

PHASE 2 SUBSTATIONS - NORTH TRUCKEE**Complete Civil Construction**

Off-Road Equipment	8.2	64.0	3.1	7.6	3.1	1.1	35.5	0.1	8,143	96%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.4	0.0	3.3	0.0	0.3	3.9	0.0	414	
Truck Hauling	0.4	3.9	0.1	1.6	0.1	0.2	1.3	0.0	771	
Subtotal	8.7	68.3	3.2	12.5	3.2	1.6	40.8	0.1	9,328	

Complete Physical Construction

Off-Road Equipment	5.9	47.5	2.3	0.0	2.3	0.0	25.2	0.1	6,078	97%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.4	0.0	3.3	0.0	0.3	3.9	0.0	414	
Truck Hauling	0.2	2.0	0.1	0.8	0.1	0.1	0.7	0.0	385	
Subtotal	6.2	49.9	2.3	4.1	2.3	0.4	29.8	0.1	6,877	

Complete Electrical Construction

Off-Road Equipment	5.5	44.0	1.9	0.0	1.9	0.0	34.7	0.1	5,999	97%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.1	1.5	0.0	0.6	0.0	0.1	0.5	0.0	289	
Subtotal	5.7	45.7	2.0	2.8	2.0	0.3	37.8	0.1	6,564	

Complete System Protection Construction

Off-Road Equipment	1.7	12.4	0.7	0.0	0.7	0.0	9.1	0.0	1,503	95%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.1	1.0	0.0	0.4	0.0	0.0	0.3	0.0	193	
Subtotal	1.9	13.6	0.8	2.6	0.8	0.3	12.0	0.0	1,972	

Complete Offsite Improvements and Mitigations

Off-Road Equipment	4.8	36.8	1.7	0.0	1.7	0.0	18.0	0.1	4,988	97%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.1	1.5	0.0	0.6	0.0	0.1	0.5	0.0	289	
Subtotal	5.1	38.5	1.8	2.8	1.8	0.3	21.1	0.1	5,553	

PHASE 2 SUBSTATIONS - DECOMMISSION BROCKWAY

Complete Civil Construction

Off-Road Equipment	8.2	64.0	3.1	7.6	3.1	1.1	35.5	0.1	8,143	97%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.4	0.0	3.3	0.0	0.3	3.9	0.0	414	
Truck Hauling	0.2	2.5	0.1	1.0	0.1	0.1	0.8	0.0	482	
Subtotal	8.6	66.8	3.2	11.9	3.2	1.6	40.3	0.1	9,039	

Complete Physical Construction

Off-Road Equipment	5.9	47.5	2.3	0.0	2.3	0.0	25.2	0.1	6,078	97%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.4	0.0	3.3	0.0	0.3	3.9	0.0	414	
Truck Hauling	0.2	2.0	0.1	0.8	0.1	0.1	0.7	0.0	385	
Subtotal	6.2	49.9	2.3	4.1	2.3	0.4	29.8	0.1	6,877	

Complete Electrical Construction

Off-Road Equipment	5.5	44.0	1.9	0.0	1.9	0.0	34.7	0.1	5,999	97%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.1	1.5	0.0	0.6	0.0	0.1	0.5	0.0	289	
Subtotal	5.7	45.7	2.0	2.8	2.0	0.3	37.8	0.1	6,564	

Complete System Protection Construction

Off-Road Equipment	1.7	12.4	0.7	0.0	0.7	0.0	9.1	0.0	1,503	95%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.1	1.0	0.0	0.4	0.0	0.0	0.3	0.0	193	
Subtotal	1.9	13.6	0.8	2.6	0.8	0.3	12.0	0.0	1,972	

Complete Offsite Improvements and Mitigations

Off-Road Equipment	4.8	36.8	1.7	0.0	1.7	0.0	18.0	0.1	4,988	97%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.1	1.5	0.0	0.6	0.0	0.1	0.5	0.0	289	
Subtotal	5.1	38.5	1.8	2.8	1.8	0.3	21.1	0.1	5,553	

PHASE 3 SUBSTATIONS - TAHOE CITY**Complete Civil Construction**

Off-Road Equipment	8.2	64.0	3.1	7.6	3.1	1.1	35.5	0.1	8,143	95%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.4	0.0	3.3	0.0	0.3	3.9	0.0	414	
Truck Hauling	0.4	4.4	0.1	1.8	0.1	0.2	1.5	0.0	867	
Subtotal	8.8	68.8	3.3	12.7	3.2	1.7	41.0	0.1	9,424	

Complete Physical Construction

Off-Road Equipment	5.9	47.5	2.3	0.0	2.3	0.0	25.2	0.1	6,078	95%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.4	0.0	3.3	0.0	0.3	3.9	0.0	414	
Truck Hauling	0.3	3.4	0.1	1.4	0.1	0.1	1.2	0.0	675	
Subtotal	6.3	51.3	2.4	4.7	2.4	0.5	30.3	0.1	7,166	

Complete Electrical Construction

Off-Road Equipment	5.5	44.0	1.9	0.0	1.9	0.0	34.7	0.1	5,999	95%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.3	2.9	0.1	1.2	0.1	0.1	1.0	0.0	578	
Subtotal	5.9	47.1	2.0	3.4	2.0	0.3	38.3	0.1	6,853	

Complete System Protection Construction

Off-Road Equipment	1.7	12.4	0.7	0.0	0.7	0.0	9.1	0.0	1,503	92%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.2	2.0	0.1	0.8	0.1	0.1	0.7	0.0	385	
Subtotal	2.0	14.6	0.8	3.0	0.8	0.3	12.4	0.0	2,164	

Complete Offsite Improvements and Mitigations

Off-Road Equipment	4.8	36.8	1.7	0.0	1.7	0.0	18.0	0.1	4,988	95%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.2	2.5	0.1	1.0	0.1	0.1	0.8	0.0	482	
Subtotal	5.1	39.5	1.8	3.2	1.8	0.3	21.5	0.1	5,745	

PHASE 3 SUBSTATIONS - SQUAW VALLEY

Complete Civil Construction

Off-Road Equipment	8.2	64.0	3.1	7.6	3.1	1.1	35.5	0.1	8,143	95%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.4	0.0	3.3	0.0	0.3	3.9	0.0	414	
Truck Hauling	0.4	4.4	0.1	1.8	0.1	0.2	1.5	0.0	867	
Subtotal	8.8	68.8	3.3	12.7	3.2	1.7	41.0	0.1	9,424	

Complete Physical Construction

Off-Road Equipment	5.9	47.5	2.3	0.0	2.3	0.0	25.2	0.1	6,078	96%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.4	0.0	3.3	0.0	0.3	3.9	0.0	414	
Truck Hauling	0.3	2.9	0.1	1.2	0.1	0.1	1.0	0.0	578	
Subtotal	6.3	50.8	2.4	4.5	2.4	0.5	30.1	0.1	7,070	

Complete Electrical Construction

Off-Road Equipment	5.5	44.0	1.9	0.0	1.9	0.0	34.7	0.1	5,999	96%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.2	2.5	0.1	1.0	0.1	0.1	0.8	0.0	482	
Subtotal	5.8	46.7	2.0	3.2	2.0	0.3	38.2	0.1	6,757	

Complete System Protection Construction

Off-Road Equipment	1.7	12.4	0.7	0.0	0.7	0.0	9.1	0.0	1,503	92%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.2	2.0	0.1	0.8	0.1	0.1	0.7	0.0	385	
Subtotal	2.0	14.6	0.8	3.0	0.8	0.3	12.4	0.0	2,164	

Complete Offsite Improvements and Mitigations

Off-Road Equipment	4.8	36.8	1.7	0.0	1.7	0.0	18.0	0.1	4,988	96%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.2	2.0	0.1	0.8	0.1	0.1	0.7	0.0	385	
Subtotal	5.1	39.0	1.8	3.0	1.8	0.3	21.3	0.1	5,649	

PHASE 3 SUBSTATIONS - KINGS BEACH**Complete Civil Construction**

Off-Road Equipment	8.2	64.0	3.1	7.6	3.1	1.1	35.5	0.1	8,143	98%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.4	0.0	3.3	0.0	0.3	3.9	0.0	414	
Truck Hauling	0.2	2.0	0.1	0.8	0.1	0.1	0.7	0.0	385	
Subtotal	8.6	66.3	3.2	11.7	3.2	1.6	40.1	0.1	8,942	

Complete Physical Construction

Off-Road Equipment	5.9	47.5	2.3	0.0	2.3	0.0	25.2	0.1	6,078	98%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.4	0.0	3.3	0.0	0.3	3.9	0.0	414	
Truck Hauling	0.1	1.5	0.0	0.6	0.0	0.1	0.5	0.0	289	
Subtotal	6.1	49.4	2.3	3.9	2.3	0.4	29.6	0.1	6,781	

Complete Electrical Construction

Off-Road Equipment	5.5	44.0	1.9	0.0	1.9	0.0	34.7	0.1	5,999	97%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.1	1.5	0.0	0.6	0.0	0.1	0.5	0.0	289	
Subtotal	5.7	45.7	2.0	2.8	2.0	0.3	37.8	0.1	6,564	

Complete System Protection Construction

Off-Road Equipment	1.7	12.4	0.7	0.0	0.7	0.0	9.1	0.0	1,503	95%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.1	1.0	0.0	0.4	0.0	0.0	0.3	0.0	193	
Subtotal	1.9	13.6	0.8	2.6	0.8	0.3	12.0	0.0	1,972	

Complete Offsite Improvements and Mitigations

Off-Road Equipment	4.8	36.8	1.7	0.0	1.7	0.0	18.0	0.1	4,988	98%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.1	1.0	0.0	0.4	0.0	0.0	0.3	0.0	193	
Subtotal	5.0	38.0	1.7	2.6	1.7	0.3	21.0	0.1	5,456	

PHASE 1 TRANSMISSION - 650 LINE UPGRADE

Complete Environmental Construction (USFS Out of Basin only)

Off-Road Equipment	1.3	108.9	4.7	7.6	4.7	1.1	50.6	0.1	13,301	94%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.2	0.6	0.0	5.5	0.0	0.6	6.5	0.0	689	
Truck Hauling	0.8	8.8	0.3	3.7	0.3	0.4	3.0	0.0	1,735	
Subtotal	2.3	118.3	5.0	16.8	5.0	2.1	60.1	0.2	15,725	

Complete Road Construction (USFS Out of Basin only)

Off-Road Equipment	1.3	108.9	4.7	7.6	4.7	1.1	50.6	0.1	13,301	94%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.2	0.6	0.0	5.5	0.0	0.6	6.5	0.0	689	
Truck Hauling	0.8	8.8	0.3	3.7	0.3	0.4	3.0	0.0	1,735	
Subtotal	2.3	118.3	5.0	16.8	5.0	2.1	60.1	0.2	15,725	

Complete Logging Operations (USFS Out of Basin only)

Off-Road Equipment	24.5	217.3	8.7	0.0	8.7	0.0	99.6	0.3	28,785	83%
Helicopter Use	2.7	17.8	0.5	0.0	0.5	0.0	3.2	0.0	4,726	
Worker Trips	0.2	0.5	0.0	4.4	0.0	0.4	5.2	0.0	552	
Truck Hauling	2.5	36.9	1.3	4.9	1.2	0.5	10.5	0.1	7,464	
Subtotal	29.8	272.4	10.5	9.3	10.4	1.0	118.5	0.4	41,526	

Complete Environmental Construction (Refresh and Remaining)

Off-Road Equipment	1.3	108.9	4.7	7.6	4.7	1.1	50.6	0.1	13,301	94%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.2	0.6	0.0	5.5	0.0	0.6	6.5	0.0	689	
Truck Hauling	0.8	8.8	0.3	3.7	0.3	0.4	3.0	0.0	1,735	
Subtotal	2.3	118.3	5.0	16.8	5.0	2.1	60.1	0.2	15,725	

Complete Road Construction (Remaining)

Off-Road Equipment	1.3	108.9	4.7	7.6	4.7	1.1	50.6	0.1	13,301	94%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.2	0.6	0.0	5.5	0.0	0.6	6.5	0.0	689	
Truck Hauling	0.8	8.8	0.3	3.7	0.3	0.4	3.0	0.0	1,735	
Subtotal	2.3	118.3	5.0	16.8	5.0	2.1	60.1	0.2	15,725	

Complete Logging Operations (Remaining)										
Off-Road Equipment	24.5	217.3	8.7	0.0	8.7	0.0	99.6	0.3	28,785	83%
Helicopter Use	2.7	17.8	0.5	0.0	0.5	0.0	3.2	0.0	4,726	
Worker Trips	0.2	0.5	0.0	4.4	0.0	0.4	5.2	0.0	552	
Truck Hauling	2.5	36.9	1.3	4.9	1.2	0.5	10.5	0.1	7,464	
Subtotal	29.8	272.4	10.5	9.3	10.4	1.0	118.5	0.4	41,526	
Complete Foundation Construction										
Off-Road Equipment	6.8	59.6	2.3	0.0	2.3	0.0	23.6	0.1	8,068	94%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.4	1.0	0.0	8.8	0.0	0.9	10.4	0.0	1,103	
Truck Hauling	0.4	3.9	0.1	1.6	0.1	0.2	1.3	0.0	771	
Subtotal	7.6	64.5	2.4	10.4	2.4	1.0	35.3	0.1	9,942	
Complete Line Construction										
Off-Road Equipment	21.4	177.1	7.9	11.4	7.9	1.7	111.3	0.2	21,808	94%
Helicopter Use	0.9	5.9	0.2	0.0	0.2	0.0	1.1	0.0	1,575	
Worker Trips	0.4	1.0	0.0	8.8	0.0	0.9	10.4	0.0	1,103	
Truck Hauling	1.0	10.8	0.4	4.5	0.3	0.5	3.7	0.0	2,120	
Subtotal	23.6	194.8	8.4	24.7	8.4	3.1	126.5	0.3	26,606	
Complete Removals										
Off-Road Equipment	10.6	92.6	3.9	0.0	3.9	0.0	39.9	0.1	11,798	94%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.4	1.0	0.0	8.8	0.0	0.9	10.4	0.0	1,103	
Truck Hauling	0.6	6.9	0.2	2.9	0.2	0.3	2.4	0.0	1,349	
Subtotal	11.6	100.4	4.1	11.6	4.1	1.2	52.7	0.2	14,250	

PHASE 2 TRANSMISSION - 650 LINE UPGRADE**Complete Environmental Construction**

Off-Road Equipment	1.3	108.9	4.7	7.6	4.7	1.1	50.6	0.1	13,301	93%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.2	0.6	0.0	5.5	0.0	0.6	6.5	0.0	689	
Truck Hauling	1.0	10.8	0.4	4.5	0.3	0.5	3.7	0.0	2,120	
Subtotal	2.5	120.3	5.0	17.6	5.0	2.2	60.8	0.2	16,110	

Complete Logging Operations

Off-Road Equipment	24.5	217.3	8.7	0.0	8.7	0.0	99.6	0.3	28,785	76%
Helicopter Use	2.7	17.8	0.5	0.0	0.5	0.0	3.2	0.0	4,726	
Worker Trips	0.2	0.5	0.0	4.4	0.0	0.4	5.2	0.0	552	
Truck Hauling	4.3	64.2	2.3	8.5	2.1	0.9	18.3	0.1	12,981	
Subtotal	31.7	299.7	11.4	12.9	11.3	1.3	126.3	0.4	47,043	

Complete Road Construction

Off-Road Equipment	1.3	108.9	4.7	7.6	4.7	1.1	50.6	0.1	13,301	90%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.2	0.6	0.0	5.5	0.0	0.6	6.5	0.0	689	
Truck Hauling	1.4	15.2	0.5	6.4	0.5	0.6	5.2	0.0	2,987	
Subtotal	2.9	124.7	5.2	19.4	5.1	2.3	62.3	0.2	16,977	

Complete Foundation Construction

Off-Road Equipment	6.8	59.6	2.3	0.0	2.3	0.0	23.6	0.1	8,068	91%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.4	1.0	0.0	8.8	0.0	0.9	10.4	0.0	1,103	
Truck Hauling	0.6	6.9	0.2	2.9	0.2	0.3	2.4	0.0	1,349	
Subtotal	7.8	67.4	2.5	11.6	2.5	1.2	36.3	0.1	10,520	

Complete Line Construction

Off-Road Equipment	21.4	177.1	7.9	11.4	7.9	1.7	111.3	0.2	21,808	94%
Helicopter Use	0.9	5.9	0.2	0.0	0.2	0.0	1.1	0.0	1,575	
Worker Trips	0.4	1.0	0.0	8.8	0.0	0.9	10.4	0.0	1,103	
Truck Hauling	1.0	11.3	0.4	4.7	0.3	0.5	3.9	0.0	2,216	
Subtotal	23.7	195.3	8.4	24.9	8.4	3.1	126.7	0.3	26,702	

Complete Removals

Off-Road Equipment	10.6	92.6	3.9	0.0	3.9	0.0	39.9	0.1	11,798	82%
Helicopter Use	2.7	17.8	0.5	0.0	0.5	0.0	3.2	0.0	4,726	
Worker Trips	0.4	1.0	0.0	8.8	0.0	0.9	10.4	0.0	1,103	
Truck Hauling	0.9	10.3	0.3	4.3	0.3	0.4	3.5	0.0	2,024	
Subtotal	14.7	121.6	4.7	13.1	4.7	1.3	57.1	0.2	19,650	

PHASE 3 - 625 LINE UPGRADE**Complete Environmental Construction**

Off-Road Equipment	21.1	174.7	7.6	15.2	7.6	2.3	82.2	0.2	20,941	95%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.2	0.6	0.0	5.5	0.0	0.6	6.5	0.0	689	
Truck Hauling	1.2	13.3	0.4	5.5	0.4	0.6	4.5	0.0	2,602	
Subtotal	22.6	188.6	8.0	26.2	8.0	3.4	93.2	0.3	24,233	

Complete Road Construction

Off-Road Equipment	21.1	174.7	7.6	15.2	7.6	2.3	82.2	0.2	20,941	95%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.2	0.6	0.0	5.5	0.0	0.6	6.5	0.0	689	
Truck Hauling	1.2	12.8	0.4	5.3	0.4	0.5	4.4	0.0	2,505	
Subtotal	22.5	188.1	8.0	26.0	8.0	3.4	93.1	0.3	24,136	

Complete Logging Operations

Off-Road Equipment	24.5	217.3	8.7	0.0	8.7	0.0	99.6	0.3	28,785	82%
Helicopter Use	2.7	17.8	0.5	0.0	0.5	0.0	3.2	0.0	4,726	
Worker Trips	0.2	0.5	0.0	4.4	0.0	0.4	5.2	0.0	552	
Truck Hauling	2.6	38.5	1.4	5.1	1.2	0.5	11.0	0.1	7,789	
Subtotal	29.9	274.0	10.5	9.5	10.4	1.0	119.0	0.4	41,850	

Complete Foundation Construction

Off-Road Equipment	6.8	59.6	2.3	0.0	2.3	0.0	23.6	0.1	8,068	95%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.4	1.0	0.0	8.8	0.0	0.9	10.4	0.0	1,103	
Truck Hauling	0.3	3.4	0.1	1.4	0.1	0.1	1.2	0.0	675	
Subtotal	7.5	64.0	2.4	10.2	2.4	1.0	35.2	0.1	9,846	

Complete Line Construction

Off-Road Equipment	22.5	187.0	8.2	11.4	8.2	1.7	114.4	0.2	23,141	90%
Helicopter Use	2.7	17.8	0.5	0.0	0.5	0.0	3.2	0.0	4,726	
Worker Trips	0.4	1.0	0.0	8.8	0.0	0.9	10.4	0.0	1,103	
Truck Hauling	1.1	11.8	0.4	4.9	0.4	0.5	4.0	0.0	2,313	
Subtotal	26.6	217.5	9.1	25.1	9.1	3.1	132.1	0.3	31,282	

Complete Removals

Off-Road Equipment	10.6	92.6	3.9	0.0	3.9	0.0	39.9	0.1	11,798	83%
Helicopter Use	2.7	17.8	0.5	0.0	0.5	0.0	3.2	0.0	4,726	
Worker Trips	0.4	1.0	0.0	8.8	0.0	0.9	10.4	0.0	1,103	
Truck Hauling	0.8	8.8	0.3	3.7	0.3	0.4	3.0	0.0	1,735	
Subtotal	14.5	120.2	4.6	12.5	4.6	1.3	56.6	0.2	19,361	

Summary of Construction Emissions by Phase and by Activity

Road Focused Alternative

Daily Truck Emissions (lb/day)										Proportion of PM10 Exh from Off-Road Equip
Task Name	ROG	NOx	PM10 Exh	PM10 Dust	PM2.5 Exh	PM2.5 Dust	CO	SOx	CO2e	
PHASE 1 SUBSTATIONS - NORTHSTAR										
Complete Civil Construction										
Off-Road Equipment	8.2	64.0	3.1	7.6	3.1	1.1	35.5	0.1	8,143	99%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.4	0.0	3.3	0.0	0.3	3.9	0.0	414	
Truck Hauling	0.1	1.0	0.0	0.4	0.0	0.0	0.3	0.0	193	
Subtotal	8.5	65.3	3.1	11.3	3.1	1.5	39.8	0.1	8,749	
Complete Physical Construction										
Off-Road Equipment	5.9	12.4	0.7	0.0	0.7	0.0	9.1	0.0	1,503	97%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.4	0.0	3.3	0.0	0.3	3.9	0.0	414	
Truck Hauling	0.0	0.5	0.0	0.2	0.0	0.0	0.2	0.0	96	
Subtotal	6.1	13.2	0.7	3.5	0.7	0.4	13.2	0.0	2,013	
Complete Electrical Construction										
Off-Road Equipment	5.5	44.0	1.9	0.0	1.9	0.0	34.7	0.1	5,999	99%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.0	0.5	0.0	0.2	0.0	0.0	0.2	0.0	96	
Subtotal	5.6	44.7	1.9	2.4	1.9	0.2	37.5	0.1	6,372	
Complete System Protection Construction										
Off-Road Equipment	1.7	12.4	0.7	0.0	0.7	0.0	9.1	0.0	1,503	98%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.0	0.5	0.0	0.2	0.0	0.0	0.2	0.0	96	
Subtotal	1.9	13.1	0.7	2.4	0.7	0.2	11.9	0.0	1,875	
Complete Offsite Improvements and Mitigations										
Off-Road Equipment	4.8	36.8	1.7	0.0	1.7	0.0	18.0	0.1	4,988	99%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.0	0.5	0.0	0.2	0.0	0.0	0.2	0.0	96	
Subtotal	5.0	37.5	1.7	2.4	1.7	0.2	20.8	0.1	5,360	

PHASE 2 SUBSTATIONS - KINGS BEACH**Complete Civil Construction**

Off-Road Equipment	8.2	64.0	3.1	7.6	3.1	1.1	35.5	0.1	8,143	95%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.4	0.0	3.3	0.0	0.3	3.9	0.0	414	
Truck Hauling	0.4	4.9	0.2	2.1	0.1	0.2	1.7	0.0	964	
Subtotal	8.8	69.3	3.3	12.9	3.3	1.7	41.1	0.1	9,520	

Complete Physical Construction

Off-Road Equipment	5.9	47.5	2.3	0.0	2.3	0.0	25.2	0.1	6,078	96%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.4	0.0	3.3	0.0	0.3	3.9	0.0	414	
Truck Hauling	0.2	2.5	0.1	1.0	0.1	0.1	0.8	0.0	482	
Subtotal	6.2	50.4	2.3	4.3	2.3	0.4	30.0	0.1	6,974	

Complete Electrical Construction

Off-Road Equipment	5.5	44.0	1.9	0.0	1.9	0.0	34.7	0.1	5,999	97%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.2	2.0	0.1	0.8	0.1	0.1	0.7	0.0	385	
Subtotal	5.8	46.2	2.0	3.0	2.0	0.3	38.0	0.1	6,661	

Complete System Protection Construction

Off-Road Equipment	1.7	12.4	0.7	0.0	0.7	0.0	9.1	0.0	1,503	94%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.1	1.5	0.0	0.6	0.0	0.1	0.5	0.0	289	
Subtotal	2.0	14.1	0.8	2.8	0.8	0.3	12.2	0.0	2,068	

Complete Offsite Improvements and Mitigations

Off-Road Equipment	4.8	36.8	1.7	0.0	1.7	0.0	18.0	0.1	4,988	97%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.1	1.5	0.0	0.6	0.0	0.1	0.5	0.0	289	
Subtotal	5.1	38.5	1.8	2.8	1.8	0.3	21.1	0.1	5,553	

PHASE 2 SUBSTATION - NORTHSTAR**Complete Civil Construction**

Off-Road Equipment	8.2	64.0	3.1	7.6	3.1	1.1	35.5	0.1	8,143	99%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.4	0.0	3.3	0.0	0.3	3.9	0.0	414	
Truck Hauling	0.1	1.0	0.0	0.4	0.0	0.0	0.3	0.0	193	
Subtotal	8.5	65.3	3.1	11.3	3.1	1.5	39.8	0.1	8,749	

Complete Physical Construction

Off-Road Equipment	5.9	47.5	2.3	0.0	2.3	0.0	25.2	0.1	6,078	99%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.4	0.0	3.3	0.0	0.3	3.9	0.0	414	
Truck Hauling	0.0	0.5	0.0	0.2	0.0	0.0	0.2	0.0	96	
Subtotal	6.1	48.4	2.3	3.5	2.3	0.4	29.3	0.1	6,588	

Complete Electrical Construction

Off-Road Equipment	5.5	44.0	1.9	0.0	1.9	0.0	34.7	0.1	5,999	99%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.0	0.5	0.0	0.2	0.0	0.0	0.2	0.0	96	
Subtotal	5.6	44.7	1.9	2.4	1.9	0.2	37.5	0.1	6,372	

Complete System Protection Construction

Off-Road Equipment	1.7	12.4	0.7	0.0	0.7	0.0	9.1	0.0	1,503	98%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.0	0.5	0.0	0.2	0.0	0.0	0.2	0.0	96	
Subtotal	1.9	13.1	0.7	2.4	0.7	0.2	11.9	0.0	1,875	

Complete Offsite Improvements and Mitigations

Off-Road Equipment	4.8	36.8	1.7	0.0	1.7	0.0	18.0	0.1	4,988	99%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.0	0.5	0.0	0.2	0.0	0.0	0.2	0.0	96	
Subtotal	5.0	37.5	1.7	2.4	1.7	0.2	20.8	0.1	5,360	

PHASE 2 SUBSTATIONS - NORTH TRUCKEE**Complete Civil Construction**

Off-Road Equipment	8.2	64.0	3.1	7.6	3.1	1.1	35.5	0.1	8,143	96%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.4	0.0	3.3	0.0	0.3	3.9	0.0	414	
Truck Hauling	0.4	3.9	0.1	1.6	0.1	0.2	1.3	0.0	771	
Subtotal	8.7	68.3	3.2	12.5	3.2	1.6	40.8	0.1	9,328	

Complete Physical Construction

Off-Road Equipment	5.9	47.5	2.3	0.0	2.3	0.0	25.2	0.1	6,078	97%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.4	0.0	3.3	0.0	0.3	3.9	0.0	414	
Truck Hauling	0.2	2.0	0.1	0.8	0.1	0.1	0.7	0.0	385	
Subtotal	6.2	49.9	2.3	4.1	2.3	0.4	29.8	0.1	6,877	

Complete Electrical Construction

Off-Road Equipment	5.5	44.0	1.9	0.0	1.9	0.0	34.7	0.1	5,999	97%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.1	1.5	0.0	0.6	0.0	0.1	0.5	0.0	289	
Subtotal	5.7	45.7	2.0	2.8	2.0	0.3	37.8	0.1	6,564	

Complete System Protection Construction

Off-Road Equipment	1.7	12.4	0.7	0.0	0.7	0.0	9.1	0.0	1,503	95%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.1	1.0	0.0	0.4	0.0	0.0	0.3	0.0	193	
Subtotal	1.9	13.6	0.8	2.6	0.8	0.3	12.0	0.0	1,972	

Complete Offsite Improvements and Mitigations

Off-Road Equipment	4.8	36.8	1.7	0.0	1.7	0.0	18.0	0.1	4,988	97%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.1	1.5	0.0	0.6	0.0	0.1	0.5	0.0	289	
Subtotal	5.1	38.5	1.8	2.8	1.8	0.3	21.1	0.1	5,553	

PHASE 2 SUBSTATIONS - DECOMMISSION BROCKWAY**Complete Civil Construction**

Off-Road Equipment	8.2	64.0	3.1	7.6	3.1	1.1	35.5	0.1	8,143	97%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.4	0.0	3.3	0.0	0.3	3.9	0.0	414	
Truck Hauling	0.2	2.5	0.1	1.0	0.1	0.1	0.8	0.0	482	
Subtotal	8.6	66.8	3.2	11.9	3.2	1.6	40.3	0.1	9,039	

Complete Physical Construction

Off-Road Equipment	5.9	47.5	2.3	0.0	2.3	0.0	25.2	0.1	6,078	97%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.4	0.0	3.3	0.0	0.3	3.9	0.0	414	
Truck Hauling	0.2	2.0	0.1	0.8	0.1	0.1	0.7	0.0	385	
Subtotal	6.2	49.9	2.3	4.1	2.3	0.4	29.8	0.1	6,877	

Complete Electrical Construction

Off-Road Equipment	5.5	44.0	1.9	0.0	1.9	0.0	34.7	0.1	5,999	97%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.1	1.5	0.0	0.6	0.0	0.1	0.5	0.0	289	
Subtotal	5.7	45.7	2.0	2.8	2.0	0.3	37.8	0.1	6,564	

Complete System Protection Construction

Off-Road Equipment	1.7	12.4	0.7	0.0	0.7	0.0	9.1	0.0	1,503	95%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.1	1.0	0.0	0.4	0.0	0.0	0.3	0.0	193	
Subtotal	1.9	13.6	0.8	2.6	0.8	0.3	12.0	0.0	1,972	

Complete Offsite Improvements and Mitigations

Off-Road Equipment	4.8	36.8	1.7	0.0	1.7	0.0	18.0	0.1	4,988	97%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.1	1.5	0.0	0.6	0.0	0.1	0.5	0.0	289	
Subtotal	5.1	38.5	1.8	2.8	1.8	0.3	21.1	0.1	5,553	

PHASE 3 SUBSTATIONS - TAHOE CITY**Complete Civil Construction**

Off-Road Equipment	8.2	64.0	3.1	7.6	3.1	1.1	35.5	0.1	8,143	95%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.4	0.0	3.3	0.0	0.3	3.9	0.0	414	
Truck Hauling	0.4	4.4	0.1	1.8	0.1	0.2	1.5	0.0	867	
Subtotal	8.8	68.8	3.3	12.7	3.2	1.7	41.0	0.1	9,424	

Complete Physical Construction

Off-Road Equipment	5.9	47.5	2.3	0.0	2.3	0.0	25.2	0.1	6,078	95%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.4	0.0	3.3	0.0	0.3	3.9	0.0	414	
Truck Hauling	0.3	3.4	0.1	1.4	0.1	0.1	1.2	0.0	675	
Subtotal	6.3	51.3	2.4	4.7	2.4	0.5	30.3	0.1	7,166	

Complete Electrical Construction

Off-Road Equipment	5.5	44.0	1.9	0.0	1.9	0.0	34.7	0.1	5,999	95%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.3	2.9	0.1	1.2	0.1	0.1	1.0	0.0	578	
Subtotal	5.9	47.1	2.0	3.4	2.0	0.3	38.3	0.1	6,853	

Complete System Protection Construction

Off-Road Equipment	1.7	12.4	0.7	0.0	0.7	0.0	9.1	0.0	1,503	92%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.2	2.0	0.1	0.8	0.1	0.1	0.7	0.0	385	
Subtotal	2.0	14.6	0.8	3.0	0.8	0.3	12.4	0.0	2,164	

Complete Offsite Improvements and Mitigations

Off-Road Equipment	4.8	36.8	1.7	0.0	1.7	0.0	18.0	0.1	4,988	95%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.2	2.5	0.1	1.0	0.1	0.1	0.8	0.0	482	
Subtotal	5.1	39.5	1.8	3.2	1.8	0.3	21.5	0.1	5,745	

PHASE 3 SUBSTATIONS - SQUAW VALLEY**Complete Civil Construction**

Off-Road Equipment	8.2	64.0	3.1	7.6	3.1	1.1	35.5	0.1	8,143	95%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.4	0.0	3.3	0.0	0.3	3.9	0.0	414	
Truck Hauling	0.4	4.4	0.1	1.8	0.1	0.2	1.5	0.0	867	
Subtotal	8.8	68.8	3.3	12.7	3.2	1.7	41.0	0.1	9,424	

Complete Physical Construction

Off-Road Equipment	5.9	47.5	2.3	0.0	2.3	0.0	25.2	0.1	6,078	96%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.4	0.0	3.3	0.0	0.3	3.9	0.0	414	
Truck Hauling	0.3	2.9	0.1	1.2	0.1	0.1	1.0	0.0	578	
Subtotal	6.3	50.8	2.4	4.5	2.4	0.5	30.1	0.1	7,070	

Complete Electrical Construction

Off-Road Equipment	5.5	44.0	1.9	0.0	1.9	0.0	34.7	0.1	5,999	96%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.2	2.5	0.1	1.0	0.1	0.1	0.8	0.0	482	
Subtotal	5.8	46.7	2.0	3.2	2.0	0.3	38.2	0.1	6,757	

Complete System Protection Construction

Off-Road Equipment	1.7	12.4	0.7	0.0	0.7	0.0	9.1	0.0	1,503	92%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.2	2.0	0.1	0.8	0.1	0.1	0.7	0.0	385	
Subtotal	2.0	14.6	0.8	3.0	0.8	0.3	12.4	0.0	2,164	

Complete Offsite Improvements and Mitigations

Off-Road Equipment	4.8	36.8	1.7	0.0	1.7	0.0	18.0	0.1	4,988	96%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.2	2.0	0.1	0.8	0.1	0.1	0.7	0.0	385	
Subtotal	5.1	39.0	1.8	3.0	1.8	0.3	21.3	0.1	5,649	

PHASE 3 SUBSTATIONS - KINGS BEACH**Complete Civil Construction**

Off-Road Equipment	8.2	64.0	3.1	7.6	3.1	1.1	35.5	0.1	8,143	98%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.4	0.0	3.3	0.0	0.3	3.9	0.0	414	
Truck Hauling	0.2	2.0	0.1	0.8	0.1	0.1	0.7	0.0	385	
Subtotal	8.6	66.3	3.2	11.7	3.2	1.6	40.1	0.1	8,942	

Complete Physical Construction

Off-Road Equipment	5.9	47.5	2.3	0.0	2.3	0.0	25.2	0.1	6,078	98%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.4	0.0	3.3	0.0	0.3	3.9	0.0	414	
Truck Hauling	0.1	1.5	0.0	0.6	0.0	0.1	0.5	0.0	289	
Subtotal	6.1	49.4	2.3	3.9	2.3	0.4	29.6	0.1	6,781	

Complete Electrical Construction

Off-Road Equipment	5.5	44.0	1.9	0.0	1.9	0.0	34.7	0.1	5,999	97%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.1	1.5	0.0	0.6	0.0	0.1	0.5	0.0	289	
Subtotal	5.7	45.7	2.0	2.8	2.0	0.3	37.8	0.1	6,564	

Complete System Protection Construction

Off-Road Equipment	1.7	12.4	0.7	0.0	0.7	0.0	9.1	0.0	1,503	95%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.1	1.0	0.0	0.4	0.0	0.0	0.3	0.0	193	
Subtotal	1.9	13.6	0.8	2.6	0.8	0.3	12.0	0.0	1,972	

Complete Offsite Improvements and Mitigations

Off-Road Equipment	4.8	36.8	1.7	0.0	1.7	0.0	18.0	0.1	4,988	98%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.1	1.0	0.0	0.4	0.0	0.0	0.3	0.0	193	
Subtotal	5.0	38.0	1.7	2.6	1.7	0.3	21.0	0.1	5,456	

PHASE 1 TRANSMISSION - 650 LINE UPGRADE

Complete Environmental Construction (USFS Out of Basin only)

Off-Road Equipment	1.1	108.9	4.7	7.6	4.7	1.1	50.6	0.1	13,301	94%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.2	0.6	0.0	5.5	0.0	0.6	6.5	0.0	689	
Truck Hauling	0.8	8.8	0.3	3.7	0.3	0.4	3.0	0.0	1,735	
Subtotal	2.2	118.3	5.0	16.8	5.0	2.1	60.1	0.2	15,725	

Complete Road Construction (USFS Out of Basin only)

Off-Road Equipment	1.1	108.9	4.7	7.6	4.7	1.1	50.6	0.1	13,301	94%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.2	0.6	0.0	5.5	0.0	0.6	6.5	0.0	689	
Truck Hauling	0.8	8.8	0.3	3.7	0.3	0.4	3.0	0.0	1,735	
Subtotal	2.2	118.3	5.0	16.8	5.0	2.1	60.1	0.2	15,725	

Complete Logging Operations (USFS Out of Basin only)

Off-Road Equipment	24.5	217.3	8.7	0.0	8.7	0.0	99.6	0.3	28,785	84%
Helicopter Use	1.8	11.9	0.3	0.0	0.3	0.0	2.2	0.0	3,150	
Worker Trips	0.2	0.5	0.0	4.4	0.0	0.4	5.2	0.0	552	
Truck Hauling	2.5	36.9	1.3	4.9	1.2	0.5	10.5	0.1	7,464	
Subtotal	28.9	266.5	10.3	9.3	10.2	1.0	117.4	0.4	39,951	

Complete Environmental Construction (Refresh and Remaining)

Off-Road Equipment	1.1	108.9	4.7	7.6	4.7	1.1	50.6	0.1	13,301	94%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.2	0.6	0.0	5.5	0.0	0.6	6.5	0.0	689	
Truck Hauling	0.8	8.8	0.3	3.7	0.3	0.4	3.0	0.0	1,735	
Subtotal	2.2	118.3	5.0	16.8	5.0	2.1	60.1	0.2	15,725	

Complete Road Construction (Remaining)

Off-Road Equipment	1.1	108.9	4.7	7.6	4.7	1.1	50.6	0.1	13,301	94%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.2	0.6	0.0	5.5	0.0	0.6	6.5	0.0	689	
Truck Hauling	0.8	8.8	0.3	3.7	0.3	0.4	3.0	0.0	1,735	
Subtotal	2.2	118.3	5.0	16.8	5.0	2.1	60.1	0.2	15,725	

Complete Logging Operations (Remaining)										
Off-Road Equipment	24.5	217.3	8.7	0.0	8.7	0.0	99.6	0.3	28,785	84%
Helicopter Use	1.8	11.9	0.3	0.0	0.3	0.0	2.2	0.0	3,150	
Worker Trips	0.2	0.5	0.0	4.4	0.0	0.4	5.2	0.0	552	
Truck Hauling	2.5	36.9	1.3	4.9	1.2	0.5	10.5	0.1	7,464	
Subtotal	28.9	266.5	10.3	9.3	10.2	1.0	117.4	0.4	39,951	
Complete Foundation Construction										
Off-Road Equipment	6.8	59.6	2.3	0.0	2.3	0.0	23.6	0.1	8,068	94%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.4	1.0	0.0	8.8	0.0	0.9	10.4	0.0	1,103	
Truck Hauling	0.4	3.9	0.1	1.6	0.1	0.2	1.3	0.0	771	
Subtotal	7.6	64.5	2.4	10.4	2.4	1.0	35.3	0.1	9,942	
Complete Line Construction										
Off-Road Equipment	21.4	177.1	7.9	11.4	7.9	1.7	111.3	0.2	21,808	95%
Helicopter Use	0.4	3.0	0.1	0.0	0.1	0.0	0.5	0.0	788	
Worker Trips	0.4	1.0	0.0	8.8	0.0	0.9	10.4	0.0	1,103	
Truck Hauling	1.0	10.8	0.4	4.5	0.3	0.5	3.7	0.0	2,120	
Subtotal	23.2	191.8	8.4	24.7	8.3	3.1	126.0	0.3	25,818	
Complete Removals										
Off-Road Equipment	10.6	92.6	3.9	0.0	3.9	0.0	39.9	0.1	11,798	94%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.4	1.0	0.0	8.8	0.0	0.9	10.4	0.0	1,103	
Truck Hauling	0.6	6.9	0.2	2.9	0.2	0.3	2.4	0.0	1,349	
Subtotal	11.6	100.4	4.1	11.6	4.1	1.2	52.7	0.2	14,250	

PHASE 2 TRANSMISSION - 650 LINE UPGRADE**Complete Environmental Construction**

Off-Road Equipment	1.1	108.9	4.7	7.6	4.7	1.1	50.6	0.1	13,301	93%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.2	0.6	0.0	5.5	0.0	0.6	6.5	0.0	689	
Truck Hauling	1.0	10.8	0.4	4.5	0.3	0.5	3.7	0.0	2,120	
Subtotal	2.3	120.3	5.0	17.6	5.0	2.2	60.8	0.2	16,110	

Complete Logging Operations

Off-Road Equipment	24.5	217.3	8.7	0.0	8.7	0.0	99.6	0.3	28,785	77%
Helicopter Use	1.8	11.9	0.3	0.0	0.3	0.0	2.2	0.0	3,150	
Worker Trips	0.2	0.5	0.0	4.4	0.0	0.4	5.2	0.0	552	
Truck Hauling	4.3	64.2	2.3	8.5	2.1	0.9	18.3	0.1	12,981	
Subtotal	30.8	293.7	11.3	12.9	11.1	1.3	125.2	0.4	45,468	

Complete Road Construction

Off-Road Equipment	1.1	108.9	4.7	7.6	4.7	1.1	50.6	0.1	13,301	90%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.2	0.6	0.0	5.5	0.0	0.6	6.5	0.0	689	
Truck Hauling	1.4	15.2	0.5	6.4	0.5	0.6	5.2	0.0	2,987	
Subtotal	2.7	124.7	5.2	19.4	5.1	2.3	62.3	0.2	16,977	

Complete Foundation Construction

Off-Road Equipment	6.8	59.6	2.3	0.0	2.3	0.0	23.6	0.1	8,068	91%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.4	1.0	0.0	8.8	0.0	0.9	10.4	0.0	1,103	
Truck Hauling	0.6	6.9	0.2	2.9	0.2	0.3	2.4	0.0	1,349	
Subtotal	7.8	67.4	2.5	11.6	2.5	1.2	36.3	0.1	10,520	

Complete Line Construction

Off-Road Equipment	21.4	177.1	7.9	11.4	7.9	1.7	111.3	0.2	21,808	95%
Helicopter Use	0.4	3.0	0.1	0.0	0.1	0.0	0.5	0.0	788	
Worker Trips	0.4	1.0	0.0	8.8	0.0	0.9	10.4	0.0	1,103	
Truck Hauling	1.0	11.3	0.4	4.7	0.3	0.5	3.9	0.0	2,216	
Subtotal	23.2	192.3	8.4	24.9	8.3	3.1	126.1	0.3	25,915	

Complete Removals

Off-Road Equipment	10.6	92.6	3.9	0.0	3.9	0.0	39.9	0.1	11,798	85%
Helicopter Use	1.8	11.9	0.3	0.0	0.3	0.0	2.2	0.0	3,150	
Worker Trips	0.4	1.0	0.0	8.8	0.0	0.9	10.4	0.0	1,103	
Truck Hauling	0.9	10.3	0.3	4.3	0.3	0.4	3.5	0.0	2,024	
Subtotal	13.8	115.7	4.5	13.1	4.5	1.3	56.0	0.2	18,075	

PHASE 3 - 625 LINE UPGRADE**Complete Environmental Construction**

Off-Road Equipment	21.1	174.7	7.6	15.2	7.6	2.3	82.2	0.2	20,941	95%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.2	0.6	0.0	5.5	0.0	0.6	6.5	0.0	689	
Truck Hauling	1.2	13.3	0.4	5.5	0.4	0.6	4.5	0.0	2,602	
Subtotal	22.6	188.6	8.0	26.2	8.0	3.4	93.2	0.3	24,233	

Complete Road Construction

Off-Road Equipment	21.1	174.7	7.6	15.2	7.6	2.3	82.2	0.2	20,941	95%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.2	0.6	0.0	5.5	0.0	0.6	6.5	0.0	689	
Truck Hauling	1.2	12.8	0.4	5.3	0.4	0.5	4.4	0.0	2,505	
Subtotal	22.5	188.1	8.0	26.0	8.0	3.4	93.1	0.3	24,136	

Complete Logging Operations

Off-Road Equipment	24.5	217.3	8.7	0.0	8.7	0.0	99.6	0.3	28,785	84%
Helicopter Use	1.8	11.9	0.3	0.0	0.3	0.0	2.2	0.0	3,150	
Worker Trips	0.2	0.5	0.0	4.4	0.0	0.4	5.2	0.0	552	
Truck Hauling	2.6	38.5	1.4	5.1	1.2	0.5	11.0	0.1	7,789	
Subtotal	29.0	268.1	10.4	9.5	10.3	1.0	117.9	0.4	40,275	

Complete Foundation Construction

Off-Road Equipment	6.8	59.6	2.3	0.0	2.3	0.0	23.6	0.1	8,068	95%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.4	1.0	0.0	8.8	0.0	0.9	10.4	0.0	1,103	
Truck Hauling	0.3	3.4	0.1	1.4	0.1	0.1	1.2	0.0	675	
Subtotal	7.5	64.0	2.4	10.2	2.4	1.0	35.2	0.1	9,846	

Complete Line Construction

Off-Road Equipment	22.5	187.0	8.2	11.4	8.2	1.7	114.4	0.2	23,141	92%
Helicopter Use	1.8	11.9	0.3	0.0	0.3	0.0	2.2	0.0	3,150	
Worker Trips	0.4	1.0	0.0	8.8	0.0	0.9	10.4	0.0	1,103	
Truck Hauling	1.1	11.8	0.4	4.9	0.4	0.5	4.0	0.0	2,313	
Subtotal	25.7	211.6	9.0	25.1	8.9	3.1	131.0	0.3	29,707	

Complete Removals

Off-Road Equipment	10.6	92.6	3.9	0.0	3.9	0.0	39.9	0.1	11,798	86%
Helicopter Use	1.8	11.9	0.3	0.0	0.3	0.0	2.2	0.0	3,150	
Worker Trips	0.4	1.0	0.0	8.8	0.0	0.9	10.4	0.0	1,103	
Truck Hauling	0.8	8.8	0.3	3.7	0.3	0.4	3.0	0.0	1,735	
Subtotal	13.6	114.2	4.5	12.5	4.5	1.3	55.5	0.2	17,786	

Summary of Construction Emissions by Phase and by Activity

Proposed Project/Action

Daily Truck Emissions (lb/day)										Proportion of PM10 Exh from Off-Road Equip
Task Name	ROG	NOx	PM10 Exh	PM10 Dust	PM2.5 Exh	PM2.5 Dust	CO	SOx	CO2e	
PHASE 1 SUBSTATIONS - NORTHSTAR										
Complete Civil Construction										
Off-Road Equipment	8.2	64.0	3.1	7.6	3.1	1.1	35.5	0.1	8,143	99%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.4	0.0	3.3	0.0	0.3	3.9	0.0	414	
Truck Hauling	0.1	1.0	0.0	0.4	0.0	0.0	0.3	0.0	193	
Subtotal	8.5	65.3	3.1	11.3	3.1	1.5	39.8	0.1	8,749	
Complete Physical Construction										
Off-Road Equipment	5.9	12.4	0.7	0.0	0.7	0.0	9.1	0.0	1,503	97%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.4	0.0	3.3	0.0	0.3	3.9	0.0	414	
Truck Hauling	0.0	0.5	0.0	0.2	0.0	0.0	0.2	0.0	96	
Subtotal	6.1	13.2	0.7	3.5	0.7	0.4	13.2	0.0	2,013	
Complete Electrical Construction										
Off-Road Equipment	5.5	44.0	1.9	0.0	1.9	0.0	34.7	0.1	5,999	99%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.0	0.5	0.0	0.2	0.0	0.0	0.2	0.0	96	
Subtotal	5.6	44.7	1.9	2.4	1.9	0.2	37.5	0.1	6,372	
Complete System Protection Construction										
Off-Road Equipment	1.7	12.4	0.7	0.0	0.7	0.0	9.1	0.0	1,503	98%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.0	0.5	0.0	0.2	0.0	0.0	0.2	0.0	96	
Subtotal	1.9	13.1	0.7	2.4	0.7	0.2	11.9	0.0	1,875	
Complete Offsite Improvements and Mitigations										
Off-Road Equipment	4.8	36.8	1.7	0.0	1.7	0.0	18.0	0.1	4,988	99%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.0	0.5	0.0	0.2	0.0	0.0	0.2	0.0	96	
Subtotal	5.0	37.5	1.7	2.4	1.7	0.2	20.8	0.1	5,360	

PHASE 2 SUBSTATIONS - KINGS BEACH**Complete Civil Construction**

Off-Road Equipment	8.2	64.0	3.1	7.6	3.1	1.1	35.5	0.1	8,143	95%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.4	0.0	3.3	0.0	0.3	3.9	0.0	414	
Truck Hauling	0.4	4.9	0.2	2.1	0.1	0.2	1.7	0.0	964	
Subtotal	8.8	69.3	3.3	12.9	3.3	1.7	41.1	0.1	9,520	

Complete Physical Construction

Off-Road Equipment	5.9	47.5	2.3	0.0	2.3	0.0	25.2	0.1	6,078	96%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.4	0.0	3.3	0.0	0.3	3.9	0.0	414	
Truck Hauling	0.2	2.5	0.1	1.0	0.1	0.1	0.8	0.0	482	
Subtotal	6.2	50.4	2.3	4.3	2.3	0.4	30.0	0.1	6,974	

Complete Electrical Construction

Off-Road Equipment	5.5	44.0	1.9	0.0	1.9	0.0	34.7	0.1	5,999	97%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.2	2.0	0.1	0.8	0.1	0.1	0.7	0.0	385	
Subtotal	5.8	46.2	2.0	3.0	2.0	0.3	38.0	0.1	6,661	

Complete System Protection Construction

Off-Road Equipment	1.7	12.4	0.7	0.0	0.7	0.0	9.1	0.0	1,503	94%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.1	1.5	0.0	0.6	0.0	0.1	0.5	0.0	289	
Subtotal	2.0	14.1	0.8	2.8	0.8	0.3	12.2	0.0	2,068	

Complete Offsite Improvements and Mitigations

Off-Road Equipment	4.8	36.8	1.7	0.0	1.7	0.0	18.0	0.1	4,988	97%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.1	1.5	0.0	0.6	0.0	0.1	0.5	0.0	289	
Subtotal	5.1	38.5	1.8	2.8	1.8	0.3	21.1	0.1	5,553	

PHASE 2 SUBSTATION - NORTHSTAR**Complete Civil Construction**

Off-Road Equipment	8.2	64.0	3.1	7.6	3.1	1.1	35.5	0.1	8,143	99%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.4	0.0	3.3	0.0	0.3	3.9	0.0	414	
Truck Hauling	0.1	1.0	0.0	0.4	0.0	0.0	0.3	0.0	193	
Subtotal	8.5	65.3	3.1	11.3	3.1	1.5	39.8	0.1	8,749	

Complete Physical Construction

Off-Road Equipment	5.9	47.5	2.3	0.0	2.3	0.0	25.2	0.1	6,078	99%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.4	0.0	3.3	0.0	0.3	3.9	0.0	414	
Truck Hauling	0.0	0.5	0.0	0.2	0.0	0.0	0.2	0.0	96	
Subtotal	6.1	48.4	2.3	3.5	2.3	0.4	29.3	0.1	6,588	

Complete Electrical Construction

Off-Road Equipment	5.5	44.0	1.9	0.0	1.9	0.0	34.7	0.1	5,999	99%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.0	0.5	0.0	0.2	0.0	0.0	0.2	0.0	96	
Subtotal	5.6	44.7	1.9	2.4	1.9	0.2	37.5	0.1	6,372	

Complete System Protection Construction

Off-Road Equipment	1.7	12.4	0.7	0.0	0.7	0.0	9.1	0.0	1,503	98%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.0	0.5	0.0	0.2	0.0	0.0	0.2	0.0	96	
Subtotal	1.9	13.1	0.7	2.4	0.7	0.2	11.9	0.0	1,875	

Complete Offsite Improvements and Mitigations

Off-Road Equipment	4.8	36.8	1.7	0.0	1.7	0.0	18.0	0.1	4,988	99%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.0	0.5	0.0	0.2	0.0	0.0	0.2	0.0	96	
Subtotal	5.0	37.5	1.7	2.4	1.7	0.2	20.8	0.1	5,360	

PHASE 2 SUBSTATIONS - NORTH TRUCKEE**Complete Civil Construction**

Off-Road Equipment	8.2	64.0	3.1	7.6	3.1	1.1	35.5	0.1	8,143	96%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.4	0.0	3.3	0.0	0.3	3.9	0.0	414	
Truck Hauling	0.4	3.9	0.1	1.6	0.1	0.2	1.3	0.0	771	
Subtotal	8.7	68.3	3.2	12.5	3.2	1.6	40.8	0.1	9,328	

Complete Physical Construction

Off-Road Equipment	5.9	47.5	2.3	0.0	2.3	0.0	25.2	0.1	6,078	97%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.4	0.0	3.3	0.0	0.3	3.9	0.0	414	
Truck Hauling	0.2	2.0	0.1	0.8	0.1	0.1	0.7	0.0	385	
Subtotal	6.2	49.9	2.3	4.1	2.3	0.4	29.8	0.1	6,877	

Complete Electrical Construction

Off-Road Equipment	5.5	44.0	1.9	0.0	1.9	0.0	34.7	0.1	5,999	97%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.1	1.5	0.0	0.6	0.0	0.1	0.5	0.0	289	
Subtotal	5.7	45.7	2.0	2.8	2.0	0.3	37.8	0.1	6,564	

Complete System Protection Construction

Off-Road Equipment	1.7	12.4	0.7	0.0	0.7	0.0	9.1	0.0	1,503	95%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.1	1.0	0.0	0.4	0.0	0.0	0.3	0.0	193	
Subtotal	1.9	13.6	0.8	2.6	0.8	0.3	12.0	0.0	1,972	

Complete Offsite Improvements and Mitigations

Off-Road Equipment	4.8	36.8	1.7	0.0	1.7	0.0	18.0	0.1	4,988	97%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.1	1.5	0.0	0.6	0.0	0.1	0.5	0.0	289	
Subtotal	5.1	38.5	1.8	2.8	1.8	0.3	21.1	0.1	5,553	

PHASE 2 SUBSTATIONS - DECOMMISSION BROCKWAY**Complete Civil Construction**

Off-Road Equipment	8.2	64.0	3.1	7.6	3.1	1.1	35.5	0.1	8,143	97%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.4	0.0	3.3	0.0	0.3	3.9	0.0	414	
Truck Hauling	0.2	2.5	0.1	1.0	0.1	0.1	0.8	0.0	482	
Subtotal	8.6	66.8	3.2	11.9	3.2	1.6	40.3	0.1	9,039	

Complete Physical Construction

Off-Road Equipment	5.9	47.5	2.3	0.0	2.3	0.0	25.2	0.1	6,078	97%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.4	0.0	3.3	0.0	0.3	3.9	0.0	414	
Truck Hauling	0.2	2.0	0.1	0.8	0.1	0.1	0.7	0.0	385	
Subtotal	6.2	49.9	2.3	4.1	2.3	0.4	29.8	0.1	6,877	

Complete Electrical Construction

Off-Road Equipment	5.5	44.0	1.9	0.0	1.9	0.0	34.7	0.1	5,999	97%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.1	1.5	0.0	0.6	0.0	0.1	0.5	0.0	289	
Subtotal	5.7	45.7	2.0	2.8	2.0	0.3	37.8	0.1	6,564	

Complete System Protection Construction

Off-Road Equipment	1.7	12.4	0.7	0.0	0.7	0.0	9.1	0.0	1,503	95%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.1	1.0	0.0	0.4	0.0	0.0	0.3	0.0	193	
Subtotal	1.9	13.6	0.8	2.6	0.8	0.3	12.0	0.0	1,972	

Complete Offsite Improvements and Mitigations

Off-Road Equipment	4.8	36.8	1.7	0.0	1.7	0.0	18.0	0.1	4,988	97%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.1	1.5	0.0	0.6	0.0	0.1	0.5	0.0	289	
Subtotal	5.1	38.5	1.8	2.8	1.8	0.3	21.1	0.1	5,553	

PHASE 3 SUBSTATIONS - TAHOE CITY**Complete Civil Construction**

Off-Road Equipment	8.2	64.0	3.1	7.6	3.1	1.1	35.5	0.1	8,143	95%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.4	0.0	3.3	0.0	0.3	3.9	0.0	414	
Truck Hauling	0.4	4.4	0.1	1.8	0.1	0.2	1.5	0.0	867	
Subtotal	8.8	68.8	3.3	12.7	3.2	1.7	41.0	0.1	9,424	

Complete Physical Construction

Off-Road Equipment	5.9	47.5	2.3	0.0	2.3	0.0	25.2	0.1	6,078	95%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.4	0.0	3.3	0.0	0.3	3.9	0.0	414	
Truck Hauling	0.3	3.4	0.1	1.4	0.1	0.1	1.2	0.0	675	
Subtotal	6.3	51.3	2.4	4.7	2.4	0.5	30.3	0.1	7,166	

Complete Electrical Construction

Off-Road Equipment	5.5	44.0	1.9	0.0	1.9	0.0	34.7	0.1	5,999	95%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.3	2.9	0.1	1.2	0.1	0.1	1.0	0.0	578	
Subtotal	5.9	47.1	2.0	3.4	2.0	0.3	38.3	0.1	6,853	

Complete System Protection Construction

Off-Road Equipment	1.7	12.4	0.7	0.0	0.7	0.0	9.1	0.0	1,503	92%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.2	2.0	0.1	0.8	0.1	0.1	0.7	0.0	385	
Subtotal	2.0	14.6	0.8	3.0	0.8	0.3	12.4	0.0	2,164	

Complete Offsite Improvements and Mitigations

Off-Road Equipment	4.8	36.8	1.7	0.0	1.7	0.0	18.0	0.1	4,988	95%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.2	2.5	0.1	1.0	0.1	0.1	0.8	0.0	482	
Subtotal	5.1	39.5	1.8	3.2	1.8	0.3	21.5	0.1	5,745	

PHASE 3 SUBSTATIONS - SQUAW VALLEY**Complete Civil Construction**

Off-Road Equipment	8.2	64.0	3.1	7.6	3.1	1.1	35.5	0.1	8,143	95%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.4	0.0	3.3	0.0	0.3	3.9	0.0	414	
Truck Hauling	0.4	4.4	0.1	1.8	0.1	0.2	1.5	0.0	867	
Subtotal	8.8	68.8	3.3	12.7	3.2	1.7	41.0	0.1	9,424	

Complete Physical Construction

Off-Road Equipment	5.9	47.5	2.3	0.0	2.3	0.0	25.2	0.1	6,078	96%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.4	0.0	3.3	0.0	0.3	3.9	0.0	414	
Truck Hauling	0.3	2.9	0.1	1.2	0.1	0.1	1.0	0.0	578	
Subtotal	6.3	50.8	2.4	4.5	2.4	0.5	30.1	0.1	7,070	

Complete Electrical Construction

Off-Road Equipment	5.5	44.0	1.9	0.0	1.9	0.0	34.7	0.1	5,999	96%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.2	2.5	0.1	1.0	0.1	0.1	0.8	0.0	482	
Subtotal	5.8	46.7	2.0	3.2	2.0	0.3	38.2	0.1	6,757	

Complete System Protection Construction

Off-Road Equipment	1.7	12.4	0.7	0.0	0.7	0.0	9.1	0.0	1,503	92%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.2	2.0	0.1	0.8	0.1	0.1	0.7	0.0	385	
Subtotal	2.0	14.6	0.8	3.0	0.8	0.3	12.4	0.0	2,164	

Complete Offsite Improvements and Mitigations

Off-Road Equipment	4.8	36.8	1.7	0.0	1.7	0.0	18.0	0.1	4,988	96%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.2	2.0	0.1	0.8	0.1	0.1	0.7	0.0	385	
Subtotal	5.1	39.0	1.8	3.0	1.8	0.3	21.3	0.1	5,649	

PHASE 3 SUBSTATIONS - KINGS BEACH**Complete Civil Construction**

Off-Road Equipment	8.2	64.0	3.1	7.6	3.1	1.1	35.5	0.1	8,143	98%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.4	0.0	3.3	0.0	0.3	3.9	0.0	414	
Truck Hauling	0.2	2.0	0.1	0.8	0.1	0.1	0.7	0.0	385	
Subtotal	8.6	66.3	3.2	11.7	3.2	1.6	40.1	0.1	8,942	

Complete Physical Construction

Off-Road Equipment	5.9	47.5	2.3	0.0	2.3	0.0	25.2	0.1	6,078	98%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.4	0.0	3.3	0.0	0.3	3.9	0.0	414	
Truck Hauling	0.1	1.5	0.0	0.6	0.0	0.1	0.5	0.0	289	
Subtotal	6.1	49.4	2.3	3.9	2.3	0.4	29.6	0.1	6,781	

Complete Electrical Construction

Off-Road Equipment	5.5	44.0	1.9	0.0	1.9	0.0	34.7	0.1	5,999	97%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.1	1.5	0.0	0.6	0.0	0.1	0.5	0.0	289	
Subtotal	5.7	45.7	2.0	2.8	2.0	0.3	37.8	0.1	6,564	

Complete System Protection Construction

Off-Road Equipment	1.7	12.4	0.7	0.0	0.7	0.0	9.1	0.0	1,503	95%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.1	1.0	0.0	0.4	0.0	0.0	0.3	0.0	193	
Subtotal	1.9	13.6	0.8	2.6	0.8	0.3	12.0	0.0	1,972	

Complete Offsite Improvements and Mitigations

Off-Road Equipment	4.8	36.8	1.7	0.0	1.7	0.0	18.0	0.1	4,988	98%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.1	0.2	0.0	2.2	0.0	0.2	2.6	0.0	276	
Truck Hauling	0.1	1.0	0.0	0.4	0.0	0.0	0.3	0.0	193	
Subtotal	5.0	38.0	1.7	2.6	1.7	0.3	21.0	0.1	5,456	

PHASE 1 TRANSMISSION - 650 LINE UPGRADE

Complete Environmental Construction (USFS Out of Basin only)

Off-Road Equipment	13.1	108.9	4.7	7.6	4.7	1.1	50.6	0.1	13,301	94%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.2	0.6	0.0	5.5	0.0	0.6	6.5	0.0	689	
Truck Hauling	0.8	8.8	0.3	3.7	0.3	0.4	3.0	0.0	1,735	
Subtotal	14.2	118.3	5.0	16.8	5.0	2.1	60.1	0.2	15,725	

Complete Road Construction (USFS Out of Basin only)

Off-Road Equipment	13.1	108.9	4.7	7.6	4.7	1.1	50.6	0.1	13,301	94%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.2	0.6	0.0	5.5	0.0	0.6	6.5	0.0	689	
Truck Hauling	0.8	8.8	0.3	3.7	0.3	0.4	3.0	0.0	1,735	
Subtotal	14.2	118.3	5.0	16.8	5.0	2.1	60.1	0.2	15,725	

Complete Logging Operations (USFS Out of Basin only)

Off-Road Equipment	24.5	217.3	8.7	0.0	8.7	0.0	99.6	0.3	28,785	84%
Helicopter Use	2.2	14.8	0.4	0.0	0.4	0.0	2.7	0.0	3,938	
Worker Trips	0.2	0.5	0.0	4.4	0.0	0.4	5.2	0.0	552	
Truck Hauling	2.5	36.9	1.3	4.9	1.2	0.5	10.5	0.1	7,464	
Subtotal	29.4	269.4	10.4	9.3	10.3	1.0	118.0	0.4	40,738	

Complete Environmental Construction (Refresh and Remaining)

Off-Road Equipment	13.1	108.9	4.7	7.6	4.7	1.1	50.6	0.1	13,301	94%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.2	0.6	0.0	5.5	0.0	0.6	6.5	0.0	689	
Truck Hauling	0.8	8.8	0.3	3.7	0.3	0.4	3.0	0.0	1,735	
Subtotal	14.2	118.3	5.0	16.8	5.0	2.1	60.1	0.2	15,725	

Complete Road Construction (Remaining)

Off-Road Equipment	13.1	108.9	4.7	7.6	4.7	1.1	50.6	0.1	13,301	94%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.2	0.6	0.0	5.5	0.0	0.6	6.5	0.0	689	
Truck Hauling	0.8	8.8	0.3	3.7	0.3	0.4	3.0	0.0	1,735	
Subtotal	14.2	118.3	5.0	16.8	5.0	2.1	60.1	0.2	15,725	

Complete Logging Operations (Remaining)										
Off-Road Equipment	24.5	217.3	8.7	0.0	8.7	0.0	99.6	0.3	28,785	84%
Helicopter Use	2.2	14.8	0.4	0.0	0.4	0.0	2.7	0.0	3,938	
Worker Trips	0.2	0.5	0.0	4.4	0.0	0.4	5.2	0.0	552	
Truck Hauling	2.5	36.9	1.3	4.9	1.2	0.5	10.5	0.1	7,464	
Subtotal	29.4	269.4	10.4	9.3	10.3	1.0	118.0	0.4	40,738	
Complete Foundation Construction										
Off-Road Equipment	6.8	59.6	2.3	0.0	2.3	0.0	23.6	0.1	8,068	94%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.4	1.0	0.0	8.8	0.0	0.9	10.4	0.0	1,103	
Truck Hauling	0.4	3.9	0.1	1.6	0.1	0.2	1.3	0.0	771	
Subtotal	7.6	64.5	2.4	10.4	2.4	1.0	35.3	0.1	9,942	
Complete Line Construction										
Off-Road Equipment	21.4	177.1	7.9	11.4	7.9	1.7	111.3	0.2	21,808	94%
Helicopter Use	0.7	4.4	0.1	0.0	0.1	0.0	0.8	0.0	1,181	
Worker Trips	0.4	1.0	0.0	8.8	0.0	0.9	10.4	0.0	1,103	
Truck Hauling	1.0	10.8	0.4	4.5	0.3	0.5	3.7	0.0	2,120	
Subtotal	23.4	193.3	8.4	24.7	8.4	3.1	126.2	0.3	26,212	
Complete Removals										
Off-Road Equipment	10.6	92.6	3.9	0.0	3.9	0.0	39.9	0.1	11,798	94%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.4	1.0	0.0	8.8	0.0	0.9	10.4	0.0	1,103	
Truck Hauling	0.6	6.9	0.2	2.9	0.2	0.3	2.4	0.0	1,349	
Subtotal	11.6	100.4	4.1	11.6	4.1	1.2	52.7	0.2	14,250	

PHASE 2 TRANSMISSION - 650 LINE UPGRADE**Complete Environmental Construction**

Off-Road Equipment	13.1	108.9	4.7	7.6	4.7	1.1	50.6	0.1	13,301	93%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.2	0.6	0.0	5.5	0.0	0.6	6.5	0.0	689	
Truck Hauling	1.0	10.8	0.4	4.5	0.3	0.5	3.7	0.0	2,120	
Subtotal	14.4	120.3	5.0	17.6	5.0	2.2	60.8	0.2	16,110	

Complete Logging Operations

Off-Road Equipment	24.5	217.3	8.7	0.0	8.7	0.0	99.6	0.3	28,785	77%
Helicopter Use	2.2	14.8	0.4	0.0	0.4	0.0	2.7	0.0	3,938	
Worker Trips	0.2	0.5	0.0	4.4	0.0	0.4	5.2	0.0	552	
Truck Hauling	4.3	64.2	2.3	8.5	2.1	0.9	18.3	0.1	12,981	
Subtotal	31.2	296.7	11.4	12.9	11.2	1.3	125.7	0.4	46,255	

Complete Road Construction

Off-Road Equipment	13.1	108.9	4.7	7.6	4.7	1.1	50.6	0.1	13,301	90%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.2	0.6	0.0	5.5	0.0	0.6	6.5	0.0	689	
Truck Hauling	1.4	15.2	0.5	6.4	0.5	0.6	5.2	0.0	2,987	
Subtotal	14.8	124.7	5.2	19.4	5.1	2.3	62.3	0.2	16,977	

Complete Foundation Construction

Off-Road Equipment	6.8	59.6	2.3	0.0	2.3	0.0	23.6	0.1	8,068	91%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.4	1.0	0.0	8.8	0.0	0.9	10.4	0.0	1,103	
Truck Hauling	0.6	6.9	0.2	2.9	0.2	0.3	2.4	0.0	1,349	
Subtotal	7.8	67.4	2.5	11.6	2.5	1.2	36.3	0.1	10,520	

Complete Line Construction

Off-Road Equipment	21.4	177.1	7.9	11.4	7.9	1.7	111.3	0.2	21,808	94%
Helicopter Use	0.7	4.4	0.1	0.0	0.1	0.0	0.8	0.0	1,181	
Worker Trips	0.4	1.0	0.0	8.8	0.0	0.9	10.4	0.0	1,103	
Truck Hauling	1.0	11.3	0.4	4.7	0.3	0.5	3.9	0.0	2,216	
Subtotal	23.4	193.8	8.4	24.9	8.4	3.1	126.4	0.3	26,309	

Complete Removals

Off-Road Equipment	10.6	92.6	3.9	0.0	3.9	0.0	39.9	0.1	11,798	92%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.4	1.0	0.0	8.8	0.0	0.9	10.4	0.0	1,103	
Truck Hauling	0.9	10.3	0.3	4.3	0.3	0.4	3.5	0.0	2,024	
Subtotal	12.0	103.9	4.2	13.1	4.2	1.3	53.8	0.2	14,924	

PHASE 3 - 625 LINE UPGRADE**Complete Environmental Construction**

Off-Road Equipment	21.1	174.7	7.6	15.2	7.6	2.3	82.2	0.2	20,941	95%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.2	0.6	0.0	5.5	0.0	0.6	6.5	0.0	689	
Truck Hauling	1.2	13.3	0.4	5.5	0.4	0.6	4.5	0.0	2,602	
Subtotal	22.6	188.6	8.0	26.2	8.0	3.4	93.2	0.3	24,233	

Complete Road Construction

Off-Road Equipment	21.1	174.7	7.6	15.2	7.6	2.3	82.2	0.2	20,941	95%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.2	0.6	0.0	5.5	0.0	0.6	6.5	0.0	689	
Truck Hauling	1.2	12.8	0.4	5.3	0.4	0.5	4.4	0.0	2,505	
Subtotal	22.5	188.1	8.0	26.0	8.0	3.4	93.1	0.3	24,136	

Complete Logging Operations

Off-Road Equipment	24.5	217.3	8.7	0.0	8.7	0.0	99.6	0.3	28,785	83%
Helicopter Use	2.2	14.8	0.4	0.0	0.4	0.0	2.7	0.0	3,938	
Worker Trips	0.2	0.5	0.0	4.4	0.0	0.4	5.2	0.0	552	
Truck Hauling	2.6	38.5	1.4	5.1	1.2	0.5	11.0	0.1	7,789	
Subtotal	29.5	271.0	10.4	9.5	10.3	1.0	118.4	0.4	41,063	

Complete Foundation Construction

Off-Road Equipment	6.8	59.6	2.3	0.0	2.3	0.0	23.6	0.1	8,068	95%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.4	1.0	0.0	8.8	0.0	0.9	10.4	0.0	1,103	
Truck Hauling	0.3	3.4	0.1	1.4	0.1	0.1	1.2	0.0	675	
Subtotal	7.5	64.0	2.4	10.2	2.4	1.0	35.2	0.1	9,846	

Complete Line Construction

Off-Road Equipment	22.5	187.0	8.2	11.4	8.2	1.7	114.4	0.2	23,141	94%
Helicopter Use	0.7	4.4	0.1	0.0	0.1	0.0	0.8	0.0	1,181	
Worker Trips	0.4	1.0	0.0	8.8	0.0	0.9	10.4	0.0	1,103	
Truck Hauling	1.1	11.8	0.4	4.9	0.4	0.5	4.0	0.0	2,313	
Subtotal	24.6	204.2	8.8	25.1	8.7	3.1	129.6	0.3	27,738	

Complete Removals

Off-Road Equipment	10.6	92.6	3.9	0.0	3.9	0.0	39.9	0.1	11,798	93%
Helicopter Use	no use	no use	no use	no use	no use	no use	no use	no use	no use	
Worker Trips	0.4	1.0	0.0	8.8	0.0	0.9	10.4	0.0	1,103	
Truck Hauling	0.8	8.8	0.3	3.7	0.3	0.4	3.0	0.0	1,735	
Subtotal	11.8	102.4	4.2	12.5	4.1	1.3	53.3	0.2	14,635	

Helicopter Emissions

The maximum daily emission levels would not differ among the various action alternatives but the total emission levels would.

Construction Activity	Percentage of Work Days with Helicopter Use			Proposed Project/ Action	max. hr/day when used
	PEA Alternative	Modified Alt	Road-Focused Alt		
Substation Construction-Civil	0%	0%	0%	0%	no use
Substation Construction-Physical	0%	0%	0%	0%	no use
Substation Construction-Electrical	0%	0%	0%	0%	no use
Substation Construction-System Protection	0%	0%	0%	0%	no use
Substation Construction-Offsite Improvements	0%	0%	0%	0%	no use
Tree Removal	30%	30%	20%	25%	8
650 Line ROW Preparation	0%	0%	0%	0%	no use
650 Line Construction	10%	10%	5%	7.5%	8
650 Line Removal	0%	0%	0%	0%	no use
Self-Supporting Steel Pole Footings	0%	0%	0%	0%	no use
New 625 Line ROW Preparation	0%	0%	0%	0%	no use
New 625 Line Construction	30%	30%	20%	20%	8
625 Line Removal	30%	30%	20%	20%	8

Emission Rates of KMAX K-100 helicopter	HC	NOx	PM Exh	CO	Jet Fuel Use
	kg/hr	kg/hr	kg/hr	kg/hr	kg/hr
	0.51	3.36	0.091	0.61	284

Source: Federal Office of Civil Aviation (Switzerland). 2009 (March). Guidance on the Determination of Helicopter Emissions.

Reference: 0 / 3/33/33-05-20. Available: www.bafu.admin.ch.

GHG Emissions Rate for Helicopter

	<u>value</u>	<u>units</u>	<u>source</u>
rate of fuel consumption by helicopter	284	kg/hr	Federal Office of Civil Aviation of Switzerland (see above)
density of jet A-1 fuel	0.804	kg/L	British Petroleum 2000
volume conversion rate	3.79	L/gal	onlineconversion.com/volume.htm
density of jet fuel	3.04	kg/gal	conversion calculation
jet A-1 fuel consumption rate	93.31	gal/hr	calculation
CO2 emission factor for jet fuel	9.57	kg/gal	CCAR 2009, Table C.3, p. 96
CO2 emission rate for jet fuel	893.0	kg/hr	calculation
N2O emission factor for jet fuel	0.31	g/gal	CCAR 2009, Table C.6, p. 100
CH4 emission factor for jet fuel	0.27	g/gal	CCAR 2009, Table C.6, p. 100
mass conversion rate	1,000	g/kg	onlineconversion.com/weight
global warming potential of CO2	1	unitless	CCAR 2009, Table A-1, p.722-723
global warming potential of N2O	310	unitless	CCAR 2009, Table A-1, p.722-723
global warming potential of CH4	21	unitless	CCAR 2009, Table A-1, p.722-723
CO2e emission rate for jet fuel	893.1	kg/hr	summation
mass conversion rate	2.205	lb/kg	onlineconversion.com/weight.htm
CO2e emission rate for jet fuel	1,969	lb/hr	conversion calculation
	<u>value</u>	<u>units</u>	<u>source</u>
mass conversion rate	2.205	lb/kg	onlineconversion.com/weight.htm

Maximum Daily Helicopter Emissions (lb/day)

All Action Alternatives	ROG	NOx	PM10 Exh	PM2.5 Exh	CO	CO2e
Substation Construction-Civil	no use	no use	no use	no use	no use	no use
Substation Construction-Physical	no use	no use	no use	no use	no use	no use
Substation Construction-Electrical	no use	no use	no use	no use	no use	no use
Substation Construction-System Protection	no use	no use	no use	no use	no use	no use
Substation Construction-Offsite Improvements	no use	no use	no use	no use	no use	no use
Tree Removal	9.0	59.3	1.6	1.6	10.8	15,752
650 Line ROW Preparation	no use	no use	no use	no use	no use	no use
650 Line Construction	9.0	59.3	1.6	1.6	10.8	15,752
650 Line Removal	no use	no use	no use	no use	no use	no use
Self-Supporting Steel Pole Footings	no use	no use	no use	no use	no use	no use
New 625 Line ROW Preparation	no use	no use	no use	no use	no use	no use
New 625 Line Construction	9.0	59.3	1.6	1.6	10.8	15,752
625 Line Removal	9.0	59.3	1.6	1.6	10.8	15,752

Average Daily Helicopter Emissions (lb/day)

PEA Alternative	ROG	NOx	PM10 Exh	PM10 Dust	PM2.5 Exh	PM2.5 Dust	CO	SOx	CO2e
Substation Construction-Civil	no use	no use	no use	no use	no use	no use	no use	no use	no use
Substation Construction-Physical	no use	no use	no use	no use	no use	no use	no use	no use	no use
Substation Construction-Electrical	no use	no use	no use	no use	no use	no use	no use	no use	no use
Substation Construction-System Protection	no use	no use	no use	no use	no use	no use	no use	no use	no use
Substation Construction-Offsite Improvements	no use	no use	no use	no use	no use	no use	no use	no use	no use
Tree Removal	2.7	17.8	0.5	0.0	0.5	0.0	3.2	0.0	4,726
650 Line ROW Preparation	no use	no use	no use	no use	no use	no use	no use	no use	no use
650 Line Construction	0.9	5.9	0.2	0.0	0.2	0.0	1.1	0.0	1,575
650 Line Removal	no use	no use	no use	no use	no use	no use	no use	no use	no use
Self-Supporting Steel Pole Footings	no use	no use	no use	no use	no use	no use	no use	no use	no use
New 625 Line ROW Preparation	no use	no use	no use	no use	no use	no use	no use	no use	no use
New 625 Line Construction	2.7	17.8	0.5	0.0	0.5	0.0	3.2	0.0	4,726
625 Line Removal	2.7	17.8	0.5	0.0	0.5	0.0	3.2	0.0	4,726
Modified Alternative									
Substation Construction-Civil	no use	no use	no use	no use	no use	no use	no use	no use	no use
Substation Construction-Physical	no use	no use	no use	no use	no use	no use	no use	no use	no use
Substation Construction-Electrical	no use	no use	no use	no use	no use	no use	no use	no use	no use
Substation Construction-System Protection	no use	no use	no use	no use	no use	no use	no use	no use	no use
Substation Construction-Offsite Improvements	no use	no use	no use	no use	no use	no use	no use	no use	no use
Tree Removal	2.7	17.8	0.5	0.0	0.5	0.0	3.2	0.0	4,726
650 Line ROW Preparation	no use	no use	no use	no use	no use	no use	no use	no use	no use
650 Line Construction	0.9	5.9	0.2	0.0	0.2	0.0	1.1	0.0	1,575
650 Line Removal	no use	no use	no use	no use	no use	no use	no use	no use	no use
Self-Supporting Steel Pole Footings	no use	no use	no use	no use	no use	no use	no use	no use	no use
New 625 Line ROW Preparation	no use	no use	no use	no use	no use	no use	no use	no use	no use
New 625 Line Construction	2.7	17.8	0.5	0.0	0.5	0.0	3.2	0.0	4,726
625 Line Removal	2.7	17.8	0.5	0.0	0.5	0.0	3.2	0.0	4,726
Road Focused Alternative									
Substation Construction-Civil	no use	no use	no use	no use	no use	no use	no use	no use	no use
Substation Construction-Physical	no use	no use	no use	no use	no use	no use	no use	no use	no use
Substation Construction-Electrical	no use	no use	no use	no use	no use	no use	no use	no use	no use
Substation Construction-System Protection	no use	no use	no use	no use	no use	no use	no use	no use	no use
Substation Construction-Offsite Improvements	no use	no use	no use	no use	no use	no use	no use	no use	no use
Tree Removal	1.8	11.9	0.3	0.0	0.3	0.0	2.2	0.0	3,150
650 Line ROW Preparation	no use	no use	no use	no use	no use	no use	no use	no use	no use
650 Line Construction	0.4	3.0	0.1	0.0	0.1	0.0	0.5	0.0	788
650 Line Removal	no use	no use	no use	no use	no use	no use	no use	no use	no use
Self-Supporting Steel Pole Footings	no use	no use	no use	no use	no use	no use	no use	no use	no use
New 625 Line ROW Preparation	no use	no use	no use	no use	no use	no use	no use	no use	no use
New 625 Line Construction	1.8	11.9	0.3	0.0	0.3	0.0	2.2	0.0	3,150
625 Line Removal	1.8	11.9	0.3	0.0	0.3	0.0	2.2	0.0	3,150

Proposed Project/Action

Substation Construction-Civil	no use	no use	no use	no use	no use	no use	no use	no use	no use
Substation Construction-Physical	no use	no use	no use	no use	no use	no use	no use	no use	no use
Substation Construction-Electrical	no use	no use	no use	no use	no use	no use	no use	no use	no use
Substation Construction-System Protection	no use	no use	no use	no use	no use	no use	no use	no use	no use
Substation Construction-Offsite Improvements	no use	no use	no use	no use	no use	no use	no use	no use	no use
Tree Removal	2.2	14.8	0.4	0.0	0.4	0.0	2.7	0.0	3,938
650 Line ROW Preparation	no use	no use	no use	no use	no use	no use	no use	no use	no use
650 Line Construction	0.7	4.4	0.1	0.0	0.1	0.0	0.8	0.0	1,181
650 Line Removal	no use	no use	no use	no use	no use	no use	no use	no use	no use
Self-Supporting Steel Pole Footings	no use	no use	no use	no use	no use	no use	no use	no use	no use
New 625 Line ROW Preparation	no use	no use	no use	no use	no use	no use	no use	no use	no use
New 625 Line Construction	1.8	11.9	0.3	0.0	0.3	0.0	2.2	0.0	3,150
625 Line Removal	1.8	11.9	0.3	0.0	0.3	0.0	2.2	0.0	3,150

Notes

- 1 It is assumed that no additional helicopter use would be needed for ROW preparation, installation of steel pole footings, Northstar Fold construction, or work at switching stations and substations.
- 2 The helicopter would not be used on segments on the 650 and 625 line that run along SR 267.
- 3 It is assumed that less helicopter use would be needed under the Road Focused Alternative than the PEA and Modified Alternatives because the lines are more accessible by road.
- 4 On days when a helicopter is used it is assumed that the crew would work for 8 hours per day.
- 5 It is assumed that ROG emissions from the helicopter are equivalent to HC emissions.
- 6 It is assumed that all PM emissions are PM2.5 and, by definition, also PM10.
- 7 Turboshift-powered helicopters, including the KMAX K1200 are fueled with jet fuel. This model uses a T53 17A-1 turboshaft engine. Based on this name, it is assumed that the engine runs on A-1 jet fuel.
- 8 0.00 It is not anticipated that helicopters will generate substantial levels of fugitive PM10 or PM2.5 dust during landings and take-offs due to the implementation of Applicant Proposed Measures that require that landing areas be paved or dust-controlled and the opacity requirements of PCAPCD regarding fugitive dust.
- 9 0.00 No emission factor is provided for SOx.
- 10 Turboshift-powered helicopters, including the KMAX K1200 are fueled with jet fuel. This model uses a T53 17A-1 turboshaft engine. Based on this name, it is assumed that the engine runs on A-1 jet fuel.

Truck Hauling Emissions by Phase and Construction Activity

				Daily Truck Emissions (lb/day)												
Task Name	Duration	Start	Finish	TOTAL	Work	Avg. Daily										
				TRUCK	Days	Truck	ROG	NOx	PM10	PM10	PM2.5	PM2.5	CO	SOx	CO2e	Construction Activity Type
PHASE 1 SUBSTATIONS - NORTHSTAR																
Complete Civil Construction	5 days	Mon 5/5/14	Fri 5/9/14	8	5	2.0	0.09	0.98	0.03	0.41	0.03	0.04	0.34	0.00	193	Substation Construction-Civil
Complete Physical Construction	20 days	Mon 5/26/14	Fri 6/20/14	16	20	1.0	0.04	0.49	0.02	0.21	0.01	0.02	0.17	0.00	96	Substation Construction-Physical
Complete Electrical Construction	20 days	Mon 6/23/14	Fri 7/18/14	12	20	1.0	0.04	0.49	0.02	0.21	0.01	0.02	0.17	0.00	96	Substation Construction-Electrical
Complete System Protection Construction	20 days	Mon 7/21/14	Fri 8/15/14	8	20	1.0	0.04	0.49	0.02	0.21	0.01	0.02	0.17	0.00	96	Substation Construction-System Protection
Complete Offsite Improvements and Mitigations	20 days	Mon 8/18/14	Fri 9/12/14	12	20	1.0	0.04	0.49	0.02	0.21	0.01	0.02	0.17	0.00	96	Substation Construction-Offsite Improvements
PHASE 2 SUBSTATIONS - KINGS BEACH																
Complete Civil Construction	5 days	Mon 5/2/16	Fri 5/6/16	48	5	10.0	0.45	4.91	0.16	2.05	0.15	0.21	1.68	0.01	964	Substation Construction-Civil
Complete Physical Construction	20 days	Mon 5/9/16	Fri 6/3/16	84	20	5.0	0.22	2.46	0.08	1.03	0.07	0.10	0.84	0.00	482	Substation Construction-Physical
Complete Electrical Construction	20 days	Mon 6/6/16	Fri 7/1/16	64	20	4.0	0.18	1.97	0.06	0.82	0.06	0.08	0.67	0.00	385	Substation Construction-Electrical
Complete System Protection Construction	20 days	Mon 7/4/16	Fri 7/29/16	48	20	3.0	0.13	1.47	0.05	0.62	0.04	0.06	0.50	0.00	289	Substation Construction-System Protection
Complete Offsite Improvements and Mitigations	20 days	Mon 8/1/16	Fri 8/26/16	56	20	3.0	0.13	1.47	0.05	0.62	0.04	0.06	0.50	0.00	289	Substation Construction-Offsite Improvements
PHASE 2 SUBSTATION - NORTHSTAR																
Complete Civil Construction	5 days	Mon 5/2/16	Fri 5/6/16	8	5	2.0	0.09	0.98	0.03	0.41	0.03	0.04	0.34	0.00	193	Substation Construction-Civil
Complete Physical Construction	20 days	Mon 5/9/16	Fri 6/3/16	16	20	1.0	0.04	0.49	0.02	0.21	0.01	0.02	0.17	0.00	96	Substation Construction-Physical
Complete Electrical Construction	20 days	Mon 6/6/16	Fri 7/1/16	12	20	1.0	0.04	0.49	0.02	0.21	0.01	0.02	0.17	0.00	96	Substation Construction-Electrical
Complete System Protection Construction	20 days	Mon 7/4/16	Fri 7/29/16	8	20	1.0	0.04	0.49	0.02	0.21	0.01	0.02	0.17	0.00	96	Substation Construction-System Protection
Complete Offsite Improvements and Mitigations	20 days	Mon 8/1/16	Fri 8/26/16	12	20	1.0	0.04	0.49	0.02	0.21	0.01	0.02	0.17	0.00	96	Substation Construction-Offsite Improvements
PHASE 2 SUBSTATIONS - NORTH TRUCKEE																
Complete Civil Construction	5 days	Mon 5/2/16	Fri 5/6/16	40	5	8.0	0.36	3.93	0.13	1.64	0.12	0.17	1.35	0.01	771	Substation Construction-Civil
Complete Physical Construction	20 days	Mon 5/9/16	Fri 6/3/16	72	20	4.0	0.18	1.97	0.06	0.82	0.06	0.08	0.67	0.00	385	Substation Construction-Physical
Complete Electrical Construction	20 days	Mon 6/6/16	Fri 7/1/16	52	20	3.0	0.13	1.47	0.05	0.62	0.04	0.06	0.50	0.00	289	Substation Construction-Electrical
Complete System Protection Construction	20 days	Mon 7/4/16	Fri 7/29/16	40	20	2.0	0.09	0.98	0.03	0.41	0.03	0.04	0.34	0.00	193	Substation Construction-System Protection
Complete Offsite Improvements and Mitigations	20 days	Mon 8/1/16	Fri 8/26/16	48	20	3.0	0.13	1.47	0.05	0.62	0.04	0.06	0.50	0.00	289	Substation Construction-Offsite Improvements
PHASE 2 SUBSTATIONS - DECOMMISSION BROCKWAY																
Complete Civil Construction	20 days	Mon 7/4/16	Fri 7/29/16	88	20	5.0	0.22	2.46	0.08	1.03	0.07	0.10	0.84	0.00	482	Substation Construction-Civil
Complete Physical Construction	20 days	Mon 6/6/16	Fri 7/1/16	72	20	4.0	0.18	1.97	0.06	0.82	0.06	0.08	0.67	0.00	385	Substation Construction-Physical
Complete Electrical Construction	15 days	Mon 5/16/16	Fri 6/3/16	42	15	3.0	0.13	1.47	0.05	0.62	0.04	0.06	0.50	0.00	289	Substation Construction-Electrical
Complete System Protection Construction	10 days	Mon 5/2/16	Fri 5/13/16	20	10	2.0	0.09	0.98	0.03	0.41	0.03	0.04	0.34	0.00	193	Substation Construction-System Protection
Complete Offsite Improvements and Mitigations	20 days	Mon 8/1/16	Fri 8/26/16	48	20	3.0	0.13	1.47	0.05	0.62	0.04	0.06	0.50	0.00	289	Substation Construction-Offsite Improvements
PHASE 3 SUBSTATIONS - TAHOE CITY																
Complete Civil Construction	20 days	Mon 4/29/19	Fri 5/24/19	172	20	9.0	0.40	4.42	0.14	1.85	0.13	0.19	1.51	0.01	867	Substation Construction-Civil
Complete Physical Construction	20 days	Mon 5/20/19	Fri 6/14/19	136	20	7.0	0.31	3.44	0.11	1.44	0.10	0.15	1.18	0.01	675	Substation Construction-Physical
Complete Electrical Construction	20 days	Mon 6/17/19	Fri 7/12/19	104	20	6.0	0.27	2.95	0.10	1.23	0.09	0.13	1.01	0.01	578	Substation Construction-Electrical
Complete System Protection Construction	20 days	Mon 7/15/19	Fri 8/9/19	80	20	4.0	0.18	1.97	0.06	0.82	0.06	0.08	0.67	0.00	385	Substation Construction-System Protection
Complete Offsite Improvements and Mitigations	20 days	Mon 8/12/19	Fri 9/6/19	92	20	5.0	0.22	2.46	0.08	1.03	0.07	0.10	0.84	0.00	482	Substation Construction-Offsite Improvements
PHASE 3 SUBSTATIONS - SQUAW VALLEY																
Complete Civil Construction	10 days	Mon 4/29/19	Fri 5/10/19	88	10	9.0	0.40	4.42	0.14	1.85	0.13	0.19	1.51	0.01	867	Substation Construction-Civil
Complete Physical Construction	20 days	Mon 5/13/19	Fri 6/7/19	108	20	6.0	0.27	2.95	0.10	1.23	0.09	0.13	1.01	0.01	578	Substation Construction-Physical
Complete Electrical Construction	20 days	Mon 6/10/19	Fri 7/5/19	84	20	5.0	0.22	2.46	0.08	1.03	0.07	0.10	0.84	0.00	482	Substation Construction-Electrical
Complete System Protection Construction	20 days	Mon 7/8/19	Fri 8/2/19	64	20	4.0	0.18	1.97	0.06	0.82	0.06	0.08	0.67	0.00	385	Substation Construction-System Protection
Complete Offsite Improvements and Mitigations	20 days	Mon 8/5/19	Fri 8/30/19	76	20	4.0	0.18	1.97	0.06	0.82	0.06	0.08	0.67	0.00	385	Substation Construction-Offsite Improvements
PHASE 3 SUBSTATIONS - KINGS BEACH																
Complete Civil Construction	20 days	Mon 5/27/19	Fri 6/21/19	68	20	4.0	0.18	1.97	0.06	0.82	0.06	0.08	0.67	0.00	385	Substation Construction-Civil
Complete Physical Construction	20 days	Mon 6/24/19	Fri 7/19/19	56	20	3.0	0.13	1.47	0.05	0.62	0.04	0.06	0.50	0.00	289	Substation Construction-Physical
Complete Electrical Construction	20 days	Mon 7/22/19	Fri 8/16/19	44	20	3.0	0.13	1.47	0.05	0.62	0.04	0.06	0.50	0.00	289	Substation Construction-Electrical
Complete System Protection Construction	20 days	Mon 8/19/19	Fri 9/13/19	32	20	2.0	0.09	0.98	0.03	0.41	0.03	0.04	0.34	0.00	193	Substation Construction-System Protection
Complete Offsite Improvements and Mitigations	20 days	Mon 9/16/19	Fri 10/11/19	40	20	2.0	0.09	0.98	0.03	0.41	0.03	0.04	0.34	0.00	193	Substation Construction-Offsite Improvements

Task Name	Duration	Start	Finish	TOTAL TRUCK TRIPS	Work Days (No.)	Daily Truck Emissions (lb/day)										Construction Activity Type
						Avg. Daily Truck Trips	ROG	NOx	PM10 Exh	PM10 Dust	PM2.5 Exh	PM2.5 Dust	CO	SOx	CO2e	
PHASE 1 TRANSMISSION - 650 LINE UPGRADE																
Complete Environmental Construction (USFS Out of Basin only)	20 days	Fri 8/16/13	Thu 9/12/13	344	20	18.0	0.80	8.85	0.29	3.70	0.26	0.38	3.03	0.02	1,735	650 Line ROW Preparation
Complete Road Construction (USFS Out of Basin only)	20 days	Fri 8/30/13	Thu 9/26/13	344	20	18.0	0.80	8.85	0.29	3.70	0.26	0.38	3.03	0.02	1,735	650 Line ROW Preparation
Complete Logging Operations (USFS Out of Basin only)	20 days	Fri 9/13/13	Thu 10/10/13	460	20	23.0	2.49	36.89	1.30	4.88	1.20	0.52	10.50	0.07	7,464	Tree Removal
Complete Environmental Construction (Refresh and Remaining)	20 days	Thu 5/1/14	Wed 5/28/14	344	20	18.0	0.80	8.85	0.29	3.70	0.26	0.38	3.03	0.02	1,735	650 Line ROW Preparation
Complete Road Construction (Remaining)	20 days	Thu 5/15/14	Wed 6/11/14	344	20	18.0	0.80	8.85	0.29	3.70	0.26	0.38	3.03	0.02	1,735	650 Line ROW Preparation
Complete Logging Operations (Remaining)	20 days	Thu 5/29/14	Wed 6/25/14	460	20	23.0	2.49	36.89	1.30	4.88	1.20	0.52	10.50	0.07	7,464	Tree Removal
Complete Foundation Construction	30 days	Thu 5/15/14	Wed 6/25/14	216	30	8.0	0.36	3.93	0.13	1.64	0.12	0.17	1.35	0.01	771	Self-Supporting Steel Pole Footings
Complete Line Construction	90 days	Thu 6/12/14	Wed 10/15/14	1900	90	22.0	0.98	10.81	0.35	4.52	0.32	0.46	3.70	0.02	2,120	650 Line Construction
Complete Removals	30 days	Thu 9/4/14	Wed 10/15/14	412	30	14.0	0.62	6.88	0.22	2.88	0.21	0.29	2.35	0.01	1,349	Line Removal
PHASE 2 TRANSMISSION - 650 LINE UPGRADE																
Complete Environmental Construction	10 days	Tue 5/3/16	Mon 5/16/16	216	10	22.0	0.98	10.81	0.35	4.52	0.32	0.46	3.70	0.02	2,120	650 Line ROW Preparation
Complete Logging Operations	5 days	Tue 5/17/16	Mon 5/23/16	196	5	40.0	4.33	64.16	2.26	8.48	2.08	0.90	18.26	0.13	12,981	Tree Removal
Complete Road Construction	5 days	Tue 5/24/16	Mon 5/30/16	152	5	31.0	1.38	15.23	0.50	6.37	0.46	0.65	5.21	0.03	2,987	650 Line ROW Preparation
Complete Foundation Construction	10 days	Tue 5/31/16	Mon 6/13/16	136	10	14.0	0.62	6.88	0.22	2.88	0.21	0.29	2.35	0.01	1,349	Self-Supporting Steel Pole Footings
Complete Line Construction	20 days	Mon 6/20/16	Fri 7/15/16	460	20	23.0	1.02	11.30	0.37	4.73	0.34	0.48	3.87	0.02	2,216	650 Line Construction
Complete Removals	5 days	Mon 7/11/16	Fri 7/15/16	102	5	21.0	0.93	10.32	0.34	4.32	0.31	0.44	3.53	0.02	2,024	Line Removal
PHASE 3 - 625 LINE UPGRADE																
Complete Environmental Construction	40 days	Wed 5/2/18	Tue 6/26/18	1074	40	27.0	1.20	13.27	0.43	5.55	0.40	0.56	4.54	0.03	2,602	New 625 Line ROW Preparation
Complete Road Construction	60 days	Wed 5/30/18	Tue 8/21/18	1530	60	26.0	1.16	12.78	0.42	5.34	0.38	0.54	4.37	0.02	2,505	New 625 Line ROW Preparation
Complete Logging Operations	58 days	Wed 7/11/18	Fri 9/28/18	1344	58	24.0	2.60	38.50	1.36	5.09	1.25	0.54	10.95	0.08	7,789	Tree Removal
Complete Foundation Construction	40 days	Wed 5/1/19	Tue 6/25/19	256	40	7.0	0.31	3.44	0.11	1.44	0.10	0.15	1.18	0.01	675	Self-Supporting Steel Pole Footings
Complete Line Construction	80 days	Wed 5/29/19	Tue 9/17/19	1864	80	24.0	1.07	11.79	0.38	4.93	0.35	0.50	4.04	0.02	2,313	New 625 Line Construction
Complete Removals	30 days	Wed 8/7/19	Tue 9/17/19	512	30	18.0	0.80	8.85	0.29	3.70	0.26	0.38	3.03	0.02	1,735	Line Removal

Haul Truck Emission Rates

Exhaust emission rates calculated on this sheet are based on output from EMFAC2011 (see wksht EMFAC2011 output) and road dust emission rates are based on AP 42 emission factors (See wksht Rd Dust Emiss Rts).

Exhaust Emission Factors for Haul Trucks	ROG	NOx	PM10	PM2.5	CO	SOx	CO2e	units	source
Running Exhaust Emission Factors	0.481	8.411	0.307	0.282	2.179	0.017	1724.891	g/mile	See Note 1 and Note 2
Idling Exhaust Emiss Factors	21.127	109.399	2.240	2.061	65.359	0.178	18423.847	g/truck/day	See Note 1 and Note 2
Source: wksht EMFAC2011 output									

	non-logging	logging-related trips	unit	source
trip length, non-logging related trips	20	80	miles/trip	default value from CalEEMod; project forestry report (destination: Quincy)
portion of trip on paved surfaces	95%	98.75%	%	See Note 3
portion of trip on unpaved surfaces	5%	1.25%	%	See Note 3
mass conversion rate	453.59	453.59	g/lb	onlineconversion.com/weight_common.htm
daily trips per truck	2	2	trips/truck	See Note 4

Exhaust Emissions Per Truck Trip	ROG	NOx	PM10	PM2.5	CO	SOx	CO2e	units	source
<u>Non-Logging Related Trips</u>									
Truck Travel Emissions	0.021	0.371	0.014	0.012	0.096	0.001	76	lb/trip	calculation
Truck Idling Emissions	0.023	0.121	0.002	0.002	0.072	0.000	20	lb/trip	calculation
Combined Emission Rate	0.045	0.491	0.016	0.015	0.168	0.001	96	lb/trip	summation
<u>Logging Related Trips</u>									
Truck Travel Emissions	0.085	1.483	0.054	0.050	0.384	0.003	304	lb/trip	calculation
Truck Idling Emissions	0.023	0.121	0.002	0.002	0.072	0.000	20	lb/trip	calculation
Combined Emission Rate	0.108	1.604	0.057	0.052	0.456	0.003	325	lb/trip	summation

Road Dust Emission Factors for Haul Trucks

	PM10 Dust	PM2.5 Dust	units	source
Paved roadway travel	0.0001	0.0000	lb/mile	wksht Rd Dust Emiss Rts
Unpaved roadway travel	0.203	0.020	lb/mile	wksht Rd Dust Emiss Rts

Road Dust Emission Rates per Truck Trip

	non-logging trips		logging-related trips only		units	source
	PM10 Dust	PM2.5 Dust	PM10 Dust	PM2.5 Dust		
Paved roadway travel	0.002	0.001	0.009	0.002	lb/trip	calculation
Unpaved roadway travel	0.2	0.02	0.2	0.02	lb/trip	calculation
Combined	0.2	0.02	0.2	0.02	lb/trip	summation

Notes

- 1 Emission rates are provided in wksht: EMFAC11 output
- 2 CalEEMod assumes that Heavy-Heavy Diesel Trucks (HHDT) are used to haul materials and equipment during construction. Therefore, haul truck emissions are estimated using EMFAC2011 emission factors for a Heavy-Heavy Duty Diesel CA International Registration Plan Construction Truck (T7 CAIRP construction). A different type of truck may be used to haul logs during logging activity, such as a T7NOOS, but the factors for these truck types are very similar.
- 3 It is assumed that truck will have to drive on some unpaved roads to reach staging areas. Much of the access in the LTAB portion of the ROW will be accessible by the Fiberboard Freeway, which is mostly paved.
- 4 For the purpose of estimating emissions from truck idling, it is assumed that each truck drives 2 trips per day (i.e., one outbound and one return). This is a conservative assumption and may result in an overestimate of truck idling emissions.

Worker Commute Emissions by Phase (daily)

These emission levels would generally be the same under all the action alternatives.

Daily Mobile-Source Exhaust Emission Rates per Worker-Day

<u>ROG</u>	<u>NOx</u>	<u>PM10 Exhaust</u>	<u>PM10 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5 Dust</u>	<u>CO</u>	<u>SOx</u>	<u>CO2e</u>
0.0096	0.0242	0.0002	0.2188	0.0002	0.0221	0.2597	0.0003	27.6

Source: wksht Worker Trip Emiss Rts

Emissions from Worker Commute Trips (lb/day)

Phase	Workers (#/day)	<u>ROG</u>	<u>NOx</u>	<u>PM10 Exh</u>	<u>PM10 Dust</u>	<u>PM2.5 Exh</u>	<u>PM2.5 Dust</u>	<u>CO</u>	<u>SOx</u>	<u>CO2e</u>
Substation Construction-Civil	15	0.14	0.36	0.00	3.28	0.00	0.33	3.89	0.00	414
Substation Construction-Physical	15	0.14	0.36	0.00	3.28	0.00	0.33	3.89	0.00	414
Substation Construction-Electrical	10	0.10	0.24	0.00	2.19	0.00	0.22	2.60	0.00	276
Substation Construction-System Protection	10	0.10	0.24	0.00	2.19	0.00	0.22	2.60	0.00	276
Substation Construction-Offsite Improvements	10	0.10	0.24	0.00	2.19	0.00	0.22	2.60	0.00	276
Tree Removal	20	0.19	0.48	0.00	4.38	0.00	0.44	5.19	0.01	552
650 Line ROW Preparation	25	0.24	0.60	0.01	5.47	0.01	0.55	6.49	0.01	689
650 Line Construction	40	0.39	0.97	0.01	8.75	0.01	0.88	10.39	0.01	1,103
Self-Supporting Steel Pole Footings	40	0.39	0.97	0.01	8.75	0.01	0.88	10.39	0.01	1,103
New 625 Line ROW Preparation	25	0.24	0.60	0.01	5.47	0.01	0.55	6.49	0.01	689
New 625 Line Construction	40	0.39	0.97	0.01	8.75	0.01	0.88	10.39	0.01	1,103
Line Removal	40	0.39	0.97	0.01	8.75	0.01	0.88	10.39	0.01	1,103

Notes

- Worker data is generally based on Table 3-11, Peak Construction Personnel in the PEA. Based on the data in Table 3-11, the number of workers is anticipated to change throughout an individual work phase; however, in order to be conservative, this analysis assumes that the maximum number of workers would work during the entirety of each construction phase.

Worker Commute Trip Emission Rates

Exhaust emission rates calculated on this sheet are based on output from EMFAC2011 (see wksht EMFAC2011 output) and road dust emission rates are based on AP 42 emission factors (See wksht Rd Dust Emiss Rts).

Raw Emission Factors from EMFAC2011

<u>Veh</u>	<u>Fuel</u>	<u>Pop</u> (Vehicles)	<u>VMT</u> (Miles/day)	<u>Trips</u> (Trips/day)	<u>Running Exhaust Emission Rates (g/mile)</u>						
					ROG_RUNEX	NOX_RUNEX	PM10_RUNEX	PM2_5_RUNEX	CO_RUNEX	SOX_RUNEX	CO2_RUNEX(Pavley I+LCFS)
LDA	GAS	6,239	484,565	38,900	0.100	0.220	0.003	0.002	2.803	0.004	321.765
LDA	DSL	50	3,537	298	0.045	0.916	0.033	0.031	0.294	0.003	332.288
LDT1	GAS	1,159	87,332	6,861	0.384	0.543	0.006	0.005	7.246	0.004	376.114
LDT1	DSL	1	64	5	0.083	0.896	0.069	0.063	0.311	0.004	333.039
LDT2	GAS	3,962	319,459	24,568	0.107	0.421	0.003	0.003	3.585	0.005	448.413
LDT2	DSL	0	0	0	0.058	0.654	0.047	0.043	0.220	0.004	323.742
Total			894,957								

Source: wksht: EMFAC11output

<u>Veh</u>	<u>Fuel</u>	<u>Ratio of Vehicle/Fuel Type to Total VMT</u>
LDA	GAS	54%
LDA	DSL	0.4%
LDT1	GAS	10%
LDT1	DSL	0.0%
LDT2	GAS	36%
LDT2	DSL	0.0%

Exhaust Emission Rates for Composite Light Duty Vehicles

<u>ROG_RUNEX</u> (gms/mile)	<u>NOX_RUNEX</u> (gms/mile)	<u>PM10_RUNEX</u> (gms/mile)	<u>PM2_5_RUNEX</u> (gms/mile)	<u>CO_RUNEX</u> (gms/mile)	<u>SOX_RUNEX</u> (gms/mile)	<u>CO2_RUNEX(Pavley I+LCFS)</u> (gms/mile)
0.130	0.326	0.003	0.003	3.505	0.004	372.318

Source: EMFAC2011 emission factors (above) and weighted mix of passenger vehicle fleet (also above)

	<u>value</u>	<u>unit</u>	<u>source</u>
trips per worker	2	trips/worker	See Note 2
trip length	16.8	miles/trip	default value from CalEEMod
portion of trip on paved surfaces	95%	%	See Note 3
portion of trip on unpaved surfaces	5%	%	See Note 3
mass conversion rate	453.59	g/lb	onlineconversion.com/weight_common.htm

Exhaust Emissions per Worker Per Day

<u>ROG</u>	<u>NOx</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO</u>	<u>SOx</u>	<u>CO2e</u>	<u>units</u>
0.0096	0.0242	0.0002	0.0002	0.2597	0.0003	27.5796	lb/worker-day

Source: Exhaust emissions are based on trip length and the Exhaust Emission Rates for Composite Light Duty Vehicles (above).

Road Dust Emission Rates for Light Duty Vehicles

	<u>PM10 Dust</u>	<u>PM2.5 Dust</u>	<u>units</u>	<u>source</u>
Paved roadway travel	0.0000	0.00001	lb/mile	wksht Rd Dust Emiss Rts
Unpaved roadway travel	0.13	0.01	lb/mile	wksht Rd Dust Emiss Rts

Road Dust Emission Rates per Worker Per Day

	<u>PM10 Dust</u>	<u>PM2.5 Dust</u>	<u>units</u>
Paved roadway travel	0.0013	0.0003	lb/worker-day
Unpaved roadway travel	0.2176	0.0218	lb/worker-day
Combined	0.2188	0.0221	lb/worker-day

Source: Road dust emission rates are based on the portion of the trip on paved vs. unpaved surfaces and the Road Dust Emission Rates for Light Duty Vehicles (above).

Notes

- 1 It is conservatively assumed that all workers would drive alone and none would made trips during break periods due to the remoteness of the work sites.
- 2 Daily VMT by workers = # workers * trips per worker * trip length
- 3 It is assumed the workers would have to drive some of their trip on unpaved roads to access parking areas.

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Veh	Fuel	Running Emission Rates									
		Pop (Vehicles)	VMT (Miles/day)	Trips (Trips/day)	ROG_RUNEX (gms/mile)	NOX_RUNEX (gms/mile)	PM10_RUNEX (gms/mile)	PM2_5_RUNEX (gms/mile)	CO_RUNEX (gms/mile)	SOX_RUNEX (gms/mile)	CO2_RUNEX(Pavley I+LC (gms/mile)
LDA	GAS	6,239	484,565	38,900	0.100	0.220	0.003	0.002	2.803	0.004	321.765
LDA	DSL	50	3,537	298	0.045	0.916	0.033	0.031	0.294	0.003	332.288
LDT1	GAS	1,159	87,332	6,861	0.384	0.543	0.006	0.005	7.246	0.004	376.114
LDT1	DSL	1	64	5	0.083	0.896	0.069	0.063	0.311	0.004	333.039
LDT2	GAS	3,962	319,459	24,568	0.107	0.421	0.003	0.003	3.585	0.005	448.413
LDT2	DSL	0	0	0	0.058	0.654	0.047	0.043	0.220	0.004	323.742
LHD1	GAS	611	51,130	9,103	0.962	1.239	0.006	0.006	9.573	0.010	959.524
LHD1	DSL	999	85,821	12,567	0.457	5.287	0.083	0.077	2.103	0.005	520.170
LHD2	GAS	29	2,386	427	0.660	0.921	0.007	0.006	9.860	0.010	959.524
LHD2	DSL	151	13,251	1,901	0.386	4.710	0.070	0.064	1.900	0.005	516.521
MCY	GAS	1,053	17,480	2,105	3.023	1.192	0.001	0.001	34.977	0.002	144.642
MDV	GAS	2,765	219,981	17,074	0.214	0.701	0.004	0.003	5.873	0.006	581.197
MDV	DSL	2	168	12	0.043	0.547	0.034	0.031	0.177	0.004	356.184
MH	GAS	275	7,455	28	0.463	1.428	0.004	0.004	10.670	0.007	678.277
MH	DSL	46	1,244	5	0.378	9.000	0.295	0.272	1.138	0.011	1192.198
Motor Coach	DSL	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
OBUS	GAS	6	607	265	0.848	4.254	0.001	0.001	14.711	0.007	678.277
PTO	DSL	0	6,193	0	0.948	14.863	0.610	0.561	4.945	0.021	2137.308
SBUS	GAS	2	163	7	4.232	5.247	0.028	0.022	88.789	0.009	734.699
SBUS	DSL	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
T6 Ag	DSL	8	255	0	0.663	8.621	0.415	0.382	1.883	0.012	1197.554
T6 CAIRP heavy	DSL	0	12	0	0.258	5.590	0.147	0.135	0.822	0.011	1186.455
T6 CAIRP small	DSL	1	40	0	0.249	4.094	0.142	0.131	0.820	0.011	1182.859
T6 instate construction heavy	DSL	4	188	0	0.712	9.668	0.432	0.398	1.996	0.012	1199.270
T6 instate construction small	DSL	7	415	0	0.460	6.527	0.281	0.259	1.387	0.011	1188.081
T6 instate heavy	DSL	37	1,742	0	0.691	9.352	0.418	0.385	1.940	0.012	1198.133
T6 instate small	DSL	65	3,960	0	0.438	6.170	0.266	0.244	1.322	0.011	1186.833
T6 OOS heavy	DSL	0	7	0	0.258	5.590	0.147	0.135	0.822	0.011	1186.455
T6 OOS small	DSL	0	23	0	0.249	4.094	0.142	0.131	0.820	0.011	1182.859
T6 Public	DSL	17	278	0	0.456	8.509	0.332	0.305	1.266	0.012	1201.331
T6 utility	DSL	1	27	0	0.188	5.810	0.145	0.133	0.606	0.011	1184.430
T6TS	GAS	22	1,835	447	0.817	2.196	0.003	0.003	14.435	0.007	678.277
T7 Ag	DSL	114	7,920	0	0.665	13.906	0.496	0.456	3.176	0.017	1741.601
T7 CAIRP	DSL	301	68,776	0	0.474	8.224	0.300	0.276	2.145	0.017	1724.141
T7 CAIRP construction	DSL	6	1,413	0	0.481	8.411	0.307	0.282	2.179	0.017	1724.891
T7 NNOOS	DSL	291	77,370	0	0.300	4.586	0.159	0.147	1.372	0.017	1712.562
T7 NOOS	DSL	109	25,046	0	0.440	8.224	0.276	0.254	2.000	0.017	1725.585
T7 other port	DSL	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
T7 POAK	DSL	28	4,234	0	0.165	14.643	0.094	0.086	0.716	0.017	1748.389
T7 POLA	DSL	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
T7 Public	DSL	150	3,742	0	0.617	15.644	0.603	0.554	3.099	0.017	1764.740
T7 Single	DSL	382	25,788	0	0.587	13.670	0.419	0.385	2.734	0.017	1729.307
T7 single construction	DSL	54	3,654	0	0.594	13.861	0.424	0.390	2.764	0.017	1729.795
T7 SWCV	DSL	52	2,609	0	0.109	13.022	0.068	0.063	0.503	0.017	1748.257
T7 tractor	DSL	172	23,190	0	0.835	15.015	0.565	0.520	3.834	0.017	1732.637
T7 tractor construction	DSL	41	2,725	0	0.885	15.490	0.588	0.541	4.049	0.017	1731.801
T7 utility	DSL	8	200	0	0.254	10.405	0.212	0.195	1.131	0.017	1720.581
T7IS	GAS	5	1,202	100	2.518	8.855	0.002	0.001	55.510	0.007	574.763
All Other Buses	DSL	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Placer County APCD

Veh	Fuel	Idling Emission Rates								CO_IDLEX (gms/vehicle/day)	SOX_IDLEX (gms/vehicle/day)	CO2_IDLEX(Pavley I+LCFS (gms/vehicle/day)
		Pop (Vehicles)	VMT (Miles/day)	Trips (Trips/day)	ROG_IDLEX (gms/vehicle/day)	NOX_IDLEX (gms/vehicle/day)	PM10_IDLEX (gms/vehicle/day)	PM2_5_IDLEX (gms/vehicle/day)				
LDA	GAS	6,239	484,565	38,900	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
LDA	DSL	50	3,537	298	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
LDT1	GAS	1,159	87,332	6,861	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
LDT1	DSL	1	64	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
LDT2	GAS	3,962	319,459	24,568	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
LDT2	DSL	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
LHD1	GAS	611	51,130	9,103	0.544	0.035	0.000	0.000	3.334	0.001	115.201	
LHD1	DSL	999	85,821	12,567	0.110	2.596	0.030	0.028	0.910	0.001	140.336	
LHD2	GAS	29	2,386	427	0.553	0.036	0.000	0.000	3.366	0.001	115.201	
LHD2	DSL	151	13,251	1,901	0.110	2.596	0.027	0.025	0.910	0.001	140.336	
MCY	GAS	1,053	17,480	2,105	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
MDV	GAS	2,765	219,981	17,074	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
MDV	DSL	2	168	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
MH	GAS	275	7,455	28	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
MH	DSL	46	1,244	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Motor Coach	DSL	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
OBUS	GAS	6	607	265	1.870	0.120	0.000	0.000	11.536	0.004	403.327	
PTO	DSL	0	6,193	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
SBUS	GAS	2	163	7	11.503	0.739	0.000	0.000	71.228	0.027	2505.481	
SBUS	DSL	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
T6 Ag	DSL	8	255	0	0.832	9.565	0.233	0.215	3.536	0.006	673.214	
T6 CAIRP heavy	DSL	0	12	0	0.205	8.568	0.039	0.036	1.626	0.007	757.479	
T6 CAIRP small	DSL	1	40	0	0.217	7.363	0.034	0.031	1.881	0.007	772.678	
T6 instate construction heavy	DSL	4	188	0	0.558	9.876	0.157	0.144	2.711	0.007	691.303	
T6 instate construction small	DSL	7	415	0	0.375	9.169	0.095	0.087	2.353	0.007	737.880	
T6 instate heavy	DSL	37	1,742	0	0.551	9.754	0.154	0.142	2.694	0.007	693.141	
T6 instate small	DSL	65	3,960	0	0.367	8.924	0.091	0.083	2.328	0.007	739.929	
T6 OOS heavy	DSL	0	7	0	0.205	8.568	0.039	0.036	1.626	0.007	757.479	
T6 OOS small	DSL	0	23	0	0.217	7.363	0.034	0.031	1.881	0.007	772.678	
T6 Public	DSL	17	278	0	0.711	9.204	0.195	0.180	3.240	0.007	689.336	
T6 utility	DSL	1	27	0	0.223	9.411	0.049	0.045	1.849	0.007	761.274	
T6TS	GAS	22	1,835	447	1.106	0.080	0.000	0.000	9.531	0.003	266.293	
T7 Ag	DSL	114	7,920	0	4.024	27.155	0.585	0.539	10.680	0.022	2297.855	
T7 CAIRP	DSL	301	68,776	0	21.338	110.774	2.203	2.027	66.813	0.180	18720.562	
T7 CAIRP construction	DSL	6	1,413	0	21.127	109.399	2.240	2.061	65.359	0.178	18423.847	
T7 NNOOS	DSL	291	77,370	0	31.535	173.963	1.571	1.445	121.376	0.303	31424.436	
T7 NOOS	DSL	109	25,046	0	25.420	134.581	2.543	2.340	80.421	0.224	23219.746	
T7 other port	DSL	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
T7 POAK	DSL	28	4,234	0	2.370	150.207	0.178	0.163	9.917	0.094	9774.824	
T7 POLA	DSL	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
T7 Public	DSL	150	3,742	0	17.711	113.328	2.655	2.443	46.132	0.081	8374.490	
T7 Single	DSL	382	25,788	0	3.446	29.229	0.417	0.383	10.942	0.024	2541.305	
T7 single construction	DSL	54	3,654	0	3.426	29.209	0.420	0.386	10.820	0.024	2510.820	
T7 SWCV	DSL	52	2,609	0	3.443	116.668	0.219	0.202	13.510	0.085	8770.129	
T7 tractor	DSL	172	23,190	0	3.166	29.239	0.414	0.381	9.783	0.023	2350.193	
T7 tractor construction	DSL	41	2,725	0	3.254	29.229	0.429	0.395	10.052	0.022	2332.731	
T7 utility	DSL	8	200	0	8.957	110.215	0.805	0.740	35.367	0.084	8757.647	
T7IS	GAS	5	1,202	100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
All Other Buses	DSL	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

Road Dust Emission Rates

Vehicle Weight Parameters

Road Dust is a function of vehicle weight according to guidance from EPA's AP 42 emission factors.

Parameters and Calculations for Worker Commute Trips (i.e., passenger vehicles)			
vehicle class for worker trips	LDA, LDT1, LDT2	unitless	default value in CalEEMod's tab for Trips and VMT in the Construction module
W = weight of passenger vehicles	2.2	ton	CalEEMod User's Guide App. A, p. 23
Parameters and Calculations for Haul Truck Trips (i.e., haul trucks)			
W = average weight of haul trucks	12,000	lb	vehicle categories description from EMFAC2011 (avg. of LHD2s)
mass conversion rate	2,000	lb/ton	onlineconversion.com/weight
W = average weight of haul trucks	6.0	ton	conversion calculation

Road dust from vehicle travel on paved surfaces is different than travel on unpaved surfaces.

Paved Roads

Emission Factors for Fugitive Dust Emissions Associated with Vehicle Travel on Paved Roads

The emission factor for fugitive dust from vehicle travel on paved surfaces is based on Equation 1a from Section 13.2.1, Paved Roads of EPA's AP 42 Emission Factors.

$E = k * (sL/12)^{0.91} * (W)^{1.02}$	
where,	<u>units</u>
E = particulate emission factor	same as k
k = particle size multiplier for particle size range and units of interest	lb/mile
sL = road surface silt loading	g/m^2
W = mean vehicle weight	tons
No adjustments are made for break wear, tire wear, or rainy days.	

	<u>value</u>	<u>units</u>	<u>source</u>
k _{PM10} = particle size multiplier for PM10	0.0022	lb/mile	Table 13.2.1-1 from AP 42
k _{PM2.5} = particle size multiplier for PM2.5	0.00054	lb/mile	Table 13.2.1-1 from AP 42
sL = road surface silt loading	0.06	g/m^2	Table 13.2.1-2 from AP 42
Road Dust Emission Factors for Paved Road Travel			
	<u>PM10 Dust</u>	<u>PM2.5 Dust</u>	<u>units</u> <u>source</u>
Worker trips	0.00004	0.00001	lb/mile calculation using AP 42 equation 1a from Section 13.2.1 of AP42
Haul truck trips	0.00011	0.00003	lb/mile calculation using AP 42 equation 1a from Section 13.2.1 of AP42

Unpaved Roads

Emission Factors for Fugitive Dust Emissions Associated with Vehicle Travel on Unpaved Roads

The emission factor for fugitive dust from vehicle travel on paved surfaces is based on Equation 1a from Section 13.2.2, Unpaved Roads of EPA's AP 42 Emission Factors.

$E = k * (s/12)^a * (W/3)^b$	
where,	units
E = size-specific emission factor	same as k
k = constant for stated aerodynamic particle size	lb/mile
s = surface material silt content	%
a = constant for stated aerodynamic particle size	unitless
W = mean vehicle weight	tons
b = constant for stated aerodynamic particle size	unitless
No adjustments are made for break wear, tire wear, or rainy days.	

	value	units	source
K _{PM10} = particle size multiplier for particle size range and units of interest for PM10	1.5	lb/mile	Table 13.2.2-2 from AP 42
K _{PM2.5} = particle size multiplier for particle size range and units of interest for PM2.5	0.15	lb/mile	Table 13.2.2-2 from AP 42
s = surface material silt content, without mitigation	4.3	%	Table 13.2.2-1 from AP 42 (service road)
a = constant for PM10 and PM2.5	0.9	unitless	Table 13.2.2-2 from AP 42
b = constant for PM10 and PM2.5	0.45	unitless	Table 13.2.2-2 from AP 42
reduction in silt content with implementation of AP AQ-1	75%	%	See Note 1

Road Dust Emission Factors for Unpaved Road Travel	PM10 Dust	PM2.5 Dust	units	source
Worker trips	0.13	0.01	lb/mile	calculation using Equation 1a from Section 13.2.2 of AP42
Haul truck trips	0.20	0.02	lb/mile	calculation using Equation 1a from Section 13.2.2 of AP42; See Note 2

Notes

- 1 APM AQ-2 requires unpaved areas subject to vehicle access to be stabilized (i.e., watered twice daily, or apply a dust palliative) to for dust abatement. It is assumed that this would result in a 75% reduction in the surface material silt content based on Figure 13.2.2-2 of EPA's AP 42 emission factors, Section 13.2.2, Unpaved Roads. Figure 13.2.2-2 states that a doubling of the surface moisture content results in a control efficiency of approximately 75%.

Summary of Diesel PM from Off-Road Equipment by Construction Activity

	PM2.5 Exhaust (lb/day)
Substation Construction-Civil	3.1
Substation Construction-Physical	2.3
Substation Construction-Electrical	1.9
Substation Construction-System Protection	0.7
Substation Construction-Offsite Improvements	1.7
Tree Removal	8.7
650 Line ROW Preparation	4.7
650 Line Construction	7.9
Self-Supporting Steel Pole Footings	2.3
New 625 Line ROW Preparation	7.6
New 625 Line Construction	8.2
Line Removal	3.9

Source: wksht OffRd Equip Emiss by Activity

Offroad Equipment Emissions by Construction Activity

Daily Emissions (lb/day) by Equipment Type													Number of Units Required (No.)	Daily Use Level (hr/day)	Hourly Exhaust Emission Rates (lb/hr) for Offroad Equipment												Fugitive Dust Emission Rates (lb/hr)	
Equipment	ROG	NOx	PM10	PM10	PM2.5	PM2.5	CO	SOx	CO2e	CO2	N2O	CH4			ROG	NOx	PM10	PM2.5	CO	SOx	CO2e	CO2	N2O	CH4	PM10	PM2.5		
			Exh	Dust	Exh	Dust																						
Substation Construction-Civil																												
¾-ton and 1-ton pickup trucks	1.73	12.37	0.72	0.00	0.72	0.00	9.09	0.02	1,503	1,500	0.00	0.16	2	6	1.4E-01	1.0E+00	6.0E-02	6.0E-02	7.6E-01	1.4E-03	1.3E+02	1.2E+02	0.0E+00	1.3E-02	not appl.	not appl.		
Boom truck (small crane)	0.46	3.63	0.20	0.00	0.20	0.00	3.22	0.01	561	560	0.00	0.04	1	4	1.1E-01	9.1E-01	5.0E-02	5.0E-02	8.0E-01	1.6E-03	1.4E+02	1.4E+02	0.0E+00	1.0E-02	not appl.	not appl.		
Dump truck	1.73	14.29	0.51	0.00	0.51	0.00	5.08	0.02	2,180	2,177	0.00	0.16	1	8	2.2E-01	1.8E+00	6.3E-02	6.3E-02	6.4E-01	2.7E-03	2.7E+02	2.7E+02	0.0E+00	2.0E-02	not appl.	not appl.		
Mini excavator	0.65	1.97	0.17	3.80	0.17	0.57	2.27	0.00	201	200	0.00	0.06	1	8	8.2E-02	2.5E-01	2.1E-02	2.1E-02	2.8E-01	3.2E-04	2.5E+01	2.5E+01	0.0E+00	7.4E-03	4.7E-01	7.1E-02		
Skid steer (Bobcat)	0.41	1.82	0.13	0.00	0.13	0.00	1.81	0.00	205	204	0.00	0.04	1	8	5.2E-02	2.3E-01	1.6E-02	1.6E-02	2.3E-01	3.3E-04	2.6E+01	2.5E+01	0.0E+00	4.7E-03	not appl.	not appl.		
Road grader	1.03	9.59	0.46	3.80	0.46	0.57	5.89	0.01	1,137	1,135	0.00	0.09	1	8	1.3E-01	1.2E+00	5.8E-02	5.8E-02	7.4E-01	1.6E-03	1.4E+02	1.4E+02	0.0E+00	1.2E-02	4.7E-01	7.1E-02		
Compactor (roller with sheep's foot)	1.01	10.50	0.36	0.00	0.36	0.00	3.11	0.01	1,226	1,224	0.00	0.09	1	8	1.3E-01	1.3E+00	4.5E-02	4.5E-02	3.9E-01	1.7E-03	1.5E+02	1.5E+02	0.0E+00	1.1E-02	not appl.	not appl.		
Concrete truck	0.50	5.25	0.18	0.00	0.18	0.00	1.55	0.01	613	612	0.00	0.05	1	4	1.3E-01	1.3E+00	4.5E-02	4.5E-02	3.9E-01	1.7E-03	1.5E+02	1.5E+02	0.0E+00	1.1E-02	not appl.	not appl.		
Water truck	0.70	4.57	0.38	0.00	0.38	0.00	3.53	0.01	518	517	0.00	0.06	1	10	7.0E-02	4.6E-01	3.8E-02	3.8E-02	3.5E-01	6.1E-04	5.2E+01	5.2E+01	0.0E+00	6.3E-03	not appl.	not appl.		
Subtotal for Substation Construction-Civil	8.2	64.0	3.1	7.6	3.1	1.1	35.5	0.1	8,143	8,127	0.0	0.7																
Substation Construction-Physical																												
¾-ton and 1-ton pickup trucks	1.73	12.37	0.72	0.00	0.72	0.00	9.09	0.02	1,503	1,500	0.00	0.16	2	6	1.4E-01	1.0E+00	6.0E-02	6.0E-02	7.6E-01	1.4E-03	1.3E+02	1.2E+02	0.0E+00	1.3E-02	not appl.	not appl.		
2-ton flatbed trucks; flatbed boom truck	1.12	9.90	0.33	0.00	0.33	0.00	3.07	0.01	1,333	1,331	0.00	0.10	1	8	1.4E-01	1.2E+00	4.1E-02	4.1E-02	3.8E-01	1.9E-03	1.7E+02	1.7E+02	0.0E+00	1.3E-02	not appl.	not appl.		
Boom truck (small crane)	0.46	3.63	0.20	0.00	0.20	0.00	3.22	0.01	561	560	0.00	0.04	1	4	1.1E-01	9.1E-01	5.0E-02	5.0E-02	8.0E-01	1.6E-03	1.4E+02	1.4E+02	0.0E+00	1.0E-02	not appl.	not appl.		
Large mobile cranes (200 tons)	1.86	17.07	0.62	0.00	0.62	0.00	6.34	0.02	2,163	2,159	0.00	0.17	1	12	1.5E-01	1.4E+00	5.2E-02	5.2E-02	5.3E-01	1.8E-03	1.8E+02	1.8E+02	0.0E+00	1.4E-02	not appl.	not appl.		
Water truck	0.70	4.57	0.38	0.00	0.38	0.00	3.53	0.01	518	517	0.00	0.06	1	10	7.0E-02	4.6E-01	3.8E-02	3.8E-02	3.5E-01	6.1E-04	5.2E+01	5.2E+01	0.0E+00	6.3E-03	not appl.	not appl.		
Subtotal for Substation Construction-Physical	5.9	47.5	2.3	0.0	2.3	0.0	25.2	0.1	6,078	6,067	0.0	0.5																
Substation Construction-Electrical																												
¾-ton and 1-ton pickup trucks	1.73	12.37	0.72	0.00	0.72	0.00	9.09	0.02	1,503	1,500	0.00	0.16	2	6	1.4E-01	1.0E+00	6.0E-02	6.0E-02	7.6E-01	1.4E-03	1.3E+02	1.2E+02	0.0E+00	1.3E-02	not appl.	not appl.		
2-ton flatbed trucks; flatbed boom truck	1.12	9.90	0.33	0.00	0.33	0.00	3.07	0.01	1,333	1,331	0.00	0.10	1	8	1.4E-01	1.2E+00	4.1E-02	4.1E-02	3.8E-01	1.9E-03	1.7E+02	1.7E+02	0.0E+00	1.3E-02	not appl.	not appl.		
Aerial lift trucks	0.34	0.99	0.03	0.00	0.03	0.00	13.02	0.00	439	421	0.06	0.02	1	8	4.2E-02	1.2E-01	4.1E-03	4.1E-03	1.6E+00	5.1E-04	5.5E+01	5.3E+01	7.3E-03	2.5E-03	not appl.	not appl.		
Boom truck (small crane)	0.46	3.63	0.20	0.00	0.20	0.00	3.22	0.01	561	560	0.00	0.04	1	4	1.1E-01	9.1E-01	5.0E-02	5.0E-02	8.0E-01	1.6E-03	1.4E+02	1.4E+02	0.0E+00	1.0E-02	not appl.	not appl.		
Large mobile cranes (200 tons)	1.86	17.07	0.62	0.00	0.62	0.00	6.34	0.02	2,163	2,159	0.00	0.17	1	12	1.5E-01	1.4E+00	5.2E-02	5.2E-02	5.3E-01	1.8E-03	1.8E+02	1.8E+02	0.0E+00	1.4E-02	not appl.	not appl.		
Subtotal for Substation Construction-Electrical	5.5	44.0	1.9	0.0	1.9	0.0	34.7	0.1	5,999	5,971	0.1	0.5																
Substation Construction-System Protection																												
¾-ton and 1-ton pickup trucks	1.73	12.37	0.72	0.00	0.72	0.00	9.09	0.02	1,503	1,500	0.00	0.16	2	6	1.4E-01	1.0E+00	6.0E-02	6.0E-02	7.6E-01	1.4E-03	1.3E+02	1.2E+02	0.0E+00	1.3E-02	not appl.	not appl.		
Subtotal for Substation Construction-System Protection	1.7	12.4	0.7	0.0	0.7	0.0	9.1	0.0	1,503	1,500	0.0	0.2																
Substation Construction-Offsite Improvements																												
¾-ton and 1-ton pickup trucks	0.87	6.19	0.36	0.00	0.36	0.00	4.54	0.01	751	750	0.00	0.08	1	6	1.4E-01	1.0E+00	6.0E-02	6.0E-02	7.6E-01	1.4E-03	1.3E+02	1.2E+02	0.0E+00	1.3E-02	not appl.	not appl.		
2-ton flatbed trucks; flatbed boom truck	1.12	9.90	0.33	0.00	0.33	0.00	3.07	0.01	1,333	1,331	0.00	0.10	1	8	1.4E-01	1.2E+00	4.1E-02	4.1E-02	3.8E-01	1.9E-03	1.7E+02	1.7E+02	0.0E+00	1.3E-02	not appl.	not appl.		
Dump truck	1.73	14.29	0.51	0.00	0.51	0.00	5.08	0.02	2,180	2,177	0.00	0.16	1	8	2.2E-01	1.8E+00	6.3E-02	6.3E-02	6.4E-01	2.7E-03	2.7E+02	2.7E+02	0.0E+00	2.0E-02	not appl.	not appl.		
Skid steer (Bobcat)	0.41	1.82	0.13	0.00	0.13	0.00	1.81	0.00	205	204	0.00	0.04	1	8	5.2E-02	2.3E-01	1.6E-02	1.6E-02	2.3E-01	3.3E-04	2.6E+01	2.5E+01	0.0E+00	4.7E-03	not appl.	not appl.		
Water truck	0.70	4.57	0.38	0.00	0.38	0.00	3.53	0.01	518	517	0.00	0.06	1	10	7.0E-02	4.6E-01	3.8E-02	3.8E-02	3.5E-01	6.1E-04	5.2E+01	5.2E+01	0.0E+00	6.3E-03	not appl.	not appl.		
Subtotal for Substation Construction-Offsite Improvements	4.8	36.8	1.7	0.0	1.7	0.0	18.0	0.1	4,988	4,979	0.0	0.4																
Tree Removal																												
¾-ton and 1-ton pickup trucks	2.60	18.56	1.08	0.00	1.08	0.00	13.63	0.03	2,254	2,250	0.00	0.23	3	6	1.4E-01	1.0E+00	6.0E-02	6.0E-02	7.6E-01	1.4E-03	1.3E+02	1.2E+02	0.0E+00	1.3E-02	not appl.	not appl.		
525 rubber-tired skidder	2.24	19.80	0.66	0.00	0.66	0.00	6.13	0.03	2,667	2,662	0.00	0.20	2	8	1.4E-01	1.2E+00	4.1E-02	4.1E-02	3.8E-01	1.9E-03	1.7E+02	1.7E+02	0.0E+00	1.3E-02	not appl.	not appl.		
Boom loader	1.83	14.51	0.81	0.00	0.81	0.00	12.88	0.03	2,243	2,240	0.00	0.17	2	8	1.1E-01	9.1E-01	5.0E-02	5.0E-02	8.0E-01	1.6E-03	1.4E+02	1.4E+02	0.0E+00	1.0E-02	not appl.	not appl.		
Brush puller	2.82	27.15	0.86	0.00	0.86	0.00	9.06	0.05	4,681	4,675	0.00	0.25	3	8	1.2E-01	1.1E+00	3.6E-02	3.6E-02	3.8E-01	2.2E-03	2.0E+02	1.9E+02	0.0E+00	1.1E-02	not appl.	not appl.		
Chip van	5.81	50.08	2.06	0.00	2.06	0.00	25.64	0.05	4,792	4,781	0.00	0.52	3	4	4.8E-01	4.2E+00	1.7E-01	1.7E-01	2.1E+00	4.0E-03	4.0E+02	4.0E+02	0.0E+00	4.4E-02	not appl.	not appl.		
D5 CAT tracked skidder	0.79	5.93	0.45	0.00	0.45	0.00	5.05	0.01	758	757																		

Daily Emissions (lb/day) by Equipment Type													Number of Units Required (No.)	Daily Use Level (hr/day)	Hourly Exhaust Emission Rates (lb/hr) for Offroad Equipment												Fugitive Dust Emiss Rates (lb/hr)	
Equipment	ROG	NOx	PM10 Exh	PM10 Dust	PM2.5 Exh	PM2.5 Dust	CO	SOx	CO2e	CO2	N2O	CH4			ROG	NOx	PM10	PM2.5	CO	SOx	CO2e	CO2	N2O	CH4	PM10	PM2.5		
650 Line ROW Preparation																												
¾-ton and 1-ton pickup trucks	1.73	12.37	0.72	0.00	0.72	0.00	9.09	0.02	1,503	1,500	0.00	0.16	2	6	1.4E-01	1.0E+00	6.0E-02	6.0E-02	7.6E-01	1.4E-03	1.3E+02	1.2E+02	0.0E+00	1.3E-02	not appl.	not appl.		
2-ton flatbed trucks; flatbed boom truck	1.12	9.90	0.33	0.00	0.33	0.00	3.07	0.01	1,333	1,331	0.00	0.10	1	8	1.4E-01	1.2E+00	4.1E-02	4.1E-02	3.8E-01	1.9E-03	1.7E+02	1.7E+02	0.0E+00	1.3E-02	not appl.	not appl.		
Bulldozer	3.87	33.39	1.37	3.80	1.37	0.57	17.10	0.03	3,195	3,187	0.00	0.35	1	8	4.8E-01	4.2E+00	1.7E-01	1.7E-01	2.1E+00	4.0E-03	4.0E+02	4.0E+02	0.0E+00	4.4E-02	4.7E-01	7.1E-02		
Dump truck	1.73	14.29	0.51	0.00	0.51	0.00	5.08	0.02	2,180	2,177	0.00	0.16	1	8	2.2E-01	1.8E+00	6.3E-02	6.3E-02	6.4E-01	2.7E-03	2.7E+02	2.7E+02	0.0E+00	2.0E-02	not appl.	not appl.		
Fire water tender	1.73	14.29	0.51	0.00	0.51	0.00	5.08	0.02	2,180	2,177	0.00	0.16	1	8	2.2E-01	1.8E+00	6.3E-02	6.3E-02	6.4E-01	2.7E-03	2.7E+02	2.7E+02	0.0E+00	2.0E-02	not appl.	not appl.		
Fuel and fluid truck	0.65	6.48	0.21	0.00	0.21	0.00	1.90	0.01	854	853	0.00	0.06	1	5	1.3E-01	1.3E+00	4.2E-02	4.2E-02	3.8E-01	1.9E-03	1.7E+02	1.7E+02	0.0E+00	1.2E-02	not appl.	not appl.		
Mechanic truck	1.04	9.95	0.35	0.00	0.35	0.00	2.94	0.01	1,123	1,121	0.00	0.09	1	10	1.0E-01	9.9E-01	3.5E-02	3.5E-02	2.9E-01	1.3E-03	1.1E+02	1.1E+02	0.0E+00	9.4E-03	not appl.	not appl.		
Truck-mounted backhoe	0.56	3.65	0.31	3.80	0.31	0.57	2.82	0.00	415	413	0.00	0.05	1	8	7.0E-02	4.6E-01	3.8E-02	3.8E-02	3.5E-01	6.1E-04	5.2E+01	5.2E+01	0.0E+00	6.3E-03	4.7E-01	7.1E-02		
Water truck	0.70	4.57	0.38	0.00	0.38	0.00	3.53	0.01	518	517	0.00	0.06	1	10	7.0E-02	4.6E-01	3.8E-02	3.8E-02	3.5E-01	6.1E-04	5.2E+01	5.2E+01	0.0E+00	6.3E-03	not appl.	not appl.		
Subtotal for 650 Line ROW Preparation																												
	13.1	108.9	4.7	7.6	4.7	1.1	50.6	0.1	13,301	13,276	0.0	1.2																
650 Line Construction																												
¾-ton and 1-ton pickup trucks	2.60	18.56	1.08	0.00	1.08	0.00	13.63	0.03	2,254	2,250	0.00	0.23	3	6	1.4E-01	1.0E+00	6.0E-02	6.0E-02	7.6E-01	1.4E-03	1.3E+02	1.2E+02	0.0E+00	1.3E-02	not appl.	not appl.		
2-ton flatbed trucks; flatbed boom truck	1.12	9.90	0.33	0.00	0.33	0.00	3.07	0.01	1,333	1,331	0.00	0.10	1	8	1.4E-01	1.2E+00	4.1E-02	4.1E-02	3.8E-01	1.9E-03	1.7E+02	1.7E+02	0.0E+00	1.3E-02	not appl.	not appl.		
Aerial lift trucks	0.68	1.98	0.07	0.00	0.07	0.00	26.04	0.01	879	842	0.12	0.04	2	8	4.2E-02	1.2E-01	4.1E-03	4.1E-03	1.6E+00	5.1E-04	5.5E+01	5.3E+01	7.3E-03	2.5E-03	not appl.	not appl.		
Bulldozer	3.87	33.39	1.37	3.80	1.37	0.57	17.10	0.03	3,195	3,187	0.00	0.35	1	8	4.8E-01	4.2E+00	1.7E-01	1.7E-01	2.1E+00	4.0E-03	4.0E+02	4.0E+02	0.0E+00	4.4E-02	4.7E-01	7.1E-02		
Conductor reel trailer (has small gas motor)	1.26	13.12	0.45	0.00	0.45	0.00	3.88	0.02	1,532	1,530	0.00	0.11	1	10	1.3E-01	1.3E+00	4.5E-02	4.5E-02	3.9E-01	1.7E-03	1.5E+02	1.5E+02	0.0E+00	1.1E-02	not appl.	not appl.		
Dump truck	1.73	14.29	0.51	0.00	0.51	0.00	5.08	0.02	2,180	2,177	0.00	0.16	1	8	2.2E-01	1.8E+00	6.3E-02	6.3E-02	6.4E-01	2.7E-03	2.7E+02	2.7E+02	0.0E+00	2.0E-02	not appl.	not appl.		
Fire water tender	1.73	14.29	0.51	0.00	0.51	0.00	5.08	0.02	2,180	2,177	0.00	0.16	1	8	2.2E-01	1.8E+00	6.3E-02	6.3E-02	6.4E-01	2.7E-03	2.7E+02	2.7E+02	0.0E+00	2.0E-02	not appl.	not appl.		
Fuel and fluid truck	0.65	6.48	0.21	0.00	0.21	0.00	1.90	0.01	854	853	0.00	0.06	1	5	1.3E-01	1.3E+00	4.2E-02	4.2E-02	3.8E-01	1.9E-03	1.7E+02	1.7E+02	0.0E+00	1.2E-02	not appl.	not appl.		
Large mobile cranes (75 tons)	1.04	9.95	0.35	0.00	0.35	0.00	2.94	0.01	1,123	1,121	0.00	0.09	1	10	1.0E-01	9.9E-01	3.5E-02	3.5E-02	2.9E-01	1.3E-03	1.1E+02	1.1E+02	0.0E+00	9.4E-03	not appl.	not appl.		
Mechanic truck	1.04	9.95	0.35	0.00	0.35	0.00	2.94	0.01	1,123	1,121	0.00	0.09	1	10	1.0E-01	9.9E-01	3.5E-02	3.5E-02	2.9E-01	1.3E-03	1.1E+02	1.1E+02	0.0E+00	9.4E-03	not appl.	not appl.		
Puller and tensioner	1.29	11.99	0.58	0.00	0.58	0.00	7.36	0.02	1,421	1,419	0.00	0.12	1	10	1.3E-01	1.2E+00	5.8E-02	5.8E-02	7.4E-01	1.6E-03	1.4E+02	1.4E+02	0.0E+00	1.2E-02	not appl.	not appl.		
Semi tractor-trailers	1.29	11.99	0.58	0.00	0.58	0.00	7.36	0.02	1,421	1,419	0.00	0.12	1	10	1.3E-01	1.2E+00	5.8E-02	5.8E-02	7.4E-01	1.6E-03	1.4E+02	1.4E+02	0.0E+00	1.2E-02	not appl.	not appl.		
Small mobile cranes (12 tons)	1.24	9.32	0.53	0.00	0.53	0.00	5.78	0.01	966	963	0.00	0.11	2	6	1.0E-01	7.8E-01	4.5E-02	4.5E-02	4.8E-01	9.0E-04	8.0E+01	8.0E+01	0.0E+00	9.3E-03	not appl.	not appl.		
Truck-mounted backhoe	1.11	7.30	0.61	7.60	0.61	1.14	5.64	0.01	829	827	0.00	0.10	2	8	7.0E-02	4.6E-01	3.8E-02	3.8E-02	3.5E-01	6.1E-04	5.2E+01	5.2E+01	0.0E+00	6.3E-03	4.7E-01	7.1E-02		
Water truck	0.70	4.57	0.38	0.00	0.38	0.00	3.53	0.01	518	517	0.00	0.06	1	10	7.0E-02	4.6E-01	3.8E-02	3.8E-02	3.5E-01	6.1E-04	5.2E+01	5.2E+01	0.0E+00	6.3E-03	not appl.	not appl.		
Subtotal for 650 Line Construction																												
	21.4	177.1	7.9	11.4	7.9	1.7	111.3	0.2	21,808	21,732	0.1	1.9																
Self-Supporting Steel Pole Footings																												
¾-ton and 1-ton pickup trucks	0.87	6.19	0.36	0.00	0.36	0.00	4.54	0.01	751	750	0.00	0.08	1	6	1.4E-01	1.0E+00	6.0E-02	6.0E-02	7.6E-01	1.4E-03	1.3E+02	1.2E+02	0.0E+00	1.3E-02	not appl.	not appl.		
2-ton flatbed trucks; flatbed boom truck	1.12	9.90	0.33	0.00	0.33	0.00	3.07	0.01	1,333	1,331	0.00	0.10	1	8	1.4E-01	1.2E+00	4.1E-02	4.1E-02	3.8E-01	1.9E-03	1.7E+02	1.7E+02	0.0E+00	1.3E-02	not appl.	not appl.		
Boom truck (small crane)	0.46	3.63	0.20	0.00	0.20	0.00	3.22	0.01	561	560	0.00	0.04	1	4	1.1E-01	9.1E-01	5.0E-02	5.0E-02	8.0E-01	1.6E-03	1.4E+02	1.4E+02	0.0E+00	1.0E-02	not appl.	not appl.		
Dump truck	1.73	14.29	0.51	0.00	0.51	0.00	5.08	0.02	2,180	2,177	0.00	0.16	1															

Daily Emissions (lb/day) by Equipment Type													Number of Units Required (No.)	Daily Use Level (hr/day)	Hourly Exhaust Emission Rates (lb/hr) for Offroad Equipment												Fugitive Dust Emiss Rates (lb/hr)	
Equipment	ROG	NOx	PM10 Exh	PM10 Dust	PM2.5 Exh	PM2.5 Dust	CO	SOx	CO2e	CO2	N2O	CH4			ROG	NOx	PM10	PM2.5	CO	SOx	CO2e	CO2	N2O	CH4	PM10	PM2.5		
New 625 Line Construction																												
¾-ton and 1-ton pickup trucks	2.60	18.56	1.08	0.00	1.08	0.00	13.63	0.03	2,254	2,250	0.00	0.23	3	6	1.4E-01	1.0E+00	6.0E-02	6.0E-02	7.6E-01	1.4E-03	1.3E+02	1.2E+02	0.0E+00	1.3E-02	not appl.	not appl.		
2-ton flatbed trucks; flatbed boom truck	2.24	19.80	0.66	0.00	0.66	0.00	6.13	0.03	2,667	2,662	0.00	0.20	2	8	1.4E-01	1.2E+00	4.1E-02	4.1E-02	3.8E-01	1.9E-03	1.7E+02	1.7E+02	0.0E+00	1.3E-02	not appl.	not appl.		
Aerial lift trucks	0.68	1.98	0.07	0.00	0.07	0.00	26.04	0.01	879	842	0.12	0.04	2	8	4.2E-02	1.2E-01	4.1E-03	4.1E-03	1.6E+00	5.1E-04	5.5E+01	5.3E+01	7.3E-03	2.5E-03	not appl.	not appl.		
Bulldozer	3.87	33.39	1.37	3.80	1.37	0.57	17.10	0.03	3,195	3,187	0.00	0.35	1	8	4.8E-01	4.2E+00	1.7E-01	1.7E-01	2.1E+00	4.0E-03	4.0E+02	4.0E+02	0.0E+00	4.4E-02	4.7E-01	7.1E-02		
Conductor reel trailer (has small gas motor)	1.26	13.12	0.45	0.00	0.45	0.00	3.88	0.02	1,532	1,530	0.00	0.11	1	10	1.3E-01	1.3E+00	4.5E-02	4.5E-02	3.9E-01	1.7E-03	1.5E+02	1.5E+02	0.0E+00	1.1E-02	not appl.	not appl.		
Dump truck	1.73	14.29	0.51	0.00	0.51	0.00	5.08	0.02	2,180	2,177	0.00	0.16	1	8	2.2E-01	1.8E+00	6.3E-02	6.3E-02	6.4E-01	2.7E-03	2.7E+02	2.7E+02	0.0E+00	2.0E-02	not appl.	not appl.		
Fire water tender	1.73	14.29	0.51	0.00	0.51	0.00	5.08	0.02	2,180	2,177	0.00	0.16	1	8	2.2E-01	1.8E+00	6.3E-02	6.3E-02	6.4E-01	2.7E-03	2.7E+02	2.7E+02	0.0E+00	2.0E-02	not appl.	not appl.		
Fuel and fluid truck	0.65	6.48	0.21	0.00	0.21	0.00	1.90	0.01	854	853	0.00	0.06	1	5	1.3E-01	1.3E+00	4.2E-02	4.2E-02	3.8E-01	1.9E-03	1.7E+02	1.7E+02	0.0E+00	1.2E-02	not appl.	not appl.		
Large mobile cranes (75 tons)	1.04	9.95	0.35	0.00	0.35	0.00	2.94	0.01	1,123	1,121	0.00	0.09	1	10	1.0E-01	9.9E-01	3.5E-02	3.5E-02	2.9E-01	1.3E-03	1.1E+02	1.1E+02	0.0E+00	9.4E-03	not appl.	not appl.		
Mechanic truck	1.04	9.95	0.35	0.00	0.35	0.00	2.94	0.01	1,123	1,121	0.00	0.09	1	10	1.0E-01	9.9E-01	3.5E-02	3.5E-02	2.9E-01	1.3E-03	1.1E+02	1.1E+02	0.0E+00	9.4E-03	not appl.	not appl.		
Puller and tensioner	1.29	11.99	0.58	0.00	0.58	0.00	7.36	0.02	1,421	1,419	0.00	0.12	1	10	1.3E-01	1.2E+00	5.8E-02	5.8E-02	7.4E-01	1.6E-03	1.4E+02	1.4E+02	0.0E+00	1.2E-02	not appl.	not appl.		
Semi tractor-trailers	1.29	11.99	0.58	0.00	0.58	0.00	7.36	0.02	1,421	1,419	0.00	0.12	1	10	1.3E-01	1.2E+00	5.8E-02	5.8E-02	7.4E-01	1.6E-03	1.4E+02	1.4E+02	0.0E+00	1.2E-02	not appl.	not appl.		
Small mobile cranes (12 tons)	1.24	9.32	0.53	0.00	0.53	0.00	5.78	0.01	966	963	0.00	0.11	2	6	1.0E-01	7.8E-01	4.5E-02	4.5E-02	4.8E-01	9.0E-04	8.0E+01	8.0E+01	0.0E+00	9.3E-03	not appl.	not appl.		
Truck-mounted backhoe	1.11	7.30	0.61	7.60	0.61	1.14	5.64	0.01	829	827	0.00	0.10	2	8	7.0E-02	4.6E-01	3.8E-02	3.8E-02	3.5E-01	6.1E-04	5.2E+01	5.2E+01	0.0E+00	6.3E-03	4.7E-01	7.1E-02		
Water truck	0.70	4.57	0.38	0.00	0.38	0.00	3.53	0.01	518	517	0.00	0.06	1	10	7.0E-02	4.6E-01	3.8E-02	3.8E-02	3.5E-01	6.1E-04	5.2E+01	5.2E+01	0.0E+00	6.3E-03	not appl.	not appl.		
Subtotal for New 625 Line Construction		22.5	187.0	8.2	11.4	8.2	1.7	114.4	0.2	23,141	23,063	0.1	2.0															
Line Removal																												
¾-ton and 1-ton pickup trucks	1.73	12.37	0.72	0.00	0.72	0.00	9.09	0.02	1,503	1,500	0.00	0.16	2	6	1.4E-01	1.0E+00	6.0E-02	6.0E-02	7.6E-01	1.4E-03	1.3E+02	1.2E+02	0.0E+00	1.3E-02	not appl.	not appl.		
2-ton flatbed trucks; flatbed boom truck	2.24	19.80	0.66	0.00	0.66	0.00	6.13	0.03	2,667	2,662	0.00	0.20	2	8	1.4E-01	1.2E+00	4.1E-02	4.1E-02	3.8E-01	1.9E-03	1.7E+02	1.7E+02	0.0E+00	1.3E-02	not appl.	not appl.		
Conductor reel trailer (has small gas motor)	1.26	13.12	0.45	0.00	0.45	0.00	3.88	0.02	1,532	1,530	0.00	0.11	1	10	1.3E-01	1.3E+00	4.5E-02	4.5E-02	3.9E-01	1.7E-03	1.5E+02	1.5E+02	0.0E+00	1.1E-02	not appl.	not appl.		
Fire water tender	1.73	14.29	0.51	0.00	0.51	0.00	5.08	0.02	2,180	2,177	0.00	0.16	1	8	2.2E-01	1.8E+00	6.3E-02	6.3E-02	6.4E-01	2.7E-03	2.7E+02	2.7E+02	0.0E+00	2.0E-02	not appl.	not appl.		
Fuel and fluid truck	0.65	6.48	0.21	0.00	0.21	0.00	1.90	0.01	854	853	0.00	0.06	1	5	1.3E-01	1.3E+00	4.2E-02	4.2E-02	3.8E-01	1.9E-03	1.7E+02	1.7E+02	0.0E+00	1.2E-02	not appl.	not appl.		
Mechanic truck	1.04	9.95	0.35	0.00	0.35	0.00	2.94	0.01	1,123	1,121	0.00	0.09	1	10	1.0E-01	9.9E-01	3.5E-02	3.5E-02	2.9E-01	1.3E-03	1.1E+02	1.1E+02	0.0E+00	9.4E-03	not appl.	not appl.		
Semi tractor-trailers	1.29	11.99	0.58	0.00	0.58	0.00	7.36	0.02	1,421	1,419	0.00	0.12	1	10	1.3E-01	1.2E+00	5.8E-02	5.8E-02	7.4E-01	1.6E-03	1.4E+02	1.4E+02	0.0E+00	1.2E-02	not appl.	not appl.		
Water truck	0.70	4.57	0.38	0.00	0.38	0.00	3.53	0.01	518	517	0.00	0.06	1	10	7.0E-02	4.6E-01	3.8E-02	3.8E-02	3.5E-01	6.1E-04	5.2E+01	5.2E+01	0.0E+00	6.3E-03	not appl.	not appl.		
Subtotal for Line Removal		10.6	92.6	3.9	0.0	3.9	0.0	39.9	0.1	11,798	11,777	0.0	1.0															

Sources/Notes

- 1
- The types of equipment, number of units, and daily use levels are linked to wksht On-Site Constr Equip List.
- 2
- The daily use levels of equipment for each construction activity is based on values used in the PEA.
- 3
- Exhaust emissions of ROG, NOx, PM10, PM2.5, CO, SOx, CO2, N2O, CH4, and CO2e are calculated using emission factors from wksht Equip Exh Emiss Rates.
- 4
- Emissions for PM10 dust and PM2.5 dust are based the fugitive dust emission rates estimated on wksht Grading Fugitive Emiss Rates and only pertain to those types of equipment that have the primary function of earth movement and ground disturbance.

Construction Equipment that would be used On Site

This list includes all of the types of equipment that would be used during more or more phases of project construction, as provided by Trisage. Most of the items listed are off-road equipment; however, some items are on-road equipment and would be used on-site most of the time. For instance, many of the trucks are on-road vehicles but would be on-site for extended periods (e.g., boom trucks, logging trucks). The number of hours/day each item would operate is based on data from the PEA.

Equipment	Use	Daily Use Level (hr/day)	Associated with grading/earth movement?
¾-ton and 1-ton pickup trucks	Transport construction personnel	6	no
2-ton flatbed trucks; flatbed boom truck	Haul and unload materials	8	no
5 kW generator	Electricity generation	8	no
525 rubber-tired skidder	Log skidder	8	no
Aerial lift trucks	Access poles, string conductor, and other uses	8	no
Boom loader	Log loader	8	no
Boom truck (small crane)	Small lifting	4	no
Brush puller	Pulls brush	8	no
Bulldozer	Grade access roads and pole sites used during reclamation	8	yes
Chip van	Catch and haul chips	4	no
Compactor (roller with sheep's foot)	Compaction	8	no
Concrete pumper truck	Pump concrete	4	no
Concrete truck	Deliver concrete	4	no
Conductor reel trailer (has small gas motor)	Transport cable reels and feed cables into conduit	10	no
D5 CAT tracked skidder	Log skidder	8	no
Dump truck	Haul excavated materials and import backfill	8	no
Fire water tender	Suppress potential fires through water application	8	no
Forklift (diesel)	Lifting	4	no
Fuel and fluid truck	Refuel and maintain vehicles	5	no
John Deere processor	Process wood	8	no
Large chipper	Chip wood	8	no
Large mobile cranes (200 tons)	Move transformers	12	no
Large mobile cranes (75 tons)	Erect poles	10	no
Logging trucks	Haul logs	8	no
Mechanic truck	Service and repair equipment	10	no
Mini excavator	Excavate	8	yes
Morbark Model 13 chipper	Chip wood	8	no
Puller and tensioner	Pull conductor and wire	10	no
Road grader	Leveling	8	yes
Semi tractor-trailers	Haul poles and equipment	10	no
Skid steer (Bobcat)	Earth moving/auguring	8	no
Small mobile cranes (12 tons)	Load and unload materials	6	no
Truck-mounted backhoe	Excavation	8	yes
Water truck	Suppress dust and fire	10	no

Emission Factor for Fugitive Dust Emissions from Grading

EPA's AP 42 emission factors are used to estimate fugitive dust emissions from earth movement activities. Equation 11.9-1 provides a methodology for estimating dust emissions from bulldozing and grading. This analysis conservatively assumes the same emission factor applies to excavators, backhoes, and any other types of off-road equipment that are primarily used for breaking ground and moving earthen material. The estimated emission rate is expressed in pounds per hour of equipment operation.

Bulldozing, Grading, Excavation, Earth Movement

Equation is applied to graders and dozers to estimate fugitive dust from grading activity

Emissions factors for P10 from bulldozing are scaled from those of PM15

PM15 emission rate (lbs/hr)=C(PM15)*s^{1.5}/M^{1.5}

Where

PM10 emission rate =PM15 emission rate*F

Where:	value	unit	source
C = coefficient	1	constant	Source 1, AP-42 Table 11.9-1, PM15,overburden
M = material moisture content	7.90%	%	Source 1, AP-42 Table 11.9-3,Overburden
s = material silt content	6.90%	%	Source 1, AP-42 Table 11.9-3,Overburden
PM15 emission rate	0.63	lb/hr	calculation
F = scaling factor	0.75	constant	Source 1, AP-42 Table 11.9-1, PM10
PM10 emission rate	0.475	lb/hr	calculation
Ratio of PM2.5 to PM10	0.15	%	Source 2, Note 1
PM2.5 emission rate	0.071	lb/hr	calculation
Daily Hours of Operation			
Bulldozer	8	hr/day	wksht On-Site Constr Equip List
Mini excavator	8	hr/day	wksht On-Site Constr Equip List
Road grader	8	hr/day	wksht On-Site Constr Equip List
Truck-mounted backhoe	8	hr/day	wksht On-Site Constr Equip List

Sources

- 1 EPA 1998. AP-42 Chapter 11.9 Mineral Products Industry, Western Surface Coal Mining, Equation 11.9-1 Bulldozing
- 2 EPA 2006. Background Document for Revisions to Fine Fraction Ratios Used for AP-42 Fugitive Dust Emission Factors. Prepared by the Midwest Research Institute for the Western Governors' Association. Finalized November 1.

Notes

- 1 Fugitive Dust PM2.5 was calculated based on a ratio of 0.10 to 0.15 for PM2.5/PM10 as indicated in EPA 2006 AP-42 Background Document for Revisions to Fine Fraction Ratios used for AP-42 Fugitive Dust Emission Factors.

Emission Rates of Equipment Used During Construction

Equipment Identified by Applicant	Use Identified by Applicant	Source of Emiss Factors	Comparable Equipment in OFFROAD2007	hp category (approx.)	ROG (lb/equip-hr)	NOx (lb/equip-hr)	PM10 (lb/equip-hr)	PM2.5 (lb/equip-hr)	CO (lb/equip-hr)	SOx (lb/equip-hr)	CO2 (lb/equip-hr)	N2O (lb/equip-hr)	CH4 (lb/equip-hr)	CO2e (lb/equip-hr)
On-Road Vehicles														
¾-ton and 1-ton pickup trucks	Transport construction personnel	* OFFROAD2007	Off-Highway Trucks	175	1.4E-01	1.0E+00	6.0E-02	6.0E-02	7.6E-01	1.4E-03	1.2E+02	0.0E+00	1.3E-02	1.3E+02
2-ton flatbed trucks; flatbed boom truck	Haul and unload materials	* OFFROAD2007	Off-Highway Trucks	250	1.4E-01	1.2E+00	4.1E-02	4.1E-02	3.8E-01	1.9E-03	1.7E+02	0.0E+00	1.3E-02	1.7E+02
Boom truck (small crane)	Small lifting	* OFFROAD2007	Off-Highway Trucks	250	1.4E-01	1.2E+00	4.1E-02	4.1E-02	3.8E-01	1.9E-03	1.7E+02	0.0E+00	1.3E-02	1.7E+02
Chip van	Catch and haul chips	* OFFROAD2007	Off-Highway Trucks	500	2.2E-01	1.8E+00	6.3E-02	6.3E-02	6.4E-01	2.7E-03	2.7E+02	0.0E+00	2.0E-02	2.7E+02
Concrete pumper truck	Pump concrete	* OFFROAD2007	Off-Highway Trucks	250	1.4E-01	1.2E+00	4.1E-02	4.1E-02	3.8E-01	1.9E-03	1.7E+02	0.0E+00	1.3E-02	1.7E+02
Concrete truck	Deliver concrete	* OFFROAD2007	Off-Highway Trucks	500	2.2E-01	1.8E+00	6.3E-02	6.3E-02	6.4E-01	2.7E-03	2.7E+02	0.0E+00	2.0E-02	2.7E+02
Conductor reel trailer (has small gas motor)	Transport cable reels and feed cables into conduit	* OFFROAD2007	Off-Highway Trucks	250	1.4E-01	1.2E+00	4.1E-02	4.1E-02	3.8E-01	1.9E-03	1.7E+02	0.0E+00	1.3E-02	1.7E+02
Logging trucks	Haul logs	* OFFROAD2007	Off-Highway Trucks	500	2.2E-01	1.8E+00	6.3E-02	6.3E-02	6.4E-01	2.7E-03	2.7E+02	0.0E+00	2.0E-02	2.7E+02
Mechanic truck	Service and repair equipment	* OFFROAD2007	Off-Highway Trucks	250	1.4E-01	1.2E+00	4.1E-02	4.1E-02	3.8E-01	1.9E-03	1.7E+02	0.0E+00	1.3E-02	1.7E+02
Semi tractor-trailers	Haul poles and equipment	* OFFROAD2007	Off-Highway Trucks	500	2.2E-01	1.8E+00	6.3E-02	6.3E-02	6.4E-01	2.7E-03	2.7E+02	0.0E+00	2.0E-02	2.7E+02
Water truck	Suppress dust and fire	* OFFROAD2007	Off-Highway Trucks	250	1.4E-01	1.2E+00	4.1E-02	4.1E-02	3.8E-01	1.9E-03	1.7E+02	0.0E+00	1.3E-02	1.7E+02
Fire water tender	Suppress potential fires through water application	* OFFROAD2007	Off-Highway Trucks	250	1.4E-01	1.2E+00	4.1E-02	4.1E-02	3.8E-01	1.9E-03	1.7E+02	0.0E+00	1.3E-02	1.7E+02
Fuel and fluid truck	Refuel and maintain vehicles	* OFFROAD2007	Off-Highway Trucks	250	1.4E-01	1.2E+00	4.1E-02	4.1E-02	3.8E-01	1.9E-03	1.7E+02	0.0E+00	1.3E-02	1.7E+02
5 kW generator 10 (hp)	Electricity generation	OFFROAD2007	Generator Sets	15	1.5E-02	1.0E-01	5.7E-03	5.7E-03	6.8E-02	1.6E-04	1.0E+01	0.0E+00	1.3E-03	1.0E+01
525 rubber-tired skidder	Log skidder	OFFROAD2007	Skidders	175	1.1E-01	9.1E-01	5.0E-02	5.0E-02	8.0E-01	1.6E-03	1.4E+02	0.0E+00	1.0E-02	1.4E+02
Aerial lift trucks	Access poles, string conductor, and other uses	OFFROAD2007	Aerial lifts	120	4.2E-02	1.2E-01	4.1E-03	4.1E-03	1.6E+00	5.1E-04	5.3E+01	7.3E-03	2.5E-03	5.5E+01
Boom loader	Log loader	OFFROAD2007	Skidders	175	1.1E-01	9.1E-01	5.0E-02	5.0E-02	8.0E-01	1.6E-03	1.4E+02	0.0E+00	1.0E-02	1.4E+02
Brush puller	Pulls brush	OFFROAD2007	Feller Buncher	250	1.2E-01	1.1E+00	3.6E-02	3.6E-02	3.8E-01	2.2E-03	1.9E+02	0.0E+00	1.1E-02	2.0E+02
Bulldozer	Leveling	OFFROAD2007	Rubber Tired Dozers	500	4.8E-01	4.2E+00	1.7E-01	1.7E-01	2.1E+00	4.0E-03	4.0E+02	0.0E+00	4.4E-02	4.0E+02
Compactor (roller with sheep's foot)	Compaction	OFFROAD2007	Rollers	250	1.3E-01	1.3E+00	4.5E-02	4.5E-02	3.9E-01	1.7E-03	1.5E+02	0.0E+00	1.1E-02	1.5E+02
D5 CAT tracked skidder	Log skidder	OFFROAD2007	Skidders	120	9.9E-02	7.4E-01	5.6E-02	5.6E-02	6.3E-01	1.1E-03	9.5E+01	0.0E+00	9.0E-03	9.5E+01
Dump truck	Haul excavated materials and import backfill	OFFROAD2007	Off-Highway Trucks	500	2.2E-01	1.8E+00	6.3E-02	6.3E-02	6.4E-01	2.7E-03	2.7E+02	0.0E+00	2.0E-02	2.7E+02
Forklift (diesel)	Lifting	OFFROAD2007	Rough Terrain Forklifts	250	1.3E-01	1.3E+00	4.2E-02	4.2E-02	3.8E-01	1.9E-03	1.7E+02	0.0E+00	1.2E-02	1.7E+02
Grader, Road Grader	Grade access roads and pole sites used during reclamation	OFFROAD2007	Graders	500	1.9E-01	1.7E+00	6.1E-02	6.1E-02	6.3E-01	2.3E-03	2.3E+02	0.0E+00	1.7E-02	2.3E+02
John Deere processor	Process wood	OFFROAD2007	Fellers/Bunchers	250	1.2E-01	1.1E+00	3.6E-02	3.6E-02	3.8E-01	2.2E-03	1.9E+02	0.0E+00	1.1E-02	2.0E+02
Large chipper	Chip wood	OFFROAD2007	Shredders	175	6.2E-02	6.1E-01	2.7E-02	2.7E-02	3.5E-01	7.9E-04	7.0E+01	0.0E+00	5.6E-03	7.0E+01
Large mobile cranes (200 tons)	Move transformers	OFFROAD2007	Cranes	500	1.5E-01	1.4E+00	5.2E-02	5.2E-02	5.3E-01	1.8E-03	1.8E+02	0.0E+00	1.4E-02	1.8E+02
Large mobile cranes (75 tons)	Erect poles	OFFROAD2007	Cranes	250	1.0E-01	9.9E-01	3.5E-02	3.5E-02	2.9E-01	1.3E-03	1.1E+02	0.0E+00	9.4E-03	1.1E+02
Mini excavator	Excavate	OFFROAD2007	Excavators	50	8.2E-02	2.5E-01	2.1E-02	2.1E-02	2.8E-01	3.2E-04	2.5E+01	0.0E+00	7.4E-03	2.5E+01
Morbark Model 13 chipper	Chip wood	OFFROAD2007	Chippers/Stump Grinders	500	1.4E-01	1.7E+00	5.2E-02	5.2E-02	5.4E-01	2.4E-03	2.5E+02	0.0E+00	1.3E-02	2.5E+02
Puller and tensioner	Pull conductor and wire	OFFROAD2007	Generator Sets	175	1.3E-01	1.2E+00	5.8E-02	5.8E-02	7.4E-01	1.6E-03	1.4E+02	0.0E+00	1.2E-02	1.4E+02
Skid steer (Bobcat)	Earth moving/auguring	OFFROAD2007	Skid Steer Loaders	50	5.2E-02	2.3E-01	1.6E-02	1.6E-02	2.3E-01	3.3E-04	2.5E+01	0.0E+00	4.7E-03	2.6E+01
Small mobile cranes (12 tons)	Load and unload materials	OFFROAD2007	Cranes	175	1.0E-01	7.8E-01	4.5E-02	4.5E-02	4.8E-01	9.0E-04	8.0E+01	0.0E+00	9.3E-03	8.0E+01
Truck-mounted backhoe	Excavation	OFFROAD2007	Tractors/Loaders/Backhoes	120	7.0E-02	4.6E-01	3.8E-02	3.8E-02	3.5E-01	6.1E-04	5.2E+01	0.0E+00	6.3E-03	5.2E+01
		CO2	N2O	CH4	units									
global warming potential		1	310	21	unitless									

Source: Table A-1 of Subpart A—Global Warming Potentials (100-YearTime Horizon) from 40 CFR 98 (page 722-723), as required by ARB's Regulation for the Mandatory Reporting of GHGs (http://www.arb.ca.gov/cc/reporting/ghg-rep/regulation/mrr_2010_clean.pdf)

Notes

- 1 The equipment list was provided by Trisage (e-mail form Jim Bengochea to SB and AJK on 12/12/2012) and a comparable type of equipment or vehicle was then identified in OFFROAD2007.
- 2 For off-road equipment, the exhaust emission rates for PM2.5 are assumed to be the same as the exhaust emission rates for PM10 because OFFROAD2007 only provides PM10 emission rates.
- 3 * Those equipment items marked with an *asterisk* may actually be on-road vehicles but the activity data was provided in hours-per-day of on-site operation rather than VMT.

Hourly Emission Factors of Offroad Equipment

Hourly emission rates are calculated based on the tons-per-year emissions and activity rates reported in wksht OFFROAD07 output.

mass conversion rate

value

2,000

unit

lb/ton

source

onlineconversion.com/weight_common.htm

Equipment	Fuel	MaxHP	Class	C/R	Pre	Handheld?	Portable?	Population	Activity	Fuel	ROG Exhaust (lb/equip-hr)	NOX Exhaust (lb/equip-hr)	PM Exhaust (lb/equip-hr)	CO Exhaust (lb/equip-hr)	SO2 Exhaust (lb/equip-hr)	CO2 Exhaust (lb/equip-hr)	N2O Exhaust (lb/equip-hr)	CH4 Exhaust (lb/equip-hr)
									(equip- hrs/day)	Consumption (gal/day)								
Off-Road Motorcycles Inactive	G2	15	Recreational Equip	U	N	NHH	NP	298	1,258	0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Off-Road Motorcycles Inactive	G2	25	Recreational Equip	U	N	NHH	NP	257	1,083	0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Off-Road Motorcycles Inactive	G2	50	Recreational Equip	U	N	NHH	NP	2,090	8,813	0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Off-Road Motorcycles Inactive	G2	120	Recreational Equip	U	N	NHH	NP	1,000	4,216	0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Snowmobiles Inactive	G2	25	Recreational Equip	U	N	NHH	P	163	1	0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Snowmobiles Inactive	G2	50	Recreational Equip	U	N	NHH	P	767	5	0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Snowmobiles Inactive	G2	120	Recreational Equip	U	N	NHH	P	1,395	9	0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
All Terrain Vehicles (ATVs) Inactive	G2	15	Recreational Equip	U	N	NHH	NP	253	1,066	0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
All Terrain Vehicles (ATVs) Inactive	G2	25	Recreational Equip	U	N	NHH	NP	165	694	0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
All Terrain Vehicles (ATVs) Inactive	G2	50	Recreational Equip	U	N	NHH	NP	217	914	0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Off-Road Motorcycles Inactive	G4	15	Recreational Equip	U	N	NHH	NP	582	2,453	0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Off-Road Motorcycles Inactive	G4	25	Recreational Equip	U	N	NHH	NP	939	3,958	0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Off-Road Motorcycles Inactive	G4	50	Recreational Equip	U	N	NHH	NP	978	4,123	0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
All Terrain Vehicles (ATVs) Inactive	G4	15	Recreational Equip	U	N	NHH	NP	206	870	0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
All Terrain Vehicles (ATVs) Inactive	G4	25	Recreational Equip	U	N	NHH	NP	2,872	12,107	0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
All Terrain Vehicles (ATVs) Inactive	G4	50	Recreational Equip	U	N	NHH	NP	130	547	0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Off-Road Motorcycles Active	G2	15	Recreational Equip	U	N	NHH	NP	745	3,141	119	7.6E-02	2.3E-05	9.3E-04	1.2E-01	2.1E-04	2.5E-01	8.6E-05	4.7E-03
Off-Road Motorcycles Active	G2	25	Recreational Equip	U	N	NHH	NP	641	2,702	102	7.6E-02	2.3E-05	9.3E-04	1.2E-01	3.8E-04	2.5E-01	8.6E-05	4.7E-03
Off-Road Motorcycles Active	G2	50	Recreational Equip	U	N	NHH	NP	5,218	22,000	834	7.6E-02	2.3E-05	9.3E-04	1.2E-01	6.1E-04	2.5E-01	8.6E-05	4.7E-03
Off-Road Motorcycles Active	G2	120	Recreational Equip	U	N	NHH	NP	2,496	10,524	399	7.6E-02	2.3E-05	9.3E-04	1.2E-01	8.9E-04	2.5E-01	8.6E-05	4.7E-03
Snowmobiles Active	G2	25	Recreational Equip	U	N	NHH	P	467	3	3	1.5E+00	4.9E-02	4.4E-02	4.2E+00	1.1E-04	6.4E+00	5.0E-03	9.1E-02
Snowmobiles Active	G2	50	Recreational Equip	U	N	NHH	P	2,204	14	25	2.8E+00	9.3E-02	8.5E-02	8.1E+00	2.1E-04	1.2E+01	7.0E-03	1.7E-01
Snowmobiles Active	G2	120	Recreational Equip	U	N	NHH	P	4,008	25	73	4.2E+00	1.7E-01	1.4E-01	1.3E+01	3.6E-04	2.1E+01	9.8E-03	2.6E-01
All Terrain Vehicles (ATVs) Active	G2	15	Recreational Equip	U	N	NHH	NP	833	3,513	133	7.6E-02	2.3E-05	9.3E-04	1.2E-01	2.5E-04	2.5E-01	8.6E-05	4.7E-03
All Terrain Vehicles (ATVs) Active	G2	25	Recreational Equip	U	N	NHH	NP	542	2,287	87	7.6E-02	2.3E-05	9.3E-04	1.2E-01	3.5E-04	2.5E-01	8.6E-05	4.7E-03
All Terrain Vehicles (ATVs) Active	G2	50	Recreational Equip	U	N	NHH	NP	714	3,010	114	7.6E-02	2.3E-05	9.3E-04	1.2E-01	4.5E-04	2.5E-01	8.6E-05	4.7E-03
Golf Carts	G2	15	Recreational Equip	U	N	NHH	NP	338	1,162	439	3.7E-02	2.9E-02	1.8E-03	2.1E+00	1.6E-04	3.9E+00	3.7E-03	2.3E-03
Specialty Vehicles Carts	G2	15	Recreational Equip	U	N	NHH	NP	3,357	695	256	2.6E-02	2.0E-02	1.4E-03	2.0E+00	1.6E-04	3.8E+00	3.2E-03	1.6E-03
Tampers/Rammers	G2	15	Construction and Mining Equip	U	P	NHH	NP	36	18	4	2.5E-02	2.0E-02	1.7E-02	1.1E+00	8.6E-05	2.1E+00	3.1E-03	1.6E-03
Plate Compactors	G2	15	Construction and Mining Equip	U	P	NHH	NP	3	2	0	2.5E-02	2.0E-02	1.7E-02	1.1E+00	8.6E-05	2.1E+00	3.1E-03	1.6E-03
Other General Industrial Equipment	G2	15	Industrial Equip	U	N	NHH	NP	0	0	0	3.5E-02	2.7E-02	1.9E-03	2.1E+00	1.7E-04	4.1E+00	3.7E-03	2.2E-03
Lawn Mowers	G2	15	Lawn and Garden Equip	C	N	NHH	NP	513	357	40	2.6E-02	6.8E-03	4.3E-03	4.6E-01	5.6E-05	1.4E+00	1.8E-03	1.6E-03
Lawn Mowers	G2	15	Lawn and Garden Equip	R	N	NHH	NP	3,849	182	26	6.0E-02	7.7E-03	4.6E-03	7.1E-01	5.6E-05	1.4E+00	1.8E-03	3.7E-03
Chainsaws	G2	2	Lawn and Garden Equip	C	N	HH	NP	918	810	48	1.0E-01	1.6E-03	2.8E-04	1.8E-01	2.0E-05	4.9E-01	8.1E-04	6.2E-03
Chainsaws	G2	2	Lawn and Garden Equip	R	N	HH	NP	10,325	154	8	5.6E-02	1.7E-03	9.8E-04	2.3E-01	2.0E-05	4.9E-01	8.3E-04	3.5E-03
Chainsaws	G2	15	Lawn and Garden Equip	C	N	HH	NP	647	571	82	2.4E-01	3.8E-03	6.9E-04	4.4E-01	4.9E-05	1.2E+00	1.3E-03	1.5E-02
Chainsaws	G2	15	Lawn and Garden Equip	R	N	HH	NP	7,273	109	14	1.2E-01	4.0E-03	2.6E-03	5.2E-01	4.9E-05	1.2E+00	1.3E-03	7.7E-03
Chainsaws Preempt	G2	15	Lawn and Garden Equip	C	P	HH	NP	805	710	102	2.4E-01	3.8E-03	6.9E-04	4.4E-01	4.9E-05	1.2E+00	1.3E-03	1.5E-02
Chainsaws Preempt	G2	15	Lawn and Garden Equip	R	P	HH	NP	9,053	135	20	1.7E-01	3.3E-03	1.5E-03	6.2E-01	4.9E-05	1.2E+00	1.2E-03	1.0E-02
Trimmers/Edgers/Brush Cutters	G2	2	Lawn and Garden Equip	C	N	HH	NP	2,992	1,108	49	4.8E-02	1.4E-03	2.5E-04	1.6E-01	1.8E-05	4.3E-01	7.5E-04	3.0E-03
Trimmers/Edgers/Brush Cutters	G2	2	Lawn and Garden Equip	R	N	HH	NP	33,357	2,188	93	3.8E-02	1.4E-03	2.5E-04	1.6E-01	1.8E-05	4.3E-01	7.6E-04	2.4E-03
Leaf Blowers/Vacuums	G2	2	Lawn and Garden Equip	C	N	HH	P	4,469	2,677	143	7.4E-02	1.5E-03	2.8E-04	1.8E-01	1.9E-05	4.7E-01	8.0E-04	4.6E-03
Leaf Blowers/Vacuums	G2	2	Lawn and Garden Equip	R	N	HH	P	11,521	169	9	5.4E-02	1.6E-03	9.5E-04	2.2E-01	1.9E-05	4.7E-01	8.1E-04	3.4E-03
Snowblowers	G2	15	Lawn and Garden Equip	C	N	HH	P	176	1	0	1.2E-01	6.5E-03	1.2E-03	7.4E-01	8.2E-05	2.0E+00	1.7E-03	7.5E-03
Snowblowers	G2	15	Lawn and Garden Equip	R	N	HH	P	1,590	0	0	2.1E-01	6.6E-03	5.1E-03	9.0E-01	8.2E-05	2.0E+00	1.7E-03	1.3E-02
Snowblowers	G2	25	Lawn and Garden Equip	C	N	HH	P	0	0	0	3.2E-01	1.7E-02	3.1E-03	2.0E+00	2.2E-04	5.3E+00	2.9E-03	2.0E-02
Snowblowers	G2	25	Lawn and Garden Equip	R	N	HH	P	1	0	0	5.7E-01	1.7E-02	1.4E-02	2.2E+00	2.2E-04	5.3E+00	2.8E-03	3.6E-02
Shredders	G2	15	Lawn and Garden Equip	C	P	NHH	NP	23	9	4	4.9E-02	3.8E-02	3.8E-02	2.4E+00	1.9E-04	4.5E+00	4.4E-03	3.1E-03
Shredders	G2	15	Lawn and Garden Equip	R	P	NHH	NP	804	2	1	2.1E-01	3.0E-02	3.8E-02	2.7E+00	1.9E-04	4.5E+00	3.8E-03	1.3E-02
Commercial Turf Equipment	G2	15	Lawn and Garden Equip	C	N	NHH	NP	12	29	12	3.7E-02	2.8E-02	2.0E-03	2.2E+00	1.8E-04	4.3E+00	3.8E-03	2.3E-03
Commercial Turf Equipment	G2	25	Lawn and Garden Equip	C	N	NHH	NP	6	14	13	7.8E-02	6.0E-02	4.2E-03	5.0E+00	3.7E-04	9.0E+00	5.6E-03	4.9E-03
Other Lawn & Garden Equipment	G2	2	Lawn and Garden Equip	C	N	HH	NP	5	1	0	5.5E-02	1.8E-03	3.2E-04	2.0E-01	2.3E-05	5.5E-01	8.6E-04	3.4E-03

Hourly emission rates are calculated based on the tons-per-year emissions and activity rates reported in wksht OFFROAD07 output.

mass conversion rate

value

2,000

unit

lb/ton

source

onlineconversion.com/weight_common.htm

Equipment	Fuel	MaxHP	Class	C/R	Pre	Handheld?	Portable?	Population	Activity	Fuel	ROG Exhaust (lb/equip-hr)	NOX Exhaust (lb/equip-hr)	PM Exhaust (lb/equip-hr)	CO Exhaust (lb/equip-hr)	SO2 Exhaust (lb/equip-hr)	CO2 Exhaust (lb/equip-hr)	N2O Exhaust (lb/equip-hr)	CH4 Exhaust (lb/equip-hr)
									(equip- hrs/day)	Consumption (gal/day)								
Other Lawn & Garden Equipment	G2	2	Lawn and Garden Equip	R	N	HH	NP	155	2	0	6.2E-02	1.9E-03	1.1E-03	2.6E-01	2.3E-05	5.5E-01	8.8E-04	3.9E-03
Other Lawn & Garden Equipment	G2	15	Lawn and Garden Equip	C	N	HH	NP	2	0	0	2.7E-01	8.9E-03	1.6E-03	1.0E+00	1.1E-04	2.7E+00	2.0E-03	1.7E-02
Other Lawn & Garden Equipment	G2	15	Lawn and Garden Equip	R	N	HH	NP	68	1	0	2.8E-01	9.3E-03	6.1E-03	1.2E+00	1.1E-04	2.7E+00	2.1E-03	1.7E-02
Generator Sets	G2	2	Light Commercial Equip	C	N	NHH	P	31	13	1	2.8E-02	4.9E-03	2.5E-03	2.6E-01	2.7E-05	6.4E-01	1.5E-03	1.7E-03
Generator Sets	G2	2	Light Commercial Equip	R	N	NHH	P	24	7	0	3.7E-02	4.8E-03	2.6E-03	3.0E-01	2.7E-05	6.4E-01	1.4E-03	2.3E-03
Generator Sets	G2	15	Light Commercial Equip	C	N	NHH	P	0	0	0	6.6E-02	4.4E-02	2.7E-03	3.1E+00	2.4E-04	5.8E+00	4.8E-03	4.1E-03
Generator Sets	G2	15	Light Commercial Equip	R	N	NHH	P	0	0	0	1.7E-01	4.3E-02	6.5E-03	3.3E+00	2.4E-04	5.8E+00	4.6E-03	1.0E-02
Pumps	G2	2	Light Commercial Equip	C	N	NHH	P	122	96	5	1.5E-02	4.7E-03	2.3E-03	2.0E-01	2.7E-05	6.5E-01	1.4E-03	9.5E-04
Pumps	G2	2	Light Commercial Equip	R	N	NHH	P	96	51	3	2.4E-02	5.0E-03	2.4E-03	2.4E-01	2.7E-05	6.5E-01	1.5E-03	1.5E-03
Pumps	G2	15	Light Commercial Equip	C	P	NHH	P	33	26	13	6.6E-02	5.0E-02	4.4E-02	2.7E+00	2.2E-04	5.2E+00	5.1E-03	4.1E-03
Pumps	G2	15	Light Commercial Equip	R	P	NHH	P	26	14	7	8.7E-02	4.9E-02	4.4E-02	2.8E+00	2.2E-04	5.2E+00	5.0E-03	5.4E-03
Pumps	G2	25	Light Commercial Equip	C	P	NHH	P	0	0	0	1.5E-01	9.9E-02	9.3E-02	6.2E+00	4.6E-04	1.1E+01	7.4E-03	9.1E-03
Pumps	G2	25	Light Commercial Equip	R	P	NHH	P	0	0	0	1.5E-01	9.7E-02	9.3E-02	6.2E+00	4.6E-04	1.1E+01	7.3E-03	9.2E-03
Chainsaws	G2	15	Logging Equip	U	P	HH	NP	638	357	294	1.3E+00	2.3E-02	4.1E-03	2.6E+00	2.9E-04	7.0E+00	3.3E-03	8.0E-02
Off-Road Motorcycles Active	G4	15	Recreational Equip	U	N	NHH	NP	1,453	6,124	115	2.6E-03	1.2E-03	1.3E-04	6.2E-02	2.1E-04	2.5E-01	6.8E-04	1.5E-04
Off-Road Motorcycles Active	G4	25	Recreational Equip	U	N	NHH	NP	2,344	9,881	185	2.6E-03	1.2E-03	1.3E-04	6.2E-02	3.8E-04	2.5E-01	6.8E-04	1.5E-04
Off-Road Motorcycles Active	G4	50	Recreational Equip	U	N	NHH	NP	2,442	10,294	193	2.6E-03	1.2E-03	1.3E-04	6.2E-02	6.1E-04	2.5E-01	6.8E-04	1.5E-04
All Terrain Vehicles (ATVs) Active	G4	15	Recreational Equip	U	N	NHH	NP	680	2,866	54	2.7E-03	1.5E-03	1.3E-04	6.4E-02	2.5E-04	2.5E-01	7.9E-04	1.6E-04
All Terrain Vehicles (ATVs) Active	G4	25	Recreational Equip	U	N	NHH	NP	9,459	39,881	753	2.7E-03	1.5E-03	1.3E-04	6.4E-02	3.5E-04	2.5E-01	7.9E-04	1.6E-04
All Terrain Vehicles (ATVs) Active	G4	50	Recreational Equip	U	N	NHH	NP	427	1,800	34	2.7E-03	1.5E-03	1.3E-04	6.4E-02	4.5E-04	2.5E-01	7.9E-04	1.6E-04
Minibikes	G4	5	Recreational Equip	U	N	NHH	NP	220	94	21	2.8E-01	7.0E-03	7.8E-03	1.9E+00	8.1E-05	2.5E-01	1.8E-03	1.7E-02
Golf Carts	G4	15	Recreational Equip	U	N	NHH	NP	264	909	371	4.8E-02	3.4E-02	2.2E-03	2.4E+00	1.1E-04	3.9E+00	4.1E-03	2.8E-03
Specialty Vehicles Carts	G4	5	Recreational Equip	U	N	NHH	NP	104	22	6	3.8E-02	9.5E-03	6.5E-03	1.4E+00	9.5E-05	2.7E+00	2.1E-03	2.3E-03
Specialty Vehicles Carts	G4	15	Recreational Equip	U	N	NHH	NP	1,409	292	115	2.8E-02	2.0E-02	1.4E-03	2.3E+00	1.1E-04	3.8E+00	3.2E-03	1.6E-03
Specialty Vehicles Carts	G4	25	Recreational Equip	U	N	NHH	NP	774	160	177	7.8E-02	5.3E-02	3.9E-03	6.7E+00	2.6E-04	1.0E+01	5.3E-03	4.6E-03
Asphalt Pavers	G4	15	Construction and Mining Equip	U	P	NHH	NP	1	1	0	8.4E-02	6.2E-02	4.7E-02	3.4E+00	1.6E-04	5.6E+00	5.7E-03	5.0E-03
Asphalt Pavers	G4	25	Construction and Mining Equip	U	P	NHH	NP	1	1	2	2.2E-01	1.4E-01	1.2E-01	8.9E+00	3.5E-04	1.4E+01	8.8E-03	1.3E-02
Asphalt Pavers	G4	50	Construction and Mining Equip	U	P	NHH	NP	1	1	2	1.5E-01	2.2E-01	2.8E-03	5.1E+00	4.4E-04	3.6E+01	1.0E-02	8.9E-03
Asphalt Pavers	G4	120	Construction and Mining Equip	U	P	NHH	NP	0	0	2	1.8E-01	5.4E-01	5.3E-03	3.7E+00	6.6E-04	6.9E+01	1.6E-02	1.1E-02
Tampers/Rammers	G4	15	Construction and Mining Equip	U	P	NHH	NP	2	1	0	7.1E-02	5.1E-02	3.9E-02	2.9E+00	1.3E-04	4.7E+00	5.1E-03	4.2E-03
Plate Compactors	G4	5	Construction and Mining Equip	U	P	NHH	NP	61	30	5	4.9E-02	2.2E-02	6.8E-04	8.0E-01	7.2E-05	2.1E+00	3.3E-03	2.9E-03
Plate Compactors	G4	15	Construction and Mining Equip	U	P	NHH	NP	64	36	16	6.2E-02	4.6E-02	3.5E-02	2.5E+00	1.2E-04	4.2E+00	4.8E-03	3.6E-03
Rollers	G4	5	Construction and Mining Equip	U	P	NHH	NP	7	2	0	6.2E-02	2.8E-02	9.6E-04	1.3E+00	1.0E-04	2.9E+00	3.7E-03	3.7E-03
Rollers	G4	15	Construction and Mining Equip	U	P	NHH	NP	11	9	5	7.8E-02	5.8E-02	4.4E-02	3.2E+00	1.5E-04	5.3E+00	5.5E-03	4.6E-03
Rollers	G4	25	Construction and Mining Equip	U	P	NHH	NP	7	6	7	1.7E-01	1.1E-01	9.3E-02	7.2E+00	2.8E-04	1.1E+01	7.9E-03	1.0E-02
Rollers	G4	50	Construction and Mining Equip	U	P	NHH	NP	0	1	2	2.3E-01	2.9E-01	3.0E-03	7.2E+00	4.8E-04	4.0E+01	1.2E-02	1.4E-02
Rollers	G4	120	Construction and Mining Equip	U	P	NHH	NP	1	2	7	3.0E-01	7.5E-01	6.2E-03	5.8E+00	7.7E-04	7.9E+01	2.0E-02	1.8E-02
Paving Equipment	G4	5	Construction and Mining Equip	U	P	NHH	NP	85	39	8	5.2E-02	2.3E-02	7.3E-04	8.7E-01	7.7E-05	2.2E+00	3.4E-03	3.1E-03
Paving Equipment	G4	15	Construction and Mining Equip	U	P	NHH	NP	143	78	45	8.3E-02	6.1E-02	4.7E-02	3.4E+00	1.6E-04	5.6E+00	5.7E-03	4.9E-03
Paving Equipment	G4	25	Construction and Mining Equip	U	P	NHH	NP	3	2	2	1.9E-01	1.2E-01	1.0E-01	7.9E+00	3.1E-04	1.2E+01	8.3E-03	1.1E-02
Paving Equipment	G4	50	Construction and Mining Equip	U	P	NHH	NP	2	1	2	8.2E-02	1.4E-01	2.9E-03	3.6E+00	4.6E-04	3.8E+01	8.1E-03	4.8E-03
Paving Equipment	G4	120	Construction and Mining Equip	U	P	NHH	NP	0	0	1	8.3E-02	2.9E-01	5.2E-03	2.1E+00	6.4E-04	6.6E+01	1.1E-02	4.9E-03
Surfacing Equipment	G4	5	Construction and Mining Equip	U	P	NHH	NP	16	8	2	5.6E-02	2.5E-02	7.6E-04	8.7E-01	8.0E-05	2.3E+00	3.5E-03	3.3E-03
Surfacing Equipment	G4	15	Construction and Mining Equip	U	P	NHH	NP	46	63	24	5.8E-02	4.3E-02	3.1E-02	2.3E+00	1.1E-04	3.7E+00	4.7E-03	3.4E-03
Surfacing Equipment	G4	25	Construction and Mining Equip	U	P	NHH	NP	1	1	1	1.4E-01	9.4E-02	7.4E-02	5.7E+00	2.2E-04	8.8E+00	7.1E-03	8.5E-03
Signal Boards	G4	5	Construction and Mining Equip	U	P	NHH	NP	0	0	0	8.0E-02	3.6E-02	1.2E-03	1.5E+00	1.2E-04	3.6E+00	4.3E-03	4.7E-03
Signal Boards	G4	15	Construction and Mining Equip	U	P	NHH	NP	1	1	1	8.5E-02	6.3E-02	4.8E-02	3.5E+00	1.6E-04	5.8E+00	5.7E-03	5.0E-03
Trenchers	G4	15	Construction and Mining Equip	U	P	NHH	NP	13	15	10	9.5E-02	7.0E-02	5.2E-02	3.8E+00	1.8E-04	6.2E+00	6.1E-03	5.6E-03
Trenchers	G4	25	Construction and Mining Equip	U	P	NHH	NP	10	12	16	2.1E-01	1.4E-01	1.1E-01	8.5E+00	3.3E-04	1.3E+01	8.7E-03	1.2E-02
Trenchers	G4	50	Construction and Mining Equip	U	P	NHH	NP	4	5	10	1.6E-01	2.3E-01	2.6E-03	5.2E+00	4.2E-04	3.4E+01	1.1E-02	9.7E-03
Trenchers	G4	120	Construction and Mining Equip	U	P	NHH	NP	1	2	7	2.3E-01	6.8E-01	5.8E-03	4.5E+00	7.2E-04	7.4E+01	1.8E-02	1.4E-02
Bore/Drill Rigs	G4	15	Construction and Mining Equip	U	P	NHH	P	0	0	0	1.1E-01	7.9E-02	6.3E-02	4.6E+00	2.1E-04	7.5E+00	6.5E-03	6.5E-03
Bore/Drill Rigs	G4	25	Construction and Mining Equip	U	P	NHH	P	2	1	1	2.1E-01	1.3E-01	1.1E-01	8.7E+00	3.4E-04	1.3E+01	8.5E-03	1.2E-02

Hourly emission rates are calculated based on the tons-per-year emissions and activity rates reported in wksht OFFROAD07 output.

mass conversion rate

value

2,000

unit

lb/ton

source

onlineconversion.com/weight_common.htm

Equipment	Fuel	MaxHP	Class	C/R	Pre	Handheld?	Portable?	Population	Activity (equip- hrs/day)	Fuel Consumption (gal/day)	ROG Exhaust (lb/equip-hr)	NOX Exhaust (lb/equip-hr)	PM Exhaust (lb/equip-hr)	CO Exhaust (lb/equip-hr)	SO2 Exhaust (lb/equip-hr)	CO2 Exhaust (lb/equip-hr)	N2O Exhaust (lb/equip-hr)	CH4 Exhaust (lb/equip-hr)
Bore/Drill Rigs	G4	50	Construction and Mining Equip	U	P	NHH	P	0	0	0	1.5E-01	2.7E-01	3.3E-03	4.7E+00	5.3E-04	4.4E+01	1.2E-02	8.8E-03
Bore/Drill Rigs	G4	120	Construction and Mining Equip	U	P	NHH	P	1	0	2	2.7E-01	1.0E+00	9.2E-03	5.2E+00	1.1E-03	1.2E+02	2.3E-02	1.6E-02
Bore/Drill Rigs	G4	175	Construction and Mining Equip	U	P	NHH	P	0	0	1	2.1E-01	1.6E+00	1.3E-02	5.5E+00	1.6E-03	1.7E+02	2.9E-02	1.3E-02
Concrete/Industrial Saws	G4	5	Construction and Mining Equip	U	P	NHH	NP	7	2	1	6.5E-02	2.9E-02	9.6E-04	1.3E+00	1.0E-04	3.0E+00	3.8E-03	3.9E-03
Concrete/Industrial Saws	G4	15	Construction and Mining Equip	U	P	NHH	NP	30	25	17	9.8E-02	7.3E-02	5.6E-02	4.0E+00	1.9E-04	6.6E+00	6.2E-03	5.8E-03
Concrete/Industrial Saws	G4	25	Construction and Mining Equip	U	P	NHH	NP	9	8	11	2.0E-01	1.3E-01	1.1E-01	8.1E+00	3.2E-04	1.3E+01	8.4E-03	1.2E-02
Concrete/Industrial Saws	G4	50	Construction and Mining Equip	U	P	NHH	NP	1	1	4	5.6E-02	8.2E-02	3.6E-03	4.0E+00	5.7E-04	4.7E+01	6.6E-03	3.3E-03
Concrete/Industrial Saws	G4	120	Construction and Mining Equip	U	P	NHH	NP	0	1	3	4.0E-02	9.1E-02	6.8E-03	1.9E+00	8.5E-04	8.8E+01	7.0E-03	2.3E-03
Cement and Mortar Mixers	G4	5	Construction and Mining Equip	U	P	NHH	NP	120	30	8	6.1E-02	2.7E-02	9.1E-04	1.2E+00	9.6E-05	2.8E+00	3.7E-03	3.6E-03
Cement and Mortar Mixers	G4	15	Construction and Mining Equip	U	P	NHH	NP	204	51	25	8.9E-02	4.3E-02	3.7E-02	3.0E+00	1.3E-04	4.5E+00	4.7E-03	5.3E-03
Cement and Mortar Mixers	G4	25	Construction and Mining Equip	U	P	NHH	NP	1	0	0	2.7E-01	1.2E-01	1.1E-01	9.6E+00	3.5E-04	1.4E+01	8.2E-03	1.6E-02
Cranes	G4	50	Construction and Mining Equip	U	P	NHH	P	0	0	1	1.5E-01	2.1E-01	2.3E-03	4.6E+00	3.7E-04	3.0E+01	1.0E-02	8.6E-03
Cranes	G4	120	Construction and Mining Equip	U	P	NHH	P	0	1	2	1.9E-01	5.4E-01	4.6E-03	3.7E+00	5.7E-04	5.9E+01	1.6E-02	1.1E-02
Cranes	G4	175	Construction and Mining Equip	U	P	NHH	P	0	0	0	1.5E-01	1.0E+00	7.8E-03	3.6E+00	9.7E-04	9.8E+01	2.3E-02	8.9E-03
Crushing/Proc. Equipment	G4	15	Construction and Mining Equip	U	P	NHH	P	0	0	0	1.1E-01	7.9E-02	6.1E-02	4.4E+00	2.1E-04	7.2E+00	6.5E-03	6.3E-03
Crushing/Proc. Equipment	G4	25	Construction and Mining Equip	U	P	NHH	P	0	0	0	2.0E-01	1.3E-01	1.1E-01	8.3E+00	3.3E-04	1.3E+01	8.5E-03	1.2E-02
Crushing/Proc. Equipment	G4	120	Construction and Mining Equip	U	P	NHH	P	0	0	1	3.7E-01	1.2E+00	1.1E-02	7.2E+00	1.3E-03	1.4E+02	2.5E-02	2.2E-02
Rough Terrain Forklifts	G4	50	Construction and Mining Equip	U	P	NHH	NP	0	0	0	2.5E-01	3.5E-01	3.9E-03	7.8E+00	6.2E-04	5.1E+01	1.4E-02	1.5E-02
Rough Terrain Forklifts	G4	120	Construction and Mining Equip	U	P	NHH	NP	1	2	8	2.9E-01	8.4E-01	7.1E-03	5.6E+00	8.8E-04	9.1E+01	2.1E-02	1.7E-02
Rough Terrain Forklifts	G4	175	Construction and Mining Equip	U	P	NHH	NP	0	0	0	2.3E-01	1.6E+00	1.2E-02	5.5E+00	1.5E-03	1.5E+02	2.9E-02	1.4E-02
Rubber Tired Loaders	G4	50	Construction and Mining Equip	U	P	NHH	NP	0	0	1	1.9E-01	2.5E-01	2.9E-03	6.0E+00	4.5E-04	3.7E+01	1.1E-02	1.1E-02
Rubber Tired Loaders	G4	120	Construction and Mining Equip	U	P	NHH	NP	2	2	8	2.2E-01	5.8E-01	5.1E-03	4.3E+00	6.4E-04	6.6E+01	1.7E-02	1.3E-02
Tractors/Loaders/Backhoes	G4	120	Construction and Mining Equip	U	P	NHH	NP	1	2	6	9.2E-02	2.2E-01	4.0E-03	3.1E+00	5.0E-04	5.2E+01	9.8E-03	5.4E-03
Skid Steer Loaders	G4	15	Construction and Mining Equip	U	P	NHH	NP	1	1	0	1.2E-01	8.5E-02	6.4E-02	4.7E+00	2.2E-04	7.7E+00	6.8E-03	6.8E-03
Skid Steer Loaders	G4	25	Construction and Mining Equip	U	P	NHH	NP	43	37	42	1.7E-01	1.1E-01	8.7E-02	6.7E+00	2.6E-04	1.0E+01	7.6E-03	9.7E-03
Skid Steer Loaders	G4	50	Construction and Mining Equip	U	P	NHH	NP	6	5	10	4.6E-02	7.1E-02	2.5E-03	3.1E+00	3.9E-04	3.2E+01	5.9E-03	2.7E-03
Skid Steer Loaders	G4	120	Construction and Mining Equip	U	P	NHH	NP	4	3	14	5.0E-02	1.4E-01	6.1E-03	2.1E+00	7.7E-04	7.9E+01	8.0E-03	3.0E-03
Dumpers/Tenders	G4	5	Construction and Mining Equip	U	P	NHH	NP	6	2	0	3.7E-02	1.7E-02	5.1E-04	5.9E-01	5.4E-05	1.6E+00	2.8E-03	2.2E-03
Dumpers/Tenders	G4	15	Construction and Mining Equip	U	P	NHH	NP	13	5	2	6.7E-02	3.6E-02	2.9E-02	2.3E+00	1.0E-04	3.5E+00	4.2E-03	4.0E-03
Dumpers/Tenders	G4	25	Construction and Mining Equip	U	P	NHH	NP	2	1	1	1.4E-01	6.8E-02	6.1E-02	5.0E+00	1.9E-04	7.4E+00	6.0E-03	8.2E-03
Dumpers/Tenders	G4	120	Construction and Mining Equip	U	P	NHH	NP	0	0	0	1.1E-01	4.0E-01	3.6E-03	2.1E+00	4.5E-04	4.6E+01	1.4E-02	6.3E-03
Other Construction Equipment	G4	175	Construction and Mining Equip	U	P	NHH	NP	1	1	4	4.3E-02	1.6E-01	8.0E-03	3.4E+00	1.0E-03	1.0E+02	8.9E-03	2.5E-03
Aerial Lifts	G4	15	Industrial Equip	U	P	NHH	NP	0	0	0	8.4E-02	6.2E-02	4.7E-02	3.5E+00	1.6E-04	5.7E+00	5.7E-03	4.9E-03
Aerial Lifts	G4	25	Industrial Equip	U	P	NHH	NP	3	3	3	1.3E-01	8.6E-02	6.9E-02	5.4E+00	2.1E-04	8.3E+00	6.8E-03	7.8E-03
Aerial Lifts	G4	50	Industrial Equip	U	P	NHH	NP	4	4	6	4.4E-02	6.9E-02	2.0E-03	2.8E+00	3.2E-04	2.6E+01	5.8E-03	2.6E-03
Aerial Lifts	G4	120	Industrial Equip	U	P	NHH	NP	4	4	10	4.2E-02	1.2E-01	4.1E-03	1.6E+00	5.1E-04	5.3E+01	7.3E-03	2.5E-03
Forklifts	G4	25	Industrial Equip	U	N	NHH	NP	0	0	0	7.0E-02	5.4E-02	3.7E-03	4.2E+00	1.7E-04	6.5E+00	5.3E-03	4.1E-03
Forklifts	G4	50	Industrial Equip	U	N	NHH	NP	12	60	96	6.0E-02	1.2E-01	1.6E-03	6.1E+00	2.6E-04	2.1E+01	8.0E-03	3.5E-03
Forklifts	G4	120	Industrial Equip	U	N	NHH	NP	43	210	443	4.2E-02	1.6E-01	2.8E-03	3.0E+00	3.5E-04	3.6E+01	9.3E-03	2.5E-03
Forklifts	G4	175	Industrial Equip	U	N	NHH	NP	2	8	31	5.9E-02	3.0E-01	5.8E-03	3.1E+00	7.2E-04	7.3E+01	1.3E-02	3.4E-03
Sweepers/Scrubbers	G4	15	Industrial Equip	U	N	NHH	NP	2	1	1	5.4E-02	3.9E-02	2.7E-03	3.3E+00	1.5E-04	5.4E+00	4.4E-03	3.2E-03
Sweepers/Scrubbers	G4	25	Industrial Equip	U	N	NHH	NP	2	1	2	1.2E-01	9.3E-02	6.3E-03	7.8E+00	3.1E-04	1.2E+01	7.1E-03	7.2E-03
Sweepers/Scrubbers	G4	50	Industrial Equip	U	N	NHH	NP	3	5	13	6.0E-02	1.2E-01	3.3E-03	4.9E+00	5.2E-04	4.3E+01	8.1E-03	3.5E-03
Sweepers/Scrubbers	G4	120	Industrial Equip	U	N	NHH	NP	3	4	18	4.3E-02	2.4E-01	6.4E-03	2.6E+00	8.0E-04	8.2E+01	1.2E-02	2.6E-03
Sweepers/Scrubbers	G4	175	Industrial Equip	U	N	NHH	NP	0	0	0	6.0E-02	5.0E-01	1.3E-02	5.7E+00	1.6E-03	1.7E+02	1.7E-02	3.5E-03
Other General Industrial Equipment	G4	15	Industrial Equip	U	N	NHH	NP	4	4	2	4.3E-02	3.1E-02	2.2E-03	2.5E+00	1.2E-04	4.1E+00	3.9E-03	2.5E-03
Other General Industrial Equipment	G4	25	Industrial Equip	U	N	NHH	NP	1	2	2	9.7E-02	7.4E-02	5.0E-03	6.0E+00	2.3E-04	9.2E+00	6.3E-03	5.7E-03
Other General Industrial Equipment	G4	50	Industrial Equip	U	N	NHH	NP	1	2	4	4.9E-02	9.8E-02	2.1E-03	4.2E+00	3.4E-04	2.8E+01	7.1E-03	2.9E-03
Other General Industrial Equipment	G4	120	Industrial Equip	U	N	NHH	NP	0	1	3	5.2E-02	2.5E-01	5.6E-03	3.0E+00	7.0E-04	7.3E+01	1.2E-02	3.0E-03
Other General Industrial Equipment	G4	175	Industrial Equip	U	N	NHH	NP	0	0	1	7.4E-02	5.3E-01	1.2E-02	5.7E+00	1.6E-03	1.6E+02	1.8E-02	4.4E-03
Other Material Handling Equipment	G4	50	Industrial Equip	U	N	NHH	NP	0	0	0	1.4E-01	2.2E-01	2.9E-03	5.7E+00	4.6E-04	3.8E+01	1.1E-02	8.3E-03
Other Material Handling Equipment	G4	120	Industrial Equip	U	N	NHH	NP	1	1	2	1.2E-01	3.7E-01	3.8E-03	2.7E+00	4.7E-04	4.9E+01	1.4E-02	6.8E-03
Lawn Mowers	G4	5	Lawn and Garden Equip	C	N	NHH	NP	3,035	2,116	252	2.7E-02	6.9E-03	4.3E-03	5.3E-01	4.7E-05	1.4E+00	1.8E-03	1.6E-03

Hourly emission rates are calculated based on the tons-per-year emissions and activity rates reported in wksht OFFROAD07 output.

mass conversion rate

value

2,000

unit

lb/ton

source

onlineconversion.com/weight_common.htm

Equipment	Fuel	MaxHP	Class	C/R	Pre	Handheld?	Portable?	Population	Activity (equip- hrs/day)	Fuel Consumption (gal/day)	ROG Exhaust (lb/equip-hr)	NOX Exhaust (lb/equip-hr)	PM Exhaust (lb/equip-hr)	CO Exhaust (lb/equip-hr)	SO2 Exhaust (lb/equip-hr)	CO2 Exhaust (lb/equip-hr)	N2O Exhaust (lb/equip-hr)	CH4 Exhaust (lb/equip-hr)
Lawn Mowers	G4	5	Lawn and Garden Equip	R	N	NHH	NP	48,106	2,274	315	2.6E-02	7.5E-03	3.3E-03	7.7E-01	4.7E-05	1.4E+00	1.8E-03	1.5E-03
Tillers	G4	5	Lawn and Garden Equip	C	N	NHH	NP	315	54	8	2.4E-02	6.1E-03	4.0E-03	7.3E-01	5.2E-05	1.5E+00	1.6E-03	1.4E-03
Tillers	G4	5	Lawn and Garden Equip	R	N	NHH	NP	1,223	67	10	3.2E-02	8.6E-03	3.8E-03	8.6E-01	5.2E-05	1.5E+00	1.9E-03	1.9E-03
Trimmers/Edgers/Brush Cutters	G4	5	Lawn and Garden Equip	C	P	NHH	NP	554	229	7	7.6E-03	3.4E-03	1.1E-04	1.4E-01	1.2E-05	3.4E-01	1.2E-03	4.5E-04
Trimmers/Edgers/Brush Cutters	G4	5	Lawn and Garden Equip	R	P	NHH	NP	2,581	169	6	9.7E-03	2.9E-03	4.9E-04	2.0E-01	1.2E-05	3.4E-01	1.1E-03	5.7E-04
Leaf Blowers/Vacuums	G4	5	Lawn and Garden Equip	C	N	NHH	P	141	27	2	9.4E-03	2.3E-03	1.6E-03	3.6E-01	2.4E-05	6.8E-01	9.9E-04	5.5E-04
Leaf Blowers/Vacuums	G4	5	Lawn and Garden Equip	R	N	NHH	P	121	2	0	1.3E-02	3.3E-03	1.4E-03	4.7E-01	2.4E-05	6.8E-01	1.2E-03	8.0E-04
Snowblowers	G4	5	Lawn and Garden Equip	C	N	NHH	P	1,909	9	1	1.5E-02	3.6E-03	2.7E-03	7.8E-01	4.6E-05	1.3E+00	1.3E-03	8.8E-04
Snowblowers	G4	5	Lawn and Garden Equip	R	N	NHH	P	17,178	3	0	2.3E-02	5.9E-03	2.4E-03	9.5E-01	4.6E-05	1.3E+00	1.6E-03	1.4E-03
Snowblowers	G4	15	Lawn and Garden Equip	C	N	NHH	P	1,444	7	2	2.0E-02	1.5E-02	1.0E-03	1.8E+00	8.5E-05	3.0E+00	2.7E-03	1.2E-03
Snowblowers	G4	15	Lawn and Garden Equip	R	N	NHH	P	12,997	3	1	2.9E-02	1.9E-02	1.0E-03	2.0E+00	8.5E-05	3.0E+00	3.0E-03	1.7E-03
Snowblowers	G4	25	Lawn and Garden Equip	C	N	NHH	P	4	0	0	3.7E-02	2.5E-02	1.8E-03	3.4E+00	1.3E-04	5.3E+00	3.5E-03	2.2E-03
Snowblowers	G4	25	Lawn and Garden Equip	R	N	NHH	P	38	0	0	5.2E-02	3.0E-02	1.8E-03	3.6E+00	1.3E-04	5.3E+00	3.8E-03	3.1E-03
Rear Engine Riding Mowers	G4	15	Lawn and Garden Equip	C	N	NHH	NP	1,662	1,375	460	2.9E-02	2.1E-02	1.5E-03	2.0E+00	9.2E-05	3.2E+00	3.2E-03	1.7E-03
Rear Engine Riding Mowers	G4	15	Lawn and Garden Equip	R	N	NHH	NP	1,457	125	42	3.2E-02	2.1E-02	1.3E-03	2.0E+00	9.2E-05	3.2E+00	3.2E-03	1.9E-03
Rear Engine Riding Mowers	G4	25	Lawn and Garden Equip	C	N	NHH	NP	8	6	4	5.5E-02	4.0E-02	2.8E-03	4.0E+00	1.6E-04	6.1E+00	4.5E-03	3.3E-03
Rear Engine Riding Mowers	G4	25	Lawn and Garden Equip	R	N	NHH	NP	7	1	0	6.2E-02	3.8E-02	2.4E-03	4.0E+00	1.6E-04	6.1E+00	4.4E-03	3.6E-03
Front Mowers	G4	15	Lawn and Garden Equip	C	N	NHH	NP	76	63	34	4.7E-02	3.4E-02	2.4E-03	3.2E+00	1.5E-04	5.2E+00	4.1E-03	2.8E-03
Front Mowers	G4	15	Lawn and Garden Equip	R	N	NHH	NP	2,463	212	114	5.1E-02	3.4E-02	2.1E-03	3.2E+00	1.5E-04	5.2E+00	4.1E-03	3.0E-03
Front Mowers	G4	25	Lawn and Garden Equip	C	N	NHH	NP	60	49	36	6.1E-02	4.5E-02	3.1E-03	4.4E+00	1.7E-04	6.8E+00	4.8E-03	3.6E-03
Front Mowers	G4	25	Lawn and Garden Equip	R	N	NHH	NP	1,929	166	120	6.8E-02	4.2E-02	2.7E-03	4.4E+00	1.7E-04	6.8E+00	4.6E-03	4.0E-03
Shredders	G4	5	Lawn and Garden Equip	C	P	NHH	NP	60	25	7	6.8E-02	3.0E-02	9.9E-04	1.3E+00	1.0E-04	3.0E+00	3.9E-03	4.0E-03
Shredders	G4	5	Lawn and Garden Equip	R	P	NHH	NP	2,224	6	2	6.1E-02	1.9E-02	6.1E-03	2.2E+00	1.0E-04	3.0E+00	3.1E-03	3.6E-03
Lawn & Garden Tractors	G4	15	Lawn and Garden Equip	C	N	NHH	NP	305	120	77	4.8E-02	3.5E-02	2.5E-03	3.8E+00	1.8E-04	6.2E+00	4.2E-03	2.8E-03
Lawn & Garden Tractors	G4	15	Lawn and Garden Equip	R	N	NHH	NP	1,979	88	57	5.5E-02	3.8E-02	2.3E-03	3.9E+00	1.8E-04	6.2E+00	4.4E-03	3.2E-03
Lawn & Garden Tractors	G4	25	Lawn and Garden Equip	C	N	NHH	NP	120	47	48	7.5E-02	5.2E-02	3.8E-03	6.3E+00	2.4E-04	9.7E+00	5.2E-03	4.4E-03
Lawn & Garden Tractors	G4	25	Lawn and Garden Equip	R	N	NHH	NP	780	35	36	8.8E-02	5.5E-02	3.5E-03	6.3E+00	2.4E-04	9.7E+00	5.3E-03	5.2E-03
Lawn & Garden Tractors	G4	50	Lawn and Garden Equip	U	N	NHH	NP	2	1	1	5.7E-02	1.1E-01	2.0E-03	2.5E+00	3.1E-04	2.6E+01	7.3E-03	3.4E-03
Wood Splitters	G4	5	Lawn and Garden Equip	C	N	NHH	NP	102	40	12	5.9E-02	1.5E-02	9.6E-03	1.4E+00	1.1E-04	3.3E+00	2.7E-03	3.5E-03
Wood Splitters	G4	5	Lawn and Garden Equip	R	N	NHH	NP	2,557	9	3	5.4E-02	1.5E-02	5.8E-03	2.3E+00	1.1E-04	3.3E+00	2.6E-03	3.2E-03
Chippers/Stump Grinders	G4	15	Lawn and Garden Equip	C	P	NHH	P	1	6	5	1.3E-01	9.4E-02	6.8E-02	4.9E+00	2.3E-04	8.1E+00	7.1E-03	7.4E-03
Chippers/Stump Grinders	G4	15	Lawn and Garden Equip	R	P	NHH	P	3	0	0	1.3E-01	6.4E-02	6.3E-02	5.5E+00	2.3E-04	8.1E+00	5.8E-03	7.4E-03
Chippers/Stump Grinders	G4	25	Lawn and Garden Equip	C	P	NHH	P	8	32	45	2.2E-01	1.4E-01	1.1E-01	8.5E+00	3.4E-04	1.3E+01	8.9E-03	1.3E-02
Chippers/Stump Grinders	G4	25	Lawn and Garden Equip	R	P	NHH	P	15	1	1	2.0E-01	9.4E-02	1.0E-01	9.4E+00	3.4E-04	1.3E+01	7.1E-03	1.2E-02
Commercial Turf Equipment	G4	15	Lawn and Garden Equip	C	N	NHH	NP	108	263	142	5.8E-02	4.2E-02	2.9E-03	3.2E+00	1.5E-04	5.2E+00	4.6E-03	3.4E-03
Commercial Turf Equipment	G4	25	Lawn and Garden Equip	C	N	NHH	NP	53	130	124	9.8E-02	7.5E-02	5.0E-03	5.8E+00	2.3E-04	9.0E+00	6.3E-03	5.8E-03
Commercial Turf Equipment	G4	50	Lawn and Garden Equip	U	N	NHH	NP	21	48	80	9.0E-02	1.4E-01	1.9E-03	5.0E+00	2.9E-04	2.4E+01	8.5E-03	5.3E-03
Commercial Turf Equipment	G4	120	Lawn and Garden Equip	U	N	NHH	NP	0	0	1	2.1E-02	1.3E-01	3.5E-03	1.2E+00	4.4E-04	4.5E+01	8.3E-03	1.2E-03
Other Lawn & Garden Equipment	G4	5	Lawn and Garden Equip	C	N	NHH	NP	95	20	4	3.5E-02	8.7E-03	5.8E-03	1.1E+00	7.6E-05	2.2E+00	2.0E-03	2.1E-03
Other Lawn & Garden Equipment	G4	5	Lawn and Garden Equip	R	N	NHH	NP	2,903	38	9	4.2E-02	1.0E-02	4.3E-03	1.5E+00	7.6E-05	2.2E+00	2.1E-03	2.5E-03
Other Lawn & Garden Equipment	G4	15	Lawn and Garden Equip	C	N	NHH	NP	42	9	4	3.4E-02	2.5E-02	1.7E-03	2.7E+00	1.3E-04	4.4E+00	3.5E-03	2.0E-03
Other Lawn & Garden Equipment	G4	15	Lawn and Garden Equip	R	N	NHH	NP	1,289	17	8	4.5E-02	2.8E-02	1.5E-03	2.9E+00	1.3E-04	4.4E+00	3.7E-03	2.6E-03
Other Lawn & Garden Equipment	G4	25	Lawn and Garden Equip	C	N	NHH	NP	1	0	0	7.3E-02	5.1E-02	3.7E-03	6.1E+00	2.4E-04	9.3E+00	5.1E-03	4.3E-03
Other Lawn & Garden Equipment	G4	25	Lawn and Garden Equip	R	N	NHH	NP	27	0	0	9.6E-02	5.4E-02	3.2E-03	6.4E+00	2.4E-04	9.3E+00	5.3E-03	5.7E-03
Other Lawn & Garden Equipment	G4	50	Lawn and Garden Equip	U	N	NHH	NP	0	0	0	8.6E-02	1.7E-01	2.8E-03	3.3E+00	4.4E-04	3.6E+01	9.2E-03	5.1E-03
Other Lawn & Garden Equipment	G4	120	Lawn and Garden Equip	U	N	NHH	NP	0	0	0	1.5E-01	6.8E-01	7.8E-03	3.5E+00	9.8E-04	1.0E+02	1.9E-02	8.7E-03
2-Wheel Tractors	G4	5	Agricultural Equip	U	P	NHH	NP	23	12	3	5.5E-02	2.5E-02	7.7E-04	9.4E-01	8.1E-05	2.3E+00	3.5E-03	3.2E-03
2-Wheel Tractors	G4	15	Agricultural Equip	U	P	NHH	NP	26	29	14	7.0E-02	5.2E-02	3.9E-02	2.9E+00	1.3E-04	4.7E+00	5.2E-03	4.1E-03
2-Wheel Tractors	G4	25	Agricultural Equip	U	P	NHH	NP	1	1	1	1.5E-01	9.6E-02	7.9E-02	6.1E+00	2.4E-04	9.4E+00	7.2E-03	8.7E-03
Agricultural Tractors	G4	120	Agricultural Equip	U	P	NHH	NP	9	16	82	3.2E-01	8.1E-01	6.7E-03	6.1E+00	8.4E-04	8.7E+01	2.0E-02	1.9E-02
Agricultural Tractors	G4	175	Agricultural Equip	U	P	NHH	NP	1	2	16	2.2E-01	1.4E+00	1.0E-02	5.0E+00	1.3E-03	1.3E+02	2.7E-02	1.3E-02
Combines	G4	120	Agricultural Equip	U	P	NHH	NP	2	1	6	1.0E-01	3.5E-01	1.0E-02	3.1E+00	1.3E-03	1.3E+02	1.2E-02	6.0E-03
Combines	G4	175	Agricultural Equip	U	P	NHH	NP	1	1	6	1.0E-01	6.1E-01	1.6E-02	6.7E+00	2.0E-03	2.0E+02	1.6E-02	5.9E-03

Hourly emission rates are calculated based on the tons-per-year emissions and activity rates reported in wksht OFFROAD07 output.

mass conversion rate

value

2,000

unit

lb/ton

source

onlineconversion.com/weight_common.htm

Equipment	Fuel	MaxHP	Class	C/R	Pre	Handheld?	Portable?	Population	Activity	Fuel	ROG Exhaust (lb/equip-hr)	NOX Exhaust (lb/equip-hr)	PM Exhaust (lb/equip-hr)	CO Exhaust (lb/equip-hr)	SO2 Exhaust (lb/equip-hr)	CO2 Exhaust (lb/equip-hr)	N2O Exhaust (lb/equip-hr)	CH4 Exhaust (lb/equip-hr)
									(equip- hrs/day)	Consumption (gal/day)								
Combines	G4	250	Agricultural Equip	U	N	NHH	NP	0	0	1	1.0E-01	9.2E-01	1.9E-02	8.0E+00	2.4E-03	2.3E+02	2.3E-02	6.0E-03
Balers	G4	50	Agricultural Equip	U	P	NHH	NP	32	7	15	1.1E-01	2.1E-01	2.5E-03	3.4E+00	4.0E-04	3.3E+01	1.0E-02	6.4E-03
Balers	G4	120	Agricultural Equip	U	P	NHH	NP	16	4	12	1.3E-01	5.2E-01	4.7E-03	2.5E+00	5.8E-04	6.0E+01	1.6E-02	7.5E-03
Agricultural Mowers	G4	15	Agricultural Equip	U	P	NHH	NP	23	14	5	5.7E-02	3.9E-02	3.0E-02	2.3E+00	1.0E-04	3.6E+00	4.5E-03	3.4E-03
Agricultural Mowers	G4	25	Agricultural Equip	U	P	NHH	NP	19	12	10	1.3E-01	8.1E-02	6.9E-02	5.4E+00	2.1E-04	8.2E+00	6.6E-03	7.8E-03
Sprayers	G4	5	Agricultural Equip	U	P	NHH	NP	89	29	5	4.3E-02	1.9E-02	6.2E-04	7.8E-01	6.5E-05	1.9E+00	3.1E-03	2.6E-03
Sprayers	G4	15	Agricultural Equip	U	P	NHH	NP	28	9	3	7.3E-02	3.2E-02	2.7E-02	2.3E+00	9.4E-05	3.3E+00	4.0E-03	4.3E-03
Sprayers	G4	25	Agricultural Equip	U	P	NHH	NP	72	23	22	1.7E-01	6.9E-02	6.5E-02	5.8E+00	2.0E-04	8.0E+00	6.0E-03	9.8E-03
Sprayers	G4	50	Agricultural Equip	U	P	NHH	NP	6	2	3	9.5E-02	1.8E-01	2.2E-03	3.0E+00	3.5E-04	2.8E+01	9.2E-03	5.6E-03
Sprayers	G4	120	Agricultural Equip	U	P	NHH	NP	10	3	9	1.3E-01	5.0E-01	4.5E-03	2.5E+00	5.6E-04	5.8E+01	1.5E-02	7.4E-03
Sprayers	G4	175	Agricultural Equip	U	P	NHH	NP	2	1	4	1.5E-01	1.1E+00	9.3E-03	3.9E+00	1.2E-03	1.2E+02	2.4E-02	8.7E-03
Tillers	G4	15	Agricultural Equip	U	N	NHH	NP	3,028	719	373	8.2E-02	4.0E-02	2.4E-03	3.2E+00	1.3E-04	4.7E+00	4.5E-03	4.8E-03
Swathers	G4	120	Agricultural Equip	U	P	NHH	NP	33	10	46	1.7E-01	6.8E-01	6.1E-03	3.4E+00	7.5E-04	7.8E+01	1.8E-02	1.0E-02
Swathers	G4	175	Agricultural Equip	U	P	NHH	NP	25	8	49	1.4E-01	1.1E+00	8.9E-03	3.7E+00	1.1E-03	1.1E+02	2.3E-02	8.4E-03
Hydro Power Units	G4	5	Agricultural Equip	U	P	NHH	NP	5	3	1	6.3E-02	2.8E-02	8.6E-04	1.0E+00	9.2E-05	2.7E+00	3.7E-03	3.7E-03
Hydro Power Units	G4	15	Agricultural Equip	U	P	NHH	NP	11	17	7	6.5E-02	4.8E-02	3.6E-02	2.6E+00	1.2E-04	4.2E+00	5.0E-03	3.8E-03
Hydro Power Units	G4	25	Agricultural Equip	U	P	NHH	NP	4	6	6	1.5E-01	9.4E-02	7.6E-02	5.9E+00	2.3E-04	9.0E+00	7.2E-03	8.6E-03
Hydro Power Units	G4	50	Agricultural Equip	U	P	NHH	NP	0	0	1	4.7E-02	6.9E-02	2.8E-03	3.7E+00	4.5E-04	3.7E+01	6.0E-03	2.8E-03
Hydro Power Units	G4	120	Agricultural Equip	U	P	NHH	NP	0	0	0	2.9E-02	6.5E-02	4.9E-03	1.4E+00	6.1E-04	6.3E+01	5.9E-03	1.7E-03
Other Agricultural Equipment	G4	5	Agricultural Equip	U	P	NHH	NP	4	2	0	4.8E-02	2.1E-02	6.8E-04	8.6E-01	7.2E-05	2.1E+00	3.2E-03	2.8E-03
Other Agricultural Equipment	G4	15	Agricultural Equip	U	P	NHH	NP	3	2	1	8.4E-02	5.5E-02	4.4E-02	3.3E+00	1.5E-04	5.2E+00	5.4E-03	4.9E-03
Other Agricultural Equipment	G4	25	Agricultural Equip	U	P	NHH	NP	1	0	1	2.2E-01	1.3E-01	1.1E-01	8.7E+00	3.3E-04	1.3E+01	8.3E-03	1.3E-02
Other Agricultural Equipment	G4	50	Agricultural Equip	U	P	NHH	NP	1	0	1	7.9E-02	1.4E-01	2.1E-03	2.8E+00	3.3E-04	2.8E+01	8.1E-03	4.6E-03
Other Agricultural Equipment	G4	120	Agricultural Equip	U	P	NHH	NP	6	2	8	1.1E-01	4.2E-01	4.9E-03	2.4E+00	6.1E-04	6.3E+01	1.3E-02	6.6E-03
Other Agricultural Equipment	G4	175	Agricultural Equip	U	P	NHH	NP	1	0	2	1.3E-01	9.5E-01	9.9E-03	4.2E+00	1.2E-03	1.2E+02	2.1E-02	7.6E-03
Other Agricultural Equipment	G4	250	Agricultural Equip	U	N	NHH	NP	0	0	1	1.9E-01	1.5E+00	1.8E-02	7.5E+00	2.2E-03	2.2E+02	2.9E-02	1.1E-02
Generator Sets	G4	5	Light Commercial Equip	C	N	NHH	P	403	165	41	8.4E-02	2.0E-02	8.9E-03	1.2E+00	8.9E-05	2.6E+00	3.1E-03	4.9E-03
Generator Sets	G4	5	Light Commercial Equip	R	N	NHH	P	317	87	23	9.4E-02	2.0E-02	8.8E-03	1.3E+00	8.9E-05	2.6E+00	3.1E-03	5.5E-03
Generator Sets	G4	15	Light Commercial Equip	C	N	NHH	P	1,108	454	277	8.0E-02	5.1E-02	3.1E-03	3.6E+00	1.7E-04	5.8E+00	5.1E-03	4.7E-03
Generator Sets	G4	15	Light Commercial Equip	R	N	NHH	P	870	240	153	1.1E-01	4.9E-02	3.0E-03	3.9E+00	1.7E-04	5.8E+00	5.0E-03	6.3E-03
Generator Sets	G4	25	Light Commercial Equip	C	N	NHH	P	595	244	322	1.7E-01	1.0E-01	6.5E-03	8.0E+00	3.1E-04	1.2E+01	7.5E-03	9.9E-03
Generator Sets	G4	25	Light Commercial Equip	R	N	NHH	P	468	129	176	2.1E-01	9.7E-02	6.4E-03	8.5E+00	3.1E-04	1.2E+01	7.2E-03	1.3E-02
Generator Sets	G4	50	Light Commercial Equip	U	N	NHH	P	198	69	158	1.0E-01	2.0E-01	2.9E-03	3.9E+00	4.6E-04	3.8E+01	9.8E-03	6.0E-03
Generator Sets	G4	120	Light Commercial Equip	U	N	NHH	P	38	13	71	1.6E-01	6.9E-01	7.5E-03	3.8E+00	9.3E-04	9.6E+01	1.9E-02	9.6E-03
Generator Sets	G4	175	Light Commercial Equip	U	N	NHH	P	4	1	11	1.6E-01	1.3E+00	1.3E-02	5.4E+00	1.6E-03	1.6E+02	2.7E-02	9.6E-03
Pumps	G4	5	Light Commercial Equip	C	P	NHH	P	143	113	19	5.3E-02	2.2E-02	1.3E-03	6.9E-01	6.8E-05	2.0E+00	3.3E-03	3.1E-03
Pumps	G4	5	Light Commercial Equip	R	P	NHH	P	112	59	11	6.6E-02	2.1E-02	3.0E-03	8.7E-01	6.8E-05	2.0E+00	3.2E-03	3.9E-03
Pumps	G4	15	Light Commercial Equip	C	P	NHH	P	155	122	67	8.1E-02	5.8E-02	4.4E-02	3.2E+00	1.5E-04	5.2E+00	5.5E-03	4.8E-03
Pumps	G4	15	Light Commercial Equip	R	P	NHH	P	122	64	36	8.8E-02	5.6E-02	4.4E-02	3.3E+00	1.5E-04	5.2E+00	5.4E-03	5.2E-03
Pumps	G4	25	Light Commercial Equip	C	P	NHH	P	40	31	37	1.8E-01	1.1E-01	9.3E-02	7.2E+00	2.8E-04	1.1E+01	7.9E-03	1.0E-02
Pumps	G4	25	Light Commercial Equip	R	P	NHH	P	31	17	20	1.8E-01	1.1E-01	9.3E-02	7.3E+00	2.8E-04	1.1E+01	7.8E-03	1.1E-02
Pumps	G4	50	Light Commercial Equip	U	P	NHH	P	16	11	24	1.0E-01	1.7E-01	2.8E-03	4.0E+00	4.5E-04	3.7E+01	8.9E-03	6.0E-03
Pumps	G4	120	Light Commercial Equip	U	P	NHH	P	20	14	82	1.8E-01	6.3E-01	8.5E-03	4.2E+00	1.1E-03	1.1E+02	1.6E-02	1.1E-02
Pumps	G4	175	Light Commercial Equip	U	P	NHH	P	1	0	4	1.6E-01	1.1E+00	1.3E-02	5.6E+00	1.6E-03	1.7E+02	2.2E-02	9.3E-03
Air Compressors	G4	5	Light Commercial Equip	C	P	NHH	P	52	89	20	6.8E-02	3.1E-02	8.6E-04	8.6E-01	9.2E-05	2.7E+00	3.9E-03	4.0E-03
Air Compressors	G4	5	Light Commercial Equip	R	P	NHH	P	41	47	10	6.8E-02	3.1E-02	8.6E-04	8.6E-01	9.2E-05	2.7E+00	3.9E-03	4.0E-03
Air Compressors	G4	15	Light Commercial Equip	C	P	NHH	P	26	45	17	5.8E-02	4.3E-02	3.1E-02	2.3E+00	1.1E-04	3.7E+00	4.7E-03	3.4E-03
Air Compressors	G4	15	Light Commercial Equip	R	P	NHH	P	21	24	9	5.6E-02	4.2E-02	3.1E-02	2.3E+00	1.1E-04	3.7E+00	4.6E-03	3.3E-03
Air Compressors	G4	25	Light Commercial Equip	C	P	NHH	P	4	6	6	1.5E-01	9.6E-02	7.6E-02	5.8E+00	2.3E-04	9.0E+00	7.2E-03	8.7E-03
Air Compressors	G4	25	Light Commercial Equip	R	P	NHH	P	3	3	3	1.5E-01	9.4E-02	7.6E-02	5.8E+00	2.3E-04	9.0E+00	7.1E-03	8.6E-03
Air Compressors	G4	50	Light Commercial Equip	U	P	NHH	P	6	9	20	1.5E-01	2.1E-01	2.6E-03	5.2E+00	4.1E-04	3.4E+01	1.0E-02	9.1E-03
Air Compressors	G4	120	Light Commercial Equip	U	P	NHH	P	20	29	110	2.0E-01	5.3E-01	5.2E-03	4.0E+00	6.5E-04	6.7E+01	1.6E-02	1.2E-02
Air Compressors	G4	175	Light Commercial Equip	U	P	NHH	P	1	2	13	1.8E-01	1.1E+00	9.9E-03	4.6E+00	1.2E-03	1.2E+02	2.4E-02	1.0E-02

Hourly emission rates are calculated based on the tons-per-year emissions and activity rates reported in wksht OFFROAD07 output.

mass conversion rate

value

2,000

unit

lb/ton

source

onlineconversion.com/weight_common.htm

Equipment	Fuel	MaxHP	Class	C/R	Pre	Handheld?	Portable?	Population	Activity	Fuel	ROG Exhaust (lb/equip-hr)	NOX Exhaust (lb/equip-hr)	PM Exhaust (lb/equip-hr)	CO Exhaust (lb/equip-hr)	SO2 Exhaust (lb/equip-hr)	CO2 Exhaust (lb/equip-hr)	N2O Exhaust (lb/equip-hr)	CH4 Exhaust (lb/equip-hr)
									(equip- hrs/day)	Consumption (gal/day)								
Welders	G4	15	Light Commercial Equip	C	P	NHH	P	101	64	37	9.4E-02	5.7E-02	4.4E-02	3.4E+00	1.5E-04	5.3E+00	5.5E-03	5.5E-03
Welders	G4	25	Light Commercial Equip	C	P	NHH	P	365	232	206	1.4E-01	8.2E-02	6.9E-02	5.4E+00	2.1E-04	8.2E+00	6.6E-03	8.1E-03
Welders	G4	50	Light Commercial Equip	U	P	NHH	P	31	20	49	1.4E-01	2.2E-01	3.0E-03	4.5E+00	4.8E-04	4.0E+01	1.0E-02	8.0E-03
Welders	G4	120	Light Commercial Equip	U	P	NHH	P	32	20	69	1.3E-01	4.6E-01	4.7E-03	2.7E+00	5.9E-04	6.1E+01	1.4E-02	7.9E-03
Welders	G4	175	Light Commercial Equip	U	P	NHH	P	2	1	8	1.3E-01	9.4E-01	8.8E-03	3.7E+00	1.1E-03	1.1E+02	2.1E-02	7.8E-03
Pressure Washers	G4	5	Light Commercial Equip	C	N	NHH	P	108	44	16	1.0E-01	2.9E-02	1.4E-02	1.5E+00	1.4E-04	4.0E+00	3.8E-03	6.0E-03
Pressure Washers	G4	5	Light Commercial Equip	R	N	NHH	P	85	23	9	1.4E-01	3.1E-02	1.4E-02	2.0E+00	1.4E-04	4.0E+00	3.9E-03	8.2E-03
Pressure Washers	G4	15	Light Commercial Equip	C	N	NHH	P	97	40	24	7.8E-02	4.9E-02	3.0E-03	3.5E+00	1.6E-04	5.6E+00	5.0E-03	4.6E-03
Pressure Washers	G4	15	Light Commercial Equip	R	N	NHH	P	76	21	13	1.0E-01	4.8E-02	3.0E-03	3.8E+00	1.6E-04	5.6E+00	4.9E-03	6.2E-03
Pressure Washers	G4	25	Light Commercial Equip	C	N	NHH	P	18	7	12	1.9E-01	1.2E-01	7.6E-03	9.5E+00	3.7E-04	1.4E+01	8.1E-03	1.1E-02
Pressure Washers	G4	25	Light Commercial Equip	R	N	NHH	P	14	4	6	2.4E-01	1.2E-01	7.6E-03	9.9E+00	3.7E-04	1.4E+01	7.9E-03	1.4E-02
Pressure Washers	G4	50	Light Commercial Equip	U	P	NHH	P	2	1	2	1.0E-01	1.9E-01	3.3E-03	4.0E+00	5.2E-04	4.3E+01	9.4E-03	6.2E-03
Shredders	G4	15	Logging Equip	U	P	NHH	NP	1,001	659	415	8.8E-02	6.5E-02	5.1E-02	3.7E+00	1.7E-04	6.1E+00	5.9E-03	5.2E-03
Cargo Tractor	G4	120	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
A/C Tug Narrow Body	G4	175	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
A/C Tug Wide Body	G4	500	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Air Conditioner	G4	175	Airport Ground Support Equip	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Air Start Unit	G4	175	Airport Ground Support Equip	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Baggage Tug	G4	120	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Belt Loader	G4	120	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Bobtail	G4	120	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Cargo Loader	G4	120	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Cart	G4	15	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Deicer	G4	120	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Forklift	G4	50	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Fuel Truck	G4	175	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Ground Power Unit	G4	175	Airport Ground Support Equip	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Lav Cart	G4	15	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Lav Truck	G4	175	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Lift	G4	120	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Maint. Truck	G4	175	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Other GSE	G4	50	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Passenger Stand	G4	175	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Sweeper	G4	120	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Generator	G4	120	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Service Truck	G4	250	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Catering Truck	G4	250	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Water Truck	G4	175	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Hydrant truck	G4	175	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Transport Refrigeration Units	G4	15	Transport Refrigeration Units	U	N	NHH	NP	151	308	181	6.3E-02	4.5E-02	3.2E-03	3.5E+00	1.6E-04	5.7E+00	4.8E-03	3.7E-03
Aerial Lifts	C4	15	Industrial Equip	U	P	NHH	NP	0	0	0	3.7E-03	3.9E-02	4.1E-03	1.4E+00	0.0E+00	8.9E+00	0.0E+00	3.1E-02
Aerial Lifts	C4	25	Industrial Equip	U	P	NHH	NP	3	3	4	8.4E-03	6.1E-02	6.7E-03	2.2E+00	0.0E+00	1.3E+01	0.0E+00	7.1E-02
Forklifts	C4	25	Industrial Equip	U	N	NHH	NP	0	0	0	1.2E-02	5.5E-02	6.8E-03	2.0E+00	0.0E+00	1.0E+01	0.0E+00	1.0E-01
Forklifts	C4	50	Industrial Equip	U	N	NHH	NP	22	110	147	2.1E-03	9.1E-02	1.6E-03	3.0E-01	0.0E+00	1.8E+01	0.0E+00	1.8E-02
Forklifts	C4	120	Industrial Equip	U	N	NHH	NP	79	386	919	3.6E-03	1.6E-01	2.8E-03	1.4E+00	0.0E+00	3.1E+01	0.0E+00	3.0E-02
Forklifts	C4	175	Industrial Equip	U	N	NHH	NP	3	14	69	4.9E-03	2.4E-01	5.8E-03	2.3E+00	0.0E+00	6.5E+01	0.0E+00	4.1E-02
Generator Sets	C4	120	Light Commercial Equip	U	N	NHH	P	3	1	6	9.0E-03	6.0E-01	7.5E-03	2.6E+00	0.0E+00	8.4E+01	0.0E+00	7.6E-02
Generator Sets	C4	175	Light Commercial Equip	U	N	NHH	P	2	1	9	1.2E-02	1.0E+00	1.3E-02	3.8E+00	0.0E+00	1.5E+02	0.0E+00	1.0E-01
Gas Compressors	C4	50	Light Commercial Equip	U	P	NHH	P	0	11	39	3.9E-03	1.4E-01	3.6E-03	6.9E-01	0.0E+00	4.7E+01	0.0E+00	3.3E-02
Gas Compressors	C4	120	Light Commercial Equip	U	P	NHH	P	1	24	229	1.0E-02	4.0E-01	9.9E-03	5.3E+00	0.0E+00	1.3E+02	0.0E+00	8.6E-02
Gas Compressors	C4	175	Light Commercial Equip	U	P	NHH	P	0	4	59	1.8E-02	6.7E-01	1.6E-02	6.7E+00	0.0E+00	2.1E+02	0.0E+00	1.5E-01
Gas Compressors	C4	250	Light Commercial Equip	U	N	NHH	P	0	3	61	1.7E-02	8.1E-01	2.4E-02	9.7E+00	0.0E+00	2.7E+02	0.0E+00	1.4E-01
Gas Compressors	C4	500	Light Commercial Equip	U	N	NHH	P	0	3	86	2.8E-02	1.3E+00	3.8E-02	1.6E+01	0.0E+00	4.3E+02	0.0E+00	2.3E-01

Hourly emission rates are calculated based on the tons-per-year emissions and activity rates reported in wksht OFFROAD07 output.

mass conversion rate

value

2,000

unit

lb/ton

source

onlineconversion.com/weight_common.htm

Equipment	Fuel	MaxHP	Class	C/R	Pre	Handheld?	Portable?	Population	Activity (equip- hrs/day)	Fuel Consumption (gal/day)	ROG Exhaust (lb/equip-hr)	NOX Exhaust (lb/equip-hr)	PM Exhaust (lb/equip-hr)	CO Exhaust (lb/equip-hr)	SO2 Exhaust (lb/equip-hr)	CO2 Exhaust (lb/equip-hr)	N2O Exhaust (lb/equip-hr)	CH4 Exhaust (lb/equip-hr)
Cargo Tractor	C4	175	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Air Conditioner	C4	175	Airport Ground Support Equip	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Baggage Tug	C4	120	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Belt Loader	C4	120	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Bobtail	C4	120	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Cargo Loader	C4	120	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Forklift	C4	50	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Fuel Truck	C4	175	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Lav Truck	C4	175	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Lift	C4	120	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Other	C4	50	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Passenger Stand	C4	175	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Sweeper	C4	50	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Service Truck	C4	250	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Catering Truck	C4	250	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Pavers	D	25	Construction and Mining Equip	U	P	NHH	NP	0	0	0	2.5E-02	1.5E-01	7.5E-03	8.0E-02	2.4E-04	1.9E+01	0.0E+00	2.2E-03
Pavers	D	50	Construction and Mining Equip	U	P	NHH	NP	10	24	31	1.4E-01	2.9E-01	3.1E-02	3.6E-01	3.6E-04	2.8E+01	0.0E+00	1.2E-02
Pavers	D	120	Construction and Mining Equip	U	P	NHH	NP	12	28	88	1.4E-01	8.4E-01	7.3E-02	5.1E-01	8.1E-04	6.9E+01	0.0E+00	1.3E-02
Pavers	D	175	Construction and Mining Equip	U	P	NHH	NP	8	17	101	1.8E-01	1.4E+00	7.7E-02	7.8E-01	1.4E-03	1.3E+02	0.0E+00	1.6E-02
Pavers	D	250	Construction and Mining Equip	U	N	NHH	NP	1	2	18	2.1E-01	1.9E+00	7.5E-02	6.1E-01	2.2E-03	1.9E+02	0.0E+00	1.9E-02
Pavers	D	500	Construction and Mining Equip	U	N	NHH	NP	1	2	23	2.3E-01	2.1E+00	8.2E-02	9.2E-01	2.3E-03	2.3E+02	0.0E+00	2.1E-02
Plate Compactors	D	15	Construction and Mining Equip	U	P	NHH	NP	4	6	1	5.0E-03	3.1E-02	1.2E-03	2.6E-02	6.7E-05	4.3E+00	0.0E+00	4.5E-04
Rollers	D	15	Construction and Mining Equip	U	P	NHH	NP	7	14	4	7.4E-03	4.6E-02	1.8E-03	3.9E-02	9.8E-05	6.3E+00	0.0E+00	6.6E-04
Rollers	D	25	Construction and Mining Equip	U	P	NHH	NP	3	6	3	1.6E-02	1.0E-01	4.1E-03	5.5E-02	1.7E-04	1.3E+01	0.0E+00	1.5E-03
Rollers	D	50	Construction and Mining Equip	U	P	NHH	NP	9	18	22	1.0E-01	2.6E-01	2.4E-02	2.9E-01	3.4E-04	2.6E+01	0.0E+00	9.2E-03
Rollers	D	120	Construction and Mining Equip	U	P	NHH	NP	50	96	259	9.9E-02	6.3E-01	5.3E-02	4.1E-01	6.9E-04	5.9E+01	0.0E+00	8.9E-03
Rollers	D	175	Construction and Mining Equip	U	P	NHH	NP	20	39	190	1.2E-01	1.0E+00	5.5E-02	6.2E-01	1.2E-03	1.1E+02	0.0E+00	1.1E-02
Rollers	D	250	Construction and Mining Equip	U	N	NHH	NP	3	5	38	1.3E-01	1.3E+00	4.5E-02	3.9E-01	1.7E-03	1.5E+02	0.0E+00	1.1E-02
Rollers	D	500	Construction and Mining Equip	U	N	NHH	NP	2	4	38	1.7E-01	1.7E+00	5.9E-02	6.3E-01	2.1E-03	2.2E+02	0.0E+00	1.5E-02
Scrapers	D	120	Construction and Mining Equip	U	P	NHH	NP	0	1	6	1.9E-01	1.1E+00	9.8E-02	6.9E-01	1.1E-03	9.4E+01	0.0E+00	1.7E-02
Scrapers	D	175	Construction and Mining Equip	U	P	NHH	NP	4	13	87	2.1E-01	1.6E+00	8.8E-02	9.1E-01	1.7E-03	1.5E+02	0.0E+00	1.9E-02
Scrapers	D	250	Construction and Mining Equip	U	N	NHH	NP	4	13	119	2.2E-01	2.0E+00	7.9E-02	6.4E-01	2.4E-03	2.1E+02	0.0E+00	2.0E-02
Scrapers	D	500	Construction and Mining Equip	U	N	NHH	NP	11	34	504	3.2E-01	2.8E+00	1.1E-01	1.2E+00	3.2E-03	3.2E+02	0.0E+00	2.9E-02
Scrapers	D	750	Construction and Mining Equip	U	N	NHH	NP	5	16	415	5.5E-01	5.0E+00	1.9E-01	2.1E+00	5.6E-03	5.5E+02	0.0E+00	5.0E-02
Paving Equipment	D	25	Construction and Mining Equip	U	P	NHH	NP	0	1	0	1.5E-02	9.7E-02	3.9E-03	5.2E-02	1.6E-04	1.3E+01	0.0E+00	1.4E-03
Paving Equipment	D	50	Construction and Mining Equip	U	P	NHH	NP	0	1	1	1.2E-01	2.5E-01	2.6E-02	3.0E-01	3.1E-04	2.4E+01	0.0E+00	1.1E-02
Paving Equipment	D	120	Construction and Mining Equip	U	P	NHH	NP	4	9	21	1.1E-01	6.6E-01	5.7E-02	4.0E-01	6.4E-04	5.4E+01	0.0E+00	9.8E-03
Paving Equipment	D	175	Construction and Mining Equip	U	P	NHH	NP	2	4	19	1.4E-01	1.1E+00	6.0E-02	6.1E-01	1.1E-03	1.0E+02	0.0E+00	1.3E-02
Paving Equipment	D	250	Construction and Mining Equip	U	N	NHH	NP	0	1	6	1.3E-01	1.2E+00	4.7E-02	3.8E-01	1.4E-03	1.2E+02	0.0E+00	1.2E-02
Surfacing Equipment	D	50	Construction and Mining Equip	U	P	NHH	NP	0	0	0	4.8E-02	1.4E-01	1.2E-02	1.4E-01	1.8E-04	1.4E+01	0.0E+00	4.3E-03
Surfacing Equipment	D	120	Construction and Mining Equip	U	P	NHH	NP	0	0	0	9.7E-02	6.5E-01	5.2E-02	4.2E-01	7.5E-04	6.4E+01	0.0E+00	8.8E-03
Surfacing Equipment	D	175	Construction and Mining Equip	U	P	NHH	NP	0	0	0	8.9E-02	7.7E-01	3.9E-02	4.7E-01	9.6E-04	8.6E+01	0.0E+00	8.1E-03
Surfacing Equipment	D	250	Construction and Mining Equip	U	N	NHH	NP	0	0	1	1.0E-01	1.1E+00	3.8E-02	3.4E-01	1.5E-03	1.3E+02	0.0E+00	9.2E-03
Surfacing Equipment	D	500	Construction and Mining Equip	U	N	NHH	NP	1	1	7	1.5E-01	1.7E+00	5.7E-02	6.4E-01	2.2E-03	2.2E+02	0.0E+00	1.4E-02
Surfacing Equipment	D	750	Construction and Mining Equip	U	N	NHH	NP	1	1	20	2.4E-01	2.7E+00	9.0E-02	1.0E+00	3.5E-03	3.5E+02	0.0E+00	2.2E-02
Signal Boards	D	15	Construction and Mining Equip	U	P	NHH	NP	34	68	19	7.2E-03	4.5E-02	1.8E-03	3.8E-02	9.6E-05	6.2E+00	0.0E+00	6.5E-04
Signal Boards	D	50	Construction and Mining Equip	U	P	NHH	NP	0	0	0	1.2E-01	3.4E-01	3.0E-02	3.5E-01	4.7E-04	3.6E+01	0.0E+00	1.0E-02
Signal Boards	D	120	Construction and Mining Equip	U	P	NHH	NP	3	4	15	1.2E-01	7.8E-01	6.4E-02	5.2E-01	9.4E-04	8.0E+01	0.0E+00	1.1E-02
Signal Boards	D	175	Construction and Mining Equip	U	P	NHH	NP	2	2	17	1.5E-01	1.3E+00	6.9E-02	8.3E-01	1.7E-03	1.5E+02	0.0E+00	1.4E-02
Signal Boards	D	250	Construction and Mining Equip	U	N	NHH	NP	0	1	6	1.6E-01	2.0E+00	5.8E-02	5.3E-01	2.9E-03	2.6E+02	0.0E+00	1.5E-02
Trenchers	D	15	Construction and Mining Equip	U	P	NHH	NP	1	1	1	9.8E-03	6.2E-02	2.4E-03	5.2E-02	1.3E-04	8.5E+00	0.0E+00	8.9E-04
Trenchers	D	25	Construction and Mining Equip	U	P	NHH	NP	1	2	2	4.0E-02	2.5E-01	9.7E-03	1.4E-01	4.2E-04	3.3E+01	0.0E+00	3.6E-03
Trenchers	D	50	Construction and Mining Equip	U	P	NHH	NP	36	61	94	1.6E-01	3.4E-01	3.5E-02	4.1E-01	4.3E-04	3.3E+01	0.0E+00	1.4E-02

Hourly emission rates are calculated based on the tons-per-year emissions and activity rates reported in wksht OFFROAD07 output.

mass conversion rate

value

2,000

unit

lb/ton

source

onlineconversion.com/weight_common.htm

Equipment	Fuel	MaxHP	Class	C/R	Pre	Handheld?	Portable?	Population	Activity (equip- hrs/day)	Fuel Consumption (gal/day)	ROG Exhaust (lb/equip-hr)	NOX Exhaust (lb/equip-hr)	PM Exhaust (lb/equip-hr)	CO Exhaust (lb/equip-hr)	SO2 Exhaust (lb/equip-hr)	CO2 Exhaust (lb/equip-hr)	N2O Exhaust (lb/equip-hr)	CH4 Exhaust (lb/equip-hr)
Trenchers	D	120	Construction and Mining Equip	U	P	NHH	NP	49	83	248	1.3E-01	7.9E-01	6.7E-02	4.7E-01	7.6E-04	6.5E+01	0.0E+00	1.2E-02
Trenchers	D	175	Construction and Mining Equip	U	P	NHH	NP	5	9	60	2.0E-01	1.6E+00	8.5E-02	8.6E-01	1.6E-03	1.4E+02	0.0E+00	1.8E-02
Trenchers	D	250	Construction and Mining Equip	U	N	NHH	NP	0	1	8	2.4E-01	2.2E+00	8.8E-02	7.1E-01	2.5E-03	2.2E+02	0.0E+00	2.1E-02
Trenchers	D	500	Construction and Mining Equip	U	N	NHH	NP	1	1	15	3.0E-01	2.8E+00	1.1E-01	1.3E+00	3.1E-03	3.1E+02	0.0E+00	2.7E-02
Trenchers	D	750	Construction and Mining Equip	U	N	NHH	NP	0	0	10	5.7E-01	5.5E+00	2.1E-01	2.4E+00	5.9E-03	5.9E+02	0.0E+00	5.1E-02
Bore/Drill Rigs	D	15	Construction and Mining Equip	U	P	NHH	P	0	0	0	1.2E-02	7.5E-02	2.9E-03	6.3E-02	1.6E-04	1.0E+01	0.0E+00	1.1E-03
Bore/Drill Rigs	D	25	Construction and Mining Equip	U	P	NHH	P	0	1	1	1.9E-02	1.2E-01	4.9E-03	6.6E-02	2.0E-04	1.6E+01	0.0E+00	1.7E-03
Bore/Drill Rigs	D	50	Construction and Mining Equip	U	P	NHH	P	2	4	5	2.9E-02	2.6E-01	1.2E-02	2.3E-01	4.0E-04	3.1E+01	0.0E+00	2.6E-03
Bore/Drill Rigs	D	120	Construction and Mining Equip	U	P	NHH	P	5	11	38	4.5E-02	4.6E-01	2.6E-02	4.7E-01	9.0E-04	7.7E+01	0.0E+00	4.0E-03
Bore/Drill Rigs	D	175	Construction and Mining Equip	U	P	NHH	P	1	3	16	7.0E-02	6.9E-01	3.0E-02	7.5E-01	1.6E-03	1.4E+02	0.0E+00	6.3E-03
Bore/Drill Rigs	D	250	Construction and Mining Equip	U	N	NHH	P	1	2	19	7.9E-02	7.6E-01	2.2E-02	3.4E-01	2.1E-03	1.9E+02	0.0E+00	7.2E-03
Bore/Drill Rigs	D	500	Construction and Mining Equip	U	N	NHH	P	2	5	68	1.3E-01	1.2E+00	3.6E-02	5.5E-01	3.1E-03	3.1E+02	0.0E+00	1.2E-02
Bore/Drill Rigs	D	750	Construction and Mining Equip	U	N	NHH	P	3	7	205	2.6E-01	2.3E+00	7.2E-02	1.1E+00	6.2E-03	6.1E+02	0.0E+00	2.3E-02
Bore/Drill Rigs	D	1000	Construction and Mining Equip	U	N	NHH	P	5	12	519	4.2E-01	6.0E+00	1.5E-01	1.7E+00	9.3E-03	9.3E+02	0.0E+00	3.8E-02
Excavators	D	25	Construction and Mining Equip	U	P	NHH	NP	0	2	1	2.0E-02	1.3E-01	4.7E-03	6.8E-02	2.1E-04	1.6E+01	0.0E+00	1.8E-03
Excavators	D	50	Construction and Mining Equip	U	P	NHH	NP	17	64	74	8.2E-02	2.5E-01	2.1E-02	2.8E-01	3.2E-04	2.5E+01	0.0E+00	7.4E-03
Excavators	D	120	Construction and Mining Equip	U	P	NHH	NP	45	174	586	1.1E-01	6.8E-01	5.9E-02	5.2E-01	8.6E-04	7.4E+01	0.0E+00	9.8E-03
Excavators	D	175	Construction and Mining Equip	U	P	NHH	NP	87	336	1,719	1.2E-01	8.9E-01	5.1E-02	6.7E-01	1.3E-03	1.1E+02	0.0E+00	1.1E-02
Excavators	D	250	Construction and Mining Equip	U	N	NHH	NP	35	137	982	1.2E-01	1.1E+00	3.7E-02	3.5E-01	1.8E-03	1.6E+02	0.0E+00	1.1E-02
Excavators	D	500	Construction and Mining Equip	U	N	NHH	NP	25	99	1,043	1.7E-01	1.5E+00	5.2E-02	5.3E-01	2.3E-03	2.3E+02	0.0E+00	1.6E-02
Excavators	D	750	Construction and Mining Equip	U	N	NHH	NP	2	6	111	2.9E-01	2.5E+00	8.7E-02	8.7E-01	3.9E-03	3.9E+02	0.0E+00	2.6E-02
Concrete/Industrial Saws	D	25	Construction and Mining Equip	U	P	NHH	NP	0	0	0	2.0E-02	1.3E-01	4.9E-03	6.8E-02	2.1E-04	1.6E+01	0.0E+00	1.8E-03
Concrete/Industrial Saws	D	50	Construction and Mining Equip	U	P	NHH	NP	0	1	1	9.6E-02	2.9E-01	2.5E-02	2.9E-01	3.9E-04	3.0E+01	0.0E+00	8.6E-03
Concrete/Industrial Saws	D	120	Construction and Mining Equip	U	P	NHH	NP	1	1	4	1.1E-01	7.2E-01	5.9E-02	4.8E-01	8.7E-04	7.4E+01	0.0E+00	9.6E-03
Concrete/Industrial Saws	D	175	Construction and Mining Equip	U	P	NHH	NP	0	0	0	1.6E-01	1.4E+00	7.1E-02	8.7E-01	1.8E-03	1.6E+02	0.0E+00	1.4E-02
Cement and Mortar Mixers	D	15	Construction and Mining Equip	U	P	NHH	NP	6	5	1	7.4E-03	4.7E-02	2.1E-03	3.9E-02	9.8E-05	6.3E+00	0.0E+00	6.7E-04
Cement and Mortar Mixers	D	25	Construction and Mining Equip	U	P	NHH	NP	1	0	0	2.7E-02	1.5E-01	8.3E-03	8.1E-02	2.2E-04	1.8E+01	0.0E+00	2.4E-03
Cranes	D	50	Construction and Mining Equip	U	P	NHH	P	0	1	2	1.0E-01	2.4E-01	2.4E-02	2.9E-01	3.0E-04	2.3E+01	0.0E+00	9.2E-03
Cranes	D	120	Construction and Mining Equip	U	P	NHH	P	4	15	36	9.2E-02	5.5E-01	4.9E-02	3.6E-01	5.9E-04	5.0E+01	0.0E+00	8.3E-03
Cranes	D	175	Construction and Mining Equip	U	P	NHH	P	4	15	57	1.0E-01	7.8E-01	4.5E-02	4.8E-01	9.0E-04	8.0E+01	0.0E+00	9.3E-03
Cranes	D	250	Construction and Mining Equip	U	N	NHH	P	9	30	152	1.0E-01	9.9E-01	3.5E-02	2.9E-01	1.3E-03	1.1E+02	0.0E+00	9.4E-03
Cranes	D	500	Construction and Mining Equip	U	N	NHH	P	3	11	90	1.5E-01	1.4E+00	5.2E-02	5.3E-01	1.8E-03	1.8E+02	0.0E+00	1.4E-02
Cranes	D	750	Construction and Mining Equip	U	N	NHH	P	7	24	324	2.6E-01	2.5E+00	8.8E-02	8.9E-01	3.0E-03	3.0E+02	0.0E+00	2.4E-02
Cranes	D	9999	Construction and Mining Equip	U	N	NHH	P	8	30	1,303	9.5E-01	1.0E+01	3.2E-01	3.3E+00	9.8E-03	9.7E+02	0.0E+00	8.6E-02
Graders	D	50	Construction and Mining Equip	U	P	NHH	NP	0	0	1	1.1E-01	2.8E-01	2.6E-02	3.3E-01	3.6E-04	2.8E+01	0.0E+00	9.8E-03
Graders	D	120	Construction and Mining Equip	U	P	NHH	NP	11	29	99	1.3E-01	7.7E-01	6.8E-02	5.3E-01	8.8E-04	7.5E+01	0.0E+00	1.1E-02
Graders	D	175	Construction and Mining Equip	U	P	NHH	NP	38	98	555	1.5E-01	1.1E+00	6.3E-02	7.3E-01	1.4E-03	1.2E+02	0.0E+00	1.3E-02
Graders	D	250	Construction and Mining Equip	U	N	NHH	NP	24	61	475	1.5E-01	1.4E+00	4.9E-02	4.3E-01	1.9E-03	1.7E+02	0.0E+00	1.3E-02
Graders	D	500	Construction and Mining Equip	U	N	NHH	NP	1	2	18	1.9E-01	1.7E+00	6.1E-02	6.3E-01	2.3E-03	2.3E+02	0.0E+00	1.7E-02
Graders	D	750	Construction and Mining Equip	U	N	NHH	NP	0	0	6	3.9E-01	3.7E+00	1.3E-01	1.3E+00	4.9E-03	4.9E+02	0.0E+00	3.6E-02
Off-Highway Trucks	D	175	Construction and Mining Equip	U	P	NHH	NP	1	4	24	1.4E-01	1.0E+00	6.0E-02	7.6E-01	1.4E-03	1.2E+02	0.0E+00	1.3E-02
Off-Highway Trucks	D	250	Construction and Mining Equip	U	N	NHH	NP	6	31	233	1.4E-01	1.2E+00	4.1E-02	3.8E-01	1.9E-03	1.7E+02	0.0E+00	1.3E-02
Off-Highway Trucks	D	500	Construction and Mining Equip	U	N	NHH	NP	8	44	537	2.2E-01	1.8E+00	6.3E-02	6.4E-01	2.7E-03	2.7E+02	0.0E+00	2.0E-02
Off-Highway Trucks	D	750	Construction and Mining Equip	U	N	NHH	NP	22	118	2,360	3.5E-01	3.0E+00	1.0E-01	1.0E+00	4.4E-03	4.4E+02	0.0E+00	3.2E-02
Off-Highway Trucks	D	1000	Construction and Mining Equip	U	N	NHH	NP	10	55	1,565	5.5E-01	6.0E+00	1.8E-01	1.7E+00	6.3E-03	6.2E+02	0.0E+00	4.9E-02
Crushing/Proc. Equipment	D	50	Construction and Mining Equip	U	P	NHH	P	2	5	10	1.7E-01	4.4E-01	4.2E-02	5.0E-01	5.7E-04	4.4E+01	0.0E+00	1.6E-02
Crushing/Proc. Equipment	D	120	Construction and Mining Equip	U	P	NHH	P	5	14	53	1.4E-01	8.6E-01	7.8E-02	5.8E-01	9.7E-04	8.3E+01	0.0E+00	1.3E-02
Crushing/Proc. Equipment	D	175	Construction and Mining Equip	U	P	NHH	P	2	6	45	1.9E-01	1.5E+00	8.7E-02	9.6E-01	1.9E-03	1.7E+02	0.0E+00	1.8E-02
Crushing/Proc. Equipment	D	250	Construction and Mining Equip	U	N	NHH	P	0	1	7	1.8E-01	2.0E+00	6.2E-02	5.4E-01	2.7E-03	2.4E+02	0.0E+00	1.7E-02
Crushing/Proc. Equipment	D	500	Construction and Mining Equip	U	N	NHH	P	1	3	56	2.6E-01	2.7E+00	8.8E-02	8.5E-01	3.7E-03	3.7E+02	0.0E+00	2.4E-02
Crushing/Proc. Equipment	D	750	Construction and Mining Equip	U	N	NHH	P	0	0	12	4.1E-01	4.4E+00	1.4E-01	1.3E+00	5.9E-03	5.9E+02	0.0E+00	3.7E-02
Crushing/Proc. Equipment	D	9999	Construction and Mining Equip	U	N	NHH	P	0	0	27	1.1E+00	1.3E+01	3.9E-01	3.7E+00	1.3E-02	1.3E+03	0.0E+00	1.0E-01
Rough Terrain Forklifts	D	50	Construction and Mining Equip	U	P	NHH	NP	1	4	6	1.2E-01	3.3E-01	3.0E-02	3.8E-01	4.4E-04	3.4E+01	0.0E+00	1.1E-02

Hourly emission rates are calculated based on the tons-per-year emissions and activity rates reported in wksht OFFROAD07 output.

mass conversion rate

value

2,000

unit

lb/ton

source

onlineconversion.com/weight_common.htm

Equipment	Fuel	MaxHP	Class	C/R	Pre	Handheld?	Portable?	Population	Activity (equip- hrs/day)	Fuel Consumption (gal/day)	ROG Exhaust (lb/equip-hr)	NOX Exhaust (lb/equip-hr)	PM Exhaust (lb/equip-hr)	CO Exhaust (lb/equip-hr)	SO2 Exhaust (lb/equip-hr)	CO2 Exhaust (lb/equip-hr)	N2O Exhaust (lb/equip-hr)	CH4 Exhaust (lb/equip-hr)
Rough Terrain Forklifts	D	120	Construction and Mining Equip	U	P	NHH	NP	63	195	557	9.6E-02	6.0E-01	5.3E-02	4.3E-01	7.3E-04	6.2E+01	0.0E+00	8.6E-03
Rough Terrain Forklifts	D	175	Construction and Mining Equip	U	P	NHH	NP	8	25	142	1.4E-01	1.0E+00	5.9E-02	7.3E-01	1.4E-03	1.2E+02	0.0E+00	1.2E-02
Rough Terrain Forklifts	D	250	Construction and Mining Equip	U	N	NHH	NP	0	1	11	1.3E-01	1.3E+00	4.2E-02	3.8E-01	1.9E-03	1.7E+02	0.0E+00	1.2E-02
Rough Terrain Forklifts	D	500	Construction and Mining Equip	U	N	NHH	NP	0	1	11	1.8E-01	1.7E+00	5.8E-02	5.7E-01	2.5E-03	2.6E+02	0.0E+00	1.6E-02
Rubber Tired Loaders	D	25	Construction and Mining Equip	U	P	NHH	NP	0	0	0	2.0E-02	1.3E-01	5.0E-03	7.0E-02	2.1E-04	1.7E+01	0.0E+00	1.8E-03
Rubber Tired Loaders	D	50	Construction and Mining Equip	U	P	NHH	NP	3	9	12	1.2E-01	3.1E-01	2.9E-02	3.6E-01	4.0E-04	3.1E+01	0.0E+00	1.1E-02
Rubber Tired Loaders	D	120	Construction and Mining Equip	U	P	NHH	NP	88	233	629	9.7E-02	6.0E-01	5.3E-02	4.1E-01	6.9E-04	5.9E+01	0.0E+00	8.8E-03
Rubber Tired Loaders	D	175	Construction and Mining Equip	U	P	NHH	NP	50	131	638	1.2E-01	9.5E-01	5.4E-02	6.3E-01	1.2E-03	1.1E+02	0.0E+00	1.1E-02
Rubber Tired Loaders	D	250	Construction and Mining Equip	U	N	NHH	NP	49	131	883	1.3E-01	1.2E+00	4.2E-02	3.7E-01	1.7E-03	1.5E+02	0.0E+00	1.1E-02
Rubber Tired Loaders	D	500	Construction and Mining Equip	U	N	NHH	NP	21	54	585	1.9E-01	1.7E+00	6.1E-02	6.4E-01	2.3E-03	2.4E+02	0.0E+00	1.7E-02
Rubber Tired Loaders	D	750	Construction and Mining Equip	U	N	NHH	NP	4	11	245	3.8E-01	3.6E+00	1.3E-01	1.3E+00	4.9E-03	4.9E+02	0.0E+00	3.5E-02
Rubber Tired Loaders	D	1000	Construction and Mining Equip	U	N	NHH	NP	0	1	32	5.2E-01	6.0E+00	1.8E-01	1.8E+00	6.0E-03	5.9E+02	0.0E+00	4.7E-02
Rubber Tired Dozers	D	175	Construction and Mining Equip	U	P	NHH	NP	0	1	3	2.1E-01	1.6E+00	8.9E-02	8.4E-01	1.5E-03	1.3E+02	0.0E+00	1.9E-02
Rubber Tired Dozers	D	250	Construction and Mining Equip	U	N	NHH	NP	3	13	108	2.4E-01	2.1E+00	8.8E-02	6.8E-01	2.1E-03	1.8E+02	0.0E+00	2.2E-02
Rubber Tired Dozers	D	500	Construction and Mining Equip	U	N	NHH	NP	4	20	240	3.2E-01	2.7E+00	1.1E-01	1.4E+00	2.6E-03	2.6E+02	0.0E+00	2.9E-02
Rubber Tired Dozers	D	750	Construction and Mining Equip	U	N	NHH	NP	5	20	371	4.8E-01	4.2E+00	1.7E-01	2.1E+00	4.0E-03	4.0E+02	0.0E+00	4.4E-02
Rubber Tired Dozers	D	1000	Construction and Mining Equip	U	N	NHH	NP	0	1	37	7.5E-01	7.4E+00	2.6E-01	3.4E+00	5.9E-03	5.9E+02	0.0E+00	6.8E-02
Tractors/Loaders/Backhoes	D	25	Construction and Mining Equip	U	P	NHH	NP	3	9	6	1.9E-02	1.2E-01	5.6E-03	6.6E-02	2.0E-04	1.6E+01	0.0E+00	1.8E-03
Tractors/Loaders/Backhoes	D	50	Construction and Mining Equip	U	P	NHH	NP	20	53	74	8.9E-02	2.9E-01	2.4E-02	3.2E-01	3.9E-04	3.0E+01	0.0E+00	8.1E-03
Tractors/Loaders/Backhoes	D	120	Construction and Mining Equip	U	P	NHH	NP	268	705	1,667	7.0E-02	4.6E-01	3.8E-02	3.5E-01	6.1E-04	5.2E+01	0.0E+00	6.3E-03
Tractors/Loaders/Backhoes	D	175	Construction and Mining Equip	U	P	NHH	NP	20	53	243	9.9E-02	7.7E-01	4.3E-02	5.9E-01	1.1E-03	1.0E+02	0.0E+00	8.9E-03
Tractors/Loaders/Backhoes	D	250	Construction and Mining Equip	U	N	NHH	NP	6	17	132	1.2E-01	1.2E+00	3.7E-02	3.7E-01	1.9E-03	1.7E+02	0.0E+00	1.1E-02
Tractors/Loaders/Backhoes	D	500	Construction and Mining Equip	U	N	NHH	NP	10	27	429	2.3E-01	2.1E+00	7.0E-02	7.4E-01	3.9E-03	3.4E+02	0.0E+00	2.1E-02
Tractors/Loaders/Backhoes	D	750	Construction and Mining Equip	U	N	NHH	NP	21	55	1,291	3.5E-01	3.2E+00	1.1E-01	1.1E+00	5.8E-03	5.2E+02	0.0E+00	3.1E-02
Crawler Tractors	D	50	Construction and Mining Equip	U	P	NHH	NP	0	0	1	1.2E-01	2.6E-01	2.7E-02	3.2E-01	3.2E-04	2.5E+01	0.0E+00	1.1E-02
Crawler Tractors	D	120	Construction and Mining Equip	U	P	NHH	NP	95	269	812	1.3E-01	7.7E-01	6.8E-02	4.9E-01	7.7E-04	6.6E+01	0.0E+00	1.2E-02
Crawler Tractors	D	175	Construction and Mining Equip	U	P	NHH	NP	32	91	504	1.7E-01	1.3E+00	7.1E-02	7.4E-01	1.4E-03	1.2E+02	0.0E+00	1.5E-02
Crawler Tractors	D	250	Construction and Mining Equip	U	N	NHH	NP	27	78	590	1.8E-01	1.6E+00	6.1E-02	5.0E-01	1.9E-03	1.7E+02	0.0E+00	1.6E-02
Crawler Tractors	D	500	Construction and Mining Equip	U	N	NHH	NP	19	54	632	2.5E-01	2.2E+00	8.7E-02	9.5E-01	2.5E-03	2.6E+02	0.0E+00	2.3E-02
Crawler Tractors	D	750	Construction and Mining Equip	U	N	NHH	NP	3	8	167	4.6E-01	4.1E+00	1.6E-01	1.7E+00	4.7E-03	4.6E+02	0.0E+00	4.1E-02
Crawler Tractors	D	1000	Construction and Mining Equip	U	N	NHH	NP	3	8	236	6.9E-01	7.4E+00	2.4E-01	2.7E+00	6.6E-03	6.6E+02	0.0E+00	6.2E-02
Skid Steer Loaders	D	25	Construction and Mining Equip	U	P	NHH	NP	23	52	33	2.0E-02	1.2E-01	6.3E-03	6.2E-02	1.7E-04	1.4E+01	0.0E+00	1.8E-03
Skid Steer Loaders	D	50	Construction and Mining Equip	U	P	NHH	NP	207	478	561	5.2E-02	2.3E-01	1.6E-02	2.3E-01	3.3E-04	2.5E+01	0.0E+00	4.7E-03
Skid Steer Loaders	D	120	Construction and Mining Equip	U	P	NHH	NP	109	251	489	4.3E-02	3.3E-01	2.4E-02	2.7E-01	5.0E-04	4.3E+01	0.0E+00	3.9E-03
Off-Highway Tractors	D	120	Construction and Mining Equip	U	P	NHH	NP	0	0	0	2.1E-01	1.2E+00	1.1E-01	7.2E-01	1.1E-03	9.4E+01	0.0E+00	1.9E-02
Off-Highway Tractors	D	175	Construction and Mining Equip	U	P	NHH	NP	15	44	264	2.0E-01	1.5E+00	8.7E-02	8.3E-01	1.5E-03	1.3E+02	0.0E+00	1.8E-02
Off-Highway Tractors	D	250	Construction and Mining Equip	U	N	NHH	NP	14	42	248	1.6E-01	1.4E+00	6.0E-02	4.7E-01	1.5E-03	1.3E+02	0.0E+00	1.5E-02
Off-Highway Tractors	D	750	Construction and Mining Equip	U	N	NHH	NP	17	53	1,368	6.5E-01	5.8E+00	2.4E-01	2.9E+00	5.7E-03	5.7E+02	0.0E+00	5.9E-02
Off-Highway Tractors	D	1000	Construction and Mining Equip	U	N	NHH	NP	2	6	207	9.8E-01	1.0E+01	3.4E-01	4.5E+00	8.2E-03	8.1E+02	0.0E+00	8.9E-02
Dumpers/Tenders	D	25	Construction and Mining Equip	U	P	NHH	NP	0	1	0	9.6E-03	6.0E-02	2.9E-03	3.2E-02	9.7E-05	7.6E+00	0.0E+00	8.7E-04
Other Construction Equipment	D	15	Construction and Mining Equip	U	P	NHH	NP	4	7	3	1.2E-02	7.4E-02	2.9E-03	6.2E-02	1.6E-04	1.0E+01	0.0E+00	1.1E-03
Other Construction Equipment	D	25	Construction and Mining Equip	U	P	NHH	NP	1	1	1	1.6E-02	1.0E-01	4.1E-03	5.4E-02	1.7E-04	1.3E+01	0.0E+00	1.4E-03
Other Construction Equipment	D	50	Construction and Mining Equip	U	P	NHH	NP	1	2	3	7.5E-02	2.6E-01	2.1E-02	2.7E-01	3.6E-04	2.8E+01	0.0E+00	6.8E-03
Other Construction Equipment	D	120	Construction and Mining Equip	U	P	NHH	NP	2	3	12	1.0E-01	7.0E-01	5.7E-02	5.3E-01	9.5E-04	8.1E+01	0.0E+00	9.1E-03
Other Construction Equipment	D	175	Construction and Mining Equip	U	P	NHH	NP	2	4	22	9.4E-02	8.0E-01	4.2E-02	5.9E-01	1.2E-03	1.1E+02	0.0E+00	8.4E-03
Other Construction Equipment	D	500	Construction and Mining Equip	U	N	NHH	NP	5	10	119	1.5E-01	1.5E+00	4.9E-02	5.2E-01	2.5E-03	2.5E+02	0.0E+00	1.3E-02
Aerial Lifts	D	15	Industrial Equip	U	P	NHH	NP	2	2	1	1.0E-02	6.4E-02	2.7E-03	5.3E-02	1.3E-04	8.6E+00	0.0E+00	9.1E-04
Aerial Lifts	D	25	Industrial Equip	U	P	NHH	NP	3	3	2	1.6E-02	9.3E-02	5.1E-03	5.0E-02	1.4E-04	1.1E+01	0.0E+00	1.5E-03
Aerial Lifts	D	50	Industrial Equip	U	P	NHH	NP	10	11	10	5.6E-02	1.8E-01	1.5E-02	1.7E-01	2.5E-04	2.0E+01	0.0E+00	5.1E-03
Aerial Lifts	D	120	Industrial Equip	U	P	NHH	NP	9	10	17	5.3E-02	3.7E-01	2.9E-02	2.4E-01	4.5E-04	3.8E+01	0.0E+00	4.8E-03
Aerial Lifts	D	500	Industrial Equip	U	N	NHH	NP	1	1	12	1.2E-01	1.5E+00	4.4E-02	4.6E-01	2.1E-03	2.1E+02	0.0E+00	1.0E-02
Aerial Lifts	D	750	Industrial Equip	U	N	NHH	NP	0	0	2	2.2E-01	2.8E+00	8.2E-02	8.3E-01	3.9E-03	3.8E+02	0.0E+00	1.9E-02
Forklifts	D	50	Industrial Equip	U	P	NHH	NP	3	15	10	4.3E-02	1.4E-01	1.2E-02	1.6E-01	1.9E-04	1.5E+01	0.0E+00	3.9E-03

Hourly emission rates are calculated based on the tons-per-year emissions and activity rates reported in wksht OFFROAD07 output.

mass conversion rate

value

2,000

unit

lb/ton

source

onlineconversion.com/weight_common.htm

Equipment	Fuel	MaxHP	Class	C/R	Pre	Handheld?	Portable?	Population	Activity	Fuel	ROG Exhaust (lb/equip-hr)	NOX Exhaust (lb/equip-hr)	PM Exhaust (lb/equip-hr)	CO Exhaust (lb/equip-hr)	SO2 Exhaust (lb/equip-hr)	CO2 Exhaust (lb/equip-hr)	N2O Exhaust (lb/equip-hr)	CH4 Exhaust (lb/equip-hr)
									(equip- hrs/day)	Consumption (gal/day)								
Forklifts	D	120	Industrial Equip	U	P	NHH	NP	5	24	34	4.3E-02	2.8E-01	2.4E-02	2.2E-01	3.7E-04	3.1E+01	0.0E+00	3.9E-03
Forklifts	D	175	Industrial Equip	U	P	NHH	NP	5	24	62	5.7E-02	4.2E-01	2.4E-02	3.3E-01	6.3E-04	5.6E+01	0.0E+00	5.1E-03
Forklifts	D	250	Industrial Equip	U	N	NHH	NP	5	24	84	5.7E-02	5.2E-01	1.7E-02	1.6E-01	8.7E-04	7.7E+01	0.0E+00	5.2E-03
Forklifts	D	500	Industrial Equip	U	N	NHH	NP	2	10	51	7.9E-02	6.5E-01	2.3E-02	2.2E-01	1.1E-03	1.1E+02	0.0E+00	7.1E-03
Sweepers/Scrubbers	D	15	Industrial Equip	U	N	NHH	NP	0	0	0	1.2E-02	8.7E-02	3.4E-03	7.3E-02	1.9E-04	1.2E+01	0.0E+00	1.1E-03
Sweepers/Scrubbers	D	25	Industrial Equip	U	N	NHH	NP	0	0	0	2.4E-02	1.5E-01	5.8E-03	8.1E-02	2.5E-04	2.0E+01	0.0E+00	2.1E-03
Sweepers/Scrubbers	D	50	Industrial Equip	U	N	NHH	NP	4	15	22	1.0E-01	3.1E-01	2.7E-02	3.4E-01	4.1E-04	3.2E+01	0.0E+00	9.1E-03
Sweepers/Scrubbers	D	120	Industrial Equip	U	N	NHH	NP	7	25	84	1.1E-01	6.9E-01	6.1E-02	5.1E-01	8.8E-04	7.5E+01	0.0E+00	9.7E-03
Sweepers/Scrubbers	D	175	Industrial Equip	U	N	NHH	NP	3	11	72	1.4E-01	1.1E+00	6.3E-02	8.0E-01	1.6E-03	1.4E+02	0.0E+00	1.3E-02
Sweepers/Scrubbers	D	250	Industrial Equip	U	N	NHH	NP	1	2	13	1.1E-01	1.2E+00	3.6E-02	3.4E-01	1.8E-03	1.6E+02	0.0E+00	1.0E-02
Other General Industrial Equipment	D	15	Industrial Equip	U	N	NHH	NP	1	2	1	6.6E-03	4.7E-02	1.8E-03	3.9E-02	9.9E-05	6.4E+00	0.0E+00	6.0E-04
Other General Industrial Equipment	D	25	Industrial Equip	U	N	NHH	NP	1	3	2	1.9E-02	1.2E-01	4.4E-03	6.3E-02	1.9E-04	1.5E+01	0.0E+00	1.7E-03
Other General Industrial Equipment	D	50	Industrial Equip	U	N	NHH	NP	1	4	4	9.3E-02	2.2E-01	2.3E-02	2.7E-01	2.8E-04	2.2E+01	0.0E+00	8.4E-03
Other General Industrial Equipment	D	120	Industrial Equip	U	N	NHH	NP	4	15	44	1.1E-01	6.6E-01	6.2E-02	4.5E-01	7.3E-04	6.2E+01	0.0E+00	1.0E-02
Other General Industrial Equipment	D	175	Industrial Equip	U	N	NHH	NP	4	16	68	1.2E-01	9.1E-01	5.4E-02	5.7E-01	1.1E-03	9.6E+01	0.0E+00	1.1E-02
Other General Industrial Equipment	D	250	Industrial Equip	U	N	NHH	NP	4	15	95	1.2E-01	1.2E+00	3.8E-02	3.1E-01	1.5E-03	1.4E+02	0.0E+00	1.0E-02
Other General Industrial Equipment	D	500	Industrial Equip	U	N	NHH	NP	4	15	186	2.1E-01	2.0E+00	6.9E-02	6.3E-01	2.6E-03	2.7E+02	0.0E+00	1.9E-02
Other General Industrial Equipment	D	750	Industrial Equip	U	N	NHH	NP	1	4	76	3.5E-01	3.4E+00	1.2E-01	1.0E+00	4.4E-03	4.4E+02	0.0E+00	3.2E-02
Other General Industrial Equipment	D	1000	Industrial Equip	U	N	NHH	NP	1	2	60	5.2E-01	5.9E+00	1.8E-01	1.6E+00	5.6E-03	5.6E+02	0.0E+00	4.7E-02
Other Material Handling Equipment	D	50	Industrial Equip	U	N	NHH	NP	0	0	0	1.3E-01	3.1E-01	3.1E-02	3.7E-01	3.9E-04	3.0E+01	0.0E+00	1.2E-02
Other Material Handling Equipment	D	120	Industrial Equip	U	N	NHH	NP	0	1	2	1.1E-01	6.5E-01	6.1E-02	4.3E-01	7.1E-04	6.1E+01	0.0E+00	9.9E-03
Other Material Handling Equipment	D	175	Industrial Equip	U	N	NHH	NP	0	1	4	1.5E-01	1.2E+00	6.8E-02	7.2E-01	1.4E-03	1.2E+02	0.0E+00	1.4E-02
Other Material Handling Equipment	D	250	Industrial Equip	U	N	NHH	NP	0	2	10	1.2E-01	1.3E+00	4.0E-02	3.3E-01	1.6E-03	1.4E+02	0.0E+00	1.1E-02
Other Material Handling Equipment	D	500	Industrial Equip	U	N	NHH	NP	0	0	3	1.5E-01	1.4E+00	4.9E-02	4.5E-01	1.9E-03	1.9E+02	0.0E+00	1.4E-02
Other Material Handling Equipment	D	9999	Industrial Equip	U	N	NHH	NP	0	0	3	6.9E-01	7.9E+00	2.3E-01	2.1E+00	7.3E-03	7.4E+02	0.0E+00	6.2E-02
Leaf Blowers/Vacuums	D	15	Lawn and Garden Equip	U	N	NHH	P	0	0	0	3.1E-03	2.2E-02	9.3E-04	1.8E-02	4.7E-05	3.0E+00	0.0E+00	2.8E-04
Leaf Blowers/Vacuums	D	120	Lawn and Garden Equip	U	N	NHH	P	0	0	0	5.5E-02	4.3E-01	2.9E-02	2.9E-01	5.7E-04	4.9E+01	0.0E+00	4.9E-03
Leaf Blowers/Vacuums	D	250	Lawn and Garden Equip	U	N	NHH	P	0	0	0	4.8E-02	7.1E-01	1.8E-02	1.9E-01	1.1E-03	1.0E+02	0.0E+00	4.4E-03
Snowblowers	D	175	Lawn and Garden Equip	U	P	NHH	P	0	0	0	1.2E-01	1.1E+00	5.5E-02	7.0E-01	1.5E-03	1.3E+02	0.0E+00	1.1E-02
Snowblowers	D	250	Lawn and Garden Equip	U	N	NHH	P	8	0	3	1.2E-01	1.6E+00	4.5E-02	4.2E-01	2.3E-03	2.0E+02	0.0E+00	1.1E-02
Snowblowers	D	500	Lawn and Garden Equip	U	N	NHH	P	25	1	14	1.7E-01	2.1E+00	6.3E-02	6.4E-01	2.9E-03	3.0E+02	0.0E+00	1.5E-02
Lawn & Garden Tractors	D	15	Lawn and Garden Equip	U	N	NHH	NP	249	413	175	9.8E-03	6.9E-02	3.1E-03	5.7E-02	1.4E-04	9.3E+00	0.0E+00	8.9E-04
Lawn & Garden Tractors	D	25	Lawn and Garden Equip	U	N	NHH	NP	195	323	210	1.7E-02	1.1E-01	4.7E-03	5.9E-02	1.8E-04	1.4E+01	0.0E+00	1.6E-03
Chippers/Stump Grinders	D	25	Lawn and Garden Equip	U	P	NHH	P	0	0	0	2.4E-02	1.5E-01	6.0E-03	8.3E-02	2.6E-04	2.0E+01	0.0E+00	2.2E-03
Chippers/Stump Grinders	D	120	Lawn and Garden Equip	U	P	NHH	P	3	5	16	1.1E-01	7.3E-01	5.8E-02	4.9E-01	8.9E-04	7.6E+01	0.0E+00	9.5E-03
Chippers/Stump Grinders	D	175	Lawn and Garden Equip	U	P	NHH	P	0	0	2	1.2E-01	1.1E+00	5.6E-02	7.0E-01	1.5E-03	1.3E+02	0.0E+00	1.1E-02
Chippers/Stump Grinders	D	250	Lawn and Garden Equip	U	N	NHH	P	0	0	1	1.4E-01	1.7E+00	5.1E-02	4.7E-01	2.5E-03	2.2E+02	0.0E+00	1.3E-02
Chippers/Stump Grinders	D	500	Lawn and Garden Equip	U	N	NHH	P	0	1	8	1.4E-01	1.7E+00	5.2E-02	5.4E-01	2.4E-03	2.5E+02	0.0E+00	1.3E-02
Chippers/Stump Grinders	D	750	Lawn and Garden Equip	U	N	NHH	P	1	1	21	3.4E-01	4.2E+00	1.3E-01	1.3E+00	6.0E-03	5.9E+02	0.0E+00	3.1E-02
Chippers/Stump Grinders	D	1000	Lawn and Garden Equip	U	N	NHH	P	1	1	56	6.3E-01	8.2E+00	2.3E-01	2.2E+00	8.5E-03	8.5E+02	0.0E+00	5.6E-02
Commercial Turf Equipment	D	15	Lawn and Garden Equip	U	N	NHH	NP	6	20	9	1.0E-02	7.0E-02	2.8E-03	5.9E-02	1.5E-04	9.6E+00	0.0E+00	9.0E-04
Commercial Turf Equipment	D	25	Lawn and Garden Equip	U	N	NHH	NP	118	383	253	1.7E-02	1.1E-01	4.1E-03	6.0E-02	1.8E-04	1.4E+01	0.0E+00	1.6E-03
Other Lawn & Garden Equipment	D	15	Lawn and Garden Equip	U	N	NHH	NP	0	0	0	1.3E-02	8.9E-02	3.6E-03	7.5E-02	1.9E-04	1.2E+01	0.0E+00	1.1E-03
Other Lawn & Garden Equipment	D	25	Lawn and Garden Equip	U	N	NHH	NP	0	0	0	2.0E-02	1.2E-01	4.8E-03	6.7E-02	2.1E-04	1.6E+01	0.0E+00	1.8E-03
Agricultural Tractors	D	15	Agricultural Equip	U	P	NHH	NP	279	496	238	1.2E-02	7.7E-02	3.0E-03	6.4E-02	1.6E-04	1.1E+01	0.0E+00	1.1E-03
Agricultural Tractors	D	25	Agricultural Equip	U	P	NHH	NP	343	611	562	2.4E-02	1.5E-01	6.2E-03	8.3E-02	2.6E-04	2.0E+01	0.0E+00	2.2E-03
Agricultural Tractors	D	50	Agricultural Equip	U	P	NHH	NP	801	1,272	2,015	1.1E-01	3.2E-01	2.8E-02	3.3E-01	4.4E-04	3.4E+01	0.0E+00	1.0E-02
Agricultural Tractors	D	120	Agricultural Equip	U	P	NHH	NP	926	1,472	4,902	1.1E-01	7.3E-01	5.8E-02	4.7E-01	8.5E-04	7.3E+01	0.0E+00	9.7E-03
Agricultural Tractors	D	175	Agricultural Equip	U	P	NHH	NP	522	829	4,706	1.2E-01	1.1E+00	5.5E-02	6.7E-01	1.4E-03	1.2E+02	0.0E+00	1.1E-02
Agricultural Tractors	D	250	Agricultural Equip	U	N	NHH	NP	337	535	4,318	1.2E-01	1.4E+00	4.2E-02	3.9E-01	2.0E-03	1.8E+02	0.0E+00	1.1E-02
Agricultural Tractors	D	500	Agricultural Equip	U	N	NHH	NP	67	106	1,402	1.7E-01	2.1E+00	6.5E-02	6.7E-01	2.9E-03	2.9E+02	0.0E+00	1.6E-02
Combines	D	120	Agricultural Equip	U	P	NHH	NP	20	10	42	1.2E-01	8.7E-01	6.0E-02	5.7E-01	1.1E-03	9.5E+01	0.0E+00	1.0E-02
Combines	D	175	Agricultural Equip	U	P	NHH	NP	29	15	83	1.0E-01	1.0E+00	4.3E-02	6.2E-01	1.4E-03	1.2E+02	0.0E+00	9.1E-03

Hourly emission rates are calculated based on the tons-per-year emissions and activity rates reported in wksht OFFROAD07 output.

mass conversion rate

value

2,000

unit

lb/ton

source

onlineconversion.com/weight_common.htm

Equipment	Fuel	MaxHP	Class	C/R	Pre	Handheld?	Portable?	Population	Activity	Fuel	ROG Exhaust (lb/equip-hr)	NOX Exhaust (lb/equip-hr)	PM Exhaust (lb/equip-hr)	CO Exhaust (lb/equip-hr)	SO2 Exhaust (lb/equip-hr)	CO2 Exhaust (lb/equip-hr)	N2O Exhaust (lb/equip-hr)	CH4 Exhaust (lb/equip-hr)
									(equip- hrs/day)	Consumption (gal/day)								
Combines	D	250	Agricultural Equip	U	N	NHH	NP	31	16	124	9.1E-02	1.3E+00	3.4E-02	3.5E-01	2.0E-03	1.8E+02	0.0E+00	8.2E-03
Combines	D	500	Agricultural Equip	U	N	NHH	NP	1	1	7	1.1E-01	1.6E+00	4.4E-02	4.9E-01	2.4E-03	2.4E+02	0.0E+00	1.0E-02
Balers	D	50	Agricultural Equip	U	P	NHH	NP	0	0	0	7.2E-02	3.2E-01	2.2E-02	2.5E-01	4.7E-04	3.6E+01	0.0E+00	6.5E-03
Balers	D	120	Agricultural Equip	U	P	NHH	NP	26	8	21	6.4E-02	5.0E-01	3.3E-02	3.2E-01	6.4E-04	5.5E+01	0.0E+00	5.7E-03
Agricultural Mowers	D	120	Agricultural Equip	U	P	NHH	NP	1	1	2	4.9E-02	3.4E-01	2.6E-02	2.2E-01	4.1E-04	3.5E+01	0.0E+00	4.4E-03
Sprayers	D	25	Agricultural Equip	U	P	NHH	NP	6	2	1	2.2E-02	1.1E-01	6.6E-03	6.1E-02	1.5E-04	1.2E+01	0.0E+00	2.0E-03
Sprayers	D	50	Agricultural Equip	U	P	NHH	NP	1	0	0	4.4E-02	2.0E-01	1.4E-02	1.5E-01	2.9E-04	2.3E+01	0.0E+00	4.0E-03
Sprayers	D	120	Agricultural Equip	U	P	NHH	NP	12	4	10	6.6E-02	5.2E-01	3.4E-02	3.4E-01	6.7E-04	5.7E+01	0.0E+00	6.0E-03
Sprayers	D	175	Agricultural Equip	U	P	NHH	NP	5	2	7	7.3E-02	7.6E-01	3.1E-02	4.6E-01	1.1E-03	9.5E+01	0.0E+00	6.6E-03
Sprayers	D	250	Agricultural Equip	U	N	NHH	NP	3	1	7	7.6E-02	1.1E+00	2.9E-02	3.0E-01	1.7E-03	1.6E+02	0.0E+00	6.9E-03
Sprayers	D	500	Agricultural Equip	U	N	NHH	NP	1	0	1	7.5E-02	1.1E+00	3.0E-02	3.4E-01	1.7E-03	1.7E+02	0.0E+00	6.8E-03
Tillers	D	15	Agricultural Equip	U	N	NHH	NP	0	0	0	7.2E-03	5.0E-02	2.1E-03	4.2E-02	1.1E-04	6.8E+00	0.0E+00	6.5E-04
Tillers	D	250	Agricultural Equip	U	N	NHH	NP	0	0	0	1.3E-01	1.8E+00	4.7E-02	4.8E-01	2.7E-03	2.4E+02	0.0E+00	1.1E-02
Tillers	D	500	Agricultural Equip	U	N	NHH	NP	0	0	1	2.0E-01	2.9E+00	8.0E-02	8.8E-01	4.2E-03	4.3E+02	0.0E+00	1.8E-02
Swathers	D	120	Agricultural Equip	U	P	NHH	NP	141	52	127	6.4E-02	4.9E-01	3.3E-02	3.2E-01	6.3E-04	5.4E+01	0.0E+00	5.7E-03
Swathers	D	175	Agricultural Equip	U	P	NHH	NP	1	0	2	8.1E-02	8.3E-01	3.5E-02	5.1E-01	1.2E-03	1.0E+02	0.0E+00	7.3E-03
Hydro Power Units	D	15	Agricultural Equip	U	P	NHH	NP	1	3	1	7.0E-03	4.4E-02	1.7E-03	3.7E-02	9.4E-05	6.0E+00	0.0E+00	6.3E-04
Hydro Power Units	D	25	Agricultural Equip	U	P	NHH	NP	3	9	5	1.4E-02	8.8E-02	3.5E-03	4.7E-02	1.4E-04	1.1E+01	0.0E+00	1.2E-03
Hydro Power Units	D	50	Agricultural Equip	U	P	NHH	NP	4	10	9	8.3E-02	2.1E-01	2.0E-02	2.4E-01	2.7E-04	2.1E+01	0.0E+00	7.5E-03
Hydro Power Units	D	120	Agricultural Equip	U	P	NHH	NP	0	1	2	7.1E-02	4.4E-01	3.9E-02	2.9E-01	4.9E-04	4.2E+01	0.0E+00	6.4E-03
Other Agricultural Equipment	D	15	Agricultural Equip	U	P	NHH	NP	4	6	2	8.9E-03	5.6E-02	2.3E-03	4.7E-02	1.2E-04	7.7E+00	0.0E+00	8.1E-04
Other Agricultural Equipment	D	25	Agricultural Equip	U	P	NHH	NP	11	16	10	2.0E-02	1.2E-01	6.1E-03	6.2E-02	1.8E-04	1.4E+01	0.0E+00	1.8E-03
Other Agricultural Equipment	D	50	Agricultural Equip	U	P	NHH	NP	10	12	14	7.5E-02	2.4E-01	2.0E-02	2.3E-01	3.3E-04	2.6E+01	0.0E+00	6.7E-03
Other Agricultural Equipment	D	120	Agricultural Equip	U	P	NHH	NP	32	41	96	7.2E-02	5.0E-01	3.8E-02	3.2E-01	6.0E-04	5.1E+01	0.0E+00	6.5E-03
Other Agricultural Equipment	D	175	Agricultural Equip	U	P	NHH	NP	3	3	14	8.8E-02	8.0E-01	3.9E-02	4.9E-01	1.0E-03	9.3E+01	0.0E+00	7.9E-03
Other Agricultural Equipment	D	250	Agricultural Equip	U	N	NHH	NP	3	3	21	8.3E-02	1.0E+00	3.0E-02	2.8E-01	1.5E-03	1.3E+02	0.0E+00	7.5E-03
Other Agricultural Equipment	D	500	Agricultural Equip	U	N	NHH	NP	1	1	7	1.1E-01	1.4E+00	4.1E-02	4.3E-01	1.9E-03	1.9E+02	0.0E+00	9.7E-03
Generator Sets	D	15	Light Commercial Equip	U	N	NHH	P	74	76	36	1.5E-02	1.0E-01	5.7E-03	6.8E-02	1.6E-04	1.0E+01	0.0E+00	1.3E-03
Generator Sets	D	25	Light Commercial Equip	U	N	NHH	P	54	56	45	2.6E-02	1.6E-01	8.9E-03	8.9E-02	2.2E-04	1.8E+01	0.0E+00	2.4E-03
Generator Sets	D	50	Light Commercial Equip	U	N	NHH	P	66	68	96	8.3E-02	2.8E-01	2.3E-02	2.6E-01	4.0E-04	3.1E+01	0.0E+00	7.5E-03
Generator Sets	D	120	Light Commercial Equip	U	N	NHH	P	101	104	370	1.1E-01	7.4E-01	5.7E-02	4.9E-01	9.1E-04	7.8E+01	0.0E+00	9.6E-03
Generator Sets	D	175	Light Commercial Equip	U	N	NHH	P	6	6	40	1.3E-01	1.2E+00	5.8E-02	7.4E-01	1.6E-03	1.4E+02	0.0E+00	1.2E-02
Generator Sets	D	250	Light Commercial Equip	U	N	NHH	P	3	3	33	1.2E-01	1.6E+00	4.6E-02	4.3E-01	2.4E-03	2.1E+02	0.0E+00	1.1E-02
Generator Sets	D	500	Light Commercial Equip	U	N	NHH	P	7	8	116	1.8E-01	2.3E+00	6.9E-02	7.1E-01	3.3E-03	3.4E+02	0.0E+00	1.6E-02
Generator Sets	D	750	Light Commercial Equip	U	N	NHH	P	5	5	117	2.9E-01	3.9E+00	1.1E-01	1.1E+00	5.5E-03	5.4E+02	0.0E+00	2.7E-02
Generator Sets	D	9999	Light Commercial Equip	U	N	NHH	P	1	1	59	7.7E-01	1.0E+01	2.8E-01	2.7E+00	1.1E-02	1.0E+03	0.0E+00	6.9E-02
Pumps	D	15	Light Commercial Equip	U	P	NHH	P	56	69	23	1.2E-02	7.4E-02	4.8E-03	4.9E-02	1.2E-04	7.4E+00	0.0E+00	1.1E-03
Pumps	D	25	Light Commercial Equip	U	P	NHH	P	17	20	18	3.5E-02	1.7E-01	1.1E-02	9.9E-02	2.5E-04	1.9E+01	0.0E+00	3.1E-03
Pumps	D	50	Light Commercial Equip	U	P	NHH	P	29	36	57	1.0E-01	3.2E-01	2.7E-02	3.1E-01	4.4E-04	3.4E+01	0.0E+00	9.0E-03
Pumps	D	120	Light Commercial Equip	U	P	NHH	P	57	70	249	1.1E-01	7.6E-01	6.0E-02	5.0E-01	9.1E-04	7.8E+01	0.0E+00	9.9E-03
Pumps	D	175	Light Commercial Equip	U	P	NHH	P	6	8	48	1.3E-01	1.2E+00	6.0E-02	7.4E-01	1.6E-03	1.4E+02	0.0E+00	1.2E-02
Pumps	D	250	Light Commercial Equip	U	N	NHH	P	4	5	50	1.2E-01	1.6E+00	4.5E-02	4.1E-01	2.3E-03	2.0E+02	0.0E+00	1.1E-02
Pumps	D	500	Light Commercial Equip	U	N	NHH	P	0	0	2	1.9E-01	2.4E+00	7.3E-02	7.4E-01	3.4E-03	3.4E+02	0.0E+00	1.7E-02
Pumps	D	750	Light Commercial Equip	U	N	NHH	P	0	0	0	3.2E-01	4.1E+00	1.2E-01	1.2E+00	5.7E-03	5.7E+02	0.0E+00	2.9E-02
Pumps	D	9999	Light Commercial Equip	U	N	NHH	P	0	0	24	1.0E+00	1.3E+01	3.7E-01	3.6E+00	1.4E-02	1.4E+03	0.0E+00	9.2E-02
Air Compressors	D	15	Light Commercial Equip	U	P	NHH	P	1	2	1	1.2E-02	7.2E-02	4.7E-03	4.8E-02	1.1E-04	7.2E+00	0.0E+00	1.1E-03
Air Compressors	D	25	Light Commercial Equip	U	P	NHH	P	2	4	2	2.6E-02	1.3E-01	7.9E-03	7.3E-02	1.8E-04	1.4E+01	0.0E+00	2.3E-03
Air Compressors	D	50	Light Commercial Equip	U	P	NHH	P	14	34	35	8.8E-02	2.2E-01	2.1E-02	2.5E-01	2.9E-04	2.2E+01	0.0E+00	7.9E-03
Air Compressors	D	120	Light Commercial Equip	U	P	NHH	P	91	226	486	7.9E-02	4.9E-01	4.4E-02	3.2E-01	5.5E-04	4.7E+01	0.0E+00	7.1E-03
Air Compressors	D	175	Light Commercial Equip	U	P	NHH	P	3	9	35	1.0E-01	8.2E-01	4.6E-02	5.0E-01	9.9E-04	8.8E+01	0.0E+00	9.2E-03
Air Compressors	D	250	Light Commercial Equip	U	N	NHH	P	5	12	72	9.8E-02	1.1E+00	3.4E-02	2.9E-01	1.5E-03	1.3E+02	0.0E+00	8.9E-03
Air Compressors	D	500	Light Commercial Equip	U	N	NHH	P	6	16	165	1.6E-01	1.7E+00	5.6E-02	5.3E-01	2.3E-03	2.3E+02	0.0E+00	1.4E-02
Air Compressors	D	750	Light Commercial Equip	U	N	NHH	P	2	6	95	2.5E-01	2.7E+00	8.9E-02	8.2E-01	3.6E-03	3.6E+02	0.0E+00	2.3E-02

Hourly emission rates are calculated based on the tons-per-year emissions and activity rates reported in wksht OFFROAD07 output.

mass conversion rate

value

2,000

unit

lb/ton

source

onlineconversion.com/weight_common.htm

Equipment	Fuel	MaxHP	Class	C/R	Pre	Handheld?	Portable?	Population	Activity	Fuel	ROG Exhaust (lb/equip-hr)	NOX Exhaust (lb/equip-hr)	PM Exhaust (lb/equip-hr)	CO Exhaust (lb/equip-hr)	SO2 Exhaust (lb/equip-hr)	CO2 Exhaust (lb/equip-hr)	N2O Exhaust (lb/equip-hr)	CH4 Exhaust (lb/equip-hr)
									(equip- hrs/day)	Consumption (gal/day)								
Air Compressors	D	1000	Light Commercial Equip	U	N	NHH	P	0	0	3	4.1E-01	5.0E+00	1.4E-01	1.4E+00	4.9E-03	4.9E+02	0.0E+00	3.7E-02
Welders	D	15	Light Commercial Equip	U	P	NHH	P	25	49	14	1.0E-02	6.2E-02	4.0E-03	4.1E-02	9.7E-05	6.2E+00	0.0E+00	9.2E-04
Welders	D	25	Light Commercial Equip	U	P	NHH	P	22	43	22	2.0E-02	1.0E-01	6.2E-03	5.7E-02	1.4E-04	1.1E+01	0.0E+00	1.8E-03
Welders	D	50	Light Commercial Equip	U	P	NHH	P	68	134	161	9.3E-02	2.5E-01	2.3E-02	2.7E-01	3.4E-04	2.6E+01	0.0E+00	8.4E-03
Welders	D	120	Light Commercial Equip	U	P	NHH	P	53	104	188	6.3E-02	4.0E-01	3.5E-02	2.6E-01	4.6E-04	3.9E+01	0.0E+00	5.7E-03
Welders	D	175	Light Commercial Equip	U	P	NHH	P	0	1	2	1.1E-01	8.8E-01	4.8E-02	5.4E-01	1.1E-03	9.8E+01	0.0E+00	9.6E-03
Welders	D	250	Light Commercial Equip	U	N	NHH	P	0	0	1	8.3E-02	9.8E-01	3.0E-02	2.6E-01	1.3E-03	1.2E+02	0.0E+00	7.5E-03
Welders	D	500	Light Commercial Equip	U	N	NHH	P	0	0	2	1.1E-01	1.2E+00	3.9E-02	3.8E-01	1.6E-03	1.7E+02	0.0E+00	9.6E-03
Pressure Washers	D	15	Light Commercial Equip	U	N	NHH	P	3	2	0	7.0E-03	4.8E-02	2.7E-03	3.2E-02	7.6E-05	4.9E+00	0.0E+00	6.3E-04
Pressure Washers	D	25	Light Commercial Equip	U	N	NHH	P	1	0	0	1.1E-02	6.4E-02	3.6E-03	3.6E-02	9.1E-05	7.1E+00	0.0E+00	9.6E-04
Pressure Washers	D	50	Light Commercial Equip	U	P	NHH	P	2	1	0	3.0E-02	1.3E-01	9.1E-03	1.0E-01	1.8E-04	1.4E+01	0.0E+00	2.7E-03
Pressure Washers	D	120	Light Commercial Equip	U	P	NHH	P	1	0	0	2.9E-02	2.2E-01	1.5E-02	1.4E-01	2.8E-04	2.4E+01	0.0E+00	2.6E-03
Shredders	D	175	Logging Equip	U	P	NHH	NP	0	0	0	6.2E-02	6.1E-01	2.7E-02	3.5E-01	7.9E-04	7.0E+01	0.0E+00	5.6E-03
Skidders	D	120	Logging Equip	U	P	NHH	NP	37	146	631	9.9E-02	7.4E-01	5.6E-02	6.3E-01	1.1E-03	9.5E+01	0.0E+00	9.0E-03
Skidders	D	175	Logging Equip	U	P	NHH	NP	60	234	1,491	1.1E-01	9.1E-01	5.0E-02	8.0E-01	1.6E-03	1.4E+02	0.0E+00	1.0E-02
Skidders	D	250	Logging Equip	U	N	NHH	NP	22	86	819	1.3E-01	1.2E+00	4.0E-02	4.1E-01	2.4E-03	2.1E+02	0.0E+00	1.2E-02
Skidders	D	500	Logging Equip	U	N	NHH	NP	1	5	55	1.5E-01	1.3E+00	4.6E-02	4.7E-01	2.5E-03	2.5E+02	0.0E+00	1.4E-02
Fellers/Bunchers	D	120	Logging Equip	U	P	NHH	NP	81	281	1,176	9.3E-02	7.1E-01	5.4E-02	6.0E-01	1.1E-03	9.2E+01	0.0E+00	8.4E-03
Fellers/Bunchers	D	175	Logging Equip	U	P	NHH	NP	100	347	2,141	1.1E-01	8.7E-01	4.7E-02	7.7E-01	1.5E-03	1.4E+02	0.0E+00	9.6E-03
Fellers/Bunchers	D	250	Logging Equip	U	N	NHH	NP	61	212	1,870	1.2E-01	1.1E+00	3.6E-02	3.8E-01	2.2E-03	1.9E+02	0.0E+00	1.1E-02
Fellers/Bunchers	D	500	Logging Equip	U	N	NHH	NP	18	62	825	1.7E-01	1.5E+00	5.3E-02	5.4E-01	2.9E-03	2.9E+02	0.0E+00	1.5E-02
Fellers/Bunchers	D	750	Logging Equip	U	N	NHH	NP	1	5	125	3.4E-01	3.0E+00	1.1E-01	1.1E+00	5.8E-03	5.8E+02	0.0E+00	3.1E-02
Cargo Tractor	D	120	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
A/C Tug Narrow Body	D	250	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
A/C Tug Wide Body	D	500	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Air Conditioner	D	175	Airport Ground Support Equip	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Air Conditioner	D	250	Airport Ground Support Equip	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Air Conditioner	D	500	Airport Ground Support Equip	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Air Start Unit	D	175	Airport Ground Support Equip	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Air Start Unit	D	250	Airport Ground Support Equip	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Air Start Unit	D	500	Airport Ground Support Equip	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Air Start Unit	D	750	Airport Ground Support Equip	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Baggage Tug	D	120	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Belt Loader	D	120	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Bobtail	D	120	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Cargo Loader	D	120	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Forklift	D	175	Airport Ground Support Equip	U	P	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Fuel Truck	D	250	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Ground Power Unit	D	175	Airport Ground Support Equip	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Lav Truck	D	175	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Lift	D	120	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Other GSE	D	175	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Passenger Stand	D	120	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Sweeper	D	120	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Generator	D	120	Airport Ground Support Equip	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Generator	D	175	Airport Ground Support Equip	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Generator	D	250	Airport Ground Support Equip	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Generator	D	500	Airport Ground Support Equip	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Generator	D	750	Airport Ground Support Equip	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Service Truck	D	175	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Catering Truck	D	250	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Hydrant Truck	D	175	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Compressor (GSE)	D	120	Airport Ground Support Equip	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA

Hourly emission rates are calculated based on the tons-per-year emissions and activity rates reported in wksht OFFROAD07 output.

mass conversion rate

value

2,000

unit

lb/ton

source

onlineconversion.com/weight_common.htm

Equipment	Fuel	MaxHP	Class	C/R	Pre	Handheld?	Portable?	Population	Activity (equip- hrs/day)	Fuel Consumption (gal/day)	ROG Exhaust (lb/equip-hr)	NOX Exhaust (lb/equip-hr)	PM Exhaust (lb/equip-hr)	CO Exhaust (lb/equip-hr)	SO2 Exhaust (lb/equip-hr)	CO2 Exhaust (lb/equip-hr)	N2O Exhaust (lb/equip-hr)	CH4 Exhaust (lb/equip-hr)
Compressor (GSE)	D	250	Airport Ground Support Equip	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Compressor (GSE)	D	500	Airport Ground Support Equip	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Compressor (GSE)	D	750	Airport Ground Support Equip	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Transport Refrigeration Units	D	15	Transport Refrigeration Units	U	N	NHH	NP	206	581	213	8.6E-03	6.0E-02	2.8E-03	4.9E-02	1.0E-04	8.0E+00	0.0E+00	7.7E-04
Transport Refrigeration Units	D	25	Transport Refrigeration Units	U	N	NHH	NP	71	202	125	1.7E-02	1.1E-01	4.7E-03	5.6E-02	1.7E-04	1.4E+01	0.0E+00	1.5E-03
Transport Refrigeration Units	D	50	Transport Refrigeration Units	U	N	NHH	NP	1,536	6,122	7,269	3.2E-02	2.2E-01	1.2E-02	2.1E-01	3.3E-04	2.6E+01	0.0E+00	2.9E-03
Compressors (Workover)	D	25	Oil Drilling	U	P	NHH	P	0	0	0	2.2E-02	1.3E-01	7.4E-03	7.4E-02	1.8E-04	1.4E+01	0.0E+00	2.0E-03
Compressors (Workover)	D	120	Oil Drilling	U	P	NHH	P	0	0	0	1.2E-01	7.4E-01	6.9E-02	4.9E-01	8.1E-04	6.9E+01	0.0E+00	1.1E-02
Compressors (Workover)	D	175	Oil Drilling	U	P	NHH	P	0	0	0	1.4E-01	1.1E+00	6.3E-02	6.8E-01	1.3E-03	1.2E+02	0.0E+00	1.3E-02
Compressors (Workover)	D	250	Oil Drilling	U	N	NHH	P	0	0	0	1.4E-01	1.4E+00	4.6E-02	3.9E-01	1.8E-03	1.6E+02	0.0E+00	1.3E-02
Compressors (Workover)	D	500	Oil Drilling	U	N	NHH	P	0	0	0	2.5E-01	2.4E+00	8.2E-02	7.7E-01	3.0E-03	3.1E+02	0.0E+00	2.2E-02
Compressors (Workover)	D	750	Oil Drilling	U	N	NHH	P	0	0	0	2.5E-01	2.5E+00	8.6E-02	7.8E-01	3.1E-03	3.2E+02	0.0E+00	2.3E-02
Compressors (Workover)	D	1000	Oil Drilling	U	N	NHH	P	0	0	0	5.1E-01	6.0E+00	1.8E-01	1.7E+00	5.6E-03	5.7E+02	0.0E+00	4.6E-02
Pump (Workover)	D	120	Oil Drilling	U	P	NHH	P	0	0	0	1.3E-01	7.9E-01	7.3E-02	5.3E-01	8.6E-04	7.4E+01	0.0E+00	1.2E-02
Pump (Workover)	D	175	Oil Drilling	U	P	NHH	P	0	0	0	1.4E-01	1.0E+00	6.0E-02	6.4E-01	1.2E-03	1.1E+02	0.0E+00	1.2E-02
Pump (Workover)	D	250	Oil Drilling	U	N	NHH	P	0	0	0	1.3E-01	1.3E+00	4.4E-02	3.7E-01	1.7E-03	1.5E+02	0.0E+00	1.2E-02
Pump (Workover)	D	500	Oil Drilling	U	N	NHH	P	0	0	1	2.3E-01	2.2E+00	7.6E-02	7.1E-01	2.8E-03	2.9E+02	0.0E+00	2.1E-02
Pump (Workover)	D	9999	Oil Drilling	U	N	NHH	P	0	0	1	1.1E+00	1.2E+01	3.6E-01	3.5E+00	1.1E-02	1.2E+03	0.0E+00	9.7E-02
Generator (Workover)	D	120	Oil Drilling	U	P	NHH	P	0	0	0	1.3E-01	7.6E-01	7.0E-02	5.0E-01	8.3E-04	7.1E+01	0.0E+00	1.2E-02
Generator (Workover)	D	175	Oil Drilling	U	P	NHH	P	0	0	0	1.4E-01	1.0E+00	6.0E-02	6.4E-01	1.2E-03	1.1E+02	0.0E+00	1.2E-02
Generator (Workover)	D	250	Oil Drilling	U	N	NHH	P	0	0	0	1.2E-01	1.2E+00	4.0E-02	3.3E-01	1.6E-03	1.4E+02	0.0E+00	1.1E-02
Generator (Workover)	D	500	Oil Drilling	U	N	NHH	P	0	0	0	2.2E-01	2.1E+00	7.3E-02	6.8E-01	2.7E-03	2.7E+02	0.0E+00	2.0E-02
Generator (Workover)	D	750	Oil Drilling	U	N	NHH	P	0	0	0	2.6E-01	2.5E+00	8.7E-02	8.0E-01	3.2E-03	3.2E+02	0.0E+00	2.3E-02
Generator (Workover)	D	9999	Oil Drilling	U	N	NHH	P	0	0	0	9.4E-01	1.1E+01	3.2E-01	3.0E+00	1.0E-02	1.0E+03	0.0E+00	8.5E-02
Swivel	D	120	Oil Drilling	U	P	NHH	P	0	0	0	1.4E-01	8.4E-01	7.8E-02	5.6E-01	9.2E-04	7.8E+01	0.0E+00	1.3E-02
Swivel	D	175	Oil Drilling	U	P	NHH	P	0	0	0	1.2E-01	9.4E-01	5.5E-02	5.9E-01	1.1E-03	9.9E+01	0.0E+00	1.1E-02
Swivel	D	250	Oil Drilling	U	N	NHH	P	0	0	0	1.4E-01	1.4E+00	4.6E-02	3.9E-01	1.8E-03	1.6E+02	0.0E+00	1.3E-02
Swivel	D	500	Oil Drilling	U	N	NHH	P	0	0	0	1.3E-01	2.0E+00	5.3E-02	5.9E-01	2.9E-03	2.9E+02	0.0E+00	1.2E-02
Snubbing	D	120	Oil Drilling	U	P	NHH	P	0	0	0	1.4E-01	8.1E-01	7.5E-02	5.4E-01	8.8E-04	7.5E+01	0.0E+00	1.2E-02
Other Workover Equipment	D	120	Oil Drilling	U	P	NHH	P	0	0	0	1.2E-01	7.2E-01	6.6E-02	4.8E-01	7.8E-04	6.7E+01	0.0E+00	1.1E-02
Other Workover Equipment	D	175	Oil Drilling	U	P	NHH	P	0	0	0	1.4E-01	1.1E+00	6.2E-02	6.7E-01	1.3E-03	1.1E+02	0.0E+00	1.3E-02
Other Workover Equipment	D	250	Oil Drilling	U	N	NHH	P	0	0	0	1.4E-01	1.4E+00	4.6E-02	3.9E-01	1.8E-03	1.6E+02	0.0E+00	1.3E-02
Other Workover Equipment	D	750	Oil Drilling	U	N	NHH	P	0	0	0	2.5E-01	2.4E+00	8.4E-02	7.7E-01	3.0E-03	3.1E+02	0.0E+00	2.2E-02
Other Workover Equipment	D	1000	Oil Drilling	U	N	NHH	P	0	0	0	6.7E-01	7.8E+00	2.3E-01	2.2E+00	7.3E-03	7.4E+02	0.0E+00	6.0E-02
Lift (Drilling)	D	120	Oil Drilling	U	P	NHH	P	0	0	0	1.5E-01	8.9E-01	8.2E-02	5.9E-01	9.7E-04	8.3E+01	0.0E+00	1.3E-02
Lift (Drilling)	D	175	Oil Drilling	U	P	NHH	P	0	0	0	1.4E-01	1.1E+00	6.1E-02	6.5E-01	1.2E-03	1.1E+02	0.0E+00	1.3E-02
Lift (Drilling)	D	250	Oil Drilling	U	N	NHH	P	0	0	0	1.5E-01	1.5E+00	4.9E-02	4.1E-01	1.9E-03	1.7E+02	0.0E+00	1.3E-02
Lift (Drilling)	D	500	Oil Drilling	U	N	NHH	P	0	0	0	2.3E-01	2.2E+00	7.7E-02	7.2E-01	2.8E-03	2.9E+02	0.0E+00	2.1E-02
Lift (Drilling)	D	750	Oil Drilling	U	N	NHH	P	0	0	0	2.3E-01	2.3E+00	7.8E-02	7.1E-01	2.8E-03	2.9E+02	0.0E+00	2.1E-02
Pump (Drilling)	D	120	Oil Drilling	U	P	NHH	P	0	0	0	1.3E-01	7.8E-01	7.2E-02	5.2E-01	8.6E-04	7.3E+01	0.0E+00	1.2E-02
Pump (Drilling)	D	175	Oil Drilling	U	P	NHH	P	0	0	0	1.4E-01	1.0E+00	5.9E-02	6.4E-01	1.2E-03	1.1E+02	0.0E+00	1.2E-02
Pump (Drilling)	D	250	Oil Drilling	U	N	NHH	P	0	0	0	1.5E-01	1.5E+00	5.0E-02	4.2E-01	1.9E-03	1.7E+02	0.0E+00	1.3E-02
Pump (Drilling)	D	500	Oil Drilling	U	N	NHH	P	0	0	1	2.3E-01	2.2E+00	7.8E-02	7.3E-01	3.3E-03	2.9E+02	0.0E+00	2.1E-02
Pump (Drilling)	D	750	Oil Drilling	U	N	NHH	P	0	0	1	3.5E-01	3.5E+00	1.2E-01	1.1E+00	4.3E-03	4.4E+02	0.0E+00	3.2E-02
Pump (Drilling)	D	9999	Oil Drilling	U	N	NHH	P	0	0	0	7.3E-01	8.4E+00	2.5E-01	2.4E+00	7.8E-03	7.9E+02	0.0E+00	6.6E-02
Generator (Drilling)	D	50	Oil Drilling	U	P	NHH	P	0	0	0	1.1E-01	2.5E-01	2.5E-02	3.0E-01	3.2E-04	2.5E+01	0.0E+00	9.6E-03
Generator (Drilling)	D	120	Oil Drilling	U	P	NHH	P	0	0	0	1.4E-01	8.1E-01	7.5E-02	5.4E-01	8.8E-04	7.5E+01	0.0E+00	1.2E-02
Generator (Drilling)	D	175	Oil Drilling	U	P	NHH	P	0	0	0	1.3E-01	9.7E-01	5.6E-02	6.0E-01	1.2E-03	1.0E+02	0.0E+00	1.2E-02
Generator (Drilling)	D	250	Oil Drilling	U	N	NHH	P	0	0	0	1.2E-01	1.3E+00	4.1E-02	3.5E-01	1.6E-03	1.4E+02	0.0E+00	1.1E-02
Generator (Drilling)	D	500	Oil Drilling	U	N	NHH	P	0	0	0	2.4E-01	2.2E+00	7.7E-02	7.1E-01	2.7E-03	2.8E+02	0.0E+00	2.2E-02
Generator (Drilling)	D	750	Oil Drilling	U	N	NHH	P	0	0	0	2.3E-01	2.3E+00	7.9E-02	7.3E-01	2.9E-03	2.9E+02	0.0E+00	2.1E-02
Drill Rig	D	120	Oil Drilling	U	P	NHH	P	0	0	0	2.4E-02	3.8E-01	1.4E-02	4.7E-01	9.8E-04	8.4E+01	0.0E+00	2.1E-03
Drill Rig	D	175	Oil Drilling	U	N	NHH	P	0	0	0	4.2E-02	6.0E-01	1.5E-02	7.5E-01	1.7E-03	1.5E+02	0.0E+00	3.8E-03

Hourly emission rates are calculated based on the tons-per-year emissions and activity rates reported in wksht OFFROAD07 output.

mass conversion rate

value

2,000

unit

lb/ton

source

onlineconversion.com/weight_common.htm

Equipment	Fuel	MaxHP	Class	C/R	Pre	Handheld?	Portable?	Population	Activity	Fuel	ROG Exhaust (lb/equip-hr)	NOX Exhaust (lb/equip-hr)	PM Exhaust (lb/equip-hr)	CO Exhaust (lb/equip-hr)	SO2 Exhaust (lb/equip-hr)	CO2 Exhaust (lb/equip-hr)	N2O Exhaust (lb/equip-hr)	CH4 Exhaust (lb/equip-hr)
									(equip- hrs/day)	Consumption (gal/day)								
Drill Rig	D	250	Oil Drilling	U	N	NHH	P	0	0	0	4.5E-02	5.1E-01	7.2E-03	3.4E-01	2.3E-03	2.0E+02	0.0E+00	4.1E-03
Drill Rig	D	500	Oil Drilling	U	N	NHH	P	0	0	1	8.2E-02	9.3E-01	1.3E-02	6.1E-01	3.6E-03	3.7E+02	0.0E+00	7.4E-03
Drill Rig	D	750	Oil Drilling	U	N	NHH	P	0	0	0	1.3E-01	1.4E+00	2.0E-02	9.5E-01	5.7E-03	5.7E+02	0.0E+00	1.1E-02
Drill Rig	D	1000	Oil Drilling	U	N	NHH	P	0	0	5	3.2E-01	6.3E+00	1.5E-01	2.4E+00	1.4E-02	1.4E+03	0.0E+00	2.9E-02
Drill Rig (Mobile)	D	50	Oil Drilling	U	P	NHH	NP	0	0	0	1.9E-01	3.5E-01	4.0E-02	4.7E-01	4.0E-04	3.1E+01	0.0E+00	1.7E-02
Drill Rig (Mobile)	D	120	Oil Drilling	U	P	NHH	NP	0	0	0	2.0E-01	1.1E+00	9.6E-02	6.3E-01	9.0E-04	7.7E+01	0.0E+00	1.8E-02
Drill Rig (Mobile)	D	175	Oil Drilling	U	N	NHH	NP	0	0	0	2.5E-01	1.8E+00	1.0E-01	9.6E-01	1.6E-03	1.4E+02	0.0E+00	2.3E-02
Drill Rig (Mobile)	D	250	Oil Drilling	U	N	NHH	NP	0	0	0	2.8E-01	2.3E+00	1.0E-01	7.7E-01	2.1E-03	1.9E+02	0.0E+00	2.5E-02
Drill Rig (Mobile)	D	500	Oil Drilling	U	N	NHH	NP	0	0	0	4.2E-01	3.5E+00	1.5E-01	2.0E+00	3.1E-03	3.1E+02	0.0E+00	3.8E-02
Drill Rig (Mobile)	D	750	Oil Drilling	U	N	NHH	NP	0	0	0	8.3E-01	6.9E+00	2.9E-01	3.9E+00	6.2E-03	6.1E+02	0.0E+00	7.5E-02
Drill Rig (Mobile)	D	1000	Oil Drilling	U	N	NHH	NP	0	0	0	1.3E+00	1.2E+01	4.5E-01	6.3E+00	9.3E-03	9.3E+02	0.0E+00	1.2E-01
Workover Rig (Mobile)	D	50	Oil Drilling	U	P	NHH	NP	0	0	0	1.9E-01	3.5E-01	4.0E-02	4.7E-01	4.0E-04	3.1E+01	0.0E+00	1.7E-02
Workover Rig (Mobile)	D	120	Oil Drilling	U	P	NHH	NP	0	0	1	2.0E-01	1.1E+00	9.6E-02	6.3E-01	9.0E-04	7.7E+01	0.0E+00	1.8E-02
Workover Rig (Mobile)	D	175	Oil Drilling	U	N	NHH	NP	0	0	0	2.5E-01	1.8E+00	1.0E-01	9.6E-01	1.6E-03	1.4E+02	0.0E+00	2.3E-02
Workover Rig (Mobile)	D	250	Oil Drilling	U	N	NHH	NP	0	0	0	2.8E-01	2.3E+00	1.0E-01	7.7E-01	2.1E-03	1.9E+02	0.0E+00	2.5E-02
Workover Rig (Mobile)	D	500	Oil Drilling	U	N	NHH	NP	0	0	2	4.2E-01	3.5E+00	1.5E-01	2.0E+00	3.1E-03	3.1E+02	0.0E+00	3.8E-02
Workover Rig (Mobile)	D	750	Oil Drilling	U	N	NHH	NP	0	0	2	8.3E-01	6.9E+00	2.9E-01	3.9E+00	6.2E-03	6.1E+02	0.0E+00	7.5E-02
Workover Rig (Mobile)	D	1000	Oil Drilling	U	N	NHH	NP	0	0	5	1.3E+00	1.2E+01	4.5E-01	6.3E+00	9.3E-03	9.3E+02	0.0E+00	1.2E-01
Pressure Washers	D	250	Oil Drilling	U	N	NHH	P	0	0	0	3.9E-02	3.7E-01	5.5E-03	2.5E-01	1.6E-03	1.4E+02	0.0E+00	3.5E-03
A/C unit	D	120	Military Tactical Support Equip	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
A/C unit	D	250	Military Tactical Support Equip	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
A/C unit	D	500	Military Tactical Support Equip	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Aircraft Support	D	120	Military Tactical Support Equip	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Aircraft Support	D	175	Military Tactical Support Equip	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Cart	D	120	Military Tactical Support Equip	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Cart	D	175	Military Tactical Support Equip	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Cart	D	250	Military Tactical Support Equip	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Communications	D	50	Military Tactical Support Equip	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Communications	D	120	Military Tactical Support Equip	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Compressor (Military)	D	50	Military Tactical Support Equip	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Compressor (Military)	D	120	Military Tactical Support Equip	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Compressor (Military)	D	175	Military Tactical Support Equip	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Compressor (Military)	D	250	Military Tactical Support Equip	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Compressor (Military)	D	500	Military Tactical Support Equip	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Crane	D	120	Military Tactical Support Equip	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Crane	D	175	Military Tactical Support Equip	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Crane	D	250	Military Tactical Support Equip	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Deicer	D	120	Military Tactical Support Equip	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Generator (Military)	D	50	Military Tactical Support Equip	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Generator (Military)	D	120	Military Tactical Support Equip	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Generator (Military)	D	175	Military Tactical Support Equip	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Generator (Military)	D	250	Military Tactical Support Equip	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Generator (Military)	D	500	Military Tactical Support Equip	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Generator (Military)	D	750	Military Tactical Support Equip	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Hydraulic unit	D	120	Military Tactical Support Equip	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Lift (Military)	D	120	Military Tactical Support Equip	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Light	D	50	Military Tactical Support Equip	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Pressure Washers	D	175	Military Tactical Support Equip	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Pump (Military)	D	50	Military Tactical Support Equip	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Pump (Military)	D	120	Military Tactical Support Equip	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Start Cart	D	120	Military Tactical Support Equip	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Start Cart	D	500	Military Tactical Support Equip	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Test Stand	D	120	Military Tactical Support Equip	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA

Hourly emission rates are calculated based on the tons-per-year emissions and activity rates reported in wksht OFFROAD07 output.

mass conversion rate

value

2,000

unit

lb/ton

source

onlineconversion.com/weight_common.htm

Equipment	Fuel	MaxHP	Class	C/R	Pre	Handheld?	Portable?	Population	Activity (equip- hrs/day)	Fuel Consumption (gal/day)	ROG Exhaust (lb/equip-hr)	NOX Exhaust (lb/equip-hr)	PM Exhaust (lb/equip-hr)	CO Exhaust (lb/equip-hr)	SO2 Exhaust (lb/equip-hr)	CO2 Exhaust (lb/equip-hr)	N2O Exhaust (lb/equip-hr)	CH4 Exhaust (lb/equip-hr)
Test Stand	D	175	Military Tactical Support Equip	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Test Stand	D	250	Military Tactical Support Equip	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Test Stand	D	500	Military Tactical Support Equip	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Welder	D	50	Military Tactical Support Equip	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Welder	D	120	Military Tactical Support Equip	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Other tactical support equipment	D	50	Military Tactical Support Equip	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Other tactical support equipment	D	120	Military Tactical Support Equip	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Other tactical support equipment	D	175	Military Tactical Support Equip	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Other tactical support equipment	D	250	Military Tactical Support Equip	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Other tactical support equipment	D	500	Military Tactical Support Equip	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Other tactical support equipment	D	750	Military Tactical Support Equip	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Compressor (Dredging)	D	50	Dredging	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Compressor (Dredging)	D	120	Dredging	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Compressor (Dredging)	D	175	Dredging	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Compressor (Dredging)	D	250	Dredging	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Compressor (Dredging)	D	500	Dredging	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Compressor (Dredging)	D	1000	Dredging	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Crane (Dredging)	D	750	Dredging	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Deck/door engine	D	250	Dredging	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Dredger	D	175	Dredging	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Dredger	D	250	Dredging	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Dredger	D	750	Dredging	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Dredger	D	9999	Dredging	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Hoist/swing/winch	D	50	Dredging	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Hoist/swing/winch	D	120	Dredging	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Hoist/swing/winch	D	175	Dredging	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Hoist/swing/winch	D	250	Dredging	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Hoist/swing/winch	D	500	Dredging	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Hoist/swing/winch	D	750	Dredging	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Hoist/swing/winch	D	9999	Dredging	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Pump (Dredging)	D	120	Dredging	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Pump (Dredging)	D	175	Dredging	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Pump (Dredging)	D	250	Dredging	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Pump (Dredging)	D	500	Dredging	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Pump (Dredging)	D	750	Dredging	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Pump (Dredging)	D	9999	Dredging	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Generator (Dredging)	D	50	Dredging	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Generator (Dredging)	D	120	Dredging	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Generator (Dredging)	D	175	Dredging	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Generator (Dredging)	D	250	Dredging	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Generator (Dredging)	D	500	Dredging	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Generator (Dredging)	D	750	Dredging	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Generator (Dredging)	D	9999	Dredging	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Other (Dredging)	D	120	Dredging	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Other (Dredging)	D	175	Dredging	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Other (Dredging)	D	250	Dredging	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Other (Dredging)	D	500	Dredging	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Misc Portable Equipment	D	120	Other Portable Equip	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Misc Portable Equipment	D	175	Other Portable Equip	U	P	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Misc Portable Equipment	D	250	Other Portable Equip	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Misc Portable Equipment	D	500	Other Portable Equip	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Misc Portable Equipment	D	750	Other Portable Equip	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Misc Portable Equipment	D	1000	Other Portable Equip	U	N	NHH	P	0	0	0	NA	NA	NA	NA	NA	NA	NA	NA

Hourly emission rates are calculated based on the tons-per-year emissions and activity rates reported in wksht OFFROAD07 output.

mass conversion rate value
2,000 unit source
lb/ton onlineconversion.com/weight_common.htm

Equipment	Fuel	MaxHP	Class	C/R	Pre	Handheld?	Portable?	Population	Activity (equip- hrs/day)	Fuel Consumption (gal/day)	ROG Exhaust (lb/equip-hr)	NOX Exhaust (lb/equip-hr)	PM Exhaust (lb/equip-hr)	CO Exhaust (lb/equip-hr)	SO2 Exhaust (lb/equip-hr)	CO2 Exhaust (lb/equip-hr)	N2O Exhaust (lb/equip-hr)	CH4 Exhaust (lb/equip-hr)
Generator (Entertainment)	D	50	Entertainment Equip	U	P	NHH	P	0	0	0	1.2E-01	4.0E-01	3.3E-02	3.7E-01	5.6E-04	4.4E+01	0.0E+00	1.1E-02
Generator (Entertainment)	D	120	Entertainment Equip	U	P	NHH	P	1	1	5	1.2E-01	8.6E-01	6.6E-02	5.6E-01	1.0E-03	8.9E+01	0.0E+00	1.1E-02
Generator (Entertainment)	D	175	Entertainment Equip	U	N	NHH	P	1	1	6	1.4E-01	1.3E+00	6.1E-02	7.8E-01	1.7E-03	1.5E+02	0.0E+00	1.2E-02
Generator (Entertainment)	D	250	Entertainment Equip	U	N	NHH	P	2	1	13	1.2E-01	1.5E+00	4.5E-02	4.2E-01	2.2E-03	2.0E+02	0.0E+00	1.1E-02
Generator (Entertainment)	D	500	Entertainment Equip	U	N	NHH	P	2	2	28	1.5E-01	1.9E+00	5.9E-02	6.2E-01	2.7E-03	2.8E+02	0.0E+00	1.4E-02
Generator (Entertainment)	D	750	Entertainment Equip	U	N	NHH	P	0	0	9	3.1E-01	3.9E+00	1.2E-01	1.2E+00	5.5E-03	5.4E+02	0.0E+00	2.8E-02
Generator (Entertainment)	D	9999	Entertainment Equip	U	N	NHH	P	0	0	2	7.2E-01	9.3E+00	2.6E-01	2.6E+00	9.7E-03	9.6E+02	0.0E+00	6.5E-02
Compressor (Entertainment)	D	120	Entertainment Equip	U	P	NHH	P	0	0	0	5.9E-02	3.7E-01	3.3E-02	2.4E-01	4.1E-04	3.5E+01	0.0E+00	5.3E-03
Compressor (Railyard)	D	120	Railyard Operations	U	P	NHH	P	0	0	0	5.5E-02	3.4E-01	3.0E-02	2.2E-01	3.8E-04	3.2E+01	0.0E+00	5.0E-03
Crane (Rail-CHE)	D	120	Railyard Operations	U	P	NHH	P	0	0	0	9.1E-02	5.7E-01	5.0E-02	3.7E-01	6.3E-04	5.4E+01	0.0E+00	8.2E-03
Crane (Rail-CHE)	D	175	Railyard Operations	U	P	NHH	P	0	0	0	6.3E-02	5.8E-01	2.8E-02	3.6E-01	7.7E-04	6.8E+01	0.0E+00	5.7E-03
Materials Handling (Rail-CHE)	D	120	Railyard Operations	U	P	NHH	P	0	0	0	1.0E-01	6.2E-01	5.5E-02	4.1E-01	6.7E-04	5.9E+01	0.0E+00	9.0E-03
Generator (Railyard)	D	175	Railyard Operations	U	P	NHH	P	0	0	0	1.3E-01	1.2E+00	5.7E-02	7.2E-01	1.6E-03	1.4E+02	0.0E+00	1.2E-02
Generator (Railyard)	D	9999	Railyard Operations	U	N	NHH	P	0	0	0	6.5E-01	8.5E+00	2.3E-01	2.4E+00	8.8E-03	8.8E+02	0.0E+00	5.9E-02
Vessels w/Outboard Engines	G2	2	Pleasure Craft	U	N	NHH	NP	541	116	8	1.3E-01	5.7E-04	1.0E-02	1.6E-01	1.7E-05	6.1E-01	4.5E-04	7.9E-03
Vessels w/Outboard Engines	G2	15	Pleasure Craft	U	N	NHH	NP	29,959	6,408	1,272	3.2E-01	1.1E-02	3.0E-02	5.0E-01	5.2E-05	1.8E+00	2.2E-03	2.0E-02
Vessels w/Outboard Engines	G2	25	Pleasure Craft	U	N	NHH	NP	8,141	1,741	998	7.2E-01	4.7E-02	1.0E-01	1.4E+00	1.7E-04	6.1E+00	4.8E-03	4.4E-02
Vessels w/Outboard Engines	G2	50	Pleasure Craft	U	N	NHH	NP	7,948	1,700	2,452	1.1E+00	1.3E-01	1.9E-01	1.9E+00	3.2E-04	2.0E+01	8.2E-03	7.1E-02
Vessels w/Outboard Engines	G2	120	Pleasure Craft	U	N	NHH	NP	6,989	1,495	4,520	2.2E+00	2.8E-01	4.0E-01	4.2E+00	6.8E-04	4.3E+01	1.2E-02	1.4E-01
Vessels w/Outboard Engines	G2	175	Pleasure Craft	U	N	NHH	NP	3,227	690	3,798	4.0E+00	4.8E-01	7.3E-01	8.8E+00	1.3E-03	7.7E+01	1.6E-02	2.5E-01
Vessels w/Outboard Engines	G2	250	Pleasure Craft	U	N	NHH	NP	927	198	1,400	5.2E+00	9.2E-01	9.8E-01	9.8E+00	1.7E-03	1.0E+02	2.3E-02	3.2E-01
Vessels w/Outboard Engines	G2	500	Pleasure Craft	U	N	NHH	NP	187	40	408	8.3E+00	1.4E-01	1.4E+00	1.5E+01	2.4E-03	1.4E+02	8.6E-03	5.2E-01
Sailboat Auxiliary Outboard Engine	G2	15	Pleasure Craft	U	N	NHH	NP	338	15	3	3.2E-01	1.3E-02	3.3E-02	4.9E-01	5.7E-05	2.0E+00	2.4E-03	2.0E-02
Sailboat Auxiliary Outboard Engine	G2	25	Pleasure Craft	U	N	NHH	NP	182	8	4	5.3E-01	3.8E-02	8.2E-02	1.1E+00	1.4E-04	5.0E+00	4.3E-03	3.3E-02
Sailboat Auxiliary Outboard Engine	G2	50	Pleasure Craft	U	N	NHH	NP	168	8	9	9.0E-01	1.2E-01	1.6E-01	1.5E+00	2.8E-04	1.8E+01	7.9E-03	5.6E-02
Personal Water Craft	G2	9999	Pleasure Craft	U	N	NHH	NP	47,105	5,228	20,036	1.7E+00	3.6E-01	5.8E-01	2.9E+00	1.0E-03	6.3E+01	1.4E-02	1.0E-01
Vessels w/Inboard Engines	G4	250	Pleasure Craft	U	N	NHH	NP	11,921	4,940	27,395	4.0E-01	5.3E-01	8.1E-03	1.3E+01	9.8E-04	8.5E+01	1.7E-02	2.4E-02
Vessels w/Outboard Engines	G4	50	Pleasure Craft	U	N	NHH	NP	2,173	465	624	1.5E-01	1.2E-01	1.8E-03	4.3E+00	2.1E-04	1.9E+01	8.2E-03	9.1E-03
Vessels w/Sterndrive Engines	G4	250	Pleasure Craft	U	N	NHH	NP	29,390	9,560	39,223	3.0E-01	3.8E-01	6.0E-03	9.8E+00	7.2E-04	6.3E+01	1.5E-02	1.7E-02
Sailboat Auxiliary Inboard Engine	G4	15	Pleasure Craft	U	N	NHH	NP	402	18	7	4.7E-02	3.8E-02	5.4E-04	1.3E+00	9.4E-05	5.6E+00	4.4E-03	2.8E-03
Vessels w/Inboard Jet Engines	G4	500	Pleasure Craft	U	N	NHH	NP	3,396	1,105	7,283	4.8E-01	6.3E-01	9.6E-03	1.6E+01	1.2E-03	1.0E+02	1.9E-02	2.9E-02
Vessels w/Inboard Engines	D	250	Pleasure Craft	U	N	NHH	NP	668	277	1,382	5.9E-01	2.0E+00	5.1E-02	8.8E-01	1.2E-03	1.1E+02	0.0E+00	5.3E-02
Sailboat Auxiliary Inboard Engine	D	50	Pleasure Craft	U	N	NHH	NP	429	19	11	6.5E-02	2.2E-01	5.6E-03	9.8E-02	1.5E-04	1.2E+01	0.0E+00	5.9E-03

OFFROAD2007

Calendar Year: 2013

Season: Summer

Avg Days: Mon-Sun

Mountain Counties Air Basin

Equipment	Fuel	MaxHP	Class	C/R	Pre	Handheld?	Portable?	Population	Activity	Fuel	ROG Exhaust (ton/day)	NOX Exhaust (ton/day)	PM Exhaust (ton/day)	CO Exhaust (ton/day)	SO2 Exhaust (ton/day)	CO2 Exhaust (ton/day)	N2O Exhaust (ton/day)	CH4 Exhaust (ton/day)
									(equip- hrs/day)	(gal/day)								
Off-Road Motorcycles Inactive	G2	15	Recreational Equip	U	N	NHH	NP	298	1,258	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Off-Road Motorcycles Inactive	G2	25	Recreational Equip	U	N	NHH	NP	257	1,083	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Off-Road Motorcycles Inactive	G2	50	Recreational Equip	U	N	NHH	NP	2,090	8,813	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Off-Road Motorcycles Inactive	G2	120	Recreational Equip	U	N	NHH	NP	1,000	4,216	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Snowmobiles Inactive	G2	25	Recreational Equip	U	N	NHH	P	163	1	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Snowmobiles Inactive	G2	50	Recreational Equip	U	N	NHH	P	767	5	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Snowmobiles Inactive	G2	120	Recreational Equip	U	N	NHH	P	1,395	9	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
All Terrain Vehicles (ATVs) Inactive	G2	15	Recreational Equip	U	N	NHH	NP	253	1,066	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
All Terrain Vehicles (ATVs) Inactive	G2	25	Recreational Equip	U	N	NHH	NP	165	694	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
All Terrain Vehicles (ATVs) Inactive	G2	50	Recreational Equip	U	N	NHH	NP	217	914	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Off-Road Motorcycles Inactive	G4	15	Recreational Equip	U	N	NHH	NP	582	2,453	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Off-Road Motorcycles Inactive	G4	25	Recreational Equip	U	N	NHH	NP	939	3,958	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Off-Road Motorcycles Inactive	G4	50	Recreational Equip	U	N	NHH	NP	978	4,123	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
All Terrain Vehicles (ATVs) Inactive	G4	15	Recreational Equip	U	N	NHH	NP	206	870	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
All Terrain Vehicles (ATVs) Inactive	G4	25	Recreational Equip	U	N	NHH	NP	2,872	12,107	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
All Terrain Vehicles (ATVs) Inactive	G4	50	Recreational Equip	U	N	NHH	NP	130	547	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Off-Road Motorcycles Active	G2	15	Recreational Equip	U	N	NHH	NP	745	3,141	119	1.20E-01	3.68E-05	1.45E-03	1.87E-01	3.22E-04	3.98E-01	1.34E-04	7.45E-03
Off-Road Motorcycles Active	G2	25	Recreational Equip	U	N	NHH	NP	641	2,702	102	1.03E-01	3.17E-05	1.25E-03	1.61E-01	5.17E-04	3.42E-01	1.16E-04	6.41E-03
Off-Road Motorcycles Active	G2	50	Recreational Equip	U	N	NHH	NP	5,218	22,000	834	8.39E-01	2.58E-04	1.02E-02	1.31E+00	6.67E-03	2.79E+00	9.41E-04	5.22E-02
Off-Road Motorcycles Active	G2	120	Recreational Equip	U	N	NHH	NP	2,496	10,524	399	4.02E-01	1.23E-04	4.87E-03	6.28E-01	4.70E-03	1.33E+00	4.50E-04	2.50E-02
Snowmobiles Active	G2	25	Recreational Equip	U	N	NHH	P	467	3	3	2.09E-03	7.04E-05	6.37E-05	6.09E-03	1.61E-07	9.22E-03	7.16E-06	1.30E-04
Snowmobiles Active	G2	50	Recreational Equip	U	N	NHH	P	2,204	14	25	1.87E-02	6.30E-04	5.71E-04	5.45E-02	1.44E-06	8.26E-02	4.76E-05	1.16E-03
Snowmobiles Active	G2	120	Recreational Equip	U	N	NHH	P	4,008	25	73	5.20E-02	2.11E-03	1.70E-03	1.56E-01	4.48E-06	2.57E-01	1.21E-04	3.23E-03
All Terrain Vehicles (ATVs) Active	G2	15	Recreational Equip	U	N	NHH	NP	833	3,513	133	1.34E-01	4.11E-05	1.63E-03	2.09E-01	4.44E-04	4.45E-01	1.50E-04	8.33E-03
All Terrain Vehicles (ATVs) Active	G2	25	Recreational Equip	U	N	NHH	NP	542	2,287	87	8.73E-02	2.68E-05	1.06E-03	1.36E-01	3.95E-04	2.90E-01	9.79E-05	5.42E-03
All Terrain Vehicles (ATVs) Active	G2	50	Recreational Equip	U	N	NHH	NP	714	3,010	114	1.15E-01	3.52E-05	1.39E-03	1.79E-01	6.83E-04	3.81E-01	1.29E-04	7.14E-03
Golf Carts	G2	15	Recreational Equip	U	N	NHH	NP	338	1,162	439	2.16E-02	1.66E-02	1.06E-03	1.19E+00	9.38E-05	2.28E+00	2.17E-03	1.34E-03
Specialty Vehicles Carts	G2	15	Recreational Equip	U	N	NHH	NP	3,357	695	256	9.21E-03	7.08E-03	5.02E-04	6.99E-01	5.50E-05	1.34E+00	1.10E-03	5.73E-04
Tampers/Rammers	G2	15	Construction and Mining Equip	U	P	NHH	NP	36	18	4	2.24E-04	1.74E-04	1.54E-04	9.63E-03	7.58E-07	1.84E-02	2.75E-05	1.39E-05
Plate Compactors	G2	15	Construction and Mining Equip	U	P	NHH	NP	3	2	0	2.18E-05	1.69E-05	1.50E-05	9.35E-04	7.36E-08	1.79E-03	2.67E-06	1.35E-06
Other General Industrial Equipment	G2	15	Industrial Equip	U	N	NHH	NP	0	0	0	6.58E-06	4.99E-06	3.54E-07	3.98E-04	3.13E-08	7.60E-04	6.80E-07	4.09E-07
Lawn Mowers	G2	15	Lawn and Garden Equip	C	N	NHH	NP	513	357	40	4.57E-03	1.22E-03	7.68E-04	8.21E-02	1.00E-05	2.44E-01	3.16E-04	2.84E-04
Lawn Mowers	G2	15	Lawn and Garden Equip	R	N	NHH	NP	3,849	182	26	5.46E-03	7.03E-04	4.22E-04	6.45E-02	5.11E-06	1.24E-01	1.64E-04	3.40E-04
Chainsaws	G2	2	Lawn and Garden Equip	C	N	HH	NP	918	810	48	4.04E-02	6.39E-04	1.15E-04	7.30E-02	8.13E-06	1.97E-01	3.27E-04	2.51E-03
Chainsaws	G2	2	Lawn and Garden Equip	R	N	HH	NP	10,325	154	8	4.33E-03	1.29E-04	7.56E-05	1.76E-02	1.55E-06	3.76E-02	6.39E-05	2.69E-04
Chainsaws	G2	15	Lawn and Garden Equip	C	N	HH	NP	647	571	82	6.88E-02	1.09E-03	1.96E-04	1.24E-01	1.38E-05	3.36E-01	3.69E-04	4.27E-03
Chainsaws	G2	15	Lawn and Garden Equip	R	N	HH	NP	7,273	109	14	6.70E-03	2.16E-04	1.42E-04	2.81E-02	2.64E-06	6.41E-02	7.13E-05	4.16E-04
Chainsaws Preempt	G2	15	Lawn and Garden Equip	C	P	HH	NP	805	710	102	8.56E-02	1.35E-03	2.44E-04	1.55E-01	1.72E-05	4.18E-01	4.60E-04	5.32E-03
Chainsaws Preempt	G2	15	Lawn and Garden Equip	R	P	HH	NP	9,053	135	20	1.13E-02	2.21E-04	9.94E-05	4.20E-02	3.28E-06	7.97E-02	8.02E-05	7.01E-04
Trimmers/Edgers/Brush Cutters	G2	2	Lawn and Garden Equip	C	N	HH	NP	2,992	1,108	49	2.65E-02	7.64E-04	1.37E-04	8.73E-02	9.72E-06	2.36E-01	4.17E-04	1.65E-03
Trimmers/Edgers/Brush Cutters	G2	2	Lawn and Garden Equip	R	N	HH	NP	33,357	2,188	93	4.19E-02	1.54E-03	2.71E-04	1.72E-01	1.92E-05	4.66E-01	8.32E-04	2.60E-03
Leaf Blowers/Vacuums	G2	2	Lawn and Garden Equip	C	N	HH	P	4,469	2,677	143	9.86E-02	2.05E-03	3.69E-04	2.34E-01	2.61E-05	6.34E-01	1.07E-03	6.13E-03
Leaf Blowers/Vacuums	G2	2	Lawn and Garden Equip	R	N	HH	P	11,521	169	9	4.58E-03	1.37E-04	8.02E-05	1.86E-02	1.64E-06	3.99E-02	6.87E-05	2.84E-04
Snowblowers	G2	15	Lawn and Garden Equip	C	N	HH	P	176	1	0	4.93E-05	2.63E-06	4.71E-07	2.99E-04	3.33E-08	8.09E-04	6.96E-07	3.06E-06
Snowblowers	G2	15	Lawn and Garden Equip	R	N	HH	P	1,590	0	0	3.17E-05	1.01E-06	7.84E-07	1.38E-04	1.26E-08	3.06E-04	2.62E-07	1.97E-06
Snowblowers	G2	25	Lawn and Garden Equip	C	N	HH	P	0	0	0	3.61E-07	1.93E-08	3.45E-09	2.19E-06	2.44E-10	5.93E-06	3.23E-09	2.24E-08
Snowblowers	G2	25	Lawn and Garden Equip	R	N	HH	P	1	0	0	8.08E-08	2.40E-09	1.91E-09	3.05E-07	3.07E-11	7.46E-07	3.96E-10	5.02E-09
Shredders	G2	15	Lawn and Garden Equip	C	P	NHH	NP	23	9	4	2.31E-04	1.80E-04	1.78E-04	1.11E-02	8.75E-07	2.12E-02	2.07E-05	1.43E-05
Shredders	G2	15	Lawn and Garden Equip	R	P	NHH	NP	804	2	1	2.28E-04	3.31E-05	4.21E-05	2.94E-03	2.07E-07	5.02E-03	4.21E-06	1.41E-05
Commercial Turf Equipment	G2	15	Lawn and Garden Equip	C	N	NHH	NP	12	29	12	5.44E-04	4.13E-04	2.90E-05	3.26E-02	2.56E-06	6.23E-02	5.49E-05	3.38E-05

Equipment	Fuel	MaxHP	Class	C/R	Pre	Handheld?	Portable?	Population	Activity	Fuel	ROG Exhaust	NOX Exhaust	PM Exhaust	CO Exhaust	SO2 Exhaust	CO2 Exhaust	N2O Exhaust	CH4 Exhaust
									(equip- hrs/day)	Consumption (gal/day)								
Commercial Turf Equipment	G2	25	Lawn and Garden Equip	C	N	NHH	NP	6	14	13	5.64E-04	4.34E-04	3.02E-05	3.60E-02	2.67E-06	6.49E-02	4.06E-05	3.51E-05
Other Lawn & Garden Equipment	G2	2	Lawn and Garden Equip	C	N	HH	NP	5	1	0	2.91E-05	9.41E-07	1.69E-07	1.08E-04	1.20E-08	2.91E-04	4.56E-07	1.81E-06
Other Lawn & Garden Equipment	G2	2	Lawn and Garden Equip	R	N	HH	NP	155	2	0	6.31E-05	1.92E-06	1.12E-06	2.61E-04	2.30E-08	5.59E-04	8.97E-07	3.92E-06
Other Lawn & Garden Equipment	G2	15	Lawn and Garden Equip	C	N	HH	NP	2	0	0	6.32E-05	2.05E-06	3.68E-07	2.34E-04	2.61E-08	6.33E-04	4.68E-07	3.93E-06
Other Lawn & Garden Equipment	G2	15	Lawn and Garden Equip	R	N	HH	NP	68	1	0	1.25E-04	4.11E-06	2.69E-06	5.34E-04	5.01E-08	1.22E-03	9.11E-07	7.75E-06
Generator Sets	G2	2	Light Commercial Equip	C	N	NHH	P	31	13	1	1.77E-04	3.08E-05	1.56E-05	1.63E-03	1.67E-07	4.05E-03	9.14E-06	1.10E-05
Generator Sets	G2	2	Light Commercial Equip	R	N	NHH	P	24	7	0	1.22E-04	1.61E-05	8.80E-06	9.87E-04	8.82E-08	2.14E-03	4.79E-06	7.57E-06
Generator Sets	G2	15	Light Commercial Equip	C	N	NHH	P	0	0	0	4.16E-06	2.81E-06	1.73E-07	1.97E-04	1.51E-08	3.68E-04	3.02E-07	2.58E-07
Generator Sets	G2	15	Light Commercial Equip	R	N	NHH	P	0	0	0	5.47E-06	1.39E-06	2.11E-07	1.08E-04	7.76E-09	1.88E-04	1.50E-07	3.40E-07
Pumps	G2	2	Light Commercial Equip	C	N	NHH	P	122	96	5	7.37E-04	2.27E-04	1.10E-04	9.44E-03	1.29E-06	3.14E-02	6.88E-05	4.58E-05
Pumps	G2	2	Light Commercial Equip	R	N	NHH	P	96	51	3	6.17E-04	1.26E-04	6.21E-05	6.15E-03	6.83E-07	1.66E-02	3.72E-05	3.84E-05
Pumps	G2	15	Light Commercial Equip	C	P	NHH	P	33	26	13	8.56E-04	6.53E-04	5.67E-04	3.56E-02	2.79E-06	6.77E-02	6.64E-05	5.32E-05
Pumps	G2	15	Light Commercial Equip	R	P	NHH	P	26	14	7	5.96E-04	3.35E-04	3.00E-04	1.93E-02	1.47E-06	3.58E-02	3.44E-05	3.71E-05
Pumps	G2	25	Light Commercial Equip	C	P	NHH	P	0	0	0	2.28E-05	1.56E-05	1.46E-05	9.66E-04	7.17E-08	1.74E-03	1.15E-06	1.42E-06
Pumps	G2	25	Light Commercial Equip	R	P	NHH	P	0	0	0	1.22E-05	7.97E-06	7.63E-06	5.10E-04	3.75E-08	9.10E-04	5.96E-07	7.56E-07
Chainsaws	G2	15	Logging Equip	U	P	HH	NP	638	357	294	2.29E-01	4.04E-03	7.25E-04	4.61E-01	5.13E-05	1.24E+00	5.96E-04	1.42E-02
Off-Road Motorcycles Active	G4	15	Recreational Equip	U	N	NHH	NP	1,453	6,124	115	7.86E-03	3.54E-03	4.05E-04	1.91E-01	6.28E-04	7.76E-01	2.09E-03	4.62E-04
Off-Road Motorcycles Active	G4	25	Recreational Equip	U	N	NHH	NP	2,344	9,881	185	1.27E-02	5.72E-03	6.53E-04	3.09E-01	1.89E-03	1.25E+00	3.37E-03	7.45E-04
Off-Road Motorcycles Active	G4	50	Recreational Equip	U	N	NHH	NP	2,442	10,294	193	1.32E-02	5.95E-03	6.81E-04	3.22E-01	3.12E-03	1.30E+00	3.51E-03	7.76E-04
All Terrain Vehicles (ATVs) Active	G4	15	Recreational Equip	U	N	NHH	NP	680	2,866	54	3.86E-03	2.16E-03	1.90E-04	9.20E-02	3.62E-04	3.63E-01	1.13E-03	2.27E-04
All Terrain Vehicles (ATVs) Active	G4	25	Recreational Equip	U	N	NHH	NP	9,459	39,881	753	5.37E-02	3.01E-02	2.64E-03	1.28E+00	6.89E-03	5.05E+00	1.57E-02	3.16E-03
All Terrain Vehicles (ATVs) Active	G4	50	Recreational Equip	U	N	NHH	NP	427	1,800	34	2.42E-03	1.36E-03	1.19E-04	5.78E-02	4.08E-04	2.28E-01	7.08E-04	1.42E-04
Minibikes	G4	5	Recreational Equip	U	N	NHH	NP	220	94	21	1.33E-02	3.33E-04	3.70E-04	9.21E-02	3.83E-06	1.20E-02	8.46E-05	7.84E-04
Golf Carts	G4	15	Recreational Equip	U	N	NHH	NP	264	909	371	2.16E-02	1.56E-02	9.96E-04	1.09E+00	5.08E-05	1.78E+00	1.87E-03	1.27E-03
Specialty Vehicles Carts	G4	5	Recreational Equip	U	N	NHH	NP	104	22	6	4.11E-04	1.02E-04	7.00E-05	1.56E-02	1.02E-06	2.95E-02	2.25E-05	2.43E-05
Specialty Vehicles Carts	G4	15	Recreational Equip	U	N	NHH	NP	1,409	292	115	4.08E-03	2.98E-03	2.11E-04	3.41E-01	1.60E-05	5.61E-01	4.61E-04	2.40E-04
Specialty Vehicles Carts	G4	25	Recreational Equip	U	N	NHH	NP	774	160	177	6.23E-03	4.27E-03	3.14E-04	5.41E-01	2.12E-05	8.37E-01	4.22E-04	3.68E-04
Asphalt Pavers	G4	15	Construction and Mining Equip	U	P	NHH	NP	1	1	0	3.52E-05	2.61E-05	1.98E-05	1.43E-03	6.73E-08	2.36E-03	2.40E-06	2.08E-06
Asphalt Pavers	G4	25	Construction and Mining Equip	U	P	NHH	NP	1	1	2	1.56E-04	1.01E-04	8.27E-05	6.37E-03	2.50E-07	9.86E-03	6.34E-06	9.17E-06
Asphalt Pavers	G4	50	Construction and Mining Equip	U	P	NHH	NP	1	1	2	5.40E-05	7.86E-05	1.00E-06	1.82E-03	1.59E-07	1.31E-02	3.73E-06	3.19E-06
Asphalt Pavers	G4	120	Construction and Mining Equip	U	P	NHH	NP	0	0	2	3.61E-05	1.07E-04	1.05E-06	7.32E-04	1.31E-07	1.35E-02	3.11E-06	2.13E-06
Tampers/Rammers	G4	15	Construction and Mining Equip	U	P	NHH	NP	2	1	0	2.89E-05	2.08E-05	1.60E-05	1.17E-03	5.45E-08	1.91E-03	2.10E-06	1.71E-06
Plate Compactors	G4	5	Construction and Mining Equip	U	P	NHH	NP	61	30	5	7.28E-04	3.26E-04	1.01E-05	1.19E-02	1.07E-06	3.08E-02	4.88E-05	4.29E-05
Plate Compactors	G4	15	Construction and Mining Equip	U	P	NHH	NP	64	36	16	1.11E-03	8.19E-04	6.28E-04	4.56E-02	2.14E-06	7.49E-02	8.71E-05	6.55E-05
Rollers	G4	5	Construction and Mining Equip	U	P	NHH	NP	7	2	0	4.74E-05	2.12E-05	7.28E-07	1.01E-03	7.71E-08	2.23E-03	2.84E-06	2.79E-06
Rollers	G4	15	Construction and Mining Equip	U	P	NHH	NP	11	9	5	3.59E-04	2.66E-04	2.04E-04	1.48E-02	6.92E-07	2.43E-02	2.53E-05	2.12E-05
Rollers	G4	25	Construction and Mining Equip	U	P	NHH	NP	7	6	7	5.40E-04	3.50E-04	2.90E-04	2.24E-02	8.77E-07	3.46E-02	2.44E-05	3.19E-05
Rollers	G4	50	Construction and Mining Equip	U	P	NHH	NP	0	1	2	9.20E-05	1.14E-04	1.21E-06	2.90E-03	1.92E-07	1.58E-02	4.90E-06	5.43E-06
Rollers	G4	120	Construction and Mining Equip	U	P	NHH	NP	1	2	7	2.29E-04	5.63E-04	4.62E-06	4.38E-03	5.76E-07	5.96E-02	1.47E-05	1.35E-05
Paving Equipment	G4	5	Construction and Mining Equip	U	P	NHH	NP	85	39	8	1.02E-03	4.60E-04	1.43E-05	1.71E-02	1.51E-06	4.37E-02	6.66E-05	6.04E-05
Paving Equipment	G4	15	Construction and Mining Equip	U	P	NHH	NP	143	78	45	3.22E-03	2.37E-03	1.82E-03	1.33E-01	6.20E-06	2.18E-01	2.21E-04	1.90E-04
Paving Equipment	G4	25	Construction and Mining Equip	U	P	NHH	NP	3	2	2	1.66E-04	1.07E-04	8.92E-05	6.88E-03	2.70E-07	1.06E-02	7.16E-06	9.80E-06
Paving Equipment	G4	50	Construction and Mining Equip	U	P	NHH	NP	2	1	2	3.59E-05	6.09E-05	1.26E-06	1.56E-03	2.00E-07	1.65E-02	3.52E-06	2.12E-06
Paving Equipment	G4	120	Construction and Mining Equip	U	P	NHH	NP	0	0	1	9.31E-06	3.24E-05	5.80E-07	2.34E-04	7.23E-08	7.48E-03	1.20E-06	5.49E-07
Surfacing Equipment	G4	5	Construction and Mining Equip	U	P	NHH	NP	16	8	2	2.35E-04	1.05E-04	3.20E-06	3.68E-03	3.39E-07	9.81E-03	1.49E-05	1.38E-05
Surfacing Equipment	G4	15	Construction and Mining Equip	U	P	NHH	NP	46	63	24	1.82E-03	1.35E-03	9.83E-04	7.13E-02	3.34E-06	1.17E-01	1.48E-04	1.07E-04
Surfacing Equipment	G4	25	Construction and Mining Equip	U	P	NHH	NP	1	1	1	6.24E-05	4.04E-05	3.19E-05	2.46E-03	9.66E-08	3.81E-03	3.08E-06	3.68E-06
Signal Boards	G4	5	Construction and Mining Equip	U	P	NHH	NP	0	0	0	2.70E-06	1.21E-06	3.98E-08	5.21E-05	4.21E-09	1.22E-04	1.44E-07	1.60E-07
Signal Boards	G4	15	Construction and Mining Equip	U	P	NHH	NP	1	1	1	4.46E-05	3.30E-05	2.55E-05	1.85E-03	8.66E-08	3.04E-03	3.03E-06	2.63E-06
Trenchers	G4	15	Construction and Mining Equip	U	P	NHH	NP	13	15	10	7.06E-04	5.22E-04	3.90E-04	2.83E-02	1.33E-06	4.66E-02	4.55E-05	4.16E-05
Trenchers	G4	25	Construction and Mining Equip	U	P	NHH	NP	10	12	16	1.21E-03	7.85E-04	6.35E-04	4.89E-02	1.92E-06	7.58E-02	5.02E-05	7.15E-05
Trenchers	G4	50	Construction and Mining Equip	U	P	NHH	NP	4	5	10	3.86E-04	5.48E-04	6.16E-06	1.22E-02	9.78E-07	8.04E-02	2.57E-05	2.28E-05
Trenchers	G4	120	Construction and Mining Equip	U	P	NHH	NP	1	2	7	1.83E-04	5.30E-04	4.50E-06	3.54E-03	5.61E-07	5.81E-02	1.43E-05	1.08E-05
Bore/Drill Rigs	G4	15	Construction and Mining Equip	U	P	NHH	P	0	0	0	6.68E-06	4.79E-06	3.82E-06	2.79E-04	1.30E-08	4.56E-04	3.95E-07	3.94E-07
Bore/Drill Rigs	G4	25	Construction and Mining Equip	U	P	NHH	P	2	1	1	6.26E-05	3.96E-05	3.42E-05	2.64E-03	1.03E-07	4.07E-03	2.57E-06	3.69E-06
Bore/Drill Rigs	G4	50	Construction and Mining Equip	U	P	NHH	P	0	0	0	4.54E-06	8.27E-06	1.01E-07	1.43E-04	1.61E-08	1.32E-03	3.54E-07	2.68E-07

Equipment	Fuel	MaxHP	Class	C/R	Pre	Handheld?	Portable?	Population	Activity	Fuel	ROG Exhaust	NOX Exhaust	PM Exhaust	CO Exhaust	SO2 Exhaust	CO2 Exhaust	N2O Exhaust	CH4 Exhaust
									(equip- hrs/day)	Consumption (gal/day)								
Bore/Drill Rigs	G4	120	Construction and Mining Equip	U	P	NHH	P	1	0	2	3.70E-05	1.44E-04	1.28E-06	7.26E-04	1.59E-07	1.65E-02	3.14E-06	2.18E-06
Bore/Drill Rigs	G4	175	Construction and Mining Equip	U	P	NHH	P	0	0	1	7.35E-06	5.61E-05	4.53E-07	1.88E-04	5.65E-08	5.69E-03	9.92E-07	4.34E-07
Concrete/Industrial Saws	G4	5	Construction and Mining Equip	U	P	NHH	NP	7	2	1	7.67E-05	3.44E-05	1.13E-06	1.48E-03	1.19E-07	3.46E-03	4.49E-06	4.52E-06
Concrete/Industrial Saws	G4	15	Construction and Mining Equip	U	P	NHH	NP	30	25	17	1.23E-03	9.13E-04	7.00E-04	5.08E-02	2.38E-06	8.35E-02	7.82E-05	7.28E-05
Concrete/Industrial Saws	G4	25	Construction and Mining Equip	U	P	NHH	NP	9	8	11	7.71E-04	4.99E-04	4.14E-04	3.19E-02	1.25E-06	4.93E-02	3.29E-05	4.55E-05
Concrete/Industrial Saws	G4	50	Construction and Mining Equip	U	P	NHH	NP	1	1	4	3.57E-05	5.25E-05	2.32E-06	2.59E-03	3.69E-07	3.03E-02	4.26E-06	2.11E-06
Concrete/Industrial Saws	G4	120	Construction and Mining Equip	U	P	NHH	NP	0	1	3	1.47E-05	3.36E-05	2.51E-06	7.05E-04	3.13E-07	3.24E-02	2.58E-06	8.66E-07
Cement and Mortar Mixers	G4	5	Construction and Mining Equip	U	P	NHH	NP	120	30	8	9.15E-04	4.10E-04	1.37E-05	1.84E-02	1.45E-06	4.20E-02	5.54E-05	5.40E-05
Cement and Mortar Mixers	G4	15	Construction and Mining Equip	U	P	NHH	NP	204	51	25	2.28E-03	1.10E-03	9.37E-04	7.68E-02	3.25E-06	1.14E-01	1.20E-04	1.34E-04
Cement and Mortar Mixers	G4	25	Construction and Mining Equip	U	P	NHH	NP	1	0	0	2.88E-05	1.31E-05	1.23E-05	1.04E-03	3.80E-08	1.50E-03	8.76E-07	1.70E-06
Cranes	G4	50	Construction and Mining Equip	U	P	NHH	P	0	0	1	1.95E-05	2.74E-05	3.07E-07	6.13E-04	4.87E-08	4.01E-03	1.36E-06	1.15E-06
Cranes	G4	120	Construction and Mining Equip	U	P	NHH	P	0	1	2	5.07E-05	1.45E-04	1.23E-06	9.78E-04	1.53E-07	1.59E-02	4.35E-06	2.99E-06
Cranes	G4	175	Construction and Mining Equip	U	P	NHH	P	0	0	0	1.62E-06	1.10E-05	8.30E-08	3.85E-05	1.03E-08	1.04E-03	2.45E-07	9.54E-08
Crushing/Proc. Equipment	G4	15	Construction and Mining Equip	U	P	NHH	P	0	0	0	1.37E-05	1.01E-05	7.81E-06	5.67E-04	2.66E-08	9.32E-04	8.35E-07	8.08E-07
Crushing/Proc. Equipment	G4	25	Construction and Mining Equip	U	P	NHH	P	0	0	0	1.69E-05	1.09E-05	9.10E-06	7.01E-04	2.75E-08	1.09E-03	7.13E-07	9.94E-07
Crushing/Proc. Equipment	G4	120	Construction and Mining Equip	U	P	NHH	P	0	0	1	3.33E-05	1.11E-04	9.70E-07	6.48E-04	1.21E-07	1.25E-02	2.26E-06	1.96E-06
Rough Terrain Forklifts	G4	50	Construction and Mining Equip	U	P	NHH	NP	0	0	0	1.32E-05	1.85E-05	2.08E-07	4.15E-04	3.30E-08	2.72E-03	7.20E-07	7.77E-07
Rough Terrain Forklifts	G4	120	Construction and Mining Equip	U	P	NHH	NP	1	2	8	2.20E-04	6.31E-04	5.34E-06	4.25E-03	6.66E-07	6.90E-02	1.55E-05	1.30E-05
Rough Terrain Forklifts	G4	175	Construction and Mining Equip	U	P	NHH	NP	0	0	0	6.12E-06	4.17E-05	3.14E-07	1.46E-04	3.92E-08	3.95E-03	7.62E-07	3.61E-07
Rubber Tired Loaders	G4	50	Construction and Mining Equip	U	P	NHH	NP	0	0	1	3.07E-05	4.10E-05	4.70E-07	9.93E-04	7.47E-08	6.14E-03	1.86E-06	1.81E-06
Rubber Tired Loaders	G4	120	Construction and Mining Equip	U	P	NHH	NP	2	2	8	2.37E-04	6.36E-04	5.62E-06	4.66E-03	7.01E-07	7.26E-02	1.84E-05	1.40E-05
Tractors/Loaders/Backhoes	G4	120	Construction and Mining Equip	U	P	NHH	NP	1	2	6	9.09E-05	2.16E-04	3.94E-06	3.01E-03	4.91E-07	5.09E-02	9.69E-06	5.36E-06
Skid Steer Loaders	G4	15	Construction and Mining Equip	U	P	NHH	NP	1	1	0	3.22E-05	2.38E-05	1.80E-05	1.31E-03	6.12E-08	2.15E-03	1.89E-06	1.90E-06
Skid Steer Loaders	G4	25	Construction and Mining Equip	U	P	NHH	NP	43	37	42	3.08E-03	2.00E-03	1.63E-03	1.26E-01	4.93E-06	1.95E-01	1.43E-04	1.82E-04
Skid Steer Loaders	G4	50	Construction and Mining Equip	U	P	NHH	NP	6	5	10	1.25E-04	1.93E-04	6.68E-06	8.39E-03	1.06E-06	8.72E-02	1.62E-05	7.40E-06
Skid Steer Loaders	G4	120	Construction and Mining Equip	U	P	NHH	NP	4	3	14	8.18E-05	2.28E-04	9.99E-06	3.38E-03	1.25E-06	1.29E-01	1.30E-05	4.82E-06
Dumpers/Tenders	G4	5	Construction and Mining Equip	U	P	NHH	NP	6	2	0	4.61E-05	2.07E-05	6.30E-07	7.30E-04	6.67E-08	1.93E-03	3.52E-06	2.72E-06
Dumpers/Tenders	G4	15	Construction and Mining Equip	U	P	NHH	NP	13	5	2	1.78E-04	9.43E-05	7.67E-05	6.11E-03	2.64E-07	9.27E-03	1.12E-05	1.05E-05
Dumpers/Tenders	G4	25	Construction and Mining Equip	U	P	NHH	NP	2	1	1	6.81E-05	3.36E-05	3.00E-05	2.47E-03	9.19E-08	3.63E-03	2.95E-06	4.02E-06
Dumpers/Tenders	G4	120	Construction and Mining Equip	U	P	NHH	NP	0	0	0	3.13E-06	1.19E-05	1.05E-07	6.14E-05	1.31E-08	1.36E-03	4.03E-07	1.85E-07
Other Construction Equipment	G4	175	Construction and Mining Equip	U	P	NHH	NP	1	1	4	1.44E-05	5.19E-05	2.67E-06	1.14E-03	3.33E-07	3.36E-02	2.96E-06	8.49E-07
Aerial Lifts	G4	15	Industrial Equip	U	P	NHH	NP	0	0	0	3.01E-06	2.24E-06	1.70E-06	1.24E-04	5.79E-09	2.03E-04	2.05E-07	1.78E-07
Aerial Lifts	G4	25	Industrial Equip	U	P	NHH	NP	3	3	3	2.03E-04	1.32E-04	1.06E-04	8.20E-03	3.21E-07	1.27E-02	1.04E-05	1.20E-05
Aerial Lifts	G4	50	Industrial Equip	U	P	NHH	NP	4	4	6	7.98E-05	1.25E-04	3.62E-06	5.13E-03	5.74E-07	4.72E-02	1.04E-05	4.70E-06
Aerial Lifts	G4	120	Industrial Equip	U	P	NHH	NP	4	4	10	7.61E-05	2.23E-04	7.34E-06	2.93E-03	9.16E-07	9.48E-02	1.31E-05	4.49E-06
Forklifts	G4	25	Industrial Equip	U	N	NHH	NP	0	0	0	6.05E-06	4.66E-06	3.15E-07	3.64E-04	1.43E-08	5.63E-04	4.57E-07	3.56E-07
Forklifts	G4	50	Industrial Equip	U	N	NHH	NP	12	60	96	1.80E-03	3.74E-03	4.87E-05	1.83E-01	7.73E-06	6.36E-01	2.40E-04	1.06E-04
Forklifts	G4	120	Industrial Equip	U	N	NHH	NP	43	210	443	4.40E-03	1.73E-02	2.92E-04	3.11E-01	3.64E-05	3.77E+00	9.81E-04	2.59E-04
Forklifts	G4	175	Industrial Equip	U	N	NHH	NP	2	8	31	2.25E-04	1.15E-03	2.23E-05	1.18E-02	2.78E-06	2.79E-01	4.93E-05	1.32E-05
Sweepers/Scrubbers	G4	15	Industrial Equip	U	N	NHH	NP	2	1	1	4.03E-05	2.89E-05	2.05E-06	2.46E-03	1.15E-07	4.03E-03	3.32E-06	2.38E-06
Sweepers/Scrubbers	G4	25	Industrial Equip	U	N	NHH	NP	2	1	2	8.95E-05	6.78E-05	4.64E-06	5.73E-03	2.24E-07	8.85E-03	5.17E-06	5.27E-06
Sweepers/Scrubbers	G4	50	Industrial Equip	U	N	NHH	NP	3	5	13	1.43E-04	2.89E-04	7.87E-06	1.18E-02	1.25E-06	1.03E-01	1.93E-05	8.43E-06
Sweepers/Scrubbers	G4	120	Industrial Equip	U	N	NHH	NP	3	4	18	8.69E-05	4.86E-04	1.28E-05	5.10E-03	1.59E-06	1.65E-01	2.35E-05	5.12E-06
Sweepers/Scrubbers	G4	175	Industrial Equip	U	N	NHH	NP	0	0	0	7.00E-07	5.86E-06	1.53E-07	6.67E-05	1.91E-08	1.92E-03	2.02E-07	4.12E-08
Other General Industrial Equipment	G4	15	Industrial Equip	U	N	NHH	NP	4	4	2	8.85E-05	6.34E-05	4.48E-06	5.15E-03	2.41E-07	8.44E-03	8.09E-06	5.22E-06
Other General Industrial Equipment	G4	25	Industrial Equip	U	N	NHH	NP	1	2	2	7.52E-05	5.77E-05	3.91E-06	4.62E-03	1.81E-07	7.13E-03	4.87E-06	4.43E-06
Other General Industrial Equipment	G4	50	Industrial Equip	U	N	NHH	NP	1	2	4	5.52E-05	1.12E-04	2.43E-06	4.77E-03	3.86E-07	3.18E-02	8.12E-06	3.25E-06
Other General Industrial Equipment	G4	120	Industrial Equip	U	N	NHH	NP	0	1	3	1.92E-05	9.28E-05	2.11E-06	1.14E-03	2.63E-07	2.72E-02	4.39E-06	1.13E-06
Other General Industrial Equipment	G4	175	Industrial Equip	U	N	NHH	NP	0	0	1	2.69E-06	1.93E-05	4.49E-07	2.04E-04	5.60E-08	5.64E-03	6.40E-07	1.58E-07
Other Material Handling Equipment	G4	50	Industrial Equip	U	N	NHH	NP	0	0	0	1.23E-06	1.94E-06	2.50E-08	4.96E-05	3.97E-09	3.26E-04	9.34E-08	7.24E-08
Other Material Handling Equipment	G4	120	Industrial Equip	U	N	NHH	NP	1	1	2	4.44E-05	1.44E-04	1.46E-06	1.03E-03	1.82E-07	1.88E-02	5.31E-06	2.62E-06
Lawn Mowers	G4	5	Lawn and Garden Equip	C	N	NHH	NP	3,035	2,116	252	2.85E-02	7.26E-03	4.55E-03	5.63E-01	4.98E-05	1.44E+00	1.87E-03	1.68E-03
Lawn Mowers	G4	5	Lawn and Garden Equip	R	N	NHH	NP	48,106	2,274	315	2.97E-02	8.53E-03	3.72E-03	8.74E-01	5.35E-05	1.55E+00	2.03E-03	1.75E-03
Tillers	G4	5	Lawn and Garden Equip	C	N	NHH	NP	315	54	8	6.49E-04	1.63E-04	1.07E-04	1.96E-02	1.40E-06	4.07E-02	4.41E-05	3.82E-05
Tillers	G4	5	Lawn and Garden Equip	R	N	NHH	NP	1,223	67	10	1.06E-03	2.88E-04	1.27E-04	2.87E-02	1.76E-06	5.09E-02	6.43E-05	6.25E-05
Trimmers/Edgers/Brush Cutters	G4	5	Lawn and Garden Equip	C	P	NHH	NP	554	229	7	8.76E-04	3.93E-04	1.27E-05	1.65E-02	1.35E-06	3.91E-02	1.40E-04	5.16E-05

Equipment	Fuel	MaxHP	Class	C/R	Pre	Handheld?	Portable?	Population	Activity	Fuel	ROG Exhaust	NOX Exhaust	PM Exhaust	CO Exhaust	SO2 Exhaust	CO2 Exhaust	N2O Exhaust	CH4 Exhaust
									(equip- hrs/day)	Consumption (gal/day)								
Trimmers/Edgers/Brush Cutters	G4	5	Lawn and Garden Equip	R	P	NHH	NP	2,581	169	6	8.23E-04	2.47E-04	4.14E-05	1.67E-02	9.96E-07	2.88E-02	9.45E-05	4.85E-05
Leaf Blowers/Vacuums	G4	5	Lawn and Garden Equip	C	N	NHH	P	141	27	2	1.25E-04	3.09E-05	2.14E-05	4.86E-03	3.15E-07	9.11E-03	1.32E-05	7.39E-06
Leaf Blowers/Vacuums	G4	5	Lawn and Garden Equip	R	N	NHH	P	121	2	0	1.20E-05	2.91E-06	1.20E-06	4.21E-04	2.09E-08	6.05E-04	1.03E-06	7.06E-07
Snowblowers	G4	5	Lawn and Garden Equip	C	N	NHH	P	1,909	9	1	6.57E-05	1.60E-05	1.17E-05	3.44E-03	2.01E-07	5.83E-03	5.51E-06	3.87E-06
Snowblowers	G4	5	Lawn and Garden Equip	R	N	NHH	P	17,178	3	0	3.86E-05	9.86E-06	4.02E-06	1.57E-03	7.61E-08	2.20E-03	2.63E-06	2.27E-06
Snowblowers	G4	15	Lawn and Garden Equip	C	N	NHH	P	1,444	7	2	6.66E-05	4.92E-05	3.46E-06	6.05E-03	2.83E-07	9.93E-03	8.83E-06	3.92E-06
Snowblowers	G4	15	Lawn and Garden Equip	R	N	NHH	P	12,997	3	1	3.63E-05	2.35E-05	1.25E-06	2.46E-03	1.07E-07	3.75E-03	3.76E-06	2.14E-06
Snowblowers	G4	25	Lawn and Garden Equip	C	N	NHH	P	4	0	0	3.71E-07	2.48E-07	1.86E-08	3.45E-05	1.35E-09	5.34E-05	3.50E-08	2.19E-08
Snowblowers	G4	25	Lawn and Garden Equip	R	N	NHH	P	38	0	0	1.90E-07	1.09E-07	6.48E-09	1.33E-05	4.92E-10	1.94E-05	1.41E-08	1.12E-08
Rear Engine Riding Mowers	G4	15	Lawn and Garden Equip	C	N	NHH	NP	1,662	1,375	460	2.03E-02	1.46E-02	1.03E-03	1.36E+00	6.35E-05	2.23E+00	2.22E-03	1.19E-03
Rear Engine Riding Mowers	G4	15	Lawn and Garden Equip	R	N	NHH	NP	1,457	125	42	2.01E-03	1.35E-03	8.09E-05	1.26E-01	5.79E-06	2.03E-01	2.02E-04	1.19E-04
Rear Engine Riding Mowers	G4	25	Lawn and Garden Equip	C	N	NHH	NP	8	6	4	1.74E-04	1.27E-04	8.92E-06	1.25E-02	4.87E-07	1.92E-02	1.43E-05	1.02E-05
Rear Engine Riding Mowers	G4	25	Lawn and Garden Equip	R	N	NHH	NP	7	1	0	1.74E-05	1.07E-05	6.87E-07	1.13E-03	4.37E-08	1.72E-03	1.23E-06	1.03E-06
Front Mowers	G4	15	Lawn and Garden Equip	C	N	NHH	NP	76	63	34	1.48E-03	1.07E-03	7.56E-05	9.95E-02	4.65E-06	1.63E-01	1.30E-04	8.74E-05
Front Mowers	G4	15	Lawn and Garden Equip	R	N	NHH	NP	2,463	212	114	5.43E-03	3.63E-03	2.18E-04	3.39E-01	1.56E-05	5.47E-01	4.37E-04	3.20E-04
Front Mowers	G4	25	Lawn and Garden Equip	C	N	NHH	NP	60	49	36	1.51E-03	1.10E-03	7.74E-05	1.08E-01	4.23E-06	1.67E-01	1.18E-04	8.89E-05
Front Mowers	G4	25	Lawn and Garden Equip	R	N	NHH	NP	1,929	166	120	5.66E-03	3.48E-03	2.24E-04	3.67E-01	1.42E-05	5.61E-01	3.82E-04	3.34E-04
Shredders	G4	5	Lawn and Garden Equip	C	P	NHH	NP	60	25	7	8.41E-04	3.77E-04	1.22E-05	1.58E-02	1.30E-06	3.75E-02	4.84E-05	4.95E-05
Shredders	G4	5	Lawn and Garden Equip	R	P	NHH	NP	2,224	6	2	1.85E-04	5.95E-05	1.87E-05	6.67E-03	3.19E-07	9.25E-03	9.40E-06	1.09E-05
Lawn & Garden Tractors	G4	15	Lawn and Garden Equip	C	N	NHH	NP	305	120	77	2.84E-03	2.07E-03	1.47E-04	2.28E-01	1.06E-05	3.73E-01	2.50E-04	1.68E-04
Lawn & Garden Tractors	G4	15	Lawn and Garden Equip	R	N	NHH	NP	1,979	88	57	2.42E-03	1.68E-03	1.00E-04	1.70E-01	7.85E-06	2.75E-01	1.93E-04	1.43E-04
Lawn & Garden Tractors	G4	25	Lawn and Garden Equip	C	N	NHH	NP	120	47	48	1.76E-03	1.22E-03	8.93E-05	1.48E-01	5.77E-06	2.28E-01	1.23E-04	1.04E-04
Lawn & Garden Tractors	G4	25	Lawn and Garden Equip	R	N	NHH	NP	780	35	36	1.52E-03	9.52E-04	6.10E-05	1.10E-01	4.25E-06	1.68E-01	9.23E-05	8.96E-05
Lawn & Garden Tractors	G4	50	Lawn and Garden Equip	U	N	NHH	NP	2	1	1	1.58E-05	3.11E-05	5.47E-07	6.79E-04	8.68E-08	7.14E-03	2.02E-06	9.31E-07
Wood Splitters	G4	5	Lawn and Garden Equip	C	N	NHH	NP	102	40	12	1.19E-03	3.01E-04	1.92E-04	2.83E-02	2.26E-06	6.55E-02	5.36E-05	7.01E-05
Wood Splitters	G4	5	Lawn and Garden Equip	R	N	NHH	NP	2,557	9	3	2.30E-04	6.26E-05	2.50E-05	9.94E-03	4.84E-07	1.40E-02	1.10E-05	1.36E-05
Chippers/Stump Grinders	G4	15	Lawn and Garden Equip	C	P	NHH	P	1	6	5	3.51E-04	2.62E-04	1.89E-04	1.36E-02	6.43E-07	2.25E-02	1.97E-05	2.06E-05
Chippers/Stump Grinders	G4	15	Lawn and Garden Equip	R	P	NHH	P	3	0	0	8.17E-06	4.13E-06	4.05E-06	3.59E-04	1.50E-08	5.26E-04	3.76E-07	4.81E-07
Chippers/Stump Grinders	G4	25	Lawn and Garden Equip	C	P	NHH	P	8	32	45	3.45E-03	2.25E-03	1.76E-03	1.35E-01	5.31E-06	2.10E-01	1.40E-04	2.02E-04
Chippers/Stump Grinders	G4	25	Lawn and Garden Equip	R	P	NHH	P	15	1	1	7.32E-05	3.46E-05	3.75E-05	3.43E-03	1.24E-07	4.88E-03	2.62E-06	4.31E-06
Commercial Turf Equipment	G4	15	Lawn and Garden Equip	C	N	NHH	NP	108	263	142	7.66E-03	5.48E-03	3.83E-04	4.17E-01	1.95E-05	6.85E-01	6.06E-04	4.51E-04
Commercial Turf Equipment	G4	25	Lawn and Garden Equip	C	N	NHH	NP	53	130	124	6.34E-03	4.86E-03	3.26E-04	3.76E-01	1.48E-05	5.83E-01	4.09E-04	3.73E-04
Commercial Turf Equipment	G4	50	Lawn and Garden Equip	U	N	NHH	NP	21	48	80	2.15E-03	3.38E-03	4.44E-05	1.20E-01	7.04E-06	5.79E-01	2.03E-04	1.27E-04
Commercial Turf Equipment	G4	120	Lawn and Garden Equip	U	N	NHH	NP	0	0	1	3.33E-06	1.99E-05	5.55E-07	1.94E-04	6.92E-08	7.17E-03	1.32E-06	1.96E-07
Other Lawn & Garden Equipment	G4	5	Lawn and Garden Equip	C	N	NHH	NP	95	20	4	3.64E-04	8.64E-05	5.72E-05	1.05E-02	7.51E-07	2.18E-02	1.98E-05	2.04E-05
Other Lawn & Garden Equipment	G4	5	Lawn and Garden Equip	R	N	NHH	NP	2,903	38	9	8.09E-04	1.99E-04	8.21E-05	2.91E-02	1.44E-06	4.18E-02	4.09E-05	4.76E-05
Other Lawn & Garden Equipment	G4	15	Lawn and Garden Equip	C	N	NHH	NP	42	9	4	1.49E-04	1.08E-04	7.67E-06	1.18E-02	5.51E-07	1.93E-02	1.54E-05	8.78E-06
Other Lawn & Garden Equipment	G4	15	Lawn and Garden Equip	R	N	NHH	NP	1,289	17	8	3.80E-04	2.36E-04	1.28E-05	2.43E-02	1.06E-06	3.71E-02	3.14E-05	2.24E-05
Other Lawn & Garden Equipment	G4	25	Lawn and Garden Equip	C	N	NHH	NP	1	0	0	6.80E-06	4.74E-06	3.44E-07	5.63E-04	2.20E-08	8.68E-04	4.78E-07	4.01E-07
Other Lawn & Garden Equipment	G4	25	Lawn and Garden Equip	R	N	NHH	NP	27	0	0	1.73E-05	9.65E-06	5.78E-07	1.15E-03	4.25E-08	1.68E-03	9.46E-07	1.02E-06
Other Lawn & Garden Equipment	G4	50	Lawn and Garden Equip	U	N	NHH	NP	0	0	0	5.18E-07	1.04E-06	1.65E-08	1.98E-05	2.63E-09	2.16E-04	5.52E-08	3.05E-08
Other Lawn & Garden Equipment	G4	120	Lawn and Garden Equip	U	N	NHH	NP	0	0	0	2.12E-06	9.73E-06	1.13E-07	5.03E-05	1.40E-08	1.45E-03	2.70E-07	1.25E-07
2-Wheel Tractors	G4	5	Agricultural Equip	U	P	NHH	NP	23	12	3	3.31E-04	1.48E-04	4.63E-06	5.68E-03	4.90E-07	1.42E-02	2.10E-05	1.95E-05
2-Wheel Tractors	G4	15	Agricultural Equip	U	P	NHH	NP	26	29	14	1.02E-03	7.54E-04	5.74E-04	4.22E-02	1.95E-06	6.85E-02	7.57E-05	6.01E-05
2-Wheel Tractors	G4	25	Agricultural Equip	U	P	NHH	NP	1	1	1	5.80E-05	3.74E-05	3.08E-05	2.40E-03	9.32E-08	3.68E-03	2.82E-06	3.41E-06
Agricultural Tractors	G4	120	Agricultural Equip	U	P	NHH	NP	9	16	82	2.54E-03	6.55E-03	5.43E-05	4.93E-02	6.77E-06	7.01E-01	1.64E-04	1.49E-04
Agricultural Tractors	G4	175	Agricultural Equip	U	P	NHH	NP	1	2	16	2.38E-04	1.55E-03	1.13E-05	5.57E-03	1.41E-06	1.42E-01	3.00E-05	1.40E-05
Combines	G4	120	Agricultural Equip	U	P	NHH	NP	2	1	6	4.66E-05	1.61E-04	4.63E-06	1.42E-03	5.78E-07	5.98E-02	5.54E-06	2.74E-06
Combines	G4	175	Agricultural Equip	U	P	NHH	NP	1	1	6	2.58E-05	1.56E-04	4.10E-06	1.72E-03	5.11E-07	5.15E-02	4.14E-06	1.52E-06
Combines	G4	250	Agricultural Equip	U	N	NHH	NP	0	0	1	4.79E-06	4.34E-05	8.95E-07	3.76E-04	1.12E-07	1.09E-02	1.08E-06	2.82E-07
Balers	G4	50	Agricultural Equip	U	P	NHH	NP	32	7	15	3.95E-04	7.50E-04	9.28E-06	1.25E-02	1.47E-06	1.21E-01	3.65E-05	2.32E-05
Balers	G4	120	Agricultural Equip	U	P	NHH	NP	16	4	12	2.38E-04	9.69E-04	8.68E-06	4.74E-03	1.08E-06	1.12E-01	2.91E-05	1.40E-05
Agricultural Mowers	G4	15	Agricultural Equip	U	P	NHH	NP	23	14	5	4.03E-04	2.77E-04	2.15E-04	1.61E-02	7.32E-07	2.57E-02	3.16E-05	2.37E-05
Agricultural Mowers	G4	25	Agricultural Equip	U	P	NHH	NP	19	12	10	7.69E-04	4.70E-04	3.96E-04	3.12E-02	1.20E-06	4.72E-02	3.81E-05	4.52E-05
Sprayers	G4	5	Agricultural Equip	U	P	NHH	NP	89	29	5	6.34E-04	2.83E-04	9.00E-06	1.14E-02	9.54E-07	2.76E-02	4.48E-05	3.73E-05
Sprayers	G4	15	Agricultural Equip	U	P	NHH	NP	28	9	3	3.31E-04	1.43E-04	1.21E-04	1.06E-02	4.29E-07	1.50E-02	1.80E-05	1.95E-05

Equipment	Fuel	MaxHP	Class	C/R	Pre	Handheld?	Portable?	Population	Activity	Fuel	ROG Exhaust	NOX Exhaust	PM Exhaust	CO Exhaust	SO2 Exhaust	CO2 Exhaust	N2O Exhaust	CH4 Exhaust
									(equip- hrs/day)	Consumption (gal/day)								
Sprayers	G4	25	Agricultural Equip	U	P	NHH	NP	72	23	22	1.96E-03	8.12E-04	7.62E-04	6.76E-02	2.39E-06	9.45E-02	7.06E-05	1.15E-04
Sprayers	G4	50	Agricultural Equip	U	P	NHH	NP	6	2	3	7.63E-05	1.43E-04	1.76E-06	2.42E-03	2.80E-07	2.30E-02	7.46E-06	4.48E-06
Sprayers	G4	120	Agricultural Equip	U	P	NHH	NP	10	3	9	1.71E-04	6.85E-04	6.12E-06	3.40E-03	7.63E-07	7.90E-02	2.09E-05	1.00E-05
Sprayers	G4	175	Agricultural Equip	U	P	NHH	NP	2	1	4	4.54E-05	3.49E-04	2.84E-06	1.18E-03	3.54E-07	3.57E-02	7.29E-06	2.67E-06
Tillers	G4	15	Agricultural Equip	U	N	NHH	NP	3,028	719	373	2.96E-02	1.43E-02	8.63E-04	1.14E+00	4.82E-05	1.69E+00	1.60E-03	1.74E-03
Swathers	G4	120	Agricultural Equip	U	P	NHH	NP	33	10	46	9.02E-04	3.54E-03	3.16E-05	1.79E-02	3.94E-06	4.08E-01	9.42E-05	5.30E-05
Swathers	G4	175	Agricultural Equip	U	P	NHH	NP	25	8	49	5.74E-04	4.38E-03	3.55E-05	1.49E-02	4.43E-06	4.46E-01	9.32E-05	3.37E-05
Hydro Power Units	G4	5	Agricultural Equip	U	P	NHH	NP	5	3	1	9.82E-05	4.39E-05	1.36E-06	1.63E-03	1.44E-07	4.16E-03	5.87E-06	5.77E-06
Hydro Power Units	G4	15	Agricultural Equip	U	P	NHH	NP	11	17	7	5.41E-04	3.99E-04	2.95E-04	2.17E-02	1.00E-06	3.52E-02	4.15E-05	3.18E-05
Hydro Power Units	G4	25	Agricultural Equip	U	P	NHH	NP	4	6	6	4.63E-04	2.99E-04	2.39E-04	1.87E-02	7.23E-07	2.85E-02	2.27E-05	2.72E-05
Hydro Power Units	G4	50	Agricultural Equip	U	P	NHH	NP	0	0	1	1.07E-05	1.57E-05	6.37E-07	8.38E-04	1.01E-07	8.32E-03	1.36E-06	6.31E-07
Hydro Power Units	G4	120	Agricultural Equip	U	P	NHH	NP	0	0	0	8.10E-07	1.85E-06	1.38E-07	3.92E-05	1.72E-08	1.79E-03	1.66E-07	4.76E-08
Other Agricultural Equipment	G4	5	Agricultural Equip	U	P	NHH	NP	4	2	0	4.33E-05	1.94E-05	6.16E-07	7.78E-04	6.52E-08	1.89E-03	2.93E-06	2.55E-06
Other Agricultural Equipment	G4	15	Agricultural Equip	U	P	NHH	NP	3	2	1	6.65E-05	4.36E-05	3.46E-05	2.61E-03	1.18E-07	4.13E-03	4.24E-06	3.91E-06
Other Agricultural Equipment	G4	25	Agricultural Equip	U	P	NHH	NP	1	0	1	4.35E-05	2.56E-05	2.20E-05	1.75E-03	6.67E-08	2.63E-03	1.69E-06	2.55E-06
Other Agricultural Equipment	G4	50	Agricultural Equip	U	P	NHH	NP	1	0	1	1.63E-05	2.90E-05	4.36E-07	5.72E-04	6.92E-08	5.69E-03	1.66E-06	9.57E-07
Other Agricultural Equipment	G4	120	Agricultural Equip	U	P	NHH	NP	6	2	8	1.35E-04	5.06E-04	5.83E-06	2.87E-03	7.27E-07	7.53E-02	1.60E-05	7.94E-06
Other Agricultural Equipment	G4	175	Agricultural Equip	U	P	NHH	NP	1	0	2	1.77E-05	1.29E-04	1.35E-06	5.69E-04	1.68E-07	1.69E-02	2.80E-06	1.04E-06
Other Agricultural Equipment	G4	250	Agricultural Equip	U	N	NHH	NP	0	0	1	9.55E-06	7.55E-05	9.07E-07	3.82E-04	1.13E-07	1.11E-02	1.46E-06	5.61E-07
Generator Sets	G4	5	Light Commercial Equip	C	N	NHH	P	403	165	41	6.93E-03	1.64E-03	7.36E-04	9.77E-02	7.34E-06	2.13E-01	2.53E-04	4.08E-04
Generator Sets	G4	5	Light Commercial Equip	R	N	NHH	P	317	87	23	4.11E-03	8.64E-04	3.84E-04	5.85E-02	3.88E-06	1.12E-01	1.33E-04	2.42E-04
Generator Sets	G4	15	Light Commercial Equip	C	N	NHH	P	1,108	454	277	1.82E-02	1.15E-02	6.98E-04	8.23E-01	3.75E-05	1.31E+00	1.16E-03	1.07E-03
Generator Sets	G4	15	Light Commercial Equip	R	N	NHH	P	870	240	153	1.29E-02	5.91E-03	3.65E-04	4.68E-01	1.98E-05	6.95E-01	6.01E-04	7.61E-04
Generator Sets	G4	25	Light Commercial Equip	C	N	NHH	P	595	244	322	2.05E-02	1.26E-02	7.91E-04	9.81E-01	3.78E-05	1.49E+00	9.11E-04	1.21E-03
Generator Sets	G4	25	Light Commercial Equip	R	N	NHH	P	468	129	176	1.38E-02	6.26E-03	4.14E-04	5.44E-01	2.00E-05	7.88E-01	4.63E-04	8.12E-04
Generator Sets	G4	50	Light Commercial Equip	U	N	NHH	P	198	69	158	3.54E-03	6.78E-03	9.99E-05	1.35E-01	1.59E-05	1.30E+00	3.42E-04	2.09E-04
Generator Sets	G4	120	Light Commercial Equip	U	N	NHH	P	38	13	71	1.09E-03	4.61E-03	5.00E-05	2.52E-02	6.24E-06	6.46E-01	1.27E-04	6.42E-05
Generator Sets	G4	175	Light Commercial Equip	U	N	NHH	P	4	1	11	1.03E-04	8.26E-04	8.32E-06	3.42E-03	1.04E-06	1.04E-01	1.69E-05	6.05E-06
Pumps	G4	5	Light Commercial Equip	C	P	NHH	P	143	113	19	2.98E-03	1.25E-03	7.24E-05	3.88E-02	3.81E-06	1.10E-01	1.86E-04	1.76E-04
Pumps	G4	5	Light Commercial Equip	R	P	NHH	P	112	59	11	1.96E-03	6.21E-04	8.94E-05	2.59E-02	2.01E-06	5.83E-02	9.48E-05	1.16E-04
Pumps	G4	15	Light Commercial Equip	C	P	NHH	P	155	122	67	4.93E-03	3.55E-03	2.67E-03	1.96E-01	9.09E-06	3.19E-01	3.37E-04	2.91E-04
Pumps	G4	15	Light Commercial Equip	R	P	NHH	P	122	64	36	2.85E-03	1.81E-03	1.40E-03	1.06E-01	4.80E-06	1.68E-01	1.74E-04	1.68E-04
Pumps	G4	25	Light Commercial Equip	C	P	NHH	P	40	31	37	2.74E-03	1.78E-03	1.45E-03	1.12E-01	4.40E-06	1.73E-01	1.23E-04	1.62E-04
Pumps	G4	25	Light Commercial Equip	R	P	NHH	P	31	17	20	1.49E-03	9.16E-04	7.68E-04	5.99E-02	2.32E-06	9.16E-02	6.42E-05	8.78E-05
Pumps	G4	50	Light Commercial Equip	U	P	NHH	P	16	11	24	5.46E-04	8.98E-04	1.51E-05	2.12E-02	2.39E-06	1.97E-01	4.75E-05	3.22E-05
Pumps	G4	120	Light Commercial Equip	U	P	NHH	P	20	14	82	1.25E-03	4.22E-03	5.74E-05	2.84E-02	7.15E-06	7.40E-01	1.11E-04	7.35E-05
Pumps	G4	175	Light Commercial Equip	U	P	NHH	P	1	0	4	3.22E-05	2.18E-04	2.68E-06	1.14E-03	3.34E-07	3.36E-02	4.45E-06	1.90E-06
Air Compressors	G4	5	Light Commercial Equip	C	P	NHH	P	52	89	20	3.03E-03	1.36E-03	3.85E-05	3.85E-02	4.08E-06	1.18E-01	1.74E-04	1.78E-04
Air Compressors	G4	5	Light Commercial Equip	R	P	NHH	P	41	47	10	1.60E-03	7.19E-04	2.03E-05	2.03E-02	2.15E-06	6.24E-02	9.22E-05	9.43E-05
Air Compressors	G4	15	Light Commercial Equip	C	P	NHH	P	26	45	17	1.30E-03	9.63E-04	7.01E-04	5.09E-02	2.39E-06	8.37E-02	1.05E-04	7.65E-05
Air Compressors	G4	15	Light Commercial Equip	R	P	NHH	P	21	24	9	6.71E-04	4.97E-04	3.71E-04	2.69E-02	1.26E-06	4.42E-02	5.51E-05	3.95E-05
Air Compressors	G4	25	Light Commercial Equip	C	P	NHH	P	4	6	6	4.49E-04	2.91E-04	2.30E-04	1.77E-02	6.94E-07	2.74E-02	2.19E-05	2.65E-05
Air Compressors	G4	25	Light Commercial Equip	R	P	NHH	P	3	3	3	2.33E-04	1.51E-04	1.21E-04	9.37E-03	3.67E-07	1.45E-02	1.15E-05	1.38E-05
Air Compressors	G4	50	Light Commercial Equip	U	P	NHH	P	6	9	20	6.84E-04	9.15E-04	1.15E-05	2.30E-02	1.83E-06	1.50E-01	4.49E-05	4.03E-05
Air Compressors	G4	120	Light Commercial Equip	U	P	NHH	P	20	29	110	2.83E-03	7.61E-03	7.46E-05	5.70E-02	9.31E-06	9.64E-01	2.26E-04	1.67E-04
Air Compressors	G4	175	Light Commercial Equip	U	P	NHH	P	1	2	13	1.71E-04	1.10E-03	9.61E-06	4.46E-03	1.20E-06	1.21E-01	2.28E-05	1.01E-05
Welders	G4	15	Light Commercial Equip	C	P	NHH	P	101	64	37	3.01E-03	1.83E-03	1.40E-03	1.09E-01	4.85E-06	1.70E-01	1.75E-04	1.77E-04
Welders	G4	25	Light Commercial Equip	C	P	NHH	P	365	232	206	1.60E-02	9.53E-03	7.96E-03	6.24E-01	2.41E-05	9.50E-01	7.68E-04	9.42E-04
Welders	G4	50	Light Commercial Equip	U	P	NHH	P	31	20	49	1.36E-03	2.23E-03	3.03E-05	4.53E-02	4.80E-06	3.95E-01	1.04E-04	8.00E-05
Welders	G4	120	Light Commercial Equip	U	P	NHH	P	32	20	69	1.36E-03	4.67E-03	4.80E-05	2.76E-02	5.99E-06	6.20E-01	1.46E-04	8.04E-05
Welders	G4	175	Light Commercial Equip	U	P	NHH	P	2	1	8	9.25E-05	6.62E-04	6.15E-06	2.61E-03	7.67E-07	7.72E-02	1.47E-05	5.45E-06
Pressure Washers	G4	5	Light Commercial Equip	C	N	NHH	P	108	44	16	2.25E-03	6.54E-04	3.07E-04	3.36E-02	3.08E-06	8.92E-02	8.39E-05	1.33E-04
Pressure Washers	G4	5	Light Commercial Equip	R	N	NHH	P	85	23	9	1.62E-03	3.60E-04	1.61E-04	2.34E-02	1.63E-06	4.72E-02	4.53E-05	9.56E-05
Pressure Washers	G4	15	Light Commercial Equip	C	N	NHH	P	97	40	24	1.55E-03	9.78E-04	5.92E-05	6.98E-02	3.18E-06	1.11E-01	9.94E-05	9.11E-05
Pressure Washers	G4	15	Light Commercial Equip	R	N	NHH	P	76	21	13	1.09E-03	5.01E-04	3.09E-05	3.97E-02	1.68E-06	5.89E-02	5.16E-05	6.45E-05
Pressure Washers	G4	25	Light Commercial Equip	C	N	NHH	P	18	7	12	6.98E-04	4.52E-04	2.83E-05	3.52E-02	1.36E-06	5.38E-02	3.02E-05	4.11E-05

Equipment	Fuel	MaxHP	Class	C/R	Pre	Handheld?	Portable?	Population	Activity	Fuel	ROG Exhaust	NOX Exhaust	PM Exhaust	CO Exhaust	SO2 Exhaust	CO2 Exhaust	N2O Exhaust	CH4 Exhaust
									(equip- hrs/day)	Consumption (gal/day)								
Pressure Washers	G4	25	Light Commercial Equip	R	N	NHH	P	14	4	6	4.71E-04	2.27E-04	1.49E-05	1.94E-02	7.21E-07	2.84E-02	1.55E-05	2.78E-05
Pressure Washers	G4	50	Light Commercial Equip	U	P	NHH	P	2	1	2	3.25E-05	5.80E-05	1.01E-06	1.23E-03	1.61E-07	1.32E-02	2.90E-06	1.91E-06
Shredders	G4	15	Logging Equip	U	P	NHH	NP	1,001	659	415	2.89E-02	2.15E-02	1.67E-02	1.21E+00	5.69E-05	2.00E+00	1.93E-03	1.70E-03
Cargo Tractor	G4	120	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A/C Tug Narrow Body	G4	175	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A/C Tug Wide Body	G4	500	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Air Conditioner	G4	175	Airport Ground Support Equip	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Air Start Unit	G4	175	Airport Ground Support Equip	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Baggage Tug	G4	120	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Belt Loader	G4	120	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bobtail	G4	120	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cargo Loader	G4	120	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cart	G4	15	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Deicer	G4	120	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Forklift	G4	50	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Fuel Truck	G4	175	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ground Power Unit	G4	175	Airport Ground Support Equip	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Lav Cart	G4	15	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Lav Truck	G4	175	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Lift	G4	120	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Maint. Truck	G4	175	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Other GSE	G4	50	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Passenger Stand	G4	175	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sweeper	G4	120	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Generator	G4	120	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Service Truck	G4	250	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Catering Truck	G4	250	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Water Truck	G4	175	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Hydrant truck	G4	175	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Transport Refrigeration Units	G4	15	Transport Refrigeration Units	U	N	NHH	NP	151	308	181	9.69E-03	6.91E-03	4.89E-04	5.34E-01	2.50E-05	8.75E-01	7.40E-04	5.71E-04
Aerial Lifts	C4	15	Industrial Equip	U	P	NHH	NP	0	0	0	1.49E-07	1.58E-06	1.64E-07	5.76E-05	0.00E+00	3.57E-04	0.00E+00	1.25E-06
Aerial Lifts	C4	25	Industrial Equip	U	P	NHH	NP	3	3	4	1.45E-05	1.05E-04	1.16E-05	3.81E-03	0.00E+00	2.24E-02	0.00E+00	1.22E-04
Forklifts	C4	25	Industrial Equip	U	N	NHH	NP	0	0	0	7.04E-07	3.10E-06	3.81E-07	1.11E-04	0.00E+00	5.78E-04	0.00E+00	5.90E-06
Forklifts	C4	50	Industrial Equip	U	N	NHH	NP	22	110	147	1.16E-04	4.98E-03	8.94E-05	1.62E-02	0.00E+00	1.00E+00	0.00E+00	9.76E-04
Forklifts	C4	120	Industrial Equip	U	N	NHH	NP	79	386	919	6.99E-04	3.13E-02	5.35E-04	2.74E-01	0.00E+00	6.02E+00	0.00E+00	5.86E-03
Forklifts	C4	175	Industrial Equip	U	N	NHH	NP	3	14	69	3.43E-05	1.67E-03	4.09E-05	1.60E-02	0.00E+00	4.60E-01	0.00E+00	2.87E-04
Generator Sets	C4	120	Light Commercial Equip	U	N	NHH	P	3	1	6	4.50E-06	2.98E-04	3.73E-06	1.32E-03	0.00E+00	4.19E-02	0.00E+00	3.77E-05
Generator Sets	C4	175	Light Commercial Equip	U	N	NHH	P	2	1	9	5.16E-06	4.29E-04	5.43E-06	1.58E-03	0.00E+00	6.11E-02	0.00E+00	4.33E-05
Gas Compressors	C4	50	Light Commercial Equip	U	P	NHH	P	0	11	39	2.23E-05	8.10E-04	2.06E-05	3.95E-03	0.00E+00	2.69E-01	0.00E+00	1.87E-04
Gas Compressors	C4	120	Light Commercial Equip	U	P	NHH	P	1	24	229	1.22E-04	4.79E-03	1.17E-04	6.32E-02	0.00E+00	1.51E+00	0.00E+00	1.02E-03
Gas Compressors	C4	175	Light Commercial Equip	U	P	NHH	P	0	4	59	3.39E-05	1.28E-03	3.14E-05	1.29E-02	0.00E+00	3.94E-01	0.00E+00	2.84E-04
Gas Compressors	C4	250	Light Commercial Equip	U	N	NHH	P	0	3	61	2.61E-05	1.24E-03	3.61E-05	1.48E-02	0.00E+00	4.06E-01	0.00E+00	2.19E-04
Gas Compressors	C4	500	Light Commercial Equip	U	N	NHH	P	0	3	86	3.68E-05	1.75E-03	5.08E-05	2.08E-02	0.00E+00	5.71E-01	0.00E+00	3.08E-04
Cargo Tractor	C4	175	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Air Conditioner	C4	175	Airport Ground Support Equip	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Baggage Tug	C4	120	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Belt Loader	C4	120	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bobtail	C4	120	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cargo Loader	C4	120	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Forklift	C4	50	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Fuel Truck	C4	175	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Lav Truck	C4	175	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Lift	C4	120	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Other	C4	50	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Passenger Stand	C4	175	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sweeper	C4	50	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Equipment	Fuel	MaxHP	Class	C/R	Pre	Handheld?	Portable?	Population	Activity	Fuel	ROG Exhaust	NOX Exhaust	PM Exhaust	CO Exhaust	SO2 Exhaust	CO2 Exhaust	N2O Exhaust	CH4 Exhaust
									(equip- hrs/day)	Consumption (gal/day)								
Service Truck	C4	250	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Catering Truck	C4	250	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Pavers	D	25	Construction and Mining Equip	U	P	NHH	NP	0	0	0	4.91E-06	2.99E-05	1.50E-06	1.59E-05	4.71E-08	3.71E-03	0.00E+00	4.43E-07
Pavers	D	50	Construction and Mining Equip	U	P	NHH	NP	10	24	31	1.61E-03	3.46E-03	3.62E-04	4.22E-03	4.25E-06	3.29E-01	0.00E+00	1.45E-04
Pavers	D	120	Construction and Mining Equip	U	P	NHH	NP	12	28	88	1.92E-03	1.16E-02	1.01E-03	7.01E-03	1.12E-05	9.58E-01	0.00E+00	1.74E-04
Pavers	D	175	Construction and Mining Equip	U	P	NHH	NP	8	17	101	1.53E-03	1.19E-02	6.63E-04	6.70E-03	1.24E-05	1.10E+00	0.00E+00	1.38E-04
Pavers	D	250	Construction and Mining Equip	U	N	NHH	NP	1	2	18	2.15E-04	2.02E-03	7.84E-05	6.30E-04	2.27E-06	2.02E-01	0.00E+00	1.94E-05
Pavers	D	500	Construction and Mining Equip	U	N	NHH	NP	1	2	23	2.42E-04	2.24E-03	8.70E-05	9.84E-04	2.44E-06	2.48E-01	0.00E+00	2.18E-05
Plate Compactors	D	15	Construction and Mining Equip	U	P	NHH	NP	4	6	1	1.57E-05	9.82E-05	3.85E-06	8.23E-05	2.10E-07	1.35E-02	0.00E+00	1.41E-06
Rollers	D	15	Construction and Mining Equip	U	P	NHH	NP	7	14	4	5.00E-05	3.13E-04	1.21E-05	2.62E-04	6.68E-07	4.30E-02	0.00E+00	4.51E-06
Rollers	D	25	Construction and Mining Equip	U	P	NHH	NP	3	6	3	4.59E-05	2.91E-04	1.16E-05	1.56E-04	4.81E-07	3.79E-02	0.00E+00	4.14E-06
Rollers	D	50	Construction and Mining Equip	U	P	NHH	NP	9	18	22	9.16E-04	2.31E-03	2.19E-04	2.60E-03	3.00E-06	2.32E-01	0.00E+00	8.26E-05
Rollers	D	120	Construction and Mining Equip	U	P	NHH	NP	50	96	259	4.73E-03	3.00E-02	2.56E-03	1.95E-02	3.32E-05	2.83E+00	0.00E+00	4.27E-04
Rollers	D	175	Construction and Mining Equip	U	P	NHH	NP	20	39	190	2.41E-03	1.95E-02	1.06E-03	1.19E-02	2.34E-05	2.08E+00	0.00E+00	2.17E-04
Rollers	D	250	Construction and Mining Equip	U	N	NHH	NP	3	5	38	3.45E-04	3.59E-03	1.23E-04	1.06E-03	4.71E-06	4.18E-01	0.00E+00	3.11E-05
Rollers	D	500	Construction and Mining Equip	U	N	NHH	NP	2	4	38	3.17E-04	3.22E-03	1.14E-04	1.21E-03	4.12E-06	4.20E-01	0.00E+00	2.86E-05
Scrapers	D	120	Construction and Mining Equip	U	P	NHH	NP	0	1	6	1.32E-04	7.82E-04	6.90E-05	4.87E-04	7.72E-07	6.58E-02	0.00E+00	1.19E-05
Scrapers	D	175	Construction and Mining Equip	U	P	NHH	NP	4	13	87	1.33E-03	1.00E-02	5.68E-04	5.84E-03	1.07E-05	9.50E-01	0.00E+00	1.20E-04
Scrapers	D	250	Construction and Mining Equip	U	N	NHH	NP	4	13	119	1.41E-03	1.28E-02	4.94E-04	4.01E-03	1.47E-05	1.31E+00	0.00E+00	1.27E-04
Scrapers	D	500	Construction and Mining Equip	U	N	NHH	NP	11	34	504	5.49E-03	4.87E-02	1.89E-03	2.08E-02	5.43E-05	5.54E+00	0.00E+00	4.95E-04
Scrapers	D	750	Construction and Mining Equip	U	N	NHH	NP	5	16	415	4.55E-03	4.10E-02	1.58E-03	1.72E-02	4.59E-05	4.57E+00	0.00E+00	4.10E-04
Paving Equipment	D	25	Construction and Mining Equip	U	P	NHH	NP	0	1	0	5.32E-06	3.37E-05	1.35E-06	1.81E-05	5.58E-08	4.40E-03	0.00E+00	4.80E-07
Paving Equipment	D	50	Construction and Mining Equip	U	P	NHH	NP	0	1	1	3.47E-05	7.48E-05	7.83E-06	9.07E-05	9.20E-08	7.11E-03	0.00E+00	3.13E-06
Paving Equipment	D	120	Construction and Mining Equip	U	P	NHH	NP	4	9	21	4.66E-04	2.81E-03	2.46E-04	1.70E-03	2.74E-06	2.33E-01	0.00E+00	4.21E-05
Paving Equipment	D	175	Construction and Mining Equip	U	P	NHH	NP	2	4	19	2.80E-04	2.18E-03	1.21E-04	1.22E-03	2.29E-06	2.03E-01	0.00E+00	2.52E-05
Paving Equipment	D	250	Construction and Mining Equip	U	N	NHH	NP	0	1	6	7.25E-05	6.93E-04	2.65E-05	2.13E-04	7.81E-07	6.94E-02	0.00E+00	6.54E-06
Surfacing Equipment	D	50	Construction and Mining Equip	U	P	NHH	NP	0	0	0	6.98E-06	1.99E-05	1.74E-06	2.05E-05	2.67E-08	2.06E-03	0.00E+00	6.30E-07
Surfacing Equipment	D	120	Construction and Mining Equip	U	P	NHH	NP	0	0	0	2.84E-06	1.91E-05	1.51E-06	1.23E-05	2.19E-08	1.87E-03	0.00E+00	2.57E-07
Surfacing Equipment	D	175	Construction and Mining Equip	U	P	NHH	NP	0	0	0	1.97E-06	1.70E-05	8.61E-07	1.04E-05	2.12E-08	1.88E-03	0.00E+00	1.77E-07
Surfacing Equipment	D	250	Construction and Mining Equip	U	N	NHH	NP	0	0	1	4.50E-06	4.91E-05	1.65E-06	1.48E-05	6.66E-08	5.92E-03	0.00E+00	4.06E-07
Surfacing Equipment	D	500	Construction and Mining Equip	U	N	NHH	NP	1	1	7	5.60E-05	6.07E-04	2.07E-05	2.35E-04	7.94E-07	8.09E-02	0.00E+00	5.06E-06
Surfacing Equipment	D	750	Construction and Mining Equip	U	N	NHH	NP	1	1	20	1.56E-04	1.70E-03	5.76E-05	6.43E-04	2.23E-06	2.22E-01	0.00E+00	1.41E-05
Signal Boards	D	15	Construction and Mining Equip	U	P	NHH	NP	34	68	19	2.45E-04	1.53E-03	5.99E-05	1.29E-03	3.28E-06	2.11E-01	0.00E+00	2.21E-05
Signal Boards	D	50	Construction and Mining Equip	U	P	NHH	NP	0	0	0	1.40E-05	4.14E-05	3.59E-06	4.19E-05	5.66E-08	4.38E-03	0.00E+00	1.26E-06
Signal Boards	D	120	Construction and Mining Equip	U	P	NHH	NP	3	4	15	2.33E-04	1.55E-03	1.28E-04	1.03E-03	1.86E-06	1.59E-01	0.00E+00	2.10E-05
Signal Boards	D	175	Construction and Mining Equip	U	P	NHH	NP	2	2	17	1.89E-04	1.64E-03	8.43E-05	1.02E-03	2.14E-06	1.90E-01	0.00E+00	1.70E-05
Signal Boards	D	250	Construction and Mining Equip	U	N	NHH	NP	0	1	6	4.24E-05	5.18E-04	1.51E-05	1.39E-04	7.45E-07	6.62E-02	0.00E+00	3.82E-06
Trenchers	D	15	Construction and Mining Equip	U	P	NHH	NP	1	1	1	7.38E-06	4.62E-05	1.80E-06	3.87E-05	9.87E-08	6.34E-03	0.00E+00	6.66E-07
Trenchers	D	25	Construction and Mining Equip	U	P	NHH	NP	1	2	2	3.14E-05	1.98E-04	7.69E-06	1.07E-04	3.30E-07	2.60E-02	0.00E+00	2.83E-06
Trenchers	D	50	Construction and Mining Equip	U	P	NHH	NP	36	61	94	4.81E-03	1.05E-02	1.08E-03	1.25E-02	1.31E-05	1.01E+00	0.00E+00	4.34E-04
Trenchers	D	120	Construction and Mining Equip	U	P	NHH	NP	49	83	248	5.33E-03	3.27E-02	2.78E-03	1.95E-02	3.16E-05	2.70E+00	0.00E+00	4.81E-04
Trenchers	D	175	Construction and Mining Equip	U	P	NHH	NP	5	9	60	8.90E-04	7.06E-03	3.87E-04	3.93E-03	7.37E-06	6.55E-01	0.00E+00	8.03E-05
Trenchers	D	250	Construction and Mining Equip	U	N	NHH	NP	0	1	8	9.60E-05	9.18E-04	3.59E-05	2.89E-04	1.02E-06	9.09E-02	0.00E+00	8.66E-06
Trenchers	D	500	Construction and Mining Equip	U	N	NHH	NP	1	1	15	1.55E-04	1.48E-03	5.74E-05	6.76E-04	1.59E-06	1.62E-01	0.00E+00	1.40E-05
Trenchers	D	750	Construction and Mining Equip	U	N	NHH	NP	0	0	10	1.01E-04	9.75E-04	3.74E-05	4.37E-04	1.05E-06	1.05E-01	0.00E+00	9.11E-06
Bore/Drill Rigs	D	15	Construction and Mining Equip	U	P	NHH	P	0	0	0	1.58E-06	9.89E-06	3.84E-07	8.28E-06	2.11E-08	1.36E-03	0.00E+00	1.42E-07
Bore/Drill Rigs	D	25	Construction and Mining Equip	U	P	NHH	P	0	1	1	7.61E-06	4.82E-05	1.93E-06	2.59E-05	7.98E-08	6.29E-03	0.00E+00	6.86E-07
Bore/Drill Rigs	D	50	Construction and Mining Equip	U	P	NHH	P	2	4	5	5.16E-05	4.58E-04	2.14E-05	4.07E-04	7.16E-07	5.54E-02	0.00E+00	4.65E-06
Bore/Drill Rigs	D	120	Construction and Mining Equip	U	P	NHH	P	5	11	38	2.45E-04	2.51E-03	1.41E-04	2.57E-03	4.95E-06	4.22E-01	0.00E+00	2.21E-05
Bore/Drill Rigs	D	175	Construction and Mining Equip	U	P	NHH	P	1	3	16	8.91E-05	8.78E-04	3.82E-05	9.55E-04	2.01E-06	1.79E-01	0.00E+00	8.04E-06
Bore/Drill Rigs	D	250	Construction and Mining Equip	U	N	NHH	P	1	2	19	8.66E-05	8.31E-04	2.40E-05	3.74E-04	2.31E-06	2.05E-01	0.00E+00	7.81E-06
Bore/Drill Rigs	D	500	Construction and Mining Equip	U	N	NHH	P	2	5	68	3.14E-04	2.84E-03	8.75E-05	1.34E-03	7.41E-06	7.55E-01	0.00E+00	2.83E-05
Bore/Drill Rigs	D	750	Construction and Mining Equip	U	N	NHH	P	3	7	205	9.47E-04	8.63E-03	2.64E-04	4.02E-03	2.28E-05	2.27E+00	0.00E+00	8.55E-05
Bore/Drill Rigs	D	1000	Construction and Mining Equip	U	N	NHH	P	5	12	519	2.58E-03	3.69E-02	9.56E-04	1.03E-02	5.77E-05	5.74E+00	0.00E+00	2.33E-04
Excavators	D	25	Construction and Mining Equip	U	P	NHH	NP	0	2	1	1.66E-05	1.05E-04	3.92E-06	5.65E-05	1.74E-07	1.37E-02	0.00E+00	1.49E-06
Excavators	D	50	Construction and Mining Equip	U	P	NHH	NP	17	64	74	2.62E-03	7.87E-03	6.81E-04	9.10E-03	1.04E-05	8.01E-01	0.00E+00	2.36E-04

Equipment	Fuel	MaxHP	Class	C/R	Pre	Handheld?	Portable?	Population	Activity	Fuel	ROG Exhaust	NOX Exhaust	PM Exhaust	CO Exhaust	SO2 Exhaust	CO2 Exhaust	N2O Exhaust	CH4 Exhaust
									(equip- hrs/day)	Consumption (gal/day)								
Excavators	D	120	Construction and Mining Equip	U	P	NHH	NP	45	174	586	9.47E-03	5.91E-02	5.11E-03	4.50E-02	7.51E-05	6.40E+00	0.00E+00	8.54E-04
Excavators	D	175	Construction and Mining Equip	U	P	NHH	NP	87	336	1,719	2.03E-02	1.50E-01	8.61E-03	1.12E-01	2.12E-04	1.88E+01	0.00E+00	1.83E-03
Excavators	D	250	Construction and Mining Equip	U	N	NHH	NP	35	137	982	8.48E-03	7.76E-02	2.54E-03	2.42E-02	1.22E-04	1.08E+01	0.00E+00	7.65E-04
Excavators	D	500	Construction and Mining Equip	U	N	NHH	NP	25	99	1,043	8.54E-03	7.27E-02	2.54E-03	2.59E-02	1.13E-04	1.15E+01	0.00E+00	7.71E-04
Excavators	D	750	Construction and Mining Equip	U	N	NHH	NP	2	6	111	9.11E-04	7.94E-03	2.74E-04	2.75E-03	1.23E-05	1.22E+00	0.00E+00	8.22E-05
Concrete/Industrial Saws	D	25	Construction and Mining Equip	U	P	NHH	NP	0	0	0	7.61E-07	4.81E-06	1.87E-07	2.60E-06	8.00E-09	6.31E-04	0.00E+00	6.87E-08
Concrete/Industrial Saws	D	50	Construction and Mining Equip	U	P	NHH	NP	0	1	1	3.14E-05	9.38E-05	8.10E-06	9.58E-05	1.28E-07	9.91E-03	0.00E+00	2.83E-06
Concrete/Industrial Saws	D	120	Construction and Mining Equip	U	P	NHH	NP	1	1	4	6.10E-05	4.09E-04	3.38E-05	2.77E-04	4.97E-07	4.24E-02	0.00E+00	5.50E-06
Concrete/Industrial Saws	D	175	Construction and Mining Equip	U	P	NHH	NP	0	0	0	2.95E-06	2.56E-05	1.33E-06	1.63E-05	3.38E-08	3.00E-03	0.00E+00	2.66E-07
Cement and Mortar Mixers	D	15	Construction and Mining Equip	U	P	NHH	NP	6	5	1	1.84E-05	1.16E-04	5.29E-06	9.56E-05	2.44E-07	1.57E-02	0.00E+00	1.66E-06
Cement and Mortar Mixers	D	25	Construction and Mining Equip	U	P	NHH	NP	1	0	0	6.03E-06	3.37E-05	1.85E-06	1.81E-05	4.97E-08	3.92E-03	0.00E+00	5.44E-07
Cranes	D	50	Construction and Mining Equip	U	P	NHH	P	0	1	2	7.15E-05	1.69E-04	1.69E-05	2.04E-04	2.11E-07	1.63E-02	0.00E+00	6.45E-06
Cranes	D	120	Construction and Mining Equip	U	P	NHH	P	4	15	36	7.11E-04	4.26E-03	3.81E-04	2.79E-03	4.54E-06	3.87E-01	0.00E+00	6.41E-05
Cranes	D	175	Construction and Mining Equip	U	P	NHH	P	4	15	57	7.97E-04	6.00E-03	3.44E-04	3.72E-03	6.98E-06	6.20E-01	0.00E+00	7.20E-05
Cranes	D	250	Construction and Mining Equip	U	N	NHH	P	9	30	152	1.56E-03	1.49E-02	5.25E-04	4.41E-03	1.89E-05	1.68E+00	0.00E+00	1.41E-04
Cranes	D	500	Construction and Mining Equip	U	N	NHH	P	3	11	90	8.51E-04	7.81E-03	2.84E-04	2.90E-03	9.70E-06	9.88E-01	0.00E+00	7.68E-05
Cranes	D	750	Construction and Mining Equip	U	N	NHH	P	7	24	324	3.09E-03	2.89E-02	1.04E-03	1.05E-02	3.58E-05	3.56E+00	0.00E+00	2.79E-04
Cranes	D	9999	Construction and Mining Equip	U	N	NHH	P	8	30	1,303	1.40E-02	1.53E-01	4.71E-03	4.92E-02	1.44E-04	1.43E+01	0.00E+00	1.26E-03
Graders	D	50	Construction and Mining Equip	U	P	NHH	NP	0	0	1	2.33E-05	5.97E-05	5.65E-06	7.02E-05	7.66E-08	5.92E-03	0.00E+00	2.10E-06
Graders	D	120	Construction and Mining Equip	U	P	NHH	NP	11	29	99	1.80E-03	1.11E-02	9.72E-04	7.62E-03	1.26E-05	1.08E+00	0.00E+00	1.63E-04
Graders	D	175	Construction and Mining Equip	U	P	NHH	NP	38	98	555	7.21E-03	5.50E-02	3.10E-03	3.60E-02	6.84E-05	6.08E+00	0.00E+00	6.50E-04
Graders	D	250	Construction and Mining Equip	U	N	NHH	NP	24	61	475	4.54E-03	4.32E-02	1.50E-03	1.32E-02	5.89E-05	5.24E+00	0.00E+00	4.10E-04
Graders	D	500	Construction and Mining Equip	U	N	NHH	NP	1	2	18	1.60E-04	1.45E-03	5.23E-05	5.41E-04	1.94E-06	1.97E-01	0.00E+00	1.44E-05
Graders	D	750	Construction and Mining Equip	U	N	NHH	NP	0	0	6	5.31E-05	4.92E-04	1.75E-05	1.79E-04	6.56E-07	6.52E-02	0.00E+00	4.79E-06
Off-Highway Trucks	D	175	Construction and Mining Equip	U	P	NHH	NP	1	4	24	3.02E-04	2.16E-03	1.26E-04	1.58E-03	2.94E-06	2.61E-01	0.00E+00	2.72E-05
Off-Highway Trucks	D	250	Construction and Mining Equip	U	N	NHH	NP	6	31	233	2.16E-03	1.91E-02	6.37E-04	5.92E-03	2.89E-05	2.57E+00	0.00E+00	1.95E-04
Off-Highway Trucks	D	500	Construction and Mining Equip	U	N	NHH	NP	8	44	537	4.72E-03	3.89E-02	1.38E-03	1.38E-02	5.81E-05	5.92E+00	0.00E+00	4.25E-04
Off-Highway Trucks	D	750	Construction and Mining Equip	U	N	NHH	NP	22	118	2,360	2.09E-02	1.76E-01	6.16E-03	6.08E-02	2.62E-04	2.60E+01	0.00E+00	1.88E-03
Off-Highway Trucks	D	1000	Construction and Mining Equip	U	N	NHH	NP	10	55	1,565	1.51E-02	1.65E-01	4.96E-03	4.61E-02	1.73E-04	1.72E+01	0.00E+00	1.37E-03
Crushing/Proc. Equipment	D	50	Construction and Mining Equip	U	P	NHH	P	2	5	10	4.31E-04	1.08E-03	1.04E-04	1.24E-03	1.41E-06	1.09E-01	0.00E+00	3.89E-05
Crushing/Proc. Equipment	D	120	Construction and Mining Equip	U	P	NHH	P	5	14	53	9.78E-04	5.96E-03	5.44E-04	4.01E-03	6.79E-06	5.79E-01	0.00E+00	8.83E-05
Crushing/Proc. Equipment	D	175	Construction and Mining Equip	U	P	NHH	P	2	6	45	5.73E-04	4.50E-03	2.55E-04	2.84E-03	5.55E-06	4.93E-01	0.00E+00	5.17E-05
Crushing/Proc. Equipment	D	250	Construction and Mining Equip	U	N	NHH	P	0	1	7	5.42E-05	5.93E-04	1.82E-05	1.59E-04	8.07E-07	7.17E-02	0.00E+00	4.89E-06
Crushing/Proc. Equipment	D	500	Construction and Mining Equip	U	N	NHH	P	1	3	56	4.31E-04	4.48E-03	1.46E-04	1.40E-03	6.06E-06	6.17E-01	0.00E+00	3.89E-05
Crushing/Proc. Equipment	D	750	Construction and Mining Equip	U	N	NHH	P	0	0	12	9.32E-05	9.99E-04	3.19E-05	2.97E-04	1.33E-06	1.32E-01	0.00E+00	8.41E-06
Crushing/Proc. Equipment	D	9999	Construction and Mining Equip	U	N	NHH	P	0	0	27	2.53E-04	2.99E-03	8.72E-05	8.28E-04	2.96E-06	2.94E-01	0.00E+00	2.29E-05
Rough Terrain Forklifts	D	50	Construction and Mining Equip	U	P	NHH	NP	1	4	6	2.41E-04	6.74E-04	6.11E-05	7.68E-04	8.89E-07	6.88E-02	0.00E+00	2.17E-05
Rough Terrain Forklifts	D	120	Construction and Mining Equip	U	P	NHH	NP	63	195	557	9.31E-03	5.84E-02	5.16E-03	4.21E-02	7.13E-05	6.08E+00	0.00E+00	8.40E-04
Rough Terrain Forklifts	D	175	Construction and Mining Equip	U	P	NHH	NP	8	25	142	1.69E-03	1.30E-02	7.40E-04	9.05E-03	1.75E-05	1.56E+00	0.00E+00	1.52E-04
Rough Terrain Forklifts	D	250	Construction and Mining Equip	U	N	NHH	NP	0	1	11	9.01E-05	9.02E-04	2.89E-05	2.64E-04	1.34E-06	1.19E-01	0.00E+00	8.13E-06
Rough Terrain Forklifts	D	500	Construction and Mining Equip	U	N	NHH	NP	0	1	11	8.35E-05	7.83E-04	2.67E-05	2.62E-04	1.15E-06	1.17E-01	0.00E+00	7.53E-06
Rubber Tired Loaders	D	25	Construction and Mining Equip	U	P	NHH	NP	0	0	0	4.42E-06	2.80E-05	1.08E-06	1.51E-05	4.65E-08	3.67E-03	0.00E+00	3.99E-07
Rubber Tired Loaders	D	50	Construction and Mining Equip	U	P	NHH	NP	3	9	12	5.15E-04	1.34E-03	1.25E-04	1.56E-03	1.73E-06	1.34E-01	0.00E+00	4.65E-05
Rubber Tired Loaders	D	120	Construction and Mining Equip	U	P	NHH	NP	88	233	629	1.13E-02	7.02E-02	6.13E-03	4.84E-02	8.05E-05	6.87E+00	0.00E+00	1.02E-03
Rubber Tired Loaders	D	175	Construction and Mining Equip	U	P	NHH	NP	50	131	638	8.15E-03	6.25E-02	3.52E-03	4.12E-02	7.86E-05	6.98E+00	0.00E+00	7.35E-04
Rubber Tired Loaders	D	250	Construction and Mining Equip	U	N	NHH	NP	49	131	883	8.22E-03	7.93E-02	2.72E-03	2.41E-02	1.10E-04	9.73E+00	0.00E+00	7.42E-04
Rubber Tired Loaders	D	500	Construction and Mining Equip	U	N	NHH	NP	21	54	585	5.08E-03	4.67E-02	1.67E-03	1.74E-02	6.32E-05	6.44E+00	0.00E+00	4.58E-04
Rubber Tired Loaders	D	750	Construction and Mining Equip	U	N	NHH	NP	4	11	245	2.14E-03	2.01E-02	7.08E-04	7.28E-03	2.71E-05	2.70E+00	0.00E+00	1.93E-04
Rubber Tired Loaders	D	1000	Construction and Mining Equip	U	N	NHH	NP	0	1	32	3.09E-04	3.56E-03	1.07E-04	1.10E-03	3.56E-06	3.54E-01	0.00E+00	2.79E-05
Rubber Tired Dozers	D	175	Construction and Mining Equip	U	P	NHH	NP	0	1	3	5.58E-05	4.10E-04	2.35E-05	2.23E-04	3.83E-07	3.41E-02	0.00E+00	5.04E-06
Rubber Tired Dozers	D	250	Construction and Mining Equip	U	N	NHH	NP	3	13	108	1.57E-03	1.34E-02	5.67E-04	4.40E-03	1.33E-05	1.18E+00	0.00E+00	1.42E-04
Rubber Tired Dozers	D	500	Construction and Mining Equip	U	N	NHH	NP	4	20	240	3.18E-03	2.71E-02	1.12E-03	1.41E-02	2.58E-05	2.63E+00	0.00E+00	2.87E-04
Rubber Tired Dozers	D	750	Construction and Mining Equip	U	N	NHH	NP	5	20	371	4.94E-03	4.26E-02	1.75E-03	2.18E-02	4.09E-05	4.07E+00	0.00E+00	4.46E-04
Rubber Tired Dozers	D	1000	Construction and Mining Equip	U	N	NHH	NP	0	1	37	5.17E-04	5.14E-03	1.79E-04	2.37E-03	4.10E-06	4.08E-01	0.00E+00	4.67E-05
Tractors/Loaders/Backhoes	D	25	Construction and Mining Equip	U	P	NHH	NP	3	9	6	8.38E-05	5.31E-04	2.42E-05	2.82E-04	8.64E-07	6.81E-02	0.00E+00	7.56E-06
Tractors/Loaders/Backhoes	D	50	Construction and Mining Equip	U	P	NHH	NP	20	53	74	2.36E-03	7.62E-03	6.28E-04	8.43E-03	1.03E-05	7.99E-01	0.00E+00	2.13E-04

Equipment	Fuel	MaxHP	Class	C/R	Pre	Handheld?	Portable?	Population	Activity	Fuel	ROG Exhaust	NOX Exhaust	PM Exhaust	CO Exhaust	SO2 Exhaust	CO2 Exhaust	N2O Exhaust	CH4 Exhaust
									(equip- hrs/day)	Consumption (gal/day)								
Tractors/Loaders/Backhoes	D	120	Construction and Mining Equip	U	P	NHH	NP	268	705	1,667	2.45E-02	1.61E-01	1.35E-02	1.24E-01	2.14E-04	1.82E+01	0.00E+00	2.21E-03
Tractors/Loaders/Backhoes	D	175	Construction and Mining Equip	U	P	NHH	NP	20	53	243	2.60E-03	2.03E-02	1.13E-03	1.54E-02	3.00E-05	2.66E+00	0.00E+00	2.35E-04
Tractors/Loaders/Backhoes	D	250	Construction and Mining Equip	U	N	NHH	NP	6	17	132	1.02E-03	9.92E-03	3.15E-04	3.12E-03	1.64E-05	1.46E+00	0.00E+00	9.24E-05
Tractors/Loaders/Backhoes	D	500	Construction and Mining Equip	U	N	NHH	NP	10	27	429	3.14E-03	2.84E-02	9.62E-04	1.02E-02	5.32E-05	4.73E+00	0.00E+00	2.84E-04
Tractors/Loaders/Backhoes	D	750	Construction and Mining Equip	U	N	NHH	NP	21	55	1,291	9.53E-03	8.80E-02	2.95E-03	3.07E-02	1.60E-04	1.42E+01	0.00E+00	8.60E-04
Crawler Tractors	D	50	Construction and Mining Equip	U	P	NHH	NP	0	0	1	2.79E-05	6.23E-05	6.41E-06	7.70E-05	7.62E-08	5.89E-03	0.00E+00	2.52E-06
Crawler Tractors	D	120	Construction and Mining Equip	U	P	NHH	NP	95	269	812	1.74E-02	1.03E-01	9.12E-03	6.53E-02	1.04E-04	8.85E+00	0.00E+00	1.57E-03
Crawler Tractors	D	175	Construction and Mining Equip	U	P	NHH	NP	32	91	504	7.63E-03	5.71E-02	3.25E-03	3.39E-02	6.20E-05	5.51E+00	0.00E+00	6.88E-04
Crawler Tractors	D	250	Construction and Mining Equip	U	N	NHH	NP	27	78	590	6.89E-03	6.24E-02	2.40E-03	1.95E-02	7.31E-05	6.49E+00	0.00E+00	6.22E-04
Crawler Tractors	D	500	Construction and Mining Equip	U	N	NHH	NP	19	54	632	6.81E-03	6.00E-02	2.33E-03	2.54E-02	6.82E-05	6.94E+00	0.00E+00	6.14E-04
Crawler Tractors	D	750	Construction and Mining Equip	U	N	NHH	NP	3	8	167	1.80E-03	1.62E-02	6.20E-04	6.71E-03	1.84E-05	1.83E+00	0.00E+00	1.63E-04
Crawler Tractors	D	1000	Construction and Mining Equip	U	N	NHH	NP	3	8	236	2.72E-03	2.90E-02	9.31E-04	1.06E-02	2.61E-05	2.59E+00	0.00E+00	2.46E-04
Skid Steer Loaders	D	25	Construction and Mining Equip	U	P	NHH	NP	23	52	33	5.22E-04	3.02E-03	1.63E-04	1.61E-03	4.53E-06	3.57E-01	0.00E+00	4.71E-05
Skid Steer Loaders	D	50	Construction and Mining Equip	U	P	NHH	NP	207	478	561	1.24E-02	5.44E-02	3.75E-03	5.41E-02	7.88E-05	6.10E+00	0.00E+00	1.12E-03
Skid Steer Loaders	D	120	Construction and Mining Equip	U	P	NHH	NP	109	251	489	5.38E-03	4.09E-02	3.07E-03	3.44E-02	6.28E-05	5.35E+00	0.00E+00	4.85E-04
Off-Highway Tractors	D	120	Construction and Mining Equip	U	P	NHH	NP	0	0	0	3.82E-06	2.23E-05	1.95E-06	1.30E-05	1.98E-08	1.69E-03	0.00E+00	3.44E-07
Off-Highway Tractors	D	175	Construction and Mining Equip	U	P	NHH	NP	15	44	264	4.52E-03	3.39E-02	1.93E-03	1.84E-02	3.24E-05	2.88E+00	0.00E+00	4.08E-04
Off-Highway Tractors	D	250	Construction and Mining Equip	U	N	NHH	NP	14	42	248	3.42E-03	3.02E-02	1.25E-03	9.77E-03	3.06E-05	2.72E+00	0.00E+00	3.09E-04
Off-Highway Tractors	D	750	Construction and Mining Equip	U	N	NHH	NP	17	53	1,368	1.73E-02	1.53E-01	6.22E-03	7.63E-02	1.51E-04	1.50E+01	0.00E+00	1.56E-03
Off-Highway Tractors	D	1000	Construction and Mining Equip	U	N	NHH	NP	2	6	207	2.74E-03	2.80E-02	9.57E-04	1.26E-02	2.28E-05	2.27E+00	0.00E+00	2.47E-04
Dumpers/Tenders	D	25	Construction and Mining Equip	U	P	NHH	NP	0	1	0	2.48E-06	1.54E-05	7.44E-07	8.22E-06	2.48E-08	1.96E-03	0.00E+00	2.24E-07
Other Construction Equipment	D	15	Construction and Mining Equip	U	P	NHH	NP	4	7	3	4.34E-05	2.72E-04	1.06E-05	2.28E-04	5.81E-07	3.73E-02	0.00E+00	3.92E-06
Other Construction Equipment	D	25	Construction and Mining Equip	U	P	NHH	NP	1	1	1	9.99E-06	6.33E-05	2.53E-06	3.40E-05	1.05E-07	8.26E-03	0.00E+00	9.01E-07
Other Construction Equipment	D	50	Construction and Mining Equip	U	P	NHH	NP	1	2	3	7.37E-05	2.52E-04	2.00E-05	2.59E-04	3.53E-07	2.73E-02	0.00E+00	6.65E-06
Other Construction Equipment	D	120	Construction and Mining Equip	U	P	NHH	NP	2	3	12	1.62E-04	1.13E-03	9.16E-05	8.51E-04	1.53E-06	1.30E-01	0.00E+00	1.47E-05
Other Construction Equipment	D	175	Construction and Mining Equip	U	P	NHH	NP	2	4	22	2.08E-04	1.78E-03	9.36E-05	1.31E-03	2.67E-06	2.37E-01	0.00E+00	1.88E-05
Other Construction Equipment	D	500	Construction and Mining Equip	U	N	NHH	NP	5	10	119	7.50E-04	7.85E-03	2.54E-04	2.70E-03	1.29E-05	1.31E+00	0.00E+00	6.77E-05
Aerial Lifts	D	15	Industrial Equip	U	P	NHH	NP	2	2	1	9.49E-06	5.96E-05	2.52E-06	4.95E-05	1.26E-07	8.11E-03	0.00E+00	8.56E-07
Aerial Lifts	D	25	Industrial Equip	U	P	NHH	NP	3	3	2	2.50E-05	1.42E-04	7.74E-06	7.63E-05	2.13E-07	1.68E-02	0.00E+00	2.26E-06
Aerial Lifts	D	50	Industrial Equip	U	P	NHH	NP	10	11	10	3.01E-04	9.85E-04	8.12E-05	9.26E-04	1.36E-06	1.06E-01	0.00E+00	2.72E-05
Aerial Lifts	D	120	Industrial Equip	U	P	NHH	NP	9	10	17	2.54E-04	1.76E-03	1.38E-04	1.15E-03	2.13E-06	1.82E-01	0.00E+00	2.30E-05
Aerial Lifts	D	500	Industrial Equip	U	N	NHH	NP	1	1	12	7.08E-05	9.12E-04	2.72E-05	2.80E-04	1.28E-06	1.30E-01	0.00E+00	6.39E-06
Aerial Lifts	D	750	Industrial Equip	U	N	NHH	NP	0	0	2	1.06E-05	1.37E-04	4.03E-06	4.07E-05	1.90E-07	1.89E-02	0.00E+00	9.58E-07
Forklifts	D	50	Industrial Equip	U	P	NHH	NP	3	15	10	3.31E-04	1.10E-03	9.17E-05	1.24E-03	1.45E-06	1.12E-01	0.00E+00	2.98E-05
Forklifts	D	120	Industrial Equip	U	P	NHH	NP	5	24	34	5.16E-04	3.32E-03	2.85E-04	2.61E-03	4.39E-06	3.75E-01	0.00E+00	4.65E-05
Forklifts	D	175	Industrial Equip	U	P	NHH	NP	5	24	62	6.83E-04	5.06E-03	2.94E-04	4.00E-03	7.60E-06	6.76E-01	0.00E+00	6.16E-05
Forklifts	D	250	Industrial Equip	U	N	NHH	NP	5	24	84	6.87E-04	6.28E-03	2.03E-04	1.93E-03	1.04E-05	9.23E-01	0.00E+00	6.20E-05
Forklifts	D	500	Industrial Equip	U	N	NHH	NP	2	10	51	4.04E-04	3.35E-03	1.19E-04	1.13E-03	5.58E-06	5.68E-01	0.00E+00	3.64E-05
Sweepers/Scrubbers	D	15	Industrial Equip	U	N	NHH	NP	0	0	0	2.51E-06	1.76E-05	6.88E-07	1.48E-05	3.76E-08	2.42E-03	0.00E+00	2.26E-07
Sweepers/Scrubbers	D	25	Industrial Equip	U	N	NHH	NP	0	0	0	4.80E-06	3.03E-05	1.18E-06	1.64E-05	5.04E-08	3.97E-03	0.00E+00	4.33E-07
Sweepers/Scrubbers	D	50	Industrial Equip	U	N	NHH	NP	4	15	22	7.49E-04	2.26E-03	1.98E-04	2.51E-03	3.02E-06	2.34E-01	0.00E+00	6.76E-05
Sweepers/Scrubbers	D	120	Industrial Equip	U	N	NHH	NP	7	25	84	1.32E-03	8.47E-03	7.47E-04	6.30E-03	1.08E-05	9.20E-01	0.00E+00	1.19E-04
Sweepers/Scrubbers	D	175	Industrial Equip	U	N	NHH	NP	3	11	72	7.97E-04	6.21E-03	3.55E-04	4.52E-03	8.83E-06	7.84E-01	0.00E+00	7.19E-05
Sweepers/Scrubbers	D	250	Industrial Equip	U	N	NHH	NP	1	2	13	1.03E-04	1.05E-03	3.30E-05	3.04E-04	1.65E-06	1.46E-01	0.00E+00	9.31E-06
Other General Industrial Equipment	D	15	Industrial Equip	U	N	NHH	NP	1	2	1	7.73E-06	5.44E-05	2.12E-06	4.55E-05	1.16E-07	7.46E-03	0.00E+00	6.98E-07
Other General Industrial Equipment	D	25	Industrial Equip	U	N	NHH	NP	1	3	2	2.89E-05	1.83E-04	6.85E-06	9.88E-05	3.04E-07	2.40E-02	0.00E+00	2.61E-06
Other General Industrial Equipment	D	50	Industrial Equip	U	N	NHH	NP	1	4	4	1.81E-04	4.33E-04	4.39E-05	5.22E-04	5.44E-07	4.21E-02	0.00E+00	1.63E-05
Other General Industrial Equipment	D	120	Industrial Equip	U	N	NHH	NP	4	15	44	8.80E-04	5.15E-03	4.84E-04	3.46E-03	5.63E-06	4.80E-01	0.00E+00	7.94E-05
Other General Industrial Equipment	D	175	Industrial Equip	U	N	NHH	NP	4	16	68	9.52E-04	7.05E-03	4.17E-04	4.45E-03	8.38E-06	7.45E-01	0.00E+00	8.59E-05
Other General Industrial Equipment	D	250	Industrial Equip	U	N	NHH	NP	4	15	95	8.98E-04	9.09E-03	2.92E-04	2.43E-03	1.18E-05	1.05E+00	0.00E+00	8.11E-05
Other General Industrial Equipment	D	500	Industrial Equip	U	N	NHH	NP	4	15	186	1.64E-03	1.55E-02	5.33E-04	4.84E-03	2.01E-05	2.05E+00	0.00E+00	1.48E-04
Other General Industrial Equipment	D	750	Industrial Equip	U	N	NHH	NP	1	4	76	6.79E-04	6.61E-03	2.24E-04	1.99E-03	8.48E-06	8.43E-01	0.00E+00	6.12E-05
Other General Industrial Equipment	D	1000	Industrial Equip	U	N	NHH	NP	1	2	60	6.06E-04	6.97E-03	2.08E-04	1.91E-03	6.60E-06	6.56E-01	0.00E+00	5.47E-05
Other Material Handling Equipment	D	50	Industrial Equip	U	N	NHH	NP	0	0	0	6.67E-06	1.60E-05	1.61E-06	1.91E-05	2.01E-08	1.56E-03	0.00E+00	6.02E-07
Other Material Handling Equipment	D	120	Industrial Equip	U	N	NHH	NP	0	1	2	3.40E-05	2.00E-04	1.87E-05	1.34E-04	2.19E-07	1.87E-02	0.00E+00	3.07E-06
Other Material Handling Equipment	D	175	Industrial Equip	U	N	NHH	NP	0	1	4	5.10E-05	3.81E-04	2.24E-05	2.39E-04	4.54E-07	4.03E-02	0.00E+00	4.60E-06

Equipment	Fuel	MaxHP	Class	C/R	Pre	Handheld?	Portable?	Population	Activity (equip- hrs/day)	Fuel Consumption (gal/day)	ROG Exhaust (ton/day)	NOX Exhaust (ton/day)	PM Exhaust (ton/day)	CO Exhaust (ton/day)	SO2 Exhaust (ton/day)	CO2 Exhaust (ton/day)	N2O Exhaust (ton/day)	CH4 Exhaust (ton/day)
Other Material Handling Equipment	D	250	Industrial Equip	U	N	NHH	NP	0	2	10	9.62E-05	9.85E-04	3.15E-05	2.63E-04	1.28E-06	1.14E-01	0.00E+00	8.68E-06
Other Material Handling Equipment	D	500	Industrial Equip	U	N	NHH	NP	0	0	3	2.21E-05	2.13E-04	7.27E-06	6.63E-05	2.76E-07	2.81E-02	0.00E+00	2.00E-06
Other Material Handling Equipment	D	9999	Industrial Equip	U	N	NHH	NP	0	0	3	3.03E-05	3.46E-04	1.03E-05	9.47E-05	3.20E-07	3.26E-02	0.00E+00	2.74E-06
Leaf Blowers/Vacuums	D	15	Lawn and Garden Equip	U	N	NHH	P	0	0	0	5.93E-08	4.17E-07	1.76E-08	3.46E-07	8.82E-10	5.67E-05	0.00E+00	5.35E-09
Leaf Blowers/Vacuums	D	120	Lawn and Garden Equip	U	N	NHH	P	0	0	0	9.04E-07	7.09E-06	4.81E-07	4.73E-06	9.41E-09	8.02E-04	0.00E+00	8.15E-08
Leaf Blowers/Vacuums	D	250	Lawn and Garden Equip	U	N	NHH	P	0	0	0	2.28E-07	3.36E-06	8.66E-08	9.11E-07	5.32E-09	4.72E-04	0.00E+00	2.05E-08
Snowblowers	D	175	Lawn and Garden Equip	U	P	NHH	P	0	0	0	1.29E-06	1.17E-05	5.73E-07	7.25E-06	1.56E-08	1.38E-03	0.00E+00	1.16E-07
Snowblowers	D	250	Lawn and Garden Equip	U	N	NHH	P	8	0	3	2.20E-05	2.75E-04	8.01E-06	7.53E-05	4.03E-07	3.58E-02	0.00E+00	1.98E-06
Snowblowers	D	500	Lawn and Garden Equip	U	N	NHH	P	25	1	14	8.89E-05	1.11E-03	3.35E-05	3.38E-04	1.56E-06	1.59E-01	0.00E+00	8.02E-06
Lawn & Garden Tractors	D	15	Lawn and Garden Equip	U	N	NHH	NP	249	413	175	2.02E-03	1.42E-02	6.49E-04	1.17E-02	2.98E-05	1.91E+00	0.00E+00	1.83E-04
Lawn & Garden Tractors	D	25	Lawn and Garden Equip	U	N	NHH	NP	195	323	210	2.80E-03	1.78E-02	7.66E-04	9.49E-03	2.92E-05	2.31E+00	0.00E+00	2.52E-04
Chippers/Stump Grinders	D	25	Lawn and Garden Equip	U	P	NHH	P	0	0	0	2.00E-06	1.26E-05	4.90E-07	6.81E-06	2.10E-08	1.65E-03	0.00E+00	1.80E-07
Chippers/Stump Grinders	D	120	Lawn and Garden Equip	U	P	NHH	P	3	5	16	2.39E-04	1.65E-03	1.31E-04	1.10E-03	2.02E-06	1.72E-01	0.00E+00	2.16E-05
Chippers/Stump Grinders	D	175	Lawn and Garden Equip	U	P	NHH	P	0	0	2	1.92E-05	1.73E-04	8.63E-06	1.09E-04	2.30E-07	2.04E-02	0.00E+00	1.73E-06
Chippers/Stump Grinders	D	250	Lawn and Garden Equip	U	N	NHH	P	0	0	1	5.07E-06	6.26E-05	1.85E-06	1.71E-05	9.14E-08	8.12E-03	0.00E+00	4.58E-07
Chippers/Stump Grinders	D	500	Lawn and Garden Equip	U	N	NHH	P	0	1	8	4.70E-05	5.73E-04	1.77E-05	1.82E-04	8.19E-07	8.34E-02	0.00E+00	4.24E-06
Chippers/Stump Grinders	D	750	Lawn and Garden Equip	U	N	NHH	P	1	1	21	1.32E-04	1.62E-03	4.92E-05	4.97E-04	2.29E-06	2.28E-01	0.00E+00	1.19E-05
Chippers/Stump Grinders	D	1000	Lawn and Garden Equip	U	N	NHH	P	1	1	56	4.56E-04	5.99E-03	1.65E-04	1.62E-03	6.21E-06	6.17E-01	0.00E+00	4.12E-05
Commercial Turf Equipment	D	15	Lawn and Garden Equip	U	N	NHH	NP	6	20	9	1.02E-04	7.17E-04	2.81E-05	6.00E-04	1.53E-06	9.83E-02	0.00E+00	9.20E-06
Commercial Turf Equipment	D	25	Lawn and Garden Equip	U	N	NHH	NP	118	383	253	3.34E-03	2.11E-02	7.92E-04	1.14E-02	3.52E-05	2.77E+00	0.00E+00	3.02E-04
Other Lawn & Garden Equipment	D	15	Lawn and Garden Equip	U	N	NHH	NP	0	0	0	7.55E-07	5.31E-06	2.16E-07	4.44E-06	1.13E-08	7.27E-04	0.00E+00	6.81E-08
Other Lawn & Garden Equipment	D	25	Lawn and Garden Equip	U	N	NHH	NP	0	0	0	1.67E-07	1.06E-06	4.10E-08	5.70E-07	1.76E-09	1.39E-04	0.00E+00	1.51E-08
Agricultural Tractors	D	15	Agricultural Equip	U	P	NHH	NP	279	496	238	3.04E-03	1.90E-02	7.38E-04	1.59E-02	4.06E-05	2.61E+00	0.00E+00	2.74E-04
Agricultural Tractors	D	25	Agricultural Equip	U	P	NHH	NP	343	611	562	7.46E-03	4.73E-02	1.90E-03	2.54E-02	7.82E-05	6.17E+00	0.00E+00	6.73E-04
Agricultural Tractors	D	50	Agricultural Equip	U	P	NHH	NP	801	1,272	2,015	7.02E-02	2.07E-01	1.79E-02	2.07E-01	2.81E-04	2.18E+01	0.00E+00	6.33E-03
Agricultural Tractors	D	120	Agricultural Equip	U	P	NHH	NP	926	1,472	4,902	7.94E-02	5.35E-01	4.28E-02	3.47E-01	6.28E-04	5.36E+01	0.00E+00	7.17E-03
Agricultural Tractors	D	175	Agricultural Equip	U	P	NHH	NP	522	829	4,706	5.17E-02	4.54E-01	2.28E-02	2.77E-01	5.81E-04	5.16E+01	0.00E+00	4.67E-03
Agricultural Tractors	D	250	Agricultural Equip	U	N	NHH	NP	337	535	4,318	3.14E-02	3.81E-01	1.14E-02	1.04E-01	5.36E-04	4.77E+01	0.00E+00	2.83E-03
Agricultural Tractors	D	500	Agricultural Equip	U	N	NHH	NP	67	106	1,402	9.22E-03	1.11E-01	3.43E-03	3.56E-02	1.52E-04	1.55E+01	0.00E+00	8.32E-04
Combines	D	120	Agricultural Equip	U	P	NHH	NP	20	10	42	5.64E-04	4.29E-03	2.94E-04	2.78E-03	5.45E-06	4.65E-01	0.00E+00	5.09E-05
Combines	D	175	Agricultural Equip	U	P	NHH	NP	29	15	83	7.31E-04	7.38E-03	3.17E-04	4.51E-03	1.02E-05	9.07E-01	0.00E+00	6.60E-05
Combines	D	250	Agricultural Equip	U	N	NHH	NP	31	16	124	7.08E-04	1.01E-02	2.63E-04	2.71E-03	1.54E-05	1.37E+00	0.00E+00	6.39E-05
Combines	D	500	Agricultural Equip	U	N	NHH	NP	1	1	7	3.49E-05	5.05E-04	1.38E-05	1.52E-04	7.36E-07	7.50E-02	0.00E+00	3.15E-06
Balers	D	50	Agricultural Equip	U	P	NHH	NP	0	0	0	4.23E-07	1.90E-06	1.31E-07	1.47E-06	2.76E-09	2.14E-04	0.00E+00	3.81E-08
Balers	D	120	Agricultural Equip	U	P	NHH	NP	26	8	21	2.64E-04	2.05E-03	1.36E-04	1.33E-03	2.65E-06	2.26E-01	0.00E+00	2.38E-05
Agricultural Mowers	D	120	Agricultural Equip	U	P	NHH	NP	1	1	2	3.61E-05	2.52E-04	1.93E-05	1.64E-04	3.04E-07	2.60E-02	0.00E+00	3.26E-06
Sprayers	D	25	Agricultural Equip	U	P	NHH	NP	6	2	1	2.31E-05	1.13E-04	6.96E-06	6.48E-05	1.59E-07	1.26E-02	0.00E+00	2.09E-06
Sprayers	D	50	Agricultural Equip	U	P	NHH	NP	1	0	0	8.62E-06	3.90E-05	2.68E-06	3.00E-05	5.68E-08	4.40E-03	0.00E+00	7.78E-07
Sprayers	D	120	Agricultural Equip	U	P	NHH	NP	12	4	10	1.24E-04	9.66E-04	6.39E-05	6.27E-04	1.25E-06	1.06E-01	0.00E+00	1.12E-05
Sprayers	D	175	Agricultural Equip	U	P	NHH	NP	5	2	7	5.72E-05	5.95E-04	2.46E-05	3.64E-04	8.36E-07	7.43E-02	0.00E+00	5.16E-06
Sprayers	D	250	Agricultural Equip	U	N	NHH	NP	3	1	7	3.75E-05	5.53E-04	1.40E-05	1.48E-04	8.57E-07	7.61E-02	0.00E+00	3.38E-06
Sprayers	D	500	Agricultural Equip	U	N	NHH	NP	1	0	1	6.26E-06	9.43E-05	2.50E-06	2.80E-05	1.39E-07	1.42E-02	0.00E+00	5.65E-07
Tillers	D	15	Agricultural Equip	U	N	NHH	NP	0	0	0	4.08E-07	2.87E-06	1.21E-07	2.38E-06	6.06E-09	3.90E-04	0.00E+00	3.68E-08
Tillers	D	250	Agricultural Equip	U	N	NHH	NP	0	0	0	6.73E-07	9.45E-06	2.50E-07	2.55E-06	1.43E-08	1.27E-03	0.00E+00	6.07E-08
Tillers	D	500	Agricultural Equip	U	N	NHH	NP	0	0	1	3.23E-06	4.61E-05	1.27E-06	1.40E-05	6.69E-08	6.82E-03	0.00E+00	2.92E-07
Swathers	D	120	Agricultural Equip	U	P	NHH	NP	141	52	127	1.65E-03	1.27E-02	8.51E-04	8.25E-03	1.63E-05	1.39E+00	0.00E+00	1.48E-04
Swathers	D	175	Agricultural Equip	U	P	NHH	NP	1	0	2	1.87E-05	1.93E-04	8.08E-06	1.18E-04	2.69E-07	2.39E-02	0.00E+00	1.69E-06
Hydro Power Units	D	15	Agricultural Equip	U	P	NHH	NP	1	3	1	1.02E-05	6.40E-05	2.48E-06	5.36E-05	1.37E-07	8.78E-03	0.00E+00	9.23E-07
Hydro Power Units	D	25	Agricultural Equip	U	P	NHH	NP	3	9	5	6.09E-05	3.86E-04	1.55E-05	2.07E-04	6.39E-07	5.04E-02	0.00E+00	5.50E-06
Hydro Power Units	D	50	Agricultural Equip	U	P	NHH	NP	4	10	9	4.00E-04	9.98E-04	9.64E-05	1.13E-03	1.30E-06	1.01E-01	0.00E+00	3.61E-05
Hydro Power Units	D	120	Agricultural Equip	U	P	NHH	NP	0	1	2	3.11E-05	1.94E-04	1.71E-05	1.27E-04	2.17E-07	1.85E-02	0.00E+00	2.81E-06
Other Agricultural Equipment	D	15	Agricultural Equip	U	P	NHH	NP	4	6	2	2.61E-05	1.64E-04	6.68E-06	1.37E-04	3.49E-07	2.24E-02	0.00E+00	2.36E-06
Other Agricultural Equipment	D	25	Agricultural Equip	U	P	NHH	NP	11	16	10	1.60E-04	9.46E-04	4.96E-05	5.04E-04	1.45E-06	1.14E-01	0.00E+00	1.45E-05
Other Agricultural Equipment	D	50	Agricultural Equip	U	P	NHH	NP	10	12	14	4.55E-04	1.45E-03	1.20E-04	1.38E-03	2.01E-06	1.55E-01	0.00E+00	4.10E-05
Other Agricultural Equipment	D	120	Agricultural Equip	U	P	NHH	NP	32	41	96	1.48E-03	1.03E-02	7.90E-04	6.65E-03	1.23E-05	1.05E+00	0.00E+00	1.33E-04
Other Agricultural Equipment	D	175	Agricultural Equip	U	P	NHH	NP	3	3	14	1.50E-04	1.36E-03	6.59E-05	8.33E-04	1.78E-06	1.58E-01	0.00E+00	1.35E-05

Equipment	Fuel	MaxHP	Class	C/R	Pre	Handheld?	Portable?	Population	Activity	Fuel	ROG Exhaust	NOX Exhaust	PM Exhaust	CO Exhaust	SO2 Exhaust	CO2 Exhaust	N2O Exhaust	CH4 Exhaust
									(equip- hrs/day)	Consumption (gal/day)								
Other Agricultural Equipment	D	250	Agricultural Equip	U	N	NHH	NP	3	3	21	1.42E-04	1.79E-03	5.18E-05	4.87E-04	2.58E-06	2.29E-01	0.00E+00	1.28E-05
Other Agricultural Equipment	D	500	Agricultural Equip	U	N	NHH	NP	1	1	7	4.45E-05	5.60E-04	1.68E-05	1.78E-04	7.81E-07	7.96E-02	0.00E+00	4.01E-06
Generator Sets	D	15	Light Commercial Equip	U	N	NHH	P	74	76	36	5.58E-04	3.81E-03	2.16E-04	2.59E-03	6.07E-06	3.90E-01	0.00E+00	5.03E-05
Generator Sets	D	25	Light Commercial Equip	U	N	NHH	P	54	56	45	7.31E-04	4.41E-03	2.49E-04	2.49E-03	6.25E-06	4.93E-01	0.00E+00	6.60E-05
Generator Sets	D	50	Light Commercial Equip	U	N	NHH	P	66	68	96	2.83E-03	9.67E-03	7.77E-04	8.83E-03	1.35E-05	1.05E+00	0.00E+00	2.55E-04
Generator Sets	D	120	Light Commercial Equip	U	N	NHH	P	101	104	370	5.50E-03	3.86E-02	2.97E-03	2.53E-02	4.74E-05	4.04E+00	0.00E+00	4.96E-04
Generator Sets	D	175	Light Commercial Equip	U	N	NHH	P	6	6	40	3.97E-04	3.68E-03	1.77E-04	2.26E-03	4.90E-06	4.35E-01	0.00E+00	3.58E-05
Generator Sets	D	250	Light Commercial Equip	U	N	NHH	P	3	3	33	2.13E-04	2.82E-03	7.87E-05	7.37E-04	4.10E-06	3.64E-01	0.00E+00	1.92E-05
Generator Sets	D	500	Light Commercial Equip	U	N	NHH	P	7	8	116	6.73E-04	8.91E-03	2.61E-04	2.70E-03	1.26E-05	1.28E+00	0.00E+00	6.07E-05
Generator Sets	D	750	Light Commercial Equip	U	N	NHH	P	5	5	117	6.98E-04	9.22E-03	2.67E-04	2.71E-03	1.29E-05	1.29E+00	0.00E+00	6.30E-05
Generator Sets	D	9999	Light Commercial Equip	U	N	NHH	P	1	1	59	4.75E-04	6.25E-03	1.71E-04	1.68E-03	6.50E-06	6.46E-01	0.00E+00	4.28E-05
Pumps	D	15	Light Commercial Equip	U	P	NHH	P	56	69	23	4.17E-04	2.52E-03	1.64E-04	1.69E-03	3.95E-06	2.54E-01	0.00E+00	3.77E-05
Pumps	D	25	Light Commercial Equip	U	P	NHH	P	17	20	18	3.56E-04	1.78E-03	1.09E-04	1.01E-03	2.53E-06	1.99E-01	0.00E+00	3.21E-05
Pumps	D	50	Light Commercial Equip	U	P	NHH	P	29	36	57	1.78E-03	5.72E-03	4.77E-04	5.44E-03	7.91E-06	6.12E-01	0.00E+00	1.61E-04
Pumps	D	120	Light Commercial Equip	U	P	NHH	P	57	70	249	3.85E-03	2.64E-02	2.09E-03	1.73E-02	3.19E-05	2.72E+00	0.00E+00	3.47E-04
Pumps	D	175	Light Commercial Equip	U	P	NHH	P	6	8	48	5.04E-04	4.55E-03	2.25E-04	2.79E-03	5.96E-06	5.30E-01	0.00E+00	4.54E-05
Pumps	D	250	Light Commercial Equip	U	N	NHH	P	4	5	50	3.35E-04	4.31E-03	1.23E-04	1.13E-03	6.17E-06	5.48E-01	0.00E+00	3.02E-05
Pumps	D	500	Light Commercial Equip	U	N	NHH	P	0	0	2	1.02E-05	1.30E-04	3.91E-06	4.01E-05	1.82E-07	1.86E-02	0.00E+00	9.21E-07
Pumps	D	750	Light Commercial Equip	U	N	NHH	P	0	0	0	2.90E-06	3.71E-05	1.10E-06	1.10E-05	5.14E-08	5.11E-03	0.00E+00	2.62E-07
Pumps	D	9999	Light Commercial Equip	U	N	NHH	P	0	0	24	2.01E-04	2.61E-03	7.21E-05	7.08E-04	2.68E-06	2.67E-01	0.00E+00	1.82E-05
Air Compressors	D	15	Light Commercial Equip	U	P	NHH	P	1	2	1	1.12E-05	6.76E-05	4.40E-06	4.52E-05	1.06E-07	6.80E-03	0.00E+00	1.01E-06
Air Compressors	D	25	Light Commercial Equip	U	P	NHH	P	2	4	2	4.82E-05	2.41E-04	1.47E-05	1.36E-04	3.42E-07	2.70E-02	0.00E+00	4.35E-06
Air Compressors	D	50	Light Commercial Equip	U	P	NHH	P	14	34	35	1.49E-03	3.75E-03	3.63E-04	4.23E-03	4.88E-06	3.78E-01	0.00E+00	1.34E-04
Air Compressors	D	120	Light Commercial Equip	U	P	NHH	P	91	226	486	8.96E-03	5.52E-02	4.98E-03	3.65E-02	6.22E-05	5.30E+00	0.00E+00	8.08E-04
Air Compressors	D	175	Light Commercial Equip	U	P	NHH	P	3	9	35	4.37E-04	3.49E-03	1.97E-04	2.15E-03	4.26E-06	3.78E-01	0.00E+00	3.94E-05
Air Compressors	D	250	Light Commercial Equip	U	N	NHH	P	5	12	72	5.93E-04	6.66E-03	2.06E-04	1.75E-03	8.88E-06	7.89E-01	0.00E+00	5.35E-05
Air Compressors	D	500	Light Commercial Equip	U	N	NHH	P	6	16	165	1.25E-03	1.35E-02	4.43E-04	4.15E-03	1.78E-05	1.82E+00	0.00E+00	1.13E-04
Air Compressors	D	750	Light Commercial Equip	U	N	NHH	P	2	6	95	7.34E-04	8.06E-03	2.61E-04	2.40E-03	1.06E-05	1.05E+00	0.00E+00	6.62E-05
Air Compressors	D	1000	Light Commercial Equip	U	N	NHH	P	0	0	3	2.97E-05	3.65E-04	1.05E-05	9.96E-05	3.54E-07	3.52E-02	0.00E+00	2.68E-06
Welders	D	15	Light Commercial Equip	U	P	NHH	P	25	49	14	2.52E-04	1.52E-03	9.91E-05	1.02E-03	2.38E-06	1.53E-01	0.00E+00	2.27E-05
Welders	D	25	Light Commercial Equip	U	P	NHH	P	22	43	22	4.38E-04	2.19E-03	1.34E-04	1.24E-03	3.11E-06	2.45E-01	0.00E+00	3.96E-05
Welders	D	50	Light Commercial Equip	U	P	NHH	P	68	134	161	6.22E-03	1.69E-02	1.56E-03	1.80E-02	2.24E-05	1.74E+00	0.00E+00	5.61E-04
Welders	D	120	Light Commercial Equip	U	P	NHH	P	53	104	188	3.26E-03	2.09E-02	1.80E-03	1.37E-02	2.41E-05	2.05E+00	0.00E+00	2.94E-04
Welders	D	175	Light Commercial Equip	U	P	NHH	P	0	1	2	2.73E-05	2.27E-04	1.23E-05	1.40E-04	2.84E-07	2.53E-02	0.00E+00	2.46E-06
Welders	D	250	Light Commercial Equip	U	N	NHH	P	0	0	1	4.77E-06	5.61E-05	1.70E-06	1.48E-05	7.66E-08	6.81E-03	0.00E+00	4.30E-07
Welders	D	500	Light Commercial Equip	U	N	NHH	P	0	0	2	1.53E-05	1.75E-04	5.58E-06	5.38E-05	2.35E-07	2.40E-02	0.00E+00	1.38E-06
Pressure Washers	D	15	Light Commercial Equip	U	N	NHH	P	3	2	0	5.32E-06	3.63E-05	2.06E-06	2.47E-05	5.79E-08	3.72E-03	0.00E+00	4.80E-07
Pressure Washers	D	25	Light Commercial Equip	U	N	NHH	P	1	0	0	1.88E-06	1.13E-05	6.41E-07	6.41E-06	1.61E-08	1.27E-03	0.00E+00	1.70E-07
Pressure Washers	D	50	Light Commercial Equip	U	P	NHH	P	2	1	0	1.05E-05	4.49E-05	3.21E-06	3.58E-05	6.49E-08	5.02E-03	0.00E+00	9.50E-07
Pressure Washers	D	120	Light Commercial Equip	U	P	NHH	P	1	0	0	4.20E-06	3.19E-05	2.22E-06	2.08E-05	4.10E-08	3.49E-03	0.00E+00	3.79E-07
Shredders	D	175	Logging Equip	U	P	NHH	NP	0	0	0	1.38E-06	1.37E-05	6.00E-07	7.80E-06	1.76E-08	1.57E-03	0.00E+00	1.24E-07
Skidders	D	120	Logging Equip	U	P	NHH	NP	37	146	631	7.25E-03	5.41E-02	4.12E-03	4.61E-02	8.10E-05	6.91E+00	0.00E+00	6.54E-04
Skidders	D	175	Logging Equip	U	P	NHH	NP	60	234	1,491	1.34E-02	1.06E-01	5.89E-03	9.40E-02	1.84E-04	1.64E+01	0.00E+00	1.21E-03
Skidders	D	250	Logging Equip	U	N	NHH	NP	22	86	819	5.74E-03	5.29E-02	1.71E-03	1.78E-02	1.02E-04	9.04E+00	0.00E+00	5.18E-04
Skidders	D	500	Logging Equip	U	N	NHH	NP	1	5	55	3.73E-04	3.13E-03	1.12E-04	1.14E-03	5.94E-06	6.05E-01	0.00E+00	3.37E-05
Fellers/Bunchers	D	120	Logging Equip	U	P	NHH	NP	81	281	1,176	1.31E-02	1.00E-01	7.53E-03	8.47E-02	1.51E-04	1.29E+01	0.00E+00	1.18E-03
Fellers/Bunchers	D	175	Logging Equip	U	P	NHH	NP	100	347	2,141	1.84E-02	1.51E-01	8.25E-03	1.33E-01	2.64E-04	2.35E+01	0.00E+00	1.66E-03
Fellers/Bunchers	D	250	Logging Equip	U	N	NHH	NP	61	212	1,870	1.24E-02	1.20E-01	3.81E-03	4.00E-02	2.32E-04	2.06E+01	0.00E+00	1.12E-03
Fellers/Bunchers	D	500	Logging Equip	U	N	NHH	NP	18	62	825	5.33E-03	4.68E-02	1.64E-03	1.69E-02	8.94E-05	9.11E+00	0.00E+00	4.81E-04
Fellers/Bunchers	D	750	Logging Equip	U	N	NHH	NP	1	5	125	8.10E-04	7.23E-03	2.51E-04	2.57E-03	1.39E-05	1.38E+00	0.00E+00	7.31E-05
Cargo Tractor	D	120	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A/C Tug Narrow Body	D	250	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A/C Tug Wide Body	D	500	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Air Conditioner	D	175	Airport Ground Support Equip	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Air Conditioner	D	250	Airport Ground Support Equip	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Air Conditioner	D	500	Airport Ground Support Equip	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Equipment	Fuel	MaxHP	Class	C/R	Pre	Handheld?	Portable?	Population	Activity	Fuel	ROG Exhaust	NOX Exhaust	PM Exhaust	CO Exhaust	SO2 Exhaust	CO2 Exhaust	N2O Exhaust	CH4 Exhaust
									(equip- hrs/day)	Consumption (gal/day)								
Air Start Unit	D	175	Airport Ground Support Equip	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Air Start Unit	D	250	Airport Ground Support Equip	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Air Start Unit	D	500	Airport Ground Support Equip	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Air Start Unit	D	750	Airport Ground Support Equip	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Baggage Tug	D	120	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Belt Loader	D	120	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bobtail	D	120	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cargo Loader	D	120	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Forklift	D	175	Airport Ground Support Equip	U	P	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Fuel Truck	D	250	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ground Power Unit	D	175	Airport Ground Support Equip	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Lav Truck	D	175	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Lift	D	120	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Other GSE	D	175	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Passenger Stand	D	120	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sweeper	D	120	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Generator	D	120	Airport Ground Support Equip	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Generator	D	175	Airport Ground Support Equip	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Generator	D	250	Airport Ground Support Equip	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Generator	D	500	Airport Ground Support Equip	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Generator	D	750	Airport Ground Support Equip	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Service Truck	D	175	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Catering Truck	D	250	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Hydrant Truck	D	175	Airport Ground Support Equip	U	N	NHH	NP	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Compressor (GSE)	D	120	Airport Ground Support Equip	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Compressor (GSE)	D	250	Airport Ground Support Equip	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Compressor (GSE)	D	500	Airport Ground Support Equip	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Compressor (GSE)	D	750	Airport Ground Support Equip	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Transport Refrigeration Units	D	15	Transport Refrigeration Units	U	N	NHH	NP	206	581	213	2.49E-03	1.75E-02	8.22E-04	1.42E-02	2.96E-05	2.33E+00	0.00E+00	2.25E-04
Transport Refrigeration Units	D	25	Transport Refrigeration Units	U	N	NHH	NP	71	202	125	1.68E-03	1.07E-02	4.77E-04	5.67E-03	1.74E-05	1.38E+00	0.00E+00	1.51E-04
Transport Refrigeration Units	D	50	Transport Refrigeration Units	U	N	NHH	NP	1,536	6,122	7,269	9.94E-02	6.85E-01	3.71E-02	6.57E-01	1.02E-03	7.93E+01	0.00E+00	8.97E-03
Compressors (Workover)	D	25	Oil Drilling	U	P	NHH	P	0	0	0	9.87E-09	5.74E-08	3.27E-09	3.28E-08	8.11E-11	6.39E-06	0.00E+00	8.90E-10
Compressors (Workover)	D	120	Oil Drilling	U	P	NHH	P	0	0	0	4.39E-07	2.61E-06	2.41E-07	1.73E-06	2.85E-09	2.43E-04	0.00E+00	3.96E-08
Compressors (Workover)	D	175	Oil Drilling	U	P	NHH	P	0	0	0	2.89E-07	2.19E-06	1.27E-07	1.36E-06	2.60E-09	2.31E-04	0.00E+00	2.61E-08
Compressors (Workover)	D	250	Oil Drilling	U	N	NHH	P	0	0	0	1.16E-07	1.17E-06	3.88E-08	3.26E-07	1.52E-09	1.35E-04	0.00E+00	1.05E-08
Compressors (Workover)	D	500	Oil Drilling	U	N	NHH	P	0	0	0	1.11E-06	1.07E-05	3.71E-07	3.47E-06	1.37E-08	1.39E-03	0.00E+00	1.00E-07
Compressors (Workover)	D	750	Oil Drilling	U	N	NHH	P	0	0	0	1.23E-06	1.21E-05	4.15E-07	3.81E-06	1.50E-08	1.53E-03	0.00E+00	1.11E-07
Compressors (Workover)	D	1000	Oil Drilling	U	N	NHH	P	0	0	0	8.60E-08	1.00E-06	2.97E-08	2.82E-07	9.31E-10	9.49E-05	0.00E+00	7.76E-09
Pump (Workover)	D	120	Oil Drilling	U	P	NHH	P	0	0	0	8.90E-07	5.29E-06	4.89E-07	3.52E-06	5.78E-09	4.93E-04	0.00E+00	8.03E-08
Pump (Workover)	D	175	Oil Drilling	U	P	NHH	P	0	0	0	1.10E-06	8.30E-06	4.81E-07	5.17E-06	9.85E-09	8.75E-04	0.00E+00	9.89E-08
Pump (Workover)	D	250	Oil Drilling	U	N	NHH	P	0	0	0	2.43E-06	2.45E-05	8.11E-07	6.80E-06	3.18E-08	2.82E-03	0.00E+00	2.19E-07
Pump (Workover)	D	500	Oil Drilling	U	N	NHH	P	0	0	1	7.54E-06	7.23E-05	2.52E-06	2.35E-05	9.28E-08	9.45E-03	0.00E+00	6.81E-07
Pump (Workover)	D	9999	Oil Drilling	U	N	NHH	P	0	0	1	1.17E-05	1.33E-04	3.97E-06	3.76E-05	1.24E-07	1.26E-02	0.00E+00	1.06E-06
Generator (Workover)	D	120	Oil Drilling	U	P	NHH	P	0	0	0	1.34E-06	7.99E-06	7.39E-07	5.31E-06	8.74E-09	7.45E-04	0.00E+00	1.21E-07
Generator (Workover)	D	175	Oil Drilling	U	P	NHH	P	0	0	0	7.31E-07	5.53E-06	3.21E-07	3.45E-06	6.57E-09	5.84E-04	0.00E+00	6.59E-08
Generator (Workover)	D	250	Oil Drilling	U	N	NHH	P	0	0	0	1.79E-07	1.81E-06	5.98E-08	5.02E-07	2.34E-09	2.08E-04	0.00E+00	1.61E-08
Generator (Workover)	D	500	Oil Drilling	U	N	NHH	P	0	0	0	4.00E-07	3.84E-06	1.33E-07	1.25E-06	4.92E-09	5.02E-04	0.00E+00	3.61E-08
Generator (Workover)	D	750	Oil Drilling	U	N	NHH	P	0	0	0	6.49E-07	6.37E-06	2.19E-07	2.01E-06	7.92E-09	8.07E-04	0.00E+00	5.86E-08
Generator (Workover)	D	9999	Oil Drilling	U	N	NHH	P	0	0	0	3.14E-07	3.58E-06	1.06E-07	1.01E-06	3.33E-09	3.40E-04	0.00E+00	2.83E-08
Swivel	D	120	Oil Drilling	U	P	NHH	P	0	0	0	4.49E-07	2.67E-06	2.47E-07	1.77E-06	2.92E-09	2.49E-04	0.00E+00	4.05E-08
Swivel	D	175	Oil Drilling	U	P	NHH	P	0	0	0	1.06E-06	8.02E-06	4.65E-07	5.00E-06	9.53E-09	8.47E-04	0.00E+00	9.56E-08
Swivel	D	250	Oil Drilling	U	N	NHH	P	0	0	0	2.56E-07	2.58E-06	8.54E-08	7.16E-07	3.35E-09	2.97E-04	0.00E+00	2.31E-08
Swivel	D	500	Oil Drilling	U	N	NHH	P	0	0	0	4.56E-09	6.83E-08	1.85E-09	2.04E-08	9.99E-11	1.02E-05	0.00E+00	4.12E-10
Snubbing	D	120	Oil Drilling	U	P	NHH	P	0	0	0	6.81E-08	4.05E-07	3.74E-08	2.69E-07	4.43E-10	3.77E-05	0.00E+00	6.14E-09
Other Workover Equipment	D	120	Oil Drilling	U	P	NHH	P	0	0	0	2.12E-06	1.26E-05	1.17E-06	8.38E-06	1.38E-08	1.18E-03	0.00E+00	1.91E-07
Other Workover Equipment	D	175	Oil Drilling	U	P	NHH	P	0	0	0	1.19E-06	9.00E-06	5.22E-07	5.61E-06	1.07E-08	9.50E-04	0.00E+00	1.07E-07

Equipment	Fuel	MaxHP	Class	C/R	Pre	Handheld?	Portable?	Population	Activity	Fuel	ROG Exhaust	NOX Exhaust	PM Exhaust	CO Exhaust	SO2 Exhaust	CO2 Exhaust	N2O Exhaust	CH4 Exhaust
									(equip- hrs/day)	Consumption (gal/day)								
Other Workover Equipment	D	250	Oil Drilling	U	N	NHH	P	0	0	0	3.95E-07	3.99E-06	1.32E-07	1.11E-06	5.17E-09	4.60E-04	0.00E+00	3.56E-08
Other Workover Equipment	D	750	Oil Drilling	U	N	NHH	P	0	0	0	3.29E-06	3.23E-05	1.11E-06	1.02E-05	4.02E-08	4.09E-03	0.00E+00	2.97E-07
Other Workover Equipment	D	1000	Oil Drilling	U	N	NHH	P	0	0	0	2.24E-06	2.60E-05	7.75E-07	7.35E-06	2.42E-08	2.47E-03	0.00E+00	2.02E-07
Lift (Drilling)	D	120	Oil Drilling	U	P	NHH	P	0	0	0	7.48E-08	4.45E-07	4.11E-08	2.96E-07	4.86E-10	4.15E-05	0.00E+00	6.75E-09
Lift (Drilling)	D	175	Oil Drilling	U	P	NHH	P	0	0	0	4.64E-08	3.51E-07	2.04E-08	2.19E-07	4.17E-10	3.71E-05	0.00E+00	4.19E-09
Lift (Drilling)	D	250	Oil Drilling	U	N	NHH	P	0	0	0	2.43E-07	2.46E-06	8.13E-08	6.82E-07	3.18E-09	2.83E-04	0.00E+00	2.19E-08
Lift (Drilling)	D	500	Oil Drilling	U	N	NHH	P	0	0	0	2.65E-06	2.54E-05	8.83E-07	8.25E-06	3.26E-08	3.32E-03	0.00E+00	2.39E-07
Lift (Drilling)	D	750	Oil Drilling	U	N	NHH	P	0	0	0	7.73E-08	7.58E-07	2.60E-08	2.39E-07	9.43E-10	9.61E-05	0.00E+00	6.97E-09
Pump (Drilling)	D	120	Oil Drilling	U	P	NHH	P	0	0	0	8.15E-07	4.84E-06	4.48E-07	3.22E-06	5.29E-09	4.51E-04	0.00E+00	7.35E-08
Pump (Drilling)	D	175	Oil Drilling	U	P	NHH	P	0	0	0	9.52E-07	7.21E-06	4.18E-07	4.49E-06	8.56E-09	7.61E-04	0.00E+00	8.59E-08
Pump (Drilling)	D	250	Oil Drilling	U	N	NHH	P	0	0	0	1.62E-06	1.63E-05	5.40E-07	4.53E-06	2.12E-08	1.88E-03	0.00E+00	1.46E-07
Pump (Drilling)	D	500	Oil Drilling	U	N	NHH	P	0	0	1	5.57E-06	5.33E-05	1.86E-06	1.73E-05	7.85E-08	6.98E-03	0.00E+00	5.02E-07
Pump (Drilling)	D	750	Oil Drilling	U	N	NHH	P	0	0	1	8.07E-06	7.92E-05	2.72E-06	2.50E-05	9.85E-08	1.00E-02	0.00E+00	7.28E-07
Pump (Drilling)	D	9999	Oil Drilling	U	N	NHH	P	0	0	0	1.72E-06	1.96E-05	5.83E-07	5.53E-06	1.82E-08	1.86E-03	0.00E+00	1.55E-07
Generator (Drilling)	D	50	Oil Drilling	U	P	NHH	P	0	0	0	1.78E-08	4.23E-08	4.26E-09	5.05E-08	5.36E-11	4.15E-06	0.00E+00	1.60E-09
Generator (Drilling)	D	120	Oil Drilling	U	P	NHH	P	0	0	0	2.04E-07	1.21E-06	1.12E-07	8.07E-07	1.33E-09	1.13E-04	0.00E+00	1.84E-08
Generator (Drilling)	D	175	Oil Drilling	U	P	NHH	P	0	0	0	6.64E-07	5.03E-06	2.91E-07	3.13E-06	5.97E-09	5.30E-04	0.00E+00	5.99E-08
Generator (Drilling)	D	250	Oil Drilling	U	N	NHH	P	0	0	0	4.57E-07	4.62E-06	1.53E-07	1.28E-06	5.98E-09	5.31E-04	0.00E+00	4.12E-08
Generator (Drilling)	D	500	Oil Drilling	U	N	NHH	P	0	0	0	7.72E-07	6.85E-06	2.44E-07	2.25E-06	8.71E-09	8.88E-04	0.00E+00	6.97E-08
Generator (Drilling)	D	750	Oil Drilling	U	N	NHH	P	0	0	0	4.71E-07	4.62E-06	1.59E-07	1.46E-06	5.75E-09	5.86E-04	0.00E+00	4.25E-08
Drill Rig	D	120	Oil Drilling	U	P	NHH	P	0	0	0	4.04E-07	6.52E-06	2.34E-07	8.03E-06	1.68E-08	1.43E-03	0.00E+00	3.65E-08
Drill Rig	D	175	Oil Drilling	U	N	NHH	P	0	0	0	7.47E-07	1.06E-05	2.72E-07	1.32E-05	3.00E-08	2.67E-03	0.00E+00	6.74E-08
Drill Rig	D	250	Oil Drilling	U	N	NHH	P	0	0	0	5.89E-07	6.69E-06	9.37E-08	4.44E-06	2.96E-08	2.63E-03	0.00E+00	5.32E-08
Drill Rig	D	500	Oil Drilling	U	N	NHH	P	0	0	1	2.91E-06	3.31E-05	4.63E-07	2.17E-05	1.28E-07	1.30E-02	0.00E+00	2.63E-07
Drill Rig	D	750	Oil Drilling	U	N	NHH	P	0	0	0	1.16E-06	1.31E-05	1.84E-07	8.61E-06	5.18E-08	5.16E-03	0.00E+00	1.04E-07
Drill Rig	D	1000	Oil Drilling	U	N	NHH	P	0	0	5	1.18E-05	2.31E-04	5.54E-06	8.77E-05	5.28E-07	5.25E-02	0.00E+00	1.07E-06
Drill Rig (Mobile)	D	50	Oil Drilling	U	P	NHH	NP	0	0	0	1.44E-07	2.73E-07	3.09E-08	3.64E-07	3.09E-10	2.39E-05	0.00E+00	1.30E-08
Drill Rig (Mobile)	D	120	Oil Drilling	U	P	NHH	NP	0	0	0	5.27E-07	2.99E-06	2.59E-07	1.69E-06	2.44E-09	2.08E-04	0.00E+00	4.76E-08
Drill Rig (Mobile)	D	175	Oil Drilling	U	N	NHH	NP	0	0	0	1.94E-07	1.40E-06	8.07E-08	7.40E-07	1.22E-09	1.09E-04	0.00E+00	1.75E-08
Drill Rig (Mobile)	D	250	Oil Drilling	U	N	NHH	NP	0	0	0	1.07E-07	8.85E-07	3.89E-08	2.97E-07	8.14E-10	7.24E-05	0.00E+00	9.70E-09
Drill Rig (Mobile)	D	500	Oil Drilling	U	N	NHH	NP	0	0	0	4.86E-07	4.01E-06	1.71E-07	2.29E-06	3.53E-09	3.59E-04	0.00E+00	4.38E-08
Drill Rig (Mobile)	D	750	Oil Drilling	U	N	NHH	NP	0	0	0	6.42E-07	5.35E-06	2.27E-07	3.02E-06	4.76E-09	4.73E-04	0.00E+00	5.79E-08
Drill Rig (Mobile)	D	1000	Oil Drilling	U	N	NHH	NP	0	0	0	1.50E-06	1.43E-05	5.19E-07	7.30E-06	1.08E-08	1.07E-03	0.00E+00	1.36E-07
Workover Rig (Mobile)	D	50	Oil Drilling	U	P	NHH	NP	0	0	0	8.34E-06	1.59E-05	1.79E-06	2.11E-05	1.79E-08	1.39E-03	0.00E+00	7.52E-07
Workover Rig (Mobile)	D	120	Oil Drilling	U	P	NHH	NP	0	0	1	2.67E-05	1.51E-04	1.31E-05	8.57E-05	1.24E-07	1.05E-02	0.00E+00	2.41E-06
Workover Rig (Mobile)	D	175	Oil Drilling	U	N	NHH	NP	0	0	0	7.97E-06	5.73E-05	3.31E-06	3.03E-05	5.01E-08	4.45E-03	0.00E+00	7.19E-07
Workover Rig (Mobile)	D	250	Oil Drilling	U	N	NHH	NP	0	0	0	7.63E-06	6.29E-05	2.76E-06	2.11E-05	5.78E-08	5.14E-03	0.00E+00	6.89E-07
Workover Rig (Mobile)	D	500	Oil Drilling	U	N	NHH	NP	0	0	2	2.54E-05	2.10E-04	8.95E-06	1.20E-04	1.85E-07	1.88E-02	0.00E+00	2.29E-06
Workover Rig (Mobile)	D	750	Oil Drilling	U	N	NHH	NP	0	0	2	2.63E-05	2.19E-04	9.29E-06	1.24E-04	1.95E-07	1.94E-02	0.00E+00	2.37E-06
Workover Rig (Mobile)	D	1000	Oil Drilling	U	N	NHH	NP	0	0	5	6.92E-05	6.56E-04	2.39E-05	3.36E-04	4.95E-07	4.92E-02	0.00E+00	6.24E-06
Pressure Washers	D	250	Oil Drilling	U	N	NHH	P	0	0	0	6.52E-09	6.20E-08	9.18E-10	4.17E-08	2.70E-10	2.40E-05	0.00E+00	5.88E-10
A/C unit	D	120	Military Tactical Support Equip	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A/C unit	D	250	Military Tactical Support Equip	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A/C unit	D	500	Military Tactical Support Equip	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Aircraft Support	D	120	Military Tactical Support Equip	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Aircraft Support	D	175	Military Tactical Support Equip	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cart	D	120	Military Tactical Support Equip	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cart	D	175	Military Tactical Support Equip	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cart	D	250	Military Tactical Support Equip	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Communications	D	50	Military Tactical Support Equip	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Communications	D	120	Military Tactical Support Equip	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Compressor (Military)	D	50	Military Tactical Support Equip	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Compressor (Military)	D	120	Military Tactical Support Equip	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Compressor (Military)	D	175	Military Tactical Support Equip	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Compressor (Military)	D	250	Military Tactical Support Equip	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Compressor (Military)	D	500	Military Tactical Support Equip	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Equipment	Fuel	MaxHP	Class	C/R	Pre	Handheld?	Portable?	Population	Activity	Fuel	ROG Exhaust	NOX Exhaust	PM Exhaust	CO Exhaust	SO2 Exhaust	CO2 Exhaust	N2O Exhaust	CH4 Exhaust
									(equip- hrs/day)	Consumption (gal/day)	(ton/day)	(ton/day)	(ton/day)	(ton/day)	(ton/day)	(ton/day)	(ton/day)	
Crane	D	120	Military Tactical Support Equip	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Crane	D	175	Military Tactical Support Equip	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Crane	D	250	Military Tactical Support Equip	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Deicer	D	120	Military Tactical Support Equip	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Generator (Military)	D	50	Military Tactical Support Equip	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Generator (Military)	D	120	Military Tactical Support Equip	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Generator (Military)	D	175	Military Tactical Support Equip	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Generator (Military)	D	250	Military Tactical Support Equip	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Generator (Military)	D	500	Military Tactical Support Equip	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Generator (Military)	D	750	Military Tactical Support Equip	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Hydraulic unit	D	120	Military Tactical Support Equip	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Lift (Military)	D	120	Military Tactical Support Equip	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Light	D	50	Military Tactical Support Equip	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Pressure Washers	D	175	Military Tactical Support Equip	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Pump (Military)	D	50	Military Tactical Support Equip	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Pump (Military)	D	120	Military Tactical Support Equip	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Start Cart	D	120	Military Tactical Support Equip	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Start Cart	D	500	Military Tactical Support Equip	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Test Stand	D	120	Military Tactical Support Equip	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Test Stand	D	175	Military Tactical Support Equip	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Test Stand	D	250	Military Tactical Support Equip	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Test Stand	D	500	Military Tactical Support Equip	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Welder	D	50	Military Tactical Support Equip	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Welder	D	120	Military Tactical Support Equip	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Other tactical support equipment	D	50	Military Tactical Support Equip	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Other tactical support equipment	D	120	Military Tactical Support Equip	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Other tactical support equipment	D	175	Military Tactical Support Equip	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Other tactical support equipment	D	250	Military Tactical Support Equip	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Other tactical support equipment	D	500	Military Tactical Support Equip	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Other tactical support equipment	D	750	Military Tactical Support Equip	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Compressor (Dredging)	D	50	Dredging	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Compressor (Dredging)	D	120	Dredging	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Compressor (Dredging)	D	175	Dredging	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Compressor (Dredging)	D	250	Dredging	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Compressor (Dredging)	D	500	Dredging	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Compressor (Dredging)	D	1000	Dredging	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Crane (Dredging)	D	750	Dredging	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Deck/door engine	D	250	Dredging	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Dredger	D	175	Dredging	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Dredger	D	250	Dredging	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Dredger	D	750	Dredging	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Dredger	D	9999	Dredging	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Hoist/swing/winch	D	50	Dredging	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Hoist/swing/winch	D	120	Dredging	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Hoist/swing/winch	D	175	Dredging	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Hoist/swing/winch	D	250	Dredging	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Hoist/swing/winch	D	500	Dredging	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Hoist/swing/winch	D	750	Dredging	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Hoist/swing/winch	D	9999	Dredging	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Pump (Dredging)	D	120	Dredging	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Pump (Dredging)	D	175	Dredging	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Pump (Dredging)	D	250	Dredging	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Pump (Dredging)	D	500	Dredging	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Pump (Dredging)	D	750	Dredging	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Pump (Dredging)	D	9999	Dredging	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Generator (Dredging)	D	50	Dredging	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Equipment	Fuel	MaxHP	Class	C/R	Pre	Handheld?	Portable?	Population	Activity	Fuel	ROG Exhaust (ton/day)	NOX Exhaust (ton/day)	PM Exhaust (ton/day)	CO Exhaust (ton/day)	SO2 Exhaust (ton/day)	CO2 Exhaust (ton/day)	N2O Exhaust (ton/day)	CH4 Exhaust (ton/day)
									(equip- hrs/day)	Consumption (gal/day)								
Generator (Dredging)	D	120	Dredging	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Generator (Dredging)	D	175	Dredging	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Generator (Dredging)	D	250	Dredging	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Generator (Dredging)	D	500	Dredging	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Generator (Dredging)	D	750	Dredging	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Generator (Dredging)	D	9999	Dredging	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Other (Dredging)	D	120	Dredging	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Other (Dredging)	D	175	Dredging	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Other (Dredging)	D	250	Dredging	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Other (Dredging)	D	500	Dredging	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Misc Portable Equipment	D	120	Other Portable Equip	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Misc Portable Equipment	D	175	Other Portable Equip	U	P	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Misc Portable Equipment	D	250	Other Portable Equip	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Misc Portable Equipment	D	500	Other Portable Equip	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Misc Portable Equipment	D	750	Other Portable Equip	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Misc Portable Equipment	D	1000	Other Portable Equip	U	N	NHH	P	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Generator (Entertainment)	D	50	Entertainment Equip	U	P	NHH	P	0	0	0	2.73E-06	9.18E-06	7.40E-07	8.45E-06	1.28E-08	9.88E-04	0.00E+00	2.47E-07
Generator (Entertainment)	D	120	Entertainment Equip	U	P	NHH	P	1	1	5	6.79E-05	4.77E-04	3.64E-05	3.10E-04	5.80E-07	4.95E-02	0.00E+00	6.12E-06
Generator (Entertainment)	D	175	Entertainment Equip	U	N	NHH	P	1	1	6	6.31E-05	5.85E-04	2.80E-05	3.57E-04	7.71E-07	6.86E-02	0.00E+00	5.70E-06
Generator (Entertainment)	D	250	Entertainment Equip	U	N	NHH	P	2	1	13	8.59E-05	1.09E-03	3.18E-05	2.99E-04	1.57E-06	1.40E-01	0.00E+00	7.75E-06
Generator (Entertainment)	D	500	Entertainment Equip	U	N	NHH	P	2	2	28	1.68E-04	2.14E-03	6.47E-05	6.82E-04	2.98E-06	3.04E-01	0.00E+00	1.52E-05
Generator (Entertainment)	D	750	Entertainment Equip	U	N	NHH	P	0	0	9	5.97E-05	7.59E-04	2.26E-05	2.35E-04	1.05E-06	1.05E-01	0.00E+00	5.38E-06
Generator (Entertainment)	D	9999	Entertainment Equip	U	N	NHH	P	0	0	2	2.04E-05	2.64E-04	7.31E-06	7.33E-05	2.75E-07	2.73E-02	0.00E+00	1.84E-06
Compressor (Entertainment)	D	120	Entertainment Equip	U	P	NHH	P	0	0	0	8.08E-07	5.00E-06	4.47E-07	3.28E-06	5.59E-09	4.77E-04	0.00E+00	7.29E-08
Compressor (Railyard)	D	120	Railyard Operations	U	P	NHH	P	0	0	0	1.50E-06	9.31E-06	8.32E-07	6.11E-06	1.04E-08	8.88E-04	0.00E+00	1.36E-07
Crane (Rail-CHE)	D	120	Railyard Operations	U	P	NHH	P	0	0	0	1.25E-06	7.73E-06	6.90E-07	5.07E-06	8.64E-09	7.37E-04	0.00E+00	1.13E-07
Crane (Rail-CHE)	D	175	Railyard Operations	U	P	NHH	P	0	0	0	1.07E-06	9.93E-06	4.75E-07	6.06E-06	1.31E-08	1.16E-03	0.00E+00	9.67E-08
Materials Handling (Rail-CHE)	D	120	Railyard Operations	U	P	NHH	P	0	0	0	1.37E-06	8.48E-06	7.57E-07	5.57E-06	9.10E-09	8.09E-04	0.00E+00	1.24E-07
Generator (Railyard)	D	175	Railyard Operations	U	P	NHH	P	0	0	0	7.26E-07	6.73E-06	3.22E-07	4.11E-06	8.87E-09	7.89E-04	0.00E+00	6.55E-08
Generator (Railyard)	D	9999	Railyard Operations	U	N	NHH	P	0	0	0	3.71E-06	4.81E-05	1.33E-06	1.33E-05	5.01E-08	4.98E-03	0.00E+00	3.35E-07
Vessels w/Outboard Engines	G2	2	Pleasure Craft	U	N	NHH	NP	541	116	8	7.36E-03	3.29E-05	5.80E-04	9.34E-03	1.00E-06	3.51E-02	2.58E-05	4.57E-04
Vessels w/Outboard Engines	G2	15	Pleasure Craft	U	N	NHH	NP	29,959	6,408	1,272	1.04E+00	3.52E-02	9.63E-02	1.59E+00	1.66E-04	5.82E+00	7.09E-03	6.46E-02
Vessels w/Outboard Engines	G2	25	Pleasure Craft	U	N	NHH	NP	8,141	1,741	998	6.23E-01	4.11E-02	8.72E-02	1.26E+00	1.50E-04	5.28E+00	4.17E-03	3.87E-02
Vessels w/Outboard Engines	G2	50	Pleasure Craft	U	N	NHH	NP	7,948	1,700	2,452	9.74E-01	1.12E-01	1.58E-01	1.63E+00	2.72E-04	1.74E+01	6.98E-03	6.06E-02
Vessels w/Outboard Engines	G2	120	Pleasure Craft	U	N	NHH	NP	6,989	1,495	4,520	1.68E+00	2.08E-01	2.96E-01	3.16E+00	5.10E-04	3.23E+01	9.21E-03	1.04E-01
Vessels w/Outboard Engines	G2	175	Pleasure Craft	U	N	NHH	NP	3,227	690	3,798	1.39E+00	1.65E-01	2.51E-01	3.02E+00	4.32E-04	2.66E+01	5.56E-03	8.65E-02
Vessels w/Outboard Engines	G2	250	Pleasure Craft	U	N	NHH	NP	927	198	1,400	5.11E-01	9.11E-02	9.73E-02	9.73E-01	1.68E-04	1.00E+01	2.25E-03	3.18E-02
Vessels w/Outboard Engines	G2	500	Pleasure Craft	U	N	NHH	NP	187	40	408	1.66E-01	2.90E-03	2.75E-02	3.04E-01	4.73E-05	2.83E+00	1.73E-04	1.03E-02
Sailboat Auxiliary Outboard Engine	G2	15	Pleasure Craft	U	N	NHH	NP	338	15	3	2.38E-03	9.51E-05	2.47E-04	3.67E-03	4.27E-07	1.50E-02	1.80E-05	1.48E-04
Sailboat Auxiliary Outboard Engine	G2	25	Pleasure Craft	U	N	NHH	NP	182	8	4	2.13E-03	1.55E-04	3.32E-04	4.34E-03	5.73E-07	2.01E-02	1.74E-05	1.32E-04
Sailboat Auxiliary Outboard Engine	G2	50	Pleasure Craft	U	N	NHH	NP	168	8	9	3.39E-03	4.59E-04	6.17E-04	5.71E-03	1.06E-06	6.80E-02	2.97E-05	2.10E-04
Personal Water Craft	G2	9999	Pleasure Craft	U	N	NHH	NP	47,105	5,228	20,036	4.31E+00	9.41E-01	1.51E+00	7.58E+00	2.68E-03	1.65E+02	3.70E-02	2.68E-01
Vessels w/Inboard Engines	G4	250	Pleasure Craft	U	N	NHH	NP	11,921	4,940	27,395	9.95E-01	1.31E+00	2.00E-02	3.26E+01	2.41E-03	2.09E+02	4.31E-02	5.89E-02
Vessels w/Outboard Engines	G4	50	Pleasure Craft	U	N	NHH	NP	2,173	465	624	3.56E-02	2.86E-02	4.13E-04	9.97E-01	4.98E-05	4.32E+00	1.92E-03	2.11E-03
Vessels w/Sterndrive Engines	G4	250	Pleasure Craft	U	N	NHH	NP	29,390	9,560	39,223	1.41E+00	1.83E+00	2.87E-02	4.67E+01	3.45E-03	3.00E+02	7.01E-02	8.35E-02
Sailboat Auxiliary Inboard Engine	G4	15	Pleasure Craft	U	N	NHH	NP	402	18	7	4.22E-04	3.39E-04	4.84E-06	1.21E-02	8.47E-07	5.06E-02	3.94E-05	2.50E-05
Vessels w/Inboard Jet Engines	G4	500	Pleasure Craft	U	N	NHH	NP	3,396	1,105	7,283	2.66E-01	3.50E-01	5.32E-03	8.70E+00	6.41E-04	5.56E+01	1.06E-02	1.58E-02
Vessels w/Inboard Engines	D	250	Pleasure Craft	U	N	NHH	NP	668	277	1,382	8.15E-02	2.79E-01	7.12E-03	1.23E-01	1.67E-04	1.48E+01	0.00E+00	7.36E-03
Sailboat Auxiliary Inboard Engine	D	50	Pleasure Craft	U	N	NHH	NP	429	19	11	6.22E-04	2.12E-03	5.35E-05	9.35E-04	1.46E-06	1.13E-01	0.00E+00	5.62E-05

Appendix N

Noise Data

APPENDIX N. CONSTRUCTION PERSONNEL AND EQUIPMENT

Table N-1 Peak Construction Personnel	
Project Component	Number of Personnel
Existing 625 Line	
Conductor Removal	40
Tower Removal	40
ROW Restoration	25
New 625 Line	
Access Road and Spur Road Construction	40
ROW Clearing	25
Tower Installation	40
Conductor Installation	40
ROW Restoration	25
650 Line	
Access Road and Spur Road Construction	40
ROW Clearing	25
Tower Installation	40
Conductor Installation	40
ROW Restoration	25
132/650 Line Double-Circuit	
Access Road and Spur Road Construction	4
ROW Clearing	4
Tower Installation	20
Conductor Installation	20
ROW Restoration	5
Northstar Fold	
Access Road and Spur Road Construction	4
ROW Clearing	4
Tower Installation	20
Conductor Installation	20
ROW Restoration	5
Substations	
Brockway Substation	10
Northstar Substation	10
Squaw Valley Substation	10
Tahoe City Substation	20
Truckee Substation and North Truckee Switching Station	10
Kings Beach Switching Station	20

Table N-2 Typical Major Construction Equipment			
Equipment	Use	Approximate Number Required	Approximate Duration of Use (hours)
Tree Removal			
¾-ton and 1-ton pickup trucks	Transport construction personnel	5	5
525 rubber-tired skidder	Log skidder	1	8
Boom loader	Log loader	1	8
Brush puller	Pulls brush	3	8
Chainsaws	Cut trees	12	8
Chip van	Catch and haul chips	3	4
D5 CAT tracked skidder	Log skidder	1	8
Fire water tender	Suppress potential fires through water application	1	5
Fuel and fluid truck	Refuel and maintain vehicles	1	5
John Deere processor	Process wood	1	8
Large chipper	Chip wood	1	8
Logging trucks	Haul logs	2	8
Morbark Model 13 chipper	Chip wood	1	8
650 Line ROW Preparation			
¾-ton and 1-ton pickup trucks	Transport construction personnel	6	6
2-ton flatbed trucks; flatbed boom truck	Haul and unload materials	2	6
Bulldozer	Grade access roads and pole sites used during reclamation	2	10
Dump truck	Haul excavated materials and import backfill	2	10
Fire units	Control potential fires	2	10
Fire water tender	Suppress potential fires through water application	1	10
Fuel and fluid truck	Refuel and maintain vehicles	2	4
Mechanic truck	Service and repair equipment	1	10
Truck-mounted backhoe	Excavate	2	10
Water truck	Suppress dust and fire	2	10
650 Line Construction			
¾-ton and 1-ton pickup trucks	Transport construction personnel	6	5
2-ton flatbed trucks; flatbed boom truck	Haul and unload materials	2	5
Aerial lift trucks	Access poles, string conductor, and other uses	4	5
Air compressors	Operate air tools	1	2
Bulldozer	Grade access roads and pole sites used during reclamation	1	10
Conductor reel trailer (has small gas motor)	Transport cable reels and feed cables into conduit	1	10

Table N-2 Typical Major Construction Equipment			
Equipment	Use	Approximate Number Required	Approximate Duration of Use (hours)
Dump truck	Haul excavated materials and import backfill	1	10
Fire units	Control potential fires	2	6
Fire water tender	Suppress potential fires through water application	1	6
Fuel and fluid truck	Refuel and maintain vehicles	1	5
Large mobile cranes (75 tons)	Erect poles	1	10
Mechanic truck	Service and repair equipment	1	10
Puller and tensioner	Pull conductor and wire	1	10
Semi tractor-trailers	Haul poles and equipment	1	10
Small mobile cranes (12 tons)	Load and unload materials	2	6
Truck-mounted backhoe	Excavation	2	6
Water truck	Suppress dust and fire	1	10
Northstar Fold Construction			
¾-ton and 1-ton pickup trucks	Transport construction personnel	3	5
2-ton flatbed trucks; flatbed boom truck	Haul and unload materials	1	5
Aerial lift trucks	Access poles, string conductor, and other uses	2	5
Air compressors	Operate air tools	1	2
Bulldozer	Grade access roads and pole sites used during reclamation	1	10
Conductor reel trailer (has small gas motor)	Transport cable reels and feed cables into conduit	1	10
Dump truck	Haul excavated materials and import backfill	1	10
Fire units	Control potential fires	1	6
Fire water tender	Suppress potential fires through water application	1	6
Fuel and fluid truck	Refuel and maintain vehicles	1	5
Large mobile cranes (75 tons)	Erect poles	1	10
Mechanic truck	Service and repair equipment	1	10
Puller and tensioner	Pull conductor and wire	1	10
Semi tractor-trailers	Haul poles and equipment	1	10
Small mobile cranes (12 tons)	Load and unload materials	1	6
Truck-mounted backhoe	Excavate	1	6
Water truck	Suppress dust and fire	1	10
132/650 Line Double-Circuit			
¾-ton and 1-ton pickup trucks	Transport construction personnel	6	5
2-ton flatbed trucks; flatbed boom truck	Haul and unload materials	2	5

Table N-2 Typical Major Construction Equipment			
Equipment	Use	Approximate Number Required	Approximate Duration of Use (hours)
Aerial lift trucks	Access poles, string conductor, and other uses	4	5
Air compressors	Operate air tools	1	2
Bulldozer	Grade access roads and pole sites used during reclamation	1	10
Conductor reel trailer (has small gas motor)	Transport cable reels and feed cables into conduit	1	10
Dump truck	Haul excavated materials and import backfill	1	10
Fire units	Control potential fires	2	6
Fire water tender	Suppress potential fires through water application	1	6
Fuel and fluid truck	Refuel and maintain vehicles	1	5
Large mobile cranes (75 tons)	Erect poles	1	10
Mechanic truck	Service and repair equipment	1	10
Puller and tensioner	Pull conductor and wire	1	10
Semi tractor-trailers	Haul poles and equipment	1	10
Small mobile cranes (12 tons)	Load and unload materials	2	6
Truck-mounted backhoe	Excavate	2	6
Water truck	Suppress dust and fire	1	10
Self-Supporting Steel Pole Footings			
¾-ton and 1-ton pickup trucks	Transport construction personnel	3	6
2-ton flatbed trucks; flatbed boom truck	Haul and unload materials	1	6
Aerial lift trucks	Access poles, string conductor, and other uses	1	8
Boom truck (small crane)	Small lifting	1	3
Dump truck	Haul excavated materials and import backfill	1	8
Concrete truck	Deliver concrete	1	4
Concrete pumper truck	Pump concrete	1	4
Forklift (diesel)	Lifting	1	4
5 kW generator	Electricity generation	1	4
New 625 Line ROW Preparation			
¾-ton and 1-ton pickup trucks	Transport construction personnel	6	6
2-ton flatbed trucks; flatbed boom truck	Haul and unload materials	2	6
Bulldozer	Grade access roads and pole sites used during reclamation	2	10
Dump truck	Haul excavated materials and import backfill	2	10

Table N-2 Typical Major Construction Equipment			
Equipment	Use	Approximate Number Required	Approximate Duration of Use (hours)
Fire units	Control potential fires	2	10
Fire water tender	Suppress potential fires through water application	1	10
Fuel and fluid truck	Refuel and maintain vehicles	2	4
Mechanic truck	Service and repair equipment	1	10
Truck-mounted backhoe	Excavate	2	10
Water truck	Suppress dust and fire	2	10
New 625 Line Construction			
¾-ton and 1-ton pickup trucks	Transport construction personnel	6	5
2-ton flatbed trucks; flatbed boom truck	Haul and unload materials	2	5
Aerial lift trucks	Access poles, string conductor, and other uses	4	5
Air compressors	Operate air tools	1	2
Bulldozer	Grade access roads and pole sites used during reclamation	1	10
Conductor reel trailer (has small gas motor)	Transport cable reels and feed cables into conduit	1	10
Dump truck	Haul excavated materials and import backfill	1	10
Fire units	Control potential fires	2	6
Fire water tender	Suppress potential fires through water application	1	6
Fuel and fluid truck	Refuel and maintain vehicles	1	5
Large mobile cranes (75 tons)	Erect poles	1	10
Mechanic truck	Service and repair equipment	1	10
Puller and tensioner	Pull conductor and wire	1	10
Semi tractor-trailers	Haul poles and equipment	1	10
Small mobile cranes (12 tons)	Load and unload materials	2	6
Truck-mounted backhoe	Excavation	2	6
Water truck	Suppress dust and fire	1	10
Substation Construction/Decommissioning			
¾-ton and 1-ton pickup trucks	Transport construction personnel	3	5
2-ton flatbed trucks; flatbed boom truck	Haul and unload materials	1	5
Aerial lift trucks	Access poles, string conductor, and other uses	2	4
Boom truck (small crane)	Small lifting	2	4
Dump truck	Haul excavated materials and import backfill	4	8
Large mobile cranes (200 tons)	Move transformers	1	12

Table N-2 Typical Major Construction Equipment			
Equipment	Use	Approximate Number Required	Approximate Duration of Use (hours)
5 kW generator	Power generation	1	8
Mini excavator	Excavate	1	8
Skid steer (Bobcat)	Earth moving/augering	1	8
Road grader	Leveling	1	8
Compactor (roller with sheep's foot)	Compaction	1	8
Concrete truck	Deliver concrete	1	8
Water truck	Suppress dust and fire	1	2
625 Line Removal			
¾-ton and 1-ton pickup trucks	Transport construction personnel	6	5
2-ton flatbed trucks; flatbed boom truck	Haul and unload materials	2	5
Conductor reel trailer (has small gas motor)	Transport cable reels and feed cables into conduit	1	10
Fire units	Control potential fires	2	5
Fire water tender	Suppress potential fires through water application	1	5
Fuel and fluid truck	Refuel and maintain vehicles	1	5
Mechanic truck	Service and repair equipment	1	10
Semi tractor-trailers	Haul poles and equipment	1	8
Water truck	Suppress dust and fire	1	10
Chain saws or other mechanized clearing equipment	Fell and delimb trees	6	10

Table N-3 Access Road Construction Equipment		
Equipment Type	Activity	Approximate Number
Bulldozer	Clearing and grading	6
Dump truck	Transport soil/fill on and off site	2
Excavator	Removal of soil and brush	4
Front-end loader	Transportation of soil and fill	2
Motor grader	Grade and level	2
Compactor	Soil Compaction	1
Water truck	Soil compaction and dust control	6

Site Preparation



Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)	Equipment	Reference Emission Noise Levels (L_{max}) at 50	Usage Factor ¹
				feet ¹	
Threshold	1,707	50.0	Dump Truck	84	0.4
Residence 1	25	96.3	Flat Bed Truck	84	0.4
Residence 2	50	88.3	Flat Bed Truck	84	0.4
			Scraper	85	0.4
			Scraper	85	0.4
			Front End Loader	80	0.4
			Pickup Truck	55	0.4
			Pickup Truck	55	0.4
			Backhoe	80	0.4
			Dozer	85	0.4
			Ground Type	Soft	
			Source Height	8	
			Receiver Height	5	
			Ground Factor ²	0.63	
			Predicted Noise Level ³	L_{eq} dBA at 50 feet ³	
			Dump Truck	80.0	
			Flat Bed Truck	80.0	
			Flat Bed Truck	80.0	
			Scraper	81.0	
			Scraper	81.0	
			Front End Loader	76.0	
			Pickup Truck	51.0	
			Pickup Truck	51.0	
			Backhoe	76.0	
			Dozer	81.0	
			Combined Predicted Noise Level (L_{eq} dBA at 50 feet)		
				88.3	

Sources:

¹ Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

² Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

³ Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

$$L_{eq}(\text{equip}) = E.L. + 10 \log (U.F.) - 20 \log (D/50) - 10 \log (G/50)$$

Where: E.L. = Emission Level;

U.F. = Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Night Line Stringing Equipment



Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)	Equipment	Reference Emission Noise Levels (L_{max}) at 50	Usage Factor ¹
				feet ¹	
Threshold	793	45.0	Man Lift	85	0.1
Residence 1	690	45.0	Pickup Truck	55	0.1
Residence 2	250	56.6	Pickup Truck	55	0.1

Ground Type	soft
Source Height	8
Receiver Height	5
Ground Factor ²	0.63

Predicted Noise Level ³	L_{eq} dBA at 50 feet ³
Man Lift	75.0
Pickup Truck	45.0
Pickup Truck	45.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)

75

Sources:

¹ Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

² Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

³ Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

$$L_{eq}(\text{equip}) = E.L. + 10 \cdot \log(U.F.) - 20 \cdot \log(D/50) - 10 \cdot G \cdot \log(D/50)$$

Where: E.L. = Emission Level;

U.F. = Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Day Line Stringing Equipment (no helicopter)



Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)	Equipment	Reference Emission Noise Levels (L_{max}) at 50	Usage Factor ¹
				feet ¹	
Threshold	835	50.0	Crane	85	0.16
Residence 1	600	52.1	Man Lift	85	0.2
Residence 2	100	72.6	Pickup Truck	55	0.4
			Pickup Truck	55	0.4

Ground Type	soft
Source Height	8
Receiver Height	5
Ground Factor ²	0.63

Predicted Noise Level ³	L_{eq} dBA at 50 feet ³
Crane	77.0
Man Lift	78.0
Pickup Truck	51.0
Pickup Truck	51.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
80.6

Sources:

¹ Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

² Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

³ Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

$$L_{eq}(\text{equip}) = E.L. + 10 \cdot \log(U.F.) - 20 \cdot \log(D/50) - 10 \cdot G \cdot \log(D/50)$$

Where: E.L. = Emission Level;

U.F. = Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Combined Noise Levels @ 50 feet

Reference Noise Levels	SEL dBA	Leq dBA	Lmax dBA
Helicopter (10 minute hovering)	100	72	100
Line Stringing Equipment		81	88
Site Prep		88	92
	Stringing + Helicopter	Site Prep + Helicopter	
Combined Hourly Leq Noise Level @ 50 feet	81	88	
Combined Maximum Noise Level @ 50 feet	100	101	

Attenuation Calculations for Stationary Noise Sources

KEY: Orange cells are for input.

Grey cells are intermediate calculations performed by the model.

Green cells are data to present in a written analysis (output).

STEP 1: Identify the noise source and enter the reference noise level (dBA and distance).

STEP 2: Select the ground type (hard or soft), and enter the source and receiver heights.

STEP 3: Select the distance to the receiver.

[illegible]

Notes:

Estimates of attenuated noise levels do not account for reductions from intervening barriers, including walls, trees, vegetation, or structures of any type.

Computation of the attenuated noise level is based on the equation presented on pg. 12-3 and 12-4 of FTA 2006.

Computation of the ground factor is based on the equation presented in Figure 6-23 on pg. 6-23 of FTA 2006, where the distance of the reference noise level can be adjusted and the usage factor is not applied (i.e., the usage factor is equal to 1).

Helicopter attenuated distance is calculated based on the distance at 45 degrees from the helicopter at 50 feet above ground with respect to the ground distance at 50 feet from construction noise source

Sources:

Federal Transit Association (FTA). 2006 (May). Transit Noise and Vibration Impact Assessment. FTA-VA-90-1003-06. Washington, D.C. Available: <http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf>. Accessed: September 24, 2010.

Equipment Description	Acoustical Usage Factor (%)	Spec 721.560 Lmax @ 50ft (dBA slow)	Actual Measured Lmax @ 50ft (dBA slow)	No. of Actual Data Samples (count)	Spec 721.560 LmaxCalc	Spec 721.560 Leq	Distance	Actual Measured LmaxCalc	Actual Measured Leq
Auger Drill Rig	20	85	84	36	79.0	72.0	100	78.0	71.0
Backhoe	40	80	78	372	74.0	70.0	100	72.0	68.0
Bar Bender	20	80	na	0	74.0	67.0	100		
Blasting	na	94	na	0	88.0		100		
Boring Jack Power Unit	50	80	83	1	74.0	71.0	100	77.0	74.0
Chain Saw	20	85	84	46	79.0	72.0	100	78.0	71.0
Clam Shovel (dropping)	20	93	87	4	87.0	80.0	100	81.0	74.0
Compactor (ground)	20	80	83	57	74.0	67.0	100	77.0	70.0
Compressor (air)	40	80	78	18	74.0	70.0	100	72.0	68.0
Concrete Batch Plant	15	83	na	0	77.0	68.7	100		
Concrete Mixer Truck	40	85	79	40	79.0	75.0	100	73.0	69.0
Concrete Pump Truck	20	82	81	30	76.0	69.0	100	75.0	68.0
Concrete Saw	20	90	90	55	84.0	77.0	100	84.0	77.0
Crane	16	85	81	405	79.0	71.0	100	75.0	67.0
Dozer	40	85	82	55	79.0	75.0	100	76.0	72.0
Drill Rig Truck	20	84	79	22	78.0	71.0	100	73.0	66.0
Drum Mixer	50	80	80	1	74.0	71.0	100	74.0	71.0
Dump Truck	40	84	76	31	78.0	74.0	100	70.0	66.0
Excavator	40	85	81	170	79.0	75.0	100	75.0	71.0
Flat Bed Truck	40	84	74	4	78.0	74.0	100	68.0	64.0
Front End Loader	40	80	79	96	74.0	70.0	100	73.0	69.0
Generator	50	82	81	19	76.0	73.0	100	75.0	72.0
Generator (<25KVA, VMS s	50	70	73	74	64.0	61.0	100	67.0	64.0
Gradall	40	85	83	70	79.0	75.0	100	77.0	73.0
Grader	40	85	na	0	79.0	75.0	100		
Grapple (on Backhoe)	40	85	87	1	79.0	75.0	100	81.0	77.0
Horizontal Boring Hydr. Jac	25	80	82	6	74.0	68.0	100	76.0	70.0
Hydra Break Ram	10	90	na	0	84.0	74.0	100		
Impact Pile Driver	20	95	101	11	89.0	82.0	100	95.0	88.0
Jackhammer	20	85	89	133	79.0	72.0	100	83.0	76.0
Man Lift	20	85	75	23	79.0	72.0	100	69.0	62.0
Mounted Impact Hammer	20	90	90	212	84.0	77.0	100	84.0	77.0
Pavement Scarafier	20	85	90	2	79.0	72.0	100	84.0	77.0
Paver	50	85	77	9	79.0	76.0	100	71.0	68.0
Pickup Truck	40	55	75	1	49.0	45.0	100	69.0	65.0
Pneumatic Tools	50	85	85	90	79.0	76.0	100	79.0	76.0
Pumps	50	77	81	17	71.0	68.0	100	75.0	72.0
Refrigerator Unit	100	82	73	3	76.0	76.0	100	67.0	67.0
Rivit Buster/chipping gun	20	85	79	19	79.0	72.0	100	73.0	66.0
Rock Drill	20	85	81	3	79.0	72.0	100	75.0	68.0
Roller	20	85	80	16	79.0	72.0	100	74.0	67.0
Sand Blasting (Single Nozzle)	20	85	96	9	79.0	72.0	100	90.0	83.0
Scraper	40	85	84	12	79.0	75.0	100	78.0	74.0
Shears (on backhoe)	40	85	96	5	79.0	75.0	100	90.0	86.0
Slurry Plant	100	78	78	1	72.0	72.0	100	72.0	72.0
Slurry Trenching Machine	50	82	80	75	76.0	73.0	100	74.0	71.0
Soil Mix Drill Rig	50	80	na	0	74.0	71.0	100		
Tractor	40	84	na	0	78.0	74.0	100		
Vacuum Excavator (Vac-tru	40	85	85	149	79.0	75.0	100	79.0	75.0
Vacuum Street Sweeper	10	80	82	19	74.0	64.0	100	76.0	66.0
Ventilation Fan	100	85	79	13	79.0	79.0	100	73.0	73.0
Vibrating Hopper	50	85	87	1	79.0	76.0	100	81.0	78.0
Vibratory Concrete Mixer	20	80	80	1	74.0	67.0	100	74.0	67.0
Vibratory Pile Driver	20	95	101	44	89.0	82.0	100	95.0	88.0
Warning Horn	5	85	83	12	79.0	66.0	100	77.0	64.0
Welder / Torch	40	73	74	5	67.0	63.0	100	68.0	64.0

Source:

FHWA Roadway Construction Noise Model, January 2006. Table 9.1

U.S. Department of Transportation

CA/T Construction Spec. 721.560

Appendix 0

Socioeconomics and Environmental Justice Census Tract Data

Results - Click [Back to Search](#) to select other tables or geographies

◀

BACK TO SEARCH

Result 1 of 1

VIEW ALL AS PDF

DP-1

Profile of General Population and Housing Characteristics: 2010
2010 Demographic Profile Data

Table View

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NOTE: For more information on confidentiality protection, nonsampling error, and definitions, see <http://www.census.gov/prod/cen2010/doc/dpsf.pdf>.

Geography: Truckee town, California

186 of 186

Subject	Number	Percent
SEX AND AGE		
Total population	16,180	100.0
Under 5 years	1,061	6.6
5 to 9 years	1,097	6.8
10 to 14 years	992	6.1
15 to 19 years	917	5.7
20 to 24 years	841	5.2
25 to 29 years	1,247	7.7
30 to 34 years	1,230	7.6
35 to 39 years	1,279	7.9
40 to 44 years	1,274	7.9
45 to 49 years	1,353	8.4
50 to 54 years	1,455	9.0
55 to 59 years	1,217	7.5
60 to 64 years	961	5.9
65 to 69 years	551	3.4
70 to 74 years	351	2.2
75 to 79 years	177	1.1
80 to 84 years	101	0.6
85 years and over	76	0.5
Median age (years)	38.0	(X)
16 years and over	12,835	79.3
18 years and over	12,411	76.7
21 years and over	11,981	74.0
62 years and over	1,797	11.1
65 years and over	1,256	7.8
Male population	8,436	52.1
Under 5 years	559	3.5
5 to 9 years	555	3.4
10 to 14 years	487	3.0
15 to 19 years	465	2.9
20 to 24 years	451	2.8
25 to 29 years	703	4.3
30 to 34 years	654	4.0
35 to 39 years	683	4.2
40 to 44 years	656	4.1
45 to 49 years	661	4.1
50 to 54 years	740	4.6
55 to 59 years	640	4.0
60 to 64 years	529	3.3
65 to 69 years	285	1.8
70 to 74 years	187	1.2
75 to 79 years	98	0.6
80 to 84 years	55	0.3
85 years and over	28	0.2
Median age (years)	37.7	(X)

16 years and over	6,740	41.7
18 years and over	6,538	40.4
21 years and over	6,293	38.9
62 years and over	938	5.8
65 years and over	653	4.0
Female population	7,744	47.9
Under 5 years	502	3.1
5 to 9 years	542	3.3
10 to 14 years	505	3.1
15 to 19 years	452	2.8
20 to 24 years	390	2.4
25 to 29 years	544	3.4
30 to 34 years	576	3.6
35 to 39 years	596	3.7
40 to 44 years	618	3.8
45 to 49 years	692	4.3
50 to 54 years	715	4.4
55 to 59 years	577	3.6
60 to 64 years	432	2.7
65 to 69 years	266	1.6
70 to 74 years	164	1.0
75 to 79 years	79	0.5
80 to 84 years	46	0.3
85 years and over	48	0.3
Median age (years)	38.3	(X)
16 years and over	6,095	37.7
18 years and over	5,873	36.3
21 years and over	5,688	35.2
62 years and over	859	5.3
65 years and over	603	3.7
RACE		
Total population	16,180	100.0
One Race	15,834	97.9
White	13,992	86.5
Black or African American	60	0.4
American Indian and Alaska Native	95	0.6
Asian	241	1.5
Asian Indian	5	0.0
Chinese	77	0.5
Filipino	40	0.2
Japanese	55	0.3
Korean	22	0.1
Vietnamese	19	0.1
Other Asian [1]	23	0.1
Native Hawaiian and Other Pacific Islander	15	0.1
Native Hawaiian	9	0.1
Guamanian or Chamorro	0	0.0
Samoan	1	0.0
Other Pacific Islander [2]	5	0.0
Some Other Race	1,431	8.8
Two or More Races	346	2.1
White; American Indian and Alaska Native [3]	77	0.5
White; Asian [3]	113	0.7
White; Black or African American [3]	31	0.2
White; Some Other Race [3]	71	0.4
Race alone or in combination with one or more other races: [4]		
White	14,322	88.5
Black or African American	107	0.7
American Indian and Alaska Native	194	1.2
Asian	381	2.4
Native Hawaiian and Other Pacific Islander	43	0.3
Some Other Race	1,516	9.4
HISPANIC OR LATINO		
Total population	16,180	100.0
Hispanic or Latino (of any race)	3,016	18.6
Mexican	2,736	16.9
Puerto Rican	30	0.2
Cuban	11	0.1
Other Hispanic or Latino [5]	239	1.5
Not Hispanic or Latino	13,164	81.4
HISPANIC OR LATINO AND RACE		
Total population	16,180	100.0
Hispanic or Latino	3,016	18.6

White alone	1,424	8.8
Black or African American alone	7	0.0
American Indian and Alaska Native alone	43	0.3
Asian alone	16	0.1
Native Hawaiian and Other Pacific Islander alone	3	0.0
Some Other Race alone	1,416	8.8
Two or More Races	107	0.7
Not Hispanic or Latino	13,164	81.4
White alone	12,568	77.7
Black or African American alone	53	0.3
American Indian and Alaska Native alone	52	0.3
Asian alone	225	1.4
Native Hawaiian and Other Pacific Islander alone	12	0.1
Some Other Race alone	15	0.1
Two or More Races	239	1.5
RELATIONSHIP		
Total population	16,180	100.0
In households	16,137	99.7
Householder	6,343	39.2
Spouse [6]	3,443	21.3
Child	4,262	26.3
Own child under 18 years	3,556	22.0
Other relatives	539	3.3
Under 18 years	170	1.1
65 years and over	68	0.4
Nonrelatives	1,550	9.6
Under 18 years	40	0.2
65 years and over	56	0.3
Unmarried partner	545	3.4
In group quarters	43	0.3
Institutionalized population	0	0.0
Male	0	0.0
Female	0	0.0
Noninstitutionalized population	43	0.3
Male	35	0.2
Female	8	0.0
HOUSEHOLDS BY TYPE		
Total households	6,343	100.0
Family households (families) [7]	4,168	65.7
With own children under 18 years	2,033	32.1
Husband-wife family	3,443	54.3
With own children under 18 years	1,567	24.7
Male householder, no wife present	314	5.0
With own children under 18 years	184	2.9
Female householder, no husband present	411	6.5
With own children under 18 years	282	4.4
Nonfamily households [7]	2,175	34.3
Householder living alone	1,382	21.8
Male	788	12.4
65 years and over	117	1.8
Female	594	9.4
65 years and over	158	2.5
Households with individuals under 18 years	2,135	33.7
Households with individuals 65 years and over	910	14.3
Average household size	2.54	(X)
Average family size [7]	2.98	(X)
HOUSING OCCUPANCY		
Total housing units	12,803	100.0
Occupied housing units	6,343	49.5
Vacant housing units	6,460	50.5
For rent	175	1.4
Rented, not occupied	39	0.3
For sale only	147	1.1
Sold, not occupied	16	0.1
For seasonal, recreational, or occasional use	5,989	46.8
All other vacants	94	0.7
Homeowner vacancy rate (percent) [8]	3.3	(X)
Rental vacancy rate (percent) [9]	7.8	(X)
HOUSING TENURE		
Occupied housing units	6,343	100.0
Owner-occupied housing units	4,326	68.2
Population in owner-occupied housing units	10,783	(X)

Average household size of owner-occupied units	2.49	(X)
Renter-occupied housing units	2,017	31.8
Population in renter-occupied housing units	5,354	(X)
Average household size of renter-occupied units	2.65	(X)

X Not applicable.

- [1] Other Asian alone, or two or more Asian categories.
- [2] Other Pacific Islander alone, or two or more Native Hawaiian and Other Pacific Islander categories.
- [3] One of the four most commonly reported multiple-race combinations nationwide in Census 2000.
- [4] In combination with one or more of the other races listed. The six numbers may add to more than the total population, and the six percentages may add to more than 100 percent because individuals may report more than one race.
- [5] This category is composed of people whose origins are from the Dominican Republic, Spain, and Spanish-speaking Central or South American countries. It also includes general origin responses such as "Latino" or "Hispanic."
- [6] "Spouse" represents spouse of the householder. It does not reflect all spouses in a household. Responses of "same-sex spouse" were edited during processing to "unmarried partner."
- [7] "Family households" consist of a householder and one or more other people related to the householder by birth, marriage, or adoption. They do not include same-sex married couples even if the marriage was performed in a state issuing marriage certificates for same-sex couples. Same-sex couple households are included in the family households category if there is at least one additional person related to the householder by birth or adoption. Same-sex couple households with no relatives of the householder present are tabulated in nonfamily households. "Nonfamily households" consist of people living alone and households which do not have any members related to the householder.
- [8] The homeowner vacancy rate is the proportion of the homeowner inventory that is vacant "for sale." It is computed by dividing the total number of vacant units "for sale only" by the sum of owner-occupied units, vacant units that are "for sale only," and vacant units that have been sold but not yet occupied; and then multiplying by 100.
- [9] The rental vacancy rate is the proportion of the rental inventory that is vacant "for rent." It is computed by dividing the total number of vacant units "for rent" by the sum of the renter-occupied units, vacant units that are "for rent," and vacant units that have been rented but not yet occupied; and then multiplying by 100.

Source: U.S. Census Bureau, 2010 Census.

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Profile of General Population and Housing Characteristics: 2010
2010 Demographic Profile Data

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NOTE: For more information on confidentiality protection, nonsampling error, and definitions, see <http://www.census.gov/prod/cen2010/doc/dpsf.pdf>.

Geography: Census Tract 220.11, Placer County, California

Subject	Number	Percent
SEX AND AGE		
Total population	1,686	100.0
Under 5 years	91	5.4
5 to 9 years	77	4.6
10 to 14 years	97	5.8
15 to 19 years	92	5.5
20 to 24 years	98	5.8
25 to 29 years	142	8.4
30 to 34 years	141	8.4
35 to 39 years	123	7.3
40 to 44 years	108	6.4
45 to 49 years	107	6.3
50 to 54 years	133	7.9
55 to 59 years	148	8.8
60 to 64 years	136	8.1
65 to 69 years	97	5.8
70 to 74 years	51	3.0
75 to 79 years	19	1.1
80 to 84 years	22	1.3
85 years and over	4	0.2
Median age (years)	39.4	(X)
16 years and over	1,399	83.0
18 years and over	1,363	80.8
21 years and over	1,317	78.1
62 years and over	269	16.0
65 years and over	193	11.4
Male population	909	53.9
Under 5 years	52	3.1
5 to 9 years	48	2.8
10 to 14 years	41	2.4
15 to 19 years	54	3.2
20 to 24 years	50	3.0
25 to 29 years	85	5.0
30 to 34 years	78	4.6
35 to 39 years	71	4.2
40 to 44 years	62	3.7
45 to 49 years	52	3.1
50 to 54 years	63	3.7
55 to 59 years	75	4.4
60 to 64 years	67	4.0
65 to 69 years	58	3.4
70 to 74 years	30	1.8
75 to 79 years	10	0.6
80 to 84 years	12	0.7
85 years and over	1	0.1
Median age (years)	38.6	(X)
16 years and over	757	44.9

18 years and over	735	43.6
21 years and over	706	41.9
62 years and over	148	8.8
65 years and over	111	6.6
Female population	777	46.1
Under 5 years	39	2.3
5 to 9 years	29	1.7
10 to 14 years	56	3.3
15 to 19 years	38	2.3
20 to 24 years	48	2.8
25 to 29 years	57	3.4
30 to 34 years	63	3.7
35 to 39 years	52	3.1
40 to 44 years	46	2.7
45 to 49 years	55	3.3
50 to 54 years	70	4.2
55 to 59 years	73	4.3
60 to 64 years	69	4.1
65 to 69 years	39	2.3
70 to 74 years	21	1.2
75 to 79 years	9	0.5
80 to 84 years	10	0.6
85 years and over	3	0.2
Median age (years)	40.7	(X)
16 years and over	642	38.1
18 years and over	628	37.2
21 years and over	611	36.2
62 years and over	121	7.2
65 years and over	82	4.9
RACE		
Total population	1,686	100.0
One Race	1,652	98.0
White	1,499	88.9
Black or African American	6	0.4
American Indian and Alaska Native	5	0.3
Asian	36	2.1
Asian Indian	6	0.4
Chinese	9	0.5
Filipino	16	0.9
Japanese	0	0.0
Korean	3	0.2
Vietnamese	0	0.0
Other Asian [1]	2	0.1
Native Hawaiian and Other Pacific Islander	1	0.1
Native Hawaiian	0	0.0
Guamanian or Chamorro	0	0.0
Samoan	0	0.0
Other Pacific Islander [2]	1	0.1
Some Other Race	105	6.2
Two or More Races	34	2.0
White; American Indian and Alaska Native [3]	9	0.5
White; Asian [3]	14	0.8
White; Black or African American [3]	3	0.2
White; Some Other Race [3]	1	0.1
Race alone or in combination with one or more other races: [4]		
White	1,529	90.7
Black or African American	10	0.6
American Indian and Alaska Native	15	0.9
Asian	57	3.4
Native Hawaiian and Other Pacific Islander	4	0.2
Some Other Race	109	6.5
HISPANIC OR LATINO		
Total population	1,686	100.0
Hispanic or Latino (of any race)	179	10.6
Mexican	148	8.8
Puerto Rican	4	0.2
Cuban	0	0.0
Other Hispanic or Latino [5]	27	1.6
Not Hispanic or Latino	1,507	89.4
HISPANIC OR LATINO AND RACE		
Total population	1,686	100.0
Hispanic or Latino	179	10.6
White alone	65	3.9
Black or African American alone	2	0.1
American Indian and Alaska Native alone	2	0.1
Asian alone	0	0.0

Native Hawaiian and Other Pacific Islander alone	0	0.0
Some Other Race alone	103	6.1
Two or More Races	7	0.4
Not Hispanic or Latino	1,507	89.4
White alone	1,434	85.1
Black or African American alone	4	0.2
American Indian and Alaska Native alone	3	0.2
Asian alone	36	2.1
Native Hawaiian and Other Pacific Islander alone	1	0.1
Some Other Race alone	2	0.1
Two or More Races	27	1.6
RELATIONSHIP		
Total population	1,686	100.0
In households	1,686	100.0
Householder	696	41.3
Spouse [6]	369	21.9
Child	337	20.0
Own child under 18 years	271	16.1
Other relatives	63	3.7
Under 18 years	22	1.3
65 years and over	6	0.4
Nonrelatives	221	13.1
Under 18 years	30	1.8
65 years and over	3	0.2
Unmarried partner	55	3.3
In group quarters	0	0.0
Institutionalized population	0	0.0
Male	0	0.0
Female	0	0.0
Noninstitutionalized population	0	0.0
Male	0	0.0
Female	0	0.0
HOUSEHOLDS BY TYPE		
Total households	696	100.0
Family households (families) [7]	416	59.8
With own children under 18 years	156	22.4
Husband-wife family	369	53.0
With own children under 18 years	131	18.8
Male householder, no wife present	24	3.4
With own children under 18 years	13	1.9
Female householder, no husband present	23	3.3
With own children under 18 years	12	1.7
Nonfamily households [7]	280	40.2
Householder living alone	147	21.1
Male	84	12.1
65 years and over	15	2.2
Female	63	9.1
65 years and over	17	2.4
Households with individuals under 18 years	195	28.0
Households with individuals 65 years and over	133	19.1
Average household size	2.42	(X)
Average family size [7]	2.85	(X)
HOUSING OCCUPANCY		
Total housing units	2,590	100.0
Occupied housing units	696	26.9
Vacant housing units	1,894	73.1
For rent	37	1.4
Rented, not occupied	4	0.2
For sale only	58	2.2
Sold, not occupied	1	0.0
For seasonal, recreational, or occasional use	1,781	68.8
All other vacants	13	0.5
Homeowner vacancy rate (percent) [8]	10.6	(X)
Rental vacancy rate (percent) [9]	14.7	(X)
HOUSING TENURE		
Occupied housing units	696	100.0
Owner-occupied housing units	486	69.8
Population in owner-occupied housing units	1,187	(X)
Average household size of owner-occupied units	2.44	(X)
Renter-occupied housing units	210	30.2
Population in renter-occupied housing units	499	(X)
Average household size of renter-occupied units	2.38	(X)

X Not applicable.

- [1] Other Asian alone, or two or more Asian categories.
- [2] Other Pacific Islander alone, or two or more Native Hawaiian and Other Pacific Islander categories.
- [3] One of the four most commonly reported multiple-race combinations nationwide in Census 2000.
- [4] In combination with one or more of the other races listed. The six numbers may add to more than the total population, and the six percentages may add to more than 100 percent because individuals may report more than one race.
- [5] This category is composed of people whose origins are from the Dominican Republic, Spain, and Spanish-speaking Central or South American countries. It also includes general origin responses such as "Latino" or "Hispanic."
- [6] "Spouse" represents spouse of the householder. It does not reflect all spouses in a household. Responses of "same-sex spouse" were edited during processing to "unmarried partner."
- [7] "Family households" consist of a householder and one or more other people related to the householder by birth, marriage, or adoption. They do not include same-sex married couples even if the marriage was performed in a state issuing marriage certificates for same-sex couples. Same-sex couple households are included in the family households category if there is at least one additional person related to the householder by birth or adoption. Same-sex couple households with no relatives of the householder present are tabulated in nonfamily households. "Nonfamily households" consist of people living alone and households which do not have any members related to the householder.
- [8] The homeowner vacancy rate is the proportion of the homeowner inventory that is vacant "for sale." It is computed by dividing the total number of vacant units "for sale only" by the sum of owner-occupied units, vacant units that are "for sale only," and vacant units that have been sold but not yet occupied; and then multiplying by 100.
- [9] The rental vacancy rate is the proportion of the rental inventory that is vacant "for rent." It is computed by dividing the total number of vacant units "for rent" by the sum of the renter-occupied units, vacant units that are "for rent," and vacant units that have been rented but not yet occupied; and then multiplying by 100.

Source: U.S. Census Bureau, 2010 Census.



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Profile of General Population and Housing Characteristics: 2010

2010 Demographic Profile Data

NOTE: For more information on confidentiality protection, nonsampling error, and definitions, see <http://www.census.gov/prod/cen2010/doc/dpsf.pdf>.**Geography: Census Tract 222, Placer County, California**

Subject	Number	Percent
SEX AND AGE		
Total population	909	100.0
Under 5 years	39	4.3
5 to 9 years	30	3.3
10 to 14 years	21	2.3
15 to 19 years	31	3.4
20 to 24 years	73	8.0
25 to 29 years	97	10.7
30 to 34 years	64	7.0
35 to 39 years	84	9.2
40 to 44 years	65	7.2
45 to 49 years	77	8.5
50 to 54 years	68	7.5
55 to 59 years	104	11.4
60 to 64 years	61	6.7
65 to 69 years	50	5.5
70 to 74 years	19	2.1
75 to 79 years	14	1.5
80 to 84 years	7	0.8
85 years and over	5	0.6
Median age (years)	40.9	(X)
16 years and over	812	89.3
18 years and over	803	88.3
21 years and over	782	86.0
62 years and over	128	14.1
65 years and over	95	10.5
Male population	496	54.6
Under 5 years	23	2.5
5 to 9 years	14	1.5
10 to 14 years	6	0.7
15 to 19 years	19	2.1
20 to 24 years	33	3.6
25 to 29 years	59	6.5
30 to 34 years	39	4.3
35 to 39 years	50	5.5
40 to 44 years	37	4.1
45 to 49 years	39	4.3
50 to 54 years	32	3.5
55 to 59 years	57	6.3
60 to 64 years	37	4.1
65 to 69 years	26	2.9
70 to 74 years	10	1.1
75 to 79 years	8	0.9
80 to 84 years	5	0.6
85 years and over	2	0.2

Subject	Number	Percent
Median age (years)	40.7	(X)
16 years and over	447	49.2
18 years and over	444	48.8
21 years and over	429	47.2
62 years and over	69	7.6
65 years and over	51	5.6
Female population	413	45.4
Under 5 years	16	1.8
5 to 9 years	16	1.8
10 to 14 years	15	1.7
15 to 19 years	12	1.3
20 to 24 years	40	4.4
25 to 29 years	38	4.2
30 to 34 years	25	2.8
35 to 39 years	34	3.7
40 to 44 years	28	3.1
45 to 49 years	38	4.2
50 to 54 years	36	4.0
55 to 59 years	47	5.2
60 to 64 years	24	2.6
65 to 69 years	24	2.6
70 to 74 years	9	1.0
75 to 79 years	6	0.7
80 to 84 years	2	0.2
85 years and over	3	0.3
Median age (years)	41.1	(X)
16 years and over	365	40.2
18 years and over	359	39.5
21 years and over	353	38.8
62 years and over	59	6.5
65 years and over	44	4.8
RACE		
Total population	909	100.0
One Race	894	98.3
White	849	93.4
Black or African American	3	0.3
American Indian and Alaska Native	3	0.3
Asian	8	0.9
Asian Indian	1	0.1
Chinese	2	0.2
Filipino	0	0.0
Japanese	4	0.4
Korean	1	0.1
Vietnamese	0	0.0
Other Asian [1]	0	0.0
Native Hawaiian and Other Pacific Islander	1	0.1
Native Hawaiian	1	0.1
Guamanian or Chamorro	0	0.0
Samoan	0	0.0
Other Pacific Islander [2]	0	0.0
Some Other Race	30	3.3
Two or More Races	15	1.7
White; American Indian and Alaska Native [3]	4	0.4
White; Asian [3]	3	0.3
White; Black or African American [3]	4	0.4
White; Some Other Race [3]	1	0.1
Race alone or in combination with one or more other races: [4]		
White	862	94.8
Black or African American	10	1.1
American Indian and Alaska Native	9	1.0

Subject	Number	Percent
Asian	12	1.3
Native Hawaiian and Other Pacific Islander	1	0.1
Some Other Race	32	3.5
HISPANIC OR LATINO		
Total population	909	100.0
Hispanic or Latino (of any race)	73	8.0
Mexican	53	5.8
Puerto Rican	2	0.2
Cuban	2	0.2
Other Hispanic or Latino [5]	16	1.8
Not Hispanic or Latino	836	92.0
HISPANIC OR LATINO AND RACE		
Total population	909	100.0
Hispanic or Latino	73	8.0
White alone	41	4.5
Black or African American alone	0	0.0
American Indian and Alaska Native alone	1	0.1
Asian alone	0	0.0
Native Hawaiian and Other Pacific Islander alone	0	0.0
Some Other Race alone	29	3.2
Two or More Races	2	0.2
Not Hispanic or Latino	836	92.0
White alone	808	88.9
Black or African American alone	3	0.3
American Indian and Alaska Native alone	2	0.2
Asian alone	8	0.9
Native Hawaiian and Other Pacific Islander alone	1	0.1
Some Other Race alone	1	0.1
Two or More Races	13	1.4
RELATIONSHIP		
Total population	909	100.0
In households	902	99.2
Householder	435	47.9
Spouse [6]	146	16.1
Child	127	14.0
Own child under 18 years	94	10.3
Other relatives	23	2.5
Under 18 years	1	0.1
65 years and over	4	0.4
Nonrelatives	171	18.8
Under 18 years	11	1.2
65 years and over	3	0.3
Unmarried partner	59	6.5
In group quarters	7	0.8
Institutionalized population	0	0.0
Male	0	0.0
Female	0	0.0
Noninstitutionalized population	7	0.8
Male	1	0.1
Female	6	0.7
HOUSEHOLDS BY TYPE		
Total households	435	100.0
Family households (families) [7]	178	40.9
With own children under 18 years	60	13.8
Husband-wife family	146	33.6
With own children under 18 years	41	9.4
Male householder, no wife present	15	3.4
With own children under 18 years	9	2.1
Female householder, no husband present	17	3.9
With own children under 18 years	10	2.3

Subject	Number	Percent
Nonfamily households [7]	257	59.1
Householder living alone	154	35.4
Male	93	21.4
65 years and over	11	2.5
Female	61	14.0
65 years and over	13	3.0
Households with individuals under 18 years	67	15.4
Households with individuals 65 years and over	70	16.1
Average household size	2.07	(X)
Average family size [7]	2.66	(X)
HOUSING OCCUPANCY		
Total housing units	1,339	100.0
Occupied housing units	435	32.5
Vacant housing units	904	67.5
For rent	58	4.3
Rented, not occupied	2	0.1
For sale only	7	0.5
Sold, not occupied	2	0.1
For seasonal, recreational, or occasional use	827	61.8
All other vacants	8	0.6
Homeowner vacancy rate (percent) [8]	2.9	(X)
Rental vacancy rate (percent) [9]	21.8	(X)
HOUSING TENURE		
Occupied housing units	435	100.0
Owner-occupied housing units	229	52.6
Population in owner-occupied housing units	488	(X)
Average household size of owner-occupied units	2.13	(X)
Renter-occupied housing units	206	47.4
Population in renter-occupied housing units	414	(X)
Average household size of renter-occupied units	2.01	(X)

X Not applicable.

[1] Other Asian alone, or two or more Asian categories.

[2] Other Pacific Islander alone, or two or more Native Hawaiian and Other Pacific Islander categories.

[3] One of the four most commonly reported multiple-race combinations nationwide in Census 2000.

[4] In combination with one or more of the other races listed. The six numbers may add to more than the total population, and the six percentages may add to more than 100 percent because individuals may report more than one race.

[5] This category is composed of people whose origins are from the Dominican Republic, Spain, and Spanish-speaking Central or South American countries. It also includes general origin responses such as "Latino" or "Hispanic."

[6] "Spouse" represents spouse of the householder. It does not reflect all spouses in a household. Responses of "same-sex spouse" were edited during processing to "unmarried partner."

[7] "Family households" consist of a householder and one or more other people related to the householder by birth, marriage, or adoption. They do not include same-sex married couples even if the marriage was performed in a state issuing marriage certificates for same-sex couples. Same-sex couple households are included in the family households category if there is at least one additional person related to the householder by birth or adoption. Same-sex couple households with no relatives of the householder present are tabulated in nonfamily households. "Nonfamily households" consist of people living alone and households which do not have any members related to the householder.

[8] The homeowner vacancy rate is the proportion of the homeowner inventory that is vacant "for sale." It is computed by dividing the total number of vacant units "for sale only" by the sum of owner-occupied units, vacant units that are "for sale only," and vacant units that have been sold but not yet occupied; and then multiplying by 100.

[9] The rental vacancy rate is the proportion of the rental inventory that is vacant "for rent." It is computed by dividing the total number of vacant units "for rent" by the sum of the renter-occupied units, vacant units that are "for rent," and vacant units that have been rented but not yet occupied; and then multiplying by 100.

Source: U.S. Census Bureau, 2010 Census.

ARIZONA
NEW MEXICO

OKLAHOMA

ARKANSAS

TENNESSEE

NORTH CAROLINA

SOUTH CAROLINA

DP-1

Profile of General Population and Housing Characteristics: 2010

2010 Demographic Profile Data

NOTE: For more information on confidentiality protection, nonsampling error, and definitions, see <http://www.census.gov/prod/cen2010/doc/dpsf.pdf>.**Geography: Census Tract 201.04, Placer County, California**

Subject	Number	Percent
SEX AND AGE		
Total population	1,288	100.0
Under 5 years	49	3.8
5 to 9 years	52	4.0
10 to 14 years	57	4.4
15 to 19 years	55	4.3
20 to 24 years	79	6.1
25 to 29 years	120	9.3
30 to 34 years	66	5.1
35 to 39 years	69	5.4
40 to 44 years	88	6.8
45 to 49 years	99	7.7
50 to 54 years	100	7.8
55 to 59 years	113	8.8
60 to 64 years	130	10.1
65 to 69 years	81	6.3
70 to 74 years	41	3.2
75 to 79 years	48	3.7
80 to 84 years	28	2.2
85 years and over	13	1.0
Median age (years)	45.4	(X)
16 years and over	1,121	87.0
18 years and over	1,088	84.5
21 years and over	1,068	82.9
62 years and over	287	22.3
65 years and over	211	16.4
Male population	669	51.9
Under 5 years	24	1.9
5 to 9 years	31	2.4
10 to 14 years	30	2.3
15 to 19 years	28	2.2
20 to 24 years	49	3.8
25 to 29 years	67	5.2
30 to 34 years	42	3.3
35 to 39 years	38	3.0
40 to 44 years	45	3.5
45 to 49 years	49	3.8
50 to 54 years	38	3.0
55 to 59 years	57	4.4
60 to 64 years	68	5.3
65 to 69 years	46	3.6
70 to 74 years	18	1.4
75 to 79 years	23	1.8
80 to 84 years	11	0.9
85 years and over	5	0.4

Subject	Number	Percent
Median age (years)	42.8	(X)
16 years and over	579	45.0
18 years and over	562	43.6
21 years and over	552	42.9
62 years and over	141	10.9
65 years and over	103	8.0
Female population	619	48.1
Under 5 years	25	1.9
5 to 9 years	21	1.6
10 to 14 years	27	2.1
15 to 19 years	27	2.1
20 to 24 years	30	2.3
25 to 29 years	53	4.1
30 to 34 years	24	1.9
35 to 39 years	31	2.4
40 to 44 years	43	3.3
45 to 49 years	50	3.9
50 to 54 years	62	4.8
55 to 59 years	56	4.3
60 to 64 years	62	4.8
65 to 69 years	35	2.7
70 to 74 years	23	1.8
75 to 79 years	25	1.9
80 to 84 years	17	1.3
85 years and over	8	0.6
Median age (years)	48.1	(X)
16 years and over	542	42.1
18 years and over	526	40.8
21 years and over	516	40.1
62 years and over	146	11.3
65 years and over	108	8.4
RACE		
Total population	1,288	100.0
One Race	1,270	98.6
White	1,212	94.1
Black or African American	5	0.4
American Indian and Alaska Native	6	0.5
Asian	19	1.5
Asian Indian	5	0.4
Chinese	2	0.2
Filipino	1	0.1
Japanese	4	0.3
Korean	2	0.2
Vietnamese	5	0.4
Other Asian [1]	0	0.0
Native Hawaiian and Other Pacific Islander	0	0.0
Native Hawaiian	0	0.0
Guamanian or Chamorro	0	0.0
Samoan	0	0.0
Other Pacific Islander [2]	0	0.0
Some Other Race	28	2.2
Two or More Races	18	1.4
White; American Indian and Alaska Native [3]	6	0.5
White; Asian [3]	3	0.2
White; Black or African American [3]	2	0.2
White; Some Other Race [3]	4	0.3
Race alone or in combination with one or more other races: [4]		
White	1,230	95.5
Black or African American	8	0.6
American Indian and Alaska Native	13	1.0

Subject	Number	Percent
Asian	22	1.7
Native Hawaiian and Other Pacific Islander	2	0.2
Some Other Race	33	2.6
HISPANIC OR LATINO		
Total population	1,288	100.0
Hispanic or Latino (of any race)	88	6.8
Mexican	76	5.9
Puerto Rican	0	0.0
Cuban	1	0.1
Other Hispanic or Latino [5]	11	0.9
Not Hispanic or Latino	1,200	93.2
HISPANIC OR LATINO AND RACE		
Total population	1,288	100.0
Hispanic or Latino	88	6.8
White alone	56	4.3
Black or African American alone	0	0.0
American Indian and Alaska Native alone	0	0.0
Asian alone	0	0.0
Native Hawaiian and Other Pacific Islander alone	0	0.0
Some Other Race alone	28	2.2
Two or More Races	4	0.3
Not Hispanic or Latino	1,200	93.2
White alone	1,156	89.8
Black or African American alone	5	0.4
American Indian and Alaska Native alone	6	0.5
Asian alone	19	1.5
Native Hawaiian and Other Pacific Islander alone	0	0.0
Some Other Race alone	0	0.0
Two or More Races	14	1.1
RELATIONSHIP		
Total population	1,288	100.0
In households	1,288	100.0
Householder	602	46.7
Spouse [6]	269	20.9
Child	241	18.7
Own child under 18 years	186	14.4
Other relatives	30	2.3
Under 18 years	14	1.1
65 years and over	2	0.2
Nonrelatives	146	11.3
Under 18 years	0	0.0
65 years and over	5	0.4
Unmarried partner	44	3.4
In group quarters	0	0.0
Institutionalized population	0	0.0
Male	0	0.0
Female	0	0.0
Noninstitutionalized population	0	0.0
Male	0	0.0
Female	0	0.0
HOUSEHOLDS BY TYPE		
Total households	602	100.0
Family households (families) [7]	320	53.2
With own children under 18 years	109	18.1
Husband-wife family	269	44.7
With own children under 18 years	78	13.0
Male householder, no wife present	16	2.7
With own children under 18 years	9	1.5
Female householder, no husband present	35	5.8
With own children under 18 years	22	3.7

Subject	Number	Percent
Nonfamily households [7]	282	46.8
Householder living alone	198	32.9
Male	99	16.4
65 years and over	23	3.8
Female	99	16.4
65 years and over	39	6.5
Households with individuals under 18 years	115	19.1
Households with individuals 65 years and over	158	26.2
Average household size	2.14	(X)
Average family size [7]	2.69	(X)
HOUSING OCCUPANCY		
Total housing units	1,986	100.0
Occupied housing units	602	30.3
Vacant housing units	1,384	69.7
For rent	35	1.8
Rented, not occupied	2	0.1
For sale only	21	1.1
Sold, not occupied	6	0.3
For seasonal, recreational, or occasional use	1,307	65.8
All other vacants	13	0.7
Homeowner vacancy rate (percent) [8]	5.1	(X)
Rental vacancy rate (percent) [9]	13.8	(X)
HOUSING TENURE		
Occupied housing units	602	100.0
Owner-occupied housing units	385	64.0
Population in owner-occupied housing units	814	(X)
Average household size of owner-occupied units	2.11	(X)
Renter-occupied housing units	217	36.0
Population in renter-occupied housing units	474	(X)
Average household size of renter-occupied units	2.18	(X)

X Not applicable.

[1] Other Asian alone, or two or more Asian categories.

[2] Other Pacific Islander alone, or two or more Native Hawaiian and Other Pacific Islander categories.

[3] One of the four most commonly reported multiple-race combinations nationwide in Census 2000.

[4] In combination with one or more of the other races listed. The six numbers may add to more than the total population, and the six percentages may add to more than 100 percent because individuals may report more than one race.

[5] This category is composed of people whose origins are from the Dominican Republic, Spain, and Spanish-speaking Central or South American countries. It also includes general origin responses such as "Latino" or "Hispanic."

[6] "Spouse" represents spouse of the householder. It does not reflect all spouses in a household. Responses of "same-sex spouse" were edited during processing to "unmarried partner."

[7] "Family households" consist of a householder and one or more other people related to the householder by birth, marriage, or adoption. They do not include same-sex married couples even if the marriage was performed in a state issuing marriage certificates for same-sex couples. Same-sex couple households are included in the family households category if there is at least one additional person related to the householder by birth or adoption. Same-sex couple households with no relatives of the householder present are tabulated in nonfamily households. "Nonfamily households" consist of people living alone and households which do not have any members related to the householder.

[8] The homeowner vacancy rate is the proportion of the homeowner inventory that is vacant "for sale." It is computed by dividing the total number of vacant units "for sale only" by the sum of owner-occupied units, vacant units that are "for sale only," and vacant units that have been sold but not yet occupied; and then multiplying by 100.

[9] The rental vacancy rate is the proportion of the rental inventory that is vacant "for rent." It is computed by dividing the total number of vacant units "for rent" by the sum of the renter-occupied units, vacant units that are "for rent," and vacant units that have been rented but not yet occupied; and then multiplying by 100.

Source: U.S. Census Bureau, 2010 Census.

ARIZONA
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DP-1

Profile of General Population and Housing Characteristics: 2010

2010 Demographic Profile Data

NOTE: For more information on confidentiality protection, nonsampling error, and definitions, see <http://www.census.gov/prod/cen2010/doc/dpsf.pdf>.**Geography: Census Tract 201.05, Placer County, California**

Subject	Number	Percent
SEX AND AGE		
Total population	1,352	100.0
Under 5 years	51	3.8
5 to 9 years	53	3.9
10 to 14 years	53	3.9
15 to 19 years	53	3.9
20 to 24 years	71	5.3
25 to 29 years	98	7.2
30 to 34 years	88	6.5
35 to 39 years	90	6.7
40 to 44 years	84	6.2
45 to 49 years	122	9.0
50 to 54 years	117	8.7
55 to 59 years	133	9.8
60 to 64 years	130	9.6
65 to 69 years	87	6.4
70 to 74 years	59	4.4
75 to 79 years	27	2.0
80 to 84 years	16	1.2
85 years and over	20	1.5
Median age (years)	46.4	(X)
16 years and over	1,184	87.6
18 years and over	1,158	85.7
21 years and over	1,137	84.1
62 years and over	291	21.5
65 years and over	209	15.5
Male population	732	54.1
Under 5 years	25	1.8
5 to 9 years	37	2.7
10 to 14 years	27	2.0
15 to 19 years	28	2.1
20 to 24 years	38	2.8
25 to 29 years	56	4.1
30 to 34 years	52	3.8
35 to 39 years	45	3.3
40 to 44 years	38	2.8
45 to 49 years	69	5.1
50 to 54 years	63	4.7
55 to 59 years	60	4.4
60 to 64 years	70	5.2
65 to 69 years	53	3.9
70 to 74 years	39	2.9
75 to 79 years	13	1.0
80 to 84 years	10	0.7
85 years and over	9	0.7

Subject	Number	Percent
Median age (years)	46.5	(X)
16 years and over	639	47.3
18 years and over	625	46.2
21 years and over	612	45.3
62 years and over	169	12.5
65 years and over	124	9.2
Female population	620	45.9
Under 5 years	26	1.9
5 to 9 years	16	1.2
10 to 14 years	26	1.9
15 to 19 years	25	1.8
20 to 24 years	33	2.4
25 to 29 years	42	3.1
30 to 34 years	36	2.7
35 to 39 years	45	3.3
40 to 44 years	46	3.4
45 to 49 years	53	3.9
50 to 54 years	54	4.0
55 to 59 years	73	5.4
60 to 64 years	60	4.4
65 to 69 years	34	2.5
70 to 74 years	20	1.5
75 to 79 years	14	1.0
80 to 84 years	6	0.4
85 years and over	11	0.8
Median age (years)	46.3	(X)
16 years and over	545	40.3
18 years and over	533	39.4
21 years and over	525	38.8
62 years and over	122	9.0
65 years and over	85	6.3
RACE		
Total population	1,352	100.0
One Race	1,315	97.3
White	1,262	93.3
Black or African American	7	0.5
American Indian and Alaska Native	10	0.7
Asian	28	2.1
Asian Indian	1	0.1
Chinese	7	0.5
Filipino	3	0.2
Japanese	8	0.6
Korean	2	0.1
Vietnamese	1	0.1
Other Asian [1]	6	0.4
Native Hawaiian and Other Pacific Islander	0	0.0
Native Hawaiian	0	0.0
Guamanian or Chamorro	0	0.0
Samoan	0	0.0
Other Pacific Islander [2]	0	0.0
Some Other Race	8	0.6
Two or More Races	37	2.7
White; American Indian and Alaska Native [3]	13	1.0
White; Asian [3]	12	0.9
White; Black or African American [3]	4	0.3
White; Some Other Race [3]	2	0.1
Race alone or in combination with one or more other races: [4]		
White	1,298	96.0
Black or African American	13	1.0
American Indian and Alaska Native	25	1.8

Subject	Number	Percent
Asian	41	3.0
Native Hawaiian and Other Pacific Islander	4	0.3
Some Other Race	10	0.7
HISPANIC OR LATINO		
Total population	1,352	100.0
Hispanic or Latino (of any race)	48	3.6
Mexican	25	1.8
Puerto Rican	4	0.3
Cuban	0	0.0
Other Hispanic or Latino [5]	19	1.4
Not Hispanic or Latino	1,304	96.4
HISPANIC OR LATINO AND RACE		
Total population	1,352	100.0
Hispanic or Latino	48	3.6
White alone	36	2.7
Black or African American alone	1	0.1
American Indian and Alaska Native alone	0	0.0
Asian alone	1	0.1
Native Hawaiian and Other Pacific Islander alone	0	0.0
Some Other Race alone	8	0.6
Two or More Races	2	0.1
Not Hispanic or Latino	1,304	96.4
White alone	1,226	90.7
Black or African American alone	6	0.4
American Indian and Alaska Native alone	10	0.7
Asian alone	27	2.0
Native Hawaiian and Other Pacific Islander alone	0	0.0
Some Other Race alone	0	0.0
Two or More Races	35	2.6
RELATIONSHIP		
Total population	1,352	100.0
In households	1,352	100.0
Householder	635	47.0
Spouse [6]	308	22.8
Child	217	16.1
Own child under 18 years	182	13.5
Other relatives	31	2.3
Under 18 years	6	0.4
65 years and over	6	0.4
Nonrelatives	161	11.9
Under 18 years	2	0.1
65 years and over	5	0.4
Unmarried partner	62	4.6
In group quarters	0	0.0
Institutionalized population	0	0.0
Male	0	0.0
Female	0	0.0
Noninstitutionalized population	0	0.0
Male	0	0.0
Female	0	0.0
HOUSEHOLDS BY TYPE		
Total households	635	100.0
Family households (families) [7]	355	55.9
With own children under 18 years	113	17.8
Husband-wife family	308	48.5
With own children under 18 years	89	14.0
Male householder, no wife present	21	3.3
With own children under 18 years	10	1.6
Female householder, no husband present	26	4.1
With own children under 18 years	14	2.2

Subject	Number	Percent
Nonfamily households [7]	280	44.1
Householder living alone	182	28.7
Male	114	18.0
65 years and over	26	4.1
Female	68	10.7
65 years and over	19	3.0
Households with individuals under 18 years	124	19.5
Households with individuals 65 years and over	152	23.9
Average household size	2.13	(X)
Average family size [7]	2.57	(X)
HOUSING OCCUPANCY		
Total housing units	2,013	100.0
Occupied housing units	635	31.5
Vacant housing units	1,378	68.5
For rent	24	1.2
Rented, not occupied	8	0.4
For sale only	29	1.4
Sold, not occupied	3	0.1
For seasonal, recreational, or occasional use	1,308	65.0
All other vacants	6	0.3
Homeowner vacancy rate (percent) [8]	6.1	(X)
Rental vacancy rate (percent) [9]	10.7	(X)
HOUSING TENURE		
Occupied housing units	635	100.0
Owner-occupied housing units	442	69.6
Population in owner-occupied housing units	948	(X)
Average household size of owner-occupied units	2.14	(X)
Renter-occupied housing units	193	30.4
Population in renter-occupied housing units	404	(X)
Average household size of renter-occupied units	2.09	(X)

X Not applicable.

[1] Other Asian alone, or two or more Asian categories.

[2] Other Pacific Islander alone, or two or more Native Hawaiian and Other Pacific Islander categories.

[3] One of the four most commonly reported multiple-race combinations nationwide in Census 2000.

[4] In combination with one or more of the other races listed. The six numbers may add to more than the total population, and the six percentages may add to more than 100 percent because individuals may report more than one race.

[5] This category is composed of people whose origins are from the Dominican Republic, Spain, and Spanish-speaking Central or South American countries. It also includes general origin responses such as "Latino" or "Hispanic."

[6] "Spouse" represents spouse of the householder. It does not reflect all spouses in a household. Responses of "same-sex spouse" were edited during processing to "unmarried partner."

[7] "Family households" consist of a householder and one or more other people related to the householder by birth, marriage, or adoption. They do not include same-sex married couples even if the marriage was performed in a state issuing marriage certificates for same-sex couples. Same-sex couple households are included in the family households category if there is at least one additional person related to the householder by birth or adoption. Same-sex couple households with no relatives of the householder present are tabulated in nonfamily households. "Nonfamily households" consist of people living alone and households which do not have any members related to the householder.

[8] The homeowner vacancy rate is the proportion of the homeowner inventory that is vacant "for sale." It is computed by dividing the total number of vacant units "for sale only" by the sum of owner-occupied units, vacant units that are "for sale only," and vacant units that have been sold but not yet occupied; and then multiplying by 100.

[9] The rental vacancy rate is the proportion of the rental inventory that is vacant "for rent." It is computed by dividing the total number of vacant units "for rent" by the sum of the renter-occupied units, vacant units that are "for rent," and vacant units that have been rented but not yet occupied; and then multiplying by 100.

Source: U.S. Census Bureau, 2010 Census.

ARIZONA
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DP-1

Profile of General Population and Housing Characteristics: 2010

2010 Demographic Profile Data

NOTE: For more information on confidentiality protection, nonsampling error, and definitions, see <http://www.census.gov/prod/cen2010/doc/dpsf.pdf>.**Geography: Census Tract 201.06, Placer County, California**

Subject	Number	Percent
SEX AND AGE		
Total population	1,719	100.0
Under 5 years	96	5.6
5 to 9 years	96	5.6
10 to 14 years	56	3.3
15 to 19 years	84	4.9
20 to 24 years	124	7.2
25 to 29 years	160	9.3
30 to 34 years	124	7.2
35 to 39 years	108	6.3
40 to 44 years	122	7.1
45 to 49 years	129	7.5
50 to 54 years	146	8.5
55 to 59 years	171	9.9
60 to 64 years	126	7.3
65 to 69 years	77	4.5
70 to 74 years	36	2.1
75 to 79 years	33	1.9
80 to 84 years	17	1.0
85 years and over	14	0.8
Median age (years)	40.4	(X)
16 years and over	1,455	84.6
18 years and over	1,419	82.5
21 years and over	1,366	79.5
62 years and over	257	15.0
65 years and over	177	10.3
Male population	915	53.2
Under 5 years	46	2.7
5 to 9 years	53	3.1
10 to 14 years	26	1.5
15 to 19 years	40	2.3
20 to 24 years	71	4.1
25 to 29 years	88	5.1
30 to 34 years	87	5.1
35 to 39 years	58	3.4
40 to 44 years	66	3.8
45 to 49 years	69	4.0
50 to 54 years	73	4.2
55 to 59 years	82	4.8
60 to 64 years	69	4.0
65 to 69 years	36	2.1
70 to 74 years	19	1.1
75 to 79 years	18	1.0
80 to 84 years	10	0.6
85 years and over	4	0.2

Subject	Number	Percent
Median age (years)	39.0	(X)
16 years and over	782	45.5
18 years and over	763	44.4
21 years and over	736	42.8
62 years and over	132	7.7
65 years and over	87	5.1
Female population	804	46.8
Under 5 years	50	2.9
5 to 9 years	43	2.5
10 to 14 years	30	1.7
15 to 19 years	44	2.6
20 to 24 years	53	3.1
25 to 29 years	72	4.2
30 to 34 years	37	2.2
35 to 39 years	50	2.9
40 to 44 years	56	3.3
45 to 49 years	60	3.5
50 to 54 years	73	4.2
55 to 59 years	89	5.2
60 to 64 years	57	3.3
65 to 69 years	41	2.4
70 to 74 years	17	1.0
75 to 79 years	15	0.9
80 to 84 years	7	0.4
85 years and over	10	0.6
Median age (years)	41.9	(X)
16 years and over	673	39.2
18 years and over	656	38.2
21 years and over	630	36.6
62 years and over	125	7.3
65 years and over	90	5.2
RACE		
Total population	1,719	100.0
One Race	1,675	97.4
White	1,547	90.0
Black or African American	3	0.2
American Indian and Alaska Native	9	0.5
Asian	26	1.5
Asian Indian	0	0.0
Chinese	5	0.3
Filipino	5	0.3
Japanese	10	0.6
Korean	1	0.1
Vietnamese	0	0.0
Other Asian [1]	5	0.3
Native Hawaiian and Other Pacific Islander	2	0.1
Native Hawaiian	1	0.1
Guamanian or Chamorro	1	0.1
Samoan	0	0.0
Other Pacific Islander [2]	0	0.0
Some Other Race	88	5.1
Two or More Races	44	2.6
White; American Indian and Alaska Native [3]	10	0.6
White; Asian [3]	10	0.6
White; Black or African American [3]	4	0.2
White; Some Other Race [3]	10	0.6
Race alone or in combination with one or more other races: [4]		
White	1,587	92.3
Black or African American	9	0.5
American Indian and Alaska Native	25	1.5

Subject	Number	Percent
Asian	40	2.3
Native Hawaiian and Other Pacific Islander	4	0.2
Some Other Race	102	5.9
HISPANIC OR LATINO		
Total population	1,719	100.0
Hispanic or Latino (of any race)	375	21.8
Mexican	341	19.8
Puerto Rican	4	0.2
Cuban	3	0.2
Other Hispanic or Latino [5]	27	1.6
Not Hispanic or Latino	1,344	78.2
HISPANIC OR LATINO AND RACE		
Total population	1,719	100.0
Hispanic or Latino	375	21.8
White alone	271	15.8
Black or African American alone	0	0.0
American Indian and Alaska Native alone	4	0.2
Asian alone	0	0.0
Native Hawaiian and Other Pacific Islander alone	0	0.0
Some Other Race alone	86	5.0
Two or More Races	14	0.8
Not Hispanic or Latino	1,344	78.2
White alone	1,276	74.2
Black or African American alone	3	0.2
American Indian and Alaska Native alone	5	0.3
Asian alone	26	1.5
Native Hawaiian and Other Pacific Islander alone	2	0.1
Some Other Race alone	2	0.1
Two or More Races	30	1.7
RELATIONSHIP		
Total population	1,719	100.0
In households	1,719	100.0
Householder	757	44.0
Spouse [6]	346	20.1
Child	355	20.7
Own child under 18 years	279	16.2
Other relatives	74	4.3
Under 18 years	18	1.0
65 years and over	10	0.6
Nonrelatives	187	10.9
Under 18 years	3	0.2
65 years and over	2	0.1
Unmarried partner	64	3.7
In group quarters	0	0.0
Institutionalized population	0	0.0
Male	0	0.0
Female	0	0.0
Noninstitutionalized population	0	0.0
Male	0	0.0
Female	0	0.0
HOUSEHOLDS BY TYPE		
Total households	757	100.0
Family households (families) [7]	413	54.6
With own children under 18 years	162	21.4
Husband-wife family	346	45.7
With own children under 18 years	126	16.6
Male householder, no wife present	28	3.7
With own children under 18 years	18	2.4
Female householder, no husband present	39	5.2
With own children under 18 years	18	2.4

Subject	Number	Percent
Nonfamily households [7]	344	45.4
Householder living alone	248	32.8
Male	135	17.8
65 years and over	20	2.6
Female	113	14.9
65 years and over	28	3.7
Households with individuals under 18 years	171	22.6
Households with individuals 65 years and over	134	17.7
Average household size	2.27	(X)
Average family size [7]	2.88	(X)
HOUSING OCCUPANCY		
Total housing units	1,866	100.0
Occupied housing units	757	40.6
Vacant housing units	1,109	59.4
For rent	44	2.4
Rented, not occupied	3	0.2
For sale only	30	1.6
Sold, not occupied	8	0.4
For seasonal, recreational, or occasional use	1,009	54.1
All other vacants	15	0.8
Homeowner vacancy rate (percent) [8]	5.8	(X)
Rental vacancy rate (percent) [9]	13.7	(X)
HOUSING TENURE		
Occupied housing units	757	100.0
Owner-occupied housing units	483	63.8
Population in owner-occupied housing units	1,137	(X)
Average household size of owner-occupied units	2.35	(X)
Renter-occupied housing units	274	36.2
Population in renter-occupied housing units	582	(X)
Average household size of renter-occupied units	2.12	(X)

X Not applicable.

[1] Other Asian alone, or two or more Asian categories.

[2] Other Pacific Islander alone, or two or more Native Hawaiian and Other Pacific Islander categories.

[3] One of the four most commonly reported multiple-race combinations nationwide in Census 2000.

[4] In combination with one or more of the other races listed. The six numbers may add to more than the total population, and the six percentages may add to more than 100 percent because individuals may report more than one race.

[5] This category is composed of people whose origins are from the Dominican Republic, Spain, and Spanish-speaking Central or South American countries. It also includes general origin responses such as "Latino" or "Hispanic."

[6] "Spouse" represents spouse of the householder. It does not reflect all spouses in a household. Responses of "same-sex spouse" were edited during processing to "unmarried partner."

[7] "Family households" consist of a householder and one or more other people related to the householder by birth, marriage, or adoption. They do not include same-sex married couples even if the marriage was performed in a state issuing marriage certificates for same-sex couples. Same-sex couple households are included in the family households category if there is at least one additional person related to the householder by birth or adoption. Same-sex couple households with no relatives of the householder present are tabulated in nonfamily households. "Nonfamily households" consist of people living alone and households which do not have any members related to the householder.

[8] The homeowner vacancy rate is the proportion of the homeowner inventory that is vacant "for sale." It is computed by dividing the total number of vacant units "for sale only" by the sum of owner-occupied units, vacant units that are "for sale only," and vacant units that have been sold but not yet occupied; and then multiplying by 100.

[9] The rental vacancy rate is the proportion of the rental inventory that is vacant "for rent." It is computed by dividing the total number of vacant units "for rent" by the sum of the renter-occupied units, vacant units that are "for rent," and vacant units that have been rented but not yet occupied; and then multiplying by 100.

Source: U.S. Census Bureau, 2010 Census.



DP-1

Profile of General Population and Housing Characteristics: 2010

2010 Demographic Profile Data

NOTE: For more information on confidentiality protection, nonsampling error, and definitions, see <http://www.census.gov/prod/cen2010/doc/dpsf.pdf>.**Geography: Census Tract 201.07, Placer County, California**

Subject	Number	Percent
SEX AND AGE		
Total population	3,510	100.0
Under 5 years	278	7.9
5 to 9 years	272	7.7
10 to 14 years	216	6.2
15 to 19 years	197	5.6
20 to 24 years	289	8.2
25 to 29 years	396	11.3
30 to 34 years	361	10.3
35 to 39 years	283	8.1
40 to 44 years	276	7.9
45 to 49 years	205	5.8
50 to 54 years	221	6.3
55 to 59 years	191	5.4
60 to 64 years	140	4.0
65 to 69 years	76	2.2
70 to 74 years	51	1.5
75 to 79 years	30	0.9
80 to 84 years	20	0.6
85 years and over	8	0.2
Median age (years)	31.2	(X)
16 years and over	2,707	77.1
18 years and over	2,624	74.8
21 years and over	2,492	71.0
62 years and over	259	7.4
65 years and over	185	5.3
Male population	1,958	55.8
Under 5 years	148	4.2
5 to 9 years	145	4.1
10 to 14 years	114	3.2
15 to 19 years	107	3.0
20 to 24 years	180	5.1
25 to 29 years	219	6.2
30 to 34 years	210	6.0
35 to 39 years	161	4.6
40 to 44 years	151	4.3
45 to 49 years	124	3.5
50 to 54 years	129	3.7
55 to 59 years	110	3.1
60 to 64 years	68	1.9
65 to 69 years	40	1.1
70 to 74 years	22	0.6
75 to 79 years	18	0.5
80 to 84 years	11	0.3
85 years and over	1	0.0

Subject	Number	Percent
Median age (years)	31.1	(X)
16 years and over	1,528	43.5
18 years and over	1,486	42.3
21 years and over	1,408	40.1
62 years and over	129	3.7
65 years and over	92	2.6
Female population	1,552	44.2
Under 5 years	130	3.7
5 to 9 years	127	3.6
10 to 14 years	102	2.9
15 to 19 years	90	2.6
20 to 24 years	109	3.1
25 to 29 years	177	5.0
30 to 34 years	151	4.3
35 to 39 years	122	3.5
40 to 44 years	125	3.6
45 to 49 years	81	2.3
50 to 54 years	92	2.6
55 to 59 years	81	2.3
60 to 64 years	72	2.1
65 to 69 years	36	1.0
70 to 74 years	29	0.8
75 to 79 years	12	0.3
80 to 84 years	9	0.3
85 years and over	7	0.2
Median age (years)	31.3	(X)
16 years and over	1,179	33.6
18 years and over	1,138	32.4
21 years and over	1,084	30.9
62 years and over	130	3.7
65 years and over	93	2.6
RACE		
Total population	3,510	100.0
One Race	3,396	96.8
White	2,948	84.0
Black or African American	15	0.4
American Indian and Alaska Native	19	0.5
Asian	9	0.3
Asian Indian	1	0.0
Chinese	2	0.1
Filipino	2	0.1
Japanese	2	0.1
Korean	1	0.0
Vietnamese	0	0.0
Other Asian [1]	1	0.0
Native Hawaiian and Other Pacific Islander	2	0.1
Native Hawaiian	1	0.0
Guamanian or Chamorro	0	0.0
Samoan	0	0.0
Other Pacific Islander [2]	1	0.0
Some Other Race	403	11.5
Two or More Races	114	3.2
White; American Indian and Alaska Native [3]	16	0.5
White; Asian [3]	7	0.2
White; Black or African American [3]	1	0.0
White; Some Other Race [3]	61	1.7
Race alone or in combination with one or more other races: [4]		
White	3,050	86.9
Black or African American	26	0.7
American Indian and Alaska Native	55	1.6

Subject	Number	Percent
Asian	22	0.6
Native Hawaiian and Other Pacific Islander	5	0.1
Some Other Race	482	13.7
HISPANIC OR LATINO		
Total population	3,510	100.0
Hispanic or Latino (of any race)	2,092	59.6
Mexican	2,002	57.0
Puerto Rican	6	0.2
Cuban	4	0.1
Other Hispanic or Latino [5]	80	2.3
Not Hispanic or Latino	1,418	40.4
HISPANIC OR LATINO AND RACE		
Total population	3,510	100.0
Hispanic or Latino	2,092	59.6
White alone	1,579	45.0
Black or African American alone	12	0.3
American Indian and Alaska Native alone	6	0.2
Asian alone	0	0.0
Native Hawaiian and Other Pacific Islander alone	0	0.0
Some Other Race alone	400	11.4
Two or More Races	95	2.7
Not Hispanic or Latino	1,418	40.4
White alone	1,369	39.0
Black or African American alone	3	0.1
American Indian and Alaska Native alone	13	0.4
Asian alone	9	0.3
Native Hawaiian and Other Pacific Islander alone	2	0.1
Some Other Race alone	3	0.1
Two or More Races	19	0.5
RELATIONSHIP		
Total population	3,510	100.0
In households	3,431	97.7
Householder	1,233	35.1
Spouse [6]	534	15.2
Child	961	27.4
Own child under 18 years	779	22.2
Other relatives	293	8.3
Under 18 years	83	2.4
65 years and over	27	0.8
Nonrelatives	410	11.7
Under 18 years	19	0.5
65 years and over	7	0.2
Unmarried partner	130	3.7
In group quarters	79	2.3
Institutionalized population	0	0.0
Male	0	0.0
Female	0	0.0
Noninstitutionalized population	79	2.3
Male	62	1.8
Female	17	0.5
HOUSEHOLDS BY TYPE		
Total households	1,233	100.0
Family households (families) [7]	711	57.7
With own children under 18 years	425	34.5
Husband-wife family	534	43.3
With own children under 18 years	305	24.7
Male householder, no wife present	77	6.2
With own children under 18 years	46	3.7
Female householder, no husband present	100	8.1
With own children under 18 years	74	6.0

Subject	Number	Percent
Nonfamily households [7]	522	42.3
Householder living alone	340	27.6
Male	202	16.4
65 years and over	25	2.0
Female	138	11.2
65 years and over	37	3.0
Households with individuals under 18 years	464	37.6
Households with individuals 65 years and over	146	11.8
Average household size	2.78	(X)
Average family size [7]	3.51	(X)
HOUSING OCCUPANCY		
Total housing units	1,952	100.0
Occupied housing units	1,233	63.2
Vacant housing units	719	36.8
For rent	131	6.7
Rented, not occupied	0	0.0
For sale only	22	1.1
Sold, not occupied	3	0.2
For seasonal, recreational, or occasional use	533	27.3
All other vacants	30	1.5
Homeowner vacancy rate (percent) [8]	4.5	(X)
Rental vacancy rate (percent) [9]	14.6	(X)
HOUSING TENURE		
Occupied housing units	1,233	100.0
Owner-occupied housing units	467	37.9
Population in owner-occupied housing units	1,203	(X)
Average household size of owner-occupied units	2.58	(X)
Renter-occupied housing units	766	62.1
Population in renter-occupied housing units	2,228	(X)
Average household size of renter-occupied units	2.91	(X)

X Not applicable.

[1] Other Asian alone, or two or more Asian categories.

[2] Other Pacific Islander alone, or two or more Native Hawaiian and Other Pacific Islander categories.

[3] One of the four most commonly reported multiple-race combinations nationwide in Census 2000.

[4] In combination with one or more of the other races listed. The six numbers may add to more than the total population, and the six percentages may add to more than 100 percent because individuals may report more than one race.

[5] This category is composed of people whose origins are from the Dominican Republic, Spain, and Spanish-speaking Central or South American countries. It also includes general origin responses such as "Latino" or "Hispanic."

[6] "Spouse" represents spouse of the householder. It does not reflect all spouses in a household. Responses of "same-sex spouse" were edited during processing to "unmarried partner."

[7] "Family households" consist of a householder and one or more other people related to the householder by birth, marriage, or adoption. They do not include same-sex married couples even if the marriage was performed in a state issuing marriage certificates for same-sex couples. Same-sex couple households are included in the family households category if there is at least one additional person related to the householder by birth or adoption. Same-sex couple households with no relatives of the householder present are tabulated in nonfamily households. "Nonfamily households" consist of people living alone and households which do not have any members related to the householder.

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[9] The rental vacancy rate is the proportion of the rental inventory that is vacant "for rent." It is computed by dividing the total number of vacant units "for rent" by the sum of the renter-occupied units, vacant units that are "for rent," and vacant units that have been rented but not yet occupied; and then multiplying by 100.

Source: U.S. Census Bureau, 2010 Census.

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S1701

POVERTY STATUS IN THE PAST 12 MONTHS ⓘ
2006-2010 American Community Survey 5-Year
Estimates

Table View

Map View

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Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, for 2010, the 2010 Census provides the [official counts of the population and housing units for the nation, states, counties, cities and towns](#). For 2006 to 2009, the Population Estimates Program provides [intercensal estimates of the population for the nation, states, and counties](#).

Subject	Census Tract 220.11, Placer County, California					
	Total		Below poverty level		Percent below poverty level	
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
Population for whom poverty status is determined	1,354	+/-395	211	+/-202	15.6%	+/-13.8
AGE						
Under 18 years	383	+/-200	87	+/-137	22.7%	+/-30.9
Related children under 18 years	383	+/-200	87	+/-137	22.7%	+/-30.9
18 to 64 years	819	+/-215	124	+/-93	15.1%	+/-12.2
65 years and over	152	+/-112	0	+/-132	0.0%	+/-22.9
SEX						
Male	760	+/-260	127	+/-111	16.7%	+/-13.3
Female	594	+/-158	84	+/-97	14.1%	+/-15.6
RACE AND HISPANIC OR LATINO ORIGIN						
One race	1,354	+/-395	211	+/-202	15.6%	+/-13.8
White	1,354	+/-395	211	+/-202	15.6%	+/-13.8
Black or African American	0	+/-132	0	+/-132	-	**
American Indian and Alaska Native	0	+/-132	0	+/-132	-	**
Asian	0	+/-132	0	+/-132	-	**
Native Hawaiian and Other Pacific Islander	0	+/-132	0	+/-132	-	**
Some other race	0	+/-132	0	+/-132	-	**
Two or more races	0	+/-132	0	+/-132	-	**
Hispanic or Latino origin (of any race)	81	+/-83	0	+/-132	0.0%	+/-36.4
White alone, not Hispanic or Latino	1,273	+/-410	211	+/-202	16.6%	+/-14.3
EDUCATIONAL ATTAINMENT						
Population 25 years and over	957	+/-217	124	+/-93	13.0%	+/-9.6
Less than high school graduate	25	+/-39	0	+/-132	0.0%	+/-65.8
High school graduate (includes equivalency)	82	+/-84	0	+/-132	0.0%	+/-36.1
Some college, associate's degree	412	+/-133	71	+/-70	17.2%	+/-16.2
Bachelor's degree or higher	438	+/-198	53	+/-69	12.1%	+/-15.8
EMPLOYMENT STATUS						
Civilian labor force 16 years and over	712	+/-215	27	+/-35	3.8%	+/-5.2
Employed	645	+/-217	0	+/-132	0.0%	+/-6.0
Male	390	+/-98	0	+/-132	0.0%	+/-9.7
Female	255	+/-144	0	+/-132	0.0%	+/-14.5
Unemployed	67	+/-61	27	+/-35	40.3%	+/-46.9
Male	67	+/-61	27	+/-35	40.3%	+/-46.9
Female	0	+/-132	0	+/-132	-	**
WORK EXPERIENCE						
Population 16 years and over	992	+/-221	124	+/-93	12.5%	+/-9.4
Worked full-time, year-round in the past 12 months	491	+/-224	0	+/-132	0.0%	+/-7.8
Worked part-time or part-year in the past 12 months	216	+/-103	26	+/-34	12.0%	+/-17.0
Did not work	285	+/-149	98	+/-75	34.4%	+/-17.9
All Individuals below:						
50 percent of poverty level	169	+/-195	(X)	(X)	(X)	(X)

125 percent of poverty level	211	+/-202	(X)	(X)	(X)	(X)
150 percent of poverty level	236	+/-203	(X)	(X)	(X)	(X)
185 percent of poverty level	287	+/-210	(X)	(X)	(X)	(X)
200 percent of poverty level	340	+/-215	(X)	(X)	(X)	(X)
Unrelated individuals for whom poverty status is determined	259	+/-135	42	+/-48	16.2%	+/-18.4
Male	219	+/-126	42	+/-48	19.2%	+/-21.3
Female	40	+/-53	0	+/-132	0.0%	+/-52.0
Mean income deficit for unrelated individuals (dollars)	N	N	(X)	(X)	(X)	(X)
Worked full-time, year-round in the past 12 months	103	+/-97	0	+/-132	0.0%	+/-31.1
Worked less than full-time, year-round in the past 12 months	22	+/-38	0	+/-132	0.0%	+/-70.1
Did not work	134	+/-95	42	+/-48	31.3%	+/-29.4
PERCENT IMPUTED						
Poverty status for individuals	48.6%	(X)	(X)	(X)	(X)	(X)

Source: U.S. Census Bureau, 2006-2010 American Community Survey

Explanation of Symbols:
An '***' entry in the margin of error column indicates that either no sample observations or too few sample observations were available to compute a standard error and thus the margin of error. A statistical test is not appropriate.
An '-' entry in the estimate column indicates that either no sample observations or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest interval or upper interval of an open-ended distribution.
An '-' following a median estimate means the median falls in the lowest interval of an open-ended distribution.
An '+' following a median estimate means the median falls in the upper interval of an open-ended distribution.
An '***' entry in the margin of error column indicates that the median falls in the lowest interval or upper interval of an open-ended distribution. A statistical test is not appropriate.
An '*****' entry in the margin of error column indicates that the estimate is controlled. A statistical test for sampling variability is not appropriate.
An 'N' entry in the estimate and margin of error columns indicates that data for this geographic area cannot be displayed because the number of sample cases is too small.
An '(X)' means that the estimate is not applicable or not available.



S1701

POVERTY STATUS IN THE PAST 12 MONTHS

2006-2010 American Community Survey 5-Year Estimates

Supporting documentation on code lists, subject definitions, data accuracy, and statistical testing can be found on the American Community Survey website in the Data and Documentation section.

Sample size and data quality measures (including coverage rates, allocation rates, and response rates) can be found on the American Community Survey website in the Methodology section.

Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, for 2010, the 2010 Census provides the official counts of the population and housing units for the nation, states, counties, cities and towns. For 2006 to 2009, the Population Estimates Program provides intercensal estimates of the population for the nation, states, and counties.

Subject	Census Tract 201.04, Placer County, California				
	Total		Below poverty level		Percent below poverty level
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate
Population for whom poverty status is determined	1,090	+/-269	112	+/-73	10.3%
AGE					
Under 18 years	197	+/-109	11	+/-18	5.6%
Related children under 18 years	186	+/-109	0	+/-132	0.0%
18 to 64 years	689	+/-202	62	+/-49	9.0%
65 years and over	204	+/-129	39	+/-48	19.1%
SEX					
Male	515	+/-174	32	+/-37	6.2%
Female	575	+/-154	80	+/-59	13.9%
RACE AND HISPANIC OR LATINO ORIGIN					
One race	1,090	+/-269	112	+/-73	10.3%
White	1,073	+/-272	112	+/-73	10.4%
Black or African American	0	+/-132	0	+/-132	-
American Indian and Alaska Native	0	+/-132	0	+/-132	-
Asian	0	+/-132	0	+/-132	-
Native Hawaiian and Other Pacific Islander	0	+/-132	0	+/-132	-
Some other race	17	+/-28	0	+/-132	0.0%
Two or more races	0	+/-132	0	+/-132	-
Hispanic or Latino origin (of any race)	17	+/-28	0	+/-132	0.0%
White alone, not Hispanic or Latino	1,073	+/-272	112	+/-73	10.4%
EDUCATIONAL ATTAINMENT					
Population 25 years and over	800	+/-212	84	+/-67	10.5%
Less than high school graduate	0	+/-132	0	+/-132	-
High school graduate (includes equivalency)	189	+/-120	56	+/-52	29.6%
Some college, associate's degree	247	+/-107	0	+/-132	0.0%
Bachelor's degree or higher	364	+/-126	28	+/-45	7.7%
EMPLOYMENT STATUS					
Civilian labor force 16 years and over	483	+/-142	13	+/-20	2.7%
Employed	440	+/-127	0	+/-132	0.0%
Male	224	+/-86	0	+/-132	0.0%
Female	216	+/-87	0	+/-132	0.0%
Unemployed	43	+/-42	13	+/-20	30.2%
Male	20	+/-33	0	+/-132	0.0%
Female	23	+/-26	13	+/-20	56.5%
WORK EXPERIENCE					

Subject	Census Tract 201.04, Placer County, California				
	Total		Below poverty level		Percent below poverty level
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate
Population 16 years and over	949	+/-223	112	+/-73	11.8%
Worked full-time, year-round in the past 12 months	208	+/-95	0	+/-132	0.0%
Worked part-time or part-year in the past 12 months	413	+/-125	41	+/-37	9.9%
Did not work	328	+/-155	71	+/-64	21.6%
All Individuals below:					
50 percent of poverty level	34	+/-39	(X)	(X)	(X)
125 percent of poverty level	152	+/-92	(X)	(X)	(X)
150 percent of poverty level	194	+/-120	(X)	(X)	(X)
185 percent of poverty level	292	+/-131	(X)	(X)	(X)
200 percent of poverty level	315	+/-137	(X)	(X)	(X)
Unrelated individuals for whom poverty status is determined	235	+/-138	90	+/-64	38.3%
Male	69	+/-60	21	+/-33	30.4%
Female	166	+/-102	69	+/-57	41.6%
Mean income deficit for unrelated individuals (dollars)	N	N	(X)	(X)	(X)
Worked full-time, year-round in the past 12 months	63	+/-61	0	+/-132	0.0%
Worked less than full-time, year-round in the past 12 months	101	+/-76	41	+/-37	40.6%
Did not work	71	+/-59	49	+/-54	69.0%
PERCENT IMPUTED					
Poverty status for individuals	14.0%	(X)	(X)	(X)	(X)

Subject	Census Tract 201.04, Placer County, California	Census Tract 201.05, Placer County, California			
	Percent below poverty level	Total		Below poverty level	
	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
Population for whom poverty status is determined	+/-6.5	1,047	+/-266	34	+/-40
AGE					
Under 18 years	+/-10.3	163	+/-100	0	+/-132
Related children under 18 years	+/-19.2	163	+/-100	0	+/-132
18 to 64 years	+/-6.0	652	+/-192	23	+/-36
65 years and over	+/-23.1	232	+/-131	11	+/-17
SEX					
Male	+/-7.3	520	+/-155	34	+/-40
Female	+/-9.0	527	+/-159	0	+/-132
RACE AND HISPANIC OR LATINO ORIGIN					
One race	+/-6.5	1,025	+/-266	34	+/-40
White	+/-6.7	1,004	+/-272	34	+/-40
Black or African American	**	0	+/-132	0	+/-132
American Indian and Alaska Native	**	0	+/-132	0	+/-132
Asian	**	0	+/-132	0	+/-132
Native Hawaiian and Other Pacific Islander	**	0	+/-132	0	+/-132
Some other race	+/-79.8	21	+/-33	0	+/-132
Two or more races	**	22	+/-26	0	+/-132
Hispanic or Latino origin (of any race)	+/-79.8	43	+/-56	0	+/-132
White alone, not Hispanic or Latino	+/-6.7	1,004	+/-272	34	+/-40
EDUCATIONAL ATTAINMENT					
Population 25 years and over	+/-7.8	840	+/-213	34	+/-40
Less than high school graduate	**	11	+/-17	11	+/-17
High school graduate (includes equivalency)	+/-19.1	156	+/-102	23	+/-36
Some college, associate's degree	+/-14.9	268	+/-106	0	+/-132
Bachelor's degree or higher	+/-11.9	405	+/-148	0	+/-132
EMPLOYMENT STATUS					
Civilian labor force 16 years and over	+/-4.0	500	+/-176	0	+/-132
Employed	+/-8.7	479	+/-172	0	+/-132
Male	+/-16.3	257	+/-115	0	+/-132
Female	+/-16.8	222	+/-98	0	+/-132
Unemployed	+/-47.6	21	+/-34	0	+/-132
Male	+/-73.6	21	+/-34	0	+/-132
Female	+/-56.5	0	+/-132	0	+/-132
WORK EXPERIENCE					
Population 16 years and over	+/-6.9	918	+/-241	34	+/-40
Worked full-time, year-round in the past 12 months	+/-17.4	258	+/-103	0	+/-132
Worked part-time or part-year in the past 12 months	+/-7.1	307	+/-120	0	+/-132
Did not work	+/-18.3	353	+/-168	34	+/-40
All Individuals below:					
50 percent of poverty level	(X)	23	+/-36	(X)	(X)
125 percent of poverty level	(X)	55	+/-52	(X)	(X)
150 percent of poverty level	(X)	55	+/-52	(X)	(X)
185 percent of poverty level	(X)	55	+/-52	(X)	(X)
200 percent of poverty level	(X)	76	+/-61	(X)	(X)
Unrelated individuals for whom poverty status is determined	+/-20.0	222	+/-108	34	+/-40
Male	+/-50.5	111	+/-75	34	+/-40
Female	+/-24.0	111	+/-80	0	+/-132
Mean income deficit for unrelated individuals (dollars)	(X)	N	N	(X)	(X)
Worked full-time, year-round in the past 12 months	+/-41.5	35	+/-34	0	+/-132
Worked less than full-time, year-round in the past 12 months	+/-28.8	57	+/-53	0	+/-132
Did not work	+/-40.8	130	+/-99	34	+/-40
PERCENT IMPUTED					

Subject	Census Tract 201.04, Placer County, California	Census Tract 201.05, Placer County, California			
	Percent below poverty level	Total		Below poverty level	
	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
Poverty status for individuals	(X)	23.9%	(X)	(X)	(X)

Subject	Census Tract 201.05, Placer County, California		Census Tract 201.06, Placer County, California		
	Percent below poverty level		Total		Below poverty level
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate
Population for whom poverty status is determined	3.2%	+/-3.7	1,663	+/-385	74
AGE					
Under 18 years	0.0%	+/-21.5	362	+/-175	0
Related children under 18 years	0.0%	+/-21.5	362	+/-175	0
18 to 64 years	3.5%	+/-5.4	1,203	+/-250	74
65 years and over	4.7%	+/-8.0	98	+/-64	0
SEX					
Male	6.5%	+/-7.2	804	+/-188	57
Female	0.0%	+/-7.3	859	+/-246	17
RACE AND HISPANIC OR LATINO ORIGIN					
One race	3.3%	+/-3.7	1,557	+/-344	74
White	3.4%	+/-3.8	1,508	+/-348	74
Black or African American	-	**	0	+/-132	0
American Indian and Alaska Native	-	**	0	+/-132	0
Asian	-	**	21	+/-23	0
Native Hawaiian and Other Pacific Islander	-	**	0	+/-132	0
Some other race	0.0%	+/-71.8	28	+/-43	0
Two or more races	0.0%	+/-70.1	106	+/-168	0
Hispanic or Latino origin (of any race)	0.0%	+/-50.2	684	+/-297	36
White alone, not Hispanic or Latino	3.4%	+/-3.8	958	+/-277	38
EDUCATIONAL ATTAINMENT					
Population 25 years and over	4.0%	+/-4.5	1,100	+/-199	38
Less than high school graduate	100.0%	+/-99.2	177	+/-81	0
High school graduate (includes equivalency)	14.7%	+/-19.2	144	+/-71	21
Some college, associate's degree	0.0%	+/-13.8	373	+/-142	17
Bachelor's degree or higher	0.0%	+/-9.4	406	+/-137	0
EMPLOYMENT STATUS					
Civilian labor force 16 years and over	0.0%	+/-7.7	1,046	+/-254	57
Employed	0.0%	+/-8.0	1,007	+/-243	36
Male	0.0%	+/-14.4	576	+/-147	36
Female	0.0%	+/-16.4	431	+/-137	0
Unemployed	0.0%	+/-71.8	39	+/-43	21
Male	0.0%	+/-71.8	39	+/-43	21
Female	-	**	0	+/-132	0
WORK EXPERIENCE					
Population 16 years and over	3.7%	+/-4.1	1,364	+/-291	74
Worked full-time, year-round in the past 12 months	0.0%	+/-14.3	575	+/-152	0
Worked part-time or part-year in the past 12 months	0.0%	+/-12.2	521	+/-164	36
Did not work	9.6%	+/-10.8	268	+/-128	38
All Individuals below:					
50 percent of poverty level	(X)	(X)	0	+/-132	(X)
125 percent of poverty level	(X)	(X)	74	+/-72	(X)
150 percent of poverty level	(X)	(X)	74	+/-72	(X)
185 percent of poverty level	(X)	(X)	209	+/-172	(X)
200 percent of poverty level	(X)	(X)	229	+/-175	(X)
Unrelated individuals for whom poverty status is determined	15.3%	+/-15.9	329	+/-141	38
Male	30.6%	+/-25.9	234	+/-125	21
Female	0.0%	+/-29.4	95	+/-52	17
Mean income deficit for unrelated individuals (dollars)	(X)	(X)	N	N	(X)
Worked full-time, year-round in the past 12 months	0.0%	+/-55.6	151	+/-86	0
Worked less than full-time, year-round in the past 12 months	0.0%	+/-43.6	90	+/-49	0
Did not work	26.2%	+/-22.9	88	+/-66	38
PERCENT IMPUTED					
Poverty status for individuals	(X)	(X)	29.5%	(X)	(X)

Subject	Census Tract 201.06, Placer County, California			Census Tract 201.07, Placer County, California	
	Below poverty level	Percent below poverty level		Total	
	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
Population for whom poverty status is determined	+/-72	4.4%	+/-4.3	3,171	+/-591
AGE					
Under 18 years	+/-132	0.0%	+/-10.5	628	+/-231
Related children under 18 years	+/-132	0.0%	+/-10.5	597	+/-228
18 to 64 years	+/-72	6.2%	+/-5.7	2,522	+/-496
65 years and over	+/-132	0.0%	+/-32.2	21	+/-24
SEX					
Male	+/-68	7.1%	+/-8.0	1,857	+/-470
Female	+/-27	2.0%	+/-3.1	1,314	+/-314
RACE AND HISPANIC OR LATINO ORIGIN					
One race	+/-72	4.8%	+/-4.5	3,159	+/-590
White	+/-72	4.9%	+/-4.6	2,662	+/-630
Black or African American	+/-132	-	**	12	+/-18
American Indian and Alaska Native	+/-132	-	**	0	+/-132
Asian	+/-132	0.0%	+/-71.8	115	+/-180
Native Hawaiian and Other Pacific Islander	+/-132	-	**	0	+/-132
Some other race	+/-132	0.0%	+/-62.2	370	+/-253
Two or more races	+/-132	0.0%	+/-30.4	12	+/-21
Hispanic or Latino origin (of any race)	+/-58	5.3%	+/-8.6	2,055	+/-652
White alone, not Hispanic or Latino	+/-42	4.0%	+/-4.2	977	+/-397
EDUCATIONAL ATTAINMENT					
Population 25 years and over	+/-43	3.5%	+/-3.9	1,954	+/-334
Less than high school graduate	+/-132	0.0%	+/-20.1	857	+/-342
High school graduate (includes equivalency)	+/-33	14.6%	+/-20.5	338	+/-172
Some college, associate's degree	+/-27	4.6%	+/-7.0	400	+/-168
Bachelor's degree or higher	+/-132	0.0%	+/-9.4	359	+/-171
EMPLOYMENT STATUS					
Civilian labor force 16 years and over	+/-68	5.4%	+/-6.3	2,199	+/-481
Employed	+/-58	3.6%	+/-5.8	2,061	+/-438
Male	+/-58	6.3%	+/-9.9	1,467	+/-389
Female	+/-132	0.0%	+/-8.9	594	+/-158
Unemployed	+/-34	53.8%	+/-53.8	138	+/-100
Male	+/-34	53.8%	+/-53.8	65	+/-75
Female	+/-132	-	**	73	+/-69
WORK EXPERIENCE					
Population 16 years and over	+/-72	5.4%	+/-5.1	2,673	+/-511
Worked full-time, year-round in the past 12 months	+/-132	0.0%	+/-6.7	1,107	+/-300
Worked part-time or part-year in the past 12 months	+/-58	6.9%	+/-10.9	1,111	+/-374
Did not work	+/-42	14.2%	+/-14.7	455	+/-179
All Individuals below:					
50 percent of poverty level	(X)	(X)	(X)	121	+/-93
125 percent of poverty level	(X)	(X)	(X)	381	+/-197
150 percent of poverty level	(X)	(X)	(X)	810	+/-420
185 percent of poverty level	(X)	(X)	(X)	1,110	+/-488
200 percent of poverty level	(X)	(X)	(X)	1,222	+/-527
Unrelated individuals for whom poverty status is determined	+/-42	11.6%	+/-10.3	828	+/-329
Male	+/-34	9.0%	+/-13.0	507	+/-276
Female	+/-27	17.9%	+/-29.0	321	+/-147
Mean income deficit for unrelated individuals (dollars)	(X)	(X)	(X)	618	+/-752
Worked full-time, year-round in the past 12 months	+/-132	0.0%	+/-23.0	283	+/-167
Worked less than full-time, year-round in the past 12 months	+/-132	0.0%	+/-34.1	366	+/-199
Did not work	+/-42	43.2%	+/-38.6	179	+/-112
PERCENT IMPUTED					
Poverty status for individuals	(X)	(X)	(X)	21.1%	(X)

Subject	Census Tract 201.07, Placer County, California				Census Tract 222, Placer County, California
	Below poverty level		Percent below poverty level		Total
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate
Population for whom poverty status is determined	265	+/-183	8.4%	+/-5.6	802
AGE					
Under 18 years	65	+/-71	10.4%	+/-11.2	135
Related children under 18 years	34	+/-54	5.7%	+/-9.4	135
18 to 64 years	200	+/-138	7.9%	+/-5.3	460
65 years and over	0	+/-132	0.0%	+/-71.8	207
SEX					
Male	118	+/-81	6.4%	+/-4.5	484
Female	147	+/-129	11.2%	+/-9.2	318
RACE AND HISPANIC OR LATINO ORIGIN					
One race	265	+/-183	8.4%	+/-5.6	770
White	164	+/-108	6.2%	+/-3.9	734
Black or African American	0	+/-132	0.0%	+/-95.0	36
American Indian and Alaska Native	0	+/-132	-	**	0
Asian	0	+/-132	0.0%	+/-28.6	0
Native Hawaiian and Other Pacific Islander	0	+/-132	-	**	0
Some other race	101	+/-158	27.3%	+/-37.6	0
Two or more races	0	+/-132	0.0%	+/-95.0	32
Hispanic or Latino origin (of any race)	218	+/-175	10.6%	+/-8.4	10
White alone, not Hispanic or Latino	47	+/-44	4.8%	+/-4.9	724
EDUCATIONAL ATTAINMENT					
Population 25 years and over	164	+/-106	8.4%	+/-5.0	667
Less than high school graduate	128	+/-91	14.9%	+/-9.7	22
High school graduate (includes equivalency)	10	+/-16	3.0%	+/-4.6	21
Some college, associate's degree	16	+/-28	4.0%	+/-7.0	262
Bachelor's degree or higher	10	+/-16	2.8%	+/-4.5	362
EMPLOYMENT STATUS					
Civilian labor force 16 years and over	81	+/-88	3.7%	+/-4.0	510
Employed	50	+/-73	2.4%	+/-3.5	441
Male	16	+/-28	1.1%	+/-1.9	278
Female	34	+/-55	5.7%	+/-9.0	163
Unemployed	31	+/-51	22.5%	+/-33.9	69
Male	31	+/-51	47.7%	+/-52.3	0
Female	0	+/-132	0.0%	+/-38.5	69
WORK EXPERIENCE					
Population 16 years and over	231	+/-144	8.6%	+/-5.3	736
Worked full-time, year-round in the past 12 months	0	+/-132	0.0%	+/-3.5	304
Worked part-time or part-year in the past 12 months	50	+/-73	4.5%	+/-6.4	159
Did not work	181	+/-128	39.8%	+/-21.5	273
All Individuals below:					
50 percent of poverty level	(X)	(X)	(X)	(X)	65
125 percent of poverty level	(X)	(X)	(X)	(X)	192
150 percent of poverty level	(X)	(X)	(X)	(X)	227
185 percent of poverty level	(X)	(X)	(X)	(X)	238
200 percent of poverty level	(X)	(X)	(X)	(X)	238
Unrelated individuals for whom poverty status is determined	179	+/-114	21.6%	+/-13.7	408
Male	76	+/-66	15.0%	+/-12.5	321
Female	103	+/-90	32.1%	+/-24.6	87
Mean income deficit for unrelated individuals (dollars)	(X)	(X)	(X)	(X)	N
Worked full-time, year-round in the past 12 months	0	+/-132	0.0%	+/-13.2	195
Worked less than full-time, year-round in the past 12 months	50	+/-73	13.7%	+/-19.5	105
Did not work	129	+/-91	72.1%	+/-30.3	108
PERCENT IMPUTED					
Poverty status for individuals	(X)	(X)	(X)	(X)	40.0%

Subject	Census Tract 222, Placer County, California				
	Total	Below poverty level		Percent below poverty level	
	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
Population for whom poverty status is determined	+/-298	85	+/-53	10.6%	+/-6.5
AGE					
Under 18 years	+/-127	0	+/-132	0.0%	+/-25.2
Related children under 18 years	+/-127	0	+/-132	0.0%	+/-25.2
18 to 64 years	+/-190	74	+/-56	16.1%	+/-10.3
65 years and over	+/-163	11	+/-17	5.3%	+/-9.4
SEX					
Male	+/-141	53	+/-49	11.0%	+/-9.9
Female	+/-202	32	+/-37	10.1%	+/-11.3
RACE AND HISPANIC OR LATINO ORIGIN					
One race	+/-268	85	+/-53	11.0%	+/-6.4
White	+/-266	85	+/-53	11.6%	+/-6.7
Black or African American	+/-56	0	+/-132	0.0%	+/-54.8
American Indian and Alaska Native	+/-132	0	+/-132	-	**
Asian	+/-132	0	+/-132	-	**
Native Hawaiian and Other Pacific Islander	+/-132	0	+/-132	-	**
Some other race	+/-132	0	+/-132	-	**
Two or more races	+/-47	0	+/-132	0.0%	+/-58.2
Hispanic or Latino origin (of any race)	+/-17	0	+/-132	0.0%	+/-100.0
White alone, not Hispanic or Latino	+/-268	85	+/-53	11.7%	+/-6.8
EDUCATIONAL ATTAINMENT					
Population 25 years and over	+/-204	85	+/-53	12.7%	+/-7.3
Less than high school graduate	+/-25	22	+/-25	100.0%	+/-70.1
High school graduate (includes equivalency)	+/-34	0	+/-132	0.0%	+/-71.8
Some college, associate's degree	+/-201	22	+/-34	8.4%	+/-15.3
Bachelor's degree or higher	+/-160	41	+/-45	11.3%	+/-10.8
EMPLOYMENT STATUS					
Civilian labor force 16 years and over	+/-280	52	+/-47	10.2%	+/-10.1
Employed	+/-208	52	+/-47	11.8%	+/-10.3
Male	+/-125	31	+/-36	11.2%	+/-12.9
Female	+/-117	21	+/-33	12.9%	+/-17.6
Unemployed	+/-107	0	+/-132	0.0%	+/-39.6
Male	+/-132	0	+/-132	-	**
Female	+/-107	0	+/-132	0.0%	+/-39.6
WORK EXPERIENCE					
Population 16 years and over	+/-266	85	+/-53	11.5%	+/-7.5
Worked full-time, year-round in the past 12 months	+/-180	0	+/-132	0.0%	+/-12.3
Worked part-time or part-year in the past 12 months	+/-122	52	+/-47	32.7%	+/-21.7
Did not work	+/-130	33	+/-30	12.1%	+/-12.0
All Individuals below:					
50 percent of poverty level	+/-46	(X)	(X)	(X)	(X)
125 percent of poverty level	+/-95	(X)	(X)	(X)	(X)
150 percent of poverty level	+/-108	(X)	(X)	(X)	(X)
185 percent of poverty level	+/-109	(X)	(X)	(X)	(X)
200 percent of poverty level	+/-109	(X)	(X)	(X)	(X)
Unrelated individuals for whom poverty status is determined	+/-136	85	+/-53	20.8%	+/-12.6
Male	+/-110	53	+/-49	16.5%	+/-14.7
Female	+/-75	32	+/-37	36.8%	+/-37.9
Mean income deficit for unrelated individuals (dollars)	N	(X)	(X)	(X)	(X)
Worked full-time, year-round in the past 12 months	+/-152	0	+/-132	0.0%	+/-18.4
Worked less than full-time, year-round in the past 12 months	+/-81	52	+/-47	49.5%	+/-44.0
Did not work	+/-65	33	+/-30	30.6%	+/-25.8
PERCENT IMPUTED					
Poverty status for individuals	(X)	(X)	(X)	(X)	(X)

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see Accuracy of the Data). The effect of nonsampling error is not represented in these tables.

While the 2006-2010 American Community Survey (ACS) data generally reflect the December 2009 Office of Management and Budget (OMB) definitions of metropolitan and micropolitan statistical areas; in certain instances the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB definitions due to differences in the effective dates of the geographic entities.

Estimates of urban and rural population, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2000 data. Boundaries for urban areas have not been updated since Census 2000. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

Source: U.S. Census Bureau, 2006-2010 American Community Survey

Explanation of Symbols:

1. An '***' entry in the margin of error column indicates that either no sample observations or too few sample observations were available to compute a standard error and thus the margin of error. A statistical test is not appropriate.
2. An '-' entry in the estimate column indicates that either no sample observations or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest interval or upper interval of an open-ended distribution.
3. An '-' following a median estimate means the median falls in the lowest interval of an open-ended distribution.
4. An '+' following a median estimate means the median falls in the upper interval of an open-ended distribution.
5. An '****' entry in the margin of error column indicates that the median falls in the lowest interval or upper interval of an open-ended distribution. A statistical test is not appropriate.
6. An '*****' entry in the margin of error column indicates that the estimate is controlled. A statistical test for sampling variability is not appropriate.
7. An 'N' entry in the estimate and margin of error columns indicates that data for this geographic area cannot be displayed because the number of sample cases is too small.
8. An '(X)' means that the estimate is not applicable or not available.



S1701

POVERTY STATUS IN THE PAST 12 MONTHS

2006-2010 American Community Survey 5-Year Estimates

Supporting documentation on code lists, subject definitions, data accuracy, and statistical testing can be found on the American Community Survey website in the Data and Documentation section.

Sample size and data quality measures (including coverage rates, allocation rates, and response rates) can be found on the American Community Survey website in the Methodology section.

Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, for 2010, the 2010 Census provides the official counts of the population and housing units for the nation, states, counties, cities and towns. For 2006 to 2009, the Population Estimates Program provides intercensal estimates of the population for the nation, states, and counties.

Subject	Census Tract 12.06, Nevada County, California					
	Total		Below poverty level		Percent below poverty level	
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
Population for whom poverty status is determined	5,524	+/-610	757	+/-264	13.7%	+/-4.6
AGE						
Under 18 years	1,512	+/-300	315	+/-169	20.8%	+/-10.9
Related children under 18 years	1,441	+/-284	244	+/-156	16.9%	+/-10.8
18 to 64 years	3,784	+/-450	442	+/-150	11.7%	+/-3.9
65 years and over	228	+/-148	0	+/-132	0.0%	+/-16.0
SEX						
Male	2,942	+/-378	398	+/-206	13.5%	+/-6.5
Female	2,582	+/-369	359	+/-119	13.9%	+/-4.2
RACE AND HISPANIC OR LATINO ORIGIN						
One race	5,420	+/-587	757	+/-264	14.0%	+/-4.7
White	4,689	+/-621	686	+/-262	14.6%	+/-5.4
Black or African American	75	+/-74	0	+/-132	0.0%	+/-38.0
American Indian and Alaska Native	0	+/-132	0	+/-132	-	**
Asian	81	+/-88	0	+/-132	0.0%	+/-36.4
Native Hawaiian and Other Pacific Islander	0	+/-132	0	+/-132	-	**
Some other race	575	+/-449	71	+/-89	12.3%	+/-10.0
Two or more races	104	+/-77	0	+/-132	0.0%	+/-30.9
Hispanic or Latino origin (of any race)	1,740	+/-542	376	+/-232	21.6%	+/-11.1
White alone, not Hispanic or Latino	3,553	+/-587	381	+/-178	10.7%	+/-4.7
EDUCATIONAL ATTAINMENT						
Population 25 years and over	3,384	+/-388	247	+/-106	7.3%	+/-3.1
Less than high school graduate	307	+/-134	51	+/-60	16.6%	+/-18.9
High school graduate (includes equivalency)	541	+/-173	43	+/-68	7.9%	+/-12.3
Some college, associate's degree	1,077	+/-255	130	+/-75	12.1%	+/-6.7
Bachelor's degree or higher	1,459	+/-322	23	+/-26	1.6%	+/-1.9
EMPLOYMENT STATUS						
Civilian labor force 16 years and over	3,538	+/-437	406	+/-157	11.5%	+/-4.3
Employed	3,160	+/-364	320	+/-130	10.1%	+/-4.1
Male	1,688	+/-271	159	+/-104	9.4%	+/-5.9
Female	1,472	+/-255	161	+/-91	10.9%	+/-6.0
Unemployed	378	+/-188	86	+/-82	22.8%	+/-19.4
Male	277	+/-147	72	+/-78	26.0%	+/-24.3
Female	101	+/-112	14	+/-22	13.9%	+/-30.0
WORK EXPERIENCE						

Subject	Census Tract 12.06, Nevada County, California					
	Total		Below poverty level		Percent below poverty level	
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
Population 16 years and over	4,237	+/-450	534	+/-165	12.6%	+/-3.8
Worked full-time, year-round in the past 12 months	1,747	+/-229	36	+/-40	2.1%	+/-2.3
Worked part-time or part-year in the past 12 months	1,957	+/-342	407	+/-145	20.8%	+/-6.8
Did not work	533	+/-199	91	+/-78	17.1%	+/-13.4
All Individuals below:						
50 percent of poverty level	374	+/-283	(X)	(X)	(X)	(X)
125 percent of poverty level	907	+/-315	(X)	(X)	(X)	(X)
150 percent of poverty level	1,530	+/-406	(X)	(X)	(X)	(X)
185 percent of poverty level	2,025	+/-525	(X)	(X)	(X)	(X)
200 percent of poverty level	2,043	+/-526	(X)	(X)	(X)	(X)
Unrelated individuals for whom poverty status is determined	1,509	+/-358	337	+/-155	22.3%	+/-9.5
Male	814	+/-281	160	+/-115	19.7%	+/-13.2
Female	695	+/-239	177	+/-118	25.5%	+/-14.6
Mean income deficit for unrelated individuals (dollars)	4,792	+/-1,922	(X)	(X)	(X)	(X)
Worked full-time, year-round in the past 12 months	539	+/-178	36	+/-40	6.7%	+/-7.6
Worked less than full-time, year-round in the past 12 months	853	+/-269	258	+/-130	30.2%	+/-14.8
Did not work	117	+/-70	43	+/-46	36.8%	+/-34.6
PERCENT IMPUTED						
Poverty status for individuals	30.4%	(X)	(X)	(X)	(X)	(X)

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see Accuracy of the Data). The effect of nonsampling error is not represented in these tables.


While the 2006-2010 American Community Survey (ACS) data generally reflect the December 2009 Office of Management and Budget (OMB) definitions of metropolitan and micropolitan statistical areas; in certain instances the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB definitions due to differences in the effective dates of the geographic entities.

Estimates of urban and rural population, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2000 data. Boundaries for urban areas have not been updated since Census 2000. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

Source: U.S. Census Bureau, 2006-2010 American Community Survey


Explanation of Symbols:

1. An '***' entry in the margin of error column indicates that either no sample observations or too few sample observations were available to compute a standard error and thus the margin of error. A statistical test is not appropriate.
2. An '-' entry in the estimate column indicates that either no sample observations or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest interval or upper interval of an open-ended distribution.
3. An '-' following a median estimate means the median falls in the lowest interval of an open-ended distribution.
4. An '+' following a median estimate means the median falls in the upper interval of an open-ended distribution.
5. An '****' entry in the margin of error column indicates that the median falls in the lowest interval or upper interval of an open-ended distribution. A statistical test is not appropriate.
6. An '*****' entry in the margin of error column indicates that the estimate is controlled. A statistical test for sampling variability is not appropriate.
7. An 'N' entry in the estimate and margin of error columns indicates that data for this geographic area cannot be displayed because the number of sample cases is too small.
8. An '(X)' means that the estimate is not applicable or not available.



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Nevada County, California

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People QuickFacts	Nevada County	California
Population, 2011 estimate	NA	37,691,912
Population, 2010	98,764	37,253,956
Population, percent change, 2000 to 2010	7.3%	10.0%
Population, 2000	92,033	33,871,648
Persons under 5 years, percent, 2010	4.4%	6.8%
Persons under 18 years, percent, 2010	19.3%	25.0%
Persons 65 years and over, percent, 2010	19.4%	11.4%
Female persons, percent, 2010	50.6%	50.3%
White persons, percent, 2010 (a)	91.4%	57.6%
Black persons, percent, 2010 (a)	0.4%	6.2%
American Indian and Alaska Native persons, percent, 2010 (a)	1.1%	1.0%
Asian persons, percent, 2010 (a)	1.2%	13.0%
Native Hawaiian and Other Pacific Islander, percent, 2010 (a)	0.1%	0.4%
Persons reporting two or more races, percent, 2010	3.2%	4.9%
Persons of Hispanic or Latino origin, percent, 2010 (b)	8.5%	37.6%
White persons not Hispanic, percent, 2010	86.5%	40.1%
Living in same house 1 year & over, 2006-2010	84.7%	84.0%
Foreign born persons, percent, 2006-2010	5.5%	27.2%
Language other than English spoken at home, pct age 5+, 2006-2010	6.6%	43.0%
High school graduates, percent of persons age 25+, 2006-2010	94.1%	80.7%
Bachelor's degree or higher, pct of persons age 25+, 2006-2010	31.9%	30.1%
Veterans, 2006-2010	10,362	2,051,959
Mean travel time to work (minutes), workers age 16+, 2006-2010	24.1	26.9
Housing units, 2010	52,590	13,680,081
Homeownership rate, 2006-2010	74.0%	57.4%
Housing units in multi-unit structures, percent, 2006-2010	9.5%	30.7%
Median value of owner-occupied housing units, 2006-2010	\$444,100	\$458,500
Households, 2006-2010	41,255	12,392,852
Persons per household, 2006-2010		

	2.36	2.89
Per capita money income in past 12 months (2010 dollars) 2006-2010	\$30,727	\$29,188
Median household income 2006-2010	\$57,121	\$60,883
Persons below poverty level, percent, 2006-2010	9.0%	13.7%
Business QuickFacts	Nevada County	California
Private nonfarm establishments, 2009	3,097	857,831 ¹
Private nonfarm employment, 2009	26,747	12,833,709 ¹
Private nonfarm employment, percent change 2000-2009	2.8%	-0.4% ¹
Nonemployer establishments, 2009	11,352	2,674,301
<hr/>		
Total number of firms, 2007	14,492	3,425,510
Black-owned firms, percent, 2007	S	4.0%
American Indian- and Alaska Native-owned firms, percent, 2007	S	1.3%
Asian-owned firms, percent, 2007	S	14.9%
Native Hawaiian and Other Pacific Islander-owned firms, percent, 2007	F	0.3%
Hispanic-owned firms, percent, 2007	S	16.5%
Women-owned firms, percent, 2007	28.7%	30.3%
<hr/>		
Manufacturers shipments, 2007 (\$1000)	664,601	491,372,092
Merchant wholesaler sales, 2007 (\$1000)	D	598,456,486
Retail sales, 2007 (\$1000)	1,077,159	455,032,270
Retail sales per capita, 2007	\$11,111	\$12,561
Accommodation and food services sales, 2007 (\$1000)	199,443	80,852,787
Building permits, 2010	142	43,716
Federal spending, 2009	769,899	331,030,869 ¹
Geography QuickFacts	Nevada County	California
Land area in square miles, 2010	957.77	155,779.22
Persons per square mile, 2010	103.1	239.1
FIPS Code	057	06
Metropolitan or Micropolitan Statistical Area	Truckee-Grass Valley, CA Micro Area	

1: Includes data not distributed by county.

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Truckee (town), California

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People QuickFacts	Truckee	California
Population, 2011 estimate	NA	37,691,912
Population, 2010	16,180	37,253,956
Population, percent change, 2000 to 2010	16.7%	10.0%
Population, 2000	13,864	33,871,648
Persons under 5 years, percent, 2010	6.6%	6.8%
Persons under 18 years, percent, 2010	23.3%	25.0%
Persons 65 years and over, percent, 2010	7.8%	11.4%
Female persons, percent, 2010	47.9%	50.3%
White persons, percent, 2010 (a)	86.5%	57.6%
Black persons, percent, 2010 (a)	0.4%	6.2%
American Indian and Alaska Native persons, percent, 2010 (a)	0.6%	1.0%
Asian persons, percent, 2010 (a)	1.5%	13.0%
Native Hawaiian and Other Pacific Islander, percent, 2010 (a)	0.1%	0.4%
Persons reporting two or more races, percent, 2010	2.1%	4.9%
Persons of Hispanic or Latino origin, percent, 2010 (b)	18.6%	37.6%
White persons not Hispanic, percent, 2010	77.7%	40.1%
Living in same house 1 year & over, 2006-2010	83.3%	84.0%
Foreign born persons, percent, 2006-2010	9.9%	27.2%
Language other than English spoken at home, pct age 5+, 2006-2010	12.3%	43.0%
High school graduates, percent of persons age 25+, 2006-2010	95.9%	80.7%
Bachelor's degree or higher, pct of persons age 25+, 2006-2010	44.9%	30.1%
Mean travel time to work (minutes), workers age 16+, 2006-2010	19.5	26.9
Housing units, 2010	12,803	13,680,081
Homeownership rate, 2006-2010	68.6%	57.4%
Housing units in multi-unit structures, percent, 2006-2010	11.1%	30.7%
Median value of owner-occupied housing units, 2006-2010	\$516,300	\$458,500
Households, 2006-2010	6,245	12,392,852
Persons per household, 2006-2010	2.54	2.89
Per capita money income in past 12 months (2010 dollars) 2006-2010	\$31,238	\$29,188

Median household income 2006-2010	\$65,351	\$60,883
Persons below poverty level, percent, 2006-2010	8.6%	13.7%
Business QuickFacts	Truckee	California
Total number of firms, 2007	3,056	3,425,510
Black-owned firms, percent, 2007	S	4.0%
American Indian- and Alaska Native-owned firms, percent, 2007	F	1.3%
Asian-owned firms, percent, 2007	S	14.9%
Native Hawaiian and Other Pacific Islander-owned firms, percent, 2007	F	0.3%
Hispanic-owned firms, percent, 2007	1.3%	16.5%
Women-owned firms, percent, 2007	28.0%	30.3%
<hr/>		
Manufacturers shipments, 2007 (\$1000)	NA	491,372,092
Merchant wholesaler sales, 2007 (\$1000)	28,239	598,456,486
Retail sales, 2007 (\$1000)	207,021	455,032,270
Retail sales per capita, 2007	\$12,952	\$12,561
Accommodation and food services sales, 2007 (\$1000)	54,048	80,852,787
Geography QuickFacts	Truckee	California
Land area in square miles, 2010	32.32	155,779.22
Persons per square mile, 2010	500.6	239.1
FIPS Code	80588	06
Counties	Nevada County	

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Placer County, California

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People QuickFacts	Placer County	California
Population, 2011 estimate	NA	37,691,912
Population, 2010	348,432	37,253,956
Population, percent change, 2000 to 2010	40.3%	10.0%
Population, 2000	248,399	33,871,648
Persons under 5 years, percent, 2010	6.0%	6.8%
Persons under 18 years, percent, 2010	24.4%	25.0%
Persons 65 years and over, percent, 2010	15.4%	11.4%
Female persons, percent, 2010	51.2%	50.3%
White persons, percent, 2010 (a)	83.5%	57.6%
Black persons, percent, 2010 (a)	1.4%	6.2%
American Indian and Alaska Native persons, percent, 2010 (a)	0.9%	1.0%
Asian persons, percent, 2010 (a)	5.9%	13.0%
Native Hawaiian and Other Pacific Islander, percent, 2010 (a)	0.2%	0.4%
Persons reporting two or more races, percent, 2010	4.3%	4.9%
Persons of Hispanic or Latino origin, percent, 2010 (b)	12.8%	37.6%
White persons not Hispanic, percent, 2010	76.1%	40.1%
Living in same house 1 year & over, 2006-2010	84.5%	84.0%
Foreign born persons, percent, 2006-2010	10.1%	27.2%
Language other than English spoken at home, pct age 5+, 2006-2010	13.9%	43.0%
High school graduates, percent of persons age 25+, 2006-2010	93.0%	80.7%
Bachelor's degree or higher, pct of persons age 25+, 2006-2010	34.1%	30.1%
Veterans, 2006-2010	30,868	2,051,959
Mean travel time to work (minutes), workers age 16+, 2006-2010	27.0	26.9
Housing units, 2010	152,648	13,680,081
Homeownership rate, 2006-2010	72.9%	57.4%
Housing units in multi-unit structures, percent, 2006-2010	17.1%	30.7%
Median value of owner-occupied housing units, 2006-2010	\$427,600	\$458,500
Households, 2006-2010	129,153	12,392,852
Persons per household, 2006-2010		

	2.58	2.89
Per capita money income in past 12 months (2010 dollars) 2006-2010	\$35,680	\$29,188
Median household income 2006-2010	\$74,447	\$60,883
Persons below poverty level, percent, 2006-2010	6.6%	13.7%
Business QuickFacts	Placer County	California
Private nonfarm establishments, 2009	9,482	857,831 ¹
Private nonfarm employment, 2009	123,022	12,833,709 ¹
Private nonfarm employment, percent change 2000-2009	31.0%	-0.4% ¹
Nonemployer establishments, 2009	27,249	2,674,301
<hr/>		
Total number of firms, 2007	36,890	3,425,510
Black-owned firms, percent, 2007	1.2%	4.0%
American Indian- and Alaska Native-owned firms, percent, 2007	S	1.3%
Asian-owned firms, percent, 2007	6.6%	14.9%
Native Hawaiian and Other Pacific Islander-owned firms, percent, 2007	S	0.3%
Hispanic-owned firms, percent, 2007	5.3%	16.5%
Women-owned firms, percent, 2007	28.3%	30.3%
<hr/>		
Manufacturers shipments, 2007 (\$1000)	3,023,419	491,372,092
Merchant wholesaler sales, 2007 (\$1000)	3,898,601	598,456,486
Retail sales, 2007 (\$1000)	6,180,067	455,032,270
Retail sales per capita, 2007	\$18,622	\$12,561
Accommodation and food services sales, 2007 (\$1000)	773,617	80,852,787
Building permits, 2010	1,166	43,716
Federal spending, 2009	2,007,114	331,030,869 ¹
Geography QuickFacts	Placer County	California
Land area in square miles, 2010	1,407.01	155,779.22
Persons per square mile, 2010	247.6	239.1
FIPS Code	061	06
Metropolitan or Micropolitan Statistical Area	Sacramento-- Arden-Arcade-- Roseville, CA Metro Area	

1: Includes data not distributed by county.

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Washoe County, Nevada

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People QuickFacts	Washoe County	Nevada
 Population, 2011 estimate	NA	2,723,322
 Population, 2010	421,407	2,700,551
 Population, percent change, 2000 to 2010	24.1%	35.1%
 Population, 2000	339,486	1,998,257
 Persons under 5 years, percent, 2010	6.6%	6.9%
 Persons under 18 years, percent, 2010	23.6%	24.6%
 Persons 65 years and over, percent, 2010	12.1%	12.0%
 Female persons, percent, 2010	49.5%	49.5%
<hr/>		
 White persons, percent, 2010 (a)	76.9%	66.2%
 Black persons, percent, 2010 (a)	2.3%	8.1%
 American Indian and Alaska Native persons, percent, 2010 (a)	1.7%	1.2%
 Asian persons, percent, 2010 (a)	5.2%	7.2%
 Native Hawaiian and Other Pacific Islander, percent, 2010 (a)	0.6%	0.6%
 Persons reporting two or more races, percent, 2010	3.8%	4.7%
 Persons of Hispanic or Latino origin, percent, 2010 (b)	22.2%	26.5%
 White persons not Hispanic, percent, 2010	66.0%	54.1%
<hr/>		
 Living in same house 1 year & over, 2006-2010	78.0%	78.2%
 Foreign born persons, percent, 2006-2010	15.3%	19.3%
 Language other than English spoken at home, pct age 5+, 2006-2010	22.2%	28.2%
 High school graduates, percent of persons age 25+, 2006-2010	86.4%	84.3%
 Bachelor's degree or higher, pct of persons age 25+, 2006-2010	26.7%	21.8%
 Veterans, 2006-2010	37,610	234,081
 Mean travel time to work (minutes), workers age 16+, 2006-2010	20.8	23.6
 Housing units, 2010	184,841	1,173,814
 Homeownership rate, 2006-2010	60.2%	60.1%
 Housing units in multi-unit structures, percent, 2006-2010	29.0%	29.4%
 Median value of owner-occupied housing units, 2006-2010	\$295,700	\$254,200

Households, 2006-2010	160,797	979,621
Persons per household, 2006-2010	2.52	2.65
Per capita money income in past 12 months (2010 dollars) 2006-2010	\$29,687	\$27,589
Median household income 2006-2010	\$55,658	\$55,726
Persons below poverty level, percent, 2006-2010	12.6%	11.9%
Business QuickFacts	Washoe County	Nevada
Private nonfarm establishments, 2009	12,015	59,785 ¹
Private nonfarm employment, 2009	173,120	1,042,166 ¹
Private nonfarm employment, percent change 2000-2009	2.2%	15.4% ¹
Nonemployer establishments, 2009	26,661	166,864
Total number of firms, 2007	40,200	221,260
Black-owned firms, percent, 2007	1.0%	3.9%
American Indian- and Alaska Native-owned firms, percent, 2007	0.6%	0.8%
Asian-owned firms, percent, 2007	4.6%	7.9%
Native Hawaiian and Other Pacific Islander-owned firms, percent, 2007	S	0.3%
Hispanic-owned firms, percent, 2007	5.2%	8.1%
Women-owned firms, percent, 2007	27.1%	28.6%
Manufacturers shipments, 2007 (\$1000)	D	15,735,787
Merchant wholesaler sales, 2007 (\$1000)	6,317,686	19,255,893
Retail sales, 2007 (\$1000)	6,667,427	37,433,983
Retail sales per capita, 2007	\$16,409	\$14,579
Accommodation and food services sales, 2007 (\$1000)	2,399,394	28,815,533
Building permits, 2010	600	6,443
Federal spending, 2009	3,332,808	19,893,713 ¹
Geography QuickFacts	Washoe County	Nevada
Land area in square miles, 2010	6,302.37	109,781.18
Persons per square mile, 2010	66.9	24.6
FIPS Code	031	32
Metropolitan or Micropolitan Statistical Area	Reno-Sparks, NV Metro Area	

1: Includes data not distributed by county.

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Reno (city), Nevada

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People QuickFacts	Reno	Nevada
 Population, 2011 estimate	NA	2,723,322
 Population, 2010	225,221	2,700,551
 Population, percent change, 2000 to 2010	24.8%	35.1%
 Population, 2000	180,480	1,998,257
 Persons under 5 years, percent, 2010	7.0%	6.9%
 Persons under 18 years, percent, 2010	22.8%	24.6%
 Persons 65 years and over, percent, 2010	11.7%	12.0%
 Female persons, percent, 2010	49.2%	49.5%
<hr/>		
 White persons, percent, 2010 (a)	74.2%	66.2%
 Black persons, percent, 2010 (a)	2.9%	8.1%
 American Indian and Alaska Native persons, percent, 2010 (a)	1.3%	1.2%
 Asian persons, percent, 2010 (a)	6.3%	7.2%
 Native Hawaiian and Other Pacific Islander, percent, 2010 (a)	0.7%	0.6%
 Persons reporting two or more races, percent, 2010	4.2%	4.7%
 Persons of Hispanic or Latino origin, percent, 2010 (b)	24.3%	26.5%
 White persons not Hispanic, percent, 2010	62.5%	54.1%
<hr/>		
 Living in same house 1 year & over, 2006-2010	73.2%	78.2%
 Foreign born persons, percent, 2006-2010	17.5%	19.3%
 Language other than English spoken at home, pct age 5+, 2006-2010	24.4%	28.2%
 High school graduates, percent of persons age 25+, 2006-2010	85.2%	84.3%
 Bachelor's degree or higher, pct of persons age 25+, 2006-2010	28.5%	21.8%
 Mean travel time to work (minutes), workers age 16+, 2006-2010	18.6	23.6
 Housing units, 2010	102,582	1,173,814
 Homeownership rate, 2006-2010	49.0%	60.1%
 Housing units in multi-unit structures, percent, 2006-2010	40.3%	29.4%
 Median value of owner-occupied housing units, 2006-2010	\$290,100	\$254,200
 Households, 2006-2010	89,224	979,621
 Persons per household, 2006-2010	2.40	2.65

i Per capita money income in past 12 months (2010 dollars) 2006-2010	\$27,714	\$27,589
i Median household income 2006-2010	\$48,895	\$55,726
i Persons below poverty level, percent, 2006-2010	16.3%	11.9%
Business QuickFacts	Reno	Nevada
i Total number of firms, 2007	22,091	221,260
i Black-owned firms, percent, 2007	1.5%	3.9%
i American Indian- and Alaska Native-owned firms, percent, 2007	0.3%	0.8%
i Asian-owned firms, percent, 2007	5.6%	7.9%
i Native Hawaiian and Other Pacific Islander-owned firms, percent, 2007	S	0.3%
i Hispanic-owned firms, percent, 2007	5.6%	8.1%
i Women-owned firms, percent, 2007	26.7%	28.6%
i Manufacturers shipments, 2007 (\$1000)	3,874,991	15,735,787
i Merchant wholesaler sales, 2007 (\$1000)	3,017,548	19,255,893
i Retail sales, 2007 (\$1000)	5,014,947	37,433,983
i Retail sales per capita, 2007	\$23,364	\$14,579
i Accommodation and food services sales, 2007 (\$1000)	1,918,046	28,815,533
Geography QuickFacts	Reno	Nevada
i Land area in square miles, 2010	103.01	109,781.18
i Persons per square mile, 2010	2,186.4	24.6
i FIPS Code	60600	32
Counties	Washoe County	

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Population estimates for counties will be available in April, 2012 and for cities in June, 2012.

- (a) Includes persons reporting only one race.
(b) Hispanics may be of any race, so also are included in applicable race categories.

D: Suppressed to avoid disclosure of confidential information
F: Fewer than 100 firms
FN: Footnote on this item for this area in place of data
NA: Not available
S: Suppressed; does not meet publication standards
X: Not applicable
Z: Value greater than zero but less than half unit of measure shown


[What do you think of QuickFacts?](#)

Source U.S. Census Bureau: State and County QuickFacts. Data derived from Population Estimates, American Community Survey, Census of Population and Housing, County Business Patterns, Economic Census, Survey of Business Owners, Building Permits, Consolidated Federal Funds Report, Census of Governments
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Sparks (city), Nevada

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People QuickFacts	Sparks	Nevada
Population, 2011 estimate	NA	2,723,322
Population, 2010	90,264	2,700,551
Population, percent change, 2000 to 2010	36.1%	35.1%
Population, 2000	66,346	1,998,257
Persons under 5 years, percent, 2010	7.2%	6.9%
Persons under 18 years, percent, 2010	25.8%	24.6%
Persons 65 years and over, percent, 2010	11.3%	12.0%
Female persons, percent, 2010	50.6%	49.5%
White persons, percent, 2010 (a)	74.5%	66.2%
Black persons, percent, 2010 (a)	2.6%	8.1%
American Indian and Alaska Native persons, percent, 2010 (a)	1.2%	1.2%
Asian persons, percent, 2010 (a)	5.9%	7.2%
Native Hawaiian and Other Pacific Islander, percent, 2010 (a)	0.6%	0.6%
Persons reporting two or more races, percent, 2010	4.0%	4.7%
Persons of Hispanic or Latino origin, percent, 2010 (b)	26.3%	26.5%
White persons not Hispanic, percent, 2010	61.4%	54.1%
Living in same house 1 year & over, 2006-2010	77.7%	78.2%
Foreign born persons, percent, 2006-2010	16.6%	19.3%
Language other than English spoken at home, pct age 5+, 2006-2010	25.7%	28.2%
High school graduates, percent of persons age 25+, 2006-2010	86.1%	84.3%
Bachelor's degree or higher, pct of persons age 25+, 2006-2010	20.3%	21.8%
Mean travel time to work (minutes), workers age 16+, 2006-2010	21.7	23.6
Housing units, 2010	36,455	1,173,814
Homeownership rate, 2006-2010	61.3%	60.1%
Housing units in multi-unit structures, percent, 2006-2010	26.3%	29.4%
Median value of owner-occupied housing units, 2006-2010	\$263,900	\$254,200
Households, 2006-2010	32,942	979,621
Persons per household, 2006-2010	2.64	2.65

 Per capita money income in past 12 months (2010 dollars) 2006-2010	\$25,717	\$27,589
 Median household income 2006-2010	\$56,775	\$55,726
 Persons below poverty level, percent, 2006-2010	11.0%	11.9%
Business QuickFacts	Sparks	Nevada
 Total number of firms, 2007	7,057	221,260
 Black-owned firms, percent, 2007	0.4%	3.9%
 American Indian- and Alaska Native-owned firms, percent, 2007	0.7%	0.8%
 Asian-owned firms, percent, 2007	4.6%	7.9%
 Native Hawaiian and Other Pacific Islander-owned firms, percent, 2007	F	0.3%
 Hispanic-owned firms, percent, 2007	6.9%	8.1%
 Women-owned firms, percent, 2007	30.8%	28.6%
 Manufacturers shipments, 2007 (\$1000)	1,522,340	15,735,787
 Merchant wholesaler sales, 2007 (\$1000)	2,998,822	19,255,893
 Retail sales, 2007 (\$1000)	1,166,353	37,433,983
 Retail sales per capita, 2007	\$13,410	\$14,579
 Accommodation and food services sales, 2007 (\$1000)	340,277	28,815,533
Geography QuickFacts	Sparks	Nevada
 Land area in square miles, 2010	35.76	109,781.18
 Persons per square mile, 2010	2,524.3	24.6
 FIPS Code	68400	32
Counties	Washoe County	

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Population estimates for counties will be available in April, 2012 and for cities in June, 2012.

(a) Includes persons reporting only one race.

(b) Hispanics may be of any race, so also are included in applicable race categories.

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Source U.S. Census Bureau: State and County QuickFacts. Data derived from Population Estimates, American Community Survey, Census of Population and Housing, County Business Patterns, Economic Census, Survey of Business Owners, Building Permits, Consolidated Federal Funds Report, Census of Governments

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Appendix P

Comments and Responses to Comments on the Draft EIS/EIS/EIR

Contents

Appendix P1a. Responses to Comments on the Draft EIS/EIS/EIR

Appendix P1b. Comment Letters and Public Hearing Transcripts

ATTACHMENTS BELOW ARE PROVIDED ON CD

Appendix P2a. Letter from NV Energy to Liberty Regarding Emergency Backup Power

**Appendix P2b. Report of Findings Regarding the Need for Upgrade of the
North Lake Tahoe Transmission System**

Appendix P3. Attachments to the Friends of the West Shore's January 6, 2014 Letter (Letter 25)

Appendix P1a

**Responses to Comments on the Draft
EIS/EIS/EIR**

P. COMMENTS AND RESPONSES TO COMMENTS ON THE DRAFT EIS/EIS/EIR

This section of the Final environmental impact statement (EIS)/EIS/environmental impact report (EIR) contains comment letters received during the public review period for the Draft EIS/EIS/EIR, which concluded on January 7, 2014. In conformance with the requirements of the National Environmental Policy Act (NEPA) and the Council on Environmental Quality Regulations Implementing NEPA (40 Code of Federal Regulations 1503.4(b)); the Tahoe Regional Planning Compact, the Tahoe Regional Planning Agency (TRPA) Code of Ordinances, and the TRPA Rules of Procedure; and Section 15088(a) of the State California Environmental Quality Act (CEQA) Guidelines, written responses were prepared addressing comments on environmental issues received from reviewers of the Draft EIS/EIS/EIR.

P.1 LIST OF COMMENTERS ON THE DRAFT EIS/EIS/EIR

Table P.1-1 below indicates the numerical designation for each comment letter received, the entity or organization providing the comment letter (if applicable), the author of the comment letter (if the letter was signed or an author otherwise indicated), and the date of the comment letter.

Table P.1-1 Comment Letters Regarding the Draft EIS/EIS/EIR			
Letter#	Entity/Organization	Author(s) of Comment Letter/e-mail	Date Sent
1	US Environmental Protection Agency, Region 9	Kathleen Martyn Goforth, Manager	January 3, 2014
2	State Clearinghouse and Planning Unit	Scott Morgan, Director	December 24, 2013
3	Nevada State Clearinghouse	Skip Canfield	January 10, 2014
4	California Department of Transportation, District 3	Marlo Tinney, Chief	January 7, 2014
5	California Department of Parks and Recreation, Sierra District	Tamara Sasaki, Sr. Environmental Scientist	December 30, 2013
6	California Department of Toxic Substances	Duane White	December 18, 2013
7	California Tahoe Conservancy	Penny Stewart, Program Manager	December 31, 2013
8	California Tahoe Conservancy	Lisa O'Daly, Senior Environmental Planner	January 7, 2014
9	California Water Boards, Lahontan Regional Water Quality Control Board	Robert Larsen, Senior Environmental Scientist	January 6, 2014
10	County of Placer, Community Development/Resource Agency	Michael J. Johnson, AICP, Agency Director	January 7, 2014
11	Town of Truckee	Tony Lashbrook, Town Manager	January 7, 2014
12	Washoe Tribe of Nevada and California	Darrel Cruz, Tribal Historic Preservation Officer	January 7, 2014
13	North Tahoe Public Utility District	Suzi Gibbons, Contracts and Planning Coordinator	January 2, 2014
14	Tahoe-Truckee Sanitation Agency	Jason A. Parker, Engineering Department Manager	January 6, 2014
15	Placer County Flood Control and Water Conservation District	Andrew Darrow, PE, CFM, Development Coordinator	January 7, 2014
16	Greater Tahoe City Plan Area Team		December 3, 2013

Table P.1-1 Comment Letters Regarding the Draft EIS/EIS/EIR			
Letter #	Entity/Organization	Author(s) of Comment Letter/e-mail	Date Sent
17	Greater Tahoe City Plan Area Team		December 12, 2013
18	Greater Tahoe City Plan Area Team		January 7, 2014
19	Tahoe City Downtown Association	Gary Davis, President	December 3, 2013
20	Sustainability Community Advocates	Steve Teshara, Principal	December 2, 2013
21	Sustainability Community Advocates	Steve Teshara, Principal	January 2, 2014
22	Tahoe City Commercial Property Owners Association	Roger Kahn	December 12, 2013
23	Northstar Property Owners Association	Geoff Sullivan Stephens, General Manager	January 6, 2014
24	League to Save Lake Tahoe	Darcie Goodman Collins, PhD, Executive Director	January 6, 2014
25	Friends of the West Shore	Susan Gearhart, President and Jennifer Quashnick, Conservation Consultant	January 6, 2014
26	Sierra Club, Tahoe Area Sierra Club Group	Laurel Ames, Conservation Co-Chair	January 7, 2014
27	North Tahoe Preservation Alliance		No date
28	North Tahoe Preservation Alliance	Ann Nichols	January 4, 2014
29	North Tahoe Citizen Action Alliance	David McClure, President	January 7, 2014
30	Friends of Lake Tahoe	Roger Patching, President	January 3, 2014
31	Friends of Tahoe Vista	Ellie Waller	December 4, 2013
32	Friends of Tahoe Vista	Ellie Waller	January 4, 2014
33		Robert Erlich	January 7, 2014
34		Steve Yonker	January 6, 2014
35	Kingswood Estates Homeowners Association	Gerald Rucker, President	December 31, 2013
36		Kathy Starbard	January 2, 2014
37		Kenneth R. Arnett, PLS	December 31, 2013
38		Jay Shaw	January 1, 2014
39		Greg Gilmore	December 10, 2013
40		Laurie Stevenson	December 31, 2013
41	Northstar California Resort	Jen Mader, CPESC, AICP, Environmental Planner	January 7, 2014
42		Frank Tomasello	January 3, 2014
43		D. Gordon Leach	January 3, 2014
44		David Nestle and Jeanne Nestle	January 4, 2014
45		Alan Roskos	January 6, 2014
46		Harry and Sandi King	January 4, 2014
47	EN2 Resources, Inc.	Rick A. Lind	January 7, 2014
48		Casey Beyer	December 20, 2013
49		Gail Taylor	December 23, 2013
50		Jerry and Julianna Joldersma	December 23, 2013

Table P.1-1 Comment Letters Regarding the Draft EIS/EIS/EIR			
Letter #	Entity/Organization	Author(s) of Comment Letter/e-mail	Date Sent
51		Jerry Joldersma	December 26, 2013
52		Karen and Rick Dustman	December 28, 2013
53		Jane Starratt	December 27, 2013
54		Teresa Grabham	January 7, 2014
55	TRPA Advisory Planning Commission Meeting		December 4, 2013
56	TRPA Governing Board Meeting		December 18, 2013
57	Providing technical assistance to the North Tahoe Citizen Action Alliance	Thomas A. Besich	April 28, 2014

P.2 COMMENTS AND RESPONSES ON THE DRAFT EIS/EIS/EIR

The individual comments received on the Draft EIS/EIS/EIR and the responses to those comments are provided in this appendix to the EIS/EIS/EIR. Each comment letter or public hearing transcript is reproduced in its entirety in Appendix P1b. Where a commenter has provided multiple comments, each comment is indicated by a line bracket and an identifying number in the margin of the comment letter or transcript.

The lead agencies noted that some similar comments were made by multiple commenters. To allow presentation of a response that addresses all aspects of such related comments, the following master responses have been prepared. Reference to a master response is provided, where relevant, in response to individual comments.

Master Response 1: Tahoe City Substation

Several comment letters were received about the Tahoe City Substation, its location, and the relationship between the proposed upgrades to the substation and ongoing Placer County planning efforts.

The Tahoe City Substation, which is currently the termination point for the existing 625 and 629 Lines, is located west of State Route (SR) 89 and south of the Truckee River (closest portion of the fenceline is approximately 80-feet south of the river and over 300 feet from Lake Tahoe) on property that is owned by California Pacific Electric Company (CalPeco). Electricity from the 625 and 629 Lines is stepped down at the substation to lower voltages to supply power to the west shore from Tahoe City to Emerald Bay, and the north shore from Tahoe City east to the midpoint between Tahoe City and Kings Beach. The substation's location is also a gateway to Tahoe City and Lake Tahoe for residents and visitors.

A component of the proposed project is to upgrade the Tahoe City Substation in its current location so as to accommodate the increase in the North Lake Tahoe Transmission System from 60 kilovolts (kV) to 120 kV. Specifically, an existing 120/60/14.4 kV transformer would be relocated, and a new 120/14.4 kV transformer and two new 120 kV breakers would be installed. All permanent alterations and additions to substation equipment would occur within the existing fence line, on property owned by CalPeco.

To upgrade the substation while maintaining distribution capabilities, portable (temporary) transformers would be required during construction and would be connected to the 625 Line or 629 Line using temporary poles. The portable transformers would be mounted on two trailers, measuring 8 feet wide by 40 feet long, that would be located immediately to the south of the Tahoe City Substation on the 64 Acre Recreation Site managed by the US Forest Service (USFS). The applicant would locate the temporary transformers in undeveloped areas or in areas designated for parking, and would restrict the public from these areas during construction (less than one

month). The applicant would coordinate with USFS and Placer County in advance of construction to ensure that the temporary transformers would not interfere with operation of the Tahoe City Transit Center.

Because of the substation's location, many commenters request that CalPeco move it as part of its project or have the agencies include relocation as an element of an alternative. These commenters note that Placer County is in the process of updating its community plans for the Lake Tahoe region in accordance with TRPA's Regional Plan. Placer County has identified four plan areas, and a Plan Area Team has been created for each of these areas to help develop the zoning and design standards.

The Tahoe City Substation is located in the Greater Tahoe City Plan Area. The Greater Tahoe City Area Planning Team, which consists of nine local residents and business owners, have worked to provide recommendations to the Planning Commission regarding local land use, density, design, and revitalization to be included in the Community Plan Update. In addition to this planning effort by Placer County, the SR 89/Fanny Bridge Community Revitalization Project is being developed by the Tahoe Transportation District and other agencies to address congestion in Tahoe City on SR 89 and at the southwest end of town (i.e., at the intersection of SR 89 and SR 28, known as the "wee"). The project proposes to relocate Fanny Bridge, realign SR 89, and implement other features to address substantial traffic congestion at this intersection and improve pedestrian and bicycle circulation. None of the alternatives identified to date require use of the Tahoe City Substation property.

While these planning efforts are underway, the 1994 Tahoe City Community Plan remains in effect. The 1994 Tahoe City Community Plan presently serves as the guiding doctrine for planning and rehabilitation of the community. It established goals and objectives, and elements of the plan address land use, transportation, conservation, recreation, and public service. As noted in several comments received on the Draft EIS/EIS/EIR for the CalPeco 625 and 650 Electrical Line Upgrade Project, the Tahoe City Community Plan recommends relocation of the Tahoe City Substation, encouraging creation of a joint use facility containing the Tahoe City Public Utilities District office, a fire station, and a power station.

The existing Tahoe City Substation is located in Special Area 3 (Recreation Area) of the Tahoe City Community Plan. Substations are defined as "Public Utility Centers," a Public Service land use, in Chapter 21 of the TRPA Code of Ordinances. Public Utility Centers are a "special use" in Special Area 3 of the Tahoe City Community Plan, and are subject to TRPA special use findings for any expansion or modification pursuant to Section 21.2.2 of the TRPA Code. Specific sections of the Tahoe City Community Plan that apply to the Tahoe City Substation and its vicinity are as follows:

The 1994 Tahoe City Community Plan addresses relocation of the Tahoe City Substation in Chapter 1 (Introduction), Section D (Vision for 2007 and Beyond). The Tahoe City Community Plan encourages relocation of the substation to facilitate: redevelopment of the wee area; improved entrance to Tahoe City; and improved river and lake access, with a greater emphasis on recreation and transportation improvements on the 64 Acre Recreation Site.

Redevelopment of the wee area is addressed in Sections 2 and 2.b of the Tahoe City Community Plan vision for land use on page 1-9. The existing substation is specifically identified in paragraph 2.b as a possible location for a future "visitor center with transit facilities." In the 1990s, the USFS and TRPA each certified an EIS/EIS for the construction of the Lake of the Sky Visitor Information Center on the 64 Acre Recreation Site.

Improved river and lake access is addressed in Section 1 of the Tahoe City Community Plan "vision" for recreation on page 1-15. This section states that the Tahoe City Community Plan "requires an increase in Truckee River and Lake Access." While this reference does not apply to the substation site specifically, because the property has no physical connection to the Truckee River or Lake Tahoe, the community plan identifies certain "possibilities" for improved river and

lake access, namely the USFS interpretative center, a linear river park, increased trails and parking, and increased marina use.

Related to requirements for undergrounding of power lines, 1994 Tahoe City Community Plan Policy 5A (page II-4) states: “Pursuant to the general recommendations in Chapter IV, projects within the scenic corridor shall be responsible for removing, relocating, or screening overhead utilities as a condition of project approval,” and “TRPA may waive this requirement if the project is part of an undergrounding program or the undergrounding has been determined by TRPA not to be necessary to meet the scenic targets of this Plan.” The Tahoe City Community Plan further states, as a general recommendation applicable to all roadway units: “Overhead utility lines should be placed underground wherever possible. Any utility lines which must be maintained above ground should be located away from the main corridor or screened so as to not detract from the overall visual quality of the area” (page IV-19).

Many land use and other changes have occurred since the adoption of the Tahoe City Community Plan 20 years ago: the USFS visitor center contemplated in the community plan was not constructed due to lack of funding; a new public transit center was constructed approximately 350 feet south of the substation site about two years ago; ownership of the “Chimney Site,” the specific parcel identified in the community plan for relocation of the substation has since changed ownership and may no longer be available as an alternative location; and SR 89 in Tahoe City is now in compliance with the TRPA scenic threshold. Notwithstanding these changes, Placer County and the community remain interested in moving the substation to another location, away from the area valued as the “Gateway to North Lake Tahoe.”

The EIS/EIS/EIR identifies and discloses the community plan goals and objectives encouraging relocation. However, the applicant has not proposed relocation of the Tahoe City substation as an element of the project, nor identified any technical reason related to its obligation to provide reliable power to the region that the substation should be relocated. No significant environmental effects were identified that would be mitigated through substation relocation. Therefore, relocation of the substation is not a required (as opposed to discretionary) element of a reasonable range of alternatives. However, the proposition of relocating the Tahoe City Substation from the current property, which is owned by the applicant, to a location removed from the main corridor of Tahoe City is a planning issue to be considered, rather than an environmental issue requiring discussion in the EIS/EIS/EIR. The community has identified the proposed project as an opportunity to move the substation in accordance with its vision. Commenters have expressed concern that substantial investment in the substation in its current location will foreclose the opportunity to relocate it later. Although the proposed move of the Tahoe City Substation is outside the scope of the project currently under review, the EIS/EIS/EIR in no way precludes the future relocation of the substation.

The agencies also note that in response to these comments, discussions among the Tahoe City area agencies and the utility are underway to determine the feasibility of relocating the Tahoe City Substation as a future project. However, at this time the prospect of moving the substation is speculative in nature and is not considered part of the proposed action evaluated in this EIS/EIS/EIR. Because rebuild of the 625 Line and the Tahoe City Substation are scheduled to take place in the third phase of the project (more than 4-years from publication of this Final EIS/EIS/EIR), there is time for planning and environmental review of a relocation site, should one be identified in the future. (Note that upgrade of the 625 Line is driven by electrical load needed to be carried by the line; and the date of upgrade is subject to actual load increases).

Master Response 2: Undergrounding Power Lines

Several commenters suggest undergrounding the 625 and 650 lines. Specific areas of concern commenters suggest could be addressed by undergrounding include the effects of aerial (on pole) lines on views and roadway operations along SR 89 and SR 267, effects on scenic vistas, appearance of community gateways, use and

appearance of bike trails, and various potential effects to residents in the Kingswood East subdivision. The lead agencies evaluated installing significant portions of the 625 and 650 Lines underground in the Draft EIS/EIS/EIR (refer to pages 3-77 through 3-78 in the discussion of alternatives considered but not evaluated further) and found that this would likely result in increased environmental effects compared to the action alternatives. In that analysis, the agencies provided an example of undergrounding an alternative alignment for the 625 Line along SR 28 between Tahoe City and Kings Beach. Under this scenario, installation of the 625 Line would have to take place in the highway travel lanes due to limited shoulder on that roadway and conflicts with existing above ground utilities. While undergrounding can provide reliable access under some circumstances, in the case of SR 28, seasonal traffic on, and snow storage along, the roadway would make gaining access to the underground line more difficult and time consuming. Another key environmental issue would be the pumping of vault water and the management of the runoff from the vaults. Vaults are often full of run-off water or infiltrating groundwater. During emergency repairs the water must be immediately pumped from the vault to allow safe access of the line. Under LRWQCB regulations, pumping of this water directly to the storm drain is not allowed within the Lake Tahoe Basin (Order No. R6T-2011-0019). As such, pumper trucks would be needed and the water disposed of at an approved facility (e.g., wastewater treatment plant). Similar to the effect of snow storage, this effort could greatly slow repair efforts and increase outage durations.

Undergrounding a significant portion of the 650 Line in and along SR 267 and undergrounding portions of the remaining power lines along specific overland portions of the existing alignments to minimize the visibility of project facilities was also considered. Substantial ground disturbance would be required for installation, and while there could be a reduced width of the tree removal/vegetation management corridor from the 40-feet identified for the project, undergrounding would not eliminate tree removal and vegetation management entirely. Trees, brush, and boulders would need to be removed to install an underground power line, and trees would not be allowed to regrow over the line in order to maintain vehicle access for inspections, maintenance, and repairs, and to prevent tree root damage to the buried conduit. Undergrounding would require substantial ground disturbance during installation and would prolong the construction period. Due to the need for excavation of the trench, importing of appropriate soil bedding material to surround the conduit, and disposal of excess fill, undergrounding is anticipated to increase construction-related impacts to air quality, noise, and traffic, and increases the potential to encounter subsurface cultural resources. Access issues similar to those identified for the SR 28 undergrounding option would apply to all undergrounded line segments; the need to find vaults and remove snow to execute repairs during the winter months, and the need to pump water from vaults before initiating repairs. These challenges and impact mechanisms would also apply to any undergrounding options for the 625 Line, including undergrounding along the Fiberboard Freeway.

As indicated on page 3-78 of the Draft EIS/EIS/EIR, the option of undergrounding portions of the 625 and 650 Lines would be feasible from a technical, legal, and regulatory perspective and would largely meet the project objectives and need. However, as summarized in the EIS/EIS/EIR, undergrounding would require substantial ground disturbance, increase construction impacts, and potentially compromise the objective of providing more reliable access. Additionally, undergrounding, other than potentially near the Truckee Tahoe Airport as identified in Mitigation Measure 4.10-5, would not reduce any significant environmental impacts identified in the EIS/EIS/EIR.

From a technical standpoint, a primary disadvantage of underground power lines is that faults in the buried lines take longer to locate and repair, which leads to decreased reliability and the potential for longer outages. For this reason, higher voltage power lines such as the 650 and 625 Lines, which serve customers on a community or regional scale, are seldom undergrounded as industry practice. Also, to minimize the risk of large scale outages, two power/transmission lines are not routinely placed in the same trench where the chances increase that both lines could be damaged or fail simultaneously. Therefore, in locations where a double-circuit for the 625 and 650 Lines is proposed, if the lines were undergrounded the ROW would be expanded to allow a separate trench for each line. Distribution lines, which carry lower voltage power directly to users at more of a neighborhood scale, are more commonly undergrounded because there are fewer users at risk of losing power in the event of a fault

and the benefits (i.e., less visually obtrusive, less susceptibility to some types of outages) are often thought to outweigh the risk to reliability. Also, the technical and engineering aspects of installing and maintaining an underground distribution line are substantially simpler than for a power/transmission line due to the reduced voltage carried by the distribution line, such as addressing heat generated by current carried through the conductor.

Several commenters indicated that the power lines through the East Kingswood Subdivision should be undergrounded. The lead agencies assume that the East Kingswood Subdivision is the housing development east of SR 267 and generally bound by Lake Vista Road at the north and Cambridge Drive at the south. The action alternatives evaluated several alignments in this area.

Under Alternative 1 (PEA Alternative), the 625 and 650 Lines would be upgraded, but would follow approximately the existing alignment. (Refer to Exhibit 3-2 in the EIS/EIS/EIR.)

Under Alternative 2 (Modified Alternative), both the upgraded 625 and 650 Lines would follow the existing 625 Line alignment. The span of the existing 650 Line that runs east-west through the East Kingswood Subdivision north of Canterbury Drive would be removed. However, the poles would be topped and left in place to support the existing underbuild (distribution lines, telecommunications lines, and/or cable lines placed on the same poles as the power lines).

Under Alternative 3 (Road Focused Alternative) and Alternative 4 (Proposed Alternative), both the upgraded 625 and 650 Lines would follow the existing 650 Line alignment. The alignment would run east-west through the East Kingswood Subdivision north of Canterbury Drive, but the existing 625 Line that currently extends north past Bristol Circle would be removed.

Alternative 3A (Road Focused Alternative with Double Circuit Option) is the only alternative that proposes a new power line alignment in this area. Under this alternative, both the 625 and 650 Lines would exit the Kings Beach Substation and follow Speckled Street to SR 267, which the line would parallel to Brockway Summit. Both the 625 and 650 Lines on the east side of the Kingswood East Subdivision would be eliminated, but the poles associated with the 650 Line would be topped and left in place to support the existing underbuild. The new double circuit power line would be located on the west side of the subdivision along SR 267.

As summarized above, undergrounding the 625 and 650 Lines was evaluated in the EIS/EIS/EIR but is not proposed in this area due to access restrictions that could result in extended outages, additional environmental effects anticipated as a result of undergrounding, and the absence of an identified significant environmental impact that undergrounding would mitigate. Although the construction cost for undergrounding is substantially greater than for aerial installation, cost was not considered as part of the rationale for eliminating this alternative from detailed evaluation in the EIS/EIS/EIR.

Master Response 3: Electromagnetic Fields

Several commenters expressed concern or requested clarification about the potential for the upgraded power lines and the relocated Kings Beach Substation to produce electromagnetic fields (EMF) in proximity to existing residences. The potential for EMF exposure is addressed in the Draft EIS/EIS/EIR in Section 4.10, Hazards and Hazardous Materials (please refer to pages 4.10-25 through 4.10-27) and Appendix D, Electric and Magnetic Fields Summary. The project incorporates design standards into all of the action alternatives to reduce the potential for exposure to EMF (please also refer to pages 3-26 and 3-27 of Chapter 3, Alternatives).

In 2006, CPUC updated its EMF Policy in Decision (D.) 06-01-042. The conclusions and findings within the decision included the following:

- ▲ The body of scientific evidence continues to evolve. However, it is recognized that public concern and scientific uncertainty remain regarding the potential health effects of EMF exposure, and
- ▲ It is not appropriate to adopt any specific numerical standard in association with EMF until we have a firm scientific basis for adopting any particular value.

The decision re-affirmed that health hazards from exposures to EMF have not been established and that state and federal public health regulatory agencies have determined that setting numeric exposure limits is not appropriate. The CPUC also re-affirmed that the existing “no-cost and low-cost” precautionary measures-based EMF policy (D. 93-01-013) should be continued. The CPUC has established EMF Design Guidelines (CPUC 2006) that describe the routine magnetic field reduction measures that all regulated California utilities must consider for new and upgraded transmission/power line and substation projects. In accordance with the Design Guidelines and CPUC’s D. 93-11-013 and D. 06-01-042, CalPeco will incorporate “no cost” and “low cost” magnetic field reduction steps in the proposed 625 and 650 Lines and associated substation facilities. These measures include:

- ▲ A standardized right of way width of 40-feet;
- ▲ Circuit attachment height of 40.5 feet above ground level; and
- ▲ Phasing of the power line circuits to maximize magnetic field reduction due to field cancellation.

At the substations, high current devices associated with the project upgrade would be centrally located towards the interior of the substation and away from the property line boundaries.

As noted in the Draft EIS/EIS/EIR, there is no agreement among scientists that EMF creates a potential health risk, and there are no defined or adopted NEPA, TRPA, or CEQA standards for defining health risk from EMF. The EMF at any single point is a function of many interrelated factors, including line resistance and height (which have a negative correlation with the presence of EMF at the ground level), and line load (which has a positive correlation). While a full accounting of existing and potential EMF at all residences in the project vicinity is not required to evaluate the project under NEPA, TRPA standards, or CEQA, the CPUC does require compliance with its EMF decisions and policies for all new and upgraded transmission/power lines and substations projects under its regulatory authority. The no cost and low cost measures incorporated into the proposed project are considered reasonable steps towards addressing potential health effects of EMF exposure.

Master Response 4: Electric Utility Rates

The issue of a potential increase in electrical service rates as a result of project implementation is outside the scope of the EIS/EIS/EIR as it is not an issue that results in a change in the natural and physical environment. However, many commenters expressed concern over an anticipated rate increase. It is not appropriate or possible in this document to speculate what the rate increase would be. As explained below, the process of rate setting is separate from project design and environmental review.

CalPeco (now Liberty Utilities) is a “public utility” under California law and thus the CPUC must approve any rates CalPeco intends to charge its customers. The CPUC does not authorize utilities to charge all customers the same rates for services. Rather, the CPUC has established different categories of customers (such as commercial or residential) and approves separate “tariffs” for the utility to provide service to the different classes of customers.

As a regulated public utility, CalPeco may receive a return on, and of, its prudently incurred capital expenditures, and may make a formal request to the CPUC seeking rate recovery for the capital costs of the 625 and 650 Electrical Line Upgrade Project. CalPeco would be allowed to receive rate recovery for the project costs only after any improvements or new infrastructure commence providing electric service (i.e., are “used and useful” in

CalPeco's provision of service to customers). The project is proposed to be built in three phases over a period of at least six to 10 years. It is expected, therefore, if the project receives the necessary approval that CalPeco may incur costs in phases, and may correspondingly seek CPUC approval for rate recovery in phases.

The CPUC requires that notice of requests for rate recovery be provided to various government officials and constituent groups, and publicly noticed through newspaper publication. CalPeco will be required to also notify its customers of the request through a bill insert. The CPUC's process will offer various avenues for public participation, including by consumer, environmental, and community advocates. The CPUC may conduct formal evidentiary hearings in which the public may present testimony and would have the opportunity to cross-examine witnesses from CalPeco and CPUC staff. The CPUC may grant cost recovery for any capital costs and associated expenses which it finds, based on the evidence in the record, are just and reasonable.

In sum, potential rate increases are not an environmental issue and it would not be appropriate to consider rate increases in the EIS/EIS/EIR due to the considerable speculation regarding future events and decision making needed to evaluate the issue.

Master Response 5: Project Alternatives

Several commenters outlined project alternatives that are different from the action alternatives analyzed in detail in the EIS/EIS/EIR. These include new infrastructure, such as new sources of power generation; energy conservation measures; and installing new power lines only between Truckee and Northstar; as well as upgrading different or fewer aspects of the North Lake Tahoe Transmission System. Many of these suggestions were evaluated and eliminated from detailed analysis in the Draft EIS/EIS/EIR (see Section 3.5, Alternatives Considered but Eliminated from Detailed Evaluation), or similar concepts were considered but not carried forward during early project development, based largely on their infeasibility or inability to meet the basic project objectives. Additional information on these alternatives is provided below, as well as responses to suggestions for new alternatives included in comments provided on the Draft EIS/EIS/EIR.

Under NEPA, TRPA, and CEQA regulations, an EIS or EIR must include a discussion of alternatives that address the potential impacts of the proposed project. (See 40 CFR Section 1502.14 and State CEQA Guidelines Section 15126.6.) The TRPA Code requires TRPA to study, develop, and describe alternatives to recommend courses of action for any project that involves unresolved conflicts concerning alternative uses of available resources. (See TRPA Code Section 3.7.1.) While the different agencies' regulations on this subject have different wording for this requirement, each is clear that an environmental analysis need not address every possible alternative (e.g., State CEQA Guidelines Section 15126.6(a), "An EIR need not consider every conceivable alternative to a project.") and only feasible alternatives that address the objectives of the proposed project need be considered in detail.

Study of potential long-term electric capacity solutions for the north Lake Tahoe area began in 1996, when the Sierra Pacific Power Company (which owned the North Lake Tahoe Transmission System at the time) prepared the North Tahoe Capacity Plan. Various planning and evaluation efforts have been conducted by Sierra Pacific Power Company and CalPeco since that time, as would be expected for a utility operating an electrical transmission and distribution system.

In 2012, Sierra Pacific Power prepared a Proponent's Environmental Assessment that included a project proposal originally developed through the North Tahoe Capacity Plan. The PEA Alternative was presented as the preferred alternative in the Notice of Preparation (NOP)/Notice of Intent (NOI) released for the CalPeco 625 and 650 Electrical Line Upgrade Project EIS/EIS/EIR in March of 2012. Three additional action alternatives and a subalternative (a variation on a primary alternative) were identified through the public scoping process that occurred between March 26 and April 25, 2012, coordination among the lead agencies, and as a result of initial environmental analysis. These four action alternatives are analyzed in detail in the Draft EIS/EIS/EIR. (Note that

through this process Alternative 4 (Proposed Alternative) was identified as the proposed project.) In addition to the action alternatives, the Draft EIS/EIS/EIR also discussed 12 other alternatives that were considered but eliminated from detailed evaluation in the document because they were either not feasible, were not consistent with the project purpose and needs/objectives, and/or did not have the potential to eliminate significant environmental effects. (See Chapter 3, Project Alternatives, pages 3-67 through 3-81 of the Draft EIS/EIS/EIR.)

Comments received on the Draft EIS/EIS/EIR included multiple suggested options or alternatives beyond the four action alternatives evaluated in detail in the document. Several of these are similar to, or derivatives of, the 12 alternatives considered but eliminated from detailed evaluation, and others are options not previously considered in the document. Each suggested alternative, or general concept for an alternative, is addressed below.

- ▲ Install a power line from Kings Beach Substation into the NV Energy Incline System. This alternative, which would involve constructing a new power line connecting the existing NV Energy Incline transmission system to the Kings Beach Substation, was suggested by commenters as a potential means to provide a new power source feeding into the North Lake Tahoe Transmission System that would provide more flexibility in system operations and reduce the need to implement the proposed 625 and 650 Line upgrades. This alternative was considered, but found infeasible in the Draft EIS/EIS/EIR primarily due to the different sizes and capabilities between the NV Energy system at Incline Village, Nevada and the North Lake Tahoe Transmission System. This new power line would require a new transmission corridor between Incline Village, Nevada and Kings Beach, California and would require the installation of very large and specialized pieces of equipment (e.g., phase shifters) at various substations to allow the two separate systems to interact and potential expansion of the substations where new equipment is installed. (See page 3-74 of the Draft EIS/EIS/EIR.) Additionally, such an interconnection with NV Energy would put additional reliance on a third party utility, which would make the power requirements in North Lake Tahoe secondary to the NV Energy needs in the event of an emergency. NV Energy has indicated that it will only accommodate CalPeco's customers in the Brockway and Kings Beach areas temporarily, in emergency cases where NV Energy has the power available, but not as a permanent solution to loading issues in the North Lake Tahoe area (see letter from NV Energy to Liberty Utilities at the end of this comments and responses section in Appendix P-2a).
- ▲ Install a new 120 kV power line between the Truckee Substation and the Northstar Substation. This alternative was suggested as a mechanism to increase power delivery capacity to a relatively high electrical demand area, with the desire to reduce the need to move power through the 625 and 650 Lines during system outages and therefore reduce the need for the proposed upgrade of these lines. While an improvement, this alternative would not address the reliability issues through the other portions of the North Lake Tahoe Transmission System. The system between the Kings Beach, Tahoe City, and Squaw Valley substations would remain at risk under certain single contingency conditions (i.e., when there is damage to the lines serving these communities, there may not be an alternative way to get power to the area and prolonged power outages could result). Under this alternative, the existing 625 and 650 Lines would not be modified and the new line would run either adjacent to the existing 650 Line corridor or in a new corridor.
- ▲ Install new generation (preferably renewable power). This alternative was suggested by commenters as a potential means to provide a new power source feeding into the North Lake Tahoe Transmission System to provide more flexibility in system operations and reduce the need to implement the proposed 625 and 650 Line upgrades. Generating incremental new power generally does not improve the reliability of power lines. To effectively reduce the load on the delivery lines during all potential line failure scenarios, new generation would be required at each substation, which could require substantial land use and permitting concessions from local jurisdictions, and would result in construction at seven different substations (including the Brockway Substation, which would be removed under the action alternatives analyzed in the Draft EIS/EIS/EIR).

For example, one of the largest load areas is Tahoe City. To reliably serve this area in the event power from the Truckee Substation is lost, a new generation station would have to be located within a 1-mile radius of the Tahoe City substation. Given the permitting constraints, questionable economics, CPUC rules limiting opportunities for utility ownership of generation, and environmental impacts of building and operating several new generation stations, the installation of generation at each substation is not considered a feasible alternative.

Additionally, renewable power, such as solar and wind generation, is not available on a continuous basis and may be unavailable during the time of actual need. Therefore, renewable energy power generation is unlikely to be an effective solution to the reliability constraints faced by the North Lake Tahoe Transmission System and additional power generation would likely be natural gas or diesel. Either natural gas or diesel fuel pipelines would need to be constructed to serve the generators, or the fuel would need to be delivered by truck on a regular basis and stored at the generation site.

- ▲ Utilize energy efficiency to offset the power needs in the basin. This alternative was suggested by commenters as a potential means to reduce or avoid the need to implement the proposed 625 and 650 Line upgrades, offering the concept that if existing and future energy demand were reduced, the capacity of the existing 625 and 650 Lines would be sufficient to provide electricity to the service area. CalPeco communicates energy efficiency program offerings with various types of customers (commercial, residential, income qualified). However, the utility has no ability to mandate participation, nor does the utility have the ability to influence the types of efficiency upgrades a customer might choose. The customer's choices may have little or no impact on CalPeco's system operation, especially if they are unrelated to peak load operations. Energy efficiency programs can aid load management, but do not address system reliability. Increasing efficiency is not an effective electrical planning tool because it is beyond the control of the utility and regulators.

In addition, programs authorized by CPUC must be financially feasible for the climate/region, the customer base, and the size of the utility. They must be cost effective in terms of energy savings for the dollars invested. For these reasons, CPUC has authorized other California utilities, such as PG&E, to conduct energy efficiency programs that vary substantially from those it has approved for CalPeco. All of the applicant's energy efficiency programs have been reviewed and approved by CPUC.

- ▲ Construct an Additional Line Outside the Lake Tahoe Basin. To minimize potential environmental effects within the Lake Tahoe Basin, comments suggested that a new line be constructed between the east and west legs of the North Lake Tahoe Transmission System outside the Basin (i.e., north of the existing 625 Line) that would support operation of the North Lake Tahoe Transmission Systems' overall loop configuration without the need to upgrade the 625 Line. Depending on the location of the outage, this may not provide single contingency reliability to the Tahoe City and Kings Beach areas. Constructing a new power line outside the Basin would result in many environmental effects similar to those within the Basin, and the benefits associated with abandonment of the existing 625 Line alignment would not occur. This alternative would result in a substantial net increase in miles of power line, power line right-of-way (ROW), and likely new accessway (depending on the selected alignment's proximity to existing roads).
- ▲ Implement Multiple Individual Options. Several commenters offered the suggestion that implementation of multiple individual options considered in the Draft EIS/EIS/EIR but eliminated from detailed evaluation could result in an alternative that would meet project objectives while eliminating or substantially delaying the need to upgrade the 625 Line. Combinations of options could include upgrading other portions of the North Lake Tahoe Transmission System, new power generation facilities, and energy conservation. As discussed above, each of these options individually was dismissed from detailed analysis in the Draft EIS/EIS/EIR either because they were not consistent with the project's purpose and needs/objectives, were infeasible, or would not eliminate significant environmental effects.

The 12 alternatives that were evaluated and eliminated from further consideration in the EIS/EIS/EIR include alternatives intended to replace the proposed project entirely and alternative methods for executing specific components of the project. As summarized below, there is no evidence that any combination of the dismissed alternatives would result in a feasible alternative that would be consistent with the project's objectives and would eliminate significant environmental effects. For more detail on these project alternatives, refer to pages 3-71 through 3-81 of the Draft EIS/EIS/EIR.

Alternatives intended to replace the entirety of the proposed project:

- ▲ Rebuild only the 650 Line. The existing 650 Line would be upgraded as described for the action alternatives. This alternative would provide some increased system capacity, but would not provide adequate long-term capacity to meet project goals. In the near future (estimated at some time in the 2020's), there would not be adequate capacity on the 650 Line to serve the system loop if the 132 Line were out of service (a single contingency event) (the 132 Line and other elements of the overall North Lake Tahoe Transmission System are shown in Exhibit 3-2 in the EIS/EIS/EIR). A critical element of providing this additional capacity would be the upgrade of the 625 Line.
- ▲ Operate the 629 Line at 120 kV. The 629 Line between the Squaw Valley Substation and the Tahoe City Substation has already been upgraded to 120 kV, but is still operated at 60 kV. Under this alternative, the east side of the North Lake Tahoe Transmission Line (i.e., the 650 Line) and the southern portion of the system (i.e., the 625 Line) would not be able accommodate the power normally transmitted by the 629 Line if the 629 Line is taken out of service. Therefore, this alternative would not meet the project's reliability objectives, and either the 625 and 650 Lines would have to be upgraded as proposed under the action alternatives or new lines would need to be constructed in roughly the same locations. (Note that operation of the 629 Line at 120 kV is proposed under the action alternatives.)
- ▲ Reconductor the 609 Line from Truckee to Squaw Valley. Upgrading the 609 Line (which generally parallels the 132 Line between the Truckee Substation and the Squaw Valley Substation) from 60 kV to 120 kV would create a 120 kV loop serving Squaw Valley. This would benefit the North Lake Tahoe Transmission System only if an outage were to occur on the 132 Line. Because it would not provide a strong, reliable source of electricity on the eastern side of the system, the eastern side of the North Lake Tahoe Transmission Line (i.e., the 650 Line) and the southern portion of the system (i.e., the 625 Line) would not be able accommodate the power normally transmitted by the 629 Line if the 629 Line were taken out of service. Therefore, this alternative would not meet the reliability objectives of the project. Either the 625 and 650 Lines would have to be upgraded as proposed under the action alternatives, or new lines would need to be constructed in roughly the same locations.
- ▲ Complete a closed 120 kV loop between the Incline Substation and the Kings Beach Substation. This alternative would establish single contingency reliability for the Kings Beach area by creating a loop on the eastern side of the North Lake Tahoe Transmission System. In addition to upgrading the 650 Line as described for the action alternatives, this alternative would install a new 120 kV power line between the Incline Substation and the Kings Beach Substation. Under this alternative, the 625 Line would not be modified. Therefore, the project objective of providing more reliable access to the 625 Line for operations and maintenance activities would not be achieved. It would be necessary to either move the 60 kV 625 Line closer to the Fiberboard Freeway or construct additional accessways to access the existing line. Further, as discussed above, this alternative is not feasible because it would place additional reliance on power from NV Energy's system.
- ▲ Utilize distribution backup for single-contingency outages. This alternative would establish a new distribution feeder line from the Truckee Substation to the Northstar Substation, which would decrease demand on the 650 Line. Although there would be additional capacity in the 650 line, it would not be

sufficient to accept the quantity of rerouted power that would be necessary during an outage elsewhere in the system. Therefore, upgrade of the 625 and 650 Lines, or construction of new lines that mirror their function along the southern and eastern legs of the North Lake Tahoe Transmission System, would still be required for this alternative to meet the project's reliability objectives.

- ▲ Utilize additional diesel generation. This alternative proposes construction of new diesel generation stations outside of the Lake Tahoe Basin and in proximity to existing substations (both inside and outside the basin). This alternative would permit greater power source flexibility, but would not address the capacity limitations of the existing 60 kV lines. The power line and substation upgrades proposed under the action alternatives would still be required to meet the project's reliability objectives. To avoid system upgrades, new generation would be required in connection with each of the seven substations in the North Lake Tahoe Transmission System, as discussed above. New generation facilities would be subject to significant regulatory constraints and would result in increased air emissions and other environmental effects associated with facility construction, operation, and maintenance (e.g., noise, fuel delivery and storage).
- ▲ Utilize reactive capacitance. Equipment (reactive capacitors) would be installed at each substation in the North Lake Tahoe Transmission System which could support an increase in the amount of power that can be transmitted over the existing lines. In addition to technical concerns related to harmonic tuning and reactivity, modeling (conducted for Sierra Pacific Power Company before CalPeco's purchase of the North Lake Tahoe Transmission System) shows that this alternative would only delay the need for the upgrade of the system described under the action alternatives. The delay is estimated to be in the range of 3 to 5 years depending on the rate of load growth.

Alternative methods for executing specific components of the project:

- ▲ Rebuild the 625 Line along its existing route. This is a variation of the proposed alignment of the 625 Line that assumes all other project components proposed under the action alternatives would be implemented. Please refer to Master Response 13 for an explanation of why rebuilding the 625 Line in its current ROW would not meet the project objective related to improved access.
- ▲ Submarine Cable Alternative. This is a variation of the proposed alignment of the 625 Line in which the new line between Tahoe City and Kings Beach would be routed under Lake Tahoe. This alternative assumes all other project components proposed under the action alternatives would be implemented. This alternative was not pursued because of the technical constraints identified with the complicated installation and repair process, and potential implications to system reliability.
- ▲ Install power lines underground. This alternative would install a significant portion of the 650 Line underground (in and along SR 267). To install the 625 Line underground, it would be relocated to the SR 28 ROW. This alternative would meet many of the project objectives, but would complicate line maintenance and repair, which could affect system reliability. (See Master Response 2 for more discussion about undergrounding power lines.)
- ▲ Relocate the Tahoe City Substation. This alternative would move the Tahoe City Substation as suggested in the 1994 Tahoe City Community Plan. This alternative is discussed further in Master Response 1.

Master Response 6: Project Need

Several comments identified concerns about whether the proposed 625 and 650 Electrical Line Upgrade Project is really needed. The discussion provided in Chapter 2, Purpose and Need, of the Draft EIS/EIS/EIR describes the basis for the project need, including peak electrical demand, projected growth, and appropriate contingency in

the event of an outage on a portion of the system. The following provides more detail about the need for the project.

The North Lake Tahoe Transmission System features a loop design, the advantages of which include the ability to redirect power flows around the loop if one segment is out of service, which improves system reliability. However, power can only be effectively redirected if there is sufficient capacity on the other parts of the loop to support the power flow being diverted in addition to loads already served by that line. The 60 kV 625 and 650 Lines are components of the North Lake Tahoe Transmission System and were installed in 1971 and 1959, respectively. These lines were engineered to address capacity requirements at the time of construction.

The applicant is required, pursuant to federal and state electric reliability standards, to ensure that the North Lake Tahoe Transmission System performs safely and reliably under normal and contingency conditions (i.e., when there is damage to a line). The North American Electric Reliability Corporation (NERC) oversees, develops, and enforces reliability standards of the bulk power system. Electric utilities across the United States and Canada must operate their power lines within the standards created by NERC or be subject to potentially substantial fines. As applied, NERC Reliability Standard TPL-002-0b requires the system to have the capability to supply peak loads at adequate voltage levels without overloading the system components while any one component out of service (referred to as a “single contingency” or “N-1”). Although CalPeco’s North Lake Tahoe Transmission System does not incur peak load levels at all times, it must be capable of maintaining service during periods of maximum demand. (See page 2-1, Section 2.1.1, of the Draft EIS/EIS/EIR.) In addition to NERC standards, California utilities are subject to the Reliable Electric Service Investments Act, which establishes as the policy of the state that each electrical corporation operate its electric distribution grid in its service area in a safe, reliable, efficient, and cost-effective manner; and that it continue to make prudent investments to protect the integrity of the electric distribution grid (California Public Utilities Code Section 399.2[a][1] and 399[c][1]).

CalPeco proposes to upgrade the North Lake Tahoe Transmission System to comply with national and state electric reliability and safety standards. According to CalPeco, the available information and modeling indicates that the existing system cannot provide single-contingency reliability during certain load levels, even with back up generation being provided by the Kings Beach Diesel Generation Station. The North Lake Tahoe Transmission System is also experiencing demands at, or in excess of, design capacity, which heats the equipment and weakens it over time. (See Chapter 2, Purpose and Need, of the Draft EIS/EIS/EIR [pages 2-3 through 2-5].) CalPeco states that, if this project is not constructed, the North Lake Tahoe loop system would operate at risk of overheating and damaging the existing lines, possibly causing large scale and extended outages and/or overheated conductors which increase fire danger. In these instances, CalPeco’s current emergency response options would be limited to running the diesel backup generators in King Beach and/or instituting rolling blackouts.

The Kings Beach back up diesel generators can supply up to 12 megawatts (MW) of power to the system. This option is limited by the local air district’s permitting restrictions, which limits the diesel generators to a finite number of operation hours in any one calendar year. The other option is instituting rolling blackouts at substations throughout the area. These outages would last approximately 2 hours per circuit and rotate through the service area during the critical peak load times.

CalPeco states that its 650 Line is one of the weakest sections in the North Lake Tahoe Transmission System due to its conductor size and capacity rating and the demand associated with the line, and is thus the highest priority for upgrade. Because of its capacity limitation, the 650 Line cannot accommodate additional load if required during an outage on another part of the system. If the electrical load exceeds the rating of the conductor, the line could fail resulting in extended outages. The wire size and capacity of the 650 Line between the Truckee Substation and the Kings Beach Substation are insufficient to handle the amount of power that is currently required on peak demand.

According to CalPeco, the most recent example of peak demand in which the lines exceeded rated capacity was from December 20, 2012 through January 9, 2013. During this period, the 650 Line reached 102 percent of rated capacity. During this same period, the 629 Line (which runs from Squaw Valley to Tahoe City) was loaded to 40 percent of rated capacity to provide power to the Tahoe City area. However, had there been an outage along the 629 Line during this peak demand period, power would have had to have been redirected to Tahoe City via the 650 and 625 Lines, with the 650 Line already carrying power in excess of its rated capacity. Had this scenario occurred, even with the assistance of energy deliveries from NV Energy via Incline and the use of the Kings Beach Diesel Generating station, CalPeco would have had to shed load, imposing rolling black outs that would mean loss of power to residential and business customers, as well as public safety operations such as street lights and traffic lights. CalPeco contends that this type of system management does not comply with the applicable federal and state reliability standards.

In order to assure the agency and the public of the need for this project, TRPA, USFS and CPUC engaged a qualified third party to review CalPeco's planning approach. The agencies asked the independent consultant to review CalPeco's planning studies and justifications to determine CalPeco's statement of need met reasonable and prudent electric planning principles. Paul Scheuerman, who is a licensed electrical engineer with 45 years of experience in the field of long and short term electrical power planning, provided an independent assessment of the data and documentation supporting the need for certain upgrades to the North Lake Tahoe Transmission System as well as the reasonableness of the project to meet said need. Based on his review, Mr. Scheuerman concluded, "the proposed rebuilding, reconductoring of lines and energizing the North Lake Tahoe Transmission System at 120 kV, with the exception of the 609 line, represents a reasonable long term approach to solving the current North Lake Tahoe Transmission System problems." (Mr. Scheuerman's report is attached as Appendix P-2b.) Based on CalPeco's information and Mr. Scheuerman's review, the lead agencies may reasonably conclude that proposed project is needed to address safety and reliability concerns associated with the North Lake Tahoe Transmission System.

After the close of the public comment period on the Draft EIS/EIS/EIR, a letter was received from Thomas A. Besich, who was retained by the North Tahoe Citizen Action Alliance (NTCAA) to provide a technical assessment of various elements of the 625 and 650 Electrical Line Upgrade Project, including studies and analyses supporting the determination of project need. Although the letter was received on April 28, 2014, more than three months after the close of the public comment period, the lead agencies determined that a response could be informative to agencies, the public, and decision makers. The Besich letter and associated response, which address various aspects of project need, are provided in this comments and responses appendix as Letter 57.

In response to the Besich letter, Paul Scheuerman was asked to comment on the timing of the needed system upgrades. Mr. Scheuerman's review of a system analysis addendum prepared by Z-Global in 2014 indicates the need to implement Phase 1 of the project (primarily reconductoring the 650 Line as described in Section 3.3.6, Common Processes of the Action Alternatives, of this final EIS/EIS/EIR) as soon as possible. With the loss of the 629 line and loads at or above 86 MW, sections of the 650 Line would overload as well as result in low voltages in the Kings Beach and Tahoe City areas. With the 650 Line reconductored, system modeling indicates that Phase 2 of the proposed project should be completed when system demands reach 89 MW. Phase 2 primarily consists of conducting improvements at the North Truckee, Northstar, and Kings Beach substations and decommissioning the Brockway Substation. With an estimated system load growth (i.e., growth of service area electricity demand) of approximately 1 MW per a year (the estimate used in the Z-Global addendum), it is proposed that Phase 2 should be completed by 2016. Phase 3 of the proposed project consists of rebuilding of the 625 Line and all remaining project elements (e.g., completing remaining substation improvements). The system modelling indicates that construction of this final phase is necessary when demand reaches 100 MW. Continuing with the 1 MW per year load growth estimate used in the Z-Global analysis, completion of Phase 3 should occur by 2027. However, construction could be required sooner or later depending on the actual rate of load growth.

Master Response 7: Growth Inducing Impacts

Several comments express concern about future development that could be served by the increased capacity provided by the 625 and 650 Line upgrades. In the context of an environmental impact analysis, removing an obstacle to growth, such as providing additional wastewater treatment capacity where existing capacity is limiting opportunities for development, is considered a growth inducing impact. Growth inducing impacts are addressed in Section 5.5, Growth Inducing Impacts, of the Draft EIS/EIS/EIR (pages 5-4 through 5-7). The following master response supplements the information provided in Section 5.5 to respond to comments provided by agencies, organizations, and individuals.

Implementation of the 625 and 650 Electrical Line Upgrade Project would result in a system with improved reliability and increased capacity. This increased capacity would be necessary to meet the project objectives and would not directly result in growth in that approval of the transmission line upgrade project would not result in approval of any land use changes or specific developments. Because the proposed project would increase capacity to meet existing demand and address an existing capacity shortfall (see discussion of the 2012/2013 peak demand event above in Master Response 6 addressing project need), it could be argued—based on NEPA case law—that it is not growth inducing. In *Morongo Band of Mission Indians v. Federal Aviation Administration* (9th Cir. 1998) the court held that “...the project was implemented in order to deal with existing problems; the fact that it might also facilitate further growth is insufficient to constitute a growth-inducing impact under 40 C.F.R. § 1508.8(b).” Similarly, in *City of Carmel-by-the-Sea v. United States Department of Transportation* (9th Cir.1997), the court acknowledged that a planned freeway “may induce limited additional development,” but reasoned that it was “the existing development that necessitate[d] the freeway.” The construction of the proposed freeway would “not spur on any unintended or, more importantly, unaccounted for, development because local officials have already planned for the future use of the land, under the assumption that the Hatton Canyon Freeway would be completed.” In the project area for the 625 and 650 Electrical Line Upgrade Project, local officials have planned for future use of the land under the assumption that sufficient electrical transmission infrastructure would be in place to provide consistent reliable service to the utility’s customers. However, because the 625 and 650 Electrical Line Upgrade Project would make available electrical transmission capacity in excess of immediate need, growth inducing effects are evaluated and disclosed in the EIS/EIS/EIR to provide a full accounting of potential environmental effects to the public and decision makers.

The Draft EIS/EIS/EIR acknowledges that the proposed upgraded power lines would improve the utility’s ability to accommodate new growth that is approved by the applicable local planning agencies. Section 5.5, Growth-Inducing Impacts of the Proposed Project, discusses changes in the pattern of land use, population density, and growth rate that could indirectly result from the project.

The relevant adopted planning documents (including the established general plans of Placer County, Nevada County, and Town of Truckee; Martis Valley Community Plan; and TRPA Regional Plan) generally define the location, type, and intensity of growth in the area. These types of land use plans are the primary means of regulating development and growth in California. Utilities and other service providers in the Lake Tahoe Basin and the Truckee and North Tahoe regions plan and upgrade their facilities based on growth projections provided by local government agencies and their own analyses. For the portions of the project area outside of the Lake Tahoe Basin, growth is planned and regulated by the general plans (and component plans, such as community plans) and zoning regulations of Placer County, Nevada County, and Town of Truckee. Within the Lake Tahoe Basin, land uses and development on public and private lands are under the jurisdiction of TRPA and are subject to growth controls that stem from a finite number of development rights, residential allocations, and commercial floor area. Existing TRPA goals, policies, and implementation measures are intended to manage growth and development in accordance with the requirements of the Tahoe Regional Planning Compact to establish a balance between the natural and built environments. The Lake Tahoe Basin is nearing a build-out condition; approximately 90 percent of privately-owned parcels in the region have been developed (TRPA 2012).

Table MR7-A summarizes the characteristics of planning documents guiding future development that would be directly served by the 625 and 650 Electrical Line Upgrade Project. The Nevada County General Plan is not included because only a small portion of the overall plan area is potentially served by the project. The Town of Truckee General Plan and specific plans within the Town of Truckee are not included because a majority of the town is provided electrical service by the Truckee Donner Public Utilities District and not CalPeco. Most of the project area that would be served by the electrical line upgrade is within Placer County; that portion within the Tahoe Basin is subject to the Tahoe Regional Plan, and most of the area outside the Basin is subject to the Martis Valley Community Plan, a part of the Placer County General Plan.

Table MR7-A. Characteristics of Local Land Use Plans Directly Served by the Elements of the 625 and 650 Electrical Line Upgrade Project		
Plan Name, Proponent	Brief Description	Population Increase/Number of Units Proposed
Regional Plan, TRPA	The Regional Plan describes the needs and goals of the Region and provides statements of policy to guide decision making as it affects the Region's resources and remaining capacities. It consists of the Goals and Policies (which identifies regional goals), Land Use Maps, Code of Ordinances (regulations and measures to implement the Goals and Policies), and plans for specific areas.	5,900 year-round population increase in the Regional Plan area by 2035 due to new development.
	To implement the portion of the Regional Plan in Placer County, the County is undertaking its community plan update and examining specific policies, design standards, and zoning to support the Regional Plan.	Community Plan update in preparation with specific development proposals not yet confirmed. However, as of May 2014, Placer County is reported to have the following remaining development potential: 90 residential bonus units; 57 residential allocations; 25 tourist accommodation units; and 76,600 square feet of commercial floor area. ¹
Martis Valley Community Plan	The Martis Valley Community Plan (MVCP), in combination with the Placer County General Plan, is the official statement of Placer County guiding the development of the Martis Valley area to at least the year 2020. The MVCP, adopted in 2003, covers the approximately 26,000 acre portion of Martis Valley in Placer County. Development contemplated in the plan includes larger proposals such as the continued expansion of Northstar-at-Tahoe and development on the Waddle Ranch property, as well as smaller areas of proposed development. (Note: Revisions to the MVCP are proposed by the Martis Valley West Parcel Specific Plan project, as described below.) Proposed uses include housing of various densities, commercial and retail, winter recreation facilities, new and continued expansion of golf and other summer recreation facilities, trails and open space, wildlife habitat, and timberland.	Estimated maximum holding capacity in the plan area of approximately 8,600 dwelling units Projection of 1,465 to 2,965 additional dwelling units by 2020 above the 1,935 units present in 2003 (total of 3,400 to 4,900 dwelling units by 2020).

Table MR7-A. Characteristics of Local Land Use Plans Directly Served by the Elements of the 625 and 650 Electrical Line Upgrade Project		
Plan Name, Proponent	Brief Description	Population Increase/Number of Units Proposed
Martis Valley West Parcel Specific Plan (an amendment to the Martis Valley Community Plan)	The Martis Valley West Parcel Specific Plan consists of a Specific Plan and TRPA Area Plan (both in preparation) covering a portion of the overall MVCP area. The Specific Plan area consists of two separate components, the East and West Parcels, which are located on either side of SR 267. The proposed project would shift 760 units and 6.6 acres of commercial from the currently allowed development on the East Parcel to the West Parcel. The project would permanently retire 600 allowed units. The 670 acres of the East Parcel currently zoned for development would be redesignated Forest, and a conservation easement would be placed over the entire 6,376 acres, or it would be sold fee simple to conservation groups. As a result, no development would occur on the East Parcel.	760 residential units with a mix of single family homes, townhomes, cabins, multi-family residences, and condominiums. 6.6 acres of commercial uses
Northstar Mountain Master Plan, Northstar Resort	The Northstar Mountain Master Plan proposes new ski terrain, lifts, skier facilities and additional recreational opportunities, as well as upgrades to existing ski terrain and facilities. The plan was developed using environmental principles and management strategies established in Northstar's Habitat Management Plan.	No residential units. New snow sport and mountain recreation facilities.
Village at Squaw Valley Specific Plan, KSL Capital Partners	The Village at Squaw Valley Specific Plan addresses comprehensive development and enhancement of approximately 85 acres of the previously developed Squaw Valley Village and the roughly 9-acre East Parcel. The Village area is planned to provide a year-round mountain resort with a diversity of resort residential lodging options, amenities, and recreational services. The East Parcel is proposed for employee housing, peak day parking, and shipping and receiving. The plan also includes the preservation of open space and habitat restoration/enhancement of Squaw Creek.	Up to 850 resort residential lodging units supporting up to 1,493 bedrooms. Lodging units would be a mix of hotel, condo hotel, and fractional ownership cabin. Full time residents are not anticipated. Approximately 300,000 square feet of ski services, amenities, common areas, restaurant, and retail. Employee housing
<p>1: Source: TRPA 2014.</p> <p>Note: Development in the Tahoe Basin is managed by TRPA through a system of development commodities, including residential development rights, residential bonus units, tourist accommodation units, and commercial floor area, all of which are capped. The values reflected for Placer County include those available across all of Placer County's community plan areas.</p>		

As shown in Table MR8-A, land use plans for areas to be served by the proposed project include approximately 1,600 residential/lodging units plus additional employee housing units, several acres of commercial uses, significant snow sport and other recreational facilities, and habitat preservation/restoration/enhancement components.

Another mechanism to identify future development that could be served by, or benefit from the 625 and 650 Electrical Line Upgrade Project is to refer to projects identified in Table 4.1-2 in the Draft EIS/EIS/EIR in Chapter 4, Affected Environment, Environmental Consequences, and Mitigation Measures. This table lists foreseeable/probable future projects included in the evaluation of cumulative impacts in the EIS/EIS/EIR. Several of the projects are residential or resort-type developments (for example cumulative projects 1, 2, 3, 4, 5, 8, 12, 14, 16, 23, 25, and 27). Based on review of these projects, growth attributable to foreseeable future projects is

generally anticipated in the Town of Truckee, Martis Valley, Northstar, Homewood, Crystal Bay/North Stateline, Alpine Meadows, and the Olympic Valley. Although a majority of the Town of Truckee is provided electrical service by the Tahoe Truckee Donner Public Utilities District, the remainder of these projects would likely receive electrical service from the North Lake Tahoe Transmission System or benefit from increased reliability provided by the proposed project.

The proposed 625 and 650 Electrical Line Upgrade Project would improve the applicant's ability to accommodate planned growth authorized by local land use agencies. Impacts commonly associated with growth include increased demand on public services and infrastructure, increased traffic and noise, degradation of air and water quality, degradation or loss of plant and animal habitat, and conversion of open space to developed uses. Projects that would be served by, or would benefit from the proposed electrical line upgrade would undergo separate environmental review and approval by the applicable land use agencies. For some of the projects identified in the cumulative analysis, this review is in process and it is possible to approximate anticipated effects.

For example, the EIR for the Truckee Railyard Master Plan identified unavoidable significant environmental impacts associated with long-term air emissions, roadway level of service, exposure of persons to railroad noise, and removal of culturally significant structures (Town of Truckee 2009). The Joerger Ranch Specific Plan (Town of Truckee 2013) and Northstar Mountain Master Plan (Placer County 2013) would both result in significant and unavoidable impacts to air quality.

Although the proposed project may serve or otherwise benefit the implementation of plans and development of projects identified above, as stated in Draft EIS/EIS/EIR (see Section 5.5.5, Growth as a Result of Increased Availability of Electrical Power), the provision of electricity is generally not considered to remove an obstacle to growth, nor does the availability of electrical capacity by itself normally ensure or encourage growth within a particular area. Other factors such as economic conditions, land availability, population trends, availability of water supply or sewer services, and local planning policies have a more direct effect on growth.

Without increased system capacity, future growth in electrical demand could eventually result in increased potential for, and frequency of, service interruptions and the possibility of extended service interruptions. Absent regulatory requirements related to reliability of service, it can be assumed that the unreliable nature of the electrical power supply would eventually limit future growth in the service area. Therefore, implementation of the proposed project could remove a potential future limitation to growth and would be considered growth inducing. However, the timing, nature, and extent of this limitation to growth is speculative, and regulatory requirements related to reliability of service would force system improvements well before outages become commonplace. CalPeco's proposed 625 and 650 Electrical Line Upgrade Project would only accommodate planned growth authorized by local land use agencies and, like most electrical utilities, CalPeco would be responding to growth planned and implemented by others and would not be instigating growth.

Finally, the proposed project does not involve an expansion of the service area; therefore, the project would not have the potential to generate growth or change the pattern of land use by providing electrical service to an area that does not currently have electrical service.

Master Response 8: Characteristics of Project Infrastructure

Several comments request details regarding the number poles, dimensions of poles, number of lines, and similar project design elements. The exact height of each pole along the project alignments, type of pole (self-supporting, guy-wire, foundation), and exact number of poles is determined by engineering requirements that take into consideration the site specific soil conditions, terrain, line voltage, conductor spacing, presence of other utilities (e.g., communication lines) on the same pole (underbuild), and vegetation among other factors. This level of detail is not available or necessary to evaluate the project under NEPA, TRPA regulations, or CEQA.

The analysis in the EIS/EIS/EIR was conducted using resource data collected within a study corridor for each alternative sufficient to describe baseline environmental conditions, available information on the project design and construction and operation details developed by the applicant, and reasonable assumptions as to what the project and alternatives would encompass. Planning and environmental analysis documents, unlike permitting documents, are typically based on more general design information, in part so that the planning and environmental review process can influence the details of the project design. This EIS/EIS/EIR uses an approach of assessing impacts based on the best information available and where necessary, providing appropriate mitigation that can accommodate the future development of a more detailed project design (e.g., methods to avoid impacts where feasible, mechanisms to minimize impacts if avoidance is not possible, and processes for compensating for unavoidable effects if they occur). Details such as the precise number of poles, the exact dimensions (height, diameter), and the type of support and foundations for each pole will be determined after a final alternative is selected and more detailed surveys and engineering can be completed for the selected alignment.

As described on page 3-26 in Chapter 3, Project Alternatives, of the Draft EIS/EIS/EIR, the new steel poles would be approximately 7 to 12 feet taller than the existing wooden poles, which are between 48 and 80 feet above ground surface. On average, pole spacing would be 300 feet apart. The diameter of the existing wooden poles ranges from 13 inches to 16 inches. The diameter of the new poles would range from 15 inches to 19 inches at the base for poles buried in the ground.

Self-supporting poles may be used where there would not be the option to use guy wires (e.g., where there are existing structures next to the site) or where conditions would not be suitable to adequately bury the pole base. The diameter of the self-supporting poles would vary based on whether the alternative calls for a single circuit, double circuit, if there is underbuild, and other factors. Self-supporting poles would be mounted on a concrete foundation, which would have a 3 to 6 foot diameter. These foundations typically extend above the ground surface to a height of 6 to 12 inches, but there could be site-specific circumstances where up to 2 feet of height would be required. The diameter of the self-supporting poles could be as much as 4.5 feet at the base where they are attached to the concrete foundations.

Generally, the number of lines (i.e., conductors) on the new poles would remain the same as are on the existing poles, except in the case where the poles are double circuited (two power lines on the same structure), or where underbuild would remain on existing poles.

Because CalPeco has committed to implementing the applicant proposed measures (APMs), they are considered part of the project description. Implementing APMs would be included in permit conditions required by the USFS, TRPA, and CPUC. APM SCE-2 requires use of self-weathering dark brown steel poles, and APM SCE-3 requires use of non-specular conductors that would reduce new sources of glare.

Table MR-8-A provides a summary comparison of characteristics of existing lines and poles with proposed project.

Table MR8-A Characteristics of Existing and Proposed Infrastructure		
Characteristic	Existing	Proposed
Pole Height	48 to 80 feet tall	55 to 92 feet tall
Pole Diameter	13 to 16 inches	15 to 19 inches at base buried in ground (7 to 10 feet deep) w/guy wires as needed. If guy wires cannot be used and where base cannot be buried; Self-supporting pole: pole diameter up to 4.5 feet at base w/concrete foundation 3 to 6 feet in diameter;
Pole Materials/color	Wooden, weathered	Steel, rusting to brown

Table MR8-A Characteristics of Existing and Proposed Infrastructure		
Characteristic	Existing	Proposed
Pole Spacing	Generally 300-foot spacing	Spacing generally same as existing, with exceptions; new pole location would generally be within 10 feet of existing pole location. Realigned lines would generally have 300-foot spacing.
Underbuild	Underbuild on existing lines	Transferred to new poles; with exceptions where realignment requires underbuild to remain on existing poles to serve nearby land uses-varies with alternative. Alt 2 has the greatest number of existing poles to remain.

Master Response 9: TRPA Scenic Thresholds

Several comments expressed concern over the visibility of project elements from local scenic highways and whether applicable TRPA Scenic Threshold Ratings could be maintained. Portions of the project are within the TRPA-designated scenic highway corridors of SR 89, SR 28, and SR 267, as stated on page 4.4-9 of the Draft EIS/EIS/EIR under Scenic Standards. TRPA Code Section 66.1.4, Roadway and Shoreline Travel Routes, states that the “the project shall not cause a decrease in the 1982 roadway or shoreline travel route ratings...” The environmental threshold standards for scenic resources along roadway and shoreline units are described starting on page 5-26 of the Draft EIS/EIS/EIR. Under Alternative 1 (PEA Alternative) and Alternative 3 (Road Focused Alternative), Segment 650-2 would be visible within Roadway Travel Unit 41—Brockway Summit. The referenced text on Page 5-26 should also identify Alternative 4 (Proposed Alternative) as being visible within Roadway Travel Unit 41 – Brockway Summit. The text has been modified to reference Alternative 4. The threshold discussion concludes that “The visual presence of the action alternatives could negatively affect one or more of the composite rating subcomponents which include unity, vividness, variety, and intactness. This in turn would cause a reduction in the scenic quality ratings.”

APM SCE-7 requires that replacement poles for the 650 Line (in the case of Alternatives 3 and 4, both the 650 and 625 Lines) from Brockway Summit southward will be moved back from the roadway into the forest to eliminate or substantially reduce their visibility from the highway within the Lake Tahoe Basin, as compared to the existing 650 Line, without causing new visual impacts from tree removal or construction of access ways that would be required to erect and maintain the line (see Exhibit 4.4-24, 650 Setback Alignment of APM SCE-7).

As noted in the discussions for Impact 4.4-2 (Alternatives 1, 3, and 4), integration of APM SCE-7 into project design would prevent adverse scenic impacts from increased visual exposure of the power lines from sensitive locations because the rebuilt power lines would be less conspicuous than the existing lines. By reducing the amount of manmade features that would be in view from TRPA Roadway Travel Unit 41 – Brockway Summit, the potential for reductions in adopted TRPA Scenic Threshold Ratings would not only be avoided, the composite score of this Roadway Travel Unit would likely improve, resulting in a beneficial scenic effect. Three additional visual simulations portraying the APM SCE-7 setback along SR 267 have been included in this Final EIS/EIS/EIR and are provided in Section 4.4, Scenic Resources, as Exhibits 4.4-13A, 4.4-13B, and 4.4-14A. These simulations show a scenario where the APM SCE-7 setback is implemented, but the existing wooden poles remain to support communications and electrical distribution lines currently on the poles, and the top portion of the poles that formerly held the 650 Line are removed. Under this scenario, where the bottom portion of the existing wooden poles remain, the APM SCE-7 setback still results in improved scenic quality in this portion of the SR 267 corridor relative to existing conditions.

Similarly, screening of the Tahoe City Substation, as described in APM SCE-5, would prevent the proposed project from adversely affecting the current attainment status of Roadway Travel Unit 14 – Tahoe Tavern. The evaluation of scenic effects of the Tahoe City Substation, views of the substation from SR 89, and effects related to Roadway Travel Unit 14 are provided in the discussions of Impact 4.4-2, Section 4.2 Aesthetics, in the Draft EIS/EIS/EIR.

Analysis of scenic issues is also prominent in responses to Comment Letter 23 from the Northstar Property Owners Association (e.g., views from SR 267) and Comment Letter 24 from the League to Save Lake Tahoe (e.g., views from the surface of Lake Tahoe).

Master Response 10: Consistency with Kings Beach and Tahoe Vista Community Plans

Two community groups submitted comments that called into question the apparent omission of the King Beach and Tahoe Vista Community Plans from the land use consistency analysis. As discussed below, consistency with these plans was not evaluated because they are not applicable to the project.

The Kings Beach Community Plan applies to the downtown Kings Beach area, generally bounded on the north by Rainbow Avenue and on the south by Lake Tahoe. The Kings Beach Community Plan Industrial Area applies to the area defined by the block of parcels north of Speckled Avenue, Cutthroat Avenue to the south, Secline Street to the west, and a few parcels east of Coon Street.

The Kings Beach Community Plan goals and policies apply within the boundaries of the community plan, and would not apply to the Kings Beach Substation or connecting power lines, which would be located outside of both the Community Plan area, and the Community Plan, Industrial Area (see Exhibit 4.2-1 in the Draft EIS/EIS/EIR). The existing Brockway Substation is within the Kings Beach Community Plan, Industrial Area, and is in an area designated as mixed use. It is the primary goal of the Community Plan that the commercial properties in the area be visually upgraded. Given that under the proposed project the Brockway Substation would be decommissioned, the project would not conflict with this goal. Any subsequent reuse of the site by CalPeco would be subject to applicable approvals from TRPA, the CPUC, and Placer County.

All project facilities are located outside of the Tahoe Vista Community Plan area. Since no construction would occur within the boundaries of the Tahoe Vista Community Plan, a consistency evaluation is not warranted.

Master Response 11: Looped Power Line Configuration

Several comments offered alternative project features or designs suggestions that would not support continued operation of the North Lake Tahoe Transmission System existing loop configuration, or that would not support the desired level of reliability in the system expressed in the project objectives. This Master Response generally describes the elements and function of a looped power line configuration and provides further explanation of why the applicant maintains that a loop is integral to project design.

Power lines are typically engineered in a looped design instead of a radial design (i.e., a hub from which power radiates out in one direction). A radial design moves power away from a single point along a single pathway/line. A failure along the single line can critically impact customers because there is no alternative pathway to provide power to customers “downstream” from the failure. Power cannot be delivered downstream of the failure until the failure is repaired.

The advantage of a looped system (such as the current configuration of the North Lake Tahoe Transmission system) is that if a line becomes non-functional (e.g., treefall breaks a line, car impacts a pole, equipment failure), the utility can redirect electricity around the loop to continue providing power to both sides of the non-operable segment. This feature of a looped design allows the system to continue to provide service to as many customers as possible even though a line within the system is not functioning. These same characteristics also allow for the system to remain in operation during maintenance on portions of the loop. A portion of the system can be de-energized for maintenance while power is delivered to both sides of the de-energized segment through the loop. Under a radial system, if any portion of the line is de-energized, all customers downstream of the de-energized segment would not receive power. This is especially critical for higher voltage supply lines that serve large numbers of customers on a community, city, or regional scale.

For a loop to operate properly during a failure, the lines must have the capacity to carry power in excess of “normal” conditions. In a highly simplified hypothetical scenario, a loop may consist of three lines, A, B, and C, in a triangular configuration. Power enters the system at the peak/top of the triangle; Line A forms the left side of the triangle, Line B forms the right side of the triangle, and Line C forms the base of the triangle. If there is a failure in the middle of Line A, the top portion of Line A may continue to receive power directly from the power source at the peak of the triangle. However, Line B must now carry sufficient power and sustain sufficient voltage to serve all customers along Line B, all customers along Line C, and the bottom half of Line A. Line C would not experience as significant an increase in load as Line B, but must still carry sufficient power to serve all customers along Line C and the customers along the bottom half of Line A.

During the period of single failure in a looped system, the system then operates as a radial system until the failure is repaired; power enters the system at the source point and can only flow in one direction down the remaining line segments. If a second failure were to occur before repairs are complete, then all customers downstream from the failure would not receive power. Therefore, during an N-1 failure, it is particularly important to not risk damage to lines with overloading as a second failure (an N-2 failure) resulting from overloading could leave a substantial number of customers without power.

The volume of power that a line in a looped system may need to carry during an N-1 failure may be reduced if additional power sources are available. In the scenario above, where Line A fails near the top of the line, if an additional power source were available near the Line B/Line C intersection, then that power could be put into Line C to move counter-clockwise through the loop and Line B would need to carry that much less power from the primary power source at the top of the triangle. This is one of the functions of the Kings Beach Diesel Generators in the North Lake Tahoe Transmission System. During line failures, or peak demand periods, power provided to the system at Kings Beach can reduce the amount of power that must be carried from Truckee through the 650 Line and the 609, 132, and 629 Lines serving Squaw Valley and Tahoe City. However, the Kings Beach Diesel Generators cannot be relied on as a permanent solution to address peak power demands and line failures on the North Lake Tahoe Transmission System because air quality permits place annual limitations on the amount of hours the facility can be operated (as described on page 3-11 of the Draft EIS/EIS/EIR).

An outside source of power can also be other transmission systems connected to the loop. It is the case for the North Lake Tahoe Transmission that it is connected to other transmission systems operated by NV Energy. However, these connections cannot be relied upon to consistently support the North Lake Tahoe Transmission System. As indicated in a letter from NV Energy to Liberty Utilities dated February 19, 2014 (provided at the end of this comments and responses section in Appendix P-2a), NV Energy reminds Liberty Utilities that NV Energy will provide electricity to the North Lake Tahoe Transmission System via the Incline Village Substation on an “emergency” and “as available basis.” As is appropriate for a utility, their existing customer base must receive priority for electricity deliveries, and only if there is additional power available would it be transferred to Liberty Utilities. As stated in the letter “Liberty Utilities should not consider our prior ability to assist as an indication of our future ability to provide any permanent solution for Liberty’s loading issues in the North Lake Tahoe area.” It is not appropriate to expect consistent power deliveries from other utilities on an as needed basis (unless such as business or contractual relationship has been established), and therefore, relying on this approach does not provide the system reliability required as part of the proposed project.

The proposed project would upgrade the power lines and corresponding substations in the North Lake Tahoe Transmission System loop from 60 kV to 120 kV (which is the next incremental increase in power line voltage class). This increase is needed to provide sufficient capacity to route power through the loop during multiple possible N-1 failure scenarios and provide continuous power to as many customers as possible. The increase in capacity takes into account power available from the Kings Beach Diesel Generation Station and from connections to other electrical systems. The system upgrade is also needed to bring the North Lake Tahoe Transmission System into full compliance with state and federal reliability requirements.

Several comments provide suggestions for alternative looped systems. Project alternatives are addressed separately in Master Response 5.

Master Response 12: Property Values

Residents in the project area expressed concern that the proposed upgrade of the 625 and 650 overhead power lines may decrease property values. An evaluation of potential changes to property value is not required by NEPA, TRPA, or CEQA standards because it is not an impact to the natural or physical environment. If property values were to be considered, the potential for the proposed upgrade to reduce the real estate value of residences near the existing lines is too speculative for evaluation in the EIS/EIS/EIR.

The body of available research is inconclusive as to whether property values would increase, decrease, or remain unchanged by the proposed project. When buying a property, several factors are considered (such as school districts, community services, scenic beauty, recreational opportunities, and commute distances). The relative importance of each of these factors varies among individuals. Likewise, the importance of nearby power lines will vary among prospective buyers and is largely subjective. Although some prospective buyers may consider power lines a visual nuisance and perceive potential health risks, other buyers do not (Pitts and Jackson 2007). In fact, the increased electrical reliability may be considered a factor that increases general property values.

A 2007 review of market interviews and academic literature concluded that “the impacts of power lines on residential properties are varied and difficult to measure.” The effect of power lines on property values is dependent on many factors, including market conditions, location, and personal preference (Pitts and Jackson 2007).

According to the applicant, CalPeco has undertaken a careful review of existing utility features and possible upgrade designs near residences. CalPeco is will commit, to the extent possible, to locating poles and power lines along the edges of property boundaries and away from residential dwellings. In addition, per APM SCE-2 and SCE-3, CalPeco has committed to using self-weathering, dark brown steel poles (CorTen), or equivalent, as well as non-specular conductors to reduce the potential for visual contrast and glare. CalPeco has also coordinated with several landowners regarding facilities on or near their properties, and plans to continue such coordination with willing landowners to explore mechanisms to minimize perceived effects on their property.

Master Response 13: Proximity to the Fiberboard Freeway

Several commenters questioned the value of placing the upgraded 625 Line closer to, or along the Fiberboard Freeway, and some comments suggest that the 625 Line should be upgraded within its existing alignment. The 625 Line is a critical component of the North Lake Tahoe Transmission System as it provides for a loop configuration rather than a less reliable radial design (see Master Response 11 regarding a looped versus radial system configuration). The applicant has identified a need for better access to the 625 Line for maintenance, repairs, and safety. During the original construction of the 625 Line more than 50 years ago, the permitting agencies at the time (e.g., USFS) directed the route to locations that were not highly visible and requested that the design of the alignment be zig-zagged to avoid a straight line vegetation management zone through the forest. As such, the 625 Line was installed in a relatively remote area with many angle points. Only limited access roadways were included in the original project authorization. Due to the remoteness and terrain, access is difficult even with roadways. According to CPUC staff, the 625 Line is unique in that it is both in high mountainous terrain, serves significant population, and is a critical component for the loop configuration.

An alternative that would rebuild the 625 Line within its current alignment was considered in the Draft EIS/EIS/EIR in Section 3.5, Alternatives Considered but Eliminated from Detailed Evaluation. As described on page 3-73, the applicant completed a preliminary evaluation to determine the amount of access way

construction that would be needed to provide wheeled vehicle access to the existing 625 Line alignment. Based on available USGS topographic maps and use of as many existing roadways as possible, it was estimated that approximately 18 miles of new access ways would be required. This is more than four times the 4.1 miles of new access way that would be required for Alternative 3 (Road Focused Alternative) and Alternative 4 (Proposed Alternative) (see Table ES-1 in the Draft EIS/EIS/EIR). However, even with new access ways constructed to reach the existing 625 Line alignment, the extreme terrain would limit access in many places, such that overland vehicle access to the entire line still would not be attained.

Given the unacceptable level of new road building to provide CalPeco the access it determined necessary, the issue then becomes whether CalPeco's project objective of more reliable access for the 625 Line is reasonable. The existing 60 kV 625 Line has operated in the existing corridor for over 50 years. The line runs through forested landscape making it, like other lines in the area, vulnerable to outages from tree fall and equipment failure. CalPeco has provided data from recent years that document regular outages on the 625 Line. While outages can and do occur on its other lines, the relative remoteness of the 625 Line presents CalPeco with challenges to minimize outage duration and to perform maintenance that could otherwise avoid outages in the first instance.

Much of the existing 625 Line is not accessible by wheeled vehicle. On some segments, the most effective way to conduct inspections and maintenance is by "over snow" vehicles (e.g., snow mobiles, snow cats), causing these activities to be scheduled during the winter months when conducting the work may be hampered by weather. Winter inspections and maintenance also places staff at additional risk when in remote locations relative to conducting work during the summer months. During the summer months, if line repairs are needed in parts of the alignment without road access, helicopters must frequently be used to identify the location needing repair and may also be necessary to transport materials and personnel to complete the repair. This substantially increases repair response times relative to areas that have road access. For example, if, during the summer months, monitoring systems indicate damage to a line segment to which there is road access, a truck may be immediately dispatched from a CalPeco maintenance yard to inspect the line. If damage is found that cannot be addressed by the original inspector, they can readily call for dispatch of a line truck (truck with a "boom" or "bucket" to lift personnel and other equipment necessary for system maintenance and repairs) and any other necessary equipment/personnel. The line truck is used to safely lift personnel and equipment to inspect and repair facilities, rather than personnel having to physically climb the pole. However, if monitoring systems indicate damage to a line segment to which no road access is available, a helicopter must often be used to locate the damage and may be needed to transport personnel and equipment needed for repairs. Because CalPeco does not own its own helicopter, this scenario involves chartering the appropriate craft and using it to fly along the power line alignment at a suitable speed and altitude to allow for visual inspection of the line. If damage is found, an assessment of the appropriate response to complete the repair is made. In remote locations with no road access, a suitable helicopter may be chartered to deliver personnel and equipment to the site. This requires a much larger helicopter than the one used for the inspection. As such, it then requires additional time for coordination. In some situations, all-terrain vehicles (ATVs) or "cross-country" travel with a truck may be used instead of a helicopter, or to supplement use of a helicopter; however, "cross-country" travel in a truck or ATV is substantially slower than roadway travel. ATVs also have limited capacity to transport tools and equipment, and where access for a line truck is not available personnel must climb poles rather than using the "boom" or "lift". This process of identifying and implementing repairs with limited wheeled vehicle access, or no wheeled vehicle access takes substantially longer and is inherently more dangerous than a road-based repair operation.

Where wheeled vehicle access to power line segments is available during the summer this access also allows for more rapid responses to outages in the winter. Relative to "cross country" travel, a road ROW provides a pathway that is more gently sloped, and clear of trees, boulders, and other obstructions. During the winter, road ROWs are more easily identifiable as pathways to desired locations compared to "cross country" over snow travel, increasing the likelihood of personnel remaining on the correct route, particularly during inclement weather. Specific to the Fiberboard Freeway, its use by recreational snowmobilers has the potential to expedite

over-snow travel by CalPeco staff by providing established “packed” pathways under certain circumstances rather than requiring over-snow vehicles to travel through accumulations of undisturbed snow.

Wheeled vehicle access provides additional benefits for facility operations, maintenance, and repairs. Use of line trucks with booms/buckets that can lift personnel to the line are safer than personnel climbing poles to conduct repairs when truck access is not available. Transport of equipment and personnel by wheeled vehicle is safer than lowering staff and equipment from a helicopter to a work site and later retrieving them by helicopter. Where wheeled vehicle access is available, periodic line inspections can be conducted year-round rather than sporadically when there is sufficient snow to support over snow vehicles. More regular inspections and maintenance serve to prevent conditions that may result in outages (e.g., hazard trees). Fire avoidance through vegetation management is a high priority for the agencies. State regulations and the CPUC require this focus that has most recently been reinforced by Governor Brown’s January 17, 2014 Declaration of Drought Emergency and CPUC’s Safety Enforcement Division February 18, 2014 letter to Liberty Utilities (CalPeco) directing Liberty to take action (including increased inspections and corrective action) in response to drought conditions. Without adequate access, vegetation management is extremely difficult and often results in greater environmental damage. The vegetation management must still occur. Therefore, the equipment required to complete the vegetation management will still need to reach the line. In the event that there is a fire emergency and roadways do not exist, Liberty or other responders must access the line quickly. In such a scenario, access could and would likely result in bladed access without environmental oversight or planning. In other words, temporary access will be bladed without a designed or established approach.

As with any situation in line work, significant risks to personnel safety exists. The Labor of Statistics considers Electric Line Workers to be the seventh most dangerous job in the United States. Specific to work on the 625 line, typically outages occur during harsh weather conditions and placing the lineman in such conditions without access increases risks. In these situations, equipment is brought in via snowmobiles and therefore the linemen must climb the poles. The risk of falling is escalated by the snow, wind and ice on and around the pole. For the combined reasons of more rapid responses to and correction of outages, more efficient and effective line inspections and maintenance, and increased employee safety and the improved ability for fire avoidance through vegetation management, CalPeco’s request for more reliable access to the 625 Line (e.g., increased wheeled vehicle access) is included as an objective of the proposed project.

As stated above, upgrade of the 625 Line in its existing alignment and provision of wheeled vehicle access would require approximately 18 miles of new access ways. However, if the project objective of increased vehicle access was not met to the degree desired by CalPeco, and new access ways to the existing 625 Line alignment were not constructed, it is reasonable to assume that upgrading of the 625 Line along this alignment would still require the development of some temporary access ways to support construction. Although power line construction can be completed by helicopter, this method is more costly than traditional wheeled-vehicle-based construction methods, is more hazardous for construction personnel, and takes longer to complete. Tree removal comparable to that identified for other alternatives would also be required to expand the existing 20-foot-wide vegetation management corridor to 40 feet, to allow a temporary construction corridor of up to 65 feet wide in some areas, and to provide stringing sites for pulling and tensioning the conductor. Assuming that USFS and other agencies would require removal of downed trees for fuels management and to reduce fire risk, a substantial number of helicopter trips would be needed, with associated costs and hazards, to support the tree removal effort if no construction vehicle access were developed. Due to the challenges associated with helicopter construction, it is reasonable to assume that at least some level of temporary access way development would be undertaken to allow use of wheeled vehicles during construction in some areas.

Temporary construction access ways could ultimately be restored to forest or other habitat types; however, if the 625 Line were upgraded along the existing alignment, it is possible that USFS will request that some temporary access ways developed during construction be retained as permanent roadways on lands it manages. The USFS has a direct interest in the ability of utility providers on USFS lands to maintain their facilities in a

manner that minimizes fire hazards and that allows rapid response to fires or situations that could ignite a forest fire (e.g., downed electrical line). Providing wheeled vehicle access to utility infrastructure is an effective way to support these interests. In addition, if a fire, or potentially imminent fire hazard occurs, CalPeco may request from the USFS authorization for construction of an emergency access road to allow wheeled vehicle access to the problem area. Given these factors, it is realistic to assume that upgrading the 625 Line in its existing alignment would require development of some level of new wheeled vehicle access, either temporary or permanent.

If providing wheeled vehicle access to the 625 Line is accepted as part of the objective of providing more reliable access to the line, the two primary mechanisms to provide increased vehicle access are to move the line near existing roads or to construct new access ways to reach the line. A comparison between Alternatives 1 and 2 and Alternatives 3 and 4, based on information provided in the Draft EIS/EIS/EIR, identifies the consequences of utilizing a route for the 625 Line that closely follows the Fiberboard Freeway versus one that does not. With the ability to use the existing Fiberboard Freeway to access the 625 Line for inspection, maintenance, and repair, Alternatives 3 and 4 require construction of an estimate 4.1 miles of new access way, versus 16.1 miles and 12.0 miles for Alternatives 1 and 2 respectively. Some of this result (as well as data provided below) can be attributed to the use of double-circuit lines for some alternatives and route options east and south of Brockway Summit; however, much of the difference is an outcome of whether or not an alternative includes a route that closely follows the Fiberboard Freeway. The trend in relative need for new access ways also applies to USFS land, with an estimated 2.8 miles needed for Alternatives 3 and 4 and 13.4 and 10.0 miles needed for Alternatives 1 and 2 respectively. With new access ways contributing to the overall permanent land disturbance for each alternative, the reduced need for new access way under Alternatives 3 and 4 is partially responsible for a reduced overall land disturbance for these alternatives, 67.5 acres for Alternatives 3 and 4 compared to 118.8 acres for Alternative 1 and 91.7 acres for Alternative 2.

An alignment that closely follows the Fiberboard Freeway also reduces the need for tree removal, in part because of the reduced amount of new access ways needed, but also because the 40-foot wide vegetation management corridor along the alignment would partially overlap with the road, where no vegetation is present. Where the vegetation management corridor and temporary construction corridor overlap with the road, no tree removal would be required. Therefore, where an estimated 36,860 trees greater than 1-inch diameter at breast height (dbh) would be removed along the 625 Line under Alternative 1, and 29,140 trees would be removed under Alternative 2, approximately 24,880 trees are estimated to be removed under Alternative 3 and 24,900 trees removed under Alternative 4. The same trend applies to estimates of hazard tree removal, with 310 and 250 hazard trees (e.g., severely damaged or diseased trees, or dead trees) projected for removal under Alternatives 1 and 2, respectively, and approximately 240 hazard trees estimated to be removed under Alternatives 3 and 4.

With reduced tree removal, less need for new access ways, and reduced ground disturbance under Alternatives 3 and 4, effects on environmental resources related to these items, such as biological resources and soil erosion potential would also be reduced. However, as acknowledged in the Draft EIS/EIS/EIR and identified by several commenters, placing the upgraded 625 Line along the Fiberboard Freeway would increase scenic impacts for those using the road, primarily recreationists seeking a high-quality recreation experience.

Different agencies, organizations, and individuals may assign different relative priorities to environmental resources, as evidenced by the diversity of comments received on the Draft EIS/EIS/EIR. Some may place the highest priority on scenic resources or the quality of the recreational experience, others may assign a higher priority to biological or forestry resources. The lead agencies will consider the environmental impacts of each alternative as described in the EIS/EIS/EIR, as well as all comments received on the draft document, when considering overall project approval, and selection and approval of an individual alternative.

For the reasons described above, CalPeco's request for more reliable access to the 625 Line for inspections, maintenance, and repairs is included as an objective of the proposed project. The two primary mechanisms to provide more reliable access are to increase wheeled vehicle access by moving the line near existing roads or constructing new access ways to reach the line. Alternatives are considered and evaluated in the Draft EIS/EIS/EIR that implement both these approaches, and the EIS/EIS/EIR adequately discloses the environmental consequences of each option and reasonably rejected alternatives that did not increase access. The Fiberboard Freeway, as an existing, primarily paved road, is an appropriate roadway to include in an alternative that focusses on placing the 625 Line near an existing roadway.

Letter

1

Response

US Environmental Protection Agency, Region 9

Kathleen Martyn Goforth, Manager

January 3, 2014

- 1-1 This comment is an introductory statement for the detailed comments that follow and provides the United States Environmental Protection Agency's (EPA's) rating of the Draft EIS/EIS/EIR. Topics listed for which EPA provides subsequent detailed comments consist of: direct and cumulative impacts to aquatic resources; compliance with Section 404 of the Clean Water Act (CWA); details regarding the presence of jurisdictional waters, impacts to jurisdictional waters, and measures to avoid impacts to jurisdictional waters; and consistency with the published rules and guidelines related to implementation of the CWA. The responses to the detailed comments below address each of these topics.
- 1-2 The comment references a statement from Page 4.6-41 of the Draft EIS/EIS/EIR. This page is part of an evaluation of water quality impacts in Section 4.6, Hydrology and Water Quality. Although issues related to compliance with Section 404 of the CWA are referenced in Section 4.6, impacts to jurisdictional waters and compliance with Section 404 of the CWA are addressed in detail in Section 4.7, Biological Resources. Issues related to Section 404 of the CWA are addressed primarily in the Biological Resources section in acknowledgement of the habitat values of wetlands and waters of the US and their consideration as a habitat of special concern. The Federal Guidelines for Specification of Disposal Sites for Dredged or Fill Materials (Guidelines) are referenced in Section 4.7. However, as stated in EPA's comment, the burden to demonstrate compliance with the Guidelines rests with the permit applicant, which in this case is the project applicant, CalPeco.

Once an alternative is approved by the lead agencies (USFS, TRPA, and the CPUC), the applicant will complete detailed design of the approved project. As the detailed design is being prepared, the location and type of wetland avoidance measures would be determined and locations where impacts could not be fully avoided would be identified. Through this process, the specific locations where impacts to wetlands and waters of the US might occur would be confirmed and a wetland delineation would be conducted at these sites. Once the delineation is verified and jurisdictional impacts are confirmed, CalPeco would apply for an appropriate permit from the US Army Corps of Engineers (USACE) (i.e., either a Nationwide Permit or Individual Permit). At that time, through the CWA Section 404 permitting process, CalPeco, in collaboration with USACE, would demonstrate compliance with the Guidelines.

It would be premature at this stage in the environmental review process to conduct a wetland delineation and obtain a jurisdictional determination for the 625 and 650 Electrical Line Upgrade Project. Four action alternatives and one sub-alternative are evaluated in the EIS/EIS/EIR covering several dozen miles of potential power line and accessway routes. To conduct a wetland delineation for all possible power line and accessway routes considered in each alternative and detailed design for each to confirm impacts and avoidance would be an inefficient use of resources, placing an undue financial and schedule burden on the applicant and requiring USACE staff to verify jurisdictional features in areas that are part of alternatives that ultimately would not be selected and in locations along an approved alignment where impacts would ultimately be avoided through detailed design of the approved alternative.

Section 4.7, Biological Resources, of the Draft EIS/EIS/EIR contains substantial information on potential impacts to wetlands and waters of the US. On pages 4.7-51 and 4.7-52 in the subsection titled "Sensitive Habitats and Natural Communities, habitat types in the study area that would be considered jurisdictional, or have the potential to contain jurisdictional areas, are identified; these are wet montane meadow, montane riparian, fresh emergent wetland, seasonal wetland, and open water. Detailed vegetation maps provided in Appendix K show the locations of these habitat types in the project study

area. Table 4.7-9 on page 4.7-67 summarizes and compares the acreages of these habitats present in the permanent and temporary impact zone of each action alternative. As described in the discussion of Impact 4.7-2 (Alt. 1) on page 4.7-66, the acreages in Table 4.7-9 do not consider measures and factors that would minimize impacts and should be considered a maximum and likely an overestimate of the area of actual impacts. For example, the acreage calculations do not take into account opportunities to span the power lines over jurisdictional areas; requirements to minimize construction disturbance in these habitats; limitations on the placement of new access ways in jurisdictional areas; and the fact that due to the nature of vegetation in jurisdictional habitats, vegetation typically does not grow tall enough to conflict with the electrical lines and require vegetation management. As stated above, once an alternative is approved and detailed design can be initiated on a single alternative, the type, location, and effect of specific avoidance measures can be determined. However, the Draft EIS/EIS/EIR clearly identifies the maximum extent of impacts to jurisdictional features that could occur under each alternative and the APMs that will be implemented to avoid and minimize potential effects and to compensate for those effects that cannot be fully avoided.

- 1-3 The lead agencies and the applicant appreciate EPA's acknowledgement of APMs and mitigation measures intended to avoid and minimize impacts to jurisdictional wetlands.

As stated in the response to comment 1-2 above, Table 4.7-9 on page 4.7-67 of the Draft EIS/EIS/EIR summarizes and compares the acreages of potential jurisdictional habitats identified and mapped in the permanent and temporary impact zone of each action alternative. This information allows a disclosure of potential impacts and a comparison among alternatives sufficient to support the NEPA/TRPA/CEQA environmental analysis; although, as stated previously, the acreages in Table 4.7-9 do not consider measures and factors that would minimize impacts and should be considered a maximum and likely an overestimate of the area of impact. Actual impacts would likely be considerably less. Given the ability to substantially limit potential effects on jurisdictional features, it is possible that the proposed project could qualify for a Nationwide Permit under Section 404 of the CWA and an individual permit would not be needed. This would be determined after a single alternative is approved, detailed project design is completed, a wetland delineation is completed that is responsive to the approved project alignment and project design, and coordination with USACE is initiated through verification of the delineation and the 404 application process.

If an individual permit is needed, USACE will need to determine whether the existing EIS/EIS/EIR is sufficient to support NEPA compliance for the USACE decision to issue a permit, or whether further NEPA review is needed. Through the individual permit review process USACE would also conduct a 404(b)(1) alternatives analysis and identify the least environmentally damaging practicable alternative (LEDPA). It is the responsibility of USACE to conduct the 404(b)(1) alternatives analysis and to determine the LEDPA. It would be premature for the project applicant, USFS, TRPA, or CPUC to conduct such an analysis at this time and to reach any conclusion regarding a LEDPA without the involvement of the USACE Regulatory Branch through the CWA Section 404 process.

Regarding the development of a mitigation plan for unavoidable impacts to waters of the US, development and implementation of such a plan is a requirement of APM BIO-30. As identified on page 4.7-68 of the Draft EIS/EIS/EIR (as well as other locations where the text of APM BIO-30 is provided): "In accordance with the USACE "no net loss" policy, all permanent wetland impacts will be mitigated at a minimum of a 1:1 ratio. This mitigation will come in the form of either contribution to a USACE-approved wetland mitigation bank or through the development of a Compensatory Mitigation and Monitoring Plan aimed at creating or restoring wetlands in the surrounding area (although creation is not authorized by TRPA in their jurisdiction)." It would be premature to prepare such a plan until the type, extent, and location of unavoidable impacts to wetlands and waters of the US are determined, and as described above, it would not be appropriate to make such a determination for the 625-650 Electrical

Line Upgrade Project as part of the NEPA/TRPA/CEQA environmental review process. Applicable USACE and EPA regulations will be complied with, following the anticipated timing and sequencing for the CWA Section 404 process outlined above.

- 1-4 The lead agencies and the applicant appreciate EPA's support of the APMs listed in the comment. The various APMs prohibiting, limiting, or providing conditions for activities in jurisdictional features, coupled with the availability of helicopters during the construction process, provides a strong incentive for the applicant to maximize the use of helicopters to reduce direct and indirect impacts at stream crossings. For example, given the time and expense associated with permitting and installing a temporary vehicle crossing over a jurisdictional feature, then restoring the jurisdictional feature after construction, monitoring the success of the restoration effort, implementing remedial measures if the restoration is not initially successful, and potentially implementing additional compensatory mitigation, use of a helicopter is extremely likely to be a more attractive option to move materials and equipment across the feature. (However, the use of helicopters would be limited or avoided in cases where breeding activities of some sensitive wildlife species could be affected, in accordance with APM BIO-25 and BIO-27.) Further measures to incentivize use of helicopters to minimize effects to jurisdictional features are not required via APMs or other elements of the EIS/EIS/EIR.
- 1-5 Emissions of PM₁₀, PM_{2.5} and toxic air contaminants (TACs) are assessed in the EIS/EIS/EIR in Section 4.13, Air Quality and Climate Change. As described in the discussions of Impact 4.13-1 for Alternatives 1 through 4, with integration of APMs into project design and implementation of mitigation measures, emissions of PM₁₀ and PM_{2.5} would be reduced to less-than-significant levels. As described in the discussion of Impact 4.13-3 for Alternatives 1 through 4, emissions of TACs would be less than significant before consideration of any APMs or mitigation measures, and would be further reduced by implementation of Mitigation Measure 4.13-1a, intended to address diesel PM exhaust during construction identified under Impact 4.13-1. Further mitigation (i.e., noticing) beyond what is identified in the Draft EIS/EIS/EIR is not needed to reduce impacts of PM₁₀, PM_{2.5}, or TACs to less-than-significant levels.
- 1-6 The lead agencies and the applicant appreciate EPA's support of APM BIO-19. The project applicant will review the suggested document, "Reducing Avian Collisions with Power Lines: State of the Art in 2012" and incorporate information into the project design as appropriate given the specifics of the proposed project, the equipment to be installed, and the habitats and bird species present in the project area.

Several elements of the project and project design would reduce the potential for adverse interactions between birds and the proposed power line relative to existing conditions. For example, the proposed 120 kV conductor will be slightly thicker than the existing 60 kV conductor, making it more visible to birds. When more than one wire is on a pole, 120 kV conductors must be spaced farther than 60 kV conductors, reducing the potential for electrocution from a bird touching two separate conductors simultaneously. In addition, consistent with recommendations to minimize avian collisions, an additional "shield wire" will not be placed along the tops of the proposed poles. Also, although the new poles would be 7-12 feet taller than existing poles, they would still not be taller than the typical surrounding forest trees, a recommended design parameter to minimize bird use of poles as perches.

Regarding guy wires, the use of guy wires is dependent on the support needed to maintain reliability and resiliency at each pole. Where additional pole support beyond a "direct bury" is needed, options other than guy wires have their own costs and benefits. For example, constructing a self-supporting pole with a concrete foundation may prevent the need for guy wires, but would result in additional ground disturbance to excavate the foundation (a hole 6-8 feet wide and 20-30 feet deep [see page 3-37 in the Draft EIS/EIS/EIR]), additional vehicle trips to remove the excess fill and deliver the concrete, and would result in additional impervious surface around the pole. Multiple factors will be considered in

determining whether guy wires are to be used at particular poles, including potential hazards to pedestrians, bicyclists, and others, and potential hazards to wildlife. In addition, consistent with standard utility practices, guy guards (an 8 foot long plastic guy wire cover) would be installed on guy wires where pedestrian traffic is present

- 1-7 The Grove Street pier in Tahoe City is the element of the proposed Lake Tahoe Passenger Ferry project closest to the CalPeco 625 and 650 Electrical Line Upgrade Project. The pier is located approximately 0.5 mile northeast of the Tahoe City Substation. It is possible that the two projects could interact to generate cumulative impacts if construction activities at the pier occurred concurrently with construction of the 625 Line upgrade in Tahoe City. Given this potential, the Lake Tahoe Passenger Ferry project has been added to the cumulative impact analysis in the EIS/EIS/EIR.

Letter
2
Response

State Clearinghouse and Planning Unit
Scott Morgan, Director
December 24, 2013

- 2-1 This letter acknowledges that the lead agencies have complied with the California State Clearinghouse review requirements pursuant to CEQA. The State Clearinghouse submitted the Draft EIS/EIS/EIR to selected state agencies for review and did not receive comments in response.

After receipt of this letter, and after the close of the review period for the Draft EIS/EIS/EIR, the State Clearinghouse provided a letter from the California Department of Forestry and Fire Protection indicating that the Department had no comments on the Draft EIS/EIS/EIR. Although this second letter was received by the lead agencies after the close of the public review period, it is provided here to document the correspondence between the Department of Forestry and Fire Protection and the State Clearinghouse.

Letter
3
Response

Nevada State Clearinghouse
Skip Canfield
January 10, 2014

- 3-1 This letter documents that the Nevada State Clearinghouse provided notice of availability of the CalPeco 625 and 650 Electrical Line Upgrade Project Draft EIS/EIS/EIR and did not receive any agency feedback.

Letter
4
Response

California Department of Transportation, District 3
Marlo Tinney, Chief
January 7, 2014

- 4-1 Caltrans expresses support for the action alternative with the least potential to conflict with the identified improvements to SR 267. As appropriate, the applicant will address potential conflicts with these proposed improvements through the encroachment permit and transportation management plan process. The project applicant has initiated this process and is currently coordinating with Caltrans staff.

- 4-2 The comment indicates that the applicant has applied for an encroachment permit for work along SR 267, and that an encroachment permit should also be obtained for proposed crossings of SR 89 and Interstate 80 (I-80). The applicant is aware of this requirement. For clarity, the last paragraph under “Highway and River Crossings” (page 3-38 of the Draft EIS/EIS/EIR) is revised as shown:

Any work proposed and performed within the State’s right-of-way would require a Caltrans Encroachment Permit (TR-0100) prior to construction. Construction of power lines across I-80, SR 267, and SR 89 would require an encroachment permit ~~(TR-0100)~~ from Caltrans for each crossing location. In conjunction with ~~this~~ the permits, traffic control would be implemented. For I-80, rolling breaks (i.e., Highway Patrol vehicles slowing traffic behind them to provide a break in traffic ahead of them where work could be conducted) of durations sufficient for construction personnel to install pull rope and string conductors across the freeway would be used. Whether rolling breaks or a traditional road closures are used, I-80 is the only crossing location where nighttime construction could be required. This option would only be used if a temporary daytime shutdown of all travel lanes as the cable is strung across the highway would not be permitted by Caltrans during daylight hours. At crossings with SR 267, SR 89, and local roadways, flaggers may temporarily hold traffic during stringing activities and reconductoring work.

- 4-3 The requirement that the applicant obtain an encroachment permit from Caltrans for work on or across SR 267, SR 89 and I-80 is understood and is identified in the Draft EIS/EIR/EIR. The transportation management plan, as an element of the encroachment permit process, has been added to the Regulatory Setting discussion in Section 4.12, Traffic and Transportation (page 4.12-2), in response to this comment. (See revised text in the response to Comment 4-4.)
- 4-4 The comment notes that project work that requires movement of oversized or excessive load vehicles on state roadways requires a transportation permit issued by Caltrans. In response to this comment, the discussion of Caltrans’ regulations in Section 4.12, Traffic and Transportation, has been revised to include reference to this requirement.

In response to Comments 4-3 and 4-4, the discussion of Caltrans’ regulations on page 4.12-2 has been revised as follows:

The California Department of Transportation (Caltrans) has a general policy to allow utilities within conventional rights-of-way (ROWs) subject to reasonable conditions to provide for the safety of the traveling public and to permit the improvement of the highway. Caltrans policy allows new utility installations, and adjustment or relocation of existing utilities to cross a freeway or expressway (Caltrans 1999). However, encroachment permits are required for any work that affects traffic on state highways, or places or replaces any utility equipment that is within the highway ROW. The encroachment permit process includes the preparation of a transportation management plan in accordance with Caltrans’ *Manual on Uniform Traffic Control Devices* as well as a public outreach component. If any existing poles are within the clear recovery area of the highway (typically a 20-30 foot zone from the outer edge of the highway pavement), they should be replaced outside of that area, if possible.

If the project requires movement of oversized or excessive load vehicles on State roadways, a transportation permit must also be obtained from Caltrans’ Transportation Permits Office.

Letter
5
Response

California Department of Parks and Recreation, Sierra District
Tamara Sasaki, Sr. Environmental Scientist
December 30, 2013

5-1 The lead agencies appreciate review of the Draft EIS/EIS/EIR by the California Department of Parks and Recreation (California State Parks). The commenter acknowledges project aspects valued by California State Parks, including plans for clean-up and post-construction restoration, measures to prevent the spread of non-native plants, preparation of a fire suppression and prevention plan, and ROW restrictions in Burton Creek State Park.

5-2 APM REC-6 was developed to respond to concerns expressed by California State Parks during meetings that were conducted during project scoping. Based on the additional detail provided in this comment, APM REC-6 has been revised as shown to clarify the location of the area subject to construction restrictions.

- ▲ **APM REC-6:** ~~In the vicinity of Burton Creek State Park,~~ CalPeco has agreed at the request of California State Parks to complete ~~the construction~~ in the vicinity of Burton Creek State Park with no new access and with limited impact to the existing ROW for an agreed upon section of three poles. Excavation for pole installation in Segment 625-2 between southwest corner of Burton Creek State Park and the southernmost portion of Segment 625-3, where the State Park road meets the Fiberboard Freeway, will be done by hand; pole removal and replacement will be carried out by helicopter. All access ways created for the 625-Line between the end of pavement of the Fiberboard Freeway and the east west alignment of the existing 625 Line alignment in the vicinity of the southwest corner of Burton Creek State Park, will be closed to recreational access to prevent non-State Park system route and trail proliferation. This is an approximately 1,800 foot segment of the proposed 625 Line alignment.

5-3 The commenter indicates that use of a portion of an access way that is located on slopes greater than 20 percent could result in soil erosion and surface water runoff that could adversely affect an existing California State Parks road.

The project has been designed to limit the potential for soil erosion and impacts to water quality. As discussed in the description of construction activities (see pages 3-28 through 3-30 in Chapter 3, Project Alternatives, of the Draft EIS/EIS/EIR), in locations where the slope is estimated to be greater than 20 percent, it is assumed that some grading would be necessary to create a suitable access way that can be traveled by maintenance and inspection vehicles. In particularly steep areas, the new access way would likely require switch back roadways to provide moderate grades and generally level cross-slopes. Erosion control BMPs (e.g., water bars, and other features) would be installed to address erosion control and water quality protection concerns. Specific BMPs would be implemented in consultation with TRPA and LRWQCB, based on local conditions.

5-4 The commenter indicates that the applicant should consult with California State Parks regarding a sensitive resource area in Burton Creek State Park, and that plans and activities on California State Parks property should be reviewed and approved by California State Parks.

The applicant has, and will continue to, consult with California State Parks about work that is proposed on its property. As noted above, it was through initial consultation with California State Parks staff that APM REC-6 was developed. Once an alternative is selected, additional consultation will commence.

Plans related to activities proposed on California State Parks land would be shared with California State Parks as appropriate and necessary to obtain additional easements.

- 5-5 The comment provides specific tree and brush removal conditions on California State Parks property, including no skidding of trees and that slash and wood generated from brush clearing and tree removal is removed from California State Parks property. During final design and construction of the proposed project, all activities on California State Parks property would be designed and implemented to meet State Parks requirements related to vegetation removal. Additionally, the commenter's suggestion to use the slash and vegetation debris removed from the new line or access ways to help conceal the retired electrical line corridor is appreciated and will be considered in the context of the overall environmental situation.
- 5-6 The comment expresses concerns about the potential for construction activities at the Tahoe City Staging Area to spread soil containing invasive weed seeds along the access ways to and through Burton Creek State Park, because the staging area has supported weeds for several years and contains a weed seed bank. The comment supports the APMs proposed to minimize or prevent the spread of weeds. The commenter requests employment of all measures included in APMs BIO-4, -5, -6, and -7 for pre-treating existing weed infestations and laying materials over the entire Tahoe City Staging Area to prevent spread of seeds and plant material by equipment and vehicles (as included in APM BIO-8). The comment also states that APM BIO-5 only requires that equipment arrive clean and weed free to the project area, but that all project vehicles should also arrive weed-free, and that the restoration plan (detailed in APM BIO-36) should incorporate the weed monitoring and management measures listed in APM BIO-37.

The applicant will implement the weed treatment techniques (per the applicable APMs) and cover areas that could support a weed seed bank and be disturbed during construction using techniques described in APM BIO-8. Although "equipment" mentioned in APM BIO-5 is intended to include vehicles, this APM has been revised to explicitly identify "vehicles."

APM BIO-5 has been revised to read as follows:

Vehicles and equipment will arrive at the project area clean and weed-free and equipment will be inspected by the on-site environmental monitor for mud or other signs that weed seeds or propagules could be present prior to use in the project area. If the vehicles and equipment are is not clean, the monitor will deny entry to the ROW and other work areas.

Additionally, APM BIO-6 addresses the cleaning of vehicles at designated weed-cleaning stations. Regarding the restoration plan described in APM BIO-36, post-restoration monitoring procedures will be developed when the plan is prepared.

APM BIO-36 has been revised as follows to clearly incorporate the actions in APM BIO-37 (and to incorporate input from other sources):

Prior to construction, CalPeco will develop a Restoration Plan that will address final clean-up, stabilization, and revegetation procedures for areas disturbed by the project. The plan will be consistent with, and implement related commitments and requirements included in the EIS/EIS/EIR project description, other APMs, mitigation measures, and agency permit requirements. The Restoration Plan will address loosening of any compacted soil, restoration of surface residue, and reseeded. If existing unpaved roads require modification to temporarily allow passage of construction equipment during the construction period, these roads will be returned to their original footprint after construction is complete. On NFS lands, restoration activities will be designed and implemented to meet invasive plant management guidelines and

Visual Quality Objectives (VQO) for the area. Areas temporarily disturbed by cut and fill activities will ~~would~~ be re-graded to blend with the natural topography. On public land, CalPeco will coordinate with the land management agency to determine an appropriate seed mix or tree planting plan as well as other elements of the plan applicable to lands managed by the agency. On private land, CalPeco will coordinate with the landowner and/or provide the landowner with a suggested seed mix based on consultation with the agency of jurisdiction. The plan will include approved seed mixes, application rates, ~~and~~ application methods, methods to record pre-disturbance conditions, success criteria for vegetation growth, monitoring and reporting protocols, and remedial measures if success criteria are not met. If broadcast seeding is determined to be the most feasible application method, seeding rates will be doubled relative to the standard seeding rate and the seeding method rationale will be explained. The plan will also include long-term erosion and sediment control measures, slope stabilization measures, criteria to determine the success of these measures, remedial actions if success criteria are not met, and monitoring and reporting procedures. As part of normal equipment inspections during project operation, an evaluation of access ways will be conducted to confirm that use has not resulted in compaction that will ~~would~~ result in “coverage” per TRPA standards.

- 5-7 APM BIO-23 addresses restoration and revegetation of disturbed areas upon completion of construction activities. In addition, prior to project implementation, APM BIO-36 requires the applicant to develop and implement a restoration plan that would require that landowners and agency land managers are consulted regarding restoration, that the project area is returned to preconstruction conditions, and that long-term restoration procedures are identified. The applicant would negotiate terms of easements and any temporary ROW with the agency land managers and property owners. Conditions such as temporary easement width, temporary ROW, parking, and restrictions on off-road activity would be addressed in these negotiations and agreements.
- 5-8 Permanent and temporary ROW needs are described in Chapter 3, Project Alternatives, of the Draft EIS/EIS/EIR. The text states that CalPeco currently holds easements from California State Parks, and the existing 625 Line alignment follows the property boundary between State Park and USFS property. The proposed alignment, under all alternatives, would follow the existing alignment in this reach. As described in APM REC-6, CalPeco has agreed at the request of California State Parks to complete the construction from one end of the alignment along the Burton Creek State Park with no new access and with limited impact to the existing ROW for an agreed upon section of three poles that are located on California State Parks property. Refer to Response to Comment 5-2, above. However, approximately 15 feet of additional ROW would be required from California State Parks and would be obtained prior to the construction of the 625 Line.
- 5-9 The State of California has been added to the list of jurisdictions that own or manage lands on which project features would be located and proposed activities would occur, as suggested by the commenter. The text of the second paragraph under Section 1.1, Project Requiring Environmental Analysis, has been revised as follows (also refer to page 1-1 of the Final EIS/EIS/EIR for this revised text).

The project features and proposed activities are predominantly located on lands managed by the USFS; these lands are located in the LTBMU and Tahoe National Forest. Portions of the project are also located in the Town of Truckee, in ~~and~~ the unincorporated Placer County communities of Kings Beach and Tahoe City, on lands within the Martis Creek Lake Recreation Area managed by the USACE, on lands owned by the State of California, and on private lands.

- 5-10 The list of responsible agencies in the second paragraph of Section 1.4, Organization of the EIS/EIS/EIR, has been revised to read as follows (also refer to page 1-5 of the Final EIS/EIS/EIR for this revised text).

For the purposes of this EIS/EIS/EIR document, responsible agencies include the Lahontan Regional Water Quality Control Board, California Department of Fish and Wildlife (CDFW), California Department of Forestry and Fire Protection, California Department of Transportation, California Department of State Parks and Recreation, California Tahoe Conservancy, Placer County Air Pollution Control District, Northern Sierra Air Quality Management District, Placer County, and the Town of Truckee.

- 5-11 “Sugar Pine Point State Park” has been revised to “Ed Z’berg-Sugar Pine Point State Park” and “Ward Creek Unit” has been added to the list of state park properties. This text now reads as follows (also refer to pages 4.2-3 through 4.2-4 of the Final EIS/EIS/EIR for this revised text).

State Parks manages the California State Park System, including Burton Creek State Park, the Kings Beach State Recreation Area (SRA), the Tahoe SRA, Washoe Meadows State Park, Lake Valley SRA, Emerald Bay State Park, D.L. Bliss State Park, the Ward Creek Unit, and Ed Z’berg-Sugar Pine Point State Park in the Tahoe Region.

- 5-12 The caption for Photograph 2 in in Exhibit 4.4-6A has been updated with the official park name: “Truckee River Outlet, Tahoe State Recreation Area” (see page 4.4-19 of the Final EIS/EIS/EIR for this revised text).
- 5-13 The comment notes the omission of Dalmatian toadflax, which occurs at the Tahoe City Staging Area, from the noxious weed list provided in Table 4.7-7.

Known Dalmatian toadflax occurrences are shown in Exhibit 4.7-9 and the species has been considered in the analysis; however, the species was missing from Table 4.7-7. Table 4.7-7 has been revised to include Dalmatian toadflax.

- 5-14 The labeling of recreation facilities on Exhibit 4.8-1 has been revised to accurately reflect the current naming conventions for California State Parks lands.

Letter
6
Response

California Department of Toxic Substances Control
Duane White
December 18, 2013

- 6-1 The lead agencies appreciate the California Department of Toxic Substances Control’s review of the Draft EIS/EIS/EIR for the CalPeco 625 and 650 Electrical Line Upgrade Project. As indicated in the comment letter, the proposed double circuit of the 132 and 650 Lines would be located on the western side of Riverview Drive, which is the eastern boundary of Truckee Regional Park. The lead agencies have reviewed the covenant to restrict the use of this property and determined that the extent of the capped waste in Truckee Regional Park is west of the amphitheater, consisting of a portion of the tennis courts and parking area. This area is approximately 0.25 mile west of the power line alignments under evaluation.

Because of the distance between the cap and the proposed alignment, excavation to support installation of new power poles along Riverview Drive would not disturb the cap, at or below grade. If a change in alignment were proposed such that potential for such disturbance could occur, it would be well outside the current project survey and study corridors and additional environmental analysis would be required. Under these circumstances, further consultation with the California Department of Toxic Substances Control would be initiated.

Letter
7
Response

California Tahoe Conservancy
Penny Stewart, Program Manager
December 31, 2013

- 7-1 The lead agencies and CalPeco acknowledge the oral comments made by Lisa O'Daly of the California Tahoe Conservancy (Conservancy) at the April 17, 2012 scoping meeting, in which she asserted that the Conservancy would act as a responsible agency under CEQA if the project would be located on Conservancy land.

As indicated in Section 4.2, Land Use, although Segments 625-2 and 625-10 of the 625 Line would be located adjacent to Conservancy-owned properties, the alignments of the action alternatives would not cross property owned by the Conservancy. However, construction of the action alternatives would require the creation and improvement of access ways on Conservancy-owned property located at the intersection of Segments 625-1 and 625-2. The Conservancy may have approval responsibility for elements of the project on Conservancy land. The applicant has conducted a detailed ROW analysis, including existing easements, outside of this environmental analysis. The applicant will initiate ROW contact following approval by the lead agencies of a final route.

Although it was initially presumed that the Conservancy would not be a responsible agency because it would not have to carry out or approve the project, project development and design has identified access ways necessary to the project that are located on Conservancy property. The list of responsible agencies on page 1-5 of Chapter 1, Introduction, has been revised to read as follows (also refer to page 1-5 of the Final EIS/EIS/EIR for this revised text).

For the purposes of this EIS/EIS/EIR document, responsible agencies include the Lahontan Regional Water Quality Control Board, California Department of Fish and Wildlife (CDFW), California Department of Forestry and Fire Protection, California Department of Transportation, California Department of State Parks and Recreation, California Tahoe Conservancy, Placer County Air Pollution Control District, Northern Sierra Air Quality Management District, Placer County, and the Town of Truckee.

- 7-2 The EIS/EIS/EIR discussion on road decommissioning notes that in order to optimize the network of forest roads, the USFS, Lake Tahoe Basin Management Unit (LTBMU) reviews proposed projects in the context of the existing roadway network and to identify appropriate response actions (including constructing, reconstructing, or decommissioning roads). Since the action alternatives would result in the relocation of portions of the 625 Line and 650 Line, it may be appropriate to decommission USFS roads no longer necessary for access, or which may have overlapping function with new access ways constructed as part of the proposed project. The roads that might meet criteria to be considered for closure under each of the action alternatives are provided in Appendix F of the EIS/EIS/EIR.

As shown in Appendix F, Forest Road T16N75.2 (Carnelian Canyon) is identified as an existing roadway that the USFS may consider for decommissioning. However, this road starts on and crosses Conservancy lands. Although the road has a USFS numbering designation (T16N75.2), the USFS would not decommission road segments on non-USFS lands, and roads on USFS lands with easements cannot be decommissioned. Therefore, the portion of the road on Conservancy lands, including the portions leading up to the water tanks on the NTPUD land in Parcel 116-010-002, would not be decommissioned as part of the project.

The text of the EIS/EIS/EIR in the last paragraph of Section 3.3, Action Alternatives, under “Road Decommissioning” has been revised as follows to clarify that only roads on USFS land would be considered for decommissioning:

To optimize the network of forest roads, the USFS LTBMU reviews proposed projects in the context of the existing roadway network and to identify appropriate response actions (including constructing, reconstructing, or decommissioning roads). Since the action alternatives would result in the relocation of portions of the 625 Line and 650 Line, it may be appropriate to decommission USFS roads no longer necessary for access. Roads with USFS numeric designations (e.g., T16N75.2) that may be considered for decommissioning may also have segments that are on non-USFS lands. The USFS would not decommission road segments on non-USFS lands, and roads on USFS lands with easements cannot be decommissioned.

- 7-3 The applicant continues to review existing easements held by CalPeco and will work directly with the Conservancy regarding whether they cover the proposed access or possible roadway improvements on Conservancy lands. As identified in the introductory text to Appendix F, the project does not include the proposal to decommission roads. Roads are identified in Appendix F that the USFS may consider for decommissioning in the future based on changes in travel system conditions resulting from the proposed project. It is possible that the Conservancy would have a discretionary approval responsibility for vehicle access. Please refer to the response to Comment 7-1, above.
- 7-4 The Conservancy has been added to the list of identified responsible agencies (see Response to Comment 7-1 above). Consultation with the Conservancy will occur as appropriate, consistent with State CEQA Statute and Guidelines elements related to coordination with responsible agencies (e.g., Public Resources Code Section 21002.1(d), Guidelines Section 15096).

Letter
8
Response

California Tahoe Conservancy
Lisa O'Daly, Senior Environmental Planner
January 7, 2014

- 8-1 This comment letter references other comments provided by the California Tahoe Conservancy. These additional comments are provided in Comment Letter 7 and responses are included in this Final EIS/EIS/EIR.

Based on Placer County parcel data, the area referenced in this comment is at the boundary of Segments 625-9 and 625-10 of the 625 Line, and APN 090-020-007 is northeast of the westward turn of the existing and proposed 625 Line alignments. As shown on Map 15 for each action alternative in Appendix B, there is an existing road that extends northeast of the power line alignment and crosses Griff Creek. However, as indicated in these exhibits, this segment of road is not proposed for use during project implementation. Other segments of this road, south and west of the Griff Creek crossing, may be used during project construction and operation, but they may be accessed from existing paved and dirt roads without crossing Griff Creek. Therefore, the failure of the bridge crossing at Griff Creek would not affect the planned construction and operation of the proposed project. The lead agencies and project applicant appreciate the information the Conservancy has provided regarding roads, road conditions, and easements in the project area and the applicant will continue to coordinate closely with the Conservancy on project design and implementation issues that may affect Conservancy properties.

Letter 9	California Water Boards, Lahontan Regional Water Quality Control Board Robert Larsen, Senior Environmental Scientist January 6, 2014
Response	

- 9-1 The LRWQCB is identified as a CEQA responsible agency on page 1-5 of the Draft EIS/EIS/EIR. The lead agencies and the applicant appreciate LRWQCB's participation in the environmental review process.
- 9-2 The comment suggests that the Draft EIS/EIS/EIR does not include sufficient information to conclude that the proposed project will not have a significant effect on the environment. This issue is addressed in more detail in subsequent comments and is responded to accordingly below.

The comment also provides various numbers and statistics from the Draft EIS/EIS/EIR to indicate the size and scope of the project. Clarification regarding the information cited from the Draft EIS/EIS/EIR is warranted. The comment states that the action alternatives:

"...will require substantive construction activities that will result in more than 200 acres of construction disturbance, 134 acres of permanent right-of-way disturbance, more than six acres of sensitive land disturbance (including wetlands and stream environment zones (SEZs), and will require an estimated 25 stream channel crossings."

Based on the numbers provided, it is assumed that the comment is providing data for Alternative 4 (Proposed Alternative) found in Tables 4.6-9 and 4.6-10 in the Hydrology and Water Quality section of the Draft EIS/EIS/EIR. As noted in the description of methods and assumptions on page 4.6-33, the numbers provided in Table 4.6-9 are based on the worst-case, simple assumption that all lands in the power line corridor would be disturbed within a 40-foot wide permanent easement (or 65-foot wide permanent easement width for double-circuit segments), a 65-foot wide temporary construction easement (for single-circuit segments), and a 12-foot wide access way easement. The calculations reflected in Table 4.6-9 do not take into account various avoidance and minimization requirements included in the APMs and mitigation measures, such as minimizing the width of the construction corridor in sensitive areas and avoiding disturbance of sensitive habitats. The disturbance area calculations also do not consider where the construction corridor may be over existing roads or similar developed areas where ground disturbance would not be needed. Therefore, the actual disturbance area for the Proposed Alternative would be substantially less than the 207 acres (total construction disturbance) indicated in Table 4.6-9. The same is true for the other action alternatives. A detailed project design would be required for each alternative to further refine the disturbance estimates in Table 4.6-9, and detailed design would commence upon approval of an alternative by the lead agencies. For reference, this project would be completed in phases. The 650 design would be completed first as the most immediate phase. The 625 Line would not be designed immediately as the upgrade on that line is not planned for several years. As such, construction related studies and permits would only be sought immediately for the 650 Line. The description of methods and assumptions on page 4.6-33 identifies the simplified nature of the data provided in Table 4.6-9, but also identifies that because a consistent methodology was used to calculate potential disturbance area for all alternatives, the table "provides a useful comparison of the potential disturbance associated with each."

Regarding the values for total permanent ROW provided in Table 4.6-9, ROW is a term that can both describe limitations of activity in a geographic area as well as be used in a real estate context. In a real estate context, CalPeco may ultimately obtain from landowners a 40-foot (or wider, or narrower) ROW easement for operations, maintenance, and repairs, but would not necessarily ever disturb the whole ROW for construction or operations. Therefore, the numbers in Table 4.6-9 for "Total Permanent ROW"

may ultimately be accurate relative to the total ROW easement acquired from landowners, but would be an overestimate of ground disturbance for the reasons described above.

Worst-case assumptions similar to those used for Table 4.6-9 were also used to calculate disturbance of sensitive habitats in Table 4.6-10 (see footnotes at the end of Table 4.6-10). Therefore, the roughly six acres of sensitive habitat (including stream environment zones [SEZs]) identified for Alternative 4 (Proposed Alternative) in Table 4.6-10 is an overestimate of actual disturbance because it does not take into account avoidance and minimization requirements included in the APMs and mitigation measures.

The total number of stream crossings identified for each alternative in Table 4.6-10 is accurate, but a crossing does not necessarily equate to disturbance. Streams and waterways can be spanned by the power lines with no poles in the waterway, resulting in no disturbance (such as the existing spans across the Truckee River in Tahoe City and Truckee that would be replaced by new spans). Some waterways may have existing culverted roads or similar existing crossings that may be used for construction and operations, resulting in no need for disturbance of the waterway. APMs such as WQ-7 specifically address methods to avoid and minimize disturbance during crossings.

The comment is accurate in identifying that the project would add “unpaved road miles” to the Lake Tahoe watershed. The addition of two-track access ways, as described on pages 3-28 through 3-30 of the Draft EIS/EIS/EIR, is disclosed and evaluated in the environmental analysis.

The removal of trees is also disclosed and analyzed and the numbers provided in the comment are generally consistent with the ranges provided in Tables 4.3-2 and 4.3-4 in the Draft EIS/EIS/EIR. However, as identified in these tables and in the discussions of methods and assumptions, the estimates of numbers of trees to be removed is for trees greater than or equal to 1-inch dbh. The available forest resource data sets used for the analysis, which cover the whole project area and were provided by the USFS, provided tree numbers based on trees greater than or equal to 1-inch dbh. Because the source data used these parameters, the impact analysis also expresses tree removal using these parameters. Therefore, although Table 4.3-2 in the Draft EIS/EIS/EIR identifies the removal of approximately 47,101 trees for Alternative 4 (Proposed Alternative) (now 48,704 in the Final EIS/EIS/EIR with incorporation of the APM SCE-7 setback), because of the nature of the available data set, this number incorporates a substantial number of very small trees and should be interpreted accordingly. As identified on page 4.3-11 of the Draft EIS/EIS/EIR, although the datasets available for the evaluation of forest resource impacts may not be ideal, because a consistent methodology is used for all alternatives it allows for a comparative evaluation of the alternatives.

Finally, the comment is correct in the estimate of vegetation removal anticipated from the development and temporary use of staging areas.

- 9-3 The comment generally expresses that the APMs do not provide sufficient detail to ensure their effectiveness and include wording, such as “extent possible” and “where feasible” that undermine confidence in their implementation. This comment is an introduction to concepts/concerns that are addressed in more detail in subsequent comments, and responses to those more detailed comments are provided below.

At the request of the lead agencies, the text of many of the APMs has been modified to simplify their future transfer to permit conditions. Many of these changes may address the commenters request for additional detail and implementation criteria. In addition, the response to Comment 10-8 (comment letter from County of Placer Community Development/Resource Agency), adds further detail to APMs related to water quality.

- 9-4 The lead agencies and the project applicant understand the ambitious nature of the 2014 construction start date identified in the EIS/EIS/EIR (previously targeted as 2012). This project is an upgrade for reliability and safety reasons (see Master Response 4). The lead agencies and the project applicant appreciate LRWQCB's efforts and cooperation in this endeavor. The project applicant has been coordinating with LRWQCB staff regarding regulatory and permit requirements and will continue this process, including providing a Storm Water Pollution Prevention Plan (SWPPP) and other materials as soon as they are available.
- 9-5 The comment indicates that the construction season stated in Section 3.3.6, Common Processes of the Action Alternatives, is incorrect in light of the requirements of TRPA and included in the Basin Plan. The identification of the construction season in Section 3.3.6 states that "The annual construction season in the project area is generally May through November, weather permitting." The statement of the construction season is a general characterization, and also encompasses the "project area," which includes areas both inside and outside the Lake Tahoe Basin. Although, as stated in the comment, the Basin Plan and TRPA may provide for a May 1 through October 15 construction season; construction may be allowable in November in some portions of the project area, such as in the Town of Truckee, weather permitting or for other reasons under TRPA's discretion. In addition, the limitation on work in the Basin applies only to ground disturbing activities, and other project activities could occur past October 15th. Therefore, the general characterization of May through November in Section 3.3.6 is considered appropriate given the geographic scope of the proposed project.
- 9-6 The comment states that APM BIO-29 does not provide adequate protection to wetlands and stream channels from the potential impacts associated with skidding trees.

Although APM BIO-29, as expressed in the Draft EIS/EIS/EIR, allowed skidding of trees in wetland areas under certain circumstances, the applicant has identified that they plan to use alternative methods to remove trees from aquatic habitat areas. APM BIO-29 has been revised to explicitly prohibit the skidding of trees in waters of the United States or waters of the state, as follows:

Skidding of trees will not be permitted ~~avoided~~ in waters of the United States or waters of the State, including wetlands. Within these waters tree removal may be conducted by hand, use of cable systems, helicopter yarding, or use of ground based equipment when determined suitable for ground based mechanical harvest. unless the channel is dry or lined with snow to a minimum depth of 1 inch. In addition, Any work conducted in the vicinity of waters of the United States, waters of the State, and wetlands will have an environmental monitor will be present consistent with the requirements of , as described in APM WQ-4. Other APMs applicable to the protection of aquatic resources will also be implemented.

APM BIO-29, and all other APMs, should not be looked at in isolation. Many of the APMs overlap in the resources and impact mechanisms they address. Skidding of trees shall be implemented in the manner identified in APM BIO-29 to avoid adverse effects to wetlands and stream channels, and where damage still might occur, elements of APM BIO-30 would come into play. It is not the intent of any one APM to result in full avoidance of damage to wetlands from the entire proposed project, but to work in tandem with other applicable APMs to implement a process of avoiding, minimizing, and compensating for impacts to wetlands. Implementation of the APMs, taken as a whole, would ultimately result in a less than significant impact on wetlands and full compliance with laws and regulations applicable to the resource.

APM BIO-30 follows a step-wise approach to addressing wetland impacts; avoid impacts where possible; where impacts cannot be avoided, minimize the impact; restore habitat subject to temporary disturbance; and where impacts to wetlands do occur, provide compensatory mitigation following

USACE criteria (which would be implemented pursuant to the CWA Section 404 permitting process). APM BIO-30 states:

“CalPeco will determine, based on the verified wetland delineation and the project design plan, the acreage of impacts on waters of the United States and waters of the state that ~~will~~ would result from project implementation. Impacts will be avoided to the extent practicable through the siting of poles and other facilities outside of delineated waters of the United States and waters of the state. Work in wetlands or wet meadow habitats with saturated soil conditions will be scheduled when soils are dry to the extent possible. If soils become saturated, timber mats will be installed along all vehicle and equipment access routes to minimize rutting. Disturbed wetland areas will be restored to preconstruction conditions and seeded with a native species, consistent with the vegetation community present prior to disturbance, to stabilize the soils and minimize the introduction of noxious weeds, as specified by the USACE and RWQCB. In accordance with the USACE “no net loss” policy, all permanent wetland impacts will be mitigated at a minimum of a 1:1 ratio. This mitigation will come in the form of either contributions to a USACE-approved wetland mitigation bank or through the development of a Compensatory Mitigation and Monitoring Plan aimed at creating or restoring wetlands in the surrounding area (although creation is not authorized by TRPA in their jurisdiction).”

Regarding the issue of the “magnitude of the potential impact” identified in the comment, it would not be feasible at this time to quantify the exact impact that might result from tree removal. To determine, in detail, the effects of tree removal would require field surveys by a registered professional forester to assess the number, size, and volume of trees to be removed and coordination with a timber harvest company (logger) to assess the likely methods of removal, locations of landings and log handling areas, and paths for transport of logs. It would be premature at this stage in the project design process to enter into such detailed planning. Four action alternatives and one sub-alternative are evaluated in the Draft EIS/EIS/EIR covering over 50-miles of potential power line and access way routes. This EIS/EIS/EIR adequately discloses the type, magnitude, and severity of potential impacts. A detailed timber removal plan for all possible power line and access way routes considered in each alternative is not required at this stage of planning. See response 9-2 above regarding the reference in the comment to “40,000+ trees to be removed” and the fact that this number includes many very small trees. Not every tree identified within the ROW in the EIS/EIS/EIR, due to their small size, will require removal, or skidding for removal.

The Draft EIS/EIS/EIR does provide substantial information on possible overall wetland impacts for each alternative. Table 4.7-9 on page 4.7-67 of the Draft EIS/EIS/EIR summarizes and compares the acreages of potential jurisdictional habitats identified and mapped in the permanent and temporary impact zone of each action alternative. This information allows a disclosure of potential impacts and a comparison among alternatives sufficient to support the NEPA/TRPA/CEQA environmental analysis. However, it is important to note that the acreages in Table 4.7-9 do not consider measures and factors that would minimize impacts and should be considered a maximum and likely an overestimate of the area of impact (a concept also addressed above in response to Comment 9-2). Actual impacts would likely be considerably less. Impact conclusions are based on available site condition data and information provided in the project description, including APMs. Potential impacts from skidding trees are evaluated under Impact 4.6-1 for each alternative. This analysis concluded that construction of the action alternatives would not violate any federal, state, regional, or TRPA water quality standards, or otherwise substantially degrade surface water quality, with integration of standard BMPs and adopted APMs into construction plans and activities and compliance with applicable federal, state, and local laws, regulations, and programs.

- 9-7 See response to Comment 9-6 above regarding the step-wise approach to addressing wetland impacts provided in APM BIO-30. APM BIO-30 is not expected to result in full avoidance of wetland impacts, but when taken as a whole with other APMs, is designed to minimize impacts and compensate for those impacts that cannot be fully avoided so that impacts would be less than significant. Multiple legal and regulatory requirements commit the applicant to implementation of protection measures. Where full avoidance of wetlands is not possible, wetland impacts would be permitted through USACE, LRWQCB, and the California Department of Fish and Wildlife where applicable (i.e., Streambed Alteration Agreements). Taking measures to avoid wetland impacts can often be more desirable to an applicant than seeking authorization for impacts simply because of the time and expense typically associated with permitting impacts to wetlands, then restoring the wetland after construction, monitoring the success of the restoration effort, implementing remedial measures if the restoration is not initially successful, and implementing additional compensatory mitigation. Specific to the CWA Section 404 permitting process, the applicant has an additional incentive to maintain wetland impacts below thresholds that would allow for use of a Nationwide Permit to take advantage of the streamlined permitting process under the Nationwide Permit program. If an individual permit is required from the USACE, a Section 404(b)(1) alternatives analysis will be conducted to ensure that the permitted project is the LEDPA. In addition, the lead agencies for the EIS/EIS/EIR (USFS, TRPA, and CPUC) each have legal obligations to monitor and document compliance with and implementation of APMs and mitigation measures. These conditions provide substantial assurance that less-than-significant impact conclusions are appropriate.
- 9-8 The comment states that there is a lack of detail in APM BIO-36, especially when considering the scope and complexity of the proposed project. In response to the general request for additional detail (as well as in response to input from other sources), the text of APM BIO-36 is modified as follows:

“Prior to construction, CalPeco will develop a Restoration Plan that will address final clean-up, stabilization, and revegetation procedures for areas disturbed by the project. The plan will be consistent with, and implement related commitments and requirements included in the EIS/EIS/EIR project description, other APMs, mitigation measures, and agency permit requirements. The Restoration Plan will address loosening of any compacted soil, restoration of surface residue, and reseeded. If existing unpaved roads require modification to temporarily allow passage of construction equipment during the construction period, these roads will be returned to their original footprint after construction is complete. On NFS lands, restoration activities will be designed and implemented to meet invasive plant management guidelines and Visual Quality Objectives (VQO) for the area. Areas temporarily disturbed by cut and fill activities will ~~would~~ be re-graded to blend with the natural topography. On public land, CalPeco will coordinate with the land management agency to determine an appropriate seed mix or tree planting plan as well as other elements of the plan applicable to lands managed by the agency. On private land, CalPeco will coordinate with the landowner and/or provide the landowner with a suggested seed mix based on consultation with the agency of jurisdiction. The plan will include approved seed mixes, application rates, ~~and~~ application methods, methods to record pre-disturbance conditions, success criteria for vegetation growth, monitoring and reporting protocols, and remedial measures if success criteria are not met. If broadcast seeding is determined to be the most feasible application method, seeding rates will be doubled relative to the standard seeding rate and the seeding method rationale will be explained. The plan will also include long-term erosion and sediment control measures, slope stabilization measures, criteria to determine the success of these measures, remedial actions if success criteria are not met, and monitoring and reporting procedures. As part of normal equipment inspections during project operation, an evaluation of access ways will be conducted to confirm that use has not resulted in compaction that will ~~would~~ result in “coverage” per TRPA standards.”

- 9-9 The comment indicates that the straw mulch and straw bale check dams listed as erosion control measures in APM SOILS-1 may not be appropriate for the proposed project and states that a detailed SWPPP will be required. Straw mulch and straw bale check dams are included in APM SOILS-1 within a list of example items that could be used to retain sediment within the construction work areas and staging areas; "...such as silt fencing, straw mulch, and straw bale check dams..." The APM does not rely solely on the use of straw mulch and straw bale check dams for sediment control, nor exclude the use of other of other methods of sediment control. In response to the comment, the list of sediment control options in APM SOILS-1 is expanded to read as follows:

Sediment control structures, such as silt fencing, coir logs, wattles, straw mulch, and straw bale check dams will ~~would~~ be installed, as appropriate and effective for the given situation...

Regarding preparation and implementation of a SWPPP, on page 3-63 of the Draft EIS/EIS/EIR it is stated that:

"A Stormwater Pollution Prevention Plan (SWPPP) would be prepared and implemented as part of the project. This plan would detail the BMPs that would be implemented to minimize erosion, reduce sediment transport, and control stormwater flow from the project area. In addition, the SWPPP would generally describe the terrain type and slope at temporary construction areas, and would address grading and slope stabilization methods, as well as construction waste disposal methods."

APMs SOILS-1 and WQ-1 each reference a SWPPP, and in the discussion of regulatory setting in Section 4.6, Hydrology and Water Quality, the requirements for a SWPPP are identified. A detailed SWPPP consistent with suggestions in the comment will be prepared and implemented.

- 9-10 The comment suggests that APM WQ-3 include more detail regarding its implementation. APM WQ-3 is modified to read as follows:

Where feasible (e.g., landowner approval is provided, sufficient space with permeable surfaces is available, slopes are gentle enough to allow control of potential sediment transport) all stormwater or groundwater ~~removed from within~~ excavations will be discharged overland into well-vegetated areas to promote the settling of sediment. If overland discharge is not possible, then water removed from excavations will be collected, treated, and disposed of consistent with requirements of the Lahontan Regional Water Quality Control Board and any other agencies with jurisdiction over the activity.

The comment also includes a statement that "Project excavation will apparently occur in many areas with shallow groundwater..." but does not indicate how this conclusion was developed. The most likely scenario for excavations to encounter groundwater that needs to be removed would be where a self-supporting poles (i.e., no guy-wires are used) with a concrete foundation are needed in a location with shallow groundwater and excavation occurs at a time when the water table is high enough to intersect with the excavation. The "typical" or "preferred" construction method is to use direct buried poles lowered into an auger-excavated hole with guy wires for support where needed. Self-supporting poles with concrete foundations are only used where the line turns at an angle and guying is not possible (e.g., where electrical clearances cannot be maintained, where space is limited, or to avoid guying across the highway). The majority of poles located within lowland areas with higher probability of groundwater will be direct buried poles. For example, there are no self-supporting poles in the Martis Valley wetland area and only one in the vicinity of Griff Creek.

- 9-11 The comment states that APM WQ-4 “...acknowledges the likelihood of skidding trees and poles through wetlands and aquatic resources...” As indicated above in response to Comment 9-6, modifications have been made to APM BIO-29 to clearly indicate that the skidding of trees through wetlands will not be permitted. This restriction has also been included in APM WQ-4. However, this issue raises the opportunity to identify that the existence of an APM addressing a potential impact or impact mechanism is not an indication of the likelihood of that impact. APMs are intended to address a variety of impact mechanisms, and to prevent significant adverse environmental effects, even those with a low probability of occurring. For example, although it is unlikely that human remains will be discovered during project construction, APM CUL-9 addresses the issue because improper treatment of remains, if encountered, would be a significant adverse environmental effect. Similarly, it is unlikely that blasting would be considered in the vicinity of existing buildings; however, APM NOI-5 addresses this issue in the unlikely event it arises during the construction process. The inclusion of APM WQ-4 in the EIS/EIS/EIR is not an indication that skidding of trees and poles through wetlands is anticipated to be a likely or frequent event.

See response to Comment 9-6 above regarding the step-wise approach to addressing wetland impacts provided in APM BIO-30 and the addition of text to APM BIO-29 that strengthens the nexus between APMs BIO-29, BIO-30, and WQ-4. Also see response to Comment 9-7 regarding the fact that no single APM is intended to result in full avoidance of wetland impacts, but, when all wetland related APMs are taken as a whole, the “program” is designed to avoid and minimize impacts and compensate for those impacts that cannot be fully avoided. The text of APM WQ-4 acknowledges this nexus between the various wetland related APMs (as well as permit requirements and mitigation measures) by stating (with edits in response to other comments):

“...An environmental monitor will be present in all instances where disturbance to in which trees or poles must be skidded through an aquatic feature may occur to ensure conditions of this APM and any other applicable APMs, permit conditions, and mitigation measures are complied with.”

The wetland avoidance, impact minimization, restoration, and compensation program provided in the suite of wetland related APMs describes substantive actions to address potential wetland impacts and provide sufficient requirements (e.g., obtaining agency permits, APM implementation a condition of lead agency authorization) to ensure completion of wetland restoration obligations.

- 9-12 In response to this comment, the last paragraph on page 4.6-5 of the Draft EIS/EIS/EIR (and extending to page 4.6-6) related to the Lake Tahoe Total Maximum Daily Load (TMDL) is modified as follows:

A pollutant source analysis conducted by the LRWQCB and NDEP identified urban uplands runoff, atmospheric deposition, forested upland runoff, and stream channel erosion as the primary sources of fine sediment particle, nitrogen, and phosphorus loads discharging to Lake Tahoe. The largest source of fine sediment particles to Lake Tahoe is urban stormwater runoff, comprising 72 percent of the total fine sediment particle load. The urban uplands also provide the largest opportunity to reduce fine sediment particle and phosphorus contributions to the lake. Undeveloped (e.g., forested) portions of the Lake Tahoe watershed are estimated to contribute approximately 9 percent of the total fine sediment particle load (LRWQCB 2010, LRWQCB 2011c). The pollution reduction approach in the Lake Tahoe TMDL implementation plan (LRWQCB 2011c) for forest upland areas focuses on easy-access, high pollutant-yielding disturbed areas such as unpaved roads, campgrounds, and ski runs. Implementation actions include installing and maintaining BMPs in disturbed areas, capturing and retaining sediment on unpaved roadways, and decommissioning and restoring unauthorized unpaved roads and trails. Operating under the current NPDES Stormwater Permit and Lake Tahoe TMDL, Placer County must develop and implement a comprehensive Pollutant Load Reduction Plan for review and

approval by LRWQCB that illustrates how their methods of operation and maintenance, and plans for capital improvements and retrofit projects, ordinance enforcement, and related actions will achieve pollutant load reduction requirements (LRWQCB 2011b).

The access ways included as part of the proposed project would consist of two track pathways suitable for passage of utility inspection and maintenance vehicles (see Exhibit 4.5-2 on page 4.5-29 of the Draft EIS/EIS/EIR) and not what one might consider a “traditional” unpaved roadway. In addition, many of the forest upland implementation actions included in the Lake Tahoe TMDL would be employed as part of the proposed project, such as installing and maintaining BMPs (as referenced in several APMs), potentially decommissioning and restoring existing roads whose functions could be replaced by project generated access ways (see Appendix F of the EIS/EIS/EIR), and abandonment (i.e., decommissioning) of the existing 625 Line ROW and related access ways after the installation of the new 625 Line and removal of the existing line.

- 9-13 The comment indicates that nearshore water quality should be characterized after consideration of the Desert Research Institute’s Lake Tahoe Evaluation and Monitoring Framework. In response to this comment, the paragraph addressing nearshore water quality at the top of page 4.6-16 of the Draft EIS/EIS/EIR is modified as follows:

The quality of water in the nearshore area, the primary point of contact for most residents and visitors to the Lake, has been tracked by measuring turbidity, which is an indication of the cloudiness of water expressed in Nephelometric Turbidity Units (NTU). Higher turbidity measurements indicate cloudier water. Higher turbidity measurements in the nearshore area of the Lake, defined by Taylor (Minor and Cablk 2004: pp. 29) as levels exceeding 0.25 NTU, appear to be influenced by surface runoff from developed areas. Of the 72 miles (115.9 kilometers [km]) of Lake shoreline, Taylor identified 0.9 mile (1.5 km) of shoreline with extremely elevated turbidity, 2.5 miles (4 km) of shoreline with moderately elevated turbidity, and 5.6 miles (9 km) of shoreline with slightly elevated turbidity (Minor and Cablk 2004: pp. iii).

Turbidity in Lake Tahoe is influenced by the presence of both sediment and algae (phytoplankton) suspended in the water. In the nearshore environment turbidity can vary considerably by location and time. Concentrations of sediment and suspended algae can be affected by upland and upstream inputs of sediment and nutrients (with nutrients supporting algae growth) that may be temporally consistent, seasonal (carried by spring runoff), or episodic (tied to a heavy rain event, forest fire, or other perturbation). Currents and eddies within the lake can also carry sediment and algae and move it to or from different nearshore areas. Perceived nearshore water quality is also significantly influenced by the presence of algae attached to rocks, gravel, and other substrates. Widespread growth of attached algae in the nearshore during the spring remains a characteristic of Lake Tahoe, where thick expanses of algae often coat the shoreline, particularly in spring (Heyvaert et. al. 2013).

- 9-14 The comment provides clarification regarding the development, intent, and implementation of the TMDL. In response to this comment, the last paragraph on page 4.6-29 of the Draft EIS/EIS/EIR (and extending to page 4.6-30) related to pollutant and water quality models is modified as follows:

Various multi-agency efforts went into collecting and compiling stormwater data and analyzing the primary sources of pollutants to the Lake and optimum ways to target load reductions to attain water quality goals. An EPA approved Lake Tahoe Watershed Model ~~(also known as the Pollutant Load Reduction Model or PLRM)~~ was developed to estimate 1) runoff and pollutant loading from all subwatersheds of the Lake Tahoe Basin, and 2) expected pollutant loads that might result from various land uses and potential land use changes in the Lake Tahoe Basin

~~formulated to represent basin-wide pollutant reduction strategies.~~ A second, Lake Clarity Model was developed to estimate Lake Tahoe's response to these pollutant loadings and to help quantify the necessary reductions in pollutant loads to achieve water quality goals, including increased lake transparency.

In addition, the discussion of "Load Reduction Milestones and Implementation" on page 4.6-31 of the Draft EIR is modified as follows:

The Lake Tahoe TMDL indicates that to achieve the target TRPA's transparency standard of 29.7 meters annual average Secchi depth, total Region-wide loads of fine sediment particles, phosphorus, and nitrogen need to be reduced by 65 percent, 35 percent, and 10 percent, respectively. Load reductions expressed as a percentage are relative to baseline pollutant loads calculated for the year 2004.

Through the Lake Tahoe TMDL, the LRWQCB and NDEP have established five year load reduction milestones shown in Table 4.6-8 to help assess progress towards meeting the overall load reduction goals. Given that the majority of pollutant loads for fine sediment particles and phosphorus are delivered to the Lake from developed lands (72 percent of the total fine sediment load), the LRWQCB and NDEP have prioritized this source category as the greatest opportunity for pollutant control. Undeveloped (e.g., forest) portions of the Lake Tahoe watershed, where the proposed project would primarily take place, are estimated to contribute approximately 9 percent of the total fine sediment particle load. Through a NPDES permit, each city and county in the California side of the Lake Tahoe Basin is expected to develop load reduction plans that prioritize water quality projects and actions to reduce loading from developed lands to meet the TMDL milestones shown in Table 4.6-8. The TMDL also provides milestone load reductions for forest upland, atmospheric deposition, and stream channels pollutant sources. These are also shown in Table 4.6-8.

Table 4.6-8 — Load Reduction Milestones From Developed Lands¹

Pollutant of Concern	2016 Target	2021 Target	Interim Clarity Challenge
Fine Sediment Particles	10%	21%	32%
Total Phosphorus	7%	14%	17%
Total Nitrogen	8%	14%	4%

¹ Load reductions expressed as a percentage are relative to baseline pollutant loads calculated for the year 2004.
Source: LRWQCB and NDEP 2010

Table 4.6-8 Load Reduction Milestones for TMDL Pollutant Source Categories¹

Pollutant Source Category	Pollutant of Concern	2016 Target	2021 Target
	<u>Fine Sediment Particles</u>	<u>10%</u>	<u>21%</u>
<u>Urban Upland</u>	<u>Total Phosphorus</u>	<u>7%</u>	<u>14%</u>
	<u>Total Nitrogen</u>	<u>8%</u>	<u>14%</u>
	<u>Fine Sediment Particles</u>	<u>6%</u>	<u>9%</u>
<u>Forest Upland</u>	<u>Total Phosphorus</u>	<u>1%</u>	<u>1%</u>
	<u>Total Nitrogen</u>	<u>0%</u>	<u>0%</u>
	<u>Fine Sediment Particles</u>	<u>8%</u>	<u>15%</u>

Table 4.6-8 Load Reduction Milestones for TMDL Pollutant Source Categories¹

<u>Pollutant Source Category</u>	<u>Pollutant of Concern</u>	<u>2016 Target</u>	<u>2021 Target</u>
<u>Atmosphere</u>	<u>Total Phosphorus</u>	<u>9%</u>	<u>17%</u>
	<u>Total Nitrogen</u>	<u>0%</u>	<u>0%</u>
	<u>Fine Sediment Particles</u>	<u>13%</u>	<u>26%</u>
<u>Stream Channel</u>	<u>Total Phosphorus</u>	<u>8%</u>	<u>15%</u>
	<u>Total Nitrogen</u>	<u>0%</u>	<u>0%</u>

¹ Load reductions expressed as a percentage are relative to baseline pollutant loads calculated for the year 2004.
Source: LRWQCB and NDEP 2010

9-15 The comment expresses that because of perceived deficiencies in the APMs identified in previous comments, the APMs are not sufficient to support a less than significant conclusion for Impact 4.6-1. Please see responses above regarding the intended application of the APMs as a set of multiple interacting and reinforcing measures rather than as isolated individual actions; the stepwise approach to wetland avoidance, impact minimization, and compensation; text additions/modifications to further clarify the APMs; and clarification regarding the size and scope of project impacts. The totality of information in the EIS/EIS/EIR supports the less-than-significant impact conclusion for Impact 4.6-1. Additional information and text modifications provided in response to agency and public comments further reinforce this conclusion.

9-16 The comment suggests that Mitigation Measures 4.6-3a and 4.6-3b are not sufficiently detailed or include all necessary information to support a less than significant impact conclusion. As described in responses to previous comments, Mitigation Measures 4.6-3a and 4.6-3b should not be taken in isolation, but should be considered in the context of being implemented concurrently with APMs that address similar issues. The discussion of Impact 4.6-3 identifies that even with actions included in the APMs, a significant impact could occur where access ways may be constructed on steep slopes with moderate to severe erosion hazards. The last paragraph of the discussion of Impact 4.6-3 (Alt. 1) on page 4.6-48 has been modified as follows to reinforce this point:

Several of the new access ways and locations of improvements to existing roads would be along steeply inclined grades in soils with moderate to severe erosion hazard, therefore are at risk of becoming a conduit for surface water drainage to collect and concentrate, potentially leading to accelerated erosion and the formation of rills and gullies and the loss of sediment that is carried to surface waters. Although access ways would be stabilized with low growing vegetation, and the SWPPP and several APMs would address potential erosion issues (e.g., BIO-36, SOILS-1, SOILS-2), if slopes were steep enough substantial erosion could still occur within the road prism. The access roads could also detrimentally capture and redirect existing drainages if not sited or designed correctly. In addition to the 37 acres of potential disturbance from new access ways and improved dirt access roads under Alternative 1 (PEA Alternative), additional disturbance areas may result from cut and fill slopes adjacent to the access ways/roads in the steeper gradient areas or in areas where the road turns. Again Even with APMs and SWPPP requirements, there is the risk ~~for~~ of accelerated erosion and hillside drainage capture at these cut and fill slopes and road turns, if not adequately designed. For this reason, this would be a significant impact.

Regarding the information provided in Mitigation Measures 4.6-3a and 4.6-3b, the “USFS Guidance” referenced in Mitigation Measure 4.6-3a is the Draft Water Quality Management Handbook prepared by the Pacific Southwest Region (Region 5) (as indicated in Chapter 7, References Cited). The bullet list

provided in Mitigation Measure 4.6-3a is a sampling of measures included in the 233 page handbook and are not intended to describe the only actions that might be implemented as part of the mitigation measure. Reliance on the USFS Water Quality Management Handbook is appropriate to provide mitigation actions and performance criteria for Mitigation Measure 4.6-3a and support a less than significant impact conclusion for Impact 4.6-3. The section of the handbook related to roads addresses multiple elements of water quality protection, including road siting, construction, operations and maintenance, and monitoring and inspection. The handbook includes a monitoring and adaptive management program to be implemented in coordination with the State Water Resources Control Board (SWRCB) to ensure the effectiveness of the program and compliance with SWRCB standards. In addition, at the request of the USFS, additional specific road design criteria have been listed in Mitigation Measure 4.6-3a and the text of Mitigation Measure 4.6-3b is modified as follows to explicitly reference the USFS Water Quality Management Handbook:

...Make repairs and implement measures in line with the USFS ~~G~~guidance on ~~L~~locating and ~~D~~esigning ~~R~~oads to ~~P~~rotect ~~W~~ater ~~Q~~uality (USFS 2011) to reduce or eliminate any erosion issues including limiting public access via gates, plantings, or signage;...”

In addition, beyond the APMs and mitigation measure identified in this response, a SWPPP will be prepared for the project and the LRWQCB will have direct involvement with project planning and development and implementation of specific BMPs and other measures through the future permitting process once approval of a single alternative is obtained.

Regarding the comment's suggested need for specific information regarding the location of roads, design elements, BMPs, and other items, the response is similar to that provide in response to Comment 9-6 above: It would be premature at this stage in the project design process to enter into such detailed planning. Four action alternatives and one sub-alternative are evaluated in the EIS/EIS/EIR covering over 50-miles of potential power line and access way routes. To conduct detailed designs for BMPs and related items for all possible power line and access way routes considered in each alternative would be infeasible at this stage of planning. However, the applicant has undertaken considerable effort to identify likely roads and access ways needed for project construction and operation for each alternative and these are reflected in the detailed alternative maps provided in Appendix B of the EIS/EIS/EIR. This EIS/EIS/EIR adequately discloses the type, magnitude, and severity of potential impacts.

- 9-17 The comment suggests that the Equivalent Roadless Area (ERA) coefficients used in the analysis for unpaved roads and staging areas (0.8 and 0.3 respectively) are incorrect, and that a coefficient of 1.0 should be used because these facilities would be hydraulically similar to impervious surfaces. (Coefficient values less than 1.0 reflect that unpaved roads, and access ways constructed as part of the proposed project and staging areas would behave differently than impervious surfaces such as asphalt, concrete, or highly compacted soil.) The use of the 0.8 and 0.3 ERA coefficient values was developed in collaboration with the USFS and TRPA. The coefficient values used in the EIS for the USFS South Shore Fuel Reduction and Healthy Forest Restoration project were considered as well as guidance from California EPA (the 2010 User's Guide for the California Impervious Surface Coefficients provided by the Office of Environmental Health Hazard Assessment).

As indicated above in response to Comment 9-12, access ways included as part of the proposed project would consist of two track pathways suitable for passage of utility inspection and maintenance vehicles (see Exhibit 4.5-2 on page 4.5-29 of the Draft EIS/EIS/EIR) and not what one might consider a “traditional” unpaved roadway. The access ways would be used infrequently for facility inspections, maintenance, and repairs and would not be subject to severe compaction. Because unpaved road and access ways have some permeability, it is appropriate to use an ERA coefficient of 0.8 rather than 1.0. Staging areas would be temporary project features and would be decompacted, seeded, and restored to

pre-project conditions after construction. Staging areas would not function as impervious surface and given these circumstances, an ERA coefficient of 0.3 is appropriate for these facilities.

- 9-18 The comment references values provided in Table 4.7-9 of the Draft EIS/EIS/EIR and characterizes them as permanent wetland impacts. As noted in Impact 4.7-2 on page 4.7-66 and footnote #2 in Table 4.7-9, the values provided in Table 4.7-9 reflect the total area of the habitat type within the project ROW and do not take into account avoidance and minimization requirements included in the APMs and mitigation measures, such as minimizing the width of the construction corridor in sensitive areas and avoiding disturbance of sensitive habitats. Actual project impacts would be substantially less than the acreage of occurrence values provided in Table 4.7-9. However, because a consistent methodology was used to calculate habitat occurrences within the ROW for each alternative, Table 4.7-9 provides a useful comparison of the habitat potentially intersected by each alternative alignment and discloses a maximum possible impact without implementation of avoidance and minimization measures.

Please see responses above regarding the intended application of the APMs as a set of multiple interacting and reinforcing measures rather than as isolated individual actions and text additions/modifications to further clarify the APMs.

Regarding the ability to implement Mitigation Measures 4.7-2a and 4.7-2b, as identified above, the actual impacts to sensitive habitats would be substantially less than the habitat occurrence acreage values provided in Table 4.7-9. Therefore, the need for compensatory habitat creation/restoration/enhancement would also be substantially less than one might estimate if the values in Table 4.7-9 were considered actual habitat losses. Numerous restoration projects have been successfully implemented in the Lake Tahoe Basin. Although potentially difficult and costly, habitat creation, restoration, and enhancement is a feasible method of compensatory mitigation. With implementation of the numerous APMs related to the avoidance, minimization, and compensation for impacts to sensitive habitats, coupled with the requirements of Mitigation Measures 4.7-2a and 4.7-2b, a less than significant conclusion for Impact 4.7-2 is appropriate.

- 9-19 The comment suggests that old growth forest cannot be replaced and any loss of old growth forest would constitute a significant impact that cannot be mitigated. As indicated in the discussions of Impact 4.7-4 for each action alternative, all action alternatives would result in the removal of less than 0.75 acres of late seral/old growth forest, as mapped by TRPA for the 2011 Threshold Evaluation. The nature of the significant impact conclusion, as identified in the EIS/EIS/EIR, is that even this small loss of late seral/old growth forest is contrary to TRPA reaching threshold standards related to this resource. The impact is considered significant because of a conflict with TRPA Code; therefore, Mitigation Measure 4.7-4 would be required, which focuses on actions that would bring the project into compliance with TRPA Code, and would address compliance with the Placer County Tree Ordinance.

As indicated in each discussion of Impact 4.7-4 in the EIS/EIS/EIR, from a biological perspective, "Tree removal within the narrow electric line ROW would not result in substantial changes in stand structure or composition or in the distribution of plant communities in the project area overall, and would not result in a change in the natural functioning of a late seral or old-growth ecosystems." A significance criterion of "no loss" (i.e., any loss is significant and unavoidable) is not reasonable or feasible. Various mechanisms are available to compensate for the loss of old growth trees, such as fuels management and vegetation treatments that can increase the health, quality, and fire resiliency of existing old growth stands, and that accelerate the growth rate of younger stands and reduce the time needed to provide old growth values. Although it would take considerable time, planting a forest stand and preserving and managing it in perpetuity would ultimately create new old growth forest (barring catastrophic events such as forest fire). Implementation of Mitigation Measure 4.7-4 would reduce Impact 4.7-4 to a less than significant level.

- 9-20 The comment summarizes the overall letter, listing topics identified in the previous comments. See the responses above addressing these various topics.

Letter
10
Response

County of Placer, Community Development/Resource Agency
Michael J. Johnson, AICP, Agency Director
January 7, 2014

- 10-1 The lead agencies acknowledge the provisions of General Order No. 131-D and recognize the role of Placer County in land use matters with respect to the CalPeco 625 and 650 Electrical Line Upgrade Project. Placer County's function as a responsible agency is also acknowledged, as described in the Draft EIS/EIS/EIR in Section 1.4, Use of this Document by Other Agencies (see page 1-5).
- 10-2 The commenter indicates that the EIS/EIS/EIR should provide further project level analysis related to alternatives that can be considered for relocation of the Tahoe City Substation and undergrounding of the overhead power lines.

Since publication of the Draft EIS/EIS/EIR, the issue of relocating the Tahoe City Substation has been identified as a planning issue to be addressed, particularly in the context of the planning efforts underway in Tahoe City to update the Community Plan in accordance with the recently adopted Regional Plan (December 2012). Discussions are ongoing between the utility, Placer County, and TRPA regarding possible relocation as a potential future project (note that the project proponent and potential location have not been determined). Relocation of the Tahoe City Substation, though desired by the County and some of the community, was determined not to be required as an alternative in the EIS/EIS/EIR because: it is not a proposed element of the reliability project; it is permitted in its present location as a "special use" in the Tahoe City Community Plan; and rebuild in place would not result in significant, unavoidable environmental effects as compared to existing (baseline) conditions. See Master Response 1 for further discussion on this topic.

See Master Response 2 for a response to the suggestion for undergrounding. In addition, the quote from the Draft EIS/EIS/EIR provided in the comment ("The existing conduits in the bridge spanning the Truckee River do not have sufficient capacity for rerouting all of the distribution lines") is not referring to the 625 Line power line, but lower voltage distribution lines leaving the substation to deliver power directly to customers. The statement is made in the EIS/EIS/EIR to indicate that if the Tahoe City Substation were moved to the opposite side of the Truckee River, distribution lines serving customers on the south side of the river would now need to cross the river, and that the existing conduits in the bridge do not have sufficient capacity to accommodate all the necessary distribution lines.

- 10-3 The applicant continues to coordinate with Placer County on a number of issues and, as needed, would work with the County, in collaboration with TRPA, on the TRPA Plan Area Statement (PAS) Amendment proposed for the Kings Beach Substation and how that might interact with the County planning process. The environmental effects of the proposed modifications to the Kings Beach Substation and corresponding staff-initiated amendment to TRPA's PAS 019, Martis Peak, are evaluated in the EIS/EIS/EIR.
- 10-4 Reconstruction or upgrading of substations would primarily consist of installation of new switches, transformers, and switchgear equipment. The Brockway Substation decommissioning would consist of removing existing equipment and leaving the site vacant, with the services provided by that equipment provided at the upgraded Kings Beach Substation. This transfer of utility equipment/service would require that the current distribution lines coming out of the Brockway Substation be extended to the

Kings Beach Substation, with these lines placed underground as part of the proposed project. The visual analysis in Section 4.4, Scenic Resources, assesses potentially significant changes to the visual character of all facility upgrades that would be visible from adjacent public ROWs. Potential changes in views at the Squaw Valley Substation and Northstar Substation are not discussed in the same detail as the Kings Beach and Brockway Substation because neither facility is easily viewed from public ROWs and all changes in equipment would be within the existing substation fence line.

Design review could potentially be initiated as part of the permitting process required by Placer County/TRPA for these activities, where they occur in locations with joint Placer County/TRPA jurisdiction and CPUC authority under GO 131-D does not preempt local authority (e.g. Brockway and Kings Beach Substations). As stated in Response 10-3 above, the applicant is coordinating with the County on a number of issues, in collaboration with TRPA as needed. It can be explored during this collaboration whether design review would be required as an element of any necessary permits or authorizations.

- 10-5 As summarized by the commenter, implementation of Alternative 2 (Modified Alternative), would result in the colocation of the 625 and 650 Lines along the existing 625 Line alignment south of Brockway Summit, and the removal of the corresponding sections of the 650 Line (Segments 650-1 and 650-2) along SR 267. The commenter's observation that this alternative could improve the quality of the viewshed for Lake Tahoe visitors while potentially requiring tree removal and creating related scenic impacts along the collocated power line corridor is noted by the lead agencies.

While there would be benefits to the viewshed from relocating or undergrounding the underbuild (i.e., existing communication and distribution lines) remaining after relocating the 625 Line under Alternative 2 (Modified Alternative), this effort, specific to Alternative 2 where there is not the opportunity to move the underbuild to a nearby upgraded 625 Line, is outside the scope of the CalPeco 625 and 650 Electrical Line Upgrade Project. The existing poles and underbuild would remain because there are buildings served by the electrical distribution and communications lines that could not be adequately served by distribution or communications lines attached to the new poles for the collocated line because of the proposed alignment. Undergrounding of these facilities under the conditions presented by Alternative 2 (Modified Alternative) would have to be a separate project initiated by the communications providers.

- 10-6 The project proposes reconstructing the 60 kV Kings Beach Substation as a 120 kV substation and removal of the existing equipment at the Brockway Substation (which is located within the residential neighborhood between Speckled Avenue and Cutthroat Avenue east of Deer Street). Some work would occur outside the fence line of the existing Kings Beach Substation, but the substation would not be relocated.

As described in Chapter 3, Project Alternatives, management of electric and magnetic fields would be consistent with CPUC Decision 06-01-042. Specific measures taken in compliance with this decision would include locating high current devices towards the interior of the substation. Please refer to pages 3-26 through 3-27 and 4.10-25 through 4.10-27 of the Draft EIS/EIS/EIR, Appendix D to the EIS/EIS/EIR, and Master Response 3 related to EMF for more information on this topic.

- 10-7 The commenter recommends that the project is presented to the North Tahoe Regional Advisory Council and the Squaw Valley Municipal Advisory Council for review and comment. Local agency representatives and members of the public have been afforded the opportunity to review and comment on the scope and content of the EIS/EIS/EIR during the scoping period and the review period for the Draft EIS/EIS/EIR. Notices have been provided via direct mailing, newspaper publication, and posting on lead agency and applicant websites. Should the project require ministerial permits from Placer County,

the County's established public notice and review procedures related to granting permits would be followed.

- 10-8 The comment provides standard language included in Placer County improvement and grading related permits and suggests the language be included in the EIS/EIS/EIR as mitigation measures for water quality impacts. The lead agencies appreciate Placer County providing these standard permit conditions and have reviewed them for suitability as mitigation for water quality impacts in the EIS/EIS/EIR. In addition, the applicant would complete all applicable County permit processes, including provisions of plans and other materials and payment of fees for ministerial permits.

Although there are items applicable to the proposed project within the standard language provided, there are also items not related to minimizing project effects on water quality, such as provision of cost estimates for project implementation and payment of plan check and inspection fees. Therefore, it would not be appropriate to include the suggested language verbatim as mitigation in the EIS/EIS/EIR. Also, several of the measures in the standard language are already addressed as part of the project description and in APMs included in the Draft EIS/EIS/EIR. For example, revegetation after construction disturbances is addressed in the project description in the discussions of access ways, pole installation, and temporary work areas, and in APMs BIO-23 and BIO-36. Temporary construction fencing for various purposes is addressed in APMs CUL-1, BIO-2, and BIO-4. To include the suggested language, as provided, would duplicate environmental protection obligations already in the EIS/EIS/EIR.

Also, the standard permit conditions provided in the comment would typically be applied to locations where Placer County has legal jurisdiction. The proposed project includes portions outside the County (Town of Truckee) and areas where the County may not have jurisdiction, such as USFS property, or instances where CPUC General Order No. 131-D may apply. To include the proposed language as mitigation for the entirety of the project could generate conflicts with requirements and conditions of other jurisdictions.

However, the standard conditions provided by the County do include prudent measures not already expressly identified in the EIS/EIS/EIR that would clarify and reinforce APMs already in the document.

APM SOILS-1 is modified to read as follows:

...Implementation and maintenance of these BMPs and any others identified in the SWPPP ~~would~~ be monitored by a qualified environmental monitor to ensure effectiveness. In addition, a winterization plan will be prepared and incorporated into the SWPPP addressing erosion and sediment management on the project site during the winter months. Implementation, monitoring, and maintenance of BMPs will be adjusted accordingly during the winter months consistent with the winterization plan.

APM BIO-23 is modified to read as follows:

...Topsoil will be segregated, stockpiled separately from subsoil, and covered. These soil stockpiles, as well as any others created by the proposed project, shall have proper erosion control measures applied until they are removed. The topsoil will then be replaced...

- 10-9 Placer County's grading ordinance is discussed in Section 4.5, Geology, Soils, Land Capability, and Coverage, and Section 4.6, Hydrology and Water Quality (see pages 4.5-10 and 4.6-21). The applicant and lead agencies acknowledge that Placer County's policies and procedures would apply to work within unincorporated Placer County. The applicant also intends to obtain all applicable permits upon project approval. As stated on page 4.12-14 of Section 4.12, Traffic and Transportation, of the Draft EIS/EIS/EIR,

“[t]he applicant would obtain applicable encroachment permits from agencies for work within the ROWs of roadways in the project area; and would perform work according to permit requirements.”

10-10 The spelling of “watershed” has been corrected in the legend on Exhibit 4.6-1.

10-11 Staging areas are analyzed throughout the EIS/EIS/EIR and depicted on many exhibits. These areas have been selected from various possible locations, in part, to minimize potential conflicts with existing dwellings and protected resource areas.

Letter
11
Response

Town of Truckee
Tony Lashbrook, Town Manager
January 7, 2014

11-1 The applicant and lead agencies thank the Town of Truckee for its careful review of the Draft EIS/EIS/EIR. The suggested changes have been made to page 3-9. The text now reads as follows:

Segment 650-7 spans between the North Truckee Substation and the Truckee Substation. From the North Truckee Substation, the power line crosses Comstock Drive and parallels the northern side of Comstock Drive for less than 1,000 feet to the east before turning south to the north side of Donner Pass Road, crossing Interstate 80 (I-80) and East ~~Main~~-Jibboom Street. This portion of Segment 650-7 is underbuilt with the 60 kV 132 Line.

11-2 Exhibit 4.2-5 has been modified to change the commercial land use designation to residential for the land at the northeast corner of the Glenshire Drive/Donner Pass Road intersection, as suggested by the commenter.

11-3 The cumulative project list was assembled through review of publically-available information, including the list of major development projects produced by the Town of Truckee, and personal correspondence with local agency planners.

The additional information provided by the Town of Truckee has been incorporated into Table 4.1-2. The Gregory Creek Subdivision has been removed from the cumulative project list, and the Truckee Railyard Master Plan has been added; the residential unit count for the Joerger Ranch Specific Plan has been updated; and the text on the status on the Canyon Springs Subdivision has been revised to reflect the anticipated start of construction.

11-4 The commenter’s suggested changes have been made to the description of land uses near the Truckee Substation (please refer to page 4.2-27 in Section 4.2, Land Use). This text now reads as follows:

The Truckee Substation serves as one terminus of the 650 Line. The substation is located near the intersection of Donner Pass Road and Church Street in the Town of Truckee. The Truckee Substation site is relatively flat and is surrounded by Trout Creek to the north, Truckee Tahoe Lumber to the east, Union Pacific Railroad land to the south, and historic residences to the west ~~industrial uses on all sides (Sierra Pacific 2010).~~

11-5 The commenter’s suggested changes have been made to modify the explanation of how the project would be consistent with the Town of Truckee’s Circulation Policy P12.1. Please see Table G3-1 in Appendix G.

- 11-6 The applicant has been working with local agencies, property owners, and local groups throughout this EIS/EIS/EIR effort, and will continue to do so. Where possible, after consultation, the applicant has made adjustments to pole placement and other project elements to address local agency issues and suggestions. The applicant's representatives spoke with a representative from the Town of Truckee to provide preliminary construction-level details and discuss permitting in late 2013, as well as early 2014. The applicant has requested to meet in person and will continue to pursue such a meeting.
- 11-7 As described in the EIS/EIS/EIR, stringing sites would be required during the removal and installation of conductors and would generally be spaced at distances between approximately 500 feet and 8,000 feet apart depending on the terrain and surface conditions in the ROW. There is some flexibility in the placement of stringing sites and the stringing sites presented in the EIS/EIS/EIR (see Appendix B) are estimated locations based on preliminary engineering.

Although it is anticipated that a stringing site would be required near the intersection of Glenshire Drive and Donner Pass Road because the line turns 90 degrees at this location (stringing sites are typically located at line turns), there is some flexibility in the specific location and configuration of the stringing site within the semi-circle area shown in the Appendix B maps. The applicant would coordinate with the Town of Truckee to determine if the terrain north of the Donner Pass Road/Glenshire Drive intersection would prohibit use as a stringing site, and modify the configuration or location of the proposed stringing site, as appropriate. Stringing sites would not generate large volumes of construction traffic, and would be used for a limited duration. Stringing activities in the vicinity of the Glenshire Drive/Donner Pass Road intersection would be completed in a matter of days, or conceivably, hours. The stringing effort can also be scheduled to occur at off-peak traffic periods. Therefore, it is believed that a less than significant traffic impact conclusion can be maintained. Construction traffic and potential intersection disruptions generated from a residential project, such as Canyon Springs, could occur for weeks or months, and are not a suitable model for projecting traffic effects of the 650 Line upgrade.

As identified in the discussion of Impact 4.12-1 related to project effects on existing transportation systems, "The applicant would obtain applicable encroachment permits from agencies for work within the ROWs of roadways in the project area; and would perform work according to permit requirements." The Town of Truckee can include measures to minimize disruption at the Glenshire Drive/Donner Pass Road intersection if necessary. A specific Transportation/Construction Management Plan for the Town of Truckee could be developed at that time; however, APM TRAN-1 already requires that the applicant prepare and implement a "...Traffic Control Plan to minimize disruption to surface travel..." and the plan must include "...coordination with local transportation agencies and emergency service providers for temporary land and road closures..." Therefore, the equivalent of a Transportation/Construction Management Plan is already included as a requirement in EIS/EIS/EIR. The combination of compliance with encroachment permits for work within roadways and implementation of APM TRAN-1 result in the less than significant impact conclusion for Impact 4.12-1. This conclusion applies to the entirety of the action alternatives and would also support a less than significant conclusion specific to the Glenshire Drive/Donner Pass Road intersection.

- 11-8 Timing and coordination of project construction with roadway improvements planned by the Town of Truckee can be addressed through the roadway encroachment permit process and the preparation of the Traffic Control Plan referenced in APM TRAN-1 (see response to Comment 11-7 above).
- 11-9 As indicated above, the applicant will coordinate with the Town of Truckee, as necessary, to refine stringing site locations. Where possible, the applicant will avoid use of sites with slopes greater than 20 percent. The parcels identified by the Town of Truckee will be reviewed for their ability to meet engineering requirements for the location of stringing sites. The applicant is aware of the challenging conditions at the Glenshire Drive/Donner Pass Road intersection (slopes, roadways present) and will

explore options to minimize ground disturbance and general disruption to the area during the stringing process. However, if grading is required, this would be a temporary disturbance. As described in Chapter 3, Project Alternatives, of the EIS/EIS/EIR, temporary disturbance areas would be restored to pre-project contours and revegetated. Therefore, if the slopes at the Glenshire Drive/Donner Pass Road intersection must be modified, they will be restored and stabilized shortly after construction is complete in the area.

Town of Truckee General Plan Conservation and Open Space Policy P12.1 has been added to the assessment of consistency with land use plans included in Appendix G.

- 11-10 The commenter requests consideration of maintaining the existing wooden poles in Segment 650-6 (Donner Pass Road to the north side of the Village Green Mobile Home Park). In Segment 650-6, the existing wooden poles support a double-circuit with the 132 Line and the 650 Line operating at 60 kV on the same poles. Lines supporting 120 kV are required to have higher ground clearances than 60 kV lines. Therefore, use of the existing wooden poles is not a feasible option as they could not support both the 120 kV 132 Line and the 650 Line upgraded to 120 kV and maintain height clearance requirements for the lower line (as defined by GO-95).

The applicant is amenable to discussing alternative stringing sites. However, a stringing site near the northern side of the Village Green Mobile Home Park would be necessary because this is the location at which the upgraded 650 Line would connect to the existing portion of the 650 Line that has already been upgraded to 120 kV (i.e., the connection of Segment 650-5 to Segment 650-6). The impact of these stringing sites on sensitive receptors, including residences was evaluated in the EIS/EIS/EIR, and no significant impacts were identified.

- 11-11 Views of the locations referenced in the comment are provided in Exhibit 4.4-6K, Photograph 41 (Truckee River Legacy Trail crossing) and Photograph 43 (I-80 crossing) in the Draft EIS/EIS/EIR. As shown in Photograph 41, multiple electrical lines are visible from this portion of the Truckee River Legacy Trail. In addition, elements of an existing nearby electrical substation (not associated with the proposed project) are also visible. Multiple pieces of electrical system infrastructure are part of the scenic condition at the 650 Line crossing of the Truckee River Legacy Trail. Although a visual simulation would illustrate post project conditions at the trail crossing, given that existing conditions include views of electrical infrastructure, the assessment determined without such a simulation that replacement of the existing 132/650 Line double-circuit with the proposed 132/650 Line double-circuit (with the 650 Line at 120 kV capacity) would be consistent with the surroundings and not result in substantial degradation of the existing visual character or quality of the site and vicinity, or exceed any other applicable significance criteria provided in Section 4.4.3, Environmental Consequences and Recommended Mitigation Measures, of the EIS/EIS/EIR.

As shown in Photograph 43, the existing 132/650 Line crossing of I-80 is not clearly visible to motorists driving I-80 in this area. Using the Google Earth Street View tool, allowing for a static view of conditions seen by a vehicle driving on I-80 (the primary viewer population) one can see other power line crossings in this area, as well as streetlights, freeway overpasses, buildings, freeway signage, and other structures. Multiple pieces of utility and transportation infrastructure are part of the scenic condition at the 650 Line crossing of I-80. As noted above for the Truckee River Legacy Trail crossing, although a visual simulation would illustrate post project conditions at the I-80 crossing, the assessment determined without such a simulation that replacement of the existing 132/650 Line double-circuit with the proposed 132/650 Line double-circuit (with the 650 Line at 120 kV capacity) would be consistent with the surroundings and not result in substantial degradation of the existing visual character or quality of the site and vicinity, or exceed any other applicable significance criteria provided in Section 4.4.3, Environmental Consequences and Recommended Mitigation Measures, of the EIS/EIS/EIR.

Although the two sites referenced in the comment would meet the criteria for selecting visual simulation viewpoints provided on page 4.4-39 of the Draft EIS/EIS/EIR, it would not be realistic to generate simulations for every location that meet the criteria. As indicated in the EIS/EIS/EIR, the locations for simulations are intended to provide anticipated views of the project from representative public viewpoints. The 17 simulations provided in the document reflect representative conditions at roads and road crossings, trails, developed areas, forested areas, open areas, foreground viewpoints, and long distance viewpoints. The simulations included in the EIS/EIS/EIR are considered sufficient to support the impact analysis and conclusions in the document.

11-12 The commenter has no comments on project alternatives. The input is noted.

Letter
12
Response

Washoe Tribe of Nevada and California
Darrel Cruz, Tribal Historic Preservation Officer
January 7, 2014

12-1 The comment provides a bullet list of eight suggestions to improve mitigation measures for cultural resources in the EIS/EIS/EIR.

The first bullet item/comment suggests that “Any and all archeological resources will be avoided.” Adopting such a requirement would place an overly broad restriction on project activities. The paragraph prior to the bullet list in the comment letter uses the term “significant cultural resources.” The distinction between “any and all archeological resources” and “significant cultural resources” is an important one. As an example, an isolated chert flake not associated with any other resources or artifacts could be considered an “archeological resource,” but would not be considered “significant.” Applicable laws and regulations (e.g., the National Historic Preservation Act [NHPA], CEQA) define the characteristics of significant cultural resources and focus protection on these significant resources. Under these laws, it would not be a significant impact to affect the example chert flake, and all similar isolated archeological resources, and no avoidance requirements would apply. Consistent with NHPA and CEQA, the impact assessment in the EIS/EIS/EIR and the APMs incorporated into the project description to avoid and minimize environmental effects rely on eligibility for inclusion in National Register of Historic Places (NRHP) or the California Register of Historic Resources to determine whether a cultural resource is significant and whether avoidance and minimization measures should be applied. Expanding the significance/avoidance criteria to incorporate “any and all archeological resources” would result in conditions where substantial time and effort would be expended to avoid items that would not warrant protection.

The project applicant and lead agencies do acknowledge their regulatory and stewardship responsibilities relating to archaeological resources and the concerns of the Washoe Tribe regarding “all” archaeological resources. During field surveys conducted in the project area, isolated artifacts and other similar archaeological resources that do not meet the criteria to be considered “significant” were appropriately documented (e.g., using California State Parks Isolate Record Forms). Documentation of newly discovered resources would be completed as required, following guidance and stipulations in appropriate regulations and APMs. Recording these archaeological resources would capture and preserve their data potential. No changes to the EIS/EIS/EIR are proposed in response to this first bullet item.

12-2 The bullet item/comment suggests that site monitors with expertise in Washoe cultural resources be employed. APM CUL-5 identifies the potential for “Tribal monitoring” if a significant site cannot be fully avoided. It is assumed that the Tribal monitor would have expertise in Washoe cultural resources. APM CUL-8 identifies that, among other items, a required Construction Monitoring and Unanticipated

Discovery Plan identify “numbers of archeological and Native American monitors” onsite during construction. APM CUL-8 has been modified as follows to also reference the qualifications of monitors:

Prior to construction, CalPeco will prepare for agency approval a Construction Monitoring and Unanticipated Discovery Plan that will present, in detail, procedures to be implemented during construction (e.g., numbers of archeological and Native American monitors, the qualifications of monitors [expertise in Washoe cultural resources], buffer zones, work stoppage guidelines)....

The lead agencies and the applicant appreciate the commenter’s offer for the Washoe Tribe to recommend qualified monitors. If approved, the project applicant will contact the Tribe in this regard prior to construction being initiated.

- 12-3 The bullet item/comment suggests that the applicant enter into an agreement with the Washoe Tribe regarding the management of specific known sites and that the terms of the agreement should be included in project permits. APM CUL-5 identifies that if an NRHP-eligible heritage or cultural resource will be adversely affected by the project, a Memorandum of Agreement (MOA) or Programmatic Agreement (PA) will be developed and signed by appropriate parties, including interested tribes, to identify treatment measures and implement procedures for mitigating adverse effects to the resources. The MOA or PA would be completed as part of compliance with Section 106 of the NHPA. The USFS is the federal lead agency for Section 106 compliance for this project and has initiated consultation with the State Historic Preservation Officer (SHPO), the Washoe Tribe, and other entities. An MOA or PA to be completed through this consultation, and therefore with Tribal input, would serve as the agreement suggested in the comment and would be included in applicable project permits.
- 12-4 The bullet item/comment suggests that the agreement referenced in comment 12-3 also include a treatment plan for unanticipated archeological discoveries. APM CUL-8 states that prior to construction, CalPeco will prepare for agency approval a Construction Monitoring and Unanticipated Discovery Plan. The plan will address actions to be taken related to the discovery, protection, evaluation, and if necessary, treatment of currently unknown cultural resources that may be encountered during project construction. APM CUL-5 references the inclusion of “a plan for unanticipated discoveries” in the Section 106 process. Therefore, a treatment plan for unanticipated archeological discoveries will be developed, and implemented if necessary.
- 12-5 The bullet item/comment suggests that areas with high potential for resources have test excavations and the Tribe must be kept informed of findings. The comment does not provide criteria to define “high potential for resources” or indicate the level, extent, or desired outcome of test excavations. Therefore, it is difficult to discern how the suggested action might be implemented; a very broad interpretation could result in extensive testing well in excess of legal or professional standards, and a very limited interpretation could provide inadequate resource protection. In addition, it is the intent of the project applicant to avoid disturbance of areas with high potential for significant resource wherever possible. Test excavations in locations where project avoidance is confirmed could result in additional disturbance to significant resources that would not otherwise be affected.

Test excavations have been conducted in various locations in the project area with potentially significant resources, and may be conducted in the future to comply with appropriate regulations and APMs (e.g., CUL-3 and CUL-5). The previous test excavations were primarily intended to determine whether the resources were eligible for inclusion in the NRHP or CRHR as well as to gather information on the content and extent of the resource. Information on the previous test excavations is provided in two documents:

Cultural Resources Evaluation Report and Subsurface Testing Recommendations for CalPeco 625 and 650 Electrical Line Upgrade Project, Nevada and Placer Counties, California (Parus Consulting 2013)

CalPeco 625 and 650 Electrical Line Upgrade Project Cultural Resources Inventory Addendum, Nevada and Placer Counties, California (Parus Consulting 2013)

These documents are not publicly available because they contain sensitive information regarding the nature and location of archaeological sites that should not be disclosed to the general public or unauthorized persons. However, these documents will be provided to authorized Tribal members as part of the Section 106 consultation process. Any further cultural resources surveys, finds, test excavations, data recovery, or similar activities would be disclosed to the Tribe via the Section 106 consultation process outlined in APM CUL-5. In addition, APM CUL-3 has been modified as follows to further document the provision of data to Tribal representatives:

...a detailed data recovery plan will be developed for those parts of the resources that would be damaged or destroyed by the project, and provided to the relevant federal or state agencies and the SHPO for review and approval. Results of test excavations and data recovery will also be provided to Tribal representatives. Data recovery excavations may be sufficient to reduce impacts to the resources to the less-than-significant level.

- 12-6 The bullet item/comment suggests that staging areas be surveyed for cultural resources prior to their use. As stated on page 4.9-26 of the Draft EIS/EIS/EIR, the area of potential effect (APE), which can be considered the cultural resources study area, includes all the staging areas. All portions of the APE where property access has been available have been surveyed for cultural resources, as described in more detail in the Cultural Resources Evaluation Report and the Cultural Resources Inventory Addendum referenced above in response to Comment 12-5.

In addition, APM CUL-6 states that:

CalPeco will ensure completion of heritage and cultural resources survey of all areas within the ultimate project APE of the selected alternative that have not already been surveyed, such as property where access was not previously available, future minor changes in the alignment of the power line and access roads or the location of other components that may be proposed because of engineering constraints...and other considerations.

Therefore, whether access was not previously available for surveys of a staging area, staging area boundaries are modified in the future, or new staging areas are selected, heritage and cultural resources surveys will be completed prior to use of the area.

- 12-7 The bullet item/comment suggests that the Tribe be immediately involved in human remains discoveries. The lead agencies and project applicant are sensitive to the Tribe's concerns related to the discovery of human remains. However, the project applicant must comply with the notification procedures in regulations and codes regarding the discovery of human remains. APM CUL-9 identifies the process for responding to discoveries of human remains. As stated in the APM, consistent with the requirements of Section 7050.5 of the Health and Safety Code (HSC), the County Coroner will be notified if suspected human remains are found. The coroner will determine whether the remains are Native American and, if so, will contact the Native American Heritage Commission. The Native American Heritage Commission will then notify the persons most likely descended from the deceased Native American, consistent with Section 5097.98 of the Public Resources Code. The lead agencies and the

project applicant would conduct initial notification of the County Coroner in compliance with Section 7050.5 of the HSC.

- 12-8 The bullet item/comment suggests that personnel receive training that “emphasizes they are subject to ARPA penalties for theft or destruction of archeological resources.” It is presumed that the acronym “ARPA” refers to the Archeological Resources Protection Act. APM CUL-7 identifies that CalPeco will design and implement a Worker Environmental Awareness Program that includes, among other items, identification of “penalties for removing or intentionally disturbing heritage an cultural resources.” This item in the APM has been expanded upon to read as follows:

...penalties for removing or intentionally disturbing heritage and cultural resources, such as those identified in the Archeological Resources Protection Act (ARPA).

- 12-9 The lead agencies and the project applicant appreciate the Washoe Tribe’s acknowledgement of its partnerships with Lake Tahoe Basin agencies and land managers. The USFS, TRPA, and the project applicant look forward to the Tribe’s participation in the Section 106 consultation process.

Letter
13
Response

North Tahoe Public Utility District
Suzi Gibbons, Contracts and Planning Coordinator
January 2, 2014

- 13-1 The portion of road T16N75.2 on California Tahoe Conservancy lands that provides access to the North Tahoe Public Utility District (NTPUD) water tanks (in Parcel 116-010-002) would not be considered for decommissioning. As described in Response 7-2, road T16N75.2 is among those being considered for decommissioning after project implementation is complete. However, as stated in the introductory text to the maps in Appendix F, roads identified for potential decommissioning on the maps will require further evaluation and the USFS intends for the information provided in Appendix F to function as a mechanism to seek public comment on potential decommissioning of roads on USFS lands. The comment is correct in identifying that the southern terminus of road T16N75.2 is on California Tahoe Conservancy lands. Therefore, although this road has a USFS numbering designation (T16N75.2), portions of the road are not on USFS lands and could not be decommissioned, including that portion that provides access to the NTPUD water tanks (on Parcel 116-010-002). As indicated in response to Comment 7-2, text on page 3-66 of the Draft EIS/EIS/EIR has been revised to clarify this point.

Letter
14
Response

Tahoe-Truckee Sanitation Agency
Jason A. Parker, Engineering Department Manager
January 6, 2014

- 14-1 The comment indicates that Northstar Community Services District is not a member of the Tahoe-Truckee Sanitation Agency. The text on page 4.11-6 has been revised to provide clarification. The last bullet identifying Northstar CSD now reads:

...Northstar CSD is not a member agency of T-TSA, but wastewater from the Northstar CSD is conveyed to T-TSA facilities through an agreement with the Truckee Sanitary District, which is a member agency of T-TSA.

- 14-2 The comment notes that waste from project's portable restrooms would not be accepted at the Tahoe-Truckee Sanitation Agency advanced treatment plant. This clarification is noted.

The Placer County Code, Article 8.24 governs on-site sewage disposal. The On-site Sewage Manual, Chapter 20 Part E (Portable Toilet Requirements), states "No water carried sewage shall be placed in portable toilets. Contents of portable toilets shall not be discharged into storm sewers, on the surface of the ground or into protected waters" (Ganapathy, pers. comm., 2014). Septic waste collected from portable toilets is trucked to a regional wastewater treatment plant within the contractor's service area. Ascent contacted Water Septic Service & Chemical Toilets located in Tahoe City and were informed that contractors based in the North Tahoe area generally truck septic waste from portable restrooms to the Incline Village General Improvement District treatment plant. The wastewater treatment plant processes and disinfects wastewater using conventional biological treatment processes and solids handling facilities. The export pipeline transports the plant's secondary treated effluent to the Incline Village General Improvement District wetlands in Douglas County.

The text on page 4.11-9 of the Draft EIS/EIS/EIR under "Issues Dismissed from Further Evaluation" is revised as follows:

In addition, the project would not generate wastewater nor consume water under the operations and maintenance phase of the project. Water use would be limited to the construction period for fire suppression and dust control only. Portable restrooms provided for construction crews during the construction period would be serviced by a contractor and wastewater would be disposed of in accordance with the Placer County on-site sewage manual as required by Chapter 8, Article 8.24 of the Placer County Code. Chapter 20 Part E (Portable Toilet Requirements) of the On-site Sewage Manual states "No water carried sewage shall be placed in portable toilets. Contents of portable toilets shall not be discharged into storm sewers, on the surface of the ground or into protected waters." Waste from portable toilets would be taken to the nearest regional wastewater treatment or water reclamation facility that accepts such waste. ~~the T-TSA water reclamation facility in Truckee for treatment.~~ Thus, no impacts would occur related to wastewater treatment capacity, meeting wastewater treatment requirements, or construction of new water or wastewater treatment facilities or expansion of existing facilities. These topics are not discussed further in this draft EIS/EIS/EIR.

Letter
15
Response

Placer County Flood Control and Water Conservation District
Andrew Darrow, PE, CFM, Development Coordinator
January 7, 2014

- 15-1 The lead agencies acknowledge that the Placer County Flood Control and Water Conservation District did not have any comments regarding the Draft EIS/EIS/EIR for the CalPeco 625 and 650 Electrical Line Upgrade Project.

**Letter
16
Response****Greater Tahoe City Plan Area Team
December 3, 2013**

- 16-1 The commenter notes that the project presents the opportunity to relocate the Tahoe City Substation as contemplated in the 1994 Tahoe City Community Plan. The commenter further states that the reasons for relocation include scenic quality, land use, and community character, but suggests that the Draft EIS/EIS/EIR focuses solely on the scenic issues as reasons for rejecting an alternative that includes relocation of the substation.

The vision statement of the Greater Tahoe City Area Planning Team is acknowledged, as is the expressed desire to move the Tahoe City Substation from its current location as a step toward realizing that vision. Discussions regarding possible relocation (to an as-yet-unidentified site) as a potential future project (by some entity) are ongoing among the utility, Placer County, TRPA, and other interested agencies and municipalities.

With regard to the environmental analysis, the charge of the EIS/EIS/EIR is to evaluate natural and physical environmental effects of the project as compared to existing conditions (baseline), and to assess effects relative to the ability to achieve and maintain TRPA threshold standards. Because substation relocation was not proposed by the applicant, and because no significant, unavoidable impacts were identified as a result of the substation rebuild in place, evaluation of an alternative that includes the relocation is not required. Notwithstanding the fact that relocating the Tahoe City Substation is not proposed as a part of this project, the relevant agencies continue to discuss this possibility as a planning issue that would be a separate project.

See Master Response 1 for more detailed discussion.

- 16-2 The commenter suggests that relocation of the Tahoe City Substation would benefit the Tahoe City community and requests that it be evaluated in the EIS/EIS/EIR. This alternative was not analyzed in detail based on the results of screening evaluations summarized on pages 3-80 to 3-81 of the Draft EIS/EIS/EIR.

See Master Response 1 for more detailed discussion.

**Letter
17
Response****Greater Tahoe City Plan Area Team
December 12, 2013**

- 17-1 The commenter notes that the Tahoe City Substation is located near Lake Tahoe and the Truckee River, and identifies a potential conflict between the substation and nearby water bodies based on the presence of sulfur hexafluoride and transformer oil, which would be used to insulate the equipment on the substations. The commenter expresses that extraordinary events (e.g., major earthquake, fire, or flood) could result in substantial disruption of the facility, such that containment structures would be circumvented, and water quality could be impaired by the release of these materials. For this reason, the commenter indicates that it would be preferable to locate the substation further from Lake Tahoe and the Truckee River.

A primary intent of environmental review in accordance with NEPA, the TRPA Code, and CEQA, is to evaluate changes in the natural and physical environment resulting from a proposed action or project against the existing, or baseline condition. The existing condition is the presence of the Tahoe City Substation in its current location. Therefore, the continued presence of a substation at the current location would not increase the risk of material leaks or other potential hazards relative to the baseline condition. The commenter is correct in identifying potential relocation of the Tahoe City substation as a planning issue that may have beneficial effects related to aesthetics and risk reduction. However, because the proposed project would not generate any significant adverse hazardous or hazardous materials effects at the Tahoe City Substation, no mitigation measures (e.g., relocation or other protective features) are required.

With regard to sulfur hexafluoride and transformer oil (mineral oil) at the Tahoe City substation, the applicant has indicated that sulfur hexafluoride is not currently used at the Tahoe City Substation. However, neither substance is highly toxic. In the extremely unlikely circumstance that they were released in a manner where they reach surface waters of the Truckee River or Lake Tahoe, it is unlikely that significant deleterious effects would result.

Sulfur hexafluoride is colorless, odorless, non-flammable, and non-toxic in its pure form. It is one of the heaviest known gases, with a vapor density approximately five times greater than air. Therefore, when released into the atmosphere, it will tend to remain close to the ground and be transported to the ground by wet deposition. Sulfur hexafluoride is not expected to be absorbed if released to the soil, and is likely to volatilize from dry soil. Similarly, if released directly into water, sulfur hexafluoride is not expected to be absorbed by suspended solids or sediment. Rather, volatilization from the water surface is more likely (the estimated volatilization half-lives for model rivers and lakes are 1.2 hours and 4.8 days, respectively). The potential for bioconcentration in aquatic organisms is low (National Center for BioTechnology Information n.d.). There would be very little potential for the gas to contaminate the waters of Lake Tahoe or the Truckee River. Sulfur hexafluoride is a potent greenhouse gas (GHG), however. The potential for operational emissions of sulfur hexafluoride from transformer and circuit breaker equipment is evaluated in Section 4.13, Air Quality. However, as stated above, the applicant has indicated that sulfur hexafluoride is not currently used at the Tahoe City Substation.

Mineral oil is a clear, colorless, odorless, petroleum derivative. It is chemically similar to petroleum jelly and is produced in heavy and light grades, or viscosities. The oil is used in many different products, including cooling systems, lubricants, cosmetics, and medicine. The toxicity of the mineral oils currently used in transformers is low. Newer transformers (i.e., those produced after 1979) do not contain polychlorinated biphenyls (PCBs).

All hazardous materials associated with project construction and operations would be used, stored, and disposed of in accordance with applicable federal, state, and local laws. As discussed in Section 4.10.1, Regulatory Setting, there are multiple regulations, laws, and agencies that address the safe use, handling, transport, and disposal of hazardous materials, including the Resource Conservation and Recovery Act, the Superfund Amendments and Reauthorization Act, the California HSC, the California Department of Toxic Substances Control, federal and state Occupational Safety and Health Administration, the California Department of Transportation, the California Highway Patrol, the Lahontan Regional Water Quality Control Board, the Placer County Environmental Health Division, and the Nevada County Environmental Health Department. In addition, Title 40 of the Code of Federal Regulations Part 112 includes the federal Spill Prevention Control and Countermeasure Plan requirements that address potential impacts related to a transformer malfunction oil spill. These multiple layers of regulatory requirements provide substantial assurances that hazardous materials stored, used, transported, and disposed of as part of the proposed project would not pose a significant hazard to the public or the environment.

- 17-2 The commenter's support for relocating the Tahoe City Substation is noted. For more information related to this topic, the commenter is referred to Master Response 1.

Letter
18
Response

Greater Tahoe City Plan Area Team
January 7, 2014

- 18-1 As noted by the commenter, CalPeco has expressed willingness to work with Placer County, TRPA, and local organizations to discuss the potential for relocation of the Tahoe City Substation as a separate project in the future. See Master Response 1 for additional discussion.
- 18-2 The commenter implies that, because the substation requires rebuild under the proposed project, it should be rebuilt in a more appropriate location. As noted above, the baseline for this project's analysis under NEPA, TRPA, and CEQA involves the baseline of an existing substation. The proposed rebuild of the substation would be limited in scope, consisting of relocating an existing 120/60/14.4 kV transformer and installing a new 120/14.4 kV transformer and two new 120 kV breakers. All permanent alterations and additions to substation equipment would occur within the existing fence line, on property that is owned by CalPeco.
- 18-3 Comments are noted. Rate recovery is assessed by the CPUC. Not all activities undertaken by the utility can be passed on to rate payers. See Master Response 4 for more information on this process.
- 18-4 The commenter notes that the project represents an opportunity to relocate the Tahoe City Substation, and expresses that such relocation would improve the scenic quality of Tahoe City, which would have a beneficial impact on the local economy. See responses to comments from Greater Tahoe City Plan Area Team dated December 3, 2013 (responses to Comments 16-1, 16-2) and December 12, 2013 (response to Comment 17-2) and Master Response 1 for additional discussion.

Letter
19
Response

Tahoe City Downtown Association
Gary Davis, President
December 3, 2013

- 19-1 The commenter notes that the project presents the opportunity to relocate the Tahoe City Substation as contemplated in the 1994 Tahoe City Community Plan. The commenter further states that the reasons for relocation include scenic quality, land use, and community character, but suggests that the Draft EIS/EIS/EIR focuses solely on the scenic issues as reasons for rejecting an alternative that includes relocation of the substation.

The analysis in the EIS/EIS/EIR indicates that improving scenic quality was "one of the reasons given in the community plan for the relocation," but does not suggest that this was the only impedes for relocation. In fact, the scenic thresholds are not at all mentioned in the "Rationale for Elimination" discussion of this alternative (page 3-81 of the Draft EIS/EIS/EIR).

Relocation of the Tahoe City Substation has not been proposed because it would not be necessary to meet the project objectives and the EIS/EIS/EIR did not identify any environmental impacts that could be mitigated by relocation of the substation. Further, the Tahoe City Substation is a permissible land use in

its current location, subject to TRPA special use findings for any expansion of the facility. (Although the Tahoe City Community Plan Vision Map and vision statements encouraged the relocation of the Tahoe City Substation, the Tahoe City Community Plan land use chapter lists the substation [defined under the land use definition of "Public Utility Centers"] as a permissible "special use" in its current location [i.e., Special Area 3, Recreation]).

- 19-2 The commenter suggests that the parcel would better serve the community without the existing substation, and implies incompatibility with existing land uses and other planned projects in the vicinity. See also Response to Comment 16-1 and Master Response 1. Please note also that ownership of the parcel is held by the project applicant, not the community or government.
- 19-3 The use of PCBs in transformer oil ceased in 1979. Over the years, PCBs that may have been in the transformers at the Tahoe City Substation have been replaced with modern oils that do not contain PCBs. Neither the existing substation nor the proposed upgrades pose the threat of leaking PCBs into the Truckee River.
- 19-4 The commenter's recommendation to relocate the Tahoe City Substation and evaluate such relocation in the environmental document is acknowledged. Discussions are ongoing between the applicant, Placer County, and TRPA regarding possible relocation as a potential future project.

With regard to the environmental analysis, the charge of the EIS/EIS/EIR is to evaluate natural and physical environmental effects of the project as compared to existing conditions (baseline), and (specific to the portions of the project with the Basin) to assess effects relative to the ability to achieve and maintain TRPA threshold standards. Because substation relocation was not proposed by the applicant, and because no significant, unavoidable impacts were identified as a result of the substation rebuild in place, evaluation of an alternative that includes the relocation is not required. Notwithstanding, the relocation of the Tahoe City Substation has been identified as a planning issue, hence the ongoing discussions between the appropriate parties.

See Master Response 1 for more detailed discussion.

Letter
20
Response

Sustainability Community Advocates
Steve Teshara, Principal
December 2, 2013

- 20-1 Relocating the Tahoe City Substation is not required to be examined in the EIS/EIS/EIR because: it is not a proposed element of the project; it is permitted as a "special use" in the Tahoe City Community Plan; and rebuild in place would not result in significant, unavoidable environmental effects as compared to existing (baseline) conditions. However, because of the planning efforts underway in Tahoe City in response to adoption of the updated Regional Plan in December 2012, the substation location has been identified as a planning issue to be resolved. Discussions are ongoing between the applicant, Placer County, and TRPA regarding relocation as a potential future project. See Master Response 1 for further discussion on this topic.
- 20-2 The commenter expresses that the upgrade of the Tahoe City Substation is inconsistent and incompatible with the direction of the Tahoe City Area Plan currently being developed, and objects to the description of the area plan process as being in its "infancy." The sentence in question near the top of page 4.2-8 of the Draft EIS/EIS/EIR is modified to read as follows:

The planning process is underway and several supporting planning documents have been published; still in its infancy however, and it is not anticipated that any of these Area Plans would be adopted and in effect prior to a decision on the proposed project.

20-3 The Tahoe City Vision Plan, which is the predecessor used to guide area plan development, is included in the cumulative project list (18). The lead agencies acknowledge that the Tahoe City Area Plan is under development, that coordination is underway with TRPA, and that workshops have been held to gather community input on the scope of the plan. It is also understood that upon adoption of the Area Plan by TRPA and Placer County, specific projects will be proposed that are consistent with the Regional Plan and Area Plan. At this time, however, there is not sufficient information available regarding the details of the proposed plan or potential projects to conduct additional cumulative analysis.

20-4 The commenter notes that the Tahoe City Substation is located in an area targeted for revitalization, and expresses that the substation is incompatible with the planned Fanny Bridge/River Walk District.

This comment also includes a note referencing the text of the cumulative impacts discussion in Section 4.2, Land Use, which acknowledges the potential for conflict if construction of the Tahoe City Transit Center were ongoing during construction of the 625 Line and associated upgrades to the Tahoe City Substation. This text is no longer fully accurate, since the Tahoe City Transit Center has been constructed and is not included on the list of cumulative projects analyzed in the EIS/EIS/EIR. The referenced text has been revised to read as follows:

~~One project, development of the~~ The Tahoe City Transit Center, is located immediately adjacent to the 625 Line and the Tahoe City Substation, in the Truckee River Corridor in North Lake Tahoe. ~~The project is a north shore transit center and parking facility. Construction of this project is currently underway. The Tahoe City Transit Center project is expected to be completed by the time construction begins on any portion of the 625 Line or 650 Line. However, there is a potential for conflicting uses at the Tahoe City Transit Center site as~~ CalPeco intends to use a portion of the Tahoe City Transit Center parcel to temporarily place transformers during construction on the 625 Line and at the Tahoe City Substation. As identified in Chapter 3, Project Alternatives, to ensure that the temporary transformers would not interfere with operation of the Tahoe City Transit Center, CalPeco will coordinate with the USFS and Placer County well in advance of construction to obtain permission to use the parcel. CalPeco would work to site the temporary transformers in undeveloped areas or in area designated for parking and restrict the public from this area. As a result, no significant conflicts are expected to occur.

The importance of the planning and redevelopment of the SR 89/Fanny Bridge area to the Tahoe City community is acknowledged. The primary purpose of the EIS/EIS/EIR, however, is to assess the changes to the natural and physical environment resulting from the proposed project/action compared to existing or baseline conditions. The Tahoe City substation is an existing authorized use and the proposed project would retain the same use within the boundaries of the same parcel (with the exception of temporary use of additional area during construction). No significant, unavoidable impacts have been identified that would require relocation of the substation. These facts notwithstanding, the utility—in response to public and agency comments—has been communicating with Placer County and other interested parties regarding a potential future relocation of the Tahoe City substation as a separate, future project. With the support of USFS and CPUC, TRPA has encouraged the applicant to continue this coordination. However, relocation of the substation would not be a component of the 625 and 650 Electrical Upgrade Project. For the relocation to proceed, it would be necessary to identify a project proponent willing to secure financing for the project. Because the CPUC assesses rate recovery for project investments based on determination of need, it is unlikely that relocation of the Tahoe City Substation would be eligible for cost recovery through rate increases.

See Master Response 1 for further discussion of the Tahoe City Substation.

- 20-5 The commenter suggests that the rationale cited in the Draft EIS/EIS/EIR for not relocating the Tahoe City substation is outdated and relies primarily on the TRPA Scenic Travel Route Rating for the immediate area. See response to Comment 20-4, above, and Master Response 1 related to the potential relocation of the Tahoe City Substation.

The Draft EIS/EIR for the 1994 Tahoe City Community Plan contained a menu of scenic mitigation measures that were presumably developed to offset scenic impacts related to new commercial development potential under the Plan. The TRPA Travel Route Rating for SR 89 was out of attainment with the TRPA threshold when the Tahoe City Community Plan was adopted, and it is possible that the relocation of the substation was related more to these menu-item scenic offsets than to a specific intent to remove the substation to attain the TRPA scenic threshold.

- 20-6 The commenter questions the validity of the rationale for elimination of the Tahoe City Substation relocation as a project alternative to receive detailed evaluation.

First, the comment asserts that it is speculative to conclude that the increased environmental effects resulting from substation relocation would not justify the action. To clarify, the environmental document is not concluding that substation relocation would have significant, unavoidable impacts, but is comparing the options of rebuild in place to the option of relocation in terms of degree of environmental impact. This is supported by the “Rationale for Elimination” in the EIS/EIS/EIR. It is not speculative to state that in comparing two substation reconstruction options:

1. reconstructing a substation at an existing location where a substation is already present, and no significant unavoidable environmental effects from the reconstruction are identified based on a thorough environmental analysis, would likely be less involved than
2. decommissioning and removing the existing substation and constructing a new substation on another parcel, and relocating existing power lines and supporting poles to the substation then transiting to underground facilities to connect the power lines to the new substation near the fenceline (and assessing the environmental impacts of that new construction and relocation).

Second, the statement that there are no significant effects associated with modification of the Tahoe City Substation as proposed in the EIS/EIS/EIR is supported by the analysis in Chapter 4, Affected Environment, Environmental Consequences, and Mitigation Measures.

Third, the conclusion that substation relocation would not better address project goals is also supported in the EIS/EIS/EIR. Section 2.2.2, Project Objectives, (see page 2-5 of the Draft EIS/EIS/EIR) lists the five specific objectives, none of which would be specifically served by substation relocation. The statement regarding impact on rate payers is based on the substantial cost associated with relocation of the substation and the potential that cost recovery through rate increases could be authorized by CPUC. The referenced “technical hurdles” and their effect on project schedule relate to the ability to secure an appropriate parcel, conduct additional environmental review, conduct planning and design for the new facility, and design a new stretch of power line alignment to connect the relocated substation to the existing system. It is not unreasonable to expect that such as significant change in the project description would jeopardize the ability of the project to stay within the currently anticipated schedule.

- 20-7 The commenter’s review of the CPUC General Order 131-D and interpretation of the order to empower Placer County, residents, and business owners with the opportunity to provide input about the continued operation of a substation located on private property is noted. The commenter incorrectly

states that the Tahoe City Substation is located on National Forest System Lands. Rather, it is located on private lands owned by CalPeco. The commenter expresses that the applicant should consider the location of the Tahoe City Substation in the context of the adopted Tahoe City Community Plan and emerging Tahoe City Area Plan. See responses to Comments 20-1 through 20-6, and Master Response 1 for more information on the potential for relocation of the Tahoe City Substation and ongoing coordination efforts.

20-8 TRPA is aware of the nexus between the Tahoe City Area Plan and the Regional Plan with its required findings pursuant to TRPA Code. There is no evidence that implementation of the 625 and 650 Electrical Line Upgrade Project would conflict with TRPA's ability to make appropriate findings related to the Tahoe City Area Plan.

20-9 See responses to Comments 20-1 through 20-8 and Master Response 1 for more information on the potential for relocation of the Tahoe City Substation and ongoing coordination efforts.

Letter
21
Response

Sustainability Community Advocates
Steve Teshara, Principal
January 2, 2014

21-1 The commenter highlights comments about the Tahoe City Substation made at the TRPA Governing Board meeting and published in the Tahoe Daily Tribune, and expresses that the existing substation and its location represents a significant liability for CalPeco and the Tahoe City community. The comment suggests that the existing substation is inadequate because it is identified for an upgrade. However, the proposed upgrade is in response to a need to increase the capacity of the entire North Lake Tahoe Transmission System from 60 kV to 120 kV and not to any site specific deficiency.

21-2 The commenter indicates that the Draft EIS/EIS/EIR does not adequately disclose and analyze the significant environmental and human hazards associated with the existing Tahoe City substation location. The comment cites, as an example, an excerpt from Managing Power magazine chronicling the dangers of transformer fires.

Please see Master Response 1, which addresses the Tahoe City Substation. Specifically regarding the issue of potential hazards associated with the Tahoe City Substation at its current location, a primary intent of environmental review pursuant to NEPA, the TRPA Code, and CEQA is to evaluate changes in the natural and physical environment resulting from a proposed action or project as compared to the existing, or baseline condition. The existing condition includes the Tahoe City Substation in its current location. Therefore, continuation of the substation at the current location would not increase potential hazards, including fire hazards, relative to the baseline condition. The hazards associated with construction and operation of the proposed project, including those associated with the substations, are evaluated in Section 4.10, Hazards and Hazardous Materials, of the EIS/EIS/EIR.

21-3 See response to Comment 21-2, above, regarding assessment of environmental effects against baseline conditions. Risks associated with the issues listed in the comment would not change with continued use of the Tahoe City Substation site as a substation, and some risks could be reduced slightly with the replacement of the existing equipment with new equipment.

As discussed in the EIS/EIS/EIR, small quantities of mineral oil and sulfur hexafluoride are often used to insulate the transformers at the substations. PCB is not present at the site. (The use of PCB in

transformer oil ceased in 1979, and transformer oils that do not contain PCB have replaced any that may have contained PCB.)

Sulfur hexafluoride is also not present at the Tahoe City Substation. Sulfur hexafluoride is colorless, odorless, non-flammable, and non-toxic in its pure form. It is one of the heaviest known gases, with a vapor density approximately five times greater than air. Therefore, if released into the atmosphere, it would tend to remain close to the ground and be transported to the ground by wet deposition. Sulfur hexafluoride is not expected to be absorbed if released to the soil, and is likely to volatilize from dry soil. Similarly, if released directly into water, sulfur hexafluoride would not be expected to be absorbed by suspended solids or sediment. Rather, volatilization from the water surface would be expected (estimated volatilization half-lives for model rivers and lakes are 1.2 hours and 4.8 days, respectively). The potential for bioconcentration in aquatic organisms is low (National Center for BioTechnology Information n.d.). Because of the characteristics of this gas, there would be very little potential for the gas to contaminate the waters of Lake Tahoe or the Truckee River. Sulfur hexafluoride is a potent GHG, however. The potential for operational emissions of sulfur hexafluoride from transformer and circuit breaker equipment is evaluated in Section 4.13, Air Quality.

Mineral oil is a clear, colorless, odorless, petroleum derivative. It's chemically similar to petroleum jelly and is produced in heavy and light grades, or viscosities. The oil is used in many different products, including cooling systems, lubricants, cosmetics, and medicine. The toxicity of the mineral oils currently used in transformers is low.

A records review was conducted to prepare the assessment of existing hazardous materials sites included in Section 4.10, Hazards and Hazardous Materials, of the Draft EIS/EIS/EIR. This included review of the EPA's National Priorities List, the California Department of Toxic Substances Control's Envirostor Database, and the SWRCB's Geotracker Database. This review identified 23 sites with current or former hazardous materials contamination within 0.25 mile of the project alternatives. No records of former or current contamination were identified at the Tahoe City Substation.

This database review comprised a reasonable and complete review of publicly-available documents on the potential for hazardous materials contamination in the project area.

- 21-4 The commenter questions the validity of the rationale for eliminating the Tahoe City Substation relocation from detailed evaluation by citing three statements from the closing paragraph of the discussion on page 3-81 of the Draft EIS/EIS/EIR.

That substation relocation could cause adverse environmental effects is supported by the two preceding paragraphs and bulleted list on Page 3-81. The finding of no significant effects associated with modification of the existing Tahoe City Substation is supported by the analysis of project alternatives in Chapter 4, Affected Environment, Environmental Consequences, and Mitigation Measures. Finally, the conclusion that substation relocation would not better address project goals relative to retaining the Tahoe City Substation at its current location is supported by a review of Section 2.2, Purpose and Need and Project Objectives, in the EIS/EIS/EIR. In and of itself, relocating the Tahoe City Substation would not advance the project objectives as defined:

1. Provide normal capacity for current and project loads.
2. Provide reliable capacity to assure adequate service to all customers during single-contingency outages.
3. Reduce dependence on the Kings Beach Diesel Generation Station.

4. Reduce the risk of fire hazards and outage durations associated with wooden poles and encroaching vegetation.
5. Provide more reliable access to the 625 Line for operation and maintenance activities.

See Master Response 1 for more information on the potential for relocation of the Tahoe City Substation.

- 21-5 The comment raises the issue of costs for the entire project, for substation relocation, and those that could be incurred in the event of an accident at the substation, and suggests that they would be shared by all customers in the service territory. The CPUC's rate recovery process, which determines the amount of infrastructure investments that can be recovered through rate increases, is complex and not necessarily a pass through to rate payers. See Master Response 4 for more information on rate increases and the CPUC process. Similarly, just as rate recovery for infrastructure investments is not a simple pass through of costs to rate payers, the same is true of requests for rate recovery of costs associated with accidents at facilities. The CPUC must evaluate any requests for cost recovery via rate increases and there is no assurance that recovery of costs resulting from accidents would be approved.
- 21-6 The commenter suggests that the Draft EIS/EIS/EIR does not adequately address impacts on land use as identified in the 1994 Tahoe City Community Plan or planning efforts underway for the Greater Tahoe City Area Plan. Please see Master Response 1 and responses to Comment Letter 20.
- 21-7 The commenter expresses that upgrade and rebuild of the Tahoe City Substation in its current location is not prudent risk management for the applicant or responsible planning for the Tahoe City community or the environment of Lake Tahoe and the Truckee River watershed. See also Master Response 1 and responses to Comment Letter 20.

Letter
22
Response

Tahoe City Commercial Property Owners Association
Roger Kahn
December 12, 2013

- 22-1 The commenter notes that the 1994 the Tahoe City Community Plan called for relocation of the Tahoe City substation for reasons that include scenic issues, land use and community character, and that the new "Vision Plan" for the Tahoe City Area Plan reinforces the community's desire for relocation.
- The "Vision Plan" is acknowledged, as is the expressed desire to move the Tahoe City Substation from its current location as a step toward realizing that vision. Discussions are ongoing between the applicant, Placer County, and TRPA to consider relocation as a potential future project.
- See Master Response 1 for further discussion.
- 22-2 The proposed rerouting of SR 89 and development of the Fanny Bridge/River Walk District is acknowledged, as is its role in the community's vision.
- 22-3 The commenter expresses that the Tahoe City Substation in its current location is not consistent with the community's vision and that further capital investments should not be made. See Master Response 1 regarding relocation of the Tahoe City Substation.

- 22-4 The commenter expresses willingness to assist with efforts to relocate the substation. The commenter is referred to Master Response 1 for more information on ongoing collaboration on the topic of potential substation relocation.

Letter
23
Response

Northstar Property Owners Association
Geoff Sullivan Stephens, General Manager
January 6, 2014

- 23-1 The lead agencies acknowledge the support expressed by the Northstar Property Owners Association (NPOA) for the proposed upgrading of the 625 and 650 Lines. The Association's concerns about the Draft EIS/EIS/EIR are addressed in the responses below.
- 23-2 The comment indicates that the visual impacts of the new power poles should be evaluated from the homes in the Northstar Subdivision, in addition to the analysis from SR 267. As shown in Exhibit 4.4-7 of the Draft EIS/EIS/EIR, the viewpoint showing the power line crossing the Martis Valley (Viewpoint 5) is located within the Martis Creek Lake Recreation Area and not along SR 267. The existing view and a simulation of views from this location are provided in Exhibit 4.4-12. This viewpoint is from a location along the Martis Creek Trail approximately 600 feet north of the existing power line alignment. Upon further review of the Draft EIS/EIS/EIR, the location of the Exhibit 4.4-12 viewpoint is not clearly described in the text. The third paragraph on page 4.4-52 of the Draft EIS/EIS/EIR is modified to read as follows:

In all cases the new line would utilize non-specular conductors (see APM SCE-~~32~~) and self-weathering, dark brown poles, or equivalent (see APM SCE-~~23~~) which would be less conspicuous than the existing conductors and poles. From SR 267, the 650 Line diverges from the highway and extends west across Martis Valley. Segment 650-4 in this area is generally about 900 ~~1,050~~ feet south of Martis Creek. A public trail leads from a gravel parking area off of SR 267. The trail generally follows the creek in this area, on its north side. The existing line is visible to the south from the trail. Exhibit 4.4-12 shows the change in view with the upgraded power line along the existing alignment from a point along the Martis Creek Trail approximately 600 feet north of alignment. the effect of increased distance of Segment 650-4 from public roads on the degree of apparent visual change. In this exhibit, the difference between the existing power line and the proposed power line is nearly indiscernible, primarily because the ~~greater~~ distance of the line from the ~~trail road~~ decreases its prominence, and decreases its potential to protrude above the horizon line. After project implementation, the line would be 600 to 1,000 feet farther from SR 267 and visual changes would be less discernable.

As indicated, the photo simulation provided in Exhibit 4.4-12 shows the view of the existing and proposed power line at a distance of 600 feet. Based on evaluation of aerial imagery, the Northstar subdivision home closest to the existing power line alignment is approximately 1,300 feet away, more than double the distance of the photo simulation viewpoint. Due to the increase in distance, the visibility of the existing power line in northerly views from the Northstar subdivision would be substantially less than indicated in the simulation, and any changes in the power line less discernable. This is supported by Photograph 34, provided in Exhibit 4.4-6l, showing the view from Basque Drive looking north, in which the existing power lines are not readily identifiable. Therefore, the conclusion in the Draft EIS/EIS/EIR of a less than significant impact related to views of the power line from the north in Segment 650-4 would also apply to views of the line from the Northstar subdivision in the south. Alignment 650-4A included in the modified alternative (Exhibit 3-4b) would move the line farther north and more distant from the Northstar subdivision and therefore scenic impacts at the subdivision would be even less.

Regarding the height and design of the proposed new poles, the height of the poles is determined by engineering requirements that take into consideration the line voltage, conductor spacing, terrain, and vegetation among other factors. The poles would be at the minimum height that also meets engineering and design requirements. CalPeco has committed to implementing the APMs, which are considered part of the project description and would be conditions of agency permits. APM SCE-2 requires use of self-weathering dark brown steel poles, and APM SCE-3 requires use of non-specular conductors that will reduce new sources of glare.

- 23-3 The comment indicates that the Draft EIS/EIS/EIR does not provide visual aids to illustrate the impact of tree removal along SR 267 and expresses concern with the tree removal required in the ROW.

Exhibit 4.4-7 in the Draft EIS/EIS/EIR shows the location of photo simulation viewpoints. Views within the Lake Tahoe Basin to the south along SR 267 are shown in the photo simulations for viewpoints 6, 7, and 15. Photo simulations depicting views along SR 267 in Segment 650-2 for Alternative 1 (PEA Alternative) and Alternative 4 (Proposed Alternative) are shown in Exhibit 4.4-13 (Viewpoint 6) and Exhibit 4.4-14 (Viewpoint 7); for Alternative 3 (Road Focused Alternative) the 650-2 segment is shown in Exhibit 4.4-23 (Viewpoint 15). These simulations give a representation of changes in views that can be expected under respective alternatives for power line segments adjacent to SR 267. Portions of the proposed alignment not immediately adjacent to SR 267 would be fully to partially screened from view for motorists due to intervening trees and vegetation.

In addition, for Alternatives 1, 3, and 4, the power lines would be set back from a portion of the highway south of Brockway summit, reducing their visibility with implementation of APM SCE-7 (see Exhibit 4.4-24, 650 Setback Alignment of APM SCE-7). APM SCE-7 requires that from Brockway Summit southward, replacement poles for the 650 Line (in the case of Alternatives 3 and 4, both the 650 and 625 Lines) are sited to eliminate or substantially reduce their visibility from the highway within the Lake Tahoe Basin, as compared to the existing 650 Line, without causing new visual impacts from tree removal or construction of new access ways that would be required to erect and maintain the line. This would result in beneficial scenic effects by further opening up views of the Lake Tahoe Basin for travelers on SR 267.

By implementing APM SCE-7, additional screening of power lines would not be needed along SR 267 to remain below impact significance thresholds identified in Section 4.4, Scenic Resources, of the EIS/EIS/EIR. Therefore, the mitigation measure suggested in the comment is not needed to avoid or reduce significant impacts to scenic resources.

Three additional visual simulations portraying the APM SCE-7 setback along SR 267 have been included in this Final EIS/EIS/EIR and are provided in Section 4.4, Scenic Resources, as Exhibits 4.4-13A, 4.4-13B, and 4.4-14A. These simulations show a scenario where the APM SCE-7 setback is implemented, but the existing wooden poles remain to support communications and electrical distribution lines currently on the poles, and the top portion of the poles that formerly held the 650 Line are removed. Under this scenario, where the bottom portion of the existing wooden poles remain, the APM SCE-7 setback still results in improved scenic quality in this portion of the SR 267 corridor relative to existing conditions.

Vegetation management (including tree removal) within the power line ROW is not a discretionary activity that can be adjusted or modified. The project applicant must remove trees and otherwise manage vegetation within the ROW to remain in compliance with utility safety and operations requirements mandated by the CPUC. The lead agencies do not have the authority to relieve the applicant of this legal obligation.

Utility safety and operations requirements mandated by the CPUC have not changed and thus vegetation management along portions Segment 650-3 north of Brockway Summit and south of the

Northstar Golf Course (i.e., in closer proximity to NPOA residences) would continue to occur as it has in the past. Even though the poles would be taller and slightly wider at the base, the location of the alignment would not change and the underbuild (e.g., distribution and communications lines) would be consolidated onto the new poles. Although a wider temporary ROW will be established to facilitate replacement of Segment 650-3, its proximity to SR 267 and the presence of existing access means that only spot/incremental removal of trees and trimming of branches would be needed to accomplish the work. In addition, the ROW would revert back to original width once construction is complete. To clarify, the description and analysis of tree removal provided on Draft EIS/EIS/EIR on page 4.4-55, as well as pages 4.4-62 and 4.4-63 pertain specifically to power line segments located within new or modified ROWs, such as much of 625 Line and APM SCE-7.

- 23-4 The lead agencies acknowledge the commenter's request for limited construction hours in Martis Valley. However, the analysis in the Draft EIS/EIS/EIR does not identify any significant noise impacts requiring further limitations of construction hours beyond those already identified to mitigate those effects. The commenter's request was reviewed with the project applicant, and given the limited construction season, and other constraints in the area that would limit construction (such as the work near wetlands, which would be required to occur at the end of the construction season when the groundwater table is the lowest), the lead agencies and the applicant have determined that further limitation of construction hours could affect the ability to complete construction in the Martis Valley in a timely manner and in compliance with other obligations and restrictions. The applicant will continue to coordinate with NPOA through the project design and construction process and will consider suggestions to limit construction disturbance, but cannot commit to implementing construction hour limitations beyond those already identified in the Draft EIS/EIS/EIR.
- 23-5 In response to the commenter's request for notice of construction 30 days prior to commencement of work in Martis Valley, APM NOI-1 has been revised so that all property owners within 300 feet of the alignment will be notified of construction at least 30 days prior to construction (rather than one week, as previously proposed). The revised APM reads as follows:

CalPeco will provide notice of construction to all property owners within 300 feet of the project by mail at least ~~1 week~~ 30 days prior to the start of construction activities. The announcement will state the construction start date, anticipated completion date, hours of operation, and the project's website where questions can be asked and complaints can be received.

Letter
24
Response

League to Save Lake Tahoe
Darcie Goodman Collins, PhD, Executive Director
January 6, 2014

- 24-1 The Draft EIS/EIS/EIR was developed and formatted to best meet the needs of three co-lead agencies: the USFS, the TRPA, and the CPUC. The CalPeco 625 and 650 Electrical Line Upgrade Project is a linear project that would be constructed over approximately 25 miles and considers four action alternatives, a subalternative, and a no action alternative. The resulting discussion is extensive and detailed, as it must be to meet the legal requirements of all three lead agencies. However, the Draft EIS/EIS/EIR follows a general organizational format (e.g., project description, impact analysis for individual environmental topic areas) typical of environmental review documents prepared to comply with NEPA, the TRPA Code, and CEQA.

Material is presented in the document both as an overview (for example Exhibit 4.7-3, which illustrates the locations of known special status species occurrences), and at a finer level of detail (for example Exhibits 4.7-4 through 4.7-7, which provide details about specific species occurrences, and Appendix K,

which includes over 60 pages of vegetation mapping). Note that Exhibit 4.7-3 presents data as it is provided by the California Natural Diversity Database (CNDDDB). Given that the CNDDDB provides location, and often accuracy class information for each species occurrence, and there are multiple species occurrences in the project study area, Exhibit 4.7-3, by its nature, expresses a great deal of information.

The PAS Amendment is discussed in Chapter 3, Project Alternatives (see pages 2-23 to 2-25). As indicated on page 3-23 of the Draft EIS/EIS/EIR, TRPA would propose a staff-initiated amendment to PAS 019 (Martis Peak). Adoption by the TRPA Governing Board of the proposed PAS amendment would require TRPA to make findings regarding the proposal under Subsection 11.8.4.B of the TRPA Code. The Special Area created by the amendment would encompass three parcels owned by CalPeco, which currently house the Kings Beach Substation and Kings Beach Diesel Generators.

The proposed amendment to the Martis Peak PAS would address the existing nonconforming uses associated with the existing Kings Beach Substation by adding “Public Utility Center” to the list of permissible uses, would accommodate the expanded substation in the most appropriate location (in the location of the existing substation and more distant from the residential area than would otherwise be permitted), and would allow the decommissioning of the Brockway Substation. The amendment would only apply to the Martis Peak Plan Area, which is depicted in Exhibit 4.2-1 of the EIS/EIS/EIR.

- 24-2 The comment states that, based on Exhibit 4.4-3 in the Draft EIS/EIS/EIR, scenic impacts from the point of view of the lake need to be analyzed and that views from ridges, hills, and lookouts, such as the ridge near the California-Nevada border and the Stateline scenic lookout area, should also be evaluated. The comment suggests that photo simulations from these viewpoints should be included in the Final EIS/EIS/EIR.

The methodology for development of Exhibit 4.4-3 and its interpretation is provided on pages 4.4-12 and 4.4-13 of the Draft EIS/EIS/EIR in the subsection titled “Study Area Viewshed and Visibility.” As described in this section, the project’s potential viewshed as expressed in Exhibit 4.4-3 is confined to a 4-mile buffer around all proposed facilities, facility upgrades/modifications, and temporary work areas. Four miles is defined by the USFS as the boundary between the middleground and background zone (USFS 1995). A 4-mile buffer was used because proposed poles, conductors, and tree removal, even if theoretically visible from more distant locations based on terrain, would typically be indistinguishable from other background elements due to the small apparent size, angle of view, and viewing context. This is why more distant viewpoints, such as those from Stateline scenic lookout (more than 15 miles directly across Lake Tahoe from the nearest project feature) are not considered in the analysis. As shown Exhibit 4.4-12 of the Draft EIS/EIS/EIR, the existing power poles and the proposed new poles are difficult to discern at a vantage point 600-feet from the poles. Individual poles would not be visible from viewpoints miles away.

However, as noted in the EIS/EIS/EIR, from middleground distances (i.e., 0.5 to 4 miles from the proposed project) the color/texture contrast in the landscape caused by vegetation clearing would be more noticeable than the poles and the conductors themselves, particularly during the winter when white snow on the ground may be contrasted with darker surrounding evergreen trees. This would also apply to views from farther background distances. For power line segments in which the proposed upgrade would follow the same alignment as the existing line, the change in vegetation clearing would be to expand a current 20 to 30 foot wide vegetation management corridor to a 40 to 65 foot corridor (depending on whether or not a double-circuit option is selected). If the existing line and vegetation management corridor is visible from any distant vantage points (i.e., several miles), it would be difficult to discern a change in views resulting from widening the vegetation management corridor as proposed and, if discernable, the change would be so minor at that distance that it would not be considered a substantial degradation of the existing visual character or quality of the view or otherwise exceed significance criteria provided in Section 4.4.3 of the EIS/EIS/EIR.

In addition, as stated in the EIS/EIS/EIR, vantage points within the middleground distance zone (which would also apply to farther background distances), would require a specific set of circumstances to occur for the proposed project to be visible. These factors would affect both the views of the existing 625 and 650 Line ROWs that might change as a result of placing the 120 kV lines in the ROW and the views of new project routes where no electrical line currently exists. Because of the height and density of trees in the landscape, cleared ROWs are easily hidden from view, especially if the viewer's line of sight is not in line with the ROW and/or the view is from a similar or lower elevation than the ROW. The project would only be visible to observers within middleground and background distance zones if: 1) the immediate foreground is clear of obstructions (e.g., a meadow, field, or large parking lot), 2) the line of sight is otherwise uninterrupted, and 3) the power line ROW is alignment coincides with the viewer's line of sight. Otherwise, the power line is likely to remain hidden from view; if it crosses perpendicularly or obliquely to the viewer's line of sight, the height of trees on either side of the cleared ROW would mask the gap, even in steeply sloped areas. This phenomenon is evident in other views of linear features within the Lake Tahoe Basin. For example, there are multiple roadways, USFS roads, off-highway vehicle trails, and linear utility alignments crossing through forests in the basin. However, most of these are not visible from middleground and background vantage points, particularly when they cut across a slope. When linear ROWs are clearly visible is typically when the ROW travels straight up and down a slope and is aligned with the viewer's line of sight, such as ski runs.

As shown in Exhibits 3-4a through 3-4d in the Draft EIS/EIS/EIR, a majority of the alternative project alignments in the Lake Tahoe Basin run roughly parallel to the slope and along contours. Where the alignments run more directly upslope, such as in the vicinity of Tahoe City and Kings Beach, the options considered for the new line follow the same general alignment as the existing line and any potential changes in views would be the expansion of the vegetation management corridor, as described above. Therefore, it is unlikely that the effects of the proposed project would be visible from ridges, hills, and lookouts as identified in the comment. Where the project might be visible from these background views, because of placement of the project within the existing alignment in locations nearest to the lake, and the distance between the viewpoint and project features (several miles), the project would not result in a substantial degradation of the existing visual character or quality of the viewshed or otherwise exceed significance criteria provided in Section 4.4.3 of the EIS/EIS/EIR. Given these circumstances, additional visual simulations from ridges, hills, and lookouts as identified in the comment are not required to retain the less than significant conclusions in the Draft EIS/EIS/EIR.

Specifically regarding Exhibit 4.4-3, as stated in the Draft EIS/EIS/EIR, this exhibit considers topography in the project area, but does not include screening by vegetation. Because the landscape is forested, the viewshed shown in Exhibit 4.4-3 vastly overestimates the real viewshed of the project. This is reinforced by Exhibit 4.4-4 which contrasts a "bare-earth viewshed" to the "real viewshed" with trees present. Where multiple poles may be visible from various locations in the bare-earth viewshed, the real viewshed indicates significant screening provided by trees and vegetation. In addition, Exhibit 4.4-4 shows conditions from an elevated aerial viewpoint that minimizes the screening effects of trees and vegetation. A viewpoint from ground level would result in more substantial vegetative screening. Therefore, Exhibit 4.4-3 can be considered a first step in the overall scenic analysis provided in the EIS/EIS/EIR, but expresses a scenario where no trees occur in the study area and not the true existing condition. Therefore, Exhibit 4.4-3, on its own, should not be used as a basis to evaluate the proposed project's potential scenic impacts, or be the sole tool used to identify potential locations for photo simulations.

In reference to potential photo simulations from the Lake Tahoe surface, for the reasons described above for views from ridges, hills, and lookouts, it is considered highly unlikely that project features would be discernable from viewpoints on the lake. This is supported by information provided in the Draft EIS/EIS/EIR. Although views from lake could be closer than views from the shoreline across the lake, a viewer on a boat could still be several miles from the proposed project. As shown in Exhibit 4.4-3, with no

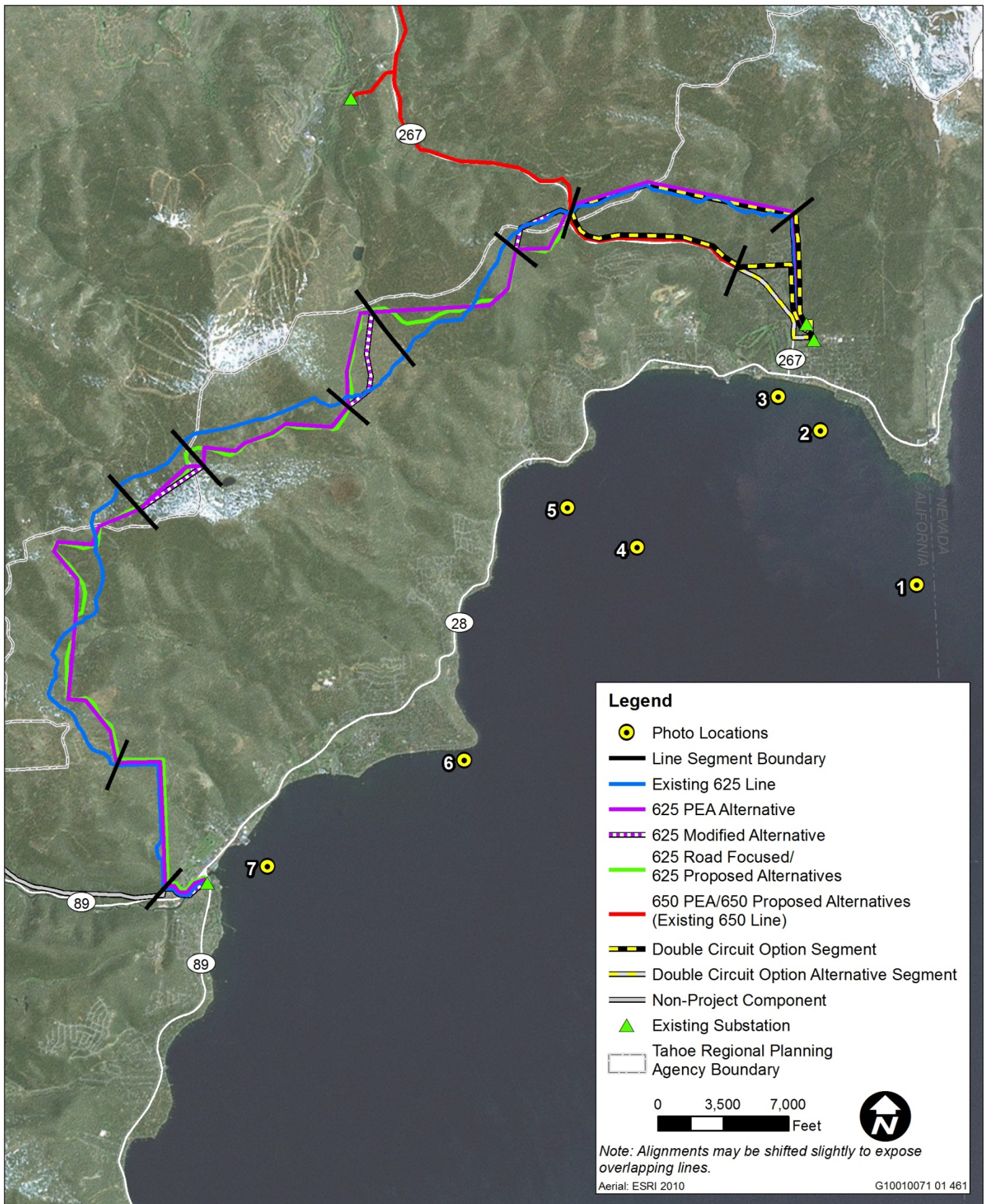
vegetation present, in the Tahoe City area, more project features would become visible as a boat moves farther from the shoreline. So, as more of the project becomes visible, views are further mitigated by distance, and as a boat approaches the shoreline, fewer of the project features are visible. With trees and vegetation present, more distant views from the water would become more like the middleground and background views described above, and as a boat approaches the shoreline trees in the foreground view would further screen the proposed project. In addition, in Segments 625-1 and 625-2, the portions of the project closest to the shoreline, the project alignments being considered either follow the existing alignment, or are very close to it (i.e., Segment 625-1A). Therefore, the project elements closest to views from the lake would replace existing power lines with new power lines, and would not involve the construction of utility infrastructure in a location where none currently exists. Conditions related to potential changes in the vegetation management corridor described above could apply.

In the Kings Beach area, if no vegetation was present, more project features would remain visible as a boat approached the shoreline (per Exhibit 4.4-3). However, in this area, the project alignments being considered follow existing power line alignments. Therefore, like in the Tahoe City area, the project elements closest to views from the lake would replace existing power lines with new power lines, and would not involve the construction of utility infrastructure in a location where none currently exists. Conditions related to potential changes in the vegetation management corridor described above would apply. Under the “true” existing condition, with vegetation present, as a boat approaches the shoreline, trees and buildings would dominate foreground views and screen proposed project elements. The nearest project feature is approximately 2,500 feet from the Lake Tahoe shoreline in the Kings Beach area. Therefore, as a boat moves from the shoreline to a vantage point where shoreline trees and buildings no longer screen the project, the boat would be at least 0.5-mile from the nearest project feature, resulting in increased distance mitigating potential views of the project.

Given these conditions based on information included in the Draft EIS/EIS/EIR, it is expected that from many locations on Lake Tahoe, the proposed project would not be visible to boaters or others on the lake. Where the project might be visible, it would be from relatively distant viewpoints and visible elements would be within the existing power line alignment. Under these circumstances, the project would not result in a substantial degradation of the existing visual character or quality of views from the water surface on Lake Tahoe or otherwise exceed significance criteria provided in Section 4.4.3 of the EIS/EIS/EIR from this viewpoint. Therefore, additional visual simulations from Lake Tahoe as suggested in the comment are not required to retain the less than significant conclusions in the Draft EIS/EIS/EIR.

To further test and verify project visibility from the Lake Tahoe surface, on March 13, 2014 a boat was chartered (the Hopper V) to take photos of the project area from various locations on the lake. Staff representing the USFS, TRPA, and the lead agencies’ consultant team were present. A Trimble GeoXH GPS unit was used to record the boat’s location at each point where photos were taken. Exhibit 24-2A shows the seven Lake Tahoe surface photo locations as well as the locations of the existing 625 and 650 Lines and the proposed routes under each action alternative. Photo locations were selected to provide potential views of the lines where they were closest to the lake and to test the visibility of the 625 Line between Tahoe City and Kings Beach. Photo Location #6 was added while in the field based on the visibility of a portion of the existing 625 Line, as described below.

Exhibit 24-2B shows a photo from Photo Location #1, approximately 2.5 miles southeast of the intersection of SRs 267 and 28. The photo is taken towards Kings Beach and the SR 267 ROW can be seen running east to west towards Brockway Summit. However, the existing 650 Line along the SR 267 ROW is not discernable, and no other elements of the existing 625 and 650 Lines can be seen. This photo supports the lack of visibility of project features from background (i.e., greater than 4 miles) distances that would be typical of most views from ridges, hills, and lookouts, and the importance of topographic and vegetative screening.



Source: Ascent Environmental 2014

Exhibit 24-2A

Lakeview Photo Locations





Source: Ascent Environmental 2014

X10010071.01.017

Exhibit 24-2B

Photo Location #1 View Toward Kings Beach - Far View



Exhibit 24-2C shows a photo taken from Photo Location #2, approximately 0.65 mile southeast of the intersection of SRs 267 and 28, almost 2 miles closer to shore than Photo Location #1. The SR 267 ROW is more clearly visible; however, the existing 650 Line along the ROW is not discernable (although it was faintly visible to the naked eye while on the boat) and no other elements of the existing 625 and 650 Lines can be seen.

Exhibit 24-2D shows a photo taken from Photo Location #3, approximately 0.25 miles southwest of the intersection of SRs 267 and 28, and approximately 950 feet from the Lake Tahoe shoreline. As indicated above, as the boat approached the shoreline, foreground trees began to screen the views of middleground and background features. Photo Location #3 was selected as it allowed the closest approach to shore while still maintaining a view of SR 267 as a common landmark for all the Kings Beach photos. The existing 650 Line along the ROW is barely discernable on the photo (although it was faintly visible to the naked eye while on the boat) and no other elements of the existing 625 and 650 Lines can be seen. The SR 267 ROW and associated earthen cuts and fills and cleared vegetation are more than 100-feet wide in some areas shown in the photo yet are not a prominent visual feature, indicating the importance of vegetative and topographic screening for linear ROWs located at a perpendicular or oblique angle to the observer's line of sight. This is also true of Photo Locations #1 and #2.

Under the various action alternatives, the alignments for the proposed 625 and 650 Lines, as they enter/exit Kings Beach would follow the routes of the existing lines. Where the existing lines are not currently visible from the lake surface and other viewpoints, they would remain screened by existing vegetation and topography. Any facilities installed along SR 267 between Kings Beach and Brockway Summit would be set back or otherwise screened to meet TRPA Scenic Threshold Ratings (see Section 4.4, Scenic Resources, of this EIS/EIS/EIR). Therefore, although middleground and background views of the combined SR 267/electrical line ROW might be altered due to project implementation, the visual changes would not be substantial, and vegetative and topographic screening would play a prominent role in blocking views of the electrical line and associated vegetation management corridor.

Photo Locations #4 and #5 were selected to represent views of the central portion of the 625 Line that extends laterally along the Lake Tahoe basin between Tahoe City and Kings Beach. Exhibit 24-2E shows a photo taken from Photo Location #4, approximately 1.4 miles southeast of the intersection of SR 28 and Carnelian Woods Ave. The photo was taken facing approximately west-northwest. The photo shows the increased visibility of snow on "bare" ground contrasted with surrounding trees (as described above). However, none of the patches of snow shown in Exhibit 24-2E are associated with the 625 Line, and no elements of the 625 Line were visible from this viewpoint. In this area, where the 625 Line ROW is oriented perpendicular or obliquely to the viewer, vegetation and topographic screening block views of the poles and conductor, and the vegetation management corridor.

Exhibit 24-2F shows a photo taken from Photo Location #5, approximately 0.6 mile southeast of the intersection of SR 28 and Carnelian Woods Ave. (approximately 0.8 mile closer to shore than Photo Location #4). The photo was taken facing approximately west-northwest. Like Photo Location #4, vegetation and topographic screening block views of the poles and conductor associated with the existing 625 Line and the vegetation management corridor and these features were not visible from the boat.

While travelling from Photo Location #5 towards Tahoe City, a portion of the 625 Line was seen to the west. Photo Location #6 was added to record this view. Exhibit 24-2G shows a photo taken from Photo Location #6, just south of the tip of Dollar Point approximately 0.2 mile southwest of the intersection of Edgewater Dr. and Dardanelles Ave. The photo shows a view to the west where a portion of the existing



Source: Ascent Environmental 2014

X10010071 01 018

Exhibit 24-2C

Photo Location #2 View Toward Kings Beach - Mid Distance



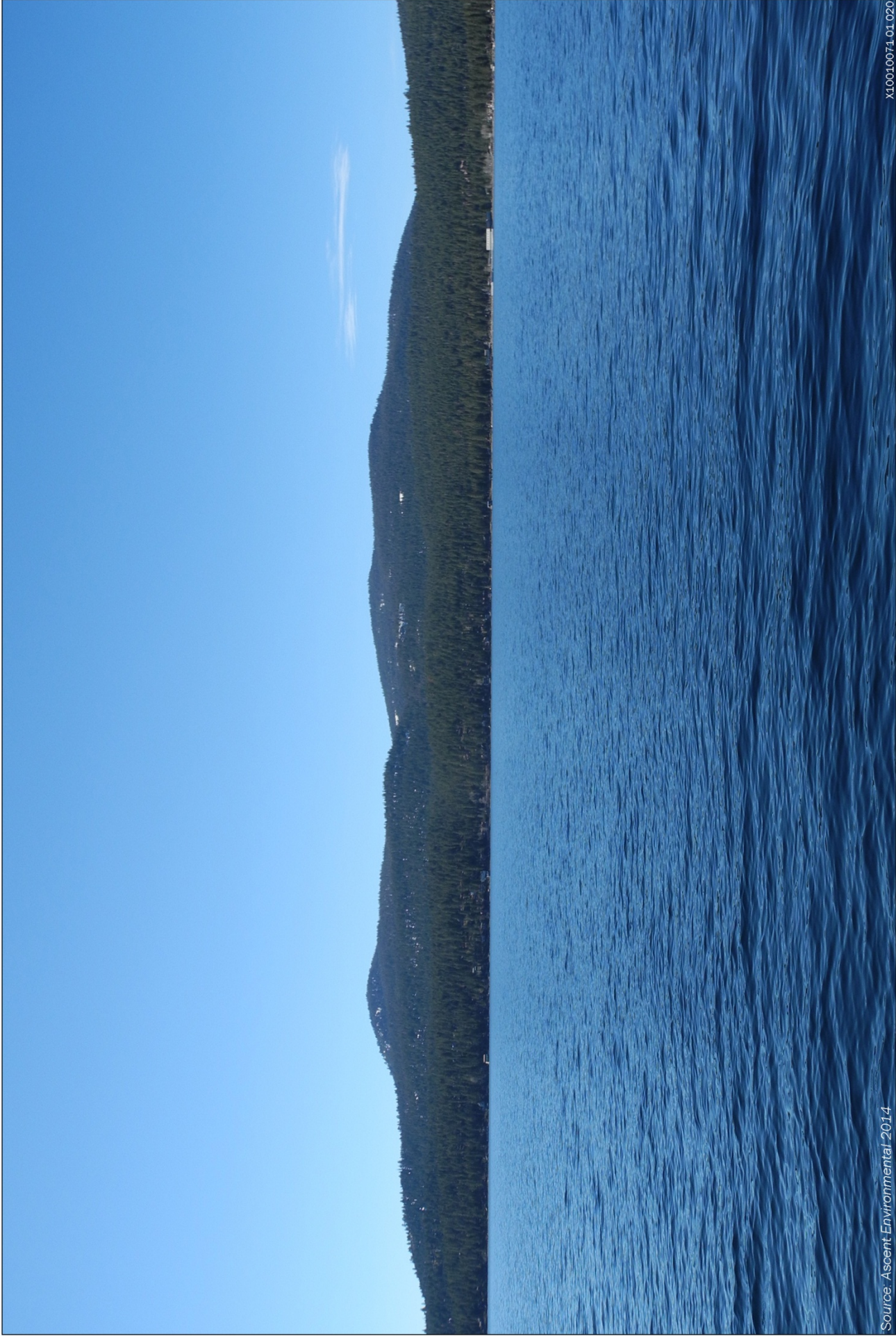
Source: Ascent Environmental | 2014

Photo Location #3 View Toward Kings Beach - Near View

Exhibit 24-2D

X10010071 01.019





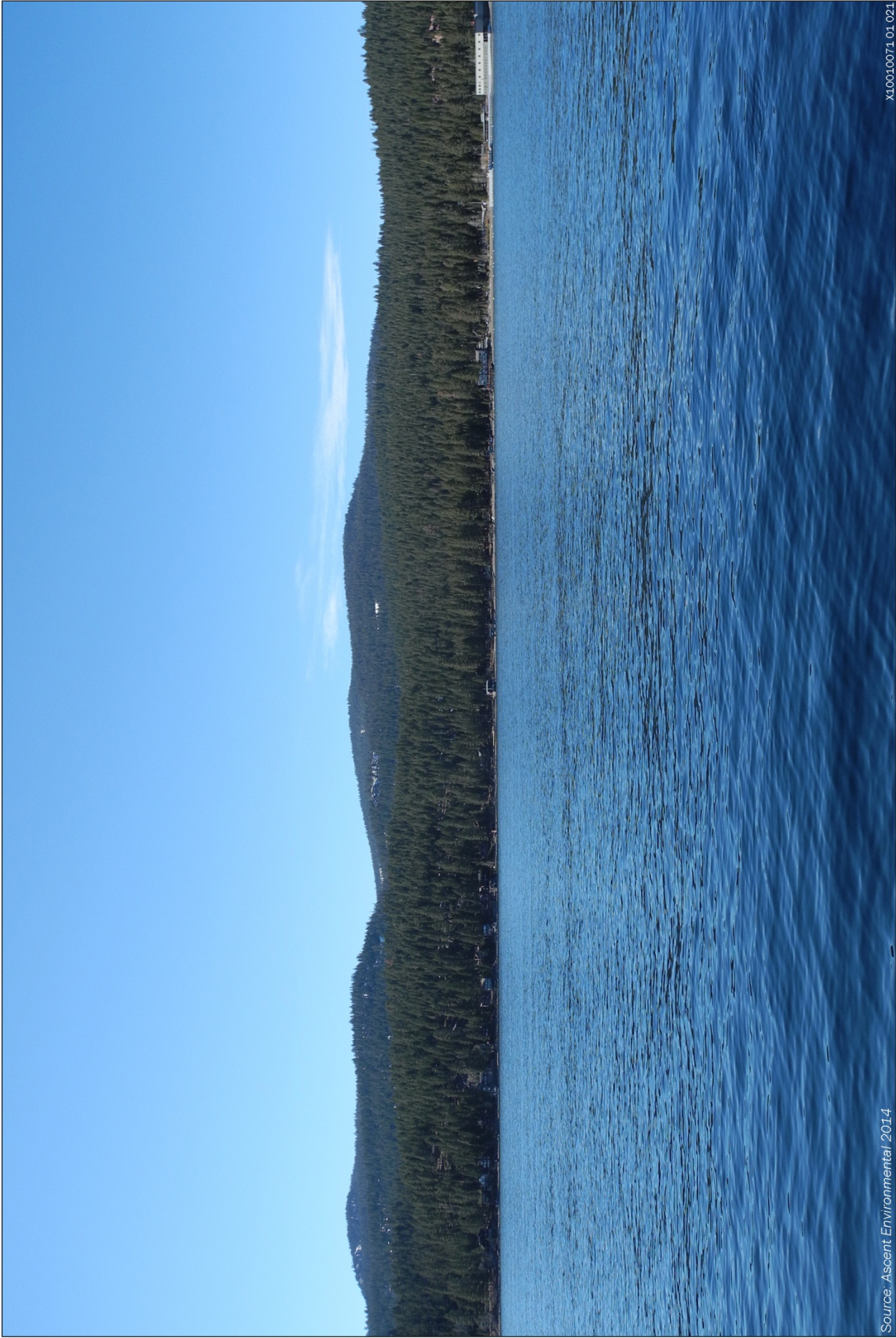
Source: Ascent Environmental 2014

X10010071 01 020



Photo Location #4 View Toward Carnelian Bay – Far View

Exhibit 24-2E



Source: Ascent Environmental 2014

X10010071 01 021

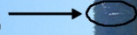
Exhibit 24-2F

Photo Location #5 View Toward Carnelian Bay – Near View





Existing 625 Line



Source: Ascent Environmental 2014

X10010071 01.022

Exhibit 24-2G

Photo Location #6 View from South of Dollar Point



625 Line travels east to west directly up a slope (see Exhibit 24-2A). This visible part of the 625 Line is located approximately 3.1 miles directly west of Photo Location #6. This viewpoint provides an example of several concepts identified above:

- ▲ The electrical poles and conductors are not visible at longer distances.
- ▲ At middleground and background distances the color/texture contrast in the landscape caused by vegetation clearing would be more noticeable than the poles and the conductors themselves, particularly during the winter when white snow on the ground may be contrasted with darker surrounding evergreen tree.
- ▲ Due to vegetation and topographic screening, the project would only be visible to observers within middleground and background distance zones if: 1) the immediate foreground is clear of obstructions, 2) the line of sight is otherwise uninterrupted, and 3) the power line ROW is aligned in the same direction as the viewer's line of sight. Otherwise, the power line is likely to remain hidden from view; if it crosses perpendicular or obliquely to the viewer's line of sight.

For all action alternatives, the current 20 to 30 foot wide vegetation management corridor in this portion of the existing 625 Line would be expanded to 40 feet wide, and a temporary construction corridor up to 65 feet wide would be established. At the distant vantage point shown in Exhibit 24-2G, as well as many middleground viewpoints moving closer to this portion of the 625 Line, it would be difficult to discern a change in views resulting from widening the vegetation management corridor as

proposed. If discernable, the change would be incremental and minor. The view of the ROW would remain subordinate to the valued landscape character and valued scenic attributes would remain. Any change in view would not be considered a substantial degradation of the existing visual character or quality of the view or otherwise exceed significance criteria provided in Section 4.4.3 of the Draft EIS/EIS/EIR. The visual effects of construction would diminish over time as vegetation along the construction corridor reestablishes and the 40 foot ROW is maintained consistent with the vegetation management activities discussed in the EIS/EIS/EIR.

Exhibit 24-2H shows a photo taken from Photo Location #7, approximately 0.6 mile east of the mouth of the Truckee River. The photo was taken facing west. The existing 625 Line is not visible from this location. Because the proposed 625 Line would generally follow the existing alignment under all action alternatives, the line and the associated vegetation management corridor also would not be visible.

The photos taken from Lake Tahoe reinforce the conclusions provided above and included in the Draft EIS/EIS/EIR: from many locations on Lake Tahoe, the proposed project would not be visible to boaters or others on the lake; and, where the project is visible, it would be from relatively distant viewpoints and visible elements would generally be within the existing power line alignment. Under these circumstances, the project would not result in a substantial degradation of the existing visual character or quality of views from Lake Tahoe or otherwise exceed significance criteria provided in Section 4.4.3 of the Draft EIS/EIS/EIR. Based on the photos taken from a boat on March 13, 2014, additional visual simulations from Lake Tahoe as suggested in the comment are not required to retain the less than significant conclusions in the Draft EIS/EIS/EIR.

- 24-3 Photo simulations are not provided for each location where the 625 Line would cross the Tahoe Rim Trail. Exhibit 4.4-16 provides a simulation of the view at the Tahoe Rim Trail trailhead in Segment 625-6. Selection of simulation viewpoints were based on field observations and review of photography, technical data, and plans and policies pertaining to visual resources management. As described under Methods and Assumptions in the EIS/EIS/EIR, the selection of key viewpoints considered views with the following characteristics:



Source: Ascent Environmental 2014

X10010071.01.023

Exhibit 24-2H

Photo Location #7 View Toward Tahoe City



- ▲ sensitive or protected views including public open space and recreation trails, residential areas, and designated scenic roadways or vista points;
- ▲ views that represent the visual experience of a relatively large number of affected viewers; and
- ▲ views that portray a representative range of viewing conditions along the project corridor (i.e., varied viewing distance and landscape character).

However, it is not necessary to generate simulations for every location that meets these criteria. As indicated in the EIS/EIS/EIR, the locations for simulations are intended to provide anticipated views of the project from representative public viewpoints. The 17 simulations provided in the document reflect representative views under various conditions, including at roads and road crossings, trails, developed areas, forested areas, open areas, foreground viewpoints, and long distance viewpoints.

The new alignment refers to the 625 Line (the new 625 alignment that replaces the old/existing alignment); all alternative alignments would cross the Tahoe Rim Trail in five locations. The simulation in Exhibit 4.4-16 depicts a view of the line along the Tahoe Rim Trail and is considered representative of general changes in scenic conditions at other trails. Other simulations of the proposed line in forested areas (e.g., Exhibits 4.4-17, 4.4-20) are also indicative of changes in views that might be expected along the Tahoe Rim Trail and other trails. With reference specifically to Exhibit 4.4-16, despite its increased height, the new pole appears lower than the existing pole because project design calls for placement of the new pole farther from the viewer and slightly lower on the hillside. This is described on page 4.4-59 in the Draft EIS/EIS/EIR. The new poles would hold the same number of conductor as the existing poles.

This placement positions the lower lines on the pole so they would not “skyline” or protrude above the horizon, and with the backdrop of vegetated hillsides in the distance they are not as visible. This also places the top of the new pole at a lower elevation than the existing pole from the viewpoint used in the simulation.

Although additional photo simulations would illustrate post project conditions at various trails and trail crossings, the simulations provided in the Draft EIS/EIS/EIR, coupled with the photos of existing conditions and text descriptions in the document, are sufficient to characterize potential changes in views under a variety of circumstances. The existing information is adequate to determine that the proposed project would not result in substantial degradation of the existing visual character or quality of the site and its surrounding, or exceed any other applicable significance criteria provided in Section 4.4.3 of the EIS/EIS/EIR. Therefore, preparation of additional visual simulation from other trail viewpoints is not proposed.

Regarding potential changes in views from more distant viewpoints, see response to Comment 24-2.

- 24-4 The comment characterizes old growth trees as irreplaceable, expresses concerns about impacts to these resources, and questions whether the proposed mitigation (Mitigation Measure 4.7-4) would effectively reduce a significant impact related to tree removal and effects on late seral forest to a less-than-significant level. As indicated in the discussions of Impact 4.7-4 for each action alternative, all action alternatives would result in the removal of less than 0.75 acres of late seral/old growth forest, as mapped by TRPA for the 2011 Threshold Evaluation. The nature of the significant impact conclusion, as identified in the Draft EIS/EIS/EIR, is that even this small loss of late seral/old growth forest is contrary to TRPA reaching threshold standards related to this resource. Because the impact is considered significant due to a conflict with TRPA Code, Mitigation Measure 4.7-4 is focused on actions that would bring the project into compliance with TRPA Code.

As indicated in each discussion of Impact 4.7-4 in the Draft EIS/EIS/EIR, from a biological perspective, “[t]ree removal within the narrow electric line ROW would not result in substantial changes in stand

structure or composition or in the distribution of plant communities in the project area overall, and would not result in a change in the natural functioning of a late seral or old-growth ecosystems.” A significance criterion equivalent to “no loss” (i.e., any loss is significant and unavoidable) is not reasonable or feasible. Various mechanisms are available to compensate for the loss of old growth trees, such as fuels management and vegetation treatments that can increase the health, quality, and fire resiliency of existing old growth stands, and that accelerate the growth rate of younger stands and reduce the time needed to provide old growth values. Although it would take considerable time, planting a forest stand and preserving and managing it in perpetuity would ultimately create new old growth forest (barring catastrophic events such as forest fire).

APMs have been incorporated into the project design to avoid and minimize tree removal and loss or degradation of old growth forest stands to the extent feasible. Through implementation of Mitigation Measure 4.7-4, any unavoidable loss of late seral/old growth forest would be compensated through development and implementation of a forest management plan to facilitate establishment of late seral/old growth forest stands and enhance existing late seral/old growth forest stands. The forest management plan would include management actions, such as fuels and vegetation treatments, to facilitate and enhance old-growth development within the existing 625 Line to be removed and/or other potential treatment areas. The forest management plan would clearly describe how the project would achieve TRPA threshold standards for late seral/old growth forest enhancement, identify priority locations where enhancement actions could be implemented to achieve the plan’s objectives, and include a funding component for late seral/old growth forest enhancement projects. As indicated in the EIS/EIS/EIR, implementation of Mitigation Measure 4.7-4 would reduce Impact 4.7-4 to a less than significant level.

In addition, although the TRPA Code provides exemption for large-tree removal for large public utilities projects, the EIS/EIS/EIR includes mitigation for tree removal and effects on stands of late seral/old growth to address potential effects on threshold standards established for these resources. While the removal of individual large trees (i.e., 24 inch dbh on the east side of the Basin, 30 inch dbh on the west side) is generally prohibited in the TRPA Code (except for large public utilities projects such as the proposed project), it can be consistent with TRPA’s threshold standard for late seral/old growth forest unless the removal affects late seral/old growth forest stands. The threshold standard is “attain and maintain a minimum of 55 percent by area of forested lands within the Lake Tahoe Basin in a late seral or old-growth condition, distributed across elevation zones. Forested lands within TRPA-designated urban areas are excluded in the calculations for threshold standard attainment.” The “late seral or old-growth condition” is based on functional stands/groves of trees, not individual trees.

- 24-5 The comment asks whether the reconnaissance-level botanical surveys conducted for the project were sufficient to provide enough information for Table 4.7-4 (Special-Status Plant Species and Likelihood to Occur in the Study Area). The surveys, supplemented by other data sources and project-specific habitat mapping, are adequate and appropriate for determining a species’ potential to occur in the study area. Using reconnaissance-level surveys to support environmental review is common and accepted practice, particularly for projects with large study areas and multiple alternatives. Determining potential for occurrence and whether project implementation could affect a special-status species was based primarily on the types, extent, and quality of habitats (i.e., habitat suitability) in the study area observed during the surveys; the proximity of the study area to known extant occurrences of the species; and the regional distribution and abundance of the species (i.e., whether the project area overlapped with the species’ known range). Any special-status species that could occur in the region and for which suitable habitat is present in the study area was conservatively assumed to potentially occur and be affected by project implementation. After final selection of an alignment and before project construction, protocol-level surveys for special-status plants will be completed, as described in APM BIO-2.

- 24-6 The comment asks whether the area of northern goshawk habitat quantified in the Draft EIS/EIS/EIR was based on the project footprint, and recommends that impacts outside of the footprint, such as construction noise, also be assessed. The reported acreages of habitat permanently or temporarily affected are based on the temporary and permanent ROW, which include the project footprint. However, the full analysis of potential effects on northern goshawk in the EIS/EIS/EIR addresses other short- and long-term effects, including disturbances resulting from noise and increased human activity within northern goshawk habitat, and other project activities such as low-flying helicopter operations near occupied habitat. For example, the discussion of Impact 4.7-6 (Alt.1) on page 4.7-78 states: “Temporary disturbances resulting from noise and increased human activity within northern goshawk habitat, or other project activities such as low-flying helicopter operations near occupied habitat, could affect foraging, movement, and reproductive activity of northern goshawks.” APM BIO-11 requires implementation of protocol level surveys to confirm the presence or absence of goshawk in the project area and APM BIO-12 establishes a 0.5 mile buffer around active goshawk nests.
- 24-7 Impacts to scenic resources are addressed in Section 4.4 of the EIS/EIS/EIR. The scenic resources analysis under Impact 4.4-3 (Alt 1), page 4.4-63, acknowledges the potential for adverse visual effects as a result of installation of the 625 Line in the vicinity of the Fiberboard Freeway. This assessment applies to all of the other action alternatives as well, although visibility would vary according to the particular alternative selected. The EIS/EIS/EIR concludes that although the visual effect of the 625 Line would be adverse, particularly immediately following line installation and prior to passive recolonization of trees and shrubs, it would not be inconsistent with the existing landscape character as seen from the Fiberboard Freeway. In addition, the 625 Line alignments under all action alternatives cross less land with a VQOs of Retention as compared to the existing 625 Line which would be abandoned and passively restored (See Table 4.4-4, Comparison of VQOs traversed by the alternative 625 Line alignments). Implementation of APM SCE-1, which outlines a series of BMPs that minimize the visual effects of linear construction within forest landscapes, as recommended by the LTBMU of the USFS, would meet applicable VQOs and minimize visual effects for recreation users of the Fiberboard Freeway, including the Mount Watson area. For these reasons, the impact to scenic resources is considered to be less than significant. The EIS/EIS/EIR analysis acknowledges that the new alignments would be more visible to recreationists using the Fiberboard Freeway than the existing alignments. Adverse effects to the recreation experience would be reduced through implementation of the APMs listed (APM SCE-1, APM SCE-2, APM SCE-3, APM SCE-5, and APM SCE-6).
- 24-8 The proposed amendment to the PAS for Martis Peak (019) would create Special Area 1 from three parcels owned by CalPeco (assessor’s parcel numbers 090-046-25, 090-046-06, and 090-046-24). A diesel backup electrical generator facility and electrical substation are currently located on these properties. The new, expanded substation would replace the existing electrical substation, and would allow decommissioning of the existing Brockway Substation (on Cutthroat Avenue in the Kings Beach Industrial Community Plan Area).

The proposed amendment would be limited to developed, private property that supports existing electrical facilities within a secure, fenced compound. New or expanded public utility centers would be limited to Special Area 1. There would be no other changes to the PAS that would extend outside of Special Area 1. As discussed in response to Comment 10-3, changes to Placer County’s PAS, if required, would not change the conclusions of the Draft EIS/EIS/EIR.

For a discussion of the environmental impacts of the proposed PAS amendment, including potential for substantial land use conflicts, the commenter is referred to the discussion of Impact 4.2-1 for each of the project alternatives included in Section 4.2, Land Use.

Letter 25 Response	Friends of the West Shore Susan Gearhart, President and Jennifer Quashnick, Conservation Consultant January 6, 2014
25-1	The lead agencies acknowledge the commenter's incorporation of comments provided by others. All comments on the Draft EIS/EIS/EIR provided during the review period are responded to in this Final EIS/EIS/EIR. Responses to the incorporated comment letters are provided in conjunction with the original submittal. Please refer to the comment summary table on page P-1 for a directory of all letters received and corresponding comment responses.
25-2	The comment identifies the broad objectives and concerns of the Friends of West Shore organization and summarizes the topics addressed in the more detailed comments that follow. Responses are provided below for the detailed comments.
25-3	The comment references comments submitted by "NTCAA" (North Tahoe Citizen Action Alliance). Responses to NTCAA's comment letter are provided in the responses to Letter 29.
25-4	The attachment of four comment letters previously submitted on the Northstar Mountain Master Plan, Draft 2011 Threshold Evaluation Report, Final Regional Plan Update, and the City of South Lake Tahoe Tourist Core Area Plan are acknowledged. Together, these letters comprise nearly 400 pages of comments that are not germane to the content, analysis, or conclusions in the Draft EIS/EIS/EIR for the CalPeco 625 and 650 Electrical Line Upgrade Project. These letters were submitted in response to the respective projects months before the release of the CalPeco 625 and 650 Electrical Line Upgrade Project Draft EIS/EIS/EIR. They are included herein as Appendix P-3.
25-5	Utilities are required to provide reliable service to all customers. This includes providing service to existing customers and new development approved by local land use authorities. Because there is a broad expectation that electrical power will be available to support projects and activities authorized by local land use authorities, it is common practice for utility providers to anticipate system need using their own projections or those provided by local jurisdictions. Beyond the issue of potential future demand, as described in Chapter 2, Purpose and Need, in the EIS/EIS/EIR, there is a need to increase the capacity of the North Lake Tahoe Transmission System to provide reliable service to existing customers. More detail on development of alternatives is provided in Master Response 5 and project need is addressed further in Master Response 6.
25-6	As summarized on page 2-2 in Chapter 2, Purpose and Need, of the Draft EIS/EIS/EIR, "[s]easonal, economic, and demographic characteristics of the region lend themselves to wide swings in electrical demand. Demand in the North Lake Tahoe Transmission System is greatest during the winter months, and typically peaks in late December and January as a result of electric heating of homes, businesses, and tourist accommodations, and ski resort loads, including ski lifts and snow-making."
	The peak demand experienced on December 30, 2012 is used to illustrate the occurrence of peak system loads, which can vary widely from normal loads expected in the summer. As higher peak demands become more common, the potential increases that a major power outage could occur if part of the system is damaged due to snow loading, a downed tree, or other cause. High loads cannot be rerouted around the outage because the existing lines may not have sufficient capacity. The result could be a potentially large segment of customers without power until the damaged line can be repaired. The applicant has established that upgrading the entire loop is the preferred engineering alternative to achieve the long term goals of providing secure, reliable, and sustainable power to in areas that could otherwise be without service. The December 30, 2012 peak demand also shows that the North Lake

Tahoe Transmission System, with a design capacity of 88 mega volt-amperes, is currently experiencing demands that meet or exceed this design capacity (88.4 mega volt-amperes during the December 30, 2012 event), and could not support continuous delivery of power to all customers served by the system if a portion of the system were damaged during a peak demand event. The commenter is also referred to Master Response 6 addressing project need and Master Response 11 addressing the looped power line configuration.

- 25-7 It is necessary to increase the capacity of the entire North Lake Tahoe Transmission System to meet the 625 and 650 Electrical Line Upgrade Project objective of providing adequate reliability to all customers.

In reference to reliability requirements, as stated in Section 2.1.1, Regulatory Requirements, on page 2-1 of the Draft EIS/EIS/EIR:

“...California Public Utilities Commission regulations for system reliability are contained in California Public Utilities Code Section 399, which implements the California Legislature’s Reliable Electric Service Investments Act (the Act). The Act states that each electrical corporation must operate its electric distribution grid in its service area in a safe, reliable, efficient, and cost-effective manner [399.2(a)(1)] and that prudent investments continue to be made to protect the integrity of the electric distribution grid [399(c)(1)].

Federal requirements include the North American Electric Reliability Corporation (NERC) Reliability Standard TPL-002-0b. This NERC standard requires transmission systems have the capability to supply peak loads at adequate voltage levels without overloading the system components with any one component out of service. This is known as “single contingency reliability” or “N-1 contingency.” The North Lake Tahoe Transmission System does not currently meet this federal standard.

Please see Master Response 11 for an explanation of the system’s loop design, Master Response 5 regarding project alternatives, and Master Response 6 addressing the need for the project.

- 25-8 The commenter requests detailed information about the summary of coincident peak demand in the North Lake Tahoe Transmission System provided in Table 3-1 (page 3-10) of the Draft EIS/EIS/EIR.

The information was provided by transmission planners and engineers under contract to Liberty Utilities. Demand the months before and after the coincident peak demand does not influence project design because power systems must be designed to accommodate the highest customer demand (see reliability discussion in response to Comment 25-7, above). A utility is not permitted to implement rolling blackouts during peak demand periods, but is required to construct and operate a system with sufficient capacity to meet the demand of all customers during peak periods. As such, an electrical utility is responsive to electrical demand from projects and activities authorized by land use authorities. Whether power is needed for lighting homes, snowmaking, operating public facilities, industrial uses, or any other purpose, the electrical utility must respond to customer power demands. The information in Table 3-1 is intended, in part, to indicate that peak system demands are approaching the system’s design capacity. The timing and source of the demand does not affect the utility’s obligation to maintain reliable service to all customers during peak demand periods.

However, to disclose electrical demand conditions on the North Lake Tahoe Transmission System, the Draft EIS/EIS/EIR does describe that the highest customer demand in the North Lake Tahoe Transmission System occurs during the winter and is generally attributed to winter tourism and recreation. As indicated in the introductory text to Table 3-1: “Electrical demand on the North Lake Tahoe

Transmission System is the greatest during the winter months, and typically peaks during the week between the Christmas and New Year holidays as a result of electric heating and ski resort loads.”

Regarding the detailed reports referenced in the comment, these have been provided to the commenter.

- 25-9 Please refer to the response to Comment 25-7, above, for information regarding electrical reliability requirements.

The commenter is also referred to Master Response 6 for further information on project need and requirements for providing reliable electrical service, and to Master Response 5 for further information about alternatives and system reliability obligations.

- 25-10 The commenter requests information about historical outages, including frequency, duration, and causes. The project applicant, in collaboration with the CPUC, has provided information on this topic to the commenter. Also, refer to Master Response 6 for a discussion of project need.

Regarding the question of whether outages were caused by ski resort usage; outages, or facility failures caused by electrical demand, cannot be attributed to a single power user unless the facility that failed was serving only that user. An outage caused by power demand exceeding system capacity is a result of combined power demand from all users.

- 25-11 The conclusions presented in the Executive Summary and Section 5.7, Environmentally Preferable Alternative/Environmentally Superior Alternative, are determinations made based on the facts presented in the body of the EIS/EIS/EIR analysis. As summarized in the statement cited by the commenter, the action alternatives are not easily distinguished based solely on the number of significant environmental effects (i.e., effects that exceed significance criteria identified in the EIS/EIS/EIR). As stated on page 5-13 of the Draft EIS/EIS/EIR, “As shown in Table 5-6, based solely on impact significance conclusions, there is not a clear distinction in the level of impact among the four action alternatives.” Therefore, in the pursuit of differences among a suite of less-than-significant impacts, a summary table was reviewed that includes an accounting of potential effects of the action alternatives (such as the acreage of sensitive habitat types within the permanent ROW and estimated number of trees to be removed) – this allowed a relative comparison of alternatives. CEQA and NEPA require the identification of an environmentally preferable/environmentally superior alternative which, based on the analysis in the Draft EIS/EIS/EIR, was identified as Alternative 4 (Proposed Alternative).
- 25-12 Given the types of information provided in Tables ES-1 (a-c), including Alternative 5 (No Action/No Project) would not provide meaningful comparison; the values for Alternative 5 (No Action/No Project) are self-evident. For most categories of information provided in these tables, the values for the No Action/No Project Alternative would be zero. There would be no stringing sites, no new access ways, no access ways on slopes greater than 20 percent, no new access ways on USFS land, no road improvements, etc. A reader would reasonably expect, based on the description of Alternative 5 (No Action/No Project Alternative) on page ES-5 and without additional data in Tables ES-1 (a-c), that the No Action/No Project Alternative would not involve installation of upgraded electrical infrastructure and would have substantially less environmental effect. Ultimately, including Alternative 5 in Table ES-1 (a-c) would not change the information, analysis, or conclusions of the EIS/EIS/EIR. However, to assist in the consideration of the No Action Alternative in the Executive Summary, the following paragraph from page 5-13 of the Draft EIS/EIS/EIR will be inserted as the third paragraph on page ES-6 and the current third paragraph on page ES-6 (which would become the fourth paragraph) is modified as shown.

From the standpoint of minimizing environmental effects, Alternative 5 (No Action/No Project Alternative) would be the environmentally preferable/environmentally superior alternative. Under Alternative 5 (No Action/No Project Alternative), no construction would take place and operations and maintenance would continue under existing programs, with the exception of a short-term increase in activity to address needed vegetation management and other ROW maintenance. Little change to the existing environment would occur under Alternative 5 (No Action/No Project Alternative). However, Alternative 5 (No Action/No Project Alternative) would not meet any of the basic project objectives related to system capacity, reliability, resilience, and access, and reduced dependence on the Kings Beach Diesel Generation Station. Ultimately, implementation of Alternative 5 (No Action/No Project Alternative) would lead to power demand regularly exceeding the system design capacity, leading to more frequent system failures and the need for rolling blackouts and other load shedding measures.

Table ES-2 (at the end of this chapter) summarizes the potential environmental effects that would result from implementation of the action alternatives; describes mitigation measures to address significant and potentially significant environmental effects; and identifies the significance of impacts both before and after mitigation.

- 25-13 Please see Master Response 5 regarding the development, consideration, and evaluation of alternatives. Further information on the use of a loop design for the North Lake Tahoe Transmission System is provided in Master Response 11. Information regarding the applicant's determination of project need is provided in Master Response 6. See responses above regarding requests for specific information related to system operations.
- 25-14 The commenter notes that several potential project alternatives were not evaluated in detail in the Draft EIS/EIS/EIR because they were clearly incompatible with legal or regulatory requirements (see Draft EIS/EIS/EIR Section 3.5, Alternatives Considered but Eliminated from Detailed Evaluation) and questions why Alternatives 2 and 3 were not similarly dismissed since they would not be compatible with TRPA Code. The conflict of Alternatives 1 and 2 with TRPA regulations was not identified until thorough environmental analysis was conducted as part of the Draft EIS/EIS/EIR preparation, and it is for this reason that they are retained for full analysis in the EIS/EIS/EIR. In addition, although Alternatives 1 and 2 would result in the prohibited removal of vegetation within TRPA disturbance zones, this would occur in an isolated area, and the lead agencies could still adopt these alternatives with modification of only these portions of the line.
- 25-15 Issues identified in the comment are addressed in Master Response 5 focusing on project alternatives and Master Response 6 addressing project need.
- 25-16 The commenter cites the Homewood Mountain Resort Ski Area Master Plan EIR/EIS in expressing concern about "fair share" distribution of the cost of anticipated capital improvements. See Master Response 4 for information on the process by which rates are set by the CPUC.
- 25-17 As described in Section 3.7, Applicant Proposed Measures, APMs are elements of the project that have been proposed by the applicant and are considered part of the proposal under evaluation. The use of APMs is typical of impact analyses conducted by the CPUC and was applied to the EIS/EIS/EIR for the CalPeco 625 and 650 Electrical Line Upgrade Project. Because the APMs are elements of the proposed project committed to in advance by the project applicant, it is not appropriate to present impact evaluations assuming these aspects of the project are not implemented. Rather, as project features, it is appropriate to assess impact significance assuming their implementation. Where the lead agencies have determined that APMs alone are not sufficient to support a less than significant impact conclusion, mitigation measures are included in the EIS/EIS/EIR to address these significant environmental effects.

Contract plans and specifications, as well as reporting or mitigation monitoring programs developed for the project, would include the project-specific environmental commitments of both the APMs and mitigation measures analyzed in this EIS/EIS/EIR. The lead agencies would provide oversight and verification of APM and mitigation measure implementation.

Note that in response to comments on the Draft EIS/EIS/EIR and based on further review of the APMs, the text of several APMs has been clarified or elaborated on. For example, references to pile burning have been removed from APM SCE-1 because the applicant has determined that they would not use burning to dispose of wood waste (i.e., slash) from tree removal operations. APM SCE-5, which references landowner permission for some activities, has also been further clarified. The commenter is referred to Chapter 3, Project Alternatives, of this Final EIS/EIS/EIR to review the updated APM text.

- 25-18 The commenter incorporates the comments contained in Comment Letters 28 and 31. For responses, refer to response to Comment 28-2, Comment 28-7, Comment 31-5, and Comment 31-6.
- 25-19 The commenter excerpts text from the discussion of methods and assumptions in Section 4.12, Traffic and Transportation, which explains the methodology used to evaluate the potential impacts of the project alone. Growth inducing impacts are assessed in the EIS/EIS/EIR in Section 5.5, Growth Inducing Effects of the Proposed Project. In addition, the projects proposed in the area that could foster economic or population growth and may be served by the upgraded electrical lines are addressed in the cumulative discussion in each resource section.

The proposed 625 and 650 Electrical Line Upgrade Project would improve the applicant's ability to accommodate planned growth authorized by local land use agencies. There are several impacts commonly associated with growth, such as those related to increased traffic. The commenter is referred to Master Response 7 for more information on this topic.

- 25-20 Construction of the 625 and 650 Electrical Line Upgrade Project would temporarily add traffic to the area roadway network and it is possible that local motorists may use alternative travel routes to avoid construction. However, construction would only disrupt roadway operations for limited periods of time and in localized areas. The existing roadway network in the overall project area is expected to have adequate capacity to accept the temporary, localized increases in vehicle trips due to construction of the project components. As discussed for Impacts 4.12-1 and 4.12-2 (for all action alternatives), this would result in a less-than-significant impact to local roadways. It would be speculative to attempt to project the numbers of motorists that might take alternative routes to avoid temporary delays and to identify potential alternative routes.
- 25-21 The analysis provided in the Draft EIS/EIS/EIR adequately assesses the potential cumulative impacts of the 625 and 650 Electrical Line Upgrade Project. As with the assessment of project impacts excerpted and provided by the commenter, the cumulative impact analysis considers traffic on the entirety of the local roadway network.

The cumulative analysis includes assessment of the project's potential interaction with all of the projects identified in Section 4.1.2, Cumulative Impact Analysis Methodology. The Homewood Mountain Resort Master Plan and Boulder Bay project are included on the list of projects evaluated in the Draft EIS/EIS/EIR. The Lake Tahoe Passenger Ferry project has been added to the cumulative project list (Table 4.1-12). See response to Comment 1-7. The assessment of cumulative impacts concluded that some of the listed projects would be more likely than others to result in a cumulative impact to transportation and traffic based on project type and anticipated construction timing. While it is not possible to know the exact period of time in which all of the projects on the cumulative project list would be constructed, it is appropriate to use available information to conduct a reasoned analysis of potential effects.

At the time the Draft EIS/EIS/EIR was prepared and published, the Homewood Mountain Resort Master Plan was considered less likely than other projects to combine with the construction traffic generated by the 625 and 650 Electrical Upgrade Project to create cumulatively considerable environmental effects because the outcome of pending litigation and timeframe for construction were unknown, and because the project site is approximately 7.5 miles south of the 625 and 650 Electrical Line Upgrade Project along SR 89. However, litigation was settled on January 30, 2014, and construction of the project is now anticipated to begin in 2015 and continue through approximately 2022. The discussion of cumulative impacts in Section 4.12, Traffic and Transportation, has been revised to reflect this development. Construction of the 625 Line could occur some time in the 2020's, depending on the rate of system load growth, and could interact with both construction traffic and increased recreational traffic generated by the Homewood Mountain Resort Master Plan.

For a cumulative impact to occur, an environmental effect from the proposed project must interact with a similar environmental effect from one or more other projects. Therefore, it is appropriate for the cumulative impacts analysis to only focus on those instances where another project might generate traffic at the same time and in the same location as the proposed project. The Homewood Mountain Resort is located on SR 89 between Tahoe City and South Lake Tahoe, and construction vehicles and visitors may access the site from the north via I-80 or from the south via Highway 50. The settlement includes provisions for traffic monitoring through approximately 2042 to mitigate potential traffic impacts. Although the portion of the traffic generated by the resort that travels south on SR 89 through Tahoe City could be present at the time that construction occurs in this area for the 625 Line rebuild, there is limited potential for these projects to generate a cumulatively considerable traffic impact.

The 625 Line would cross SR 89 southwest of Tahoe City, approximately 0.25 mile from the intersection of SR 89 and SR 28. Work near SR 89 would be limited to a few poles associated with the crossing of SR 89. Traffic control would be required to accommodate this crossing. Flaggers would temporarily hold traffic for approximately 10 to 15 minutes to pull conductor. This work, and the presences of construction traffic in the area, would occur over a limited period of time and would not be an ongoing nuisance for area traffic. Construction would slow or halt traffic for a brief period, but is not expected to contribute to a substantial traffic hazard. The work would be governed by an encroachment permit obtained from Caltrans.

Moreover, the SR 89/Fanny Bridge Community Revitalization Project is proposed for construction in 2014-2015. This project would re-route SR 89 by constructing a new bridge over the Truckee River and bypassing the SR 89/SR 28 wye. If this project is constructed prior to upgrade of the 625 Line, as anticipated, construction and visitor traffic associated with the Homewood Mountain Resort Master Plan would be re-routed along SR 89 west of the proposed 625 Line upgrade. This would further reduce the potential for a cumulative impact to occur.

- 25-22 The commenter suggests that Western Regional Climate Center information for Tahoe City should be included in the general discussion of existing climate, and meteorological and topographic conditions on pages 4.13-12 and 4.13-13 of the Draft EIS/EIS/EIR. This discussion is intended to provide an overview of the characteristics of the project area that affect the atmosphere's capacity to transport and dilute emissions. The following paragraph on page 4.13-12 is amended as follows to include climate information based on data collected in Tahoe City:

The project area generally experiences warm, dry summers and wet and snowy winters. Local climatology of the project site can be best represented by measurements at the Tahoe City, Squaw Valley Lodge₂ and Truckee Airport stations (WRCC 2012a; WRCC 2012b). Climate data collected at the Tahoe City station, which is located inside the Lake Tahoe Basin, indicate that maximum temperatures occur during July and reach approximately 78 degrees Fahrenheit on

average. Minimum temperatures at Tahoe City can be as low as 19 degrees Fahrenheit during winter months. Average annual precipitation of approximately 31 inches (191 inches of snowfall) occurs primarily during the months of November through March. Climate data collected at meteorological stations at Squaw Valley Lodge and the Truckee Airport indicate climate conditions for the northern portion of the project area, which is north of and outside of the Lake Tahoe Basin. Here ~~M~~maximum temperatures occur during July and reach 80 degrees Fahrenheit on average. Minimum temperatures can be as low at 15 degrees Fahrenheit during winter months (~~WRCC 2012a~~). Average annual precipitation of approximately 51 inches (247 inches of snowfall) occurs primarily during the months of November through March (~~WRCC 2012a~~). Average annual wind speed is approximately 4 miles per hour from the south (~~WRCC 2012b~~).

These text changes do not result in any changes to the impact conclusions in the Draft EIS/EIS/EIR.

- 25-23 The comment includes several remarks on the attainment of standards for ozone and the analysis of impacts by regional air district rather than air basin.

First, the comment indicates that ozone attainment status in Table 4.13-3 is not correct. Table 4.13-3 is presented in the regulatory setting as part of the discussion of TRPA regulations, and is a summary of TRPA's reviews of attainment status of environmental threshold carrying capacities. A court recently affirmed TRPA's determination of ozone threshold status (Sierra Club and Friends of West Shore v. Tahoe Regional Planning Agency). For clarity, "TRPA" has been added to the title of Table 4.13-3, which is now "TRPA Air Quality Indicator Attainment Status and Trends."

Although the lead agencies acknowledge that state and federal air quality standards also apply to the project, Table 4.13-3 refers to TRPA information only. Please refer to Table 4.13-1 for the state and federal attainment status for a variety of pollutants, including ozone, by air basin.

Second, the comment suggests that the summary of annual air quality data for 2009, 2010, and 2011 presented in Table 4.13-5 is misleading due to the combination of air basins. The purpose of Table 4.13-5 is to provide a general summary of the local air quality conditions in the project area, rather than basin-wide or region-wide conditions. Regional conditions are summarized in previous tables, Table 4.13-1 and Table 4.13-2. Therefore, the most recent (at the time) ambient air quality measurements from the nearest, most representative monitoring stations were included in the table. Data from Placer County's ozone monitoring station in Tahoe City were not approved at the time of writing the Draft EIS/EIS/EIR and is not available from the California Air Resources Board's (ARB's) Air Quality Data Statistics page (www.arb.ca.gov/adam/) at the time of writing this response. Also, the Draft EIS/EIS/EIR does not suggest that the purpose of Table 4.13-5 is to show trends in air pollutant concentrations in the project area as the comment implies—demonstrating a trend in air quality conditions would require more than three years of data. The purpose of Table 4.13-5, entitled "Summary of Annual Air Quality Data (2009-2011)," is to characterize, based on available data, the worst air quality conditions recorded in the project area around the time of the NOP/NOI. Moreover, it is not uncommon for ARB to designate an entire county or an entire air basin as non-attainment with respect to a California Ambient Air Quality Standards (CAAQS) even if the nonattainment condition occurs in only one portion of the county or air basin. Thus, including only the attainment status of the counties or air basins in which the project is located would be less precise description of local conditions.

The comment also suggests that air quality impacts should be analyzed separately by air basin. The analyses of potential impacts to air quality are separated by air basin and/or air district/TRPA where the approach or thresholds of significance recommended by the respective air districts/TRPA differ. For instance, under Impact 4.13-1, Table 4.13-6 shows separate levels of construction-related emissions of criteria air pollutants (CAPs) and precursors for the jurisdiction of Placer County Air Pollution Control District (PCAPCD) and Northern Sierra Air Quality Management District (NSAQMD) and applies the

districts' separate mass emission thresholds to reach a significance determination. This distinction is important because the two air districts have different approaches to reducing emissions and attaining CAAQS and National Ambient Air Quality Standards as part of the State Implementation Plan. Impact 4.13-2 specifically focuses on the contribution of construction-generated emissions of ozone precursors (i.e., reactive organic gas [ROG] and oxides of nitrogen [NO_x]) in the Sacramento Federal Ozone Nonattainment Area. Impact 4.13-3 examines the potential for increased exposure to TACs, which are pollutants of localized concern rather than pollutants of basin-wide concern. Odor impacts, which are examined under Impact 4.13-4, are also a topic of localized concern and GHGs, which are examined under Impact 4.13-5, are inherently a pollutant of global concern. Appendix M includes detailed calculations that support separate analyses for different air basins and jurisdictions, where needed.

- 25-24 As indicated in response to Comment 25-19, the excerpted discussion explains the methodology used to evaluate the potential air quality and climate change impacts of the proposed project alone. Growth inducing impacts are assessed in Section 5.5, Growth Inducing Effects of the Proposed Project. In addition, the projects proposed in the area that could foster economic or population growth and may be served by the upgraded electrical lines are addressed in the cumulative discussion in each resource section.

The proposed 625 and 650 Electrical Line Upgrade Project would improve CalPeco's ability to accommodate planned growth authorized by local land use agencies. There are several impacts commonly associated with growth, such as those related to increased traffic. The commenter is referred to Master Response 7 for more information on this topic.

The frequency with which over-snow vehicle and helicopter access has been required to access the 650 and 625 Lines in the last 40 years is not relevant to the discussion cited by the commenter. The cited text explains that maintenance trips were assumed to be relatively constant between existing and with-project conditions and notes that easier access to the lines might reduce over-snow vehicle and helicopter use. The existing schedule of inspection and maintenance for the 625 and 650 Lines would continue for the upgraded lines. Where vehicle access to the line might be improved under any one of the action alternatives, some portion of inspection, maintenance, and repair trips currently conducted by helicopter or over-snow vehicle might be conducted by wheeled vehicle. Researching the historical data for helicopter and over-snow vehicle use would not change the conclusions of the Draft EIS/EIS/EIR.

- 25-25 In accordance with the suggestion made in the comment, the following text change is made to the heading paragraph of Impact 4.13-1 (Alt1) on page 4.13-22, Impact 4.13-1 (Alt2) on page 4.13-34, Impact 4.13-1 (Alt3) on page 4.13-39, and Impact 4.13-1 (Alt4) on page 4.13-43:

Daily construction-generated emissions of ROG, NO_x, PM₁₀, PM_{2.5}, and CO. Construction-generated emissions in Placer County would exceed PCAPCD significance thresholds for NO_x and PM₁₀. Construction-generated emissions in Nevada County would exceed NSAQMD significance thresholds for NO_x. Construction activity would also generate substantial levels of PM_{2.5}. Implementation of Alternative 1/2/3/4 (XXX Alternative) would generate emissions that contribute to nonattainment status of ozone, PM₁₀ and PM_{2.5} in the MCAB and the nonattainment status of ozone and PM₁₀ in the LTAB. Therefore, this would be a **significant** impact.

The nonattainment-transitional status of the Lake Tahoe Air Basin (LTAB) with respect to the CAAQS for ozone is noted in Table 4.13-1 on page 4.13-3 in air quality regulatory setting of the Draft EIS/EIS/EIR. As stated in the notes of Table 4.13-1, Nonattainment-Transitional is a subcategory of the nonattainment designation and an area is designated nonattainment-transitional to signify that the area is close to attaining the standard for that pollutant.

- 25-26 The comment suggests that the estimated maximum daily construction-generated emissions of CAPs and precursors summarized in Table 4.13-6 (under Impact 4.13-1) should show a breakdown by air basin instead of by county because the county jurisdictional boundaries are not the same as the air basin boundaries.

The project area includes portions of both the LTAB and the Mountain Counties Air Basin (MCAB). The portion of the project area inside the LTAB is also entirely within the jurisdiction of the PCAPCD but PCAPCD also has jurisdiction over portions of the MCAB while the NSAQMD has jurisdiction over other portions of the MCAB. Most importantly, however, because the significance criteria are recommended by the air districts and PCAPCD does not recommend separate criteria for the LTAB and the MCAB, the emissions analysis is differentiated between air districts rather than air basins. Also see response to Comment 25-23 above, which also addresses this topic.

In addition, because the project is linear in nature and it is not known at this time when construction activity within PCAPCD jurisdiction would occur in which air basin, it can be conservatively assumed that the maximum daily level of emissions-generating activity in PCAPCD jurisdiction could entirely occur in the LTAB or the MCAB. The fact that both air basins would be adversely affected by these emissions is explained in the lead paragraph under Impact 4.13-1. To provide additional clarity, the following note has been added to Table 4.13-6:

³ It is assumed that up to 100% of the emissions in PCAPCD's jurisdiction could potentially be emitted in either the LTAB or the MCAB, depending on the exact location where emissions-generating construction activity would occur.

These text changes do not result in any changes to the impact conclusions in the Draft EIS/EIS/EIR.

- 25-27 The comment notes that APM SCE-1 stipulates the timing and location of pile burning to reduce the potential for impacts to scenic quality, but other effects of pile burning are not addressed in the Draft EIS/EIS/EIR.

The proposed methods of vegetation clearing are discussed in Chapter 3, Project Alternatives, of the Draft EIS/EIS/EIR (pages 3-64 to 3-65). As indicated in this discussion, material would be chipped, removed, or lopped and scattered within 150 feet of a high public use or travel area. Pile burning would not be used. Therefore, the text in APM SCE-1 related to pile burning has been removed from the Final EIS/EIS/EIR.

The text of APM SCE-1 now reads as follows (with additional text edits in response to other input):

The following measures will be implemented during construction:

- ▲ Construction activities will be kept as clean and inconspicuous as practical.
- ▲ Construction storage and staging will be screened, where practical, with opaque fencing from close-range residential views and public viewing areas.
- ▲ Slash treatment ~~within the immediate foreground (50 feet)~~ will be chipping, mastication, or by lop and scatter as determined by the applicable land owner/manager.
- ▲ ~~If hand piling and burning is utilized, piles will be located away from the edge of the roadway. Piles will be constructed to minimize residual unburnable material (resulting from pile compaction and/or high dirt content) and damage to remaining trees. Pile burning will be accomplished the following fall or spring, when possible. Pile burning will be planned and implemented to minimize scorching of existing non-fire-killed vegetation.~~
- ▲ When "cut-tree" marks are utilized, marks will be placed on back sides of trees or away from views of the travelling public.

- ▲ Within the immediate to middle-distance foreground (300 feet), log skidding trails will be re-graded, to the degree possible, back to their original, natural contour and rehabilitated with vegetation.
- ▲ Non-affected timber and ground vegetation will be protected during harvesting and slash treatment.
- ▲ Trees and vegetation within the “clear zone” that do not pose a risk to power lines will be preserved.
- ▲ Visual diversity of the ground surface will be maintained through irregular scatter of limbs, seeding, and other means as practicable.
- ▲ Barriers/boulders/downed logs will be placed in strategic locations to discourage the establishment of user-created trails. Implement restoration of temporary access ways in a manner that minimizes visibility from intersecting roads.
- ▲ Cut stumps will be 6-inch maximum height measured from the uphill side.

25-28 APM AQ-11 was developed by the applicant to keep fugitive dust emissions below established thresholds by limiting the simultaneous earth disturbance associated with various project components. Using ARB’s Urban Emissions model (URBEMIS) it was determined that up to 5 acres per day could be actively graded without generating mass emissions of PM₁₀ that would exceed the PCAPCD mass emission threshold of 82 lb/day.

The commenter also inquires as to how much dust would be generated by the grading of 5 acres. As explained on page 4.13-20 of the Draft EIS/EIS/EIR, fugitive PM₁₀ and PM_{2.5} dust emissions generated by ground disturbance activities were estimated using EPA AP-42 emission factors (EPA 1998), and exhaust emissions of PM₁₀ and PM_{2.5} were estimated using emission factors from ARB’s Off-Road Emissions Inventory Program (OFFROAD2007) (ARB 2008). However, the analysis does not include calculation of PM₁₀ and PM_{2.5} generated solely by grading or other ground disturbance activity. As seen in the table entitled “Offroad Equipment Emissions by Construction Activity” in Appendix M, maximum daily emissions from offroad equipment, including both exhaust emissions and fugitive dust emissions, were estimated based on the number and types of offroad equipment and daily operating hours by each construction activity (e.g., Substation Construction-Civil, Substation Construction-Physical, Substation Construction-Electrical). These estimates were not based on the area of disturbance. This table shows that all of the equipment used for ground disturbance activities would generate fugitive PM₁₀ and PM_{2.5} dust in addition to exhaust emissions of PM₁₀ and PM_{2.5}.

Nonetheless, an estimate is provided here. Since completion of the air quality analysis for the Draft EIS/EIS/EIR, ARB’s California Emissions Estimator Model has replaced URBEMIS as the preferred model to estimate emissions. According to default assumptions used by ARB’s California Emissions Estimator Model, a single grader or dozer can grade approximately 0.5 acre in an 8-hour workday. Thus, it would take 10 pieces of equipment to actively grade 5 acres in a single workday. As shown in the above-referenced table, “Offroad Equipment Emissions by Construction Activity” a single grader would generate 0.46 lb/day of PM₁₀ exhaust and 3.80 lb/day of PM₁₀ dust and single dozer would generate 1.37 lb/day of PM₁₀ exhaust and 3.80 lb/day of PM₁₀ dust. Therefore, grading of 5 acres in a single day could generate 42.6—51.7 lb/day of PM₁₀.

The commenter questions what monitoring would be required to ensure that the APMs achieve the goal of mitigating fugitive dust. As indicated in the project description (see page 3-43), the project would be observed by an estimated one to three environmental monitors that would work with the crews to monitor implementation of the project consistent with the project description and APMs, mitigation measures, and any additional regulatory permit conditions. APM BIO-21 provides additional information regarding environmental monitors, including providing them the authority to stop work to help ensure

protection of resources and compliance with permits. Other APMs provide for additional specialized monitors, such as cultural resources monitors identified in APM CUL-8. Environmental monitors would be independent auditors, and would report directly to the USFS, TRPA, CPUC, or other agreed-upon agency. These monitors would observe construction activities and report any variance from the applicant's commitment to limit the area of active grading to 5 acres.

- 25-29 The comment poses multiple questions regarding Mitigation Measure 4.13-1b, which requires the applicant to pay an off-site mitigation fee into PCAPCD's Clean Air Grants Program for the purpose of reducing NO_x emitted by project construction activities in Placer County to a less-than-significant level (i.e., less than 82 lb/day). The commenter inquires as to how these mitigation funds will be spent, how the funds mitigate NO_x emissions in both air basins, and who will oversee these funds. As stated in the mitigation measure, PCAPCD's Clean Air Grants Program provides grant funding for cleaner-than-required engines and equipment. The program is overseen by PCAPCD staff. In lieu of reducing construction-generated emissions of NO_x the applicant will pay into the program, which PCAPCD will use to achieve reductions in NO_x from other sources in its jurisdiction. Details about which type of offset projects will be implemented would likely depend on the timing of project construction and the types of offset projects that are readily available at the time offsets are needed. For instance, in the case of Alternative 1 (PEA Alternative), which would generate up to 663 lb/day of NO_x in either the LTAB or the MCAB based on the conservative estimates used in the Draft EIS/EIS/EIR, the applicant would have to pay funding necessary to offset NO_x emissions by an amount of 581 lb/day to bring the net increase in NO_x emissions to less than the threshold of 82 lb/day. Even if all of the 581 lb/day-offset occurred in only one of the two air basins the net increase in NO_x in PCAPCD's portion of both air basins would be reduced to a less than significant level.

As explained on page 4.13-26 of the Draft EIS/EIS/EIR, NSAQMD does not have an off-site mitigation fee program (Longmire, pers. comm., 2012, Murano, pers. comm., 2013). Thus, the impact of NO_x emissions in Nevada County would be significant and unavoidable. For further discussion about evaluation of project impacts by air district, see response to Comment 25-23.

In addition, the commenter suggests that ambient ozone monitoring should be conducted to assess ozone levels in the project area. This type of monitoring is not required by PCAPCD, NSAQMD, or TRPA. No reasoning is offered as to why such local monitoring of ozone would be meaningful. Ozone is a pollutant of regional concern and that ozone is a secondary pollutant that is formed through complex chemical reactions between precursor emissions of ROG and NO_x in the presence of sunlight. In many instances, ozone forms at locations that are relatively distant from the sources of ROG and NO_x emissions.

The commenter also suggests that mitigation of construction-generated ozone precursors should require that construction activity be curbed during periods of intense inversions and/or when ambient concentrations of ozone are relatively high. Given the limited construction season in the project area due to the presence of heavy snowfall and freezing temperatures during the winter season, it would not be feasible to limit the number of days when construction activity could occur. Timing of the various construction activities is critical for a linear project of this nature, which includes the delivery of building supplies and equipment, the use of helicopters, the management of sometimes large numbers of workers, and the order in which the various phases occur. In addition, as stated above, ozone is a secondary pollutant formed through complex chemical reactions between precursor emissions of ROG and NO_x in the presence of sunlight. In many instances, ozone forms at locations that are relatively distant from the sources of ROG and NO_x emissions. Reducing construction activity, and therefore the emissions of ROG and NO_x, during periods of elevated ozone levels, would provide no assurance that the reduced ROG and NO_x emissions would translate to a reduced contribution to ozone levels in the location or time of elevated readings.

- 25-30 Published scientific studies, such as the *Study of ultrafine particles near a major highway with heavy-duty diesel traffic* (Zhu et. al. 2002) cited in Section 4.13, Air Quality and Climate Change, have documented a decrease in particle concentration with increasing distance from the source of pollution. The commenter asserts that meteorological evidence suggests Tahoe's thermal inversions inhibit the dissipation of pollutants. As support, the commenter references a preliminary study performed by UC Davis. The comment is incorrect in its assessment of the 2002 study by Zhu and Hinds, which examined health effects associated with mobile sources of diesel exhaust. The study focused on health effects of diesel PM from vehicles along a highway. The comment questions the applicability of a study conducted in a different part of California to the Tahoe Region. The comment provides reference to a study of particles along US 50, which suggests that particles persist for longer duration in periods of thermal inversion (with emphasis on winter inversions), which is true in any location. Thermal inversions are prevalent in both summer and winter throughout California, including in Los Angeles where the Zhu and Hinds study was conducted. In its *Air Quality and Land Use Handbook: A Community Health Perspective* (ARB 2005), ARB provides recommendations for setback distances from TAC sources that are not climate- or location-specific. According to ARB, distance from the source is the best indicator of health risk from diesel PM.

The attachments provided by the commenter have been reviewed; however no information could be found (e.g., citations, journal reference, website address) that allow the EIS/EIS/EIR authors to find the referenced 2004 preliminary study by UC Davis of pollutants and thermal inversions. Separate internet searches for the study were also unsuccessful. Therefore, it is not possible to independently ascertain the validity of this specific claim or assess the necessity of including additional information in the analysis.

The quantity of diesel PM exhaust generated by the proposed project is based on modeling performed for the analysis of mass emissions of CAPs and precursors under Impact 4.13-1. As indicated in Table 4.13-8, modeled values represent worst-case daily emissions of PM_{2.5} exhaust from diesel-powered off-roads equipment. The statement that "exposure at any one receptor would be far less than the emissions estimate" due to the known qualities of diesel PM is appropriate because diesel PM-emitting construction activities would be located approximately 50 feet from closest existing sensitive receptors (and typically much farther), allowing for dissipation of the diesel PM before reaching the receptor. For example, line removal, as shown in the last line of Table 4.13-8, may result in diesel PM exhaust emissions of 3.9 lb/day; however, any one receptor would not be exposed to this full 3.9 lb/day due to dissipation with distance, as well as winds moving the emissions in different directions. It is a reasonable assumption that some dissipation of diesel PM would occur over this minimum span of approximately 50 feet.

Therefore, no change to the document is necessary because: 1) the qualifying statement is generally accurate for any location where there are inversions; 2) the nearest sensitive receptor is approximately 50 feet from the edge of the ROW, while the modeled emissions rates are reported within the ROW; and 3) despite the general understanding that these numbers are "worst case" and would overestimate actual exposure of sensitive receptors to diesel PM, the values presented in Table 4.13-8 are used in the analysis to determine significant effects to assist in ensuring that potential impacts are not minimized or underestimated.

An additional factor is that the duration of construction at any one location would be limited. As identified in Table 4.13-8, daily emissions of diesel exhaust would generally be lower near substations (which are typically located in or near developed areas) than along the 625 and 650 Lines. Construction activities at substations would not exceed 20 days. The exposure timeframe at any point along the 625 and 650 Lines would likely be less than at the substations because the project is linear in nature and

proposed in phases. Thus, diesel exhaust would not be emitted from the same location for an extended period of time.

The commenter asks about the duration of the construction period and how much construction would occur during the winter or summer seasons. It is not possible to quantify the exact number of construction weeks that would occur in each season. However, construction activities are not proposed the winter months and most construction activities would take place in the summer and fall. The project description (page 3-60 of the Draft EIS/EIS/EIR) indicates that the annual construction period would generally be between May and November, although limited construction activity could take place outside of the general construction window. The project is anticipated to result in a total of 14 months of activity spread over a five year period.

Based on the analysis and significance criteria in the EIS/EIS/EIR, the document does not identify any significant impacts related to exposure of sensitive receptors to TACs, including diesel PM. Therefore, no mitigation measures are required to address diesel PM emissions.

- 25-31 With regard to the analysis of ozone contributions, the commenter suggests that the text describing the existing cumulative air quality conditions in the project area should be revised to indicate that there is “relatively little transport of ozone into the Tahoe Basin.” The text that the commenter has identified is not specific to the Tahoe Basin. The overall project includes components both inside and outside the Tahoe Basin, and the cumulative discussion addresses the complete project. To describe the cumulative condition for the entirety of the project, including both the MCAB and the LTAB, it is appropriate to state that “ROG and NO_x, generated by cumulative development projects in the region and transported from outside the region” contribute to the nonattainment with respect to the CAAQS. Although there may be differing degrees to which transported emissions effect local nonattainment within the air basins, both sources are known to contribute to the cumulative condition.

The commenter suggests that “the analysis of PM₁₀ should focus on more localized impacts of PM₁₀, while the PM_{2.5} analysis must consider longer travel times and the impacts of Tahoe’s frequent inversions (both factors allow more accumulation).” The methods used in the EIS/EIS/EIR to analyze project-generated PM₁₀ and PM_{2.5} emissions is consistent with guidance in PCAPCD’s *CEQA Air Quality Handbook* (PCAPCD 2012) and NSAQMD’s *Guidelines for Assessing and Mitigating Air Quality Impacts of Land Use Projects* (NSAQMD 2009). Project-generated emissions of PM₁₀ are compared to the air districts’ mass emission thresholds and, as explained on page 4.13-52, “because PCAPCD and NSAQMD do not recommend mass emission thresholds for evaluating PM_{2.5} emissions from a project but do for PM₁₀, the analysis of PM_{2.5} generally follows the analysis of PM₁₀.” This approach is confirmed by PCAPCD staff who state that “because PM_{2.5} is a subset of PM₁₀, where construction activity does not generate concentrations of PM₁₀ that exceed the District’s Construction threshold of 82 lbs/day for PM₁₀, PM_{2.5} will also be considered less-than-significant for PM_{2.5} impacts” (Green, pers. comm. 2014). NSAQMD staff also agree with this approach (Longmire, pers. comm. 2014). This approach is also used by other air districts in California, including the Sacramento Metropolitan Air Quality Management District (SMAQMD 2009:3-6).

Part of the commenter’s reasoning is a conclusion that PM_{2.5} will travel farther than PM₁₀. However, while this may be true under certain atmospheric conditions, the commenter does not substantiate this conclusion with any evidence or reference sources. Moreover, atmospheric conditions that result in PM_{2.5} traveling further than PM₁₀ would likely also result in more rapid dispersion of PM_{2.5} than PM₁₀.

Also relevant to this discussion is the analysis of diesel particulate matter under Impact 4.13-3 beginning on page 4.13-27 of the Draft EIS/EIS/EIR. Most diesel PM is PM_{2.5}. This can be seen in the running exhaust emission rates for various vehicles in the EMFAC 2011 table of Appendix M (Air Quality Data) to the EIS/EIS/EIR. For instance the running exhaust rate for a T7 CAIRP construction haul truck, a vehicle

type representative of haul trucks used during construction, is 0.276 grams per mile for $PM_{2.5}$, which is 92 percent of the emission rate for PM_{10} of 0.307 gram per mile. Therefore, the analysis of the localized effects of diesel PM from construction activity under Impact 4.13-3 also serves as an analysis of the localized effects of $PM_{2.5}$ and both PCAPCD and NSAQMD recommend that diesel PM be analyzed in CEQA documents (PCAPCD 2012; NSAQMD 2009). Thus, contrary to the commenter's assertion, $PM_{2.5}$ is a pollutant of local concern.

In addition, the occurrence of inversions and their contribution to poor air quality is recognized on page 4.13-12 of the Draft EIS/EIS/EIR where it states, "Pollutants from local sources are trapped by frequent inversions in the LTAB and MCAB, greatly limiting the volume of air into which the pollutants are mixed (e.g., diluted), which results in accumulation and elevated concentrations of pollutants."

- 25-32 The comment questions why the mass emission level of 10,000 metric tons (MT) carbon dioxide equivalent (CO_2e)/year is used as a threshold to evaluate GHG emissions associated with construction, tree removal, and operational emissions. Discussion about why this threshold is used begins on page 4.13-19 of the Draft EIS/EIS/EIR and continues on to the following page. It is explained that "the net increase in GHG emissions associated with a proposed project is considered substantial and, therefore, cumulatively considerable if it exceeds 10,000 MT CO_2e /year, which is the level used to determine whether a stationary source is required to report its GHG emissions to ARB as part of its Mandatory Reporting of Greenhouse Gas Emissions Regulation and Cap-and-Trade Program." This explanation does not state or suggest that any of the GHG-emitting sources that would operate under the proposed project are stationary sources. Instead, it borrows the value of 10,000 MT CO_2e /year, which is notable and important in ARB's mandatory reporting requirements and Cap-and-Trade Program, and decides to use this same value as a mass emission threshold for evaluating the proposed project. In other words, the level at which stationary sources are required to report their emissions is borrowed as an indication about what mass emission level of GHGs is considered to be "a lot" or "too much." The commenter does not suggest that another threshold or type of threshold be used to evaluate the project's GHG emissions.

Also, the discussion about the net increase in GHGs associated with the project under Impact 4.13-5 (for each action alternative), as well as any GHG emissions analysis for an individual project, is inherently a cumulative impact analysis. The proposed project, or any single project, would not individually generate sufficient GHGs to induce a change in global climate. It is on a cumulative basis that global emissions of GHGs could contribute to anthropomorphic climate change. Therefore, the question is whether a single project makes a significant contribution to the cumulative global emissions of GHGs. Whether the GHG emissions from a project are from a mobile source or stationary source is irrelevant to determining the significance of the contribution to global atmospheric GHG concentrations. Various thresholds have been developed to assess whether a single project's GHG emissions are a significant contribution to cumulative global GHG emissions. For the 625 and 650 Electrical Line Upgrade Project, the ARB stationary source reporting level is used because it is the level of mass emissions that ARB deems high enough to report. Also, application of 10,000 MT CO_2e /year as a threshold is more stringent than applying a level of 25,000 MT CO_2e /year which, as explained on page 4.13-19 of the Draft EIS/EIS/EIR, is the level identified by the Council on Environmental Quality at which GHG emissions may warrant some description in the appropriate NEPA analysis for agency actions involving direct emissions of GHGs. Moreover, a threshold of 10,000 MT CO_2e /year has been used in CEQA analyses for other projects throughout California.

The commenter also asks how project-related increases in GHGs relate to plans by Placer County and TRPA regarding GHGs. The discussion on page 4.13-19 also notes that neither PCAPCD nor NSAQMD have identified a standard of significance for determining whether a project's GHG emissions are cumulatively considerable. Also Placer County and TRPA have not adopted GHG reduction plans that specifically address GHGs from construction activity and tree removal. The Lake Tahoe Sustainable Communities Program's

Sustainability Action Plan (2013) includes a measure to require quantification of carbon released due to removal of trees from a construction site to discourage excessive removal of vegetation. While this plan is not adopted by TRPA, per se, it does provide guidance that can be incorporated into community and area plans. The loss of sequestered carbon and future sequestration potential were quantified in the Draft EIS/EIS/EIR (see 4.13-9 on page 4.13-31).

The commenter contends that evaluation of project-related GHG emissions using mass emission levels applied to the regulation of station sources is a comparison of apples and oranges. To ensure that GHG emissions from the project were not underrepresented, they were calculated for multiple potential emission pathways, combined into a single emissions amount, and compared against a single threshold. If, for example, mobile-source GHG emissions were compared against one threshold, and stationary emissions compared against another threshold, one could argue that impacts were minimized by segmenting the emissions. As indicated in the EIS/EIS/EIR, the total project GHG emissions, considering construction emissions, timber removal, and operational emissions, would not be a cumulatively considerable contribution to a significant cumulative impact.

- 25-33 The comment asks how many trees and acres would be disturbed within the Tahoe Basin, and expresses concerns about soil health and runoff as a result of tree removal. For an approximation of tree removal within the Tahoe Basin, please refer to the response to Comment 32-36, which includes a table of estimated tree removal within and outside the Lake Tahoe Basin. Tables ES-1a and ES-1b in the EIS/EIS/EIR include the number of acres of temporary and permanent disturbance by each project segment and alternative. Although a breakdown of acreage affected only within the Lake Tahoe Basin was not calculated for the Draft EIS/EIS/EIR, an approximation of that acreage can be obtained by summing the values in Tables ES-1a and ES-1b for Segments 650-3 through 650-7, 625-4, and 625-8. The potential effects of project related tree removal on forestry resources and water quality are evaluated in Section 4.3, Forestry Resources, and Section 4.6, Hydrology and Water Quality, of the EIS/EIS/EIR.

- 25-34 The comment indicates that the 625 and 650 Electrical Upgrade Project could accommodate planned growth.

The 625 and 650 Electrical Line Upgrade Project has been developed to increase reliability to customers of the North Lake Tahoe Transmission System. This cannot be achieved without increasing capacity (see Master Response 6 addressing Project Need and Master Response 11 addressing the Looped Power Line Configuration). As addressed in the Section 5.5, Growth Inducing Effects of the Proposed Project, this increased capacity would also allow the system to serve planned future projects in the area served by the system that are ultimately approved by the appropriate land use agencies. Please refer to Master Response 7 for further information on growth inducing impacts, and responses above addressing this topic.

- 25-35 The comment provides a text excerpt from Chapter 5, Other NEPA-, TRPA, and CEQA-Mandated Sections, of the Draft EIS/EIS/EIR. This section references Impact 4.5-5 in the overall discussion on impervious cover. This impact discussion addresses increases in land coverage under each alternative. Tables 4.5-6 and 4.5-7 on pages 4.5-27 and 4.5-30, respectively, provide summaries of preliminary land coverage increases by Land Capability District (LCD) for improved paved roads, poles, and substations. Table 5-7 on page 5-16 presents the potential net increase in land coverage for LCDs 1b and 2 associated with the power line improvements.

The discussion for Impact 4.5-5 under Alternative 1 (PEA Alternative) describes how the land coverage standards would apply to the project alternatives and how the increase in coverage resulting from project implementation would require that the applicant purchase and transfer the required coverage from offsite parcel owners ("sending parcels") in accordance with Chapter 30, Land Coverage, of the

TRPA Code. The amount of coverage that would be required to be purchased and transferred would be determined on a parcel-by-parcel basis and would be a function of: 1) the extent of TRPA-verified legally existing coverage; 2) the land capability and base allowable coverage; 3) the type of agreement between the applicant and the affected parcel owners (such as a recorded deed-restricted easement, or ROW dedication); and 4) the size of the affected parcel, or width of the recorded easement. As stated on page 5-16 of the Draft EIS/EIS/EIR, all increases in land coverage associated with the project would occur in compliance with the TRPA land classification system and coverage requirements, as required by Chapter 30 of the TRPA Code. Any required coverage transfers would occur in accordance with Section 30.4 of the TRPA Code. Therefore, no additional actions are required to mitigate for an increase in coverage.

- 25-36 As described in Chapter 3, Project Alternatives, of the Draft EIS/EIS/EIS, page 3-29, the power line ROWs would initially be cleared of trees and shrubs as part of project construction. After completion of construction, the centerline access routes would be maintained in low growing vegetation for erosion control while allowing over-land vehicle travel by line trucks and inspection trucks (i.e., pickup trucks).

As described in Impact 4.5-2, vegetation removal, which includes trees, would result in an increased potential for soil erosion. The impacts discussion notes that APM SOILS-1, APM BIO-1, and APM BIO-36 would address soil erosion and no further mitigation measures are required.

- 25-37 The commenter refers to comments made by other reviewers, with the apparent intent of incorporating those comments into their submission. As indicated in response to Comment 25-1, responses to the incorporated comment letters are provided in conjunction with the original submittal. Please refer to the comment summary table on page P1-1 for a directory of all letters received and corresponding comment responses.

- 25-38 The comment expresses concern over potential impacts to large trees and old growth forest, and states that mitigation for the removal of an old growth tree is not possible. Please refer to the responses to Comment 9-19 and 24-4, which also addresses this issue.

- 25-39 The proposed amendment to the PAS for Martis Peak (019) would create Special Area 1 from three parcels owned by CalPeco (assessor's parcel numbers 090-046-25, 090-046-06, and 090-046-24). A diesel backup electrical generator facility and electrical substation are currently located on these properties. The new, expanded substation would replace the existing electrical substation, and construction of any new electrical substation in Special Area 1 would allow the removal of the existing substation on Cutthroat Avenue in the Kings Beach Industrial Community Plan Area.

The proposed amendment would be limited to developed, private property that supports existing electrical facilities within a secure, fenced compound. New or expanded public utility centers would be limited to Special Area 1. There would be no other changes to the PAS that would extend outside of Special Area 1.

Letter
26
Response

Sierra Club, Tahoe Area Sierra Club Group
Laurel Ames, Conservation Co-Chair
January 7, 2014

- 26-1 The comment references and incorporates comments submitted by Ellie Waller, the North Tahoe Preservation Alliance, NTCAA, and Friends of the West Shore. The lead agencies acknowledge the Tahoe Area Sierra Club's support of those comments, which are each responded to in this Final EIS/EIS/EIR.

- 26-2 The commenter requests the evaluation of alternatives that increase the reliability of the North Lake Tahoe Transmission System without increasing the capacity of the system, and modification to the project purpose to support this class of alternatives. However, it is not possible to adequately improve reliability of the North Lake Tahoe Transmission System without increasing system capacity. Refer to Master Response 5 for more information on project alternatives. Also see Master Response 6 related to the project need.
- 26-3 The cumulative impacts of the proposed 625 and 650 Electrical Line Upgrade Project are addressed in the impact discussions for each of the 13 environmental issue areas evaluated in Chapter 4, Affected Environment, Environmental Consequences, and Mitigation Measures. The potential for cumulative impacts to result from concurrent construction of the proposed project and other projects are addressed as appropriate in these analyses. Projects considered in the cumulative analysis are listed in Table 4.1-2, which has been updated in response to other comments (see page 4.1-5 of the Final EIS/EIS/EIR).
- 26-4 Traffic and other impacts associated with development that could be accommodated by the proposed project are addressed in Section 5.5, Growth-Inducing Impacts of the Proposed Project. Also see Master Response 7, which addresses growth-inducing impacts.
- 26-5 The commenter does not provide evidence or specific examples to support the assertion that the Draft EIS/EIS/EIR failed to adequately examine environmental impacts to air and water quality, noise, scenic resources, wildlife, forest health, and soil health. These potential environmental impacts are addressed in Sections 4.13, 4.6, 4.14, 4.4, 4.7, 4.3, and 4.5, respectively, of Chapter 4, Affected Environment, Environmental Consequences, and Mitigation Measures.
- 26-6 The potential impacts of each of the project alternatives on SEZs are evaluated in Section 4.7, Biological Resources, of the EIS/EIS/EIR.
- 26-7 The comment suggests that the Draft EIS/EIS/EIR should be recirculated, but offers no basis for why recirculation may be warranted. The Draft EIS/EIS/EIR meets the legal requirements of NEPA, TRPA regulations, and CEQA and no conditions within these laws requiring recirculation have been met.

Letter

27

Response

North Tahoe Preservation Alliance

No date

- 27-1 The comment states that the roads and trails between Kings Beach and Tahoe City are not “marred” by “unsightly power lines.” While the project would increase the visibility of poles and power lines along the Fiberboard Freeway and other locations by virtue of their increased size and proposed location nearer the paved road, the implication that power lines are not currently visible from these roads and trails is not an accurate representation of the existing condition. As shown in several photos provided in Section 4.4, Scenic Resources, of the EIS/EIS/EIR, existing power lines are visible along the Tahoe Rim Trail (Exhibit 4.4-6C, Photograph 9; Exhibit 4.4-6F, Photograph 24), other trails (Exhibit 4.4-23, Photograph 20), and the Fiberboard Freeway (Exhibit 4.4-6C, Photograph 12; Exhibit 4.4-6D, Photograph 16). As described on page 4.4-34, the existing 625 Line currently crosses the Tahoe River Trail at three locations.

The 625 and 650 Electrical Line Upgrade Project proposes reconstruction of existing 60 kV power lines to 120 kV. The 625 Line runs between Tahoe City and Kings Beach and appears to be the line of primary concern to the commenter. The action alternatives under consideration for the 625 Line would generally follow the Fiberboard Freeway. In conjunction with the construction of the new power line, the existing line (which is located in the same area but setback from the Fiberboard Freeway on USFS land) would be removed and the ROW would be restored.

The project has been developed to provide reliable power to existing customers (as defined and required by state and federal regulations), but could also accommodate some additional system demands. The commenter is referred to Master Response 6 explaining the need for the project and Master Response 7 explaining the project's potential to accommodate future growth.

- 27-2 The commenter expresses general concern over the environmental impacts of the proposed 625 Line upgrade alternatives that place the line along Mt. Watson Road (also referred to as Fiberboard Freeway), including visual effects. The comment identifies seven specific elements of project impacts and characteristics. Items 1 and 2 are correct representations of estimated tree removal associated with Alternative 4 (Proposed Alternative) (see Tables 4.3-3 and 4.3-4 in the Draft EIS/EIS/EIR). However, the tree removal estimates include all trees greater than or equal to 1-inch in diameter. Because of the nature of the available data used for the forestry analysis, the number of trees projected for removal includes a substantial number of very small trees and should be interpreted accordingly. Please also see response to Comment 9-2, which addresses this topic.

Items 3, 4, 5 are accurate representations of project characteristics as they are described and analyzed in the EIS/EIS/EIR. Note that for power pole heights, a 92-foot-tall pole would typically replace an existing pole that is 80 feet tall. There are not foreseeable circumstances where a 40-foot-tall pole would be replaced by a 92-foot-tall pole.

The 150-foot-wide tree removal area identified in Item 6 applies to hazard trees. All trees tall enough to compromise the line would be removed within the vegetation management corridor (40-feet wide for single-circuit lines and 65-feet wide for double-circuit lines). However, beyond the vegetation management corridor, only hazard trees (e.g., diseases, damaged, leaning trees) that could damage the line if they fell or large branches fell off would be removed. The selective removal of hazard trees would not produce a substantial, visible area devoid of trees.

Item 7 is consistent with the miles of new access ways anticipated in the Tahoe Basin for Alternative 4 (Proposed Alternative) as identified in Table 3-2 in the EIS/EIS/EIR.

- 27-3 The commenter is referred to Master Response 4 for information on the process through which the CPUC determines rate recovery of project costs.
- 27-4 The environmental analysis of the 625 and 650 Electrical Line Upgrade Project discloses that the project would result in the loss of public areas and potentially diminish the recreational experience in some areas. The action alternatives would use existing power line alignments to the extent determined practical and feasible by the engineering team. In the vicinity of the east Kingswood neighborhood, Alternatives 1, 2, 3, and 4 would use existing power line alignments (only Alternative 3A proposes a new alignment in this area). The commenter is referred to Master Response 2 for further discussion of undergrounding and Master Response 5 regarding the consideration of alternatives that focus on the use of existing alignments.
- 27-5 The commenter is referred to Master Response 6 for a discussion of project need.

Letter
28
Response

North Tahoe Preservation Alliance
Ann Nichols
January 4, 2014

- 28-1 The comment references other comments submitted previously by the North Tahoe Preservation Alliance. These previous comments are identified as Letter 27 within this Final EIS/EIS/EIR, with responses provided for each comment.

The comment also states that the letter incorporates comments submitted by NTCAA, Tahoe Area Sierra Club, Friends of Lake Tahoe, and Ellie Waller. The comments provided by these organizations and individuals are each responded to in this Final EIS/EIS/EIR.

- 28-2 The comment is substantially similar to comments and information provided previously by the North Tahoe Preservation Alliance in Letter 27. See responses to Letter 27.

- 28-3 The comment indicates that the Draft EIS/EIS/EIR does not adequately investigate or disclose the project's effects related to scenic resources and recreational opportunities. The commenter specifically requests additional information on the visual impacts of the new power poles in locations that would be associated with the 625 Line and the potential effects of hazard tree removal on existing recreation areas. The effects of the proposed project are fully analyzed in the EIS/EIS/EIR. Section 4.4, Scenic Resources, addresses the effects on scenic resources and Section 4.8, Recreation, addresses the project's effects on recreation resources. The determination as to whether visual change would result in significant effects to the visual environment is based on the degree of visual change in combination with sensitivity to visual change compared against the significance criteria provided on pages 4.4-37 and 4.4-38 of the Draft EIS/EIS/EIR. The key factors used in determining the overall visual change are visual contrast, dominance, and view blockage. Visual sensitivity is based on the combined factors of visual quality, viewer types and numbers of viewers, and visual exposure to the project. As described in Section 4.4, Scenic Resources, in the Draft EIS/EIS/EIR (page 4.4-35), the analysis is based on visual sensitivity defined by viewer groups, visual exposure, and scenic quality represented by 16 viewpoints (note that the Draft EIS/EIS/EIR states 15 viewpoints, and this typographical error has been corrected). Refer to Table 4.4-1, which identifies the viewer groups, view exposure, visual quality, and visual quality under existing conditions for each viewpoint. The "Matrix for Determining Scenic Impact Significance/Intensity" in Table 4.4-2 provides guidelines to assist in evaluating effects of the project on the visual character or quality of an area, and is based on the visual sensitivity of key viewpoints and the degree of overall visual change introduced by the project within the view.

APMs have been incorporated into the project to minimize potential impacts to scenic resources. Impact conclusions were made considering the attenuating effect of the APMs (the mitigation monitoring plan prepared for the project will include implementation of APMs, and compliance monitoring will be conducted). Regarding the 625 Line along the Fiberboard Freeway, implementation of APM SCE-6 and APM SCE-9 would reduce the visibility of structures by placing poles such that a significant clearing would be spanned while minimizing visibility from the road, and selectively planting conifer trees to screen relatively unobstructed foreground views of structures.

The 150-foot-wide tree removal area identified in the comment applies to hazard trees. All trees tall enough to compromise the line would be removed within the vegetation management corridor (40 feet wide for single-circuit lines and 65 feet wide for double-circuit lines) as required under GO-95. However, beyond the vegetation management corridor, only hazard trees (e.g., diseased, damaged, leaning trees) that could damage the power line if they fell or large branches fell off would be removed. The selective removal of hazard trees would not produce a cleared area that would be apparent to casual observers.

Regarding request for analysis from specific locations and facilities, the Draft EIS/EIS/EIR evaluates the visual effects of the entirety of the project. Seventeen visual simulations are provided from 16 separate viewpoints (two separate simulations were prepared for Viewpoint 5 in Martis Valley) to represent project effects under a variety of conditions. Simulations include views at the Tahoe Rim Trail, Martis Creek Lake Recreation Area, the Fiberboard Freeway, the Truckee River, and in the vicinity of the 64 Acre Recreation Site. The simulations provided in the document reflect representative conditions at roads and road crossings, trails, developed areas, forested areas, open areas, foreground viewpoints, and long distance viewpoints. The simulations included in the Draft EIS/EIS/EIR are considered sufficient to support the impact analysis and conclusions in the document.

With regard to information specific to the Tahoe Basin, project facilities and environmental effects in the basin can be estimated by reviewing the segment by segment data provided in Tables ES-1a and ES-1b. Each impact analysis section evaluates the project against TRPA specific significance thresholds (as well as thresholds addressing NEPA and CEQA). Section 5.8 evaluates the project consequences for TRPA environmental threshold carrying capacities. Providing additional information specific to the Lake Tahoe Basin would not alter the analysis or conclusions in the Draft EIS/EIS/EIR and the document provides information to fully disclose to the public the characteristics of the entirety of the project, project alternatives, and their environmental effects.

The commenter is also referred to Master Response 8 on project facilities design and Master Response 9 on TRPA scenic thresholds.

- 28-4 Analysis of the project's potential effects on TRPA environmental threshold carrying capacities is provided in Section 5.8 of the EIS/EIS/EIR.
- 28-5 The commenter questions the need for elements of the project and the range of alternatives considered in the EIS/EIS/EIR. Please see Master Response 5 related to project alternatives and Master Response 6 addressing project need.
- 28-6 The comment addresses the distance between upgraded power poles and existing homes, EMF, and undergrounding. The commenter is referred to Master Response 3 for a discussion of EMFs and Master Response 2 regarding undergrounding. The commenter requests that the justification for a less than significant impact conclusion be defined and described, but does not identify any deficiencies in the content or analysis in the Draft EIS/EIS/EIR. The document provides substantial evidence through impact discussions and evaluation of the effects of APMs and mitigation measures supporting each significance conclusion.
- 28-7 The comment states that the 650 Line should be undergrounded or set back along SR 267 to improve scenic quality. The EIS/EIS/EIR considers undergrounding and setback of the upgraded power lines along SR 267. Undergrounding a significant portion of the 650 Line was dismissed from detailed evaluation, but set back of the power line is proposed in conjunction with Alternative 3 (Road Focused Alternative) and Alternative 4 (Proposed Alternative). (See the analysis of Impact 4.4-2 for these alternatives on pages 4.4-75 through 4.4-81 and 4.4-86 to 4.4-88 of the Draft EIS/EIS/EIR.) For more information on undergrounding, please refer to Master Response 2 and Chapter 3, Project Alternatives, of the Draft EIS/EIS/EIR (pages 3-77 to 3-78).
- 28-8 The question and answer portion of the December 4, 2013 TRPA Advisory Planning Commission (APC) meeting was transcribed and the written transcripts are provided in this Final EIS/EIS/EIR as Item 55. The commenter suggests that the Liberty Utilities president, Mr. Smart, stated at the commission meeting that the project was not required. The commenter takes the exchange out of context. Mr. Smart does not indicate that the project is not needed, rather he was responding to the question as to whether the

CPUC is requiring the project, which they are not. The CPUC does not direct any regulated utility to perform certain projects. The applicant has concluded that the existing infrastructure is inadequate, which is the impetus for proposing an upgrade of the 625 and 650 Lines. The 625 and 650 Electrical Line Upgrade Project improves the reliability of the North Lake Tahoe Transmission System. This is an existing concern that has been identified by the engineers managing the system. The applicant is required under the applicable regulations and expected to proactively upgrade its system to reliably serve existing and projected demands. See Master Response 6 for more information on project need.

- 28-9 Table G2 in Appendix G of the EIS/EIS/EIR provides an analysis of consistency of the project with applicable land use plans. The commenter is referred to Master Response 10 on consistency with Kings Beach and Tahoe Vista community plans.
- 28-10 The comment generally states the opinion that the Draft EIS/EIS/EIR fails to adequately analyze and describe the impacts of tree removal on wildlife. The comment also expresses concerns about a “flyway migration for birds” west of SR 267, impacts to common species, and effects on large/old trees. The general comment does not clearly express which wildlife species are being referenced, or provide details about a specific migratory flyway of concern. Potential impacts to a full suite of common and sensitive biological resources, including special-status and common migratory birds that would be protected by the Migratory Bird Treaty Act, as well as wildlife species movement corridors, were analyzed and described in the Draft EIS/EIS/EIR. Effects beyond just habitat removal were also considered, such as noise and disturbance from construction activity (which would include vehicle trips). For example, this impact mechanism is referenced several times in the discussion of Impact 4.7-6 (Alt.1) and several APMs require the establishment of no-disturbance buffers around sensitive wildlife resources. Importantly, as required for the Draft EIS/EIS/EIR, potential impacts on wildlife resources were evaluated based specifically on the significance criteria described on pages 4.7-59 through 4.7-60. Regarding effects on common biological resources and large trees, for purposes of the EIS/EIS/EIR, an adverse effect (e.g., removal) alone does not necessarily constitute a significant impact; significance and the need to mitigate are based on the magnitude and intensity of the effect relative to existing conditions, and must be evaluated based specifically on the established significance criteria. Also see response to Comment 9-19 addressing impacts and mitigation for late seral/old growth trees.

The comment references the concept of seeking another location for the proposed power lines to avoid conflicts with special-status species habitat. An effective mechanism to avoid habitat impacts is to place the power line within ROWs with limited habitat values, such as road ROWs. This principal is a primary reason for evaluating the Fiberboard Freeway as a possible alternative project route. For example, as shown in Table ES-1a, Alternative 3 (Road Focused Alternative) and Alternative 4 (Proposed Alternative), which place the 625 Line along the Fiberboard Freeway, result in the removal of substantially fewer trees (12-30 percent fewer) than Alternative 1 (PEA Alternative) and Alternative 2 (Modified Alternative), which do not follow the Fiberboard Freeway as closely. Alternative 4 (Proposed Alternative) follows the commenter’s suggestion of seeking an alternative that minimizes conflicts with special-status species habitats.

- 28-11 The comment suggests that the Draft EIS/EIS/EIR should be recirculated based on the information provided in the overall comment letter. See the responses above to each comment provided in the letter. The Draft EIS/EIS/EIR meets the legal requirements of NEPA, TRPA codes and regulations, and CEQA and no conditions within these laws requiring recirculation have been met.

Letter
29
Response

North Tahoe Citizen Action Alliance
David McClure, President
January 7, 2014

- 29-1 The NTCAA indicates its intent to incorporate comments from others into its letter, and that further comments from the NTCAA may follow at a later date. Responses to all comments received during the public review period for the Draft EIS/EIS/EIR are provided in this Final EIS/EIS/EIR. See Table P1-1 for the list of comments received during the review period, which concluded January 7, 2014.
- 29-2 The commenter references three reports that have been provided to the commenter: the North Tahoe Capacity Plan (prepared by Sierra Pacific Power in 1996), Capacity Plan Validation Report (prepared by Z-Global in 2011), and Liberty's Electric Transmission System Upgrade (prepared by Tri Sage Consulting in 2011). These documents were not cited in the Draft EIS/EIS/EIR (although the results of some of these reports may have informed development of the project and are indirectly referenced in a discussion of project planning history). No analysis or conclusions in the Draft EIS/EIS/EIR related to the project's potential environmental effects were based on the technical documents requested by the commenter.

The commenter identifies himself and many groups in the Lake Tahoe area and argues that the Draft EIS/EIS/EIR violates all applicable law and public trust. Specific comments are addressed below.

As stated in Chapter 2, Purpose and Need, of the EIS/EIS/EIR, the project is needed based on current electrical demand. Although projecting future demand is an element of prudent utility system planning, the results of such planning are not relevant to assessing the environmental effects of the project proposal. One could make a connection between projecting future demand and project need; however, as stated above, CalPeco justifies the project without consideration of future electrical demand. Please also see Master Response 6 for further information on project need. Whether the proposed project was implemented following the currently anticipated schedule, or delayed because of an unforeseen reduction in electricity demand, the evaluation of environmental effects in the Draft EIS/EIS/EIR would remain the same.

Development of project alternatives is based in large part on the ability of alternatives to meet project objectives. The objectives, as identified on page 2-5 of the Draft EIS/EIS/EIR are:

1. Provide normal capacity for current and projected loads.
2. Provide reliable capacity to assure adequate service to all customers during single-contingency outages.
3. Reduce dependence on the Kings Beach Diesel Generation Station.
4. Reduce the risk of fire hazards and outage durations associated with wooden poles and encroaching vegetation.
5. Provide more reliable access to the 625 Line for operation and maintenance activities.

Past evaluations of anticipated load growth have no appreciable effect on the evaluation of an alternative's ability to meet the project objectives. As stated above, where there may be a nexus between future load growth and project development, this would be related to the timing of project implementation and not the mechanisms to provide system capacity and reliability. Please also see Master Response 5 regarding the development of project alternatives.

The lead agencies understand that the commenter has been provided all requested information. Because these documents contain proprietary information and were not part of the record of cited

information assembled for the EIS/EIS/EIR, it was necessary to obtain approval from the applicant and the lead agencies prior to their release. The CPUC, the CEQA lead agency, is familiar with the legal requirements for an EIR pursuant to CEQA regulations. It is the shared opinion of the lead agencies that these studies are not necessary to complete the environmental analysis of the project alternatives, including the no project alternative.

- 29-3 The lead agencies and applicant have fully complied with the public noticing and involvement procedures required under NEPA, TRPA regulations, and CEQA.

A looped system is proposed as the fundamental approach for all of the action alternatives evaluated in detail in the EIS/EIS/EIR because it is an industry-accepted approach to addressing reliability – which is a fundamental objective of the proposed project. For more information on the development of alternatives, the commenter is referred to Master Response 5. Master Response 6 addresses questions related to project need, and Master Response 11 provides more information on the need for a looped power line configuration. The comment also references the concept of project funding by ratepayers. Please see Master Response 4 for more information on this topic.

- 29-4 The comment appears to reference a section in Chapter 1, Introduction, and contends that it does not meet the legal obligations of the Project Description under CEQA. Section 1.1, Project Requiring Environmental Analysis, is intended as an introductory section. For a full project description, the commenter is referred to Chapter 3, Project Alternatives. Chapter 3 discusses the development of reasonable alternatives and the role of economic feasibility (see pages 3-68 through 3-70). Please refer to Master Response 4 for information on the CPUC process for evaluating cost recovery via rate increases.

- 29-5 The commenter indicates that, because the Draft EIS/EIS/EIR does not provide details about neighboring substations, it fails to provide information that is relevant to the public's understanding of the proposed project. The commenter also indicates that substations outside of the North Lake Tahoe Transmission System serve 30 percent of system loads and contribute to peak demand, but does not provide evidence to support this assertion.

Different electrical transmission systems are often interconnected, even those owned by different utilities. In the case of the substations referenced in the comment, they are not owned by CalPeco and are not part of the system under evaluation. Power can enter or leave North Lake Tahoe Transmission System via connections to these substations, but these connections cannot be relied upon to consistently support the North Lake Tahoe System. As indicated in a letter from NV Energy to Liberty Utilities dated February 19, 2014 (copy of letter provided in Appendix P2a) NV Energy reminds Liberty Utilities that NV Energy will provide electricity to the North Lake Tahoe Transmission system via the Incline Village substation on an "emergency" and "as available basis." As is appropriate for a utility, its existing customer base must receive priority for electricity deliveries, and only if there is additional power available would it be transferred to Liberty Utilities. As stated in the letter, "Liberty Utilities should not consider our prior ability to assist as an indication of our future ability to provide any permanent solution for Liberty's loading issues in the North Lake Tahoe area." It is not appropriate to expect consistent power deliveries from other utilities on an as needed basis (unless such a business or contractual relationship has been established), and therefore, relying on this approach does not provide the system reliability required as part of the proposed project.

The discussion on page 3-2 of the Draft EIS/EIS/EIR is a brief listing of the components of the North Lake Tahoe Transmission System that are owned by the applicant. Substations and other utility infrastructure that are not owned by the applicant and cannot be relied upon to consistently serve the North Lake Tahoe Transmission System are not relevant to the analysis in the Draft EIS/EIS/EIR.

The comment offers these connections to other utility systems as potential mechanisms to maintain the North Lake Tahoe Transmission System as a loop system. Please see Master Response 5 addressing project alternatives and Master Response 11 discussing the need for a loop system.

- 29-6 The commenter states that the 625 and 650 Electrical Line Upgrade Project was originally proposed by Sierra Pacific Power (which owned the system at that time) in 1996. Sierra Pacific applied for permits for this project in 2010. After CalPeco acquired the system, experienced electrical system engineers evaluated the North Lake Tahoe Transmission System and confirmed that the system should be upgraded because it does not meet applicable regulatory requirements related to reliability, and that the most prudent, cost effective, and technically-efficient solution would be to complete a 120 kV loop upgrade. Objectives established for the project include maintenance activities that would bring the project into compliance with ROW and maintenance standards established by the CPUC to promote reliable electrical service.

The comment includes various questions that are essentially business and operational decisions. Is maintenance of the existing 625 Line sufficiently problematic to instigate a change? Does maintenance of the 625 Line result in higher than necessary costs? Is it appropriate to desire more reliable access to the 625 Line? While these questions may be of interest to agency decision makers, it is beyond the scope of the environmental review to evaluate the business or operational decisions of the project applicant. The environmental review assesses the potential effects of the project as proposed, and of a reasonable range of alternatives based on the project objectives. Please also see the discussion of Purpose and Need in Master Response 6.

The comment also asserts that replacing wooden poles with steel poles is a standard practice for any power line replacement project. This is not the case. The proposed project could be implemented with wooden poles. However, the applicant has elected to propose the use of steel poles for the additional resiliency the steel poles provide. Were the project in a desert environment where wildfire risk was not an issue, the applicant might not include reducing the risk of fire hazard and the associated use of steel poles as a project objective.

Regarding the concept of objectives related to cost and potential financial effects on rate payers, please see Master Response 4 which addresses the issue of potential increases in electricity rates.

Regarding the concept of achieving environmental gains from project implementation, this is a policy issue and not a component of the environmental review process. The environmental review process identifies and discloses project effects relative to existing conditions, and where necessary, recommends mitigation to reduce those effects where the identified standards are exceeded. While beneficial and encouraged, there is no obligation to require a net gain for an environmental resource; therefore, there is no obligation via the environmental review process to consider environmental gain as a project objective.

The comment mentions relocation of the Tahoe City Substation. Please see Master Response 1 for further information on this topic.

The NEPA, TRPA, and CEQA processes allow the public, through the scoping period, to get involved and express concerns, comments, and suggestions about project objectives and alternatives. The 30-day scoping period for this project was held between March 26, 2012 and April 25, 2012 and included public scoping meetings on April 17, 2012 in Kings Beach and April 19, 2012 in Truckee. The NTCAA submitted a scoping comment letter on April 14, 2012.

- 29-7 The commenter is referred to Master Response 5 for information on the development of project alternatives. Specific items identified by the commenter, such as combining individual alternatives that were considered but eliminated from detailed evaluation in the EIS/EIS/EIR, construction of a new natural gas peak generator plant, and alternative loop scenarios are also addressed in this Master Response.

The comment excerpts text from CEQA court decisions, providing statements that relate to alternatives analysis. The Draft EIS/EIS/EIR exceeds CEQA requirements for alternatives analysis by fulfilling the NEPA requirement of evaluating each alternative at an equal level of detail. A document fulfilling only the requirements of CEQA could provide a more general analysis of each alternative's environmental effects, identifying the relative increase or decrease in effects compared to those identified for the proposed project. The Draft EIS/EIS/EIR provides a robust analysis of alternatives considered but eliminated from detailed evaluation; within the 14 page section of the document 12 different alternatives are evaluated addressing options such as rebuilding on the 650 Line, increasing diesel generation, using demand management and conservation, and installing a submarine cable within Lake Tahoe. An EIR is not required to consider every conceivable alternative or alternatives that are infeasible (California Code of Regulations Section 15126.6[a]). CEQA requires evaluation of the comparative merits of a range of reasonable alternatives that would feasibly attain most of the project objectives and would avoid or substantially lessen any identified significant effects. The alternatives analysis in the Draft EIS/EIS/EIR meets the requirements of CEQA expressed in the statute, the CEQA Guidelines, and judicial decisions.

- 29-8 The comment identifies environmental effects of construction of the 625 Line and questions the necessity of the line as part of the proposed project. In reference to the assertion that the project would generate 12,000 vehicle trips along Mt. Watson Road, it is assumed that the commenter is referring to the estimated 12,495 total truck trips for Alternative 4 (Proposed Alternative) identified in Table 3-3 (page 3-30 of the Draft EIS/EIS/EIR). If this is correct, the 12,495 truck trips are a total for all elements of the proposed project (i.e., the 625 Line, the 650 Line, and the substations), and only a fraction of the 12,495 would occur on Mt. Watson Road/Fiberboard Freeway. A more accurate estimate would be to utilize the number of truck trips attributed to the 625 Line Upgrade, 5,330 trips; however, many of these trips would be associated with activities in the vicinity of Tahoe City, Kings Beach, and along SR 267 and would not utilize Mt. Watson Road/Fiberboard Freeway. It is unclear by what mechanism truck trips on the existing paved Fiberboard Freeway would "forever alter the area" as suggested in the comment.

Regarding the necessity of upgrading the 625 Line, this is an issue in which multiple components of system design and operation come into play. The commenter is referred to Master Response 5 for more information on project alternatives, Master Response 6 for more information on project need, and Master Response 11 addressing the loop system design.

- 29-9 The primary point conveyed in the comment is that the North Lake Tahoe Transmission System, and in particular the 625 Line, are more reliable than portrayed in the Draft EIS/EIS/EIR, and that there may not be a need to upgrade the 625 Line or move it from its current location to provide additional access. See response to Comment 29-6 above. It is beyond the scope of the environmental review to determine how much access is needed to adequately maintain and operate a facility. The commenter is referred to Master Response 6 for information on project need. The commenter's requests for several pieces of data related to the historical reliability of the North Lake Tahoe Transmission System have been conveyed to the applicant, who would be the appropriate entity to provide this information.

The commenter's observations of current customer satisfaction are not necessarily an appropriate metric to evaluate reliability of the 625 Line, the 650 Line, or other large power lines within the North Lake Tahoe Transmission System. There could be multiple incidents of single line failures along the

system that are not noticed by customers because the existing loop configuration maintains power deliveries. Conversely, if customers were not satisfied with the reliability of power service, this could be based entirely on the failure of local distribution lines while the larger power lines experience no failures.

The commenter is correct in stating that increased vegetation management would reduce the risk of line failures. Removal of trees from the vegetation management corridor and hazard trees that may be outside the corridor would reduce the potential for trees and branches to fall on and damage the line. However, development of budgets for vegetation management and allocations of vegetation management funds to various facilities are topics outside the scope of the environmental review process.

The lead agencies have independently reviewed the language in the Draft EIS/EIS/EIR related to existing system reliability and damage/outage risk and maintain that the descriptions are suitable for the EIS/EIS/EIR.

- 29-10 The purpose of NEPA, CEQA, and similar TRPA regulations is to disclose the environmental impacts of an application. Economic feasibility is considered only in terms of developing reasonable and feasible alternatives to reduce identified environmental impacts. The potential cost to construct the proposed project is not an environmental effect appropriate for analysis in the environmental document. The commenter is referred to Master Response 4 for information on the process through which the CPUC determines rate recovery of project costs and Master Response 5 on the development of project alternatives.
- 29-11 The commenter's understanding of the purpose of the looped power system design is noted. The assertion that the 625 Line only serves as a conveyance for single contingency power needs outside the Lake Tahoe Basin is incorrect. For example, if the 650 Line were to fail near Brockway Summit, then the 625 Line would be used to carry power from Tahoe City to Kings Beach. Similarly, if the 629 Line were to fail south of Squaw Valley, the 625 Line would be the sole source of power to Tahoe City, delivering power routed through Kings Beach. Also see Master Response 11 addressing the looped power system.
- 29-12 NEPA, TRPA, and CEQA regulations do not require that the cost of the preferred alternative be evaluated against the cost of other alternatives. The analysis of project costs and cost-causation is separate from the analysis of the environmental impacts of the proposal. Also see response to Comment 29-10 above.

Letter
30
Response

Friends of Lake Tahoe
Roger Patching, President
January 3, 2014

- 30-1 The comment expresses objection to the project and suggests that it is unnecessary. Please see Master Response 6 regarding the need for the proposed project.
- 30-2 The commenter suggests that the only part of the project that is necessary is upgrade of the 650 Line between Truckee and Northstar. While this upgrade alone would address some immediate concerns, it would not address reliability issues in other portions of the North Lake Tahoe Transmission System. See Master Response 6 regarding the need for all elements of the proposed project and Master Response 11 regarding the function and value of a looped power line configuration. See Master Response 4 for

information on cost recovery for project expenses and the rate setting process. Regarding consideration of other system loop configurations, please see Master Response 5 addressing project alternatives.

- 30-3 The comment expresses concern about impacts pertaining to tree removal, wildlife, SEZs, and scenic effects. These impacts are addressed in the EIS/EIS/EIR. See Master Response 4 for further discussion regarding rate recovery and Master Response 6 regarding project need.
- 30-4 As discussed in Master Response 5 and Master Response 11, the upgrade of the 625 Line is necessary to improve reliability to the entire service territory. Master Response 5 addresses consideration of other system loop configurations.

The commenter's concerns about project cost and the potential for electric utility rate increases are noted. The commenter is referred to Master Response 4 for information on the process through which the CPUC determines rate recovery of project costs.

- 30-5 The comment reiterates objection to the project and summarizes previous comments pertaining to need, rate increases, and environmental impacts. See responses to Comments 30-1 through 30-4.

Letter
31
Response

Friends of Tahoe Vista
Ellie Waller
December 4, 2013

- 31-1 The commenter expresses concern about the potential for the 625 and 650 Electrical Line Upgrade Project to result in a rate increase and questions whether the project is needed. These issues are addressed in Master Response 4 and Master Response 6, respectively.
- 31-2 These comments pertain to other items discussed at the TRPA APC's December 4, 2013 meeting and not to the CalPeco 625 and 650 Electrical Line Upgrade Project. No response is necessary.
- 31-3 Cumulative impacts of the 625 and 650 Electrical Upgrade Project are assessed in the impact discussions for each of the resource areas evaluated in Chapter 4, Affected Environment, Environmental Consequences, and Mitigation Measures. Growth inducement is evaluated in Section 5.5, Growth Inducing Impacts of the Proposed Project, and further information is provided in Master Response 7.
- 31-4 Table 4.1-2 has been updated to include the anticipated number of units for the TRPA-approved Homewood Mountain Resort Master Plan and the Boulder Bay Project.
- 31-5 The commenter inquires as to why the Kings Beach and Tahoe Vista community plans were not listed with the Tahoe City Community Plan in the description of the regulatory setting in Section 4.4, Scenic Resources. In brief, the proposed project is located outside these community plan boundaries. The commenter is referred to Master Response 10 regarding consistency with Kings Beach and Tahoe Vista community plans.
- 31-6 The commenter notes that potential changes to the scenic character of the area that would result from the project include increased visibility of the 625 Line along the Fiberboard Freeway and more visually prominent infrastructure near the Tahoe Rim Trail and SR 267. These project effects are described in Section 4.4, Scenic Resources, and Section 4.8, Recreation, of the EIS/EIS/EIR. Setback of the proposed power lines along SR 267 to meet the scenic thresholds is proposed under Alternative 3 (Road Focused Alternative) and Alternative 4 (Proposed Alternative) (see pages 4.4-75 through 4.4-81 and 4.4-86

through 4.4-88 of the Draft EIS/EIS/EIR). The commenter is referred to Master Response 9 for more information on TRPA scenic thresholds.

31-7 The commenter notes that use of helicopters during construction could affect residents outside of the notification area identified in APM NOI-1 and the 1,000-foot vicinity identified in APM NOI-2, and suggests that the applicant post scheduled activities and expected hours of operation on its website and in local newspapers one week prior to commencement. Other APMs, such as APM NOI-3, which designates a disturbance coordinator responsible for responding to local noise complaints, and APM NOI-9, under which helicopter flight patterns would be designed to minimize flights over residential areas are included in the project to address this concern. As discussed under Impact 4.14-1 for each action alternative, potential impacts from helicopter and construction equipment noise would be actively managed with the incorporation of APMs to maintain acceptable levels. No significant impacts associated with the use of helicopters would be reduced through additional notification requirements. The significant impact associated with nighttime construction activities would be reduced to a less than significant level with implementation of Mitigation Measure 4.14-1. The TRPA noise ordinance applies within the Tahoe Basin, including those portions of the Basin that are part of Placer County.

31-8 The comment questions the conclusion in the EIS/EIS/EIR that decommissioning the existing 625 Line would result in a long-term benefit for northern goshawk habitat, calling it misleading, and inquires as to how long it would take for trees to fully mature following line decommissioning.

The comment implies that suitable goshawk habitat is comprised of individual large trees only, without consideration of other ecological factors that influence habitat function and suitability. As described in the EIS/EIS/EIR, the post-restoration conditions of temporary construction areas would not be outside the range of habitat types that contribute to suitable goshawk habitat and territories; goshawk habitat is typically a mosaic of nesting and foraging habitats, consisting of mature forest stands interspersed with patches of native shrub and herbaceous vegetation.

As described in the EIS/EIS/EIR, forest or other native vegetation recruitment, development, and succession within the decommissioned ROWs would benefit goshawk habitat in those areas by providing additional cover and foraging habitat for goshawks and their prey species. Additionally, APM BIO-37 requires that decommissioned ROWs be evaluated for soil compaction or other factors that could limit the recruitment and reestablishment of native vegetation over time, and apply appropriate treatments to facilitate native vegetation development as needed. Also, no goshawk nest sites/stands are known to occur within areas where potential habitat would be permanently removed. In addition to the regeneration of native vegetation in the abandoned 625 Line corridor, eliminating existing vegetation management and maintenance activities within the existing 625 Line would reduce levels of human disturbance and potential impacts to goshawk and other wildlife at those locations.

For purposes of the analysis, potential habitat for northern goshawk was generally assumed to include all conifer forest types mapped in the study area; this includes areas of sparse canopy closure and forest gaps, small trees, and areas adjacent to high-levels of human disturbance. This assumption is conservative, because not all of these areas likely function as suitable nesting or foraging habitat, due to variability in stand structure and canopy closure, forage quality, presence of potential nesting trees, levels of existing disturbance, and other biophysical factors. Therefore, the habitat acreage values referenced throughout the analysis overestimate the potential effect on goshawk habitat. Overall, the level of benefit to goshawk habitat as a result of decommissioning the existing 625 Line is considered commensurate with the type of impacts on goshawk habitat assumed in the analysis.

31-9 Identification of an active goshawk nest would affect work in the immediate vicinity of the nest, but would not necessarily affect the overall project schedule. As a linear project, if a nesting area required

avoidance, work could continue on other parts of the alignment and construction activities could be performed in the avoidance area once APM/mitigation/permit conditions allowed.

As detailed in APM BIO-12, vegetation management and treatment would not occur within 0.5 mile of active northern goshawk nests during the breeding season (February 15 to September 15). A qualified biologist would have the ability to amend the start and end dates of these breeding seasons with concurrence from appropriate resources agencies if it can be determined that breeding has not started or that fledglings have left the nest. If the location of a nest site within a protected activity center is unknown, either surveys would be required to locate the nest stand and determine nesting status or, as an alternative to surveys, an activity buffer would be applied to the 0.25-mile area surrounding the protected activity center. The activity buffer may be waived for vegetation treatments of limited scope and duration, when a biological evaluation determines that such work is unlikely to result in breeding disturbance considering intensity, duration, timing, and specific location. Where a biological evaluation concludes that a nest site would be shielded from planned activities by topographic features that minimize disturbance, the buffer distance may be modified in coordination with the USFS.

- 31-10 The commenter's desire to see the potential amendment to PAS 019 fully vetted by the TRPA Governing Board is noted by TRPA planning staff. This matter will be considered by the Governing Board and evaluated in the context of all applicable TRPA codes and policies.
- 31-11 The Fiberboard Freeway is a joint ownership road. It was first constructed by a private landowner and when the surrounding land was sold, the owner retained use rights to maintain access to remaining parcels of land. Southern Pacific Industries and Northstar are two of the other joint owners, along with USFS. All owners share in maintenance of the road.

The applicant has an existing master permit with the USFS for the 625 and 650 Lines that would be amended to accommodate the proposed project (if approved). An access management agreement would be prepared that would ultimately be included in the amended master permit. Conditions of use of USFS roads, including portions of the Fiberboard Freeway on USFS lands, would be part of the access management agreement. Conditions of use for individual roads would depend upon various factors, including the status of the road (i.e., its intended use within the USFS road system, the existing condition of the road, whether it requires upgrading, whether it would be used exclusively by CalPeco for project access and then be restored and closed, or if it is a general access road that would be kept open for the public.) All conditions of use would be detailed in the master permit amendment and access management plan (Rodman pers. comm. 2014).

For portions of the Fiberboard Freeway not on USFS lands, CalPeco would negotiate easements or access agreements with the landowner.

As stated on page 3-28 of the Draft EIS/EIS/EIR, if any roads are damaged during project construction, they would be repaired to pre-project conditions prior to project completion.

- 31-12 These comments pertain to other items discussed at the TRPA APC's December 4, 2013 meeting and not to the proposed project or Draft EIS/EIS/EIR. No response is necessary.

Letter
32
Response

Friends of Tahoe Vista
Ellie Waller
January 4, 2014

- 32-1 The comment indicates that utility customers in the Lake Tahoe Basin would be required to pay for the 625 and 650 Electrical Line Upgrade Project and questions whether the purpose of the project is reliability or to serve proposed expansions at Northstar and Squaw Valley resorts. The commenter also requests statistic on historical electricity demand within the Lake Tahoe Basin and at the area resorts.

Responses to the commenter's concerns can be found in several master responses. See Master Response 4 for information on electrical rates, Master Response 6 for information on project need, and Master Response 7 for information on the potential growth-inducing impacts of the project.

Regarding Mr. Smart's statement at the December 4, 2013 TRPA APC Meeting, please see response to Comment 28-8 that also addresses this issue. In summary, the answer from Mr. Smart does not indicate that the project is not needed; it simply states that the CPUC is not currently requiring that CalPeco implement the project, as the CPUC does not specify or order projects. Rather, the CPUC is a regulatory agency focused on application of codes and regulations.

- 32-2 Please refer to Master Response 5 regarding alternatives development; Master Response 6, which discusses the need for the project and includes the results of an independent peer review of the needs assessment; and Master Response 11 addressing the loop system design.
- 32-3 The discussion in Section 3.2.4, System Reliability, Operation, and Capacity, was developed to broadly explain the existing condition of the electrical system. No part of this discussion is dependent on the relative electricity use by different consumers. However, the EIS/EIS/EIR does acknowledge that snow making has been a key component of demand. As indicated in Section 2.1.3, System Capacity Demands, "[d]emand in the North Lake Tahoe Transmission System is greatest during the winter months...as a result of electric heating of homes, businesses, and tourist accommodations, and ski resort loads, including ski lifts and snow-making" (page 2-2). The additional information requested by the commenter is not available nor does it affect the environmental analysis in the EIS/EIS/EIR. CalPeco must respond to electrical demands, including peak demands, regardless of the source. As identified in Master Response 11, there are only limited mechanisms for the location of demand along a loop to affect the need for capacity and reliability along the entirety of the loop.
- 32-4 The commenter requests a demand assessment for four categories of customers that identifies which users are causing reduced system reliability. This request is noted, but is not necessary for the environmental analysis in the EIS/EIS/EIR. Please also see Master Response 6 addressing project need and Master Response 11 addressing the function of a loop system.
- 32-5 Improving system reliability for the entire North Lake Tahoe Transmission System is a key objective of the 625 and 650 Electrical Line Upgrade Project. It is beyond the scope of the environmental document to speculate on modifications to another project that may occur absent the proposed electrical line upgrade.
- 32-6 Project phasing is described in Chapter 3, Project Alternatives, of the Draft EIS/EIS/EIR (page 3-60). Refer to Master Response 6 for information on project need and Master Response 11 regarding operation of a loop system. The data requested in the comment is noted, but would not affect the analysis or conclusions in the EIS/EIS/EIR, especially in light of the information provided in Master Responses 6 and 11.

- 32-7 Table 4.1-2 has been updated to include the anticipated number of units for the TRPA-approved Homewood Mountain Resort Master Plan and the Boulder Bay Project.

The cumulative impacts of the proposed 625 and 650 Electrical Line Upgrade Project are addressed in the impact discussions for each of the 13 environmental issue areas evaluated in Chapter 4, Affected Environment, Environmental Consequences, and Mitigation Measures, in the Draft EIS/EIS/EIR.

The project's capacity to accommodate growth is evaluated in Section 5.5, Growth-Inducing Impacts of the Proposed Project, in the EIS/EIS/EIR. Summarizing from Section 5.5, the upgrade of the 625 and 650 Lines would be growth accommodating, as it would remove an obstacle to planned development. The environmental effects of growth, in and of itself, are not assumed to be necessarily beneficial, detrimental, or inconsequential (see Section 15126.2(d) of the State CEQA Guidelines). Rather, the potential for increased population growth to tax existing community services, resulting in the construction of new facilities that could result in environmental effects, and the potential for the project to encourage or facilitate other projects that could have detrimental effects on the environment, are considered. The growth accommodated by the 625 and 650 Electrical Line Upgrade Project is anticipated by, and consistent with, local land use plans and growth management policies. Therefore, the types of growth accommodated by the project are assumed to properly characterize the potential for increased demand on community services and potential environmental impacts. Also see Master Response 7 on growth inducement for more information on this topic.

- 32-8 The commenter is referred to Master Response 10 with regard to consistency with Kings Beach and Tahoe Vista community plans. In summary, project facilities are not proposed within the boundaries of these plan areas.
- 32-9 The comment requests information on the costs associated with use of the Fiberboard Freeway (wear and tear from construction and ongoing use) and indicates that financial information is required to establish financial feasibility of alternatives. Commenter is referred to response to Comment 31-11 for additional detail regarding financial obligations for repair and maintenance of the Fiberboard Freeway. The physical change brought about by the project (road wear) would be addressed by the master permit amendment and the access management plan, as described in the referenced response. Any interactions between the project applicant and other entities relevant to the environmental analysis are referenced in the EIS/EIS/EIR. Other materials or correspondence not part of the NEPA/TRPA/CEQA administrative record are not provided as part of this environmental review process.
- 32-10 Provision of the requested correspondence is beyond the scope of the EIS/EIS/EIR and the content of any correspondence would not further inform the environmental analysis. As with any portion of the project, CalPeco would negotiate access easements with the land owner, if required.
- 32-11 The number of construction trips associated with the project varies according to construction phase and construction activity. Appendix M, Air Quality, of the EIS/EIS/EIR shows the number of construction trips associated with each of the construction activities for the 625 Line upgrade. These trips are not identified by roadway, but since roughly 3/4 to 2/3 of the existing 625 Line and the proposed alignment are accessed off of the Fiberboard Freeway, these trip numbers can give an indication of anticipated construction-related traffic levels.

The average daily truck traffic varies from 7 trips per day to 27 trips per day, depending upon the particular construction activity. Refer to sheet 237 of Appendix M, Air Quality Data, in the EIS/EIS/EIR for average daily truck trips by construction activity.

- 32-12 The comment requests identification of the process for snow removal and access for maintenance issues on the Fiberboard Freeway. Snow removal would not be conducted; as with existing wintertime maintenance operations, over-snow vehicles would be used.
- 32-13 The comment requests maps identifying which roads would be modified, the width of roadway required, and the number of trees that would be removed during construction or modification of access ways. Appendix F of the EIS/EIS/EIR shows the USFS roads anticipated for use under each alternative. Appendix B of the EIS/EIS/EIR shows dirt roads where improvement would be needed for each alternative. The environmental effects of road improvement are addressed in the Chapter 4 resource area discussions, including but not limited to 4.3, Forestry Resources; 4.5, Geology, Soils, Land Capability, and Coverage; 4.6, Hydrology and Water Quality; and 4.7, Biological Resources.

Table ES-1a in the Executive Summary of the EIS/EIS/EIR provides a comparison of resource impacts by line segment, including an estimate of the number of trees greater than 1-inch dbh that would be removed by line segment, miles of road that would require improvement, and miles of USFS Roads that are expected to need improvement. Table 4.7-8 in the EIS/EIS/EIR shows the acreage of common vegetation community/habitat types in the permanent and temporary ROW for each alternative. Permanent effect is based on the 40-foot-wide permanent electric line ROW for single-circuit segments and a 65-foot-wide permanent electric line ROW for double-circuit segments that would remain following project completion plus new and improved access roads. Habitat types include red fir forest, white fir forest, Jeffrey pine forest, and Sierran mixed conifer forest.

While the exact number and size class of trees was not inventoried in the field, the estimate in Table ES-1a and the acreage comparison of habitat types provided allows a reasoned assessment of the impacts of each alternative on vegetation and habitats. The separation of impacts related to roadways from the project's overall footprint is not necessary to make a determination as to the overall impact of the project on habitat types and trees. However, the tree removal and roadway data provided by Segment in Table ES-1a coupled with the various maps and exhibits showing the segment boundaries could be used to roughly correlate tree removal to particular roadway/accessway segments.

Impact 4.7-4 in the Draft EIS/EIS/EIR addresses tree removal for each alternative. All action alternatives would result in substantial tree removal as defined by TRPA (i.e., project activities of 3 acres or more and proposing the removal of more than 100 live trees 14 inches dbh or larger). Though the specific number and size classes of trees that would be removed has not been recorded via a "timber cruise" (i.e., field recordation), it would be more than 100 trees 14 inches or greater dbh and would include a large number that are greater than 24 inches dbh.

Chapter 3, Project Alternatives, in the Draft EIS/EIS/EIR, page 3-28, describes "new access ways" in locations where a new vehicle travel pathway would be created where one does not currently exist. A majority of the mileage of new access ways would be within the power line ROWs providing "centerline access routes" (see Table 3-2, New and Improved Access Ways Required under the Action Alternatives). The centerline access routes would be approximately 10 feet wide, and although "centerline" is in the category title, in reality the route would move back and forth within the power line ROW, going on either side of power poles, avoiding boulders and other barriers, and responding to topography. In addition, turnouts (30 feet wide) would be needed approximately every 1,000 feet for vehicle passing.

New access ways outside the power line ROW would be similar to centerline access routes in all respects except for location. They would first be developed during project construction to support construction vehicle access to the ROW. Many of the new access ways would consist of short spur roads connecting existing roadways to nearby portions of the power line ROW.

New access ways requiring grading/earth moving due to terrain would be approximately 10 feet wide for straight sections and up to 25-feet wide at curves to safely allow the movement of construction equipment and vehicles to each site. Cut and fill slopes would disturb a wider area.

- 32-14 The commenter provides text from the explanation of terms included in Section 4.4.2, Existing Conditions/Affected Environment. While this text indicates that general terms are used to describe existing conditions, the discussion is not stating that the analysis included in Section 4.4.4, Environmental Consequences and Recommended Mitigation Measures, is general. The analysis in the Draft EIS/EIS/EIR was prepared in accordance with TRPA's scenic codes and regulations (see Section 4.4, Scenic Resources, and Section 5.8, Consequences for TRPA Threshold Carrying capacities).

Undergrounding portions of the power line was considered, but eliminated from further detailed evaluation (see pages 3-77 through 3-78 of the Draft EIS/EIS/EIR). Relocation of the power lines in the SR 267 scenic corridor was also analyzed in the Draft EIS/EIS/EIR (see Impact 4.4-2 for Alternative 3 on pages 4.4-75 to 4.4-82 and Impact 4.4-2 for Alternative 4 on pages 4.4-86 through 4.4-88). The commenter is also referred to Master Response 9 regarding TRPA scenic thresholds and Master Response 2 related to the assessment of undergrounding the upgraded facilities.

The project's consistency with applicable, adopted policies is evaluated in the EIS/EIS/EIR. The Northstar Mountain Master Plan has not been approved. As such, it is considered in the cumulative analysis (particularly in Section 4.8, Recreation, and Section 4.11, Public Services and Utilities). The commenter is also referred to Table G2 in Appendix G of the EIS/EIS/EIR, which provides an analysis of project consistency with applicable land use plans.

- 32-15 The commenter is referred to Master Response 8 regarding design of project facilities. Substantial information on project design elements is also provided in Chapter 3, Project Alternatives, of the EIS/EIS/EIR. In addition, the visual simulations included in Section 4.4, Scenic Resources, in the EIS/EIS/EIR provides a visual comparison of existing poles and new poles, including color, size, and number of conductors. The process through which alternative power line alignments were developed is discussed further in Master Response 5.
- 32-16 The commenter is referred to Master Response 9 regarding TRPA scenic thresholds and responses above related to adherence to TRPA and Placer County ordinances. Also note that Section 4.4, Scenic Resources, in the Draft EIS/EIS/EIR was prepared in accordance with TRPA regulations, including those pertaining to Roadway Travel Unit ratings. TRPA Threshold Carrying Capacities are evaluated in Section 5.8, Consequences for TRPA Threshold Carrying Capacities.
- 32-17 The Placer County requirements cited by the commenter do not apply to the proposed project because: 1) geological and engineering constraints have been identified that prohibit undergrounding; 2) the CPUC's preemptive jurisdiction and direct responsibility over the construction, maintenance, and operation of public utilities in the State of California means that no local discretionary permits (e.g., conditional use permits) or local plan consistency reconciliations are anticipated for the proposed project; and 3) the project does not include proposed development. A description of, and analysis of conformity with, applicable local ordinances is included in the EIS/EIS/EIR in pertinent sections of Chapter 4 and Appendix G.
- 32-18 The comment notes that APM SCE-1 stipulates the timing and location of pile burning to reduce the potential for impacts to scenic quality, but other effects of pile burning are not addressed in the Draft EIS/EIS/EIR.

The proposed methods of vegetation clearing are discussed in Chapter 3, Project Alternatives, of the Draft EIS/EIS/EIR (pages 3-64 to 3-65). As indicated in this discussion, material would be chipped, removed, or lopped and scattered within 150 feet of a high public use or travel area. Pile burning would not be used. Therefore, the text in APM SCE-1 related to pile burning has been removed from the Final EIS/EIS/EIR.

The text of APM SCE-1 now reads as follows (with additional edits in response to other input):

The following measures will be implemented during construction:

- ▲ Construction activities will be kept as clean and inconspicuous as practical.
- ▲ Construction storage and staging will be screened, where practical, with opaque fencing from close-range residential views and public viewing areas.
- ▲ Slash treatment ~~within the immediate foreground (50 feet)~~ will be chipping, mastication, or by lop and scatter as determined by the applicable land owner/manager.
- ▲ ~~If hand piling and burning is utilized, piles will be located away from the edge of the roadway. Piles will be constructed to minimize residual unburnable material (resulting from pile compaction and/or high dirt content) and damage to remaining trees. Pile burning will be accomplished the following fall or spring, when possible. Pile burning will be planned and implemented to minimize scorching of existing non-fire-killed vegetation.~~
- ▲ When “cut-tree” marks are utilized, marks will be placed on back sides of trees or away from views of the travelling public.
- ▲ Within the immediate to middle-distance foreground (300 feet), log skidding trails will be re-graded, to the degree possible, back to their original, natural contour and rehabilitated with vegetation.
- ▲ Non-affected timber and ground vegetation will be protected during harvesting and slash treatment.
- ▲ Trees and vegetation within the “clear zone” that do not pose a risk to power lines will be preserved.
- ▲ Visual diversity of the ground surface will be maintained through irregular scatter of limbs, seeding, and other means as practicable.
- ▲ Barriers/boulders/downed logs will be placed in strategic locations to discourage the establishment of user-created trails. Implement restoration of temporary access ways in a manner that minimizes visibility from intersecting roads.
- ▲ Cut stumps will be 6-inch maximum height measured from the uphill side.

32-19 The comment references several documents related to the evaluation of roadways under the TRPA scenic thresholds and requests clarification that the 625 and 650 Electrical Line Upgrade Project would not violate the scenic threshold. See Master Response 9 on TRPA scenic thresholds as well as Section 5.8, Consequences for TRPA Environmental Threshold Carrying Capacities.

32-20 As described for Impact 4.14-1, combining noise levels from heavy duty equipment and a helicopter at active construction sites would result in hourly average noise levels of up to 88 A-weighted decibels (dBA) equivalent noise level during line stringing activities and up to 88 dBA equivalent noise level during site preparation activities, with maximum noise levels of up to 101 dBA at 50 feet from construction activities. The helicopter flight paths would be coordinated with the Federal Aviation Administration, Caltrans, and with permitting agencies through the development of a flight plan. Helicopters traveling to construction sites would normally operate at a higher altitude than they would

in the immediate vicinity of construction sites where they would pick up and drop off equipment and personnel. Therefore, overflight areas would not be subject to noise levels as high as described for the construction sites. As noted in Chapter 3, Project Alternatives, helicopter operations would only be used in remote areas where access is limited. These areas would be less likely to have sensitive receptors and implementation of APM NOI-9 will minimize flights over residential areas.

The comment suggests that the applicant post scheduled activities and expected hours of operation on their website and in local newspapers one week prior to commencement. Established APMs (such as APM NOI-3, which designates a disturbance coordinator responsible for responding to local noise complaints, and APM NOI-9, under which helicopter flight patterns will be designed to minimize flights over residential areas) are already included in the project to address concerns related to far reaching noise impacts from helicopters and blasting. As discussed under Impact 4.14-1 for each action alternative, potential impacts from helicopter and construction equipment noise would be actively managed at acceptable (i.e., less than significant) levels with the incorporation of APMs. There are no significant impacts associated with the use of helicopters that would be reduced through additional notification requirements. The significant impact associated with nighttime construction activities would be reduced to a less than significant level with implementation of Mitigation Measure 4.14-1.

Noise limitations applicable to the project area include TRPA noise regulations that apply within the Lake Tahoe Basin; Placer County noise restrictions that apply to those portions of the project in Placer County outside of the Lake Tahoe Basin; and the Town of Truckee noise regulations within the town limits of Truckee. The noise limitations for construction activities are described for each area in the Draft EIS/EIS/EIR on pages 4.14-3 through 4.14-10.

- 32-21 This comment requests that Final EIS/EIS/EIR cite the TRPA Code that allows TRPA environmental threshold carrying capacity noise standards for highway corridors to supersede the noise standards in a PAS or Community Plan. The information in Table 4.14-2 of the Draft EIS/EIS/EIR was obtained from page 2-26 of the 2012 Regional Plan.

For additional clarity on this issue, the text on page 4.14-3 of the Draft EIS/EIS/EIR that explains TRPA's Goals and Policies is revised as follows:

The Noise Subelement also contains the following policy statement:

It shall be the policy of the TRPA Governing Board in the development of the Regional Plan to define, locate, and establish CNEL levels for transportation corridors. The Noise Subelement established the following CNEL values for transportation corridors:

- ▲ US Highway 50 (US 50)—65 dBA
- ▲ State Routes (SRs) 89, 207, 28, 267, and 431—55 dBA
- ▲ South Lake Tahoe Airport—60 dBA

The highway CNEL standards override the land-use-based CNELs and are limited to an area within 300 feet from the edge of the road (TRPA 2012a: 2-26). The airport CNEL standard applies to those areas affected by the approved flight patterns for each airport, as included in their Airport Master Plan and Airport Land Use Plan.

In addition, the sources for Table 4.14-2 have been revised as shown:

Sources: TRPA 2012a, TRPA 2012b

- 32-22 For details about the proposed staging areas, the commenter is referred to the descriptions in Section 3.3.1, Common Project Features of the Action Alternatives, where the necessity and extent of vegetation removal and grading is addressed separately for each of the proposed staging areas (refer to pages 3-34 through 3-36 of the Draft EIS/EIS/EIR). Regarding the SPI Staging Area, the discussion on page 3-35 describes the improvements that would be made to the existing access road (i.e., trimming of vegetation encroaching on the road, minor grading) and indicates that the new access way would be temporary resulting in approximately 0.3 acres of new disturbance. Also on page 3-35, “minor access improvements” required at the Kings Beach Substation are defined to include “removal of approximately 10 trees that have established within the right of way.”

The detailed description of the Kings Beach Staging Area on page 3-35 includes the statement that the site was formerly used as a landfill area. This statement may have been misleading. In fact, there is no documentation that the site was used as a permitted or regulated landfill. The area does not appear in public databases of hazardous materials sites maintained by the California Department of Toxic Substances Control or the SWRCB, nor is it included on the California Department of Resource Recycling and Recovery’s database of current and former landfills. Rather, informal observation of debris (such as broken ceramic fragments) by the lead agencies during site visits lead to the conclusion that this remote site may have been used to dispose of trash at some point in the past. This type of historical dumping is not uncommon on remote USFS roads. The unclear text on page 3-35 has been revised and now reads:

“This site ~~was formerly used as a landfill and, as a result,~~ has a previously-disturbed area that measures approximately 300 feet by 300 feet and may have historically been used locally as a disposal site for inert refuse.”

The use of helicopters at staging areas is also discussed in Chapter 3, Project Alternatives, of the EIS/EIS/EIR. As indicated on page 3-33, helicopters would be employed at staging sites with large areas that have been previously disturbed, and no additional grading would be required. However, some vegetation clearing may be required to provide a safe operating environment. This vegetation removal is included in the description of work required at each of the staging areas, as summarized above.

Potential access restrictions on local roadways, including those associated with use of the staging areas, are evaluated in Section 4.12, Traffic and Transportation. No potentially significant impacts to access have been identified. However, the project does include APM TRAN-1, which obligates the applicant to prepare a Traffic Control Plan. This plan would, among other provisions, include public outreach advising the travelling public of construction activity and travel restrictions.

- 32-23 Stringing sites are shown for all action alternatives in the detailed maps included as Appendix B to the EIS/EIS/EIR. Tree removal required to ensure safe equipment operation in these areas of temporary disturbance is analyzed throughout the EIS/EIS/EIR. Tree removal estimates were based on the *Supplemental Forestry and Vegetation Management Report* included as Appendix H to the EIS/EIS/EIR. These estimates include tree removal required for stringing sites, but do not account for tree removal at each of the stringing sites separately. Tree removal estimates assumed removal of all trees at all stringing sites, which is unlikely to be needed. It is not anticipated that the entire area of each stringing site would be disturbed during construction. Sufficient area is provided at each stringing site to allow the construction contractor the flexibility to implement different approaches during line stringing and tensioning. However, APMs such as APM BIO-28 that limit vegetation and tree removal to only the area necessary for construction would still apply. Therefore, the overall estimates of tree removal are likely higher, and thus more conservative from an impact analysis standpoint, than would actually occur. Providing estimates of tree removal at each stringing site would not alter the impact analysis or conclusions in the Draft EIS/EIS/EIR.

- 32-24 Detailed information on the staging areas under evaluation is provided in Chapter 3, Project Alternatives, in the Draft EIS/EIS/EIR on pages 3-33 to 3-36. As explained in this discussion, it is not known at this time which of the staging areas would be used. Details such as the exact timing of use or quantity of materials requiring storage cannot be accurately estimated until an alternative is approved, final project design is complete, a construction contractor has been selected, and the contractor has collaborated with the applicant and regulatory agencies regarding the specific details of implementing the construction process. The decision about which staging areas to use would depend on several factors, including negotiations with land owners. Access to the staging areas is assessed throughout the document and included on most of the exhibits in the document (for example, refer to Exhibit 3-4 [a-d]). Land use and zoning of these project elements is addressed in Section 4.2, Land Use, and land use designations are depicted on Exhibits 4.2-3 through 4.2-5.
- 32-25 The comment requests documentation of approval from lead agencies for tree removal within the 150-foot hazard tree border zone, and an estimate of hazard tree removal within the ROW. The referenced statement from the Draft EIS/EIS/EIR does not represent authorization for hazard tree removal, but agreement among the lead agencies that the impact assessment methodology used in the EIS/EIS/EIR would assume that hazard tree removal would occur within 75-feet from each side of the power line. Beyond this 150-foot wide corridor, it is highly unlikely that there would be diseased or damaged trees tall enough to fall across the elevated conductor. An estimate of hazard tree removal is provided in Table ES-1 (a-c) of the EIS/EIS/EIR.
- 32-26 The comment requests information about the change in views that could result from hazard tree removal and potential impacts on the TRPA scenic thresholds. Removal of hazard trees is considered throughout the EIS/EIS/EIR impact analysis as part of the proposed project. The change in visual quality at each of the identified key viewpoints is assessed in the Draft EIS/EIS/EIR under Impact 4.4-2 for each of the action alternatives and in Section 5.8, Consequences for the TRPA Environmental Threshold Carrying Capacities (see pages 5-25 through 5-27). The commenter is also referred to response to Comment 28-3 for more information pertaining to the potential effects of hazard tree removal on existing recreation areas and consistency of the impact analysis with TRPA's environmental threshold carrying capacities, and Master Response 9 related to TRPA scenic thresholds.
- 32-27 The commenter expresses concern over potential impacts to common biological resources and large trees. This portion of the comment is essentially identical to a portion of Comment 28-10; please see response to Comment 28-10.

The comment requests clarification related to potential impacts within TRPA disturbance zones, suggests that the project would violate the TRPA Code of Ordinances, and states that an impact conclusion of significant and unavoidable is unacceptable (presumably referring to impacts related to goshawk disturbance zones under Alternatives 1 and 2). The comment inaccurately refers to "70+ acres" of impact on TRPA disturbance zones. As detailed in Table 4.7-10, vegetation removal under Alternative 1 (PEA Alternative) and Alternative 2 (Modified Alternative) would result in a net permanent habitat loss within TRPA-designated disturbance zones around historic northern goshawk nests in nonurban areas of 3.2 and 6.4 acres, respectively. As described in Chapter 5, Other NEPA-, TRPA-, and CEQA-Mandated Sections, this impact would conflict with the nondegradation standard of the TRPA Code for goshawk disturbance zones and is prohibited by TRPA. Implementation of Alternative 3 (Road Focused Alternative) or Alternative 4 (Proposed Alternative) would not conflict with the nondegradation standard established in the Code, because a small net gain or enhancement of habitat within the nonurban portion of the disturbance zones relative to existing conditions would occur. Section 4.7, Biological Resources, and Chapter 5, Other NEPA-, TRPA-, and CEQA-Mandated Sections, of the EIS/EIS/EIR include a full discussion and rationale for impacts to TRPA disturbance zones and consistency of project alternatives with TRPA threshold standards. As discussed in Chapter 5, although Alternative 1

and Alternative 2 would conflict with the Code and constitute a significant impact, implementation of any of the action alternatives is not expected to affect attainment of the Threshold Standard for northern goshawk (maintain a minimum of 12 reproductively active territories), because impacts to goshawk reproductive success, territory occupancy, or population size are not anticipated. In addition, if necessary, Alternatives 1 and 2 could be modified to further limit effects on TRPA-designated disturbance zones around historic goshawk nests in nonurban areas.

32-28 The comment relates to consistency of the proposed project with the Northstar Habitat Management Plan (HMP). Proposed project activities on Northstar lands (Northstar Substation) would occur within and near the boundary of HMP Zones A and C. Zone A is designated as Developed Community; Zone C is designated as Intensive Recreation Use Area. Allowable land uses and conservation/management measures within each HMP zone are described in the HMP. The proposed project would not conflict with HMP goals, objectives, or allowable land uses.

32-29 The comment expresses disagreement with the proposed mitigation for disturbance or loss of sensitive habitats, including waters of the United States, waters of the state, riparian habitat, and SEZs. The comment references Mitigation Measure 4.7-2a (Compensate for Unavoidable Loss of Stream and Riparian Habitat) and states that contributing to a mitigation bank (which is one option included in Mitigation Measure 4.7-2a) would not be adequate and compensation for impacts within the Lake Tahoe Basin must occur within the Basin. The commenter is referred to Mitigation Measure 4.7-2b (Compensate for Unavoidable Loss of SEZ), which would be implemented specifically to compensate for impacts on SEZ within the Basin and ensure consistency with the TRPA Code. Mitigation Measure 4.7-2b requires that, in instances where there is no feasible alternative to avoid SEZ in the Basin, CalPeco mitigate all impacts within the boundaries of SEZs by restoring SEZ habitat (LCD 1b) in the surrounding area, or other appropriate area as determined by TRPA, at a minimum ratio of 1.5:1, consistent with TRPA Code. In regard to timing of mitigation measures, Mitigation Measure 4.7-2a references its nexus with a California Department of Fish and Wildlife streambed alteration agreement consistent with Section 1602 of the Fish and Game Code. This permit must be obtained before effects on stream and riparian habitat take place; therefore all permit conditions and compensatory mitigation obligations must be confirmed before impacts occur. Mitigation Measure 4.7-2b has a similar nexus with Section 1602 of the Fish and Game Code, as well as a reference to preparation of a restoration plan as part of APM BIO-36, which states that the plan must be completed prior to construction. Therefore, all permit conditions and compensatory mitigation obligations related to Mitigation Measure 4.7-2b must also be confirmed before impacts occur.

32-30 The comment refers to Mitigation Measure 4.7-5 (Utilize Local Native Seed and Notify Noxious Weed Coordinator). In the Draft EIS/EIS/EIR, the measure states that, after project completion, the USFS noxious weed coordinator shall be notified so that the project area can be monitored by the USFS, if desired. The comment states that the Final EIS/EIS/EIR should specify that such monitoring is a requirement.

Although applicable APMs (BIO-3, BIO-4, BIO-5, BIO-6, BIO-7, BIO-8, BIO-24, BIO-26, BIO-30, and BIO-36) have been incorporated into the project design to minimize, avoid, and reduce potential adverse effects of noxious weeds, Mitigation Measure 4.7-5 was specifically developed to ensure consistency with the Forest Service Noxious Weed Management strategy. Therefore, as it relates to consistency with this strategy, the determination as to whether and how frequently to monitor for weeds following project completion at a particular location would be at the discretion of USFS based on the risk of weed invasion and other factors. In addition to monitoring that may be conducted under Mitigation Measure 4.7-5, post-project monitoring for weeds would occur in specific instances (e.g., as required under APM BIO-37). Additionally, as required by APM BIO-36, CalPeco would develop a Restoration Plan to address revegetation procedures and monitoring. Even if the USFS chose not to monitor to ensure consistency

with the Forest Service Noxious Weed Management strategy, multiple other monitoring and response obligations are included in the APMs and mitigation measures to prevent a significant effect.

- 32-31 This comment relates to permanent impacts to TRPA northern goshawk disturbance zones and TRPA Code compliance. Please refer to the response to Comment 32-27. The Draft EIS/EIS/EIR analyzes all project alternatives at an equal level of detail and concludes that two of the four alternatives (Alternative 1 and Alternative 2) would result in significant unavoidable effects related to goshawk disturbance zones and TRPA Code consistency. However, if necessary, TRPA Code consistency could be achieved with modifications to Alternatives 1 and 2 to further limit effects on TRPA-designated disturbance zones around historic goshawk nests in nonurban areas. Selection of a final project alignment and design would be based partly on these and other conclusions presented in the Draft EIS/EIS/EIR analysis.
- 32-32 The comment cites and requests information or documentation related to Section 62.4.3, Environmental Documents, and Section 62.4.4, Special Conditions, of the TRPA Code of Ordinances. Section 62.4.3 states that “applicants for projects within disturbance zones shall submit with their applications appropriate environmental documentation prepared by a biologist that includes specific recommendations for avoiding significant impacts...” The impact analysis, APMs, and proposed mitigation measures presented in the Draft EIS/EIS/EIR include specific recommendations for avoiding significant impacts to northern goshawk disturbance zones under Alternative 3 (Road Focused Alternative) and Alternative 4 (Proposed Alternative); however, Alternative 1 (PEA Alternative) and Alternative 2 (Modified Alternative) were determined to be significant and unavoidable. Please refer to the responses to Comment 32-23 and Comment 32-27 for additional detail on these conclusions and related documentation.
- 32-33 Section 62.4.4 of the TRPA Code states that special conditions of project approval may be required to mitigate or avoid significant adverse impacts to certain categories of special-status species. A determination of whether or not special conditions would be required for TRPA permitting purposes, in addition to the APMs and proposed mitigation measures in the EIS/EIS/EIR, would occur during or after selection of a final project alignment.
- 32-34 The comment requests that the potential amendment to PAS 019 is fully vetted by the TRPA Governing. This matter will be considered by the Governing Board and evaluated in the context of all applicable TRPA codes and policies. See also response to Comment 31-10, also submitted by Friends of Tahoe Vista through Ms. Ellie Waller, on December 4, 2013.
- 32-35 The Boulder Bay Project is located in Crystal Bay, Nevada, and would not be served by the 625 and 650 Electrical Line Upgrade Project. The project would not directly benefit power service in Incline Village, and NV Energy would not provide funding for the proposed project. See also Master Response 11 which also addresses connections to other electrical systems.
- 32-36 The lead agencies acknowledge the commenter’s intent to enter the two articles into the record. The EIS/EIS/EIR acknowledges the customer base served by the existing 625 and 650 Lines and those that would be served by the upgraded lines, as well as snow making as a component of electrical demand.
- 32-37 The commenter requests information about the current electricity consumption at Northstar and the projected electricity use under its Master Plan, and additional clarification of information provided in the Northstar Master Plan EIR. The comment correlates the electrical demand of the Northstar Mountain Master Plan to issues of that project’s feasibility, ability to provide sufficient electricity to the development, and project funding. These are not comments on the scope, content, or analysis in the CalPeco 625 and 650 Electrical Line Upgrade Project EIS/EIS/EIR and the specific information requested

would not alter the EIS/EIS/EIR analysis or conclusions. Several master responses address general issues raised in the comment. Please see Master Response 4 related to cost reimbursement and utility rates, Master Response 6 related to project need, and Master Response 11 addressing the function of a loop electrical system and its influence on the need to upgrade the 625 and 650 Lines. Northstar California Resort also provided a comment letter addressing potential interactions between the proposed project and planned Northstar Development; please see responses to Comment Letter 41.

- 32-38 The commenter requests that the EIS/EIS/EIR include electrical requirements (by phase) for proposed development in Northstar, Squaw Valley, and Homewood, as well as an explanation of how the proposed alternative would meet these demands. These requests are noted, but provision of these data are beyond the scope of the EIS/EIS/EIR, the purpose of which is to assess and disclose the environmental effects of the proposed electrical line upgrade. Assessment of whether a utility can meet the requirements of approved development projects is a separate process. As indicated on page 3-60 of the Draft EIS/EIS/EIR, there is an immediate need to upgrade the 650 Line and the 625 Line would be upgraded at a later date, with construction expected to begin in 2018 (with the construction start date potentially starting later, depending on the rate of system load growth as described in Master Response 6 related to project need). However, construction of the 625 Line could begin earlier based on need. CalPeco, like all public utilities, tracks and projects demand and is expected to respond accordingly to provide and maintain reliable electrical service.

As indicated in the EIS/EIS/EIR, the proposed project would allow CalPeco to serve additional loads from the existing substations (limited by the capacity of the substation transformers and distribution feeders). New load would result from projects that are approved by local land use agencies.

- 32-39 The commenter requests that the EIS/EIS/EIR describe the impact to the proposed Northstar Master Plan if the 625 and 650 Electrical Line Upgrade Project is modified. It is beyond the scope of the EIS/EIS/EIR to speculate on the consequences to proposed development at Northstar if unspecified modifications were made to the project.
- 32-40 The comment requests a detailed analysis of how the Kings Beach and Northstar Substations affect system reliability. As with all substations, they are critical system components that move electricity from transmission/power lines to the distribution system, as well as from power line to power line. If a substation is not reliable, or does not have sufficient capacity to match other system components, service failures at the substation could affect both customers served by the distribution system and the ability to move power across the power line network. Further detailed substation specific analysis is not necessary to understand the role of substations in system operations and reliability.
- 32-41 The comment suggests that undergrounding the power lines in the Kingswood neighborhood should be considered due to EMF. Undergrounding of the power lines is discussed in Master Response 2. Undergrounding the upgraded line was considered in the Draft EIS/EIS/EIR, but eliminated from detailed evaluation as described on pages 3-77 and 3-78, due in large part to the inaccessibility of underground line during the winter months and the environmental effects resulting from excavation associated with undergrounding of power lines.

The comment also requests information about the correlation between power line size and EMF production, and the effect of tree removal related to electric field exposure. It is important to note that EMF exposure does not directly correlate solely to line capacity, but is a function of many interrelated factors, including line resistance and height (which have an inverse correlation with the presence of EMF at the ground level), and line load (which has a positive correlation). In fact, the upgraded line may reduce EMF generation compared to the existing line under certain circumstances. The EIS/EIS/EIR includes an analysis of EMF as a combined phenomenon. The text from page 4.10-25 of the Draft

EIS/EIS/EIR (which is excerpted by the commenter) is indicating that where the electric aspect of EMF would be blocked by physical objects, potential exposure to EMF was still evaluated due to the presence of magnetic fields. Additional analysis of tree removal as it relates to EMFs would not be meaningful. Please refer to Master Response 3 for more details.

- 32-42 The comment refers to Table ES-2 (Summary of Resource Topics/Impacts and Mitigation Measures), Impact 4.7-4 (Tree removal and loss of late seral/old growth forest). This impact summary concludes that, without mitigation, implementing the action alternatives would result in substantial tree removal, as defined by TRPA, and could result in the loss of late seral/old growth forest stands, which could interfere with attainment of late seral/old growth forest threshold standards. The comment states that “interfering with threshold attainment renders this EIR inadequate.” The commenter is referred to Mitigation Measure 4.7-4 (Conduct a Tree Survey; Avoid Late Seral/Old-Growth Forest; Compensate for Loss of Trees). As described in Section 5.8, Consequences for TRPA Environmental Threshold Carrying Capacities, of the EIS/EIS/EIR, with implementation of the proposed mitigation, construction of any of the action alternatives would not affect the attainment status of this Threshold Standard.

The comment requests that the Final EIS/EIS/EIR describe the methodology for determining the number of trees that would be removed, and provide a table showing a breakdown of how many trees would be removed in the Lake Tahoe Basin versus outside the Basin. The methodology for estimating tree removal is described in Section 4.3, Forestry, in the subsection titled “Methods and Assumptions” beginning on page 4.3-10 of the Final EIS/EIS/EIR. Table 4.3-2 in Section 4.3 summarizes the total number of trees to be removed under each project alternative (this table has been updated since preparation of the Draft EIS/EIS/EIR to incorporate tree removal associated with implementation of the APM SCE-7 line setback along SR 267). The following table provides an approximate estimate of tree removal within and outside the Lake Tahoe Basin. In this approximation, tree removal outside the Basin was based on estimated tree removal within Segments 650-3 through 650-7, 625-4, and 625-8 provided in Table ES-1 (a-c); tree removal inside the Lake Tahoe Basin was based on data for all other segments.

Approximate Tree Removal Within and Outside the Tahoe Basin		
Alternative	Total Number of Trees ≥1" dbh Within the Tahoe Basin	Total Number of Trees ≥1" dbh Outside the Tahoe Basin
Alternative 1 (PEA Alternative)	39,807	16,444
Alternative 2 (Modified Alternative)	37,834	16,677
Alternative 3 (Road Focused Alternative)	29,491	15,708
Alternative 3A (Road Focused Alternative with Double Circuit Option)	28,573	15,710
Alternative 4 (Proposed Alternative)	29,508	15,344
Alternative 5 (No Action/No Project Alternative)	N/A	N/A
Note: these values do not include stringing sites associated with removal of the existing 625 Line		

The comment includes a general statement that alternative approaches to capacity and reliability must be considered, with additional alternatives proposed. Please refer to Master Response 6, which relates to the purpose and need of the project and Master Response 5, which explains the evaluation of alternatives.

- 32-43 Forest Plan Standards and Guidelines required by LTBMU apply to federal forest lands within the Lake Tahoe Basin. A comparison of TRPA regulations with LTBMU Forest Plan Standards and Guidelines would not contribute to the analysis of impacts associated with the proposed project. Placer County uses the California Building Code 2010 effective January 1, 2011; there is not a separate Placer County Building code.

One purpose of listing the goals and policies in the EIS/EIS/EIR is to assess project consistency with those goals and policies, and to determine whether mitigation measures are necessary to bring the project into consistency. The goals and policies are implemented through each jurisdiction's codes and ordinances. The TRPA Code of Ordinances is described on pages 4.5-6 through 4.5-8 of the Draft EIS/EIS/EIR; Code Chapter and Section numbers are provided, as appropriate.

- 32-44 The commenter points out the potential applicability of TRPA Code 22.7.6 to the proposed project and requests the inclusion of a traffic analysis in the EIS/EIS/EIR, based on this code section, which requires such analysis where temporary activity includes the closure of a traffic lane or intersection of any state or federal highway for more than one hour.

The proposed project would typically not result in lane closures of more than one hour. As provided on page 4.10-39 of the Draft EIS/EIS/EIR, "[d]uring the removal of the existing conductor or stringing of the new conductor, temporary road closures may be required at I-80, SR 267, and SR 89. These roads would typically be closed for 10 to 15 minutes during the pull of each conductor, but I-80 could be closed for up to one hour for the stringing." However, to address the possibility that lane closures could last more than an hour under some circumstances, the referenced paragraph on page 4.12-3 of the Draft EIS/EIS/EIR has been modified to read as follows:

The TRPA Code of Ordinances is designed, among other things, to implement the Goals and Policies contained in the Regional Plan in a manner that attains and maintains the TRPA environmental threshold standards. The Code addresses many subjects, including required permits for development, projects subject to TRPA review and approval, findings required for approval of projects, allowable land use, density and land coverage, development standards, grading and construction practices, resource management, water quality, air quality and transportation, and other topics. Changes in daily vehicle trip ends (DVTE) as a result of a change in project operation are discussed in Section 65.2, Traffic and Air Quality Mitigation Program, of the Code of Ordinances. The Code does not address transportation or traffic related to construction activities. However, Section 22.7.6, Traffic Mitigation, does address temporary intersection and lane closures of more than one hour of state or federal highways, which could apply to SR 267 and SR 89 in the project area.

In addition, the last paragraph of APM TRAN-1 has been modified to read as follows:

The Traffic Control Plan measures will be monitored by the applicant for effectiveness and adjustments will be made as needed to the implementation of the Traffic Control Plan to further minimize travel disruptions and maintain safety. The Traffic Control Plan will meet the requirements of agencies with jurisdiction over the roadways being affected, such as Caltrans for I-80 and SR 267 effects, and TRPA if any actions trigger TRPA code 22.7.6 Traffic Mitigation requirements within the Lake Tahoe Basin.

The bracketed comment also includes a series of additional excerpts from the Draft EIS/EIS/EIR and TRPA's Goals and Policies. The lead agencies could not discern a comment from this submission and, subsequently, do not have a response to this excerpted text.

- 32-45 Easement/ROW acquisition negotiations are a business transaction between the landowner and utility and are not appropriate for inclusion in the environmental document because they would not generate a physical impact on the environment. Physical impacts of ROW acquisition are disclosed in the EIS/EIS/EIR.
- 32-46 The cumulative impact discussions in Chapter 4, Affected Environment, Environmental Consequences, and Mitigation Measures, includes an analysis of foreseeable/probable future projects that could interact on a cumulative basis with the proposed project. These projects are listed in Table 4.1-2 (see pages 4.1-5 to 4.1-9 of the Draft EIS/EIS/EIR). This list includes one future electrical line upgrade project, the Kingswood Alternate Feed Project, which is described as a five pole distribution tap off the existing 650 Line underbuild.
- 32-47 APMs are incorporated into the project description and, as noted in the comment, would be included as permit conditions and incorporated into the mitigation monitoring program for the project. Permitting agencies would require that the project is implemented in a manner consistent with the project described in the EIS/EIS/EIR, including APMs.
- 32-48 The comment indicates that the number of customers and potential for an electric utility rate increase should be considered in the Final EIS/EIS/EIR. Please see Master Response 4 for information on the potential for rate increase and the process through which the CPUC determines rate recovery of project costs.
- 32-49 The comment requests a table that identifies the dollar value associated with each mitigation measure that proposes payment of a fee. The information requested by the commenter is not available at this time. The fees required by many permitting agencies are not determined until such time as permits are requested, or until the project is underway or complete. For example, fees may be based on actual volume of activity, duration of activity, or extent of impact. Permits cannot be obtained until the project has undergone environmental review and an alternative is selected. In addition, information on mitigation fees would not alter the analysis or conclusions in the Draft EIS/EIS/EIR.
- 32-50 The comment requests amendment and recirculation of the Draft EIS/EIS/EIR to address 1) substation capacity assessment, 2) undergrounding feasibility for portions of the upgrade, 3) needs assessment by resort versus Tahoe Basin, and 4) TRPA and Placer County code compliance for specific issues.

It is unclear what it meant by “substation capacity assessment” in item 1; however, any technical assessment of the capacity of the existing substations in the North Lake Tahoe Transmission System is beyond the scope of the EIS/EIS/EIR. Regarding item 2, installing the upgraded lines underground is assessed in Section 3.5, Alternatives Considered but Eliminated from Detailed Evaluation (see pages 3-77 to 3-78 in the Draft EIS/EIS/EIR). Please also refer to responses to this topic above and Master Response 2. Item 3 indicates that the document should be amended to include an assessment of “need” for uses inside and outside of the Lake Tahoe Basin. This assessment is also outside the scope of the EIS/EIS/EIR. Please refer to Master Response 6 and the additional expert review regarding project need. Compliance with TRPA and Placer County code is analyzed in each resource section of Chapter 4, Affected Environment, Environmental Consequences, and Mitigation Measures, under the Regulatory Setting heading.

Recirculation of the Draft EIS/EIS/EIR is not required. The analysis and conclusions are supported by substantial evidence, and none of the conditions under CEQA requiring recirculation or supplement to the EIS under NEPA have been met.

- 32-51 Please see Master Response 4 for discussion of rate increases. The CPUC is the appropriate regulatory agency to determine the proper allotment of tariffs to recover all or some of the financial investment in a project that is determined necessary to provide reliable electrical service. This determination of rate

increase cannot happen until the project is operational; and, therefore, it is not possible to include this information in the environmental analysis. Also see Master Response 5 related to project alternatives.

- 32-52 The cited text is part of the description of concepts related to scenic resources analysis. These concepts are commonly used and accepted in the assessment of visual resources, and are routinely used by the CPUC in visual assessment of projects throughout California, as noted in the Draft EIS/EIS/EIR. In addition, analysis of scenic resources specific to the TRPA Code, scenic corridors, and environmental threshold carrying capacities, are provided in Section 4.4, Scenic Resources, and 5.8, Consequences for TRPA Environmental Threshold Carrying Capacities of the EIS/EIS/EIR.
- 32-53 The commenter's incorporation of several TRPA and Placer County documents into the comment is noted.

Letter
33
Response

Robert Erlich
January 7, 2014

- 33-1 The comment expresses concern that the draft environmental document did not adequately address socioeconomic and environmental justice issues related to the cost of the project, and notes that these issues were raised in scoping by the EPA relative to NEPA requirements, and by the Town of Truckee with regard to future rate increases to customers. The EPA scoping letter identifies the requirements for an EIS to address environmental justice, but makes no reference to project costs and potential rate increases as an environmental justice or socioeconomic issue. The Town of Truckee inquires in its scoping about how much of the cost of the proposed project would be passed on to electrical customers via future rate increases, but makes no reference to environmental justice or socioeconomic issues. The topic of rate increases potentially resulting in environmental justice impacts was not raised during the scoping process. All comments provided during scoping are included in Appendix A of the EIS/EIS/EIR.
- 33-2 Socioeconomics and environmental justice are discussed on pages 5-7 through 5-12 of the Draft EIS/EIS/EIR. Consistent with the federal requirements regarding the evaluation of environmental justice, the analysis complies with guidance provided in *Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (February 11, 1994) and the *Interagency Memorandum of Understanding on Environmental Justice* (August 4, 2011) and evaluates whether the proposed action would have a disproportionately high and adverse human health or environmental effects on minority and low-income populations. Specific to environmental justice, as summarized in the EIS/EIS/EIR, none of the action alternatives would cause a disproportionately high and adverse impact on minority or low-income populations for the following reasons:
- ▲ most of the project footprint occurs in non-urbanized areas with no residences or other development;
 - ▲ where the project footprint does pass through urbanized areas, it typically follows the alignment of the existing power line and would replace an existing facility with a similar facility; and
 - ▲ because of the linear nature of the project, no one area supports a disproportionate amount of project facilities and project effects would not be concentrated among any one racial, ethnic, or income group.

Potential increases in utility rates resulting from the proposed action are not evaluated as a potential environmental justice issue in the EIS/EIS/EIR because it is not yet known what percentage of project

costs may be recovered via utility rates, what population of ratepayers might be subject to rate increases, and how rate increases may be spread across different ratepayer categories (e.g., residential vs. commercial). To attempt to project potential rate increases at this time would require significant speculation regarding future actions of the CPUC. Cost recovery for investments in infrastructure made by a California utility is determined by the CPUC after project construction is complete. The CPUC will make decisions on the factors mentioned above, as well as consider other factors to determine whether a rate increase is permissible and the details of implementing any rate increase. The commenter is referred to Master Response 4, which addresses the potential for utility rate increases related to the proposed project. This master response provides information on the process through which the CPUC determines rate recovery of project costs.

If a rate increase is permitted by the CPUC as a cost recovery measure, it would be spread across thousands of ratepayers encompassing a variety of socioeconomic and ethnic groups. The population affected can be expected to have characteristics similar to those described in the socioeconomic and environmental justice regional setting provided on pages 5-9 through 5-11 of the Draft EIS/EIS/EIR. Because no one particular demographic group would be subject to rate increases different from another (other than potentially across ratepayer categories such as residential and commercial), there would not be a disproportionately high and adverse effect on minority or low-income populations.

The geographic scope of the socioeconomic and environmental justice analysis in the EIS/EIS/EIR is based on potential effects of the construction and operation of the proposed project and the nature of the data available from the US Census Bureau (e.g., the location, size, and configuration of census tracts). Altering or expanding the study area would not change the conclusion that no one particular demographic group would be subject to rate increases different from another; therefore, there would not be a disproportionately high and adverse effect on minority or low-income populations if a larger geographic area were considered.

Regarding socioeconomics, as indicated on page 5-8 of the Draft EIS/EIS/EIR, NEPA requires evaluation of social and economic impacts if they are related to effects on the natural or physical environment. As indicated in the Draft EIS/EIS/EIR (page 5-8), significant impacts to socioeconomic could occur if any of the action alternatives were to:

- ▲ displace substantial numbers of residences in the project area,
- ▲ substantially displace or disrupt businesses,
- ▲ create a substantial demand for additional housing that could not be sustained within the project area, or
- ▲ generate public service demands that exceed the providers' capabilities to accommodate them.

Implementation of the proposed project would not result in any of these effects. The same conclusions would apply to the issue of potential rate increases to recover project costs.

**Letter
34
Response****Steve Yonker
January 6, 2014**

- 34-1 Socioeconomics and environmental justice are discussed on pages 5-7 through 5-12 of the Draft EIS/EIS/EIR. The analysis evaluates social and economic impacts related to effects on the natural or physical environment. See Master Response 4 for additional information on utility rates and rate recovery.
- 34-2 The commenter's concerns about the potential for a rate increase and observations about the operation of CalPeco are noted. See Master Response 4 for additional information on utility rates and rate recovery.

**Letter
35
Response****Kingswood Estates Homeowners Association
Gerald Rucker, President
December 31, 2013**

- 35-1 The comment expresses objection to the project, indicates that other alternatives should be evaluated, and that the beneficiaries of the project should be identified.
- The lead agencies acknowledge the commenter's objection to the project. However, the commenter does not specify which other alternatives should be evaluated, or what issues they would be intended to address. As indicated in the EIS/EIS/EIR, it is intended that all CalPeco customers served by the North Lake Tahoe Transmission System benefit from the improved reliability that would result from upgrade of the 625 and 650 Lines.
- 35-2 As requested, the commenter has been added to the notification list for the project and EIS/EIS/EIR. The commenter will receive notification of the date on which the CalPeco 625 and 650 Electrical Line Upgrade Project will be presented to the TRPA Governing Board for decision and any other mailings or notices related to the project review and approval process.

**Letter
36
Response****Kathy Starbard
January 2, 2014**

- 36-1 The lead agencies acknowledge the timing of the comment period during the holiday season, but the 60-day public review period (November 8, 2013 to January 7, 2013) afforded adequate time for the public to review the Draft EIS/EIS/EIR and provide comments. Responses to the commenter's subsequent points are included below.
- 36-2 The commenter is referred to pages 3-26 through 3-27 and 4.10-25 through 4.10-27 of the Draft EIS/EIS/EIR, Appendix D to the EIS/EIS/EIR, and Master Response 3 related to EMF for a discussion of the potential health effects of overhead power lines. Corona discharge, which can cause power loss, noise, electromagnetic interference, light displays, ozone production, and damage to insulators, is not a recognized human health hazard. Corona discharge is evaluated in the EIS/EIS/EIR relative to the noise that can result. As discussed under Impact 4.14-3 (Alt. 1), although corona discharge can occur when the

air around power lines is ionized, power lines are designed to minimize corona discharge to avoid transmission inefficiencies.

- 36-3 The commenter is referred to Master Response 12 regarding property values.
- 36-4 Project effects on scenic views are analyzed in Section 4.4, Scenic Resources. The comment does not address specific conclusions or analyses in the Draft EIS/EIS/EIR, so no further response is possible.
- 36-5 Commenter is referred to Master Response 2 regarding undergrounding.

Letter
37
Response

Kenneth R. Amett, PLS
December 31, 2013

- 37-1 The commenter expresses a preference for an alignment along Speckled Avenue and north along SR 267 that is undergrounded and that bypasses Kingswood East Subdivision. This comment is noted. The comment then summarizes issues addressed in more detail in the remainder of the comment letter (which is a resubmittal of the commenter's April 23, 2012 scoping comment letter). Responses to these subsequent more detailed comments are provided below.
- 37-2 The commenter provides as an attachment to his December 31, 2013 e-mail, a letter submitted to the lead agencies during project scoping in April of 2012. Because these comments were prepared before the environmental document was released, they are not considered comments on the Draft EIS/EIS/EIR analysis. Responses are provided below.
- 37-3 The comment expresses concerns about disturbances of SEZs during project construction and maintenance of power poles, and expresses that project-related disturbances to SEZs would not be consistent with the goals and objectives of TRPA.

Avoiding, minimizing, and compensating for impacts to SEZs, and ensuring consistency with TRPA Threshold Standards and Goals and Policies for SEZ, were priorities in the project design and development of APMs. The locations of TRPA mapped SEZs are shown in Exhibit 4.7-8 of the Draft EIS/EIS/EIR and SEZs are described on pages 4.7-51 and 4.7-52 in the discussion of sensitive habitats and natural communities. Acreages of SEZ within the alignment of each action alternative are provided in Table 4.7-9. It is important to note that the values in Table 4.7-9 indicate the total amount of SEZ in each alignment, but do not take into account various avoidance and minimization measures that would be implemented, such as spanning the electrical conductor across SEZs. Therefore, Table 4.7-9 should be considered a maximum potential project impact, and likely an overestimate of the actual impact. As described in the discussion of Impact 4.7-3 in the Draft EIS/EIS/EIR, with implementation of applicable APMs and required mitigation measures that—in accordance with federal, state, and TRPA laws and regulations—avoid, minimize, and compensate for impacts to SEZs and other sensitive habitats would be reduced to a less than significant level. Project design features, APMs, and permit conditions that would minimize effects to SEZ areas include avoiding or minimizing soil disturbance within wet or sensitive areas, limiting surface disturbance to between May 1 and Oct 15, requiring implementation of temporary and permanent water quality BMPs, development and implementation of a SWPPP and TRPA-approved Dewatering Plan, restoration of soil function and organic matter following project implementation, and restoration of protective ground and vegetative cover (relevant agency permit conditions are discussed in detail in Section 4.5, Geology, Soils, Land Capability and Coverage; Section

4.6, Hydrology and Water Quality; and Section 4.7, Biological Resources). In addition to these protective measures, where impacts to SEZs within the Lake Tahoe Basin are unavoidable, CalPeco would mitigate all impacts within the boundaries of SEZs by restoring SEZ habitat in the surrounding area at a minimum ratio of 1.5:1, consistent with TRPA Code. Because protective measures are incorporated into the design of the action alternatives and permit conditions, and because coverage increases in SEZ areas would occur consistent with TRPA regulations, the action alternatives would not be expected to impede or degrade the ability to achieve attainment of TRPA's SEZ Threshold Standard.

- 37-4 The comment expresses a concern regarding increased wildfire risk associated with the proposed project. The potential for wildland fire as a result of project implementation is addressed in Section 4.10, Hazards and Hazardous Materials, in the EIS/EIS/EIR. Refer to the impact analysis associated with Impact 4.10-7 for each alternative, which concludes that the potential to expose people or structures to wildfires would be less than significant with implementation of any of the action alternatives. This conclusion is based in part on the fact that the upgraded line would comply with CPUC vegetation clearance guidance for the higher voltage, resulting in no net change in ignition risk for the new line (see page 4.10-40 of the Draft EIS/EIS/EIR), and that the higher voltage lines can accommodate higher load demand without generating excessive heat. In addition, for alternatives that place the line in more easily accessible locations, if a fire were to occur, the fire suppression response could be more rapid than a more remote location.
- 37-5 The commenter anticipates adverse impacts to property values due to the visual impacts of the 625 and 650 Electrical Line Upgrade Project. Visual impacts were evaluated in detail in Section 4.4, Scenic Resources, of the EIS/EIS/EIR. Although installation of the line would result in a change in visual conditions, with implementation of APMs and mitigation measures the Draft EIS/EIS/EIR concludes that there would not be a substantial degradation of the existing visual character or quality of a site or its surroundings, or the exceedance of any other significance criteria identified on pages 4.4-37 and 4.4-38. The line upgrade will require some additional tree trimming and removal. Design of the new line has taken potential changes in visual character into account and has minimized effects to the extent possible, while maintaining safety requirements and considering other potential environmental concerns. For additional information regarding the issue of potential effects on real estate values, the commenter is referred to Master Response 12.
- 37-6 The comment asks that potential health hazards associated with EMF be addressed in the EIS/EIS/EIR. This topic is discussed on pages 4.10-25 through 4.10-27 of the Draft EIS/EIS/EIR and further information is provided in Master Response 3.
- 37-7 The comment indicates that upgrade of the 60 kV power line abutting the Kingswood neighborhood would overburden the existing easement. The existing easement would be expanded to 40 feet for single line configurations (Alternative 1) and 65 feet for double-circuit configurations (Alternatives 2, 3, and 4). The expanded ROW would allow the vegetation management area to be widened to protect the power line from damage due to treefall. A widening of the easement for a 120 kV power line is required under CPUC GO 95 to ensure the ability to implement proper vegetation management. Because the easement would be expanded to meet CPUC standards, the easement would be considered adequate to accommodate the upgraded line. The existing easement east of the Kingswood neighborhood contains both the 625 and 650 Lines on two separate sets of poles for much of its length. For alternatives that would include a double-circuit in this area, the two sets of poles would be removed and replaced by a single set of poles holding both the 625 and 650 Lines.
- 37-8 Alternative alignments for the power line were developed subsequent to release of the NOP/NOI and are evaluated in the Draft EIS/EIS/EIR. The alternative suggested by the commenter was analyzed in an

overhead configuration in the EIS/EIS/EIR as Alternative 3A (Road Focused Alternative with Double Circuit Option). That the commenter expresses support for an undergrounded configuration is noted.

Letter
38
Response

Jay Shaw
January 1, 2014

38-1 All customers served by the North Lake Tahoe Transmission System would benefit from the proposed electrical line upgrade because reliability of the whole system would be improved. See Master Response 4 for information on the rate recovery process.

38-2 The commenter expresses concern about the scenic impacts of the proposed upgrade of the 625 Line and suggests that an alternative with fewer scenic effects should be developed.

The potential for upgrading the 625 Line in its current alignment was evaluated during initial project development, but later eliminated from consideration. This evaluation is summarized in Section 3.5, Alternatives Considered by Eliminated from Detailed Evaluation (see page 3-73).

All of the action alternatives evaluated in the EIS/EIS/EIR are in closer proximity to the Fiberboard Freeway than the existing alignment. These alternatives limit the impact on forested lands and permit the abandonment of the existing 625 Line ROW. These alignments have areas where environmental effects are less (such as reduced disturbance of habitat on USFS land from maintaining ROW and access) and where they may be greater (because the line would be more visible to those traveling on the Fiberboard Freeway). As summarized in Chapter 5, Section 5.7, Environmentally Preferable Alternative/Environmentally Superior Alternative, of the EIS/EIS/EIR, there would not be significant impacts to scenic resources under any of the four action alternatives evaluated. All potential environmental impacts of the action alternatives (including those to scenic resources) are evaluated in Chapter 4, Affected Environment, Environmental Consequences, and Mitigation Measures, of the EIS/EIS/EIR.

38-3 The commenter indicates a preference for upgrading the power lines in their current ROW. All of the action alternatives primarily propose use of the existing ROW for the 650 Line. Please refer to Master Response 13 for detailed information on the reasoning for locating the 625 Line Closer to the Fiberboard Freeway. Also see Master Response 5 for further information on various alternatives considered as part of the project evaluation and Master Response 6 for information on the need to provide greater access to the 625 Line for inspections, maintenance, and repairs. As described in Chapter 3, Project Alternatives, of the EIS/EIS/EIR, upgrading the 625 Line in its current location would require development of numerous miles of access ways to provide adequate access to this route, which would generate environmental effects greater than those of the action alternatives.

Letter
39
Response

Greg Gilmore
December 10, 2013

- 39-1 The comment does not specify which substation is being referenced. However, both the Tahoe City Substation and the Kings Beach Substation (which are both in the Lake Tahoe Basin) are necessary components of the North Lake Tahoe Transmission System and cannot be replaced with substations in other locations.
- 39-2 The commenter suggests that the diesel generators be removed from the Lake Tahoe Basin.
- Modification or removal of the Kings Beach Diesel Generators is not a component of the project under evaluation. However, reducing the current overall dependence on the Kings Beach Diesel Generating Station is a stated objective of the 625 and 650 Electrical Line Upgrade Project.
- 39-3 The commenter suggests that all pole footings be covered with natural rock, presumably to conceal the concrete foundations. This suggestion is acknowledged. However, the Draft EIS/EIS/EIR did not identify any significant scenic effects that would be reduced through the covering of concrete footings with natural rock. Additionally, the pole referenced by the commenter (#224) is located on land owned by the applicant (CalPeco), not private property, and is not in a location widely viewed by the public.

Letter
40
Response

Laurie Stevenson
December 31, 2013

- 40-1 The lead agencies acknowledge the commenter's objection to the project.
- The commenter suggests that the project would negatively affect land along Mt. Watson Road (the Fiberboard Freeway) and associated views, damage streams, remove trees, and increase use of area highways. These issues are addressed in the EIS/EIS/EIR (see Section 4.4, Scenic Resources; Section 4.6, Hydrology and Water Quality; Section 4.3, Forestry Resources; and Section 4.12, Traffic and Transportation).
- 40-2 See Master Response 12 related to property values in response to the issue of market value of homes in Kingswood and Master Response 3 related to EMF in response to potential for power line health issues.
- 40-3 The project is proposed to provide reliable electrical service to customers throughout the North Lake Tahoe Transmission System and is not designed to serve any one particular customer group or geographic area within the system service area. More information on project need can be found in Master Response 6.
- Undergrounding in the vicinity of the Kingswood neighborhood is not proposed as a component of the 625 and 650 Electrical Line Upgrade Project. Refer to Master Response 2 for more information on undergrounding.

Letter
41
Response

Northstar California Resort
Jen Mader, CPESC, AICP, Environmental Planner
January 7, 2014

- 41-1 The project applicant has been, and will continue to coordinate with Northstar regarding the proposed project and the use of, and access to Northstar property. These discussions will address right-of-entry agreements and coordination of project activities with resort operations.
- 41-2 The commenter references the cumulative impacts discussion in Section 4.8, Recreation. As indicated in this discussion, the applicant is coordinating with Northstar to address any potential conflicts between the 650 Line improvements and the resort's planned projects. The upgraded Northstar Fold would follow the existing power line alignment and connect to the existing Northstar Substation (see Exhibits 3-4a through 3.4-d, and Map #9 for each alternative in Appendix B, which identify the existing 650 Line and the proposed 650 Line in the same alignment through Northstar property). Because the proposed Northstar Fold would follow the same alignment where poles currently exist, it is assumed that the existing poles could also conflict with the proposed Castle Peak Gondola and that the request for undergrounding of the line would be provided to CalPeco whether or not the proposed project was being considered. The applicant will continue to collaborate with Northstar regarding the coordination of resort development plans and existing and proposed electrical infrastructure.

Regarding the planned employee parking lot and existing horse stables, these uses are generally considered compatible with power line alignments. The existing Northstar Tap runs adjacent to the horse stables and the upgraded Northstar Fold facilities would follow the same alignment. The applicant will continue to collaborate with Northstar regarding the coordination of resort operations, resort development plans, and existing and proposed electrical infrastructure.

- 41-3 As stated above, the applicant intends to use the existing power line easement for the Northstar Tap, although the ROW would be increased to meet CPUC requirements for 120 kV lines. Grading of the existing access way may be required in any locations in which slopes exceed 20 percent.

Regarding APM BIO-36, a restoration plan will be developed prior to construction to address final clean-up, stabilization, and revegetation procedures for areas disturbed by the project. The plan will include long-term erosion and sediment control measures, slope stabilization, and monitoring procedures. The applicant will coordinate with the land owner to determine the appropriate seed mix or tree planting plan. As indicated in Mitigation Measure 4.7-5, the applicant will use locally-collected, native seed sources for revegetation when possible.

Letter
42
Response

Frank Tomasello
January 3, 2014

- 42-1 The comment expresses objection to the project, and suggests providing power to Northstar without modifying the power lines in Kings Beach. However, providing power solely to Northstar is not the purpose of the proposed 625 and 650 Electrical Line Upgrade Project, and doing so would not meet the established objectives of the upgrade project, many of which address the entirety of the loop transmission system (see Section 2.2.2, Project Objectives, on page 2-5 of the Draft EIS/EIS/EIR).

The lead agencies acknowledge the commenter's objection to the project.

**Letter
43
Response**

**D. Gordon Leach
January 3, 2014**

- 43-1 The comment expresses objection to the project, and agreement with the position of Friends of Lake Tahoe, which provided written comments on the Draft EIS/EIS/EIR (see Letter 30 and responses thereto). The lead agencies acknowledge the commenter's objection to the project.

**Letter
44
Response**

**David Nestle and Jeanne Nestle
January 4, 2014**

- 44-1 The commenter's objection to the project is noted. Specifically, the commenter is concerned with the size of the proposed power poles. The larger steel poles would be approximately 7 to 12 feet taller than the existing wooden poles, which are between 48 and 80 feet above the ground surface (see page 3-26 of the Draft EIS/EIS/EIR). Therefore, a 90 foot tall pole would typically only be installed if it was replacing an existing 78 to 80 foot tall pole. Poles of this height are atypical; new poles would typically be in the 55 to 70 foot height range. The proposed project would increase the reliability of the North Lake Tahoe Transmission System, thereby benefiting all customers served by the system and not just one customer class or geographic area.
- 44-2 The commenter includes a copy of a bill insert with the following statement highlighted: "Lots of snow, accessible roads for tourists, and just the usual increase in load all contributed to setting a new peak." The commenter questions this information as justification for the project and indicates that residential energy usage in the Lake Tahoe Basin has been stable or declined in recent history due to various energy conservation measures. Multiple factors influence the need for the proposed project, including energy demand. See Master Response 6 for further discussion of project need.
- 44-3 Electric rate increases are regulated by the CPUC. This process is outside the purview of TRPA. For information on the rate recovery process, the commenter is referred to Master Response 4. As stated above, for information on electrical demand and project need, see Master Response 6.
- 44-4 The commenter's opposition to the project is noted. See also responses to Comments 44-1 through 44-3, above.

**Letter
45
Response**

**Alan Roskos
January 6, 2014**

- 45-1 The comment expresses objection to the project and desire to protect certain resources. The lead agencies acknowledge the commenter's objection to expansion of power lines in the Lake Tahoe Basin.

**Letter
46
Response**

**Harry and Sandi King
January 4, 2014**

- 46-1 The comment expresses objection to the project. The commenter identifies the presence of environmental resources in the project area (scenic quality, sensitive species, and streams and wetlands) and the need to protect them.

The 625 and 650 Electrical Line Upgrade Project proposes replacing 60 kV power lines with 120 kV power lines. The project does not include any new or expanded development. Cumulative impacts, which consider the combined effects of the project with closely related past, present, and reasonably foreseeable future projects are addressed in each technical section of Chapter 4, Affected Environment, Environmental Consequences, and Mitigation Measures, of the EIS/EIS/EIR.

The lead agencies acknowledge the commenter's objection to the project.

**Letter
47
Response**

**EN2 Resources, Inc.
Rick A. Lind
January 7, 2014**

- 47-1 The commenter's support for approval of the 625 and 650 Electrical Line Upgrade Project is noted.

The commenter expresses that the proposed project would bring the North Lake Tahoe Transmission System into compliance with current regulatory standards and improve the quality and reliability of electric service in the area (which can be beneficial to area businesses, residents, and the environment), while minimizing environmental effects by using existing utility and other public use corridors.

**Letter
48
Response**

**Casey Beyer
December 20, 2013**

- 48-1 The applicant has reviewed the information provided by the commenter on the battery energy storage system. The commenter notes that more sustainable energy options could potentially replace the diesel generation systems in the project.

Please note, that while the project proposes the upgrade of switching equipment at several substations, these substations are not themselves diesel generators. The Kings Beach Diesel Generation Station, which is used in a limited, periodic fashion to support heavy electrical loads (typically in emergency situations), would not be modified by the proposed project (although reduced dependence on the Kings Beach Diesel Generation Station is an objective of the CalPeco 625 and 650 Electrical Line Upgrade Project).

Because modification of the diesel backup generators in King Beach is outside the scope of the project under evaluation, no changes to the EIS/EIS/EIR have been made in response to this comment.

**Letter
49
Response**

**Gail Taylor
December 23, 2013**

- 49-1 The comment erroneously suggests that CalPeco has requested a 30 percent rate increase from the CPUC. Cost recovery for investments in infrastructure made by a utility is determined by the CPUC after project construction. The commenter is referred to Master Response 4 addressing the potential for utility rate increases related to the proposed project, and for information on the process through which CPUC determines recovery of project costs through rates.

**Letter
50
Response**

**Jerry and Julianna Joldersma
December 23, 2013**

- 50-1 The comment erroneously suggests that CalPeco plans to raise electrical rates by 20 to 30 percent. Cost recovery for investments in infrastructure made by a utility is determined by the CPUC after project construction. The commenter is referred to Master Response 4 addressing the potential for utility rate increases related to the proposed project, and for information on the process through which CPUC determines rate recovery of project costs.

**Letter
51
Response**

**Jerry Joldersma
December 26, 2013**

- 51-1 The comment erroneously suggests that CalPeco proposes to raise electrical rates by 30 percent. Cost recovery for investments in infrastructure made by a utility is determined by the CPUC after project construction. The commenter is referred to Master Response 4 for more detail on this issue.

**Letter
52
Response**

**Karen and Rick Dustman
December 28, 2013**

- 52-1 The commenter transmitted to Mr. Ken Wittman of Liberty Utilities (CalPeco) LLC a courtesy copy of a letter sent to Mr. Mike Florio of the CPUC on December 26, 2013. These comments generally express opposition to the project and the anticipated rate increase that may be associated with it. Because this communication was received during the comment period for the Draft EIS/EIS/EIR, the email and attached letter were forwarded to TRPA. The following discussion provides responses to the specific comments in the letter transmitted to CPUC.
- 52-2 The comment expresses objection to the project. This is acknowledged by the lead agencies.

- 52-3 The commenter notes that the base of rate payers that could potentially pay for the project through the CPUC's rate recovery process could be smaller than the base of rate payers Sierra Pacific Power had at the time the project was originally proposed. Please see Master Response 4 for information on the CPUC rate recovery process.
- 52-4 The comment expresses the opinion that the existing power lines adequately serve the current demand in the Tahoe Basin. The commenter is referred to Master Response 6 for information on project need.
- The commenter incorrectly asserts that rates will increase by 20 to 30 percent to pay for the proposed project. The commenter is referred to Master Response 4 for further information about the potential for an increase in utility rates as a result of project implementation.
- 52-5 The comment cites tree removal and potential growth as areas of concern. See Master Response 7 for information on the potential for the project to induce growth. The project correctly identifies the estimated number of trees removed as a result of implementation of Alternative 4 (Proposed Alternative). However, as indicated in multiple locations in Section 4.3, Forestry Resources, of the EIS/EIS/EIR (for example, Table 4.3-2) this number includes all trees equal to or greater than 1-inch dbh. The available forest resource data sets used for the impact analysis, which cover the whole project area and were provided by the USFS, provided tree numbers based on trees greater than or equal to 1-inch dbh. Because the source data used these parameters, the impact analysis also expresses tree removal using these parameters. Therefore, although Table 4.3-2 in the Draft EIS/EIS/EIR identifies the removal of approximately 47,000 trees for Alternative 4 (Proposed Alternative) (the numbers in this table have been updated in the Final EIS/EIS/EIR and estimated tree removal for Alternative 4 (Proposed Alternative) is now approximately 48,700 trees when incorporating the APM SCE-7 line setback), this number incorporates a substantial number of very small trees because of the nature of the available data set and should be interpreted accordingly. As identified on page 4.3-11 of the Draft EIS/EIS/EIR, although the datasets available for the evaluation of forest resource impacts may not be ideal, because a consistent methodology is used for all alternatives it allows for a comparative evaluation of the alternatives.
- 52-6 Relocation of the Tahoe City Substation is not proposed as a component of the 625 and 650 Electrical Line Upgrade Project. However, the analysis in the EIS/EIS/EIR in no way precludes potential future relocation of the substation through a different project. The commenter is referred to Master Response 1 for more information on the potential relocation of the Tahoe City Substation.
- 52-7 The comment expresses that a disproportionate financial burden would be imposed on rate payers that are not responsible for demand and that current residential rate payers should be relieved of any rate increases related to the project. See Master Response 4 related to the potential for rate increases.

Letter
53
Response

Jane Starratt
December 27, 2013

- 53-1 The comment erroneously suggests that CalPeco plans to raise electrical rates by 30 percent. Cost recovery for investments in infrastructure made by a utility is determined by the CPUC after project construction. The commenter is referred to Master Response 4 addressing the potential for utility rate increases related to the proposed project. This master response provides information on the process

through which CPUC determines rate recovery of project costs, including the geographic scope of rate recovery.

Letter
54
Response

Teresa Grabham
January 7, 2014

- 54-1 The comment erroneously suggests that CalPeco plans to substantially raise electrical rates. Cost recovery for investments in infrastructure made by a utility is determined by the CPUC after project construction. The commenter is referred to Master Response 4 addressing the potential for utility rate increases related to the proposed project, and for information on the process through which CPUC determines rate recovery of project costs.

Item
55
Response

TRPA Advisory Planning Commission Meeting
December 4, 2013

The following summarizes comments relevant to the Draft EIS/EIS/EIR provided during the December 4, 2013 TRPA APC meeting and provides responses to those comments. The full transcript of the comment and question and answer portion of the meeting is provided in Appendix P1b.

Steve Buelna, APC Member

Summarized Comment

The comment pertains to community plan consistency (specifically, the potential opportunity for relocation of the Tahoe City Substation and the potential for undergrounding utilities) and the potential for conflict with recreational use of the 64 Acre Recreation Site.

What kinds of impacts would occur if the project does not go forward?

Response

Upgrade of the existing Tahoe City Substation is consistent with the goals and objectives of the Tahoe City Community Plan. The substation is located in Special Area 3 (Recreation Area) of the Tahoe City Community Plan. Public Utility Centers, which include substations, are a “special use” in Special Area 3 of the Tahoe City Community Plan and are subject to TRPA special use findings for any expansion or modification pursuant to Section 21.2.2 of the TRPA Code.

Related to the requirements for undergrounding of the power line, 1994 Tahoe City Community Plan Policy 5A states “TRPA may waive this requirement if the project is part of an undergrounding program or the undergrounding has been determined by TRPA not to be necessary to meet the scenic targets of this Plan.” The removal, relocation, and screening requirements for overhead utilities are no longer mandatory, since SR 89 in Tahoe City is now in compliance with the TRPA scenic threshold. For more information on relocation of the Tahoe City Substation and the evaluation of undergrounding portions of the power lines, the commenter is referred to Master Response 1 and Master Response 2, respectively.

For a discussion of the potential for conflict with recreational use of the 64 Acre Recreation Site, commenter is referred to the analysis in Section 4.8, Recreation, of the EIS/EIS/EIR. The conclusion, supported by evidence in the impact analysis, is that effects on the 64 Acre Recreation Site would not be significant. The effects of the project not going forward are evaluated as Alternative 5 (No Action Alternative) in the EIS/EIS/EIR. The commenter is referred to the analysis of impacts associated with Alternative 5 (No Action Alternative) for each of the resource areas evaluated in Chapter 4, Affected Environment, Environmental Consequences, and Mitigation Measures.

Ellie Waller, Friends of Tahoe Vista

Summarized Comment

The project is potentially growth-inducing, and cumulative impacts should be addressed. Specific areas of concern include scenic (the change in visual character that would result from larger poles near roadways), noise (the desire for public noticing of blasting), and biological resources (the period of time required for the abandoned 625 Line ROW to provide goshawk habitat). The proposed PAS amendment should be evaluated as part of the environmental review process.

Response

The commenter provided an oral summary of written comments provided to the APC as a separate submission (Comment Letter 31). Response to the comment on growth-inducing and cumulative effects is provided in response to Comment 31-3. Responses to concerns about scenic, noise, and biology impacts are addressed in responses to Comments 31-6, 31-7, and 31-8, respectively. Response to the commenter's concern about the adoption of the PAS amendment is provided in response to Comment 31-10.

Scott Zumwalt, owner of the Bridgetender Tavern and Grill

Summarized Comment

If there is going to be a revamping of the Tahoe City Substation, this would probably be the time to look at relocation.

Response

The commenter is referred to Master Response 1 addressing the Tahoe City Substation.

Dave McClure, North Tahoe Citizens Action Alliance

Summarized Comment

Is the project economically feasible? All of the alternatives evaluated in detail are loop systems. There was a predisposition to this approach and there was no effort to look at combining possible alternatives into a scheme that might end up being a legitimate alternative. Single contingency reliability needs to be thoroughly analyzed on all segments of the proposed project. Along SR 267, there is an opportunity to move the power lines over about 150 feet so there is a visual buffer provided by the trees.

Response

The comments provided are the same, or very similar to those later provided in writing by Mr. McClure as president of the NTCAA. Please see responses to Comment Letter 29. Economic feasibility of the applicant-proposed project is not an environmental effect suitable for analysis under NEPA, CEQA, or the portions of the TRPA code relevant to preparation of an EIS. Economic feasibility is only included in environmental analysis as a means to screen alternatives considered for detailed evaluation.

For discussion of alternatives development, screening of alternatives for detailed evaluation, and whether individual alternatives eliminated from detailed evaluation could be combined into a feasible alternative, the commenter is referred to Master Response 5. For discussion of the importance of the "looped" system design,

see Master Response 11. The opportunity to set the power lines back along SR 267 is analyzed in the Draft EIS/EIS/EIR (see Section 4.4, Scenic Resources). Additional refinement of this opportunity has been conducted and is included in the foreword to this Final EIS/EIS/EIR.

Laurel Ames, Tahoe Area Sierra Club

Summarized Comment

The Tahoe Area Sierra Club is interested in the growth inducing and cumulative impacts of the project.

Response

The Tahoe Area Sierra Club sent a separate written comment letter on the Draft EIS/EIS/EIR that mirrored oral comments provided at the APC meeting. Responses to the commenter's concerns about growth-inducing and cumulative impacts are included in responses to Comments 26-3 and 26-4, respectively.

Peter Maurer, APC Member

Summarized Comment

Can the decision of one lead agency force the decision of another?

Cost seems to be a reason for rejecting alternatives; it would be helpful to see a comparison of costs.

The project is important and engineering utilities is complex. However, I think we have to be very careful to see how we can minimize impacts to resources in the Basin.

Moving the power line out of the SR 267 ROW may create a nicer view from the road, but a parallel swath of cleared path might be created. That should be considered.

Response

As indicated by John Marshall at the APC meeting, the lead agencies do not supersede one another. Once the Final EIS/EIS/EIR is released, each agency will independently review, accept or certify the document, and issue a ruling.

Cost is not the only reason for elimination of any potential project alternatives from detailed evaluation. Please see Section 3.5, Alternatives Considered but Eliminated from Detailed Evaluation, in the EIS/EIS/EIR for information on the criteria used to evaluate alternatives. Although cost is considered in the evaluation of some potential project alternatives, the primary criteria used to determine whether an alternative was eliminated from detailed evaluation are: 1) consistency with project purpose and needs/objectives; 2) legal, regulatory, and technical feasibility; and 3) potential for the alternative to eliminate significant environmental effects. A cost comparison of alternatives was not available and is not appropriate for inclusion in the EIS/EIS/EIR. This information would not have a meaningful effect on the conclusions regarding alternatives that were or were not carried forward for detailed evaluation in the document.

The EIS/EIS/EIR is required to evaluate the environmental effects of the entirety of the proposed action, with the obligation to mitigate significant environmental effects, regardless of where they may occur. It is not within the purview of the environmental review document to give special consideration to one particular geographic area or local jurisdiction, other than where laws or regulations in that area/jurisdiction may influence significance criteria, mitigation requirements, or other elements of the proposed action or environmental analysis. Where the TRPA Code or other regulations specific to the Lake Tahoe Basin provide for increased protection for resources in Basin, these are reflected in the EIS/EIS/EIR.

The implications of locating the power line outside of the SR 267 ROW from Brockway Summit to the Kings Beach Substation are included Draft EIS/EIS/EIR (see pages 4.4-75 through 4.4-81). Additional refinement of this opportunity has been conducted and is included in the foreword to this Final EIS/EIS/EIR.

Charlie Donohue, APC Chairman

Summarized Comment

How close has the applicant come to reaching the 720-hour operation limit for the diesel generators in Kings Beach?

With regard to the State of California's electric reliability regulations, did the commission identify the need for the project, or is the applicant is being proactive?

What are the accessibility restrictions on the existing 625 Line?

Response

The commenter's questions were answered by Mike Smart during the APC meeting. To summarize, the Kings Beach Diesel Generators have reached their operating limit during some years, but do not reach the operation limit every year. The utility is being proactive in proposing the project, in the sense that they have not been reprimanded by the CPUC for not providing reliable electricity service; and, because the existing 625 Line is setback from the Fiberboard Freeway and other roadways, it is difficult to access for inspections, maintenance, and repairs.

Item
56
Response

TRPA Governing Board Meeting
December 18, 2013

The following summarizes comments relevant to the Draft EIS/EIS/EIR provided during the December 18, 2013 TRPA Governing Board meeting and provides responses to those comments. The full transcript of the comment and question and answer portion of the meeting is provided in Appendix P1b.

Public Comments

Marguerite Sprague

Summarized Comment

We appreciate that there is serious consideration being given to moving the Tahoe City Substation. It will better serve our community, our Basin, and the Lake. The Tahoe City Planning Team would be happy to help in finding alternative locations.

We encourage thoughtful coordination of the CalPeco project with other projects for which planning is underway, including the SR 89/Fanny Bridge project, and the community planning efforts.

The prudent use of strong substances in substations is very important, especially in proximity to Lake Tahoe and the Truckee River.

Response

The commenter's expressed belief that moving the Tahoe City Substation would benefit the community and willingness to help identify an alternative location are noted, as is the commenter's encouragement that the

applicant coordinate with other projects and community planning efforts. Relocating the Tahoe City substation is not proposed as part of this project. Additional information on the Tahoe City Substation is provided in Master Response 1. The applicant is coordinating with various community groups and members of project teams for other projects in the Tahoe City area.

The commenter is referred to response to Comment 17-1 for information on potentially hazardous substances used at the substation.

Steve Teshara

Summarized Comment

The project is very important to upgrade the electrical system. It's important to have reliable and safe power provided in an efficient and environmentally compatible way.

The Tahoe City Substation really needs to be moved, both in the context of compatibility with the 1994 Tahoe City Community Plan, and with the future Area Plan.

The commenter respectfully suggests that the environmental document is inadequate with regard to analyzing the issues of the impacts of the Tahoe City Substation in its existing location. There are alternative sites available, and with the project phasing as proposed, there is time to look at alternative locations.

Response

Please see Master Response 1 regarding the potential relocation of the Tahoe City Substation and the relationship of this proposal to the EIS/EIS/EIR and compatibility with the 1994 Tahoe City Area Plan.

A primary purpose of the EIS/EIS/EIR is to assess the changes to the natural and physical environment resulting from the proposed project/action compared to existing, or baseline, conditions. Rebuilding the Tahoe City Substation in place would not result in significant, unavoidable environmental effects as compared to baseline conditions. These facts notwithstanding, the applicant—in response to public and agency comments—has engaged with Placer County and other interested parties regarding a potential future relocation of the Tahoe City Substation. Any relocation of the Tahoe City Substation would be considered as a separate project from the 625 and 650 Electrical Line Upgrade Project currently under evaluation.

Dave McClure, North Tahoe Citizens Action Alliance

Summarized Comment

Since the 625 Line was constructed in 1972, growth in the Tahoe Basin and load demand on the line has been minimal. Substantial growth has occurred outside the Basin, however, with development of Lahontan, Martis Camp, and Northstar. Sierra Pacific Industries and Squaw Valley are also launching new projects. The purpose of the looped project is to wheel power to serve growth outside the Basin. Upgrade of the 625 Line is not necessary today and may not ever be necessary.

There is no question that portions of the system are having capacity issues, but those are outside of the Basin. There are no major reliability problems.

The action alternatives are all the same, based on the concept of a looped system. Other alternatives, such as a peaking power plant for Northstar, or running a 120 kV line to the Northstar Substation are rejected because they're not a loop.

Response

The commenter is referred to Master Response 5 for information on project alternatives, and Master Response 6 for information on the need for the project. The reasons why a “looped” system would be necessary to meet the project’s objectives are addressed in Master Response 11.

Ellie Waller, Friends of Tahoe Vista**Summarized Comment**

Basin ratepayers could see rate increases of 20 to 30 percent, yet the upgrade will serve Vail Corporation (Northstar), KSL (Squaw Valley), and Homewood.

The project is not required by the CPUC.

The EIR must include a cost breakdown of each phase of the proposed alternative; needs assessments for Northstar, Squaw Valley, and Homewood; and a separate needs assessment for the portion of the service area within the Tahoe Basin.

SR 267 is a scenic route and a desirable outcome would be to remove, underground, or screen with trees to enhance that threshold.

Existing and proposed poles should be depicted on the same chart for comparison of diameter, height, number of lines, and the like.

The EIR should identify whether CalPeco would have to pay the USFS for wear and tear of the Fiberboard Freeway.

The number of construction trips anticipated on the Fiberboard Freeway, and all USFS requirements should be identified.

Proposed public notification during construction is insufficient relative to helicopter flight paths and blasting operations. At a minimum, CalPeco should post construction activities on its website, in mailers, and in the newspapers.

The EIR should identify which regulations (TRPA or Placer County) apply to days/hours of construction. CNEL levels should be identified for each affected Tahoe Basin community.

The EIR needs to explain the impacts of disturbing 70 acres on all special [status] species.

Unavoidable, unmitigable impacts to northern goshawk are not acceptable.

The project will result in significant impacts to ratepayers.

Response

The comments provided are the same, or very similar to those later provided in writing by Ellie Waller representing Friends of Tahoe Vista. Please see responses to Comment Letters 31 and 32. Brief summaries of responses to several issues are provided below.

The comment incorrectly suggests that Liberty Utilities proposes to raise electrical rates by 20 to 30 percent. Cost recovery for investments in infrastructure made by a utility is determined by the CPUC after project construction. The commenter is referred to Master Response 4 for more detail on this issue.

The CPUC requires that the applicant provide reliable electrical service to all customers. The 625 and 650 Electrical Upgrade Project is required to meet this obligation.

With regard to the requested cost breakdowns and needs assessments, please see Master Response 6.

Opportunities to remove, underground, or screen the power lines along SR 267 south of Brockway Summit are analyzed in the EIS/EIS/EIR.

The request for a chart comparing existing and proposed power pole characteristics is addressed in response to Comment 32-11.

Information on who owns the Fiberboard Freeway and cost sharing of road maintenance is provided in response to Comment 31-11.

Response to the commenter's noise-related concerns is provided in response to Comment 31-7.

The EIS/EIS/EIR assesses the impacts of ground disturbance on sensitive species, including northern goshawk, associated with the project.

Ann Nichols, North Tahoe Preservation Alliance

Summarized Comment

The project will make it easier to maintain the power poles by virtue of access, but is it a worthwhile tradeoff in terms of recreation, biological resources impacts, creation of 7.5 miles of new ROW in the Basin, and tree removal?

Other alternatives should be analyzed, including upgrade of the 625 Line in its present location so as to have fewer impacts on recreation and scenic; constructing a loop in the Northstar area; and undergrounding the portion through the residential area of Kingswood East.

Response

The commenter is referred to Master Response 13 regarding the need for relocation of the 625 Line, Master Response 5 regarding the proposed loop system, and Master Response 2 for information about the feasibility of undergrounding.

Laurel Ames, Tahoe Area Sierra Club

Summarized Comment

The EIR needs to disclose growth-inducing impacts.

Peak energy use is in December and January, and is linked to snowmaking and increased water use. Do the people in the Tahoe Basin need more energy for snowmaking outside the Basin?

Response

The commenter is referred to Master Response 7 for information on growth inducing impacts and Master Response 6 for additional information on project need.

Steve Buelna, Placer County

Summarized Comment

Placer County has received several letters from area business groups over concerns about the Tahoe City Substation. The concern is about consistency with the existing Community Plan. Also, Placer County is updating its Area Plans, and there is concern about the location of the Tahoe City Substation within the Town Center, as opposed to within an industrial area. The analysis should consider the cost of relocation versus upgrading the substation in place.

Response

Please see response to Comment 10-2 regarding consistency of the Tahoe City upgrade with the Tahoe City Community Plan, and Master Response 1 addressing the suggested relocation of the Tahoe City Substation as a future, unrelated project.

Governing Board Member Comments***Elizabeth Carmel, Governing Board Member*****Summarized Comment**

What is our authority with respect to this project?

Response

As indicated by John Marshall at the Governing Board meeting, the board will be voting on whether to approve construction of the portion of the proposed project that is in the Lake Tahoe Basin based on the analysis in the EIS/EIS/EIR.

Clem Shute, Governing Board Member**Summarized Comment**

There is no reference to growth-inducing impacts in the Summary. Where would additional growth supplied by the project occur?

Response

Growth-inducing impacts are addressed in Chapter 5, Other NEPA-, TRPA-, and CEQA-Mandated Sections, of the EIS/EIS/EIR. See also Master Response 7 for more information on growth that could be accommodated by the project.

Norma Santiago, Governing Board Member**Summarized Comment**

There is substantial public testimony regarding the relocation of the Tahoe City Substation. How do we address this?

Response

See Master Response 1 for information on the suggested relocation of the Tahoe City Substation.

Larry Sevison, Governing Board Member**Summarized Comment**

One of the goals of the Tahoe City planning team is to improve the image of Tahoe City. Relocation of the Tahoe City substation should be considered.

Response

See Master Response 1 for information on the suggested relocation of the Tahoe City Substation.

Casey Beyer, Governing Board Vice Chair**Summarized Comment**

The question from the audience is about growth inducement. How much energy load is the project projected to accommodate? Growth is limited within the Basin, so the growth would happen outside the Basin, which affects the overall area.

The public is concerned about Basin customers paying for an electrical upgrade that will serve development outside the Basin.

Has the utility looked at something else besides diesel for back-up generation?

Response

See Master Response 7 for information on growth inducement and Master Response 4 for information on the potential for rate increase.

Modifications to the diesel generators at Kings Beach are not proposed as part of the 625 and 650 Electrical Upgrade Project, and because the proposed project concerns transmission of power and not its generation, consideration of alternative power sources is not within the scope of the EIS/EIS/EIR. However, evaluation of various alternatives suggested in comments received on the Draft EIS/EIS/EIR is provided in Master Response 5.

Mark Bruce, Governing Board Member

Summarized Comment

Do we know if the demand was from within the Basin or outside the Basin on the peak day of December 30, 2012?

Which alternatives have unmitigable adverse effects and which are approvable? Which alternatives work with respect to biological resources? With respect to air quality?

Response

During the peak demand period on December 30, 2012, demand was from both inside and outside the Lake Tahoe Basin. The North Lake Tahoe Transmission System provided electricity to customers both inside and outside the Basin and the entire customer base generates demand. All of the action alternatives would result in significant and unavoidable impacts to heritage, cultural, and paleontological resources and air quality. The cultural impacts would be related to the potential to damage to resources that have not been identified (i.e., buried artifacts that cannot be identified through surface surveys). The air quality impacts would occur because the NSAQMD does not have an offsite fee mitigation program that could be used to offset the NO_x produced during construction. Alternatives 1 and 2 would result in permanent habitat loss within TRPA-designated disturbance zones around northern goshawk nests, which is prohibited by TRPA. However, significant and unavoidable impacts do not in and of themselves result in an alternative not being approvable. All alternatives would be approvable, although Alternatives 1 and 2 would require modification in the area of the TRPA-designated northern goshawk disturbance zones.

Bill Yeates, Governing Board Member

Summarized Comment

How do we balance tradeoffs between impacts to different issue areas?

What if we determined that the solution is to put the line underground?

The solution to the scenic issue in Tahoe City is to push the line back onto the 64 Acre Recreation Site. Aren't we required to work with other jurisdictions before we make a decision that will determine for several years the location of that power line? Maybe we should address this now to allow the communities to do what's necessary to implement the Regional Plan.

Response

The applicant is willing to discuss a potential project design with the appropriate local land use authorities, and the CPUC encourages the project applicant to do so. Please see Master Response 1 regarding coordination with local

jurisdictions in the Tahoe City area related to the Tahoe City substation. Please also refer to Master Response 2 for information on undergrounding.

Marsha Berkbigler, Governing Board Member

Summarized Comment

Is visual the only issue with the Tahoe City Substation? Is it a source of pollution?

Response

The Tahoe City Substation is not a documented source of pollution and no significant and unavoidable scenic impacts from upgrade of the Tahoe City Substation were identified in the Draft EIS/EIS/EIR. It is also a validly permitted existing use. Please see response to Comment 17-1 for information on potentially hazardous substances used at the substation.

Shelly Aldean, Governing Board Chair

Summarized Comment

There would be a substantial cost to move the substation and Liberty Utilities may not get reimbursed for those costs because it has nothing to do with providing reliable power.

Response

Please see Master Response 4 for information on cost recovery.

Hal Cole, Governing Board Member

Summarized Comment

It's important to support the local jurisdictions, and if the Area Plan effort can be supported through moving the substation, we should let the utility company know that is the preference.

The applicant should look into natural gas generators instead of diesel to improve air quality.

Response

Please see Master Response 1 with regard to for information on the proposed relocation of the Tahoe City Substation.

Modifications to the diesel generators at Kings Beach are not proposed as part of the 625 and 650 Electrical Line Upgrade Project, and because the proposed project concerns transmission of power and not its generation, consideration of alternative power sources is not within the scope of the EIS/EIS/EIR. However, evaluation of various alternatives suggested in comments received on the Draft EIS/EIS/EIR is provided in Master Response 5.

Elizabeth Carmel, Governing Board Member

Summarized Comment

Were aggressive retrofit or conservation measures analyzed, and could this help meet peak demand? The environmental document should include a quantitative analysis of power savings from conservation and if that is a viable alternative.

Response

Conservation is not a viable project alternative because conservation measures are not mandatory or enforceable, and thus not reliable. Please refer to the discussion of the Non-Wires Alternative – Demand Management Conservation in Chapter 3, Project Alternatives, of the Draft EIS/EIS/EIR (page 3-79) for more analysis of this alternative.

Letter

On Behalf of the North Tahoe Citizen Action Alliance

57

Thomas A. Besich, Electric Utility Power Engineer

Response

April 28, 2014

- 57-1 Commenter provides an introduction, noting that he has been retained by NTCAA to provide a technical assessment of the validity of various electrical planning documents and the Draft EIS/EIS/EIR, as well as to provide a professional opinion regarding the need for the project. Commenter summarizes his professional experience (curricula vitae appended), which includes a degree in electrical engineering and over 25 years' experience with Southern California Edison in departments responsible for transmission planning, system operations, and power contracts. Commenter also provides a list of the documents relating to the North Tahoe Electric Transmission system including load data.
- 57-2 Commenter provides a summary of his understanding of the North Tahoe Electrical System, including the period of winter peaks and the correlation between below freezing temperatures and winter peak demand periods. Commenter points out that transmission conductors can experience a 25 to 30 percent increase in thermal ratings in such conditions, compared to summer. Commenter points out that all ratings used in Sierra Pacific Power and Z-Global studies appear to be summer ratings. Based on this comment, the analysis was revised using the more appropriate winter conductor ratings.
- 57-3 Commenter provides his opinion that the 3.3 mile section of smaller conductor (2/0 aluminum conductor steel reinforced [ACSR] cables) on the 650 Line between Truckee and Northstar should be reconducted (with 397.5 aluminum alloy cable) and rebuilt for eventual 120 kV operation, as soon as possible. Independent reviewer Paul Scheuerman concurs with this opinion.
- 57-4 Commenter provides his opinion that the 5.9 mile section of smaller conductor (2/0 ACSR) in the 650 Line between Northstar and Kings Beach does not need to be reconducted until there is sufficient load growth in the Brockway/Tahoe City area, or it is determined that system conditions require the entire 650 Line from Truckee to Kings Beach to be operated at 120 kV. Independent reviewer, Paul Scheuerman, recommends immediate reconductoring of all 2/0 ACSR section of the 650 Line.
- 57-5 Commenter provides his opinion that the rebuilding the 625 Line (between Kings Beach and Tahoe City) does not appear to be justified at this time, but fails to provide specific technical support for this opinion. Commenter states that there were errors in one set of power flow plots from Z-Global (H1 – H3). These plots have been reviewed by Z-Global and have been updated. Figure H2 where the Kings Beach generation was inadvertently modeled at unity Power Factor with little to no reactive support (i.e., VAR production) was updated. The model has been modified so that the generation would attempt to hold the voltage schedule at the main Kings Beach 60 kV buss instead of the generation buss. This resulted in the generation producing the full reactive output of roughly 4 MVAR. In addition, the Kings Beach 120/60 kV transformer impedance modeling was updated. The results were found to be largely consistent with the initial report and Figure H2. Independent reviewer Paul Scheuerman concludes that completion of the 120 kV loop by rebuilding and operating the 625 Line at 120 kV would be required when the system load reaches 100 MW. Relying on an estimated area load growth of 1 MW per year used in the updated Z-Global analysis and a current peak load of 86 MW, need to reconductor and operate the 625 Line at 120 kV should occur by 2027.
- 57-6 Commenter provides his opinion that the project tries to accomplish more than has been justified in supporting documents, including lack of proper and accurate power flow analysis. Commenter points out that the simplest and least environmentally damaging solution is to reconductor the 3.3 miles of the 650 Line between Truckee and Northstar, but fails to provide specific technical support for this opinion.

- 57-7 Commenter provides his opinion that rebuilding the 3.3 miles 2/0 ACSR segment of the 650 Line should be separated from proposed efforts to prematurely rebuild the entire 650 Line; and the 650 Line rebuilding should proceed without delay, independent of other segments of the 650 Line. Commenter fails to provide specific technical support for said opinion. See response to Comment 57-4.
- 57-8 Commenter provides references to unspecified flawed study modeling. Commenter questions the use of applicable line conductor ratings (multiple locations) because the ampacity (line ratings) of the various conductors modeled by Z-Global were summer emergency ratings rather than winter emergency ratings, which would be higher. Selected cases were rerun by Z-Global with winter emergency ratings and the use of these ratings did little to change the fundamental problems affecting the existing system, including unacceptable voltage levels during the loss of key facilities. If the conductor ratings were increased, additional line loading could be accommodated; however, with the additional line loading during the loss of key facilities, voltage levels would be adversely impacted considerably more than those indicated by the existing models. The result after using the winter ratings is no change in the eventual need for the project, but changes to the phasing and timing of implementation, as noted in response to Comment 57-5.
- 57-9 Commenter provides his opinion regarding how future load growth should be accommodated and how portions of the proposed project should be implemented. Commenter cites unspecified flawed study modeling, but fails to provide specific technical support for this opinion.
- 57-10 Commenter provides his opinion regarding operation of Kings Beach generation and air quality restrictions that have reduced generation capacity from 15 MW to 12 MW and the corresponding effect on volt ampere reactive output.
- 57-11 Commenter states demand side management and interruptible load should be addressed as an alternative. Under the Non-Wires Alternative – Demand Management Conservation discussion in Chapter 3, Alternatives Eliminated from Further Consideration of the EIS/EIS/EIR, demand management conservation programs as an alternative to the project are discussed and were eliminated from further analysis because these programs require voluntary participation and are separate and standalone programs. CalPeco cannot guarantee that such voluntary programs would provide sufficient energy conservation to achieve either the capacity or reliability needs of CalPeco in the Tahoe Basin. Therefore, this alternative would not meet the objectives for the project.
- 57-12 Commenter states that the only alternative considered in the document were variations of the proposed project; however, as detailed in Chapter 3, numerous alternatives were considered - with alternatives being considered and rejected that did not meet the purpose and need of the project. The result of this alternative process was that variations of the proposed project were analyzed as action alternatives because they would meet the purpose and need of the project.
- Commenter further states “rolling” load from Brockway to the Sierra Pacific Power system in the same manner Sierra Pacific Power rolls load from its Incline Substation to Brockway and Glenbrook for Sierra Pacific Power’s N-1s at Incline should have been evaluated. He further states load rolling also may be feasible between Tahoe City and one of Liberty Utilities’ substations serving South Tahoe. As noted in a letter from NV Energy to Liberty Utilities, NV Energy states “Liberty Utilities should not consider our prior ability to assist as an indication of our future ability to provide any permanent solution for Liberty’s loading issues in the north Lake Tahoe area” (see Appendix P-2a). Therefore, load rolling is not a reliable option.
- 57-13 Commenter states that there does not appear to be sufficient justification to rebuild the 625 Line for full 120 kV loop operation. Commenter states the major expense and majority of environmental impacts are

being justified on what appear to be non-existent voltage problems based on flawed transformer modeling. Commenter recommends that Liberty Utilities complete a re-evaluation of voltage to determine at what future load level system conditions and contingencies voltage problems exist that could not be corrected with a minimal amount of shunt capacitors. Independent reviewer Paul Scheuerman concludes that, relying upon an estimated area load growth to 1 MW per year used in the updated Z-Global analysis, and a current peak of 86 MW, the completion of the 120 kV loop by rebuilding and operating the 625 Line at 120 kV need not occur by 2027.

- 57-14 Commenter notes the need for information regarding harmonic resonance and limits associated with the application of shunt capacitors to correct voltage problems. Commenter asserts that sufficient space at Brockway/Kings Beach and Squaw Valley substations is available for the installation of capacitors. While the application of capacitors may present a short term solution to various system voltage issues, the potential problems associated with their interaction with solid state devices is uncertain. Considerable literature is available that suggests there may be problems if such a course of action was implemented. Capacitor application could potentially create problems for both the customer and the utility. However, if successfully implemented, capacitors could provide an interim solution.
- 57-15 The commenter takes issue with replacement of existing single line service with dual service to Northstar Substation. In addition to serving the resort related load located at Northstar, other non-resort loads are also served via separate distribution feeders, similar to other distribution feeders located at other substations. Given the load level and the reliability benefits accruing to the area customers, it is prudent to upgrade service to the substation to a double circuit configuration as proposed by the applicant.
- 57-16 The commenter is referred to Master Response 13: Proximity to the Fiberboard Freeway, for more detailed information regarding access and safety issues in regards to the 625 Line. Commenter points out that the 625 Line currently has the largest conductor (397.5 aluminum alloy) Liberty Utilities is proposing, and never overloads in any of the studies. At this time, the need to upgrade the line to 120 kV is envisioned as the final phase in converting the existing 60 kV loop to 120 kV with safety and access issues lending support to the need for the 625 Line upgrade.
- 57-17 Commenter questions applicability of NERC reliability standards, and questions the need for dual service to loads under 10 MW. Western Electricity Coordinating Council and NERC jurisdiction over Liberty Utilities is debatable; however, that does not mean that Liberty Utilities should be able to provide a quality of service to their customer that is anything less than what is commonly afforded similarly situated customers on other systems. Commenter makes it sound like it is matter of providing dual service to customers with loads under 10 MW (meaning single customers with less than 10 MW), but fails to note that the system under consideration provides service to a number of distribution substations that in turn provide service to multiple distribution circuits serving multiple customers. Most utilities provide their distribution substations with redundant service whenever possible. Doing so is a common utility practice.

The level of reliability to customers served from the area's distribution substations (Martis, Squaw Valley, Tahoe City, Kings Beach, and Northstar) should be no different from the reliability level available to customers served from similar distribution facilities located in other areas throughout California.

- 57-18 Commenter states, "As noted by NTCAA, all the load growth in the last 15 plus years has been outside these 4 substations" (Squaw Valley, Tahoe City, Kings Beach, and Northstar). This statement is not supported by the commenter and is incorrect as demonstrated in the below table of substation loads. Clearly the load growth has been sporadic and distributed among all area substations. However, as noted, with loss of the 629 Line and with loads at or above 86 MW, the 650 Line section of 2/0 ACSR will

overload as well as result in low voltages in the Kings Beach and Tahoe City areas. With the 650 Line reconducted (i.e., Phase 1 of the project, as identified in the EIS/EIS/EIR, being complete), independent reviewer Paul Scheuerman concludes that Phase 2 of the proposed project should occur when system demands reach 89 MW. Phase 2 primarily consists of conducting improvements at the North Truckee, Northstar, and Kings Beach substations and decommissioning the Brockway Substation. With an estimated system load growth (i.e., growth of service area electricity demand) of approximately 1 MW per a year (the estimate used in the Z-Global 2014 addendum), it is proposed that Phase 2 should be completed by 2016. Phase 3 of the proposed project consists of rebuilding of the 625 Line and all remaining project elements (e.g., completing remaining substation improvements). The system modelling indicates that construction of this final phase is necessary when demand reaches 100 MW. Continuing with the 1 MW per year load growth estimate used in the Z-Global analysis, completion of Phase 3 should occur by 2027. However, construction could be required sooner or later depending on the actual rate of load growth.

Transformer	Coincident Peak								
	2005	2006	2007	2008	2009	2010	2011	2012	2013
Brockway #1	7.2		7.6	7.8	6.7	7.8	6.9	7.0	5.8
Brockway #2	8.6		9.2	8.6	8.2	9.3	8	9.4	7.3
Tahoe City #1	9.3		8.7	9.4	8.0	10.1	10	10.4	6.2
Tahoe City #2	9.6		15.6	12.6	13.8	16.5	16.1	14.0	13.2
Squaw Valley #1	5.2		5.1	5.3	4.6	5.2	5.4	2.9	2.5
Squaw Valley #2	5.3		6.4	6	6.3	5.9	6.1	6.1	8.9
Truckee	2		3.0	3	3.0	3.8	3.8	3.5	3.0
Northstar	3		8.3	8.6	8.3	8.5	8.6	13.0	9.6
Glenshire	3.9		4.1	3.7	3.3	2.8	2.8	3.2	3.0
Subtotal (w/o TDPUD)	54.1		67.8	65.0	62.1	70.0	67.7	69.4	59.4
Martis (TDPUD)	8.1		10.2	8.9	8.8	6.0	8.6	8.2	7.0
Truckee (TDPUD)	7.5		8.7	9	7.7	10.0	9.6	9.8	8.0
Total	69.7		86.7	82.9	78.6	86.0	85.9	87.4	74.4

57-19 See response to Comment 57-8 for a discussion regarding applicable line conducting ratings.

57-20 Commenter reiterates a proposal for the project in a conclusory fashion.

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Appendix P1b

**Comment Letters and Public Hearing
Transcripts**



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

Letter
1

JAN 03 2014

Tahoe Regional Planning Agency
Attention: Wendy Jepson, Senior Planner
P.O. Box 5310
Stateline, NV 89449

Subject: Draft Environmental Impact Statement for the California Pacific Electric Company 625 and 650 Electrical Line Upgrade Project, Placer and Nevada Counties, CA (CEQ # 20130326)

Dear Ms. Jepson:

The U.S. Environmental Protection Agency has reviewed the DEIS for the California Pacific Electric Company 625 and 650 Electrical Line Upgrade Project pursuant to the National Environmental Policy Act, Council on Environmental Quality regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act.

The EPA supports the proposed action to minimize environmental effects by maximizing the use of the existing transmission line right-of-way, and appropriate siting of infrastructure. That said, we are concerned about potential direct and cumulative impacts to aquatic resources. We have rated the DEIS as *Environmental Concerns – Insufficient Information* (EC-2). Please see the enclosed "Summary of EPA Rating Definitions."

The EPA is concerned about the project's compliance with Section 404 of the Clean Water Act. We recommend the FEIS provide a discussion of Clean Water Act jurisdictional waters that could be filled by project activities, and include descriptions of type and acreage of jurisdictional waters, measures to avoid impacts, and consistency with the *Compensatory Mitigation for Losses of Aquatic Resources; Final Rule*. Our detailed comments are enclosed.

Thank you for the opportunity to review this DEIS. When the FEIS is published, please send one hard copy to us at the address above (Mail Code: CED-2). If you have any questions, please contact me at 415-972-3521, or contact Scott Sysum, the lead reviewer for this project. Scott can be reached at 415-972-3742 or sysum.scott@epa.gov.

Sincerely,

Kathleen Martyn Goforth
Kathleen Martyn Goforth, Manager
Environmental Review Office (CED-2)

Enclosures: Summary of EPA Rating System
EPA's Detailed Comments

U.S. ENVIRONMENTAL PROTECTION AGENCY'S DETAILED COMMENTS ON THE CALIFORNIA
PACIFIC ELECTRIC COMPANY 625 AND 650 ELECTRICAL LINE UPGRADE PROJECT, DRAFT
ENVIRONMENTAL IMPACT STATEMENT, PLACER AND NEVADA COUNTIES, CA, JANUARY 3, 2014

Clean Water Act Section 404

Section 404(b)(1) Guidelines

The purpose of the CWA is to restore and maintain the chemical, physical, and biological integrity of waters of the United States (WUS, or jurisdictional waters). These goals are achieved, in part, by prohibiting discharges of dredged or fill material that would result in avoidable or significant adverse impacts on the aquatic environment. Pursuant to Section 404 of the CWA, discharge of dredged or fill material to WUS requires a permit issued by the U.S. Army Corps of Engineers. If a permit is required, the EPA will review the project for compliance with the *Federal Guidelines for Specification of Disposal Sites for Dredged or Fill Materials* (40 CFR 230) (Guidelines), promulgated pursuant to Section 404(b)(1) of the CWA. The burden to demonstrate compliance with the Guidelines rests with the permit applicant.

Recommendation:

Discuss and demonstrate compliance with the Guidelines in the Final Environmental Impact Statement.

1-2

Geographic Extent of Waters of the United States

The EPA is concerned about the potential adverse impact to aquatic resources that could result from the proposed project. The DEIS states (p. 4.6-41) that a USACE 404 Permit and 1:1 mitigation may be required for the discharge of dredged or fill material into jurisdictional waters. A formal jurisdictional delineation of the full extent of WUS on the project site has not yet been completed, or verified by the USACE.

Recommendation:

EPA strongly encourages the USFS to include the results of a jurisdictional determination in the FEIS. A jurisdictional determination must be performed by the Corps. Additionally, the FEIS should list the acres of jurisdictional waters impacted by each alternative.

Analysis of Alternatives – 40 CFR 230.10(a)

If an individual permit for fill of jurisdictional waters of the United States is required, in order to comply with the Guidelines, the applicant must comprehensively evaluate a range of alternatives to ensure that the “preferred” alternative is the *Least Environmentally Damaging Practicable Alternative*. Identification of the LEDPA is achieved by performing an alternatives analysis that estimates the direct, indirect, and cumulative impacts to jurisdictional waters resulting from a set of on- and off-site project alternatives. Project alternatives that are not practicable and do not meet the project purpose are eliminated. The LEDPA is the remaining alternative with the fewest impacts to aquatic resources, so long as it does not have other significant adverse environmental consequences. Only when this analysis has been performed can the applicant and the permitting authority be assured that the selected alternative

1-3

is the LEDPA (40 CFR 230.10(a)).

EPA was pleased to see the inclusion of applicant proposed measures and additional mitigations that would either avoid or minimize impacts to potential jurisdictional wetlands, however, it cannot be determined whether that alternative is the LEDPA without a Corps' delineation of the geographic extent of jurisdictional waters.

Recommendation:

The FEIS should consider sufficient analyses of the alternatives to identify the LEDPA. These analyses should consider changes to the preferred alternative or application of mitigation measure that could reduce the environmental impacts to the greatest extent possible. The FEIS should also contain sufficient detail to allow for meaningful comparison between alternatives.

Mitigation of Potential Adverse Impacts

Pursuant to the Guidelines, mitigation of project impacts begins with the avoidance and minimization of direct, indirect, and cumulative impacts to the aquatic ecosystem, followed by compensatory measures if a loss of aquatic functions and/or acreage is unavoidable. Compensatory mitigation is, therefore, intended only for unavoidable impacts to jurisdictional waters after the LEDPA has been determined. For this reason, it would be premature to examine in detail any mitigation proposal before compliance with 40 CFR 230.10(a) is established.

Recommendation:

Include in the FEIS a mitigation plan for unavoidable impacts to waters of the United States, as required by Corps and EPA regulations.

Stream Crossings in Riparian Areas

The proposed action would cross 29 streams and impact stream environment zones (p. 4.6-41). We support the applicant proposed measures APM WQ-1, WQ-3, WQ-4, WQ-5, WQ-7, WQ-8, HAZ-1, BIO-1, and BIO-2 which among other things, indicates CALPECO will attempt to avoid impacts by siting poles and other facilities outside of delineated waters of the U.S. (p. 4.6-45); however, the EPA is still concerned with the potential direct impacts, such as clearing vegetation, and indirect impacts, such as sedimentation to riparian areas from road widening and tree removal, that could result at these crossings.

Recommendation:

Maximize, to the extent possible, helicopter mitigation to further reduce impacts at stream crossings as stated in APM BIO-27. Quantify the result of additional impact avoidance in the FEIS.

Public Health and Sensitive Receptor Notification

In light of the projected daily emission, the FEIS should consider a mitigation measure that would inform sensitive receptors of these potential risks in advance of construction. This information should be provided concurrently with advanced notification of construction for noise impacts.

1-3
cont'd

1-4

1-5

Recommendation:

Consider a mitigation measure that would provide advanced notification to sensitive receptors of the potential effects of PM₁₀ and PM_{2.5}, as well as toxic air contaminants.

1-5
cont'd

Biological Resources

The EPA is pleased to see that APM BIO-19 states that the power poles will be constructed to conform to the practices described in the Suggested Practices for Avian Protection on Power Lines Manual developed by the Avian Power Line Interaction Committee (2006) (p. 3-98). The DEIS states, for the new poles, poles would be buried 7 to 10 feet deep, depending on height. Guy wires may be connected to the poles in areas that need additional stability (p. 3-26). Guy wires can and electrical wires have been known to result in avian injury or mortality. Also guy wires have been known to cause injury to humans, who were not aware of their presence.

1-6

Recommendation:

Include, in the FEIS, design practices to be followed for the above ground power lines and guy wires to minimize bird collisions. A useful reference for this is the Avian Power Line Interaction Committee document, *Reducing Avian Collisions with Power Lines: State of the Art in 2012*. Minimize the use of guy wires as much as practicable.

Cumulative Impacts Analysis

The DEIS lists the cumulative projects in Table 4.1-2 (p. 4.1-5). A Notice of Intent/Notice of Preparation was recently published for the proposed Lake Tahoe Passenger Ferry project. The cross-lake ferry service will go from South Lake Tahoe to the Grove street pier in Tahoe City. This project may require the construction of fueling facilities and pier modification. The ferry service would operate year round and on a fixed schedule.

1-7

Recommendations:

The FEIS should update the list of reasonably foreseeable projects to include the Tahoe Passenger Ferry Project.

SUMMARY OF EPA RATING DEFINITIONS*

This rating system was developed as a means to summarize the U.S. Environmental Protection Agency's (EPA) level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the Environmental Impact Statement (EIS).

ENVIRONMENTAL IMPACT OF THE ACTION

"LO" (Lack of Objections)

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

"EC" (Environmental Concerns)

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

"EO" (Environmental Objections)

The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

"EU" (Environmentally Unsatisfactory)

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

ADEQUACY OF THE IMPACT STATEMENT

"Category 1" (Adequate)

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

"Category 2" (Insufficient Information)

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analysed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

"Category 3" (Inadequate)

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analysed in the draft EIS, which should be analysed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640, Policy and Procedures for the Review of Federal Actions Impacting the Environment.



Edmund G. Brown Jr.
Governor

STATE OF CALIFORNIA
Governor's Office of Planning and Research
State Clearinghouse and Planning Unit



Letter
2

Ken Alex
Director

December 24, 2013

RECEIVED
JAN 02 2014
TAHOE REGIONAL
PLANNING AGENCY

Wendy Jepson
Tahoe Regional Planning Agency
P.O. Box 5310
Stateline, NV 89449

Subject: Calpeco 625 and 650 Electrical Line Upgrade Project
SCH#: 2012032066

Dear Wendy Jepson:

The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review. The review period closed on December 23, 2013, and no state agencies submitted comments by that date. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act.

Please call the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process. If you have a question about the above-named project, please refer to the ten-digit State Clearinghouse number when contacting this office.

Sincerely,

Scott Morgan
Director, State Clearinghouse

2-1

**Document Details Report
State Clearinghouse Data Base**

SCH# 2012032066
Project Title Calpeco 625 and 650 Electrical Line Upgrade Project
Lead Agency Tahoe Regional Planning Agency

Type EIR Draft EIR
Description The proposed 625 and 650 Electrical Line Upgrade Project is located in northeastern Placer County and southeastern Nevada County, California. The proposed action consist primarily of an upgrade of the 625 and 650 Lines and associated substations from 60 kilovolt (kV) to 120kV to allow the entire transmission loop to operate at 120kV.

Lead Agency Contact

Name Wendy Jepson
Agency Tahoe Regional Planning Agency
Phone 775 589 5269 **Fax**
email
Address P.O. Box 5310
City Stateline **State** NV **Zip** 89449

Project Location

County Nevada
City Nevada City
Region
Lat / Long 39° 14' 45.06" N / 120° 01' 37.42" W
Cross Streets SR 89/SR 28; SR 267/SR 28; Brockway Road/Donner Pass Road
Parcel No. numerous
Township **Range** **Section** **Base**

Proximity to:

Highways SR89, SR28, SR267, I-80
Airports Truckee-Tahoe
Railways Union Pacific
Waterways Lake Tahoe, Truckee River, Griff Creek, other creeks
Schools N. Tahoe/Truckee
Land Use As specified in : Kings Beach, Tahoe City, Community Plan; Truckee, Placer Court General Plans; Mrtis Valley Community Plan

Project Issues Air Quality; Archaeologic-Historic; Biological Resources; Flood Plain/Flooding; Forest Land/Fire Hazard; Geologic/Seismic; Noise; Public Services; Recreation/Parks; Soil Erosion/Compaction/Grading; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Wetland/Riparian; Landuse; Growth Inducing; Cumulative Effects; Aesthetic/Visual

Reviewing Agencies Resources Agency; Department of Fish and Wildlife, Region 2; Cal Fire; Office of Historic Preservation; Department of Parks and Recreation; Department of Water Resources; California Highway Patrol; Caltrans, District 3 N; Air Resources Board; Regional Water Quality Control Bd., Region 6 (So Lake Tahoe); Department of Toxic Substances Control; California Energy Commission; Native American Heritage Commission

Date Received 11/08/2013 **Start of Review** 11/08/2013 **End of Review** 12/23/2013



Edmund G. Brown Jr.
Governor

STATE OF CALIFORNIA
Governor's Office of Planning and Research
State Clearinghouse and Planning Unit



Ken Alex
Director

RECEIVED

JAN 30 2014

TAHOE REGIONAL
PLANNING AGENCY

January 28, 2014

Wendy Jepson
Tahoe Regional Planning Agency
P.O. Box 5310
Stateline, NV 89449

Subject: Calpeco 625 and 650 Electrical Line Upgrade Project
SCH#: 2012032066

Dear Wendy Jepson:

The enclosed comment (s) on your Draft EIR was (were) received by the State Clearinghouse after the end of the state review period, which closed on December 23, 2013. We are forwarding these comments to you because they provide information or raise issues that should be addressed in your final environmental document.

The California Environmental Quality Act does not require Lead Agencies to respond to late comments. However, we encourage you to incorporate these additional comments into your final environmental document and to consider them prior to taking final action on the proposed project.

Please contact the State Clearinghouse at (916) 445-0613 if you have any questions concerning the environmental review process. If you have a question regarding the above-named project, please refer to the ten-digit State Clearinghouse number (2012032066) when contacting this office.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Enclosures
cc: Resources Agency

Memorandum

LAE
12/23/13
E

To: Bill Holmes, Chief
Northern Region
Department of Forestry and Fire Protection

Date: November 14, 2013
R13

Attention: Environmental Coordinator
Nevada-Yuba-Placer Unit

Telephone: (916) 653-4995

From: Department of Forestry and Fire Protection
Chris Browder, Deputy Chief
Environmental Protection

Subject: Environmental Document Review

Project Name: California Pacific Electric Company 625 & 650 Electric Line Upgrade
Project
SCH #: 2012032066
Document Type: Draft Environmental Impact Report (DEIR)

Potential Area(s) of Concern: Fire Protection?;
Other:

MANDATED DUE DATE: 12/23/2013

The above referenced environmental document was submitted to State Headquarters, Environmental Protection for review under the California Environmental Quality Act (CEQA) or the National Environmental Policy Act (NEPA). The proposed project, located within your Unit/Program Area, may have an impact upon the Department's fire protection and/or natural resource protection and management responsibilities or require the Department's permits or approval. Your determination of the appropriate level of CAL FIRE involvement with this project is needed. Please review the attached document and address your comments, if any, **to the lead agency** prior to the due date. Your input at this time can be of great value in shaping the project. If your Unit's Environmental Coordinator is not available, please pass on to another staff member in order to meet the mandated deadline.

Please submit comments directly to the lead agency before the mandated due date with copy to the State Clearinghouse (P.O. Box 3044, Sacramento, CA 95812-3044).

☒ No Comment - explain briefly on the lines below.

*Project proponent is working on a THP for
the tree removal.*

RECEIVED

JAN 24 2014

Name and Title of Reviewer: *Jeff Dowling FOR I* STATE CLEARINGHOUSE
Phone: *(530) 587-8926* Email: *jeff.dowling@arc.ca.gov*
Note: Please complete this form and return it, with a copy of any comments, for CAL FIRE's records to: Ken Nehoda or Chris Browder, Deputy Chief, Environmental Protection, P.O. Box 944246, Sacramento CA 94244-2460.

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
 For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH # 2012032066

Project Title: California Pacific Electric Company 625 and 650 Electric Line Upgrade Project

Lead Agency: USFS LTBMU for NEPA, CPUC for CEQA, and TRPA

Contact Person: Wendy Jepson, Senior Planner

Mailing Address: TRPA P.O. Box 5310

Phone: 775 589 5269

City: Stateline, Nevada

Zip: 89449

County: Douglas County, Nevada

Project Location: County: Placer and Nevada Counties

City/Nearest Community: Tahoe City/Kings Beach/Truckee

Cross Streets: SR 89/SR 267/SR 28; Brockway Rd/Donner Pass Rd - Zip Codes: 96145/96143

Zip Code: 96161

Longitude/Latitude (degrees, minutes and seconds): 39 ° 14 ' 45.05" N / 120 ° 01 ' 37.42" W Total Acres: 30 miles +/- of line

Assessor's Parcel No.: NA

Section: NA

Twp.: NA

Range: NA

Base: NA

Within 2 Miles: State Hwy #: SR 89/SR 267/I-80

Waterways: Lake Tahoe, Truckee River, Griff Creek, other creeks

Airports: Truckee-Tahoe Airport

Schools: No. Tahoe & Truckee Sq

Document Type:

CEQA: ☐ NOP
☐ Early Cons
☐ Neg Dec
☐ Mit Neg Dec

☒ Draft EIR
☐ Supplement/Subsequent EIR
 (Prior SCH No.)
 Other:

NOI
 EA
☐ Draft EIS
☐ FONSI

Other: ☒ Joint Document
☐ Final Document
☒ Other: Joint EIS/EIS/EIR
 USFS/TRPA/CPUC

Local Action Type:

☐ General Plan Update
☐ General Plan Amendment
☐ General Plan Element
☐ Community Plan
☐ Specific Plan
☐ Master Plan
☐ Planned Unit Development
☐ Site Plan

☐ Rezone
☐ Prezone
☐ Use Permit
☐ Land Division (Subdivision, etc.)

☐ Annexation
☐ Redevelopment
☐ Coastal Permit
☒ Other: agency approval

Development Type:

☐ Residential: Units _____ Acres _____
☐ Office: Sq. ft. _____ Acres _____ Employees _____
☐ Commercial: Sq. ft. _____ Acres _____ Employees _____
☐ Industrial: Sq. ft. _____ Acres _____ Employees _____
☐ Educational: _____
☐ Recreational: _____
☐ Water Facilities: Type _____ MGD _____

☐ Transportation: Type _____
☐ Mining: Mineral _____
☐ Power: Type _____ MW _____
☐ Waste Treatment: Type _____ MGD _____
☐ Hazardous Waste: Type _____
☒ Other: Electric line upgrade; 60kV to 120kV & reroute

Project Issues Discussed in Document:

☒ Aesthetic/Visual
☐ Agricultural Land
☒ Air Quality
☒ Archeological/Historical
☒ Biological Resources
☐ Coastal Zone
☒ Drainage/Absorption
☒ Economic/Jobs

☐ Fiscal
☒ Flood Plain/Flooding
☒ Forest Land/Fire Hazard
☒ Geologic/Seismic
☐ Minerals
☐ Noise
☐ Population/Housing Balance
☒ Public Services/Facilities

☒ Recreation/Parks
☐ Schools/Universities
☐ Septic Systems
☐ Sewer Capacity
☒ Soil Erosion/Compaction/Grading
☐ Solid Waste
☒ Toxic/Hazardous
☒ Traffic/Circulation

☒ Vegetation
☒ Water Quality
☒ Water Supply/Groundwater
☒ Wetland/Riparian
☒ Growth Inducement
☒ Land Use
☒ Cumulative Effects
☒ Other: GHG Emissions

Present Land Use/Zoning/General Plan Designation:

As specified in: Kings Beach, Tahoe City, Community Plans; Truckee, Placer County General Plans; Martis Valley Community Plan

Project Description: (please use a separate page if necessary)

The proposed 625 and 650 Electrical Line Upgrade Project would primarily consist of upgrading CalPeco's existing 625 and 650 electrical power lines and associated substations from 60 kilovolt (kV) to 120 kV to allow the entire North Lake Tahoe Transmission System to operate at 120 kV. The project would consist of three primary elements: 1) removal of the existing 625 Line and construction of a new, rerouted 625 Line; 2) rebuilding of the existing 650 Line, with potential for realignments based on the action alternatives considered; 3) upgrade, modification, and/or decommissioning of six substations. These improvements would increase CalPeco's ability to maintain the current maximum system loads during an outage on any one of four key power lines within the North Lake Tahoe Transmission System, as well as decrease reliance on the existing Kings Beach Diesel Generation Station. In addition, rebuilding and realigning the power lines would reduce the likelihood of outages and would improve access to the lines for maintenance, emergency outage response, and repair activities.

State Clearinghouse Contact:

(916) 445-0613

State Review Began:

11 - 4 - 2013

SCH COMPLIANCE

12 - 23 - 2013

Please note State Clearinghouse Number
 (SCH#) on all Comments

SCH#:

2012032066

Please forward late comments directly to the
 Lead Agency

Project Sent to the following State Agencies

<input checked="" type="checkbox"/> Resources	State/Consumer Svcs
<input type="checkbox"/> Boating & Waterways	General Services
<input type="checkbox"/> Coastal Comm	Cal EPA
<input type="checkbox"/> Colorado Rvr Bd	<input checked="" type="checkbox"/> ARB: ALL Projects
<input type="checkbox"/> Conservation	<input type="checkbox"/> ARB: Transportation Projects
<input checked="" type="checkbox"/> CDFW # 2	<input type="checkbox"/> ARB: Major Industrial Projects
<input checked="" type="checkbox"/> Delta Protection Comm	<input type="checkbox"/> SWRCB: Div. Financial Assist.
<input checked="" type="checkbox"/> Cal Fire	<input type="checkbox"/> SWRCB: Wtr Quality
<input checked="" type="checkbox"/> Historic Preservation	<input type="checkbox"/> SWRCB: Wtr Rights
<input checked="" type="checkbox"/> Parks & Rec	<input checked="" type="checkbox"/> Reg. WQCB # 65
<input type="checkbox"/> Central Valley Flood Prot.	<input checked="" type="checkbox"/> Toxic Sub Ctrl-CTC
<input type="checkbox"/> Bay Cons & Dev Comm.	Yth/Adlt Corrections
<input checked="" type="checkbox"/> DWR	Corrections
<input type="checkbox"/> Cal EMA	
<input type="checkbox"/> Resources, Recycling and Recovery	
<input type="checkbox"/> Bus Transp Hous	Independent Comm
<input type="checkbox"/> Aeronautics	<input checked="" type="checkbox"/> Energy Commission
<input checked="" type="checkbox"/> CHP	<input checked="" type="checkbox"/> NAHC
<input checked="" type="checkbox"/> Caltrans # 34	<input type="checkbox"/> Public Utilities Comm
<input type="checkbox"/> Trans Planning	<input type="checkbox"/> State Lands Comm

From: Skip Canfield <scanfield@lands.nv.gov>
Sent: Friday, January 10, 2014 9:42 AM
To: Jessica Babcock
Cc: Skip Canfield
Subject: State Agency Comments E2014-050 California Pacific Electric Company 625/650
Electrical Lines Upgrade

Jessica – The Nevada State Clearinghouse did not receive any agency feedback on this proposal,
<http://clearinghouse.nv.gov/public/Notice/2014/E2014-050.pdf>

3-1

Skip Canfield
Nevada State Clearinghouse
State Land Use Planning Agency

Nevada Division of State Lands
Department of Conservation and Natural Resources
901 South Stewart Street, Suite 5003
Carson City, NV 89701
775-684-2723
<http://clearinghouse.nv.gov>
www.lands.nv.gov

DEPARTMENT OF TRANSPORTATION
DISTRICT 3 – SACRAMENTO AREA OFFICE
2379 GATEWAY OAKS DRIVE, STE 150 - MS 19
SACRAMENTO, CA 95833
PHONE (916) 274-0638
FAX (916) 263-1796
TTY 711

**Letter
4**

*Flex your power!
Be energy efficient!*

January 7, 2014

032013-TAH-005
#530-201-00
SCH# 2012032066

Wendy Jepson, Senior Planner
Tahoe Regional Planning Agency
P.O. Box 5310
Stateline, NV 89449

California Pacific Electric Company (CalPeco) 625 and 650 Electrical Line Upgrade Project – Draft Environmental Impact Statement (DEIS) / Draft Environmental Impact Report (DEIR) / Draft Environmental Impact Statement – Tahoe Regional Planning Agency (DEIS-TRPA)

Dear Ms. Jepson:

Thank you for including the California Department of Transportation (Caltrans) in the DEIS/DEIR/DEIS-TRPA review process for the CalPeco 625 and 650 Electrical Line Upgrade Project. The CalPeco 625 and 650 Electrical Line Upgrade Project involves upgrading two major electrical power lines in the North Tahoe Basin (the 625 and 650 lines and associated substations) from 60 kilovolt (kV) to 120 kV to allow the entire North Lake Tahoe Transmission System to operate at 120 kV. The project would consist of three primary elements: 1) removal of the existing 625 Line and construction of a new rerouted 625 Line; 2) rebuild of the existing 650 Line with potential for realignments based on the action alternatives considered; 3) upgrade, modification, and/or decommissioning of six substations. This project is either adjacent to or within the Right of Way (ROW) of Interstate 80, State Route 89, and a significant portion of State Route 267. The following comments are based on the DEIS/DEIR/DEIS-TRPA received.

State Route 267 Projects

There are several transportation improvement projects planned on State Route (SR) 267 which are partially or entirely within the proposed project area. This includes:

- Widen SR 267 from two lanes to four lanes from Brockway Road to Placer County Line, (2010 Nevada County Regional Transportation Plan, Nevada County Transportation Commission 2011)
- Extend the existing southbound truck-climbing lane from Northstar Drive to Brockway Summit (SR 267 Transportation Concept Report, Caltrans 2012)

4-1

- In various places on SR 267 from Brockway Road to SR 28, shoulder widening, asphalt concrete surfacing, slope stabilization, plant establishment and protection, and bicycle route improvements (SR 267 Transportation Concept Report; Caltrans 2012)

Caltrans supports the alternatives that will have the least impact on the existing and future highway system, maintenance facilities, and maintenance operations. Furthermore, agencies involved with this project must be aware of the above future projects, and should modify the project scope and schedule to avoid or lessen any conflicts between the project and highway activities through the Encroachment Permit and Transportation Management Plan processes discussed below.

4-1
cont'd

Encroachment Permits

The DEIS/DEIR/DEIS-TRPA mentions that "construction of power lines across I-80, SR 267, and SR 89 would require an encroachment permit (TR-0100) from Caltrans" (page 3-38). The project applicant has already applied for an encroachment permit for those portions of the project which are along SR 267. If the project is approved, they will also need an encroachment permit for the portions which cross SR 89 and I-80 prior to construction over those roadways.

4-2

Any work proposed and performed within the State's ROW will require a Caltrans Encroachment Permit prior to construction. To apply, a completed encroachment permit application, environmental documentation, and five sets of plans clearly indicating State Right of Way must be submitted to the following address: Bruce Capul, Office of Permits - North Area Branch, Caltrans District 3, 703 B Street, Marysville, CA 95901. More information on Encroachment Permits may be found at the following website: [http://www .dot.ca.gov/hq/traffops/developserv/permits/](http://www.dot.ca.gov/hq/traffops/developserv/permits/)

Transportation Management Plan (TMP)

The DEIS/DEIR/DEIS-TRPA mentions that construction of power lines across I-80, SR 267, and SR 89 may require California Highway Patrol-coordinated rolling traffic breaks and/or lane closures (page 3-38). To mitigate for disruptions caused to users of the State Highway System, the DEIS/DEIR/DEIS-TRPA calls for the following mitigation measure:

Applicant Proposed Measure (APM) TRAN-1: The applicant will develop and implement a Traffic Control Plan to minimize disruptions to surface travel and protect the safety of workers and the traveling public.

4-3

The DEIS/DEIR/DEIS-TRPA says that mitigation measure APM TRAN-1, in addition to other applicant proposed measures, "would effectively minimize the adverse effects of project construction on the performance of transportation systems in the project area and temporary disruptions to various modes of surface travel (transit, automobile, truck, bicycle, and pedestrian)" (page 4.12-15).

If traffic restrictions and/or detours on or affecting State highways are required for this project, a TMP must be created and approved by Caltrans prior to construction. Creation of a TMP is part of the Encroachment Permit process, and is coordinated by the Office of Permits. TMPs must be

Wendy Jepson, Senior Planner
Tahoe Regional Planning Agency
CalPeco 625 and 650 Electrical Line Upgrade Project DEIS/DEIR
January 7, 2014
Page 3

prepared in accordance with Caltrans' *Manual on Uniform Traffic Control Devices*. Further information is available for download at the following web address:
<http://www.dot.ca.gov/hq/traffops/signtech/mutcdsupp/pdf/camutcd2012/Part6.pdf>

The TMP should include a vigorous public information outreach effort to inform highway users of upcoming construction activities and associated delays. SR 267 is often used by recreational bicyclists, so the outreach effort should include bicycle advocacy and interest groups in the Tahoe area.

Transportation Permit

The DEIS/DEIR/DEIS-TRPA mentions that "During the construction period, some law enforcement services may be required for traffic control when oversized materials or equipment are moved to construction sites, when crossing structures are erected, and when the conductor is pulled across roadways" (page 4.11-9). Project work that requires movement of oversized or excessive load vehicles on State roadways requires a transportation permit that is issued by Caltrans. To apply, a completed transportation permit application must be submitted to: Caltrans Transportation Permits Office, 1823 14th Street, Sacramento, CA 95811-7119. See the following website for more information: <http://www.dot.ca.gov/hq/traffops/permits/>

Please provide our office with copies of any further actions regarding this project. We would appreciate the opportunity to review and comment on any changes and documents related to this development.

If you have any questions regarding these comments or require additional information, please contact Jeffrey Morneau, Intergovernmental Review Coordinator for Placer County at (916) 274-0679 or by email at: jeffrey.morneau@dot.ca.gov.

Sincerely,



MARLO TINNEY
Chief, Office of Transportation Planning – East

Cc: Scott Morgan, State Clearinghouse



DEPARTMENT OF PARKS AND RECREATION
Sierra District
P.O. Box 266
Tahoma, CA 96142

Major General Anthony L. Jackson, USMC

Letter
5

December 30, 2013

Tahoe Regional Planning Agency
Attention: Wendy Jepson, Senior Planner
P.O. Box 5310
Stateline, NV 89449

SUBJECT: CalPeco 625 and 650 Line Upgrade Project Draft EIS/EIS/EIR,
SCH# 2012032066

The California Department of Parks and Recreation (CA State Parks) appreciates the opportunity to respond to the CalPeco 625 and 650 Electrical Line Upgrade Project draft EIR. Approximately 0.5 mile of Segment 625-2 of the proposed project is located on the southwest corner of Burton Creek State Park, a CA State Park unit within the Sierra District. The project also proposes to use a couple of existing park roads that link to the Fiberboard Freeway. The Tahoe City Staging Area is located close to the south and to the west boundaries of Burton Creek State Park.

General Comments

- CA State Parks appreciates the Draft EIS/EIS/EIR including:
 - Clean-up and Post-Construction Restoration section that includes removal of all materials, construction debris, and equipment from the former electrical line and the new electrical line construction as well as post-construction restoration around the poles and conductor stringing and staging areas.
 - Applicant Proposed Measures on preventing spread of invasive non-native plants (weeds); preparing a Fire Suppression and Prevention Plan; and REC-6.
- To prevent the creation of non-park system routes and trails, REC-6 needs to be more specific per the following:
 - Segment 625-2 between southwest corner of Burton Creek State Park and the south most portion of Segment 625-3 where the State Park road meets the Fiberboard Freeway (segment that includes P16 and P18) will have hand dug pole holes; helicopter to remove old poles and new set poles; and construction activities that minimize soil and existing vegetation disturbance.

5-1

5-2

- More specifically, CA State Parks wants all 625 line access ways (P11, P12, P15, P16, P17, and P18) in the vicinity of the southwest corner of Burton Creek State Park be closed to recreational access to prevent non-State Park system route and trail proliferation.
- The western portion of the P15 access way is located on greater than 20% slopes. CA State Parks is concerned soil erosion and surface water runoff if not properly addressed can impact the State Park road below.
- CalPeco needs to consult with CA State Parks regarding:
 - A sensitive resource area within the proposed electrical line corridor on Burton Creek State Park that must be avoided.
 - Any CalPeco plans and activities on State Park property, including access ways grading/road improvements or erosion control plans, tree and brush removal and disposal, post-construction restoration, fire suppression and prevention plan, etc. needs to be reviewed and approved by CA State Parks.
- Specific tree and brush removal conditions on CA State Parks property include:
 - No skidding of trees
 - Slash and wood generated from brush clearing and tree removal will be removed from State Park property. Suggest using the slash and vegetation debris removed from the new line or access ways to help obscure the retired electrical line corridor if applicable.
- CA State Parks is very concerned about the spread of invasive non-native plant species (weeds). Burton Creek State Park has very few invasive non-native plant infestations. The Tahoe City Staging Area has had multiple weed infestations for many years and has a weed seed bank in the soils. The draft EIS/EIS/EIR has a good plan to prevent the spread of weeds by treating the weeds on site prior to use, requiring clean equipment, vehicle inspections, use of weed-free materials, etc. However at the Tahoe City Staging Area, our concern is to prevent the spread of soil containing invasive weed seeds along the access ways to and through Burton Creek State Park. CA State Parks would like to see all types of treatment of existing weeds proposed be used per BIO-4-7 to pretreat the weed infestations AND layers of materials as proposed by BIO-8 be laid down over the entire staging area to prevent spread of seeds and plant material by equipment and vehicles. It is less costly over time to prevent the spread of weeds than to allow the spread and have to control weeds.
 - BIO-5 as written only requires equipment will arrive clean and weed free to the project area. BIO-5 should also require all project vehicles to arrive clean and weed-free before accessing the ROW and other work areas.
- BIO-36 refers to a Restoration Plan for all lands affected by CalPeco construction activities. This Restoration Plan should including the actions listed in BIO-37 for decommissioning existing 625 line regarding monitoring for new and existing weed infestation and weed control and post-treatment monitoring, reporting, and remediation.
- CalPeco is responsible for the repair, rehabilitation, and restoration of park roads used in the project to the State's satisfaction.

- No new parking areas or parking spots shall be created along roads within Burton Creek State Park.
- No driving vehicles or equipment off-road outside of easement.
- No temporary ROW or increase in easement width for the new electrical line on State Park property.

5-7
cont'd
5-8

Specific Comments

Page

- 1-1.1.1 1.1 Project Requiring Environmental Analysis, 2nd paragraph
Listing other lands affected by the project to include "State of California lands" since the project does affect California Department of Parks and Recreation.
- 1-5 1.4 Organization of the EIS/EIS/EIR, 2nd Paragraph
Please replace "California Department of State Parks" with "California Department of Parks and Recreation."
- 4.2-4 4.2.1 Regulatory Setting, State, California State Parks, 1st paragraph
Please replace Sugar Pine Point State Park with Ed Z'berg-Sugar Pine Point State Park. Please add "Ward Creek Unit" to the list of State park properties in the Tahoe Region.
Scenic Resources, Visitors and Recreationists
- 4.4-19 Exhibit 4.4-6A, Photograph 2 caption—please replace "William B. Layton Park" with the official park name "Truckee River Outlet, Tahoe State Recreation Area."
- 4.7-56 Noxious Weeds, Table 4.7-9 does not include Dalmatian toadflax. This invasive plant species should be considered in the study area as it is found in the Tahoe City Staging Area.
- 4.8-4 Exhibit 4.8-1 Recreation Facilities in the Project Area
William B. Layton Park was the former name. The current official name is the Truckee River Outlet which is part of the Tahoe State Recreation Area. Truckee River Outlet encompasses both the locations incorrectly marked on this Exhibit as Truckee River Outlet Park and William B. Layton Park. The text in the 2nd paragraph of 4.8-8 is correct regarding ownership and operation entities.

5-9
5-10
5-11
5-12
5-13
5-14

Please contact me if you have any questions or require additional information regarding the contents of this letter.

Sincerely,



Tamara Sasaki
Sr. Environmental Scientist
P.O. Box 266
Tahoma, CA 96142

cc: Marilyn Linkem

From: White, Duane@DTSC [<mailto:Duane.White@dtsc.ca.gov>]

Sent: Wednesday, December 18, 2013 3:07 PM

To: Wendy Jepson

Cc: Miles, Tim@DTSC

Subject: Comment on the Pacific Electric Company 625 and 650 Electric Line Upgrade - SCH - 2012032066

Letter
6

Dear Wendy Jepson:

The California Department of Toxic Substances (DTSC) received the draft Environmental Impact Report (EIR) for the California Pacific Electric Company 625 and 650 Electric Line Upgrade project for the California State Clearing House #2012032066. The proposed 625 and 650 Electric Line Upgrade Project (Project) would primarily consist of upgrading CalPeco's existing 625 and 650 electrical power lines and associated substations from 60 kV to 120 kV. As stated on page 4.10-18 in the EIR, segment 650-6 of the 650 Line will cross the eastern boundary of the Truckee Regional Park. An area within the park, located approximately 400 feet west of the 650 Line is a former burn dump that contains high concentrations of lead, dioxins, and other hazardous waste. The Regional Park is located at 10570 Brockway Road in Truckee, California. Following consolidation and capping of the former Truckee Regional Park Burn Dump in 2010, a land use covenant was recorded on a portion to limits the site's land use to open space use and require a soil management plan be submitted to DTSC for review if any soil underneath the cap is disturb at or below grade. An operation and maintenance agreement was signed for the long-term operation and maintenance of the cap. If the proposed project disturbs the cap at or below grade, please notify DTSC through email at dwhite@dtsc.ca.gov. One might have to submit a Soil Management Plan, which would contain a Health and Safety Plan to protect workers, depending on the disturbance. Additional information on the former Truckee Regional Park Burn Dump is available at <http://www.envirostor.dtsc.ca.gov/public/>

6-1

Please call me at (916) 255-3585 if you have any questions.

Sincerely,

Duane White



Letter
7

RECEIVED

JAN 03 2014

TAHOE REGIONAL
GOVERNMENT

Re: Comments in Response to CalPeco 525 and 650 Electrical Line
Upgrade Project

December 31, 2013

BOARD MEMBERS

LARRY SEVISON, Chair
Placer County

JOHN HOOPER, Vice Chair
Public Member

LYNN SUTER
Public Member

TODD FERRARA
Resources Agency

KAREN FINN
Department of Finance

TOM DAVIS
City of South Lake Tahoe

NORMA SANTIAGO
El Dorado County

NANCY J. GIBSON
U.S. Forest Service (ex-officio)

PATRICK WRIGHT
Executive Director

Dear Ms. Jepson,

Thank you for providing the California Tahoe Conservancy (Conservancy) notice of the CalPeco Project (Project) and for your help in assisting us in obtaining additional information during the public comment period. The Conservancy sought to clarify whether Project elements are proposed on the State lands it owns, as it was not consulted or listed in the environmental document as a responsible agency for the project after posing the question at a Project scoping meeting last April.

Tri Sage has clarified that existing roads are proposed for Project access (and in some cases, road upgrades) through Conservancy-owned Placer County Assessor Parcel Numbers (APNs) 094-180-059, 094-141-001, 002, and 003. Additionally, APNs 090-020-007 and 008 have an existing road proposed for Project access during decommissioning of the 625 line.

The Conservancy's observations related to the small scale Road Decommissioning Maps (Appendix F) further indicate that there may be an additional road (or roads) proposed for access or decommissioning across other Conservancy-owned lands. Care should be taken when the descriptor "CalPeco Permitted USFS Roads" label is used on map legends for Appendix F when such roads cross other than National Forest System Lands. It would be prudent to determine whether the Forest Service has a recorded easement for the roads when they are proposed for use. Additionally, please examine all Appendix F roads located lower in the watershed (which are not reflected on larger scale project detail maps or the maps provided to the Conservancy by Tri Sage and found in the environmental document) to determine whether additional Conservancy parcels are affected by any road use or decommissioning proposal. We have provided GIS layers of the Conservancy's north shore land ownership to Project consultants. Of particular interest is Road T16N75.2, which is proposed for decommissioning in Alternatives 1, 3 and 4, in the vicinity of Carnelian Canyon (detail map attached). It appears to be a road

7-1

7-2

that crosses Conservancy lands at its lowest point in the watershed (APNs 116-101-002 and 018). If so, it is encumbered by easements to other agencies and may be planned for significant BMP work, including section realignment, by another easement holder (North Tahoe Public Utility District, for water tank access). This could limit the potential for decommissioning portions of the road.

7-2
cont'd

If the Project consultants have examined easements held by the utility company and concluded that they provide for the access or road improvement/decommissioning activities proposed by the Project, please provide the easements and conclusions for concurrence by the Conservancy. If this detailed easement examination has not occurred, then it is possible that the Conservancy will have a discretionary approval responsibility for these elements of the Project pursuant to its Special Use Guidelines (<http://tahoe.ca.gov/special-use.aspx>).

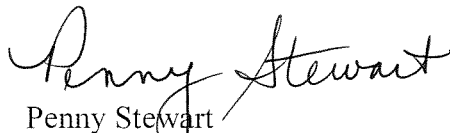
7-3

If based upon the information requested above, the CEQA lead agency (the California Public Utilities Commission) determines that the Project may require or requires a discretionary decision by the Conservancy for its implementation activities, we suggest that our agency be identified as a responsible agency in the environmental document and that CEQA Project consultation be initiated expediently. While we were not consulted prior to the document's public circulation, we are available for such consultation at this time should we be expected to use the Project's CEQA document for Conservancy Board actions related to our agency's statutory authority. We seek to ensure that the focus in the EIR is conducive to Conservancy CEQA decision making needs so that the Conservancy Board can make an informed decision.

7-4

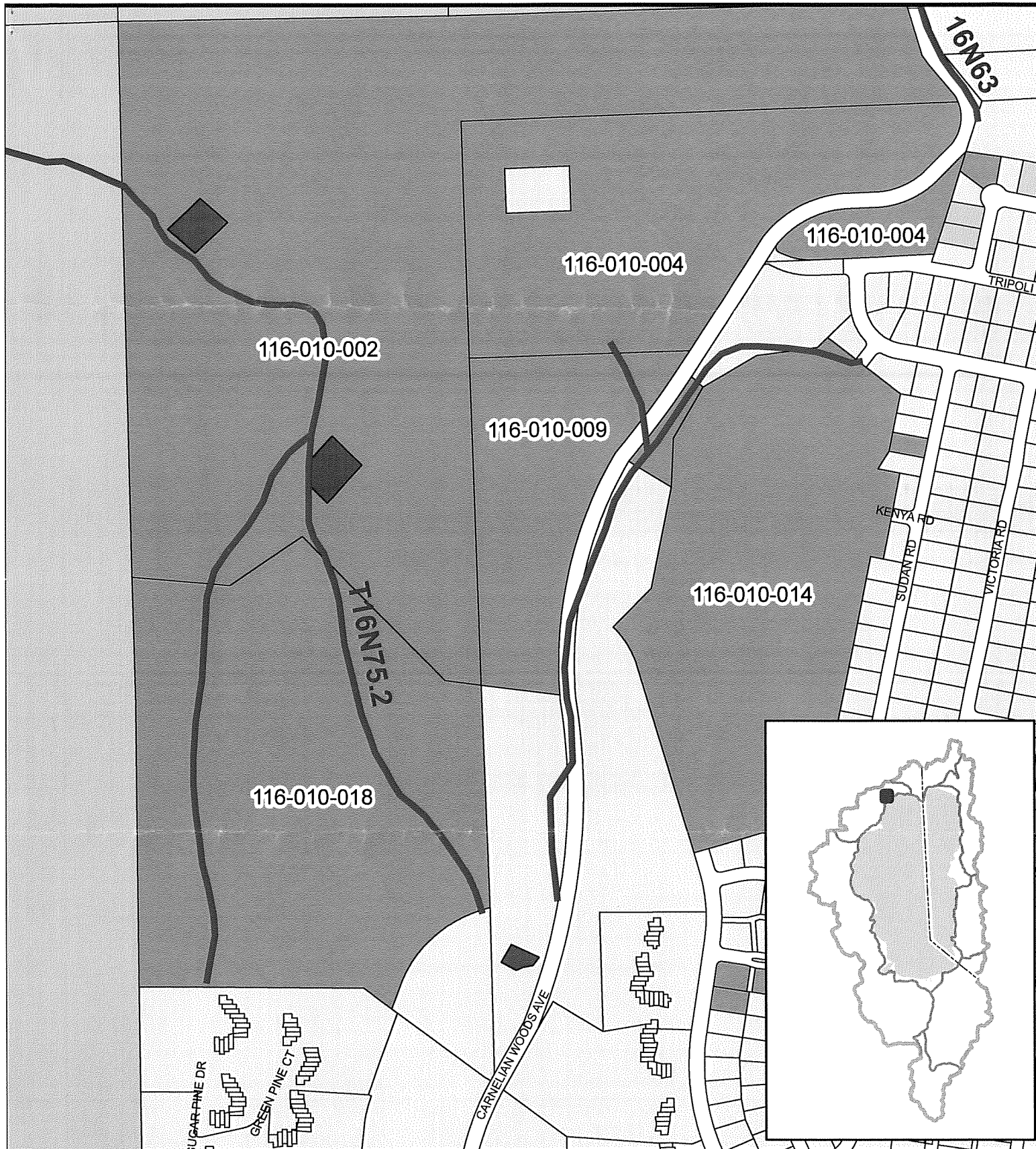
For additional information or consultation regarding this project, please contact Lisa O'Daly, Program Supervisor (530-543-6037).

Sincerely,







Penny Stewart
Program Manager
Resources and Public Access Program

Carnelian Canyon



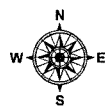
Legend

Ownership

-  California Tahoe Conservancy
-  Forest Service
-  North Tahoe Public Utility District
-  Private

 Unpaved Access Roads

T16N75.2 USFS Road Number



Scale 1:6,000
1" = 500'

California Tahoe Conservancy

December 2013

Map for reference purposes only.

Sources: TRPA



From: O'Daly, Lisa@Tahoe [<mailto:Lisa.Odaly@tahoe.ca.gov>]
Sent: Tuesday, January 07, 2014 3:44 PM
To: Wendy Jepson
Cc: Peter Kraatz; Butler, Shawn@Tahoe; 'Villanueva, Garrett -FS'
Subject: Additional CalPeco Comment from the CA Tahoe Conservancy

Hello, Wendy –

By now you have likely received the Conservancy's official comments regarding the CalPeco Project. Those comments do not change; however, this email message provides supplementary information. Specifically, the road across Conservancy parcel APN 090-020-007 is an unmaintained Placer County road easement. The road historically crossed Griff Creek; however, that bridge crossing recently failed. The road is not currently passable and its future status has not been determined. The CalPeco project proposes use of this road for access during decommissioning of the 625 line.

8-1

Thank you for ensuring that the project proponent is aware of this important information,
Lisa

Lisa O'Daly
Senior Environmental Planner
Public Access and Recreation Program

California Tahoe Conservancy
State of California >> Natural Resources Agency
1061 Third Street, South Lake Tahoe, CA 96158

Phone 530.543.6037
Fax 530.542.5567
Email lodaly@tahoe.ca.gov

Lahontan Regional Water Quality Control Board

January 6, 2014

Michael Rosauer
California Public Utilities Commission
505 Van Ness Avenue, 4th Floor
San Francisco, CA 94102

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JAN 08 2014

TAHOE REGIONAL
PLANNING AGENCY

COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT REPORT/ ENVIRONMENTAL IMPACT STATEMENT FOR THE CALIFORNIA PACIFIC ELECTRIC COMPANY 625 AND 650 ELECTRICAL LINE UPGRADE PROJECT (SCH# 2012032066), PLACER AND NEVADA COUNTIES

Thank you for the opportunity to comment on the Draft Environmental Impact Report/Environmental Impact Statement (Draft EIR/EIS) for the California Pacific Electrical Company 625 and 650 Electrical Line Upgrade Project (Project). The proposed Project is located in northeastern Placer County and southeastern Nevada County and consists of an upgrade to California Pacific Electric Company's existing electrical power lines and associated substations. The Project will involve the removal of the existing 625 line and constructing a new, rerouted 625 line, rebuilding the existing 650 line with possible realignment, and upgrading, modifying, and/or decommissioning six electrical power substations.

State law assigns responsibility for protection of water quality within the Lahontan basin to the California Regional Water Quality Control Board-Lahontan Region (Water Board). The Water Board implements and enforces the Porter-Cologne Water Quality Control Act (California Water Code § 13000 et seq.) and the *Water Quality Control Plan for the Lahontan Region* (Basin Plan). The Water Board is a responsible agency under the California Environmental Quality Act (CEQA) for the Project and will need an adequate CEQA document as the basis for issuing Clean Water Act section 401 Water Quality Certification, applicable Basin Plan prohibition exemptions, and National Pollutant Discharge Elimination System stormwater construction permit approvals.

9-1

Water Board staff have reviewed the information provided in the Draft EIR/EIS in context to the proposed Project's potential impacts to water quality and beneficial uses of waters of the State.

General Comments

The Draft EIR/EIS does not include sufficient information to conclude that the Project will not have a significant effect on the environment. All of the considered Project alternatives (with the exception of the "no action" alternative) will require substantive construction activities that will result in more than 200 acres of construction disturbance, 134 acres of permanent right-of-way disturbance, more than six acres of sensitive land disturbance (including wetlands and stream environment zones (SEZs)), and will require an estimated 25 stream channel crossings. The alternatives analyzed by Draft EIR/EIS will add unpaved road miles to the Lake Tahoe watershed and will involve removing more than 40,000 trees, including nearly 2,000 trees within SEZs. Construction staging alone will require more than 20 acres of vegetation clearing.

9-2

For the majority of potential impacts, the Draft EIR/EIS relies on identified “applicant proposed measures” (APMs) to avoid potentially significant impacts. The APMs, however, do not adequately describe the location, extent, and implementation details for the proposed actions. Such information is needed to assess the potential efficacy of APMs at preventing potentially significant environmental impacts, and the environmental analysis cannot be completed without those details. Furthermore, most APMs include qualifying language that undermines the potential for actual implementation. Phrases and wording such as “as necessary”, “as practical”, “extent possible”, “where feasible”, “when required”, “minimize”, “avoid” are undefined and lack clear criteria to indicate when various measures will be applied to the landscape. The lack of specificity and commitment to APM implementation does not provide sufficient confidence that the AMPs will effectively prevent impacts from occurring.

9-3

Schedule

Draft EIR/EIS section 3.3.6 describes the proposed Project schedule. The schedule indicates that the 650 Line rebuild would occur during the 2014 construction season. Given the timing of the environmental analysis and review and the complexity of needed construction approvals, this schedule appears optimistic. Because the Project involves disturbance in the 100-year floodplain and Lake Tahoe basin SEZs, Project construction will require obtaining exemptions from Basin Plan requirements that prohibit disturbance in these areas. The Project would be considered a “public service” facility and as such the needed exemptions may require approval at a Water Board public hearing. Water Board staff are unaware of any final Project plans or Storm Water Pollution Prevention Plan (SWPPP) documents that are needed to initiate the permitting and Basin Plan prohibition exemption process. The needed construction approvals will likely take many months, so actual construction may not commence until 2015 or later.

9-4

Also note that Draft EIR/EIS section 3.3.6 incorrectly states that the construction season runs from May through November. In accordance with the Basin Plan and Tahoe Regional Planning Agency (TRPA) requirements, the construction season in the Lake Tahoe basin extends from May 1 through October 15 of each year.

9-5

Specific APM Comments

BIO-29 - The APM states “Skidding of trees will be avoided in Waters of the United States (WOUS), including wetlands, unless the channel is dry or lined with snow...” Skidding trees through wetlands and stream channels has the potential to significantly impact these sensitive watershed resources, and the APM does not provide adequate protection to prevent significant resource impact. There are no specific criteria to “avoid” skidding trees through sensitive areas, nor is there any detail regarding the magnitude of the potential impact. Considering there are 40,000+ trees to be removed, it is likely that skidding trees through sensitive lands cannot be “avoided” and the resulting impacts will require substantial mitigation.

9-6

BIO-30 – The APM states that all wetlands will be delineated prior to construction and that “impacts will be avoided to the extent practicable”. The APM further states that work in meadows, wetlands, and saturated soils will be “scheduled when soils are dry to the extent possible”. The lack of commitment to effectively avoid sensitive areas fails to provide any confidence that wetland resources will be protected. The APM acknowledges that permanent impacts are likely to occur by stating “all permanent wetland impacts will be mitigated at a minimum of a 1:1 ratio”. Given the likelihood of permanent and irreparable harm to wetland resources and the lack of a clearly defined mitigation plan, the APM is insufficient to prevent significant and unavoidable impacts to sensitive lands.

9-7

BIO-36 – The APM describes the Project proponents' intent to develop and implement a revegetation plan for "all areas disturbed by the Project". As with other APMs, the lack of detail regarding the expected complexity and extent of such work fails to acknowledge the real and potentially significant impacts associated with the scope and scale of the proposed disturbance.

9-8

SOIL-1 – The APM references straw mulch and straw bale check dams among the potential erosion control measures. These are antiquated and ineffective measures that do not acknowledge the real and significant temporary erosion control challenges that the Project proponent will face in construction project of this magnitude. A detailed SWPPP describing the proposed location for sediment control fencing, fiber rolls, and other practices along with construction phasing and vegetation protection details will be needed to fully describe soil protection efforts.

9-9

WQ-3 – The APM indicates that stormwater and groundwater pumped from excavations will be discharge overland "where feasible". This APM, like others, lacks a clearly defined process for assessing whether a given action is "feasible". The potential impact cannot be accurately assessed without such information. Project excavation will apparently occur in many areas with shallow groundwater and the proposed measure inadequately addresses the possible impacts associated with construction dewatering.

9-10

WQ-4 – The APM acknowledges the likelihood of skidding trees and poles through wetlands and aquatic resources and fails to provide any substantive action to address the impact to these sensitive lands. The APM statement that "CalPeco will restore the banks and channels to preconstruction conditions immediately afterwards" fails to acknowledge the complexity and uncertainty associated with such restoration.

9-11

Hydrology and Water Quality

Regulatory Setting

The "State" portion of the regulatory setting section includes a discussion of the Lake Tahoe Total Maximum Daily Load (TMDL) program that emphasizes the pollutant loading and control measures associated with urban stormwater runoff. The document fails to discuss the fine sediment particle and nutrient loading associated with undeveloped forest lands and the associated implementation plan elements that prohibit the increase in pollutant loading from land management actions in undeveloped areas. The Lake Tahoe TMDL identifies unpaved roadways as the primary source of pollutants in undeveloped forest lands, and supports resource management efforts to reduce the number of unpaved roads on the landscape. The Project proposes to *add* unpaved road miles to the Lake Tahoe basin and involves significant construction disturbance to undeveloped forest lands and sensitive habitats. As such, the Project runs counter to the Lake Tahoe TMDL implementation plan and has the potential to increase pollutant loading to the Lake. The incomplete discussion of the Lake Tahoe TMDL, consequently, leads to an inadequate assessment of potential water quality impacts.

9-12

Nearshore Water Quality

The summary of nearshore water quality is overly simplistic with a disproportionate emphasis on nearshore turbidity measurements. While fine sediment particle discharges are an issue, the primary concern in the nearshore environment is the perception of elevated algal growth. The Draft EIR/EIS should consider the most recent nearshore research report, available on the Desert Research Institute website at:

9-13

[http://www.dri.edu/images/stories/centers/cwes/Lake Tahoe Nearshore Evaluation and Monitoring Framework.pdf](http://www.dri.edu/images/stories/centers/cwes/Lake_Tahoe_Nearshore_Evaluation_and_Monitoring_Framework.pdf)

Pollutant Sources

The Draft EIR/EIS reflects a misunderstanding of the TMDL development and implementation process. Under the "Existing Conditions" heading, the discussion of Lake Tahoe TMDL pollutant sources contains incorrect information. The Lake Tahoe Watershed Model and the Pollutant Load Reduction Model are not synonymous as the Draft EIR/EIS suggests. The Lake Tahoe Watershed Model was used to estimate pollutant loading from various land uses in the Lake Tahoe Basin. The Pollutant Load Reduction Model was developed after Lake Tahoe TMDL adoption as a tool to evaluate the potential load reduction associated with various implementation actions in urbanized areas.

9-14

Load Reduction Milestones and Implementation

Again, the Draft EIR/EIS presents incorrect information regarding the intent of the Lake Tahoe TMDL and the implementation responsibilities. The Lake Tahoe TMDL was not developed to "achieve TRPA's transparency standard" as suggested by the Draft EIR/EIS. The states of California and Nevada undertook the TMDL effort to address the failure to meet state water quality standards, not those adopted by TRPA. The implementation discussion again disproportionately emphasizes urban stormwater runoff treatment when the Project in question is more likely to impact undeveloped forest lands.

Hydrology and Water Quality Impact 4.6-1

The Draft EIR/EIS concludes that none of the considered alternatives will violate any federal, state, regional, or TRPA water quality standards or otherwise substantially degrade surface or groundwater quality. The "less than significant" finding is based on the implementation of the water quality APMs and compliance with applicable regulations that prohibit such water quality degradation. As discussed above, the APMs lack sufficient detail to support a "less than significant" finding. The Project will involve substantial construction disturbance spread across multiple watersheds requiring significant amounts of soil and vegetation disturbance for staging, access, and facility improvement. Due to the scope and scale of both construction and post-construction watershed disturbances, the potential for violating established water quality standards and degrading surface water quality is potentially significant.

9-15

Hydrology and Water Quality Impact 4.6-3

The Draft EIR/EIS rightly concludes that the Project will likely have a significant impact on existing drainage patterns that may result in substantial erosion or siltation that may be carried to surface waters. The identified mitigation measures, however, do not reduce the impact to less-than-significant levels for the proposed alternative. The referenced USFS "guidance" and vague reference to a "maintenance routine" are insufficient and lack specific detail and required mitigation monitoring to ensure success. Specific information regarding the location of proposed roads, design elements, best management practices, maintenance efforts, and specific "feasibility" criteria are needed to evaluate whether the proposed mitigation measures can sufficiently reduce potential impacts to less than significant levels.

9-16

Cumulative Impacts – Surface Water Quality

The Draft EIR/EIS relies on an "Equivalent Roaded Acres" approach to assess the cumulative water quality impacts. The analysis, however, uses flawed equivalent coefficients and thus does not adequately assess the potential cumulative impact. Unpaved roads and staging areas should be assigned coefficients of 1.0 rather than the 0.8 and 0.3 includes in the analysis. Unpaved roads and compacted disturbed staging sites will be hydraulically similar to impervious surfaces. The increase in unpaved road mileage is of particular water quality concern, and the assignment of a coefficient less than 1.0 distorts the potential impact the new roads will have on the landscape.

9-17

Biological Resources

Disturbance or loss of sensitive habitats

The Project has the potential to significantly impact wetland and riparian resources. Table 4.7-9 lists permanent wetland impacts ranging from five to ten acres, depending on the alternative. The proposed alternative would result in 9.9 acres and 9.2 acres of permanent and temporary wetland disturbance, respectively and an additional 3.7 acres of permanent disturbance to SEZs in the Lake Tahoe basin. The Draft EIR/EIS again relies on vaguely worded, inadequate APMs that lack clearly defined implementation criteria to offset the impacts to sensitive lands. The Draft EIR/EIS correctly notes that the APMs are insufficient to reduce potential impacts to less than significant levels and instead relies on identified two mitigation measures to compensate for unavoidable losses of stream, riparian, and SEZ habitats.

Mitigation Measures 4.7-2a and 4.7-2b

These measures assume that all unavoidable impacts to stream and riparian habitats and SEZs can be offset by either purchasing mitigation credits or by "creating or restoring in-kind habitat in the surrounding area" in a minimum 1:1 ratio for stream and riparian habitats and in a 1.5:1 ratio for SEZs. The mitigation measures do not, however, include any assessment of the availability of mitigation credits or suitable sites for constructing new or enhanced wetland, riparian, and SEZ areas. As noted in the Draft EIR/EIS, these habitats are considered sensitive because they are declining in quantity and condition throughout the region and because they provide important habitat functions. Suggesting that substantive sensitive habitat losses can be mitigated by developing a plan to build new wetland/riparian/SEZ habitat nearby fails to acknowledge the challenge and complexity associated with restoration work. Given the unavoidable, permanent loss of wetland/riparian/SEZ habitats associated with the Project, this impact should be listed as significant and unavoidable.

9-18

Tree removal and loss of late seral/old growth forest

The Project will result in the significant and unavoidable loss of old growth forest in the Lake Tahoe Basin. Instead of acknowledging this impact, the Draft EIR/EIS implies that such loss can be mitigated by developing and implementing a forest management plan. This implication fails to acknowledge that old growth forest cannot be replaced, and any loss would constitute a significant impact.

9-19

Conclusion

One of the primary purposes of CEQA is to disclose to the public the significant environmental effects of a proposed discretionary project. The California Pacific Electric Company 625 and 650 Electrical Line Upgrade Project is a large and complex utility upgrade effort that will involve significant temporary and permanent environmental impacts. Although the Draft EIR/EIS fully describes these impacts and includes an adequate alternatives analysis, it fails to acknowledge the unavoidable impacts to water quality, sensitive habitat, and old growth forest that will result from Project construction. The listed APMs and Mitigation Measures lack the detail and implementation commitment to sufficiently offset the anticipated negative environmental impacts associated with this Project. The final EIR/EIS should clearly disclose the Project's significant and unavoidable impacts and, if appropriate, make a statement of overriding considerations to justify why the Project should go forward in spite of those impacts.

9-20

Michael Rosauer
California Public Utilities Commission

- 6 -

We appreciate the opportunity to review and comment on the Draft EIR/EIS. If you have any questions or concerns please contact me at RLarsen@waterboards.ca.gov or (530) 542-5439.



Robert Larsen
Senior Environmental Scientist

cc: Wendy Jepson, Senior Planner, Tahoe Regional Planning Agency

BL/dg/T: CALPECo.CEQA comments.doc
File: new pending: Placer County, CALPECo 625/650 Upgrade Project



COUNTY OF PLACER
Community Development/Resource Agency

Michael J. Johnson, AICP
Agency Director

Letter
10

ADMINISTRATION

January 7, 2014

Wendy Jepson
Tahoe Regional Planning Agency
PO Box 5310
128 Market Street
Stateline, NV 89449
wjepson@trpa.org

Subject: **California Pacific Electric Company 625 and 650 Electrical Line Upgrade Project, Draft EIS/EIR/EIS**

Thank you for providing Placer County the opportunity to review the Draft EIS/EIR/EIS for the subject project. The proposed project primarily consists of an upgrade of the 625 and 650 Lines and associated substations. These improvements are located in the vicinity of Martis Valley, Northstar at Tahoe, Tahoe Vista, Kings Beach, Carnelian Bay and Tahoe City in northeastern Placer County and Truckee in southeast Nevada County. This project proposes to bring reliable electrical service to the North Lake Tahoe Region. It will allow for greater reliability during normal and down power line operations. It will decrease the reliance of the diesel locomotive engines during down power lines which will lower air emissions to the region. The increased reliability and more consistent power stability will be a key to any future economic development or housing opportunity in the region. Placer County has reviewed the document and compiled the following comments for your consideration.

GENERAL ORDER NO. 131-D

Placer County has reviewed General Order No. 131-D and offers the following comments regarding the Order. While it is true that local jurisdictions are preempted "from regulating power line projects, distribution lines, substations or electric facilities constructed by *public utilities* subject to the PUC's jurisdiction", the County does in fact have a role in local land use matters.

Section XIV.B of the General Order States: "This General Order clarifies that local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations or electric facilities constructed by public utilities subject to the Commission's jurisdiction. *However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters. In instances where the public utilities and local agencies are unable to resolve their differences, the Commission shall set a hearing no later than 30 days after the utility or local agency has notified the Commission of the inability to reach agreement on land use matters*" (emphasis added).

Placer County agrees that the PUC is the Lead Agency for purposes of CEQA compliance for CalPeco's project. Placer County agrees that the PUC preempts local regulation of power line projects, substations and electric facilities constructed by *public utilities*. However, such regulation does not eliminate the County's role in discussing land use matters with respect to these projects, nor does it

10-1

exempt CalPeco from its legal obligations to formally notice the County and allow the County to protest the proposed project (or portions thereof.) Nor does this order eliminate the County's role as a responsible agency under CEQA to the extent it must issue building or grading permits for the CalPeco project.

10-1
cont'd

Currently, the PUC, as Lead Agency, is conducting its CEQA review. To the extent that the Placer County finds there are land use interests that should be brought to the PUC's attention, comments on the Draft EIS/EIR/EIS are a helpful vehicle for such communication.

COMMUNITY PLAN CONSISTENCY

1. Tahoe City and Substation Reconstruction to Operate at 120 kV (APN 094-540-019): Reconstruction of the Tahoe City Substation should be compatible with the adopted 1994 Tahoe City Community Plan Goals and Objectives. Specifically, the existing power substation in Tahoe City is envisioned to be relocated from the Fanny Bridge site to the Chimney Site (off Fairway Street). The relocation is to move the power substation and high power lines away from scenic areas and the main gateway of Tahoe City (Tahoe City Community Plan Chapter I-15 "Public Service; #3 Relocate Power Substation"). The environmental document places a majority of the rationale to continue with the existing Tahoe City substation by relying on the TRPA Scenic rating of the Tahoe City Community Plan area. Specifically the Draft EIS/EIS/EIR page 3-80 and 81 cites:

"Further, one of the reasons given in the community plan for the relocation was to improve scenic quality for the SR 89 TRPA route. Since this publication of this plan, the travel route rating for this section of highway has increased as a result of other improvements in the community plan and the asserted unit is now in attainment with the TRPA threshold. Therefore, the need to relocate this facility is significantly diminished and may no longer exist."

Placer County supports the December 2, 2013 correspondence from Sustainable Community Advocates (SCA) in that the Draft EIS/EIR/EIS provides a narrow and incomplete interpretation of multiple reasons why the Substation is recommended for relocation in the adopted Tahoe City Community Plan. Beyond scenic concerns, the 1994 Plan's "Vision for 2007 and Beyond" encouraged/recommended relocation of the substation to facilitate: 1) Redevelopment of the Wye Area (page I-8); Improved Entrance to Tahoe City (page I-13); and Improved River and Lake Access, with a greater emphasis on recreation and transportation improvements on the "64-Acre Tract" (page I-14). SCA notes the other two recommended items under Public Service - expansion of Tahoe City Public Utility District facilities to a portion of the USFS Chimney site and relocation of the Tahoe City Fire Station - have both been accomplished, consistent with the adopted Community Plan.

10-2

Undergrounding of overhead power lines along scenic vistas, gateways, bike trails and the Truckee River also needs to be considered and evaluated. On page 3-81 there was an explanation that dismisses shifting the power lines underground since the existing fanny bridge spanning the Truckee River does did not have sufficient capacity.

"The existing conduits in the bridge spanning the Truckee River do not have sufficient capacity for rerouting of all the distribution lines."

The 1994 Tahoe City Community Plan Policy 5A (page II-4) states "Pursuant to the general recommendations in Chapter IV projects within the scenic corridor shall be responsible for removing, relocating or screening overhead utilities as a condition of the project approval." The project is located in the Tahoe City Scenic Roadway Units #14, #42 and #43 as defined in Chapter IV of the Community Plan and Chapter IV under General Recommendations (a) further indicates (page IV-21) that overhead utility lines should be placed underground.

Placer County believes that the Draft EIS/EIR/EIS needs to provide further project level analysis relating to alternatives that can be considered for the relocation of the Tahoe City Substation and the undergrounding of overhead power lines.

10-2
cont'd

2. Kings Beach Substation Reconstruction to Operate at 120 kV (APN 090-046-006): The project proposes to reconstruct the Kings Beach Substation site as a 120 kV substation to accommodate the upgraded 650 and 625 lines. The Draft EIS/EIR/EIS states that the project will require an amendment to Plan Area Statement - 019, Martis Peak, in order to add Public Utility Centers as a special use within a new Special Area. This amendment will result in an inconsistency between the TRPA Plan Area Statement - 019 and the Placer County Plan Area Statement - 019 which were adopted by both TRPA and Placer County at the same time in accordance with the North Tahoe Area General Plan. How does the applicant propose to resolve this inconsistency in adopted Plans?

10-3

AESTHETICS

1. Kings Beach Substation: The Draft EIS/EIR/EIS states that the Kings Beach Substation reconstruction proposes "...four relocated 14.4 kV distribution feeders which are currently above ground and would be placed underground..." and "To facilitate the upgrade of this facility, some activities would occur outside of the existing facility's fence line; however, all work would occur within the larger CalPeco-owned parcel that houses the Kings Beach Utility Center." The document further states that "New lighting would be installed at the Kings Beach Substation..." As many of these project improvements have aesthetic elements, Placer County recommends that the reconstruction of the Kings Beach Substation and the decommissioning of the Brockway Substation be submitted to the County for Design/Site Review as well as the local citizens Design Review Committee (North Tahoe Design Review Committee) in order to ensure that the project design elements such as colors, materials, landscaping, and lighting comply with the local design guidelines.

10-4

2. Squaw Valley and the Northstar Substation: The Draft EIS/EIR/EIS indicates that the existing Squaw Valley and Northstar Substations will be upgraded and that "All work would occur within the existing substation fence line. The Draft EIS/EIR/EIS does not, however, provide details as to whether these upgrades will be visible from adjacent public right-of-ways or adjoining properties. Placer County recommends that prior to upgrading these substations, the proposed upgrades should be submitted to the County for Design/Site Review as well as the local citizens Design Review Committee (Squaw Valley and North Tahoe Design Review Committee) in order to ensure that the project design elements such as colors, materials, landscaping, and lighting comply with the local design guidelines.

3. Alternative 2: This alternative provides for the inclusion of a new 625-9-D-C-OH-3 and 625-9-D-C-OH-4 line that would be relocated away from the existing State Route 267 alignment for the portions that are within the Lake Tahoe Basin. While this alternative does result in tree removal and result in scenic impacts as viewed from the Lake, there are several benefits from this alternative. An arguably higher number of individuals visiting Tahoe first see the lake from the highway viewsheds. The alternative realignment would result in improved views from that viewshed. Further improvement could be achieved by also relocating the other utilities such as the phone lines at the same time and/or undergrounding consistent with the direction provided in the community plans.

10-5

ELECTRICAL AND MAGNETIC FIELDS (EMF)

The Draft EIS/EIR/EIS states that: "The environmental document does not consider electric and magnetic fields (EMF) in the context of the National Environmental Protection Act (NEPA), California Environmental Quality Act (CEQA), and TRPA regulations and determination of environmental impact first, because there is no agreement among scientists that EMF does create a potential health risk, and second, because there are no defined or adopted CEQA/NEPA or TRPA standards for defining health risk from EMF (page 4.10-25). How will it be assured with the Kings Beach substation relocation that measures are taken or proposed to reduce the potential exposure to electrical and magnetic fields generated by the proposed facilities and their upgrading?

10-6

PUBLIC NOTICE

Placer County has a public process for projects of this scale to require adequate public notice and input from our Advisory Councils, Design/Site Review Committees, and the Tahoe Community Plan stakeholder groups. The County is aware that the project may not require local discretionary review, but the GO-131-D Section III .C states that “...to ensure safety and compliance with local building standards, the utility must first communicate with, and obtain the input of, local authorities regarding land use matters and obtain non-discretionary local permits required for the construction and operation of these projects.” Therefore, Placer County recommends that the project be presented to the North Tahoe Regional Advisory Council and the Squaw Valley Municipal Advisory Council for review and comment.

10-7

WATER QUALITY

Since it is likely that the County will be reviewing and approving permits related to improvements and grading on this project, the County suggests using the County Standard language as Mitigation Measures for Impacts to Water Quality as follows:

- a. *The applicant shall prepare and submit Improvement Plans, specifications and cost estimates (per the requirements of Section II of the Land Development Manual [LDM] that are in effect at the time of submittal) to the Engineering and Surveying Division (ESD) for review and approval. The plans shall show all physical improvements as required by the conditions for the project as well as pertinent topographical features both on and off site. All existing and proposed utilities and easements, on site and adjacent to the project, which may be affected by planned construction, shall be shown on the plans. All landscaping and irrigation facilities within the public right-of-way (or public easements), or landscaping within sight distance areas at intersections, shall be included in the Improvement Plans. The applicant shall pay plan check and inspection fees with the 1st Improvement Plan submittal. (NOTE: Prior to plan approval, all applicable recording and reproduction cost shall be paid). The cost of the above-noted landscape and irrigation facilities shall be included in the estimates used to determine these fees. It is the applicant's responsibility to obtain all required agency signatures on the plans and to secure department approvals. If the Design/Site Review process and/or Development Review Committee (DRC) review is required as a condition of approval for the project, said review process shall be completed prior to submittal of Improvement Plans. Record drawings shall be prepared and signed by a California Registered Civil Engineer at the applicant's expense and shall be submitted to the ESD in both hard copy and electronic versions in a format to be approved by the ESD prior to acceptance by the County of site improvements.*

10-8

Conceptual landscape plans submitted prior to project approval may require modification during the Improvement Plan process to resolve issues of drainage and traffic safety.

- b. *The Improvement Plans shall show all proposed grading, drainage improvements, vegetation and tree removal and all work shall conform to provisions of the County Grading Ordinance (Ref. Article 15.48, Placer County Code) and Stormwater Quality Ordinance (Ref. Article 8.28, Placer County Code) that are in effect at the time of submittal. No grading, clearing, or tree disturbance shall occur until the Improvement Plans are approved and all temporary construction fencing has been installed and inspected by a member of the Development Review Committee (DRC). All cut/fill slopes shall be at a maximum of 2:1 (horizontal: vertical) unless a soils report supports a steeper slope and the Engineering and Surveying Division (ESD) concurs with said recommendation. Fill slopes shall not exceed 1.5:1 (horizontal: vertical)*

The applicant shall revegetate all disturbed areas. Revegetation, undertaken from April 1 to October 1, shall include regular watering to ensure adequate growth. A winterization plan shall be provided with project Improvement Plans. It is the applicant's responsibility to ensure proper installation and

maintenance of erosion control/winterization before, during, and after project construction. Soil stockpiling or borrow areas, shall have proper erosion control measures applied for the duration of the construction as specified in the Improvement Plans. Provide for erosion control where roadside drainage is off of the pavement, to the satisfaction of the Engineering and Surveying Division (ESD).

The applicant shall submit to the ESD a letter of credit or cash deposit in the amount of 110 percent of an approved engineer's estimate for winterization and permanent erosion control work prior to Improvement Plan approval to guarantee protection against erosion and improper grading practices. Upon the County's acceptance of improvements, and satisfactory completion of a one-year maintenance period, unused portions of said deposit shall be refunded to the project applicant or authorized agent.

If, at any time during construction, a field review by County personnel indicates a significant deviation from the proposed grading shown on the Improvement Plans, specifically with regard to slope heights, slope ratios, erosion control, winterization, tree disturbance, and/or pad elevations and configurations, the plans shall be reviewed by the DRC/ESD for a determination of substantial conformance to the project approvals prior to any further work proceeding. Failure of the DRC/ESD to make a determination of substantial conformance may serve as grounds for the revocation/modification of the project approval by the appropriate hearing body.

- c. The Improvement Plan submittal shall include a final drainage report in conformance with the requirements of Section 5 of the Land Development Manual and the Placer County Storm Water Management Manual that are in effect at the time of submittal, to the Engineering and Surveying Division for review and approval. The report shall be prepared by a Registered Civil Engineer and shall, at a minimum, include: A written text addressing existing conditions, the effects of the improvements, all appropriate calculations, a watershed map, increases in downstream flows, proposed on- and off-site improvements and drainage easements to accommodate flows from this project. The report shall identify water quality protection features and methods to be used both during construction and for long-term post-construction water quality protection. "Best Management Practice" measures shall be provided to reduce erosion, water quality degradation, and prevent the discharge of pollutants to stormwater to the maximum extent practicable.*
- d. The Improvement Plans shall show that water quality treatment facilities/Best Management Practices (BMPs) shall be designed according to the guidance of the California Stormwater Quality Association Stormwater Best Management Practice Handbooks for Construction, for New Development / Redevelopment, and for Industrial and Commercial (or other similar source as approved by the Engineering and Surveying Division (ESD) such as the Stormwater Quality Design Manual for the Sacramento and South Placer Regions.*

Construction (temporary) BMPs for the project include, but are not limited to: _____. (To be completed by applicant)

Storm drainage from on- and off-site impervious surfaces (including roads) shall be collected and routed through specially designed catch basins, vegetated swales, vaults, infiltration basins, water quality basins, filters, etc. for entrapment of sediment, debris and oils/greases or other identified pollutants, as approved by the Engineering and Surveying Division (ESD). BMPs shall be designed at a minimum in accordance with the Placer County Guidance Document for Volume and Flow-Based Sizing of Permanent Post-Construction Best Management Practices for Stormwater Quality Protection. Post-development (permanent) BMPs for the project include, but are not limited to: _____. (To be completed by applicant). No water quality facility construction shall be permitted within any identified wetlands area, floodplain, or right-of-way, except as authorized by project approvals.

10-8
cont'd

All BMPs shall be maintained as required to insure effectiveness. The applicant shall provide for the establishment of vegetation, where specified, by means of proper irrigation. Proof of on-going maintenance, such as contractual evidence, shall be provided to ESD upon request. Maintenance of these facilities shall be provided by the project owners/permittees unless, and until, a County Service Area is created and said facilities are accepted by the County for maintenance.

- e. Prior to Improvement Plans, the applicant shall obtain such permit from the State Regional Water Quality Control Board and shall provide to the Engineering and Surveying Division evidence of a state-issued WDID number or filing of a Notice of Intent and fees.*
- f. This project is partially located within the permit area covered by Placer County's Small Municipal Separate Storm Sewer System (MS4) Permit (State Water Resources Control Board National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000004, Order No. 2013-0001-DWQ), pursuant to the NPDES Phase II program. Project-related stormwater discharges are subject to all applicable requirements of said permit.*
- g. The project shall implement permanent and operational source control measures as applicable. Source control measures shall be designed for pollutant generating activities or sources consistent with recommendations from the California Stormwater Quality Association (CASQA) Stormwater BMP Handbook for New Development and Redevelopment, or equivalent manual, and shall be shown on the Improvement Plans.*
- h. The project is also required to implement Low Impact Development (LID) standards designed to reduce runoff, treat stormwater, and provide baseline hydromodification management to the extent feasible.*

10-8
cont'd

GENERAL

- 1. The Draft EIS/EIR/EIS should note that the project will be subject to Placer County's Grading/Improvement Plan review process for work within unincorporated Placer County. An Encroachment Permit shall be obtained from Placer County Department of Public Works for all work within the County right-of-way.
- 2. There is a typo in the Exhibit 4.6-1 legend (Watershed is mis-spelled).
- 3. The Draft EIS/EIR/EIS should provide more detail identifying the stockpiling and/or vehicle staging areas with locations as far as practical from existing dwellings and protected resources in the area.

10-9

I 10-10

10-11

Once again, Placer County appreciates the opportunity to provide comments on this project and realizes the overall value and benefits that this project brings to the residents and businesses located in the region. The County looks forward to working cooperatively with TRPA and CalPeco to address the County's comments stated herein.

Sincerely,



MICHAEL J. JOHNSON, AICP
Agency Director

- cc. E. J. Ivaldi, Environmental Coordinator
Crystal Jacobsen, Planning Services Division
Paul Thompson, CDRA
Jennifer Merchant, County Executive Office
Steve Buelna, CDRA

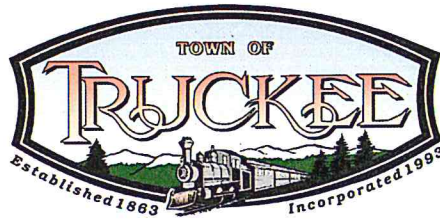
Rick Eiri, Engineering and Surveying Division
Sarah Gillmore, Engineering and Surveying Division
Ken Grehm, Department of Public Works
Richard Moorehead, Department of Public Works
Wesley Nicks, Environmental Health Services
Andy Fisher, Facility Services - Parks
Karin Schwab, County Counsel

Town Council

Patrick Flora, Mayor

Alicia Barr, Vice Mayor

Dr. Mark Brown D.C., Council Member
Joan deRyk Jones, Council Member
Carolyn Wallace Dee, Council Member



Department Heads

Tony Lashbrook, Town Manager
Andy Morris, Finance Director
Adam McGill, Planning Director

John McLaughlin, Community Development Director
Kim Szczurek, Administrative Services Director
Judy Price, Town Clerk
Alex Terrazas, Assistant Town Manager
Daniel Wilkins, Public Works Director/Town Engineer

**Letter
11**

January 7, 2014

Wendy Jepson, Senior Planner
Tahoe Regional Planning Agency
P.O. Box 5310
Stateline, NV 89449

Re: California Pacific Electric Company (CalPeco) 625 and 650 Electrical Upgrade Project (California State Clearinghouse #2012032066, TRPA project file #530-201-00/ERSP 2009-3591, TRPA EIR file #ENVR2010-0001, TRPA Plan Area Amendment #PLAN2013-0004, and CPUC Application #CPUC A. 10-08024)

Dear Ms. Jepson:

Thank you for the opportunity to review and comment on the California Public Utilities Commission 625 and 650 Electrical Line Upgrade Draft EIS/EIS/EIR. The Town understands the purpose of the proposed electrical line upgrade project to be primarily based on compliance with the following State and Federal requirements:

California Public Utilities Code Section 399, which implements the California Legislature's Reliable Electric Service Investments Act (the Act). The Act states that each electrical corporation must operate its electric distribution grid in its service in a safe, reliable, efficient, and cost-effective manner [399.2(a)(1)] and that prudent investments continue to be made to protect the integrity of the electric distribution grid [399(c)(1)].

The North American Electric Reliability Corporation (NERC) Reliability Standard TPL-002-0b. This NERC standard requires transmission systems have the capability to supply peak loads at adequate voltage levels without overloading the system components with any one component out of service. This is known as "single contingency reliability" or "N-1 contingency." The North Lake Tahoe Transmission System does not currently meet this federal standard.

The Town also understands that the California Public Utilities Commission (CPUC) has preemptive jurisdiction over the construction, maintenance, and operation of CalPeco's facilities but that ministerial building and encroachment permits from local jurisdictions would be obtained. Additionally, CalPeco would be required to comply with local building, design and safety standards to the greatest degree feasible to minimize project conflicts with local conditions (DEIR pp. 3-82). Based on this understanding, please accept the following comments

Tahoe/Truckee



10183 Truckee Airport Road, Truckee, CA 96161-3306

www.townoftruckee.com

Administration: 530-582-7700 / Fax: 530-582-7710 / email: truckee@townoftruckee.com
Community Development: 530-582-7820 / Fax: 530-582-7889 / email: cdd@townoftruckee.com
Animal Services/Vehicle Abatement: 530-582-7830 / Fax: 530-582-7889 / email: animalservices@townoftruckee.com
Police Department: 530-550-2328 / Fax: 530-550-2326 / email: policedepartment@townoftruckee.com

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on behalf of the Town of Truckee. Please note that proposed text amendments are edited within this comment letter where applicable, and are identified with ~~highlighted-strikethrough~~ for suggested deletions and underlined highlighted italic for suggested additions.

1. Suggested changes for Page 3-9:

SEGMENT 650-7 Segment 650-7 spans between the North Truckee Substation and the Truckee Substation. From the North Truckee Substation, the power line crosses Comstock ~~Driver~~ Drive and parallels the northern side of Comstock Drive for less than 1,000 feet to the east before turning south to the north side of Donner Pass Road, crossing Interstate 80 (I-80) and East Main Jibboom Street. This portion of Segment 650-7 is underbuilt with the 60 kV 132 Line. Segment 650-7 then parallels the north side of Donner Pass Road for less than 600 feet before turning south, crossing over Trout Creek Road, Donner Pass Road, and East Keiser Avenue to reach the Truckee Substation. This portion of the segment is configured with a distribution line underbuild.

11-1

2. Exhibit 4.2-5: There is a commercial land use designation applied to the northeast corner of the Glenshire Drive/Donner Pass Road intersection that based on Town of Truckee Zoning Map Sheet #22 is zoned DRM-14 (Downtown Multi-Family Residential, 14 dwelling units per acre). Please modify the map to change the commercial land use designation to residential for this location.

11-2

3. Table 4.1-2:

- a. Please address why Table 4.1-2 (Cumulative Project List) includes the Gregory Creek Subdivision, a non-entitled land use proposal that has been withdrawn from consideration, but the Truckee Railyard Master Plan, an adopted Master Plan with development potential of extensive commercial and residential development located adjacent to the 650-6 line section was excluded from the probable projects list.
- b. Please modify the Joerger Ranch Specific Plan residential unit count from 318 dwelling units to 97 dwelling units consistent with the April 2012 Draft Specific Plan and September 2013 Draft Environmental Impact Report.
- c. Please modify the project status for Canyon Springs to read:
 - i. Draft EIR comment period ended March 2013. The Final EIR is in preparation. Project development to if approved would occur in phases from 2012 to 2019 starting no earlier than 2015.

11-3

4. Suggested changes to page 4.2-27:

The Truckee Substation serves as one terminus of the 650 Line. The substation is located near the intersection of Donner Pass Road and Church Street in the Town of Truckee. The Truckee Substation site is relatively flat and is surrounded by Trout Creek to the north, Truckee Tahoe Lumber to the east, Union Pacific Railroad land to the south, and historic residences to the west industrial uses on all sides (Sierra Pacific 2010).

11-4

5. Suggested changes to Table G2-1 (Appendices):

Truck traffic would occur on I-80, SR 267, and SR 89 as well as some Town roads such as Pioneer Trail, Glenshire Drive and River View Drive. Although most truck traffic would

11-5

occur outside of downtown and residential areas, these areas may be subject to temporary traffic disruptions. Warning signs and/or flagmen would be used to regulate traffic where necessary to maintain a safe transportation corridor during construction. Specifics of traffic disruption would be addressed through applicable right-of-way encroachment permits.

11-5
cont'd

6. Draft EIS/EIS/EIR page 3-82 states, *"No local discretionary permits are required, since the CPUC has preemptive jurisdiction over the construction, maintenance, and operation of CalPeco's facilities...The applicant would still have to obtain all ministerial building and encroachment permits from local jurisdictions."* Although this is understood, this is a complex project, many aspects of which by nature of the project size, cannot be detailed within an EIR. Because details such as which exact trees would be removed within which easement, and where each pole will be placed in relation to exiting poles, the Town of Truckee requests that the applicant either:
- Apply for and obtain a Zoning Clearance land use permit for all activity not encompassed within applicable Town of Truckee right-of-way encroachment permits and apply for a Use Permit Amendment for work to the Truckee and Northern Truckee Substations, or;
 - Consult with Town staff and provide preliminary construction-level details prior to any work within Town limits.

11-6

The purpose of this request is to provide an opportunity for the applicant and Town of Truckee staff to work together collaboratively to ensure the best siting of new poles that would create the least long-term aesthetic impacts. This is not a request to have final say in the design, but a request to have the opportunity to review preliminary construction drawings and provide suggestions within the limits of the EIR, project objectives, and easement constraints. The Use Permit Amendment request for work at either Truckee substation is based on past Sierra Pacific Power and NV Energy practice. The Town previously approved a Use Permit (Application No, 00-006) in 2000 and an amendment to this permit in 2012 for work at the Truckee substations.

7. The Glenshire Drive/Donner Pass Road intersection is highly utilized by local traffic coming to and from the Glenshire Subdivision, a primarily full-time occupancy residential neighborhood. This intersection does not currently meet the Town of Truckee Level of Service (LOS) threshold LOS E for a non-signalized intersection located within the Downtown Specific Plan Area. The recent Town of Truckee Canyon Springs Draft EIR (SCH #2004052060) concludes that mitigation for temporary project construction traffic is necessary to conclude less-than-significant transportation system impacts. One of the up to 71 project stringing sites is proposed at the north side of this intersection on steep slopes. There is currently no access to the proposed stringing site with the exception of Donner Pass Road at the Glenshire Drive intersection. Although it is understood that the proposed project construction would be temporary in nature, the Draft EIS/EIS/EIR fails to discuss the existing intersection deficiency in relation to proposed temporary traffic impacts. At a minimum, the Town requests the incorporation of a mitigation measure requiring the preparation of a Transportation/Construction Management Plan for impacts to this intersection. Preferably the Draft EIS/EIS/EIR should consider alternative stringing sites to the Donner Pass Road/Glenshire Drive site (see Comment #9 below). We reserve the right to assess traffic impacts to this intersection and other Town roads through Town encroachment permits.

11-7

8. Draft EIS/EIS/EIR page 3-60 states that the proposed project would be constructed in three phases over five construction seasons between 2013 and 2019 with the rebuild and update of the 650 line occurring within the first phase; the 650 line upgrade is planned to be in service prior to the 2014 season peak in December. The Town has several planned capital improvement road projects including Phase Two of the Glenshire Drive Bike Lane Capital Improvement Project which will need to be coordinated with the 650 line upgrade construction timing. This timing and coordination issue can be addressed through the Transportation/Construction Management Plan mitigation measure requested in Comment #7 above. 11-8
9. The Draft EIS/EIS/EIR does not describe how the steep slopes at the Donner Pass Road/Glenshire Drive stringing site would be graded to accommodate the near-flat condition needed for stringing. The Final EIS/EIS/EIR, including Table G2-1, should discuss the grading at this intersection in relation to Town of Truckee General Plan Conservation and Open Space Element Policy P12.1 which states, "Preserve slopes of 30 percent or greater as open space and avoid slopes of 20 percent to 30 percent if there are other, more suitable areas for development with slopes less than 20 percent." The Town also requests that an alternative stringing site that does not requiring grading, such as the parcel currently being leased by Rock & Rose Inc. (10739 Glenshire Drive; APN 19-420-15) or the Barsell parcel at 19-420-43, be considered. 11-9
10. As stated in the Town's May 9, 2012 scoping letter, the Town requests that the Final EIS/EIS/EIR consider a project alternative to maintain the existing wooden poles for the section of the line from Donner Pass Road to the north side of the Village Green Mobile Home Park which has already been upgraded to the 132/650 double-circuit line. In addition, the Final EIS/EIS/EIR should consider an alternative stringing site that is further from residences than the one proposed adjacent to the Village Green Mobile Home Park. Other possible sites that should be considered include the Truckee-Donner Recreation and Parks District-controlled rodeo grounds. 11-10
11. Consistent with the Draft EIS/EIS/EIR selection of simulation viewpoints criteria—including sensitive or protected views including public open space and recreation trails, residential areas, and designated scenic roadways or vista points—the Town requests that the Final EIS/EIS/EIR include visual simulations of:
 - a. The Town of Truckee designated Interstate 80 Scenic Corridor; and
 - b. View of the Truckee River and Legacy Trail crossing.11-11
12. The Town does not have any comments on the project alternatives because there are no significant differences among the alternatives for the portion of the project located within Truckee Town limits. 11-12

Thank you for the opportunity to comment on the project and we look forward to reviewing the Final EIS/EIS/EIR as well as working with the applicant in the future. If you have any questions, please do not hesitate to contact me at (530) 582-2901 or by e-mail at tlashbrook@townoftruckee.com.

Town of Truckee Draft EIS/EIS/EIR Comment Letter
CalPeco 625 and 650 Electrical Line Upgrade Project
January 6, 2014

Page 5 of 5

Sincerely,



Tony Lashbrook
Town Manager

Cc: Truckee Town Council
Joann Roubique, U.S. Forest Service



January 7, 2014

Tahoe Regional Planning Agency
Attn.: Wendy Jepson, TRPA Senior Planner
P.O. Box 5310
Stateline, NV 894498-4527
wjepson@trpa.org.

Via Electronic Mail

Dear Ms. Jepson:

Re: CalPeco Electrical Line Update - Draft Environmental Documents – Comments

The Washoe Tribe of Nevada and California offers its comments regarding the DEIS-EIR-EIR developed to analyze the potential impacts of the above referenced project.

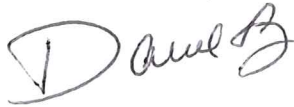
Given the scope of this project and the area that will be impacted, it is likely that significant cultural resources will be impacted. The proposed mitigation measures can be improved by including language that provides that:

- Any and all archeological resources will be avoided. 12-1
- Site monitors with expertise in Washoe cultural resources will be employed. This will ensure the highest quality work and the greatest protection of resources. The Washoe Tribe can make recommendations in this regard. 12-2
- Specific, known, sites that require special attention will be managed pursuant to an agreement that the project proponent will enter into with the Tribe and the terms of the agreement should be included in project permits. Due to the public nature of this document, the Washoe Tribe prefers not to reveal specific details about these sites in this forum. 12-3
- The agreement discussed in the previous bullet point will also include a treatment plan for unanticipated archeological discoveries. 12-4
- Areas with a high potential for resources will have test excavations and the Tribe must be kept informed on findings. 12-5

- Staging areas will be surveyed prior to their use. I 12-6
- The Tribe will be immediately involved in human remains discoveries. I 12-7
- Personnel will receive training that emphasizes that they are subject to ARPA penalties for theft and destruction of archeological resources. I 12-8

The Washoe Tribe appreciates the partnerships that it has developed with Basin agencies and land managers and trusts that these partners will protect the Native American Heritage Resources. Thank you for the opportunity to comment and your attention to this matter. I 12-9

Sincerely,



Darrel Cruz
Tribal Historic Preservation Officer

From: Suzi Gibbons [<mailto:SGibbons@ntpud.org>]

Sent: Thursday, January 02, 2014 9:53 AM

To: Wendy Jepson

Cc: William Stelter; Paul Schultz; Cecchi, Scott@Tahoe; aturner@trisage.com

Subject: CalPeco 625 Electrical Line Upgrade Project - TRPA File #530-201-00/ERSP 2009-3591; TRPA EIS File #EMVR2010-0001

Importance: High

Hello Wendy,

It was recently brought to the NTPUD's attention that the CalPeco / Liberty energy environmental document for the Subject project proposes the decommissioning of road T16N75.2 (Carnelian Canyon) as shown in Appendix F of the Draft EIS/EIR. As shown on the attached map (CarnelianCanyon.pdf), these roads start on Conservancy lands, within which are two NTPUD parcels with water tanks on them. The NTPUD has easements on both of these lower roads and needs these sections of the road to be retained to continue to provide continuous access to our water tanks and appurtenances.

Also, as you will see on the attached 95% plans, sheet C2, the NTPUD is proposing to construct some improvements and reroute the upper section of T16N75.2 on Conservancy lands because it has direct hydrologic connectivity to Carnelian Creek. The Biological and Cultural surveys have been completed and the NTPUD Board of Directors adopted the MND for our project on December 10, 2013. The Conservancy will be granting additional easements to the NTPUD for BMP maintenance as early as their March 2014 CTC Board meeting.

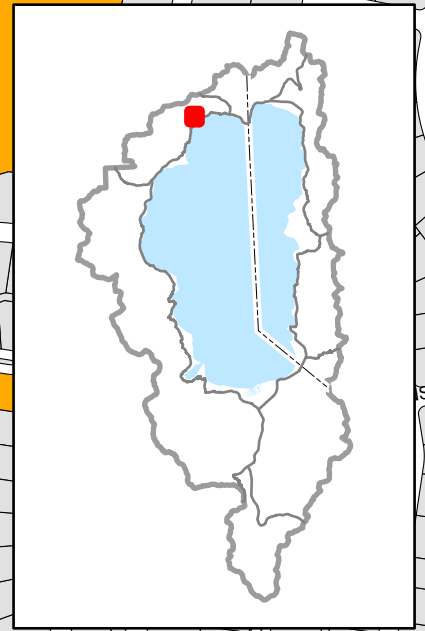
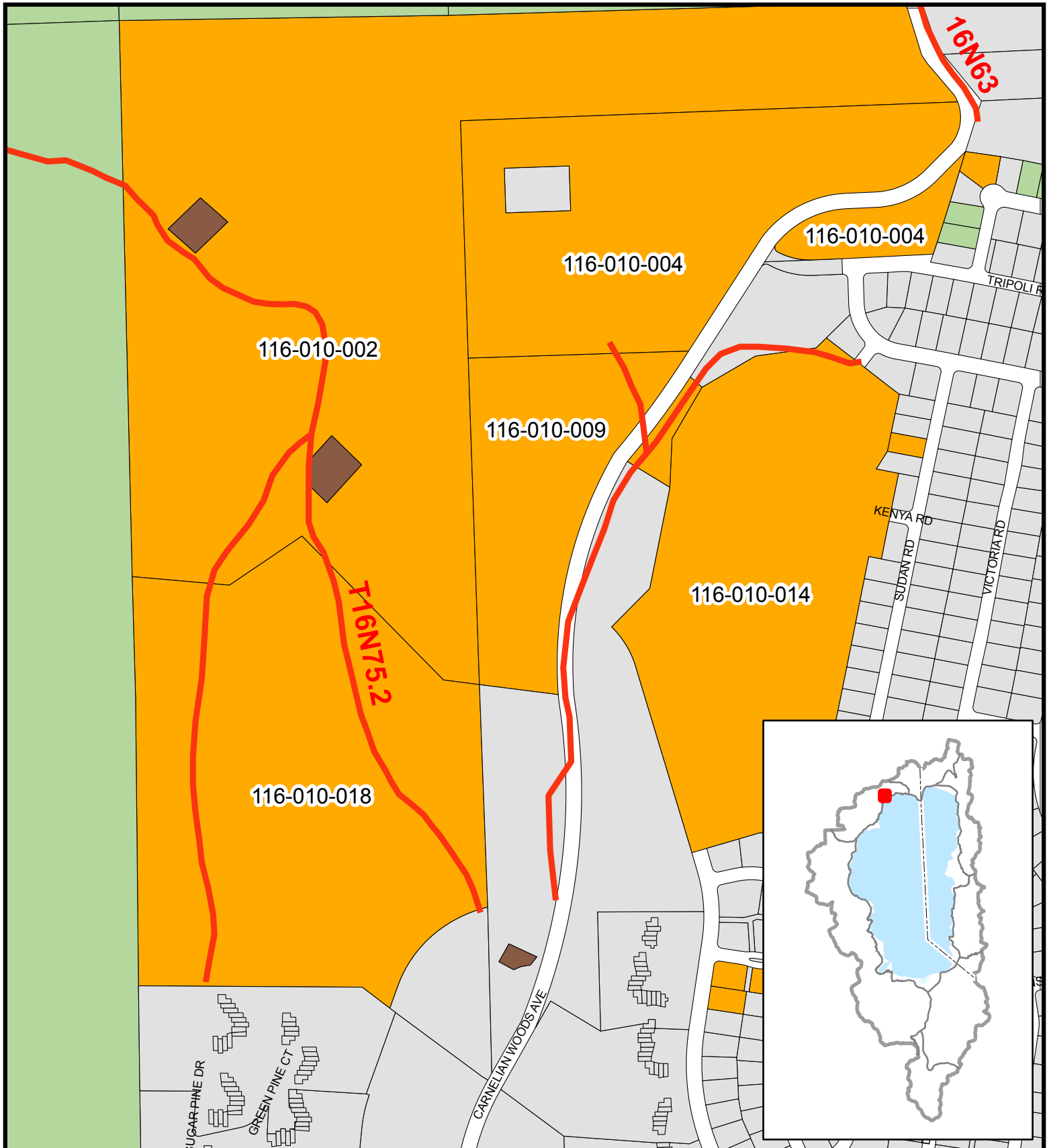
This email serves as formal notification that the North Tahoe Public Utility District objects to the decommissioning of road T16N75.2 in the areas that are on Conservancy lands and NTPUD's easements for public health and safety as this is the only water supply for our customers in our Carnelian Bay system.

Please let me know if you have any questions or need additional information.

Suzi Gibbons
Contracts and Planning Coordinator
North Tahoe Public Utility District
875 National Avenue
PO Box 139
Tahoe Vista, CA 96148
Direct: (530) 553-5433
Office: (530) 546-4212 ext. 5433
Fax: (530) 546-2652
sgibbons@ntpud.org

13-1

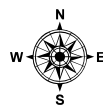
Carnelian Canyon



Legend

Ownership

- California Tahoe Conservancy
 - Forest Service
 - North Tahoe Public Utility District
 - Private
- Unpaved Access Roads
- T16N75.2 USFS Road Number



Scale 1:6,000
1" = 500'

California Tahoe Conservancy
December 2013

Map for reference purposes only.

Sources: TRPA



NTPUD EROSION CONTROL PLANNING GRANT PLACER COUNTY CALIFORNIA

OWNER

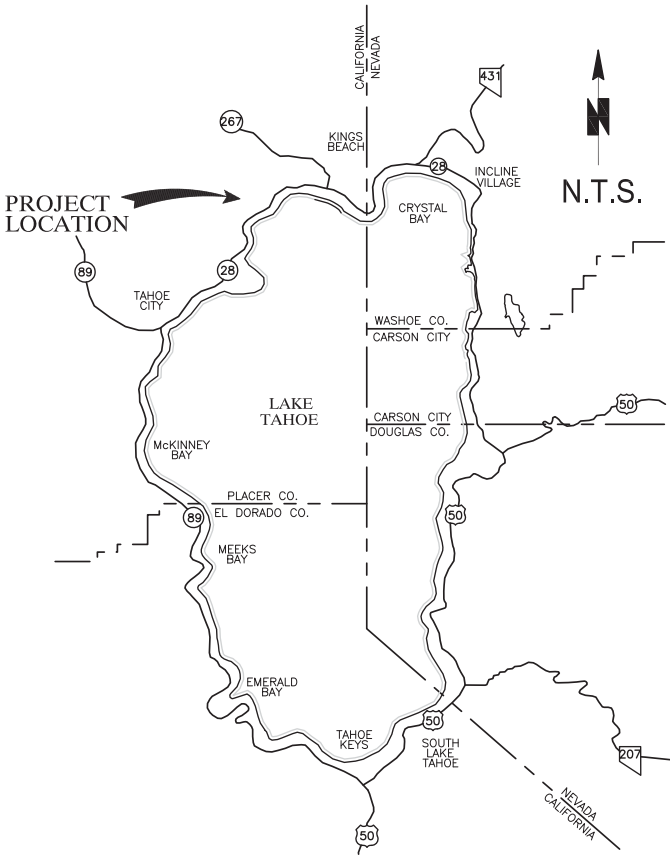


NTPUD
NORTH TAHOE PUBLIC UTILITY DISTRICT
P.O. BOX 139
TAHOE VISTA, CALIFORNIA 96148
Ph: (530) 546-4212

ENGINEER

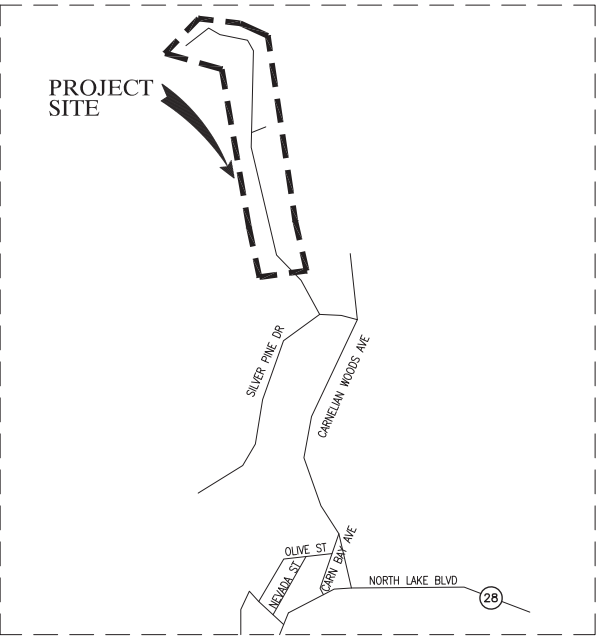


Nichols Consulting Engineers, Chtd.
Engineering & Environmental Services
1885 S. Arlington Ave., Suite #111
Reno, NV 89509
Ph: (775) 329-4955
Fx: (775) 329-5098



VICINITY MAP

SHEET INDEX	
DRAWING NO.	DESCRIPTION
G1	TITLE SHEET
G2	NOTES, LEGEND & ABBREVIATIONS
C1	CARNELIAN WOODS OVERALL SITE PLAN
C2	CARNELIAN WOODS UPPER TANK SITE PLAN
D1	DETAIL SHEET



SITE MAP

Nichols Consulting
Engineers, Chtd.
1885 S. Arlington Ave. Ste. 111
Reno, Nevada 89509
(775) 329-4955 * Fax (775) 329-5098



NORTH TAHOE PUBLIC
UTILITY DISTRICT
EROSION CONTROL
PLANNING GRANT
CARNELIAN 500,000
GALLON TANKS AND
ACCESS ROAD

OWNER

NORTH TAHOE PUBLIC
UTILITY DISTRICT
P.O. BOX 139
TAHOE VISTA, CA.
96148

NO.	DATE	DESCRIPTION

PROJECT NO:	A566.01.14
DESIGNED BY:	CNH
DRAWN BY:	KH
CHECKED BY:	JWN
DATE:	07-17-13
DATE:	07-22-13

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SHEET TITLE

TITLE SHEET

DRAWING	G1
SHEET	1 OF 6

ENDORSEMENTS

NORTH TAHOE PUBLIC UTILITY DISTRICT
DATE

FOR REVIEW
NOT FOR CONSTRUCTION
95% PRELIMINARY
DATE: 07-22-13





NORTH TAHOE PUBLIC
UTILITY DISTRICT
EROSION CONTROL
PLANNING GRANT
CARNELIAN 500,000
GALLON TANKS AND
ACCESS ROAD

OWNER

NORTH TAHOE PUBLIC
UTILITY DISTRICT
P.O. BOX 139
TAHOE VISTA, CA.
96148

NO.	DATE	DESCRIPTION
-----	------	-------------

PROJECT NO: A566.01.14

DESIGNED BY: CNH

DRAWN BY: KH

CHECKED BY: JWN DATE: 07-17-13

DATE: 07-22-13

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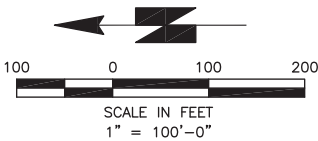
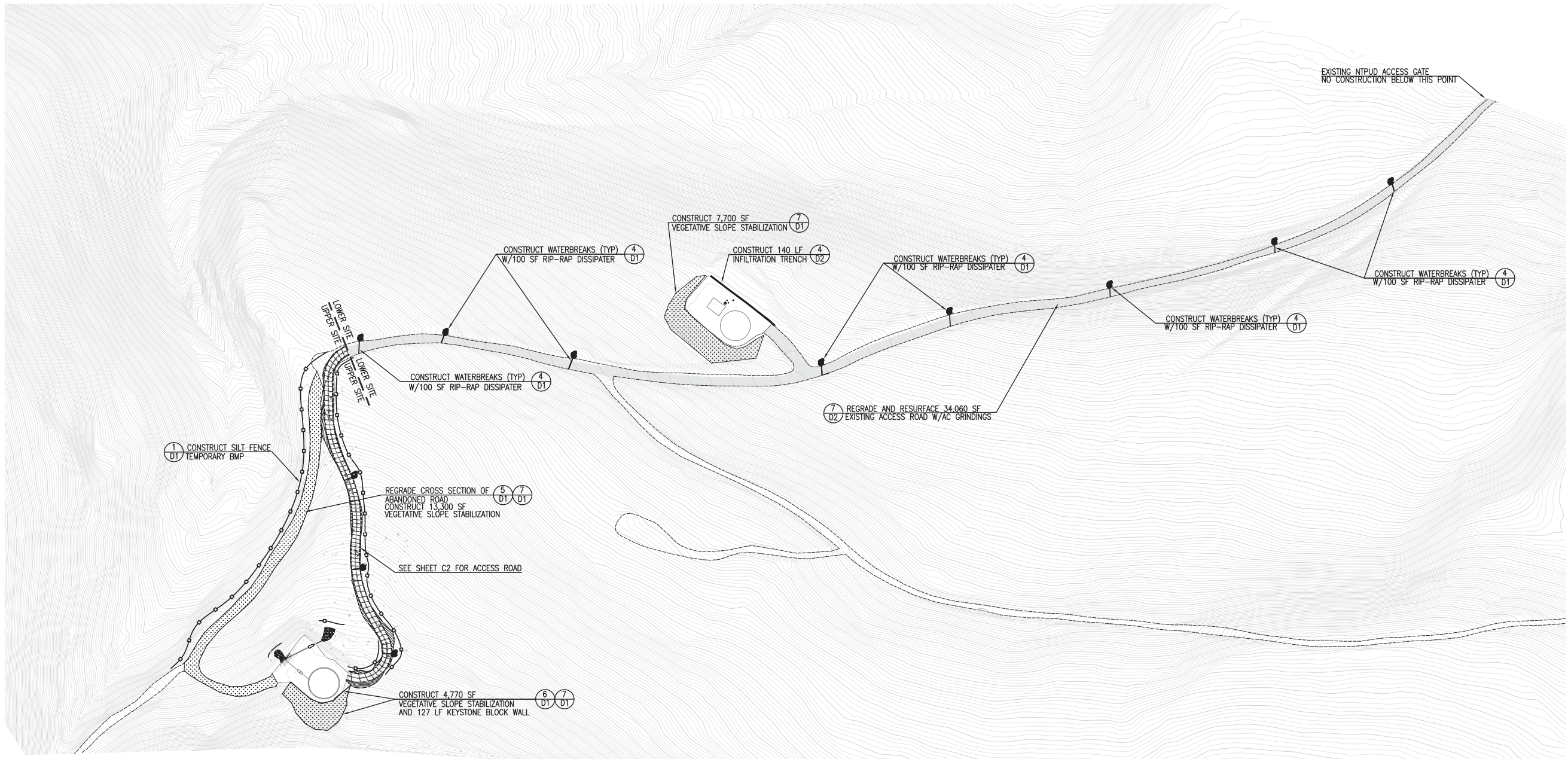
SHEET TITLE

SITE PLAN

DRAWING

C1

SHEET 3 OF 6



FOR REVIEW
NOT FOR CONSTRUCTION
95% PRELIMINARY
DATE: 07-22-13



NORTH TAHOE PUBLIC
UTILITY DISTRICT
EROSION CONTROL
PLANNING GRANT
CARNELIAN 500,000
GALLON TANKS AND
ACCESS ROAD

OWNER

NORTH TAHOE PUBLIC
UTILITY DISTRICT
P.O. BOX 139
TAHOE VISTA, CA.
96148

NO.	DATE	DESCRIPTION
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PROJECT NO:	A566.01.14
DESIGNED BY:	CNH
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SHEET TITLE

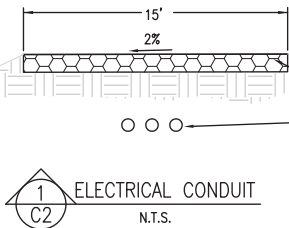
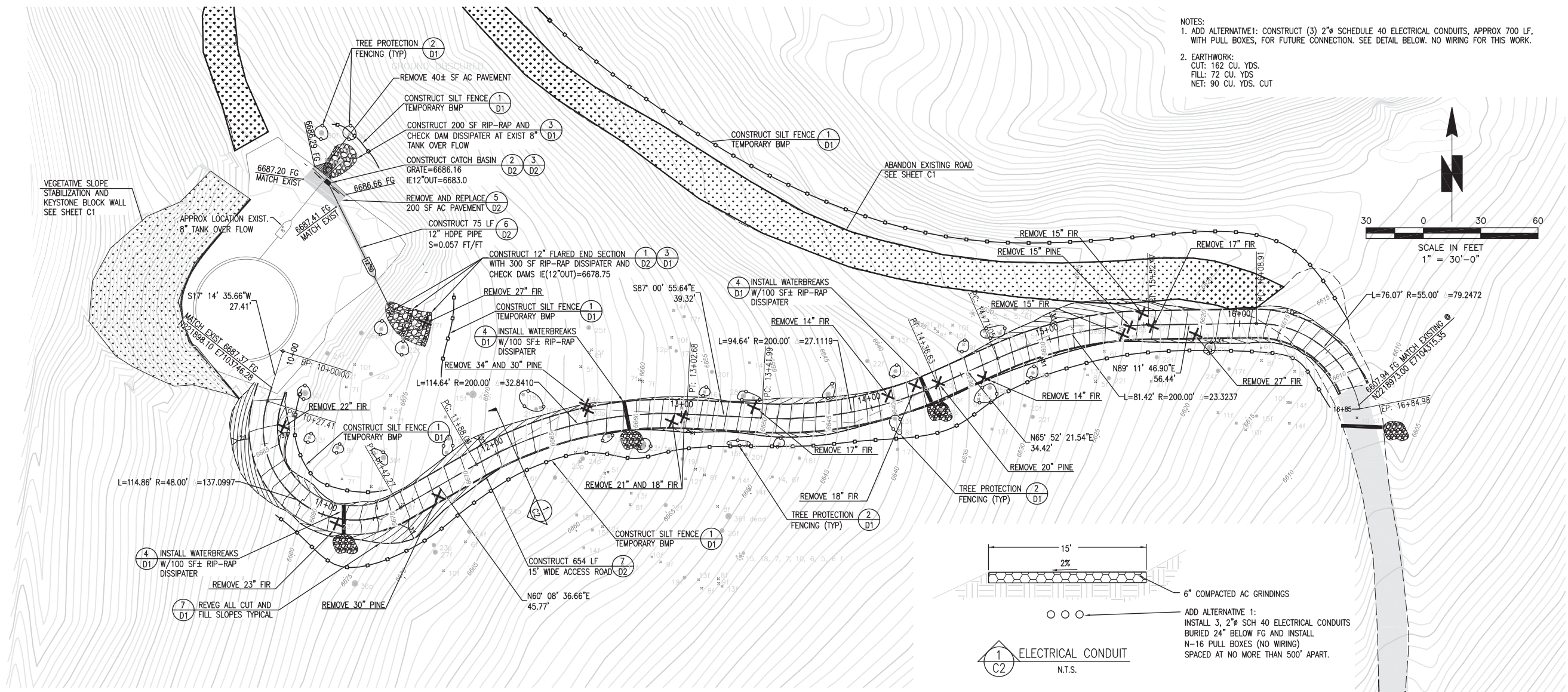
UPPER TANK SITE PLAN

DRAWING

C2

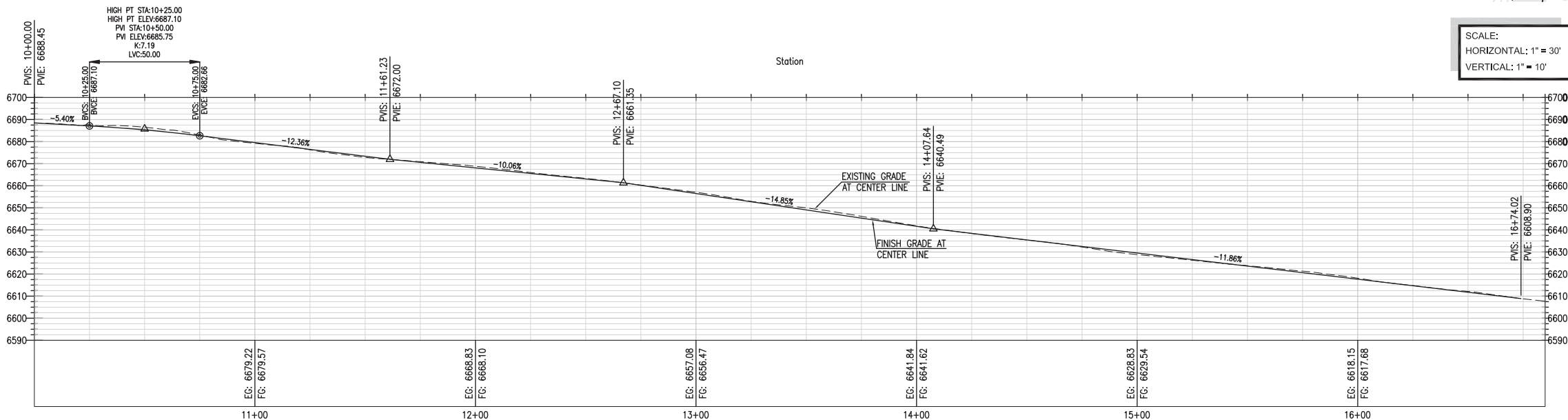
SHEET 4 OF 6

- NOTES:
- ADD ALTERNATIVE 1: CONSTRUCT (3) 2" SCHEDULE 40 ELECTRICAL CONDUITS, APPROX 700 LF, WITH PULL BOXES, FOR FUTURE CONNECTION. SEE DETAIL BELOW. NO WIRING FOR THIS WORK.
 - EARTHWORK:
CUT: 162 CU. YDS.
FILL: 72 CU. YDS.
NET: 90 CU. YDS. CUT



ADD ALTERNATIVE 1:
INSTALL 3, 2" SCH 40 ELECTRICAL CONDUITS
BURIED 24" BELOW FG AND INSTALL
N-16 PULL BOXES (NO WIRING)
SPACED AT NO MORE THAN 500' APART.

SCALE:
HORIZONTAL: 1" = 30'
VERTICAL: 1" = 10'

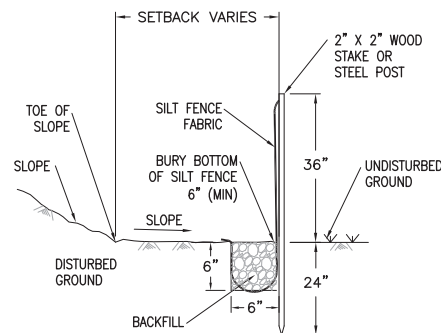
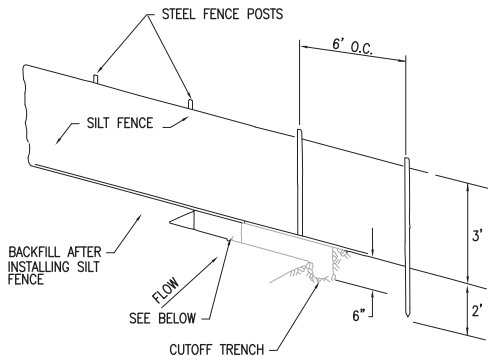


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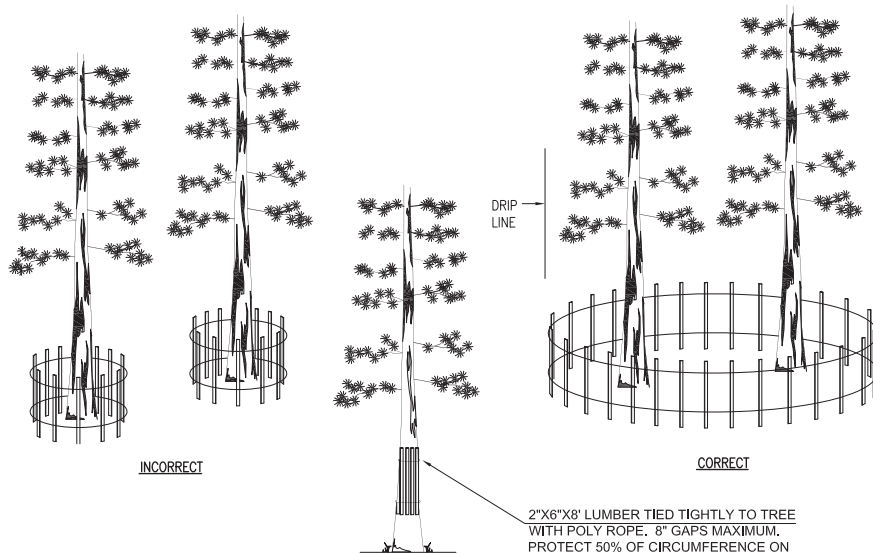


NOTES:

- DO NOT USE IN STREAMS, CHANNELS, DRAIN INLETS, OR ANYWHERE FLOW IS CONCENTRATED. DO NOT USE TO DIVERT FLOW.
- SILT FENCE FABRIC SHOULD BE WOVEN POLYPROPYLENE WITH A MINIMUM WIDTH OF 36 IN AND A MINIMUM TENSILE STRENGTH OF 100 LB FORCE.
- THE FOLLOWING CRITERIA IS RECOMMENDED FOR SELECTION OF THE FABRIC EQUIVALENT OPENING SIZE:
 - IF 50% OR LESS OF THE SOIL, BY WEIGHT, WILL PASS THE U.S. STANDARD SIEVE NO. 200, SELECT THE EOS TO RETAIN 85% OF THE SOIL. THE EOS SHOULD NOT BE FINER THAN EOS70.
 - FOR ALL OTHER SOIL TYPES, THE EOS SHOULD BE NO LARGER THAN THE OPENINGS IN THE U.S. STANDARD SIEVE NO. 70 EXCEPT WHERE DIRECT DISCHARGE TO A STREAM, LAKE, OR WETLAND WILL OCCUR, THEN THE EOS SHOULD BE NO LARGER THAN STANDARD SIEVE NO. 100.
- CONNECTION/JOINING OF SILT FENCES SHALL BE COMPLETED BY TIGHTLY OVERLAPPING THE ENDS OF THE ROLLS A MINIMUM OF 12" OR BY OVERLAPPING THE END POSTS AND SECURING THE TWO POSTS TOGETHER TIGHTLY WITH PLASTIC WIRE TIES AND/OR STEEL BAILING WIRE.
- STAKES SHALL BE SPACED AT 6'-0" MAXIMUM AND SHALL BE POSITIONED ON DOWNSTREAM SIDE OF FENCE.
- STAPLES USED TO FASTEN THE FENCE FABRIC TO THE STAKES SHOULD BE NOT LESS THAN 1.25 IN. LONG AND SHOULD BE FABRICATED FROM 15 GAUGE OR HEAVIER WIRE. PLASTIC WIRE TIES AND/OR STEEL BAILING WIRE (9 GAUGE OR HEAVIER) MAY BE SUBSTITUTED. NOT LESS THAN 4 STAPLES/TIES SHALL BE USED ON EACH STAKE.
- THE LAST 8' OF FENCES SHALL BE TURNED UPSLOPE.
- SILT FENCES SHOULD BE LEFT IN PLACE, REGULARLY INSPECTED, AND MAINTAINED UNTIL THE UPSTREAM AREA IS PERMANENTLY STABILIZED. SEDIMENT SHOULD BE REMOVED BEFORE THE SEDIMENT ACCUMULATION REACHES ONE-THIRD OF THE BARRIER HEIGHT.
- DO NOT INSTALL PERPENDICULAR TO SLOPE OR ACROSS ANY CONTOUR LINE.
- MAXIMUM SLOPE PERPENDICULAR TO SLOPE SHOULD BE 1:1.
- POST SHALL BE A MINIMUM OF 2" x 2" WOOD STAKES OF COMMERCIAL QUALITY LUMBER OR EQUIVALENT STRENGTH METAL.

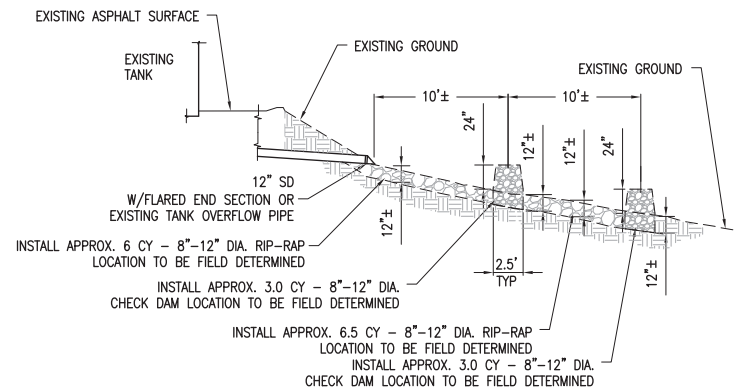


1 SILT FENCE
D1 N.T.S.



INDIVIDUAL TREE PROTECTION

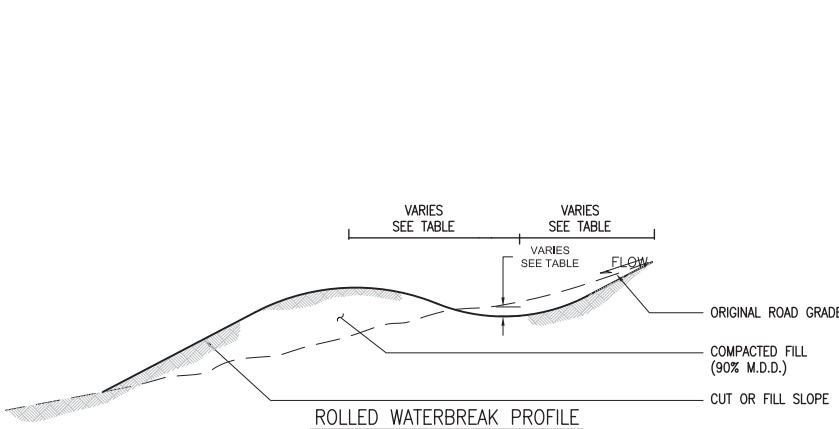
2 TREE PROTECTION FENCING
D1 N.T.S.



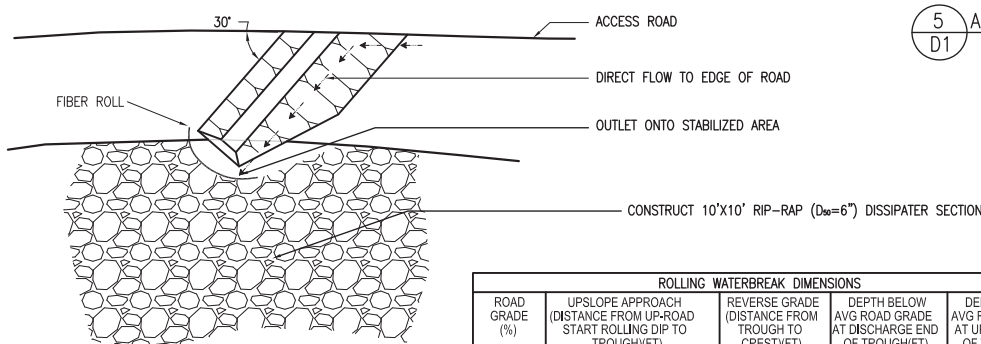
NOTES:

- EXACT LOCATION OF RIP-RAP SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- CONTRACTOR SHALL PROTECT ALL EXISTING MATURE VEGETATION, TREES AND TREE ROOTS FROM DAMAGE. RIP-RAP SHALL BE HAND PLACED WHERE NECESSARY TO PREVENT DAMAGE TO TREES AND VEGETATION BY EQUIPMENT.

3 RIP-RAP AND CHECK DAM DISSIPATER SECTION
D1 N.T.S.



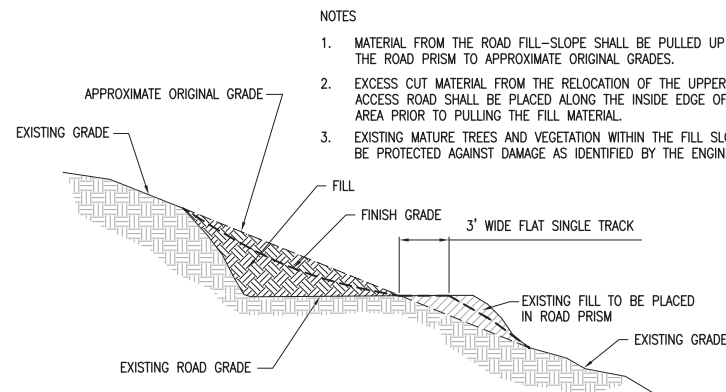
ROLLED WATERBREAK PROFILE



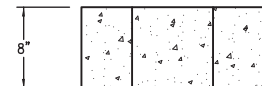
PLAN VIEW

ROLLING WATERBREAK DIMENSIONS				
ROAD GRADE (%)	UPSLOPE APPROACH (DISTANCE FROM UP-ROAD START ROLLING DIP TO TROUGH)(FT)	REVERSE GRADE (DISTANCE FROM TROUGH TO CREST)(FT)	DEPTH BELOW AVG ROAD GRADE AT DISCHARGE END OF TROUGH(FT)	DEPTH BELOW AVG ROAD GRADE AT UPSLOPE END OF TROUGH(FT)
<6	55	15-20	0.9	0.3
8	65	15-20	1.0	0.2
10	75	15-20	1.1	0.1
12	85	20-25	1.2	0.1
>12	100	20-25	1.3	0.1

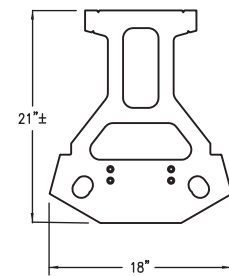
4 ROLLED WATERBREAKS
D1 N.T.S.



5 ABANDONED ACCESS ROAD RESTORATION DETAIL
D1 N.T.S.



STANDARD ELEVATION



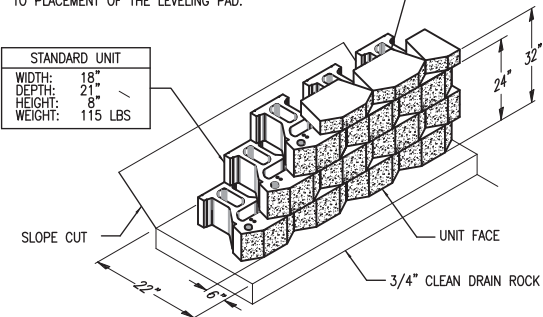
STANDARD PLAN

BASE LEVELING PAD NOTES:

- THE LEVELING PAD IS TO BE CONSTRUCTED OF CRUSHED STONE OR 2,000 PSI± UNREINFORCED CONCRETE.
- THE BASE FOUNDATION IS TO BE APPROVED BY THE SITE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF THE LEVELING PAD.

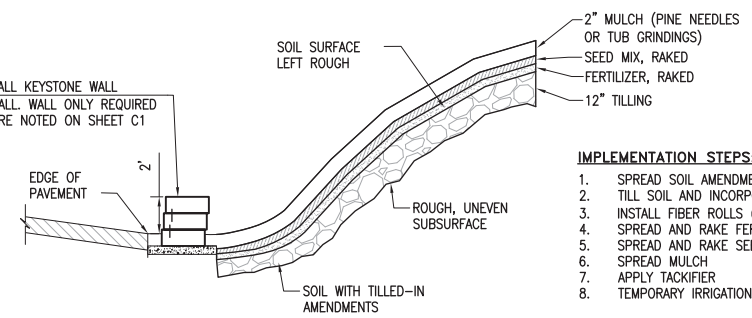
STANDARD UNIT	
WIDTH: 18"	
DEPTH: 21"	
HEIGHT: 8"	
WEIGHT: 115 LBS	

MINI CAP UNIT	
WIDTH: 18"	
DEPTH: 10"	
HEIGHT: 8"	
WEIGHT: 45 LBS	



6 KEYSTONE BLOCK
D1 N.T.S.

6 D1 INSTALL KEYSTONE WALL
2' TALL WALL ONLY REQUIRED WHERE NOTED ON SHEET C1



7 VEGETATIVE SLOPE STABILIZATION
D1 N.T.S.

IMPLEMENTATION STEPS:

- SPREAD SOIL AMENDMENTS.
- TILL SOIL AND INCORPORATE AMENDMENTS.
- INSTALL FIBER ROLLS (REFER TO FIBER ROLL DETAIL)
- SPREAD AND RAKE FERTILIZER
- SPREAD AND RAKE SEED MIX
- SPREAD MULCH
- APPLY TACKIFIER
- TEMPORARY IRRIGATION

FOR REVIEW
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95% PRELIMINARY
DATE: 07-22-13



NORTH TAHOE PUBLIC UTILITY DISTRICT
EROSION CONTROL PLANNING GRANT
CARNELIAN 500,000 GALLON TANKS AND ACCESS ROAD

OWNER

NORTH TAHOE PUBLIC UTILITY DISTRICT
P.O. BOX 139
TAHOE VISTA, CA. 96148

NO.	DATE	DESCRIPTION

PROJECT NO:	A566.01.14
DESIGNED BY:	CNH
DRAWN BY:	KH
CHECKED BY:	JWN
DATE:	07-17-13
DATE:	07-22-13

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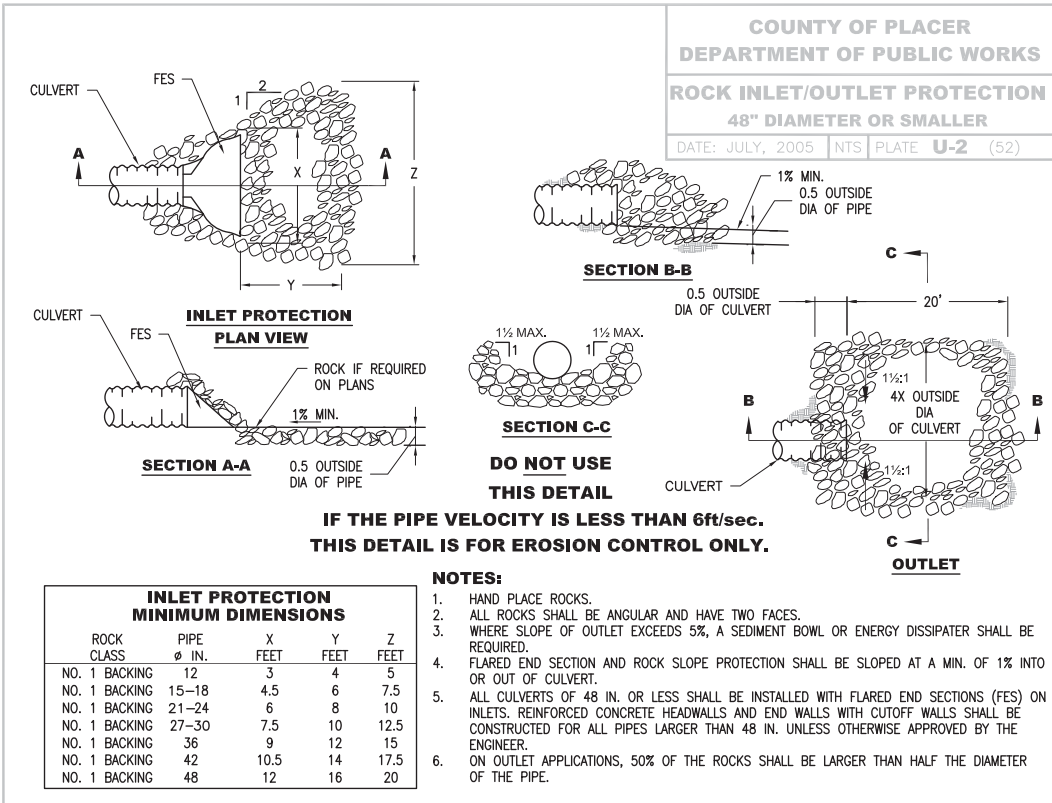
SHEET TITLE

DETAILS

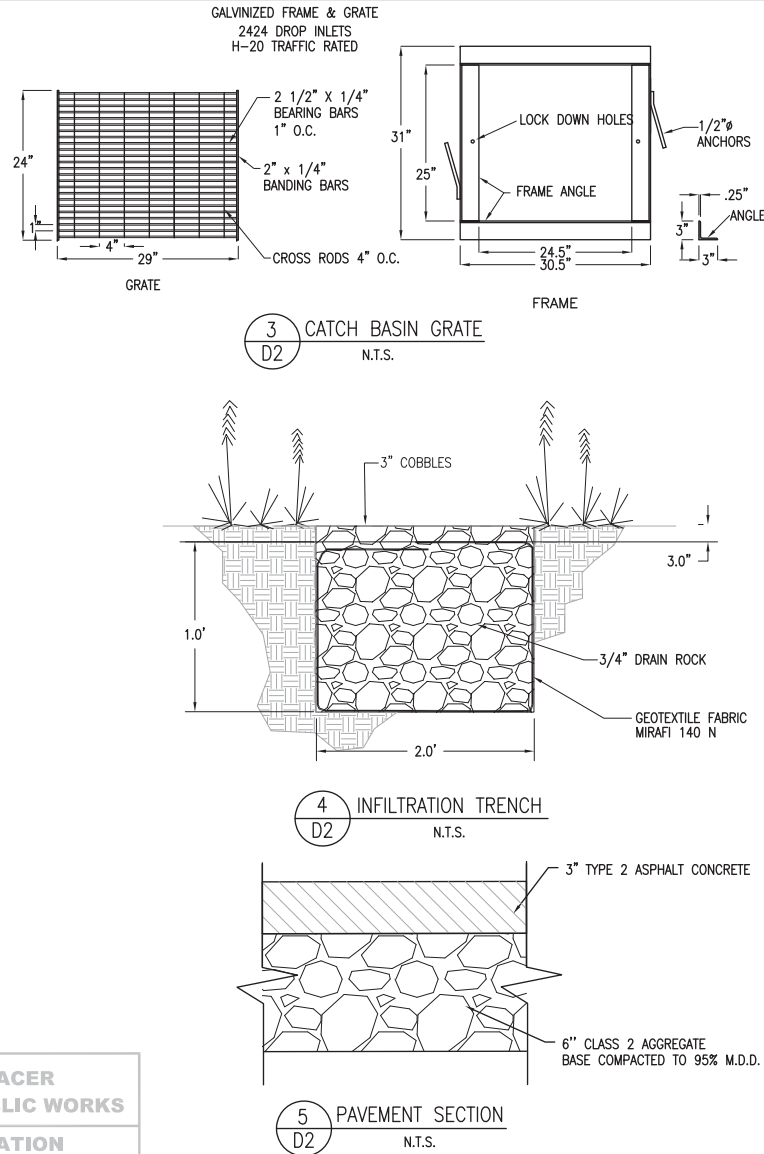
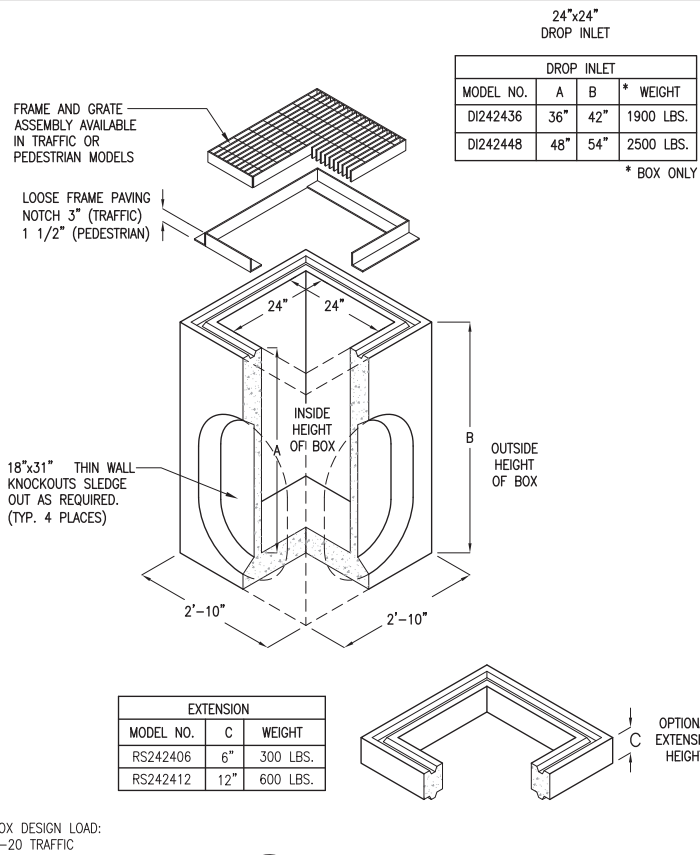
DRAWING

D1

SHEET 5 OF 6

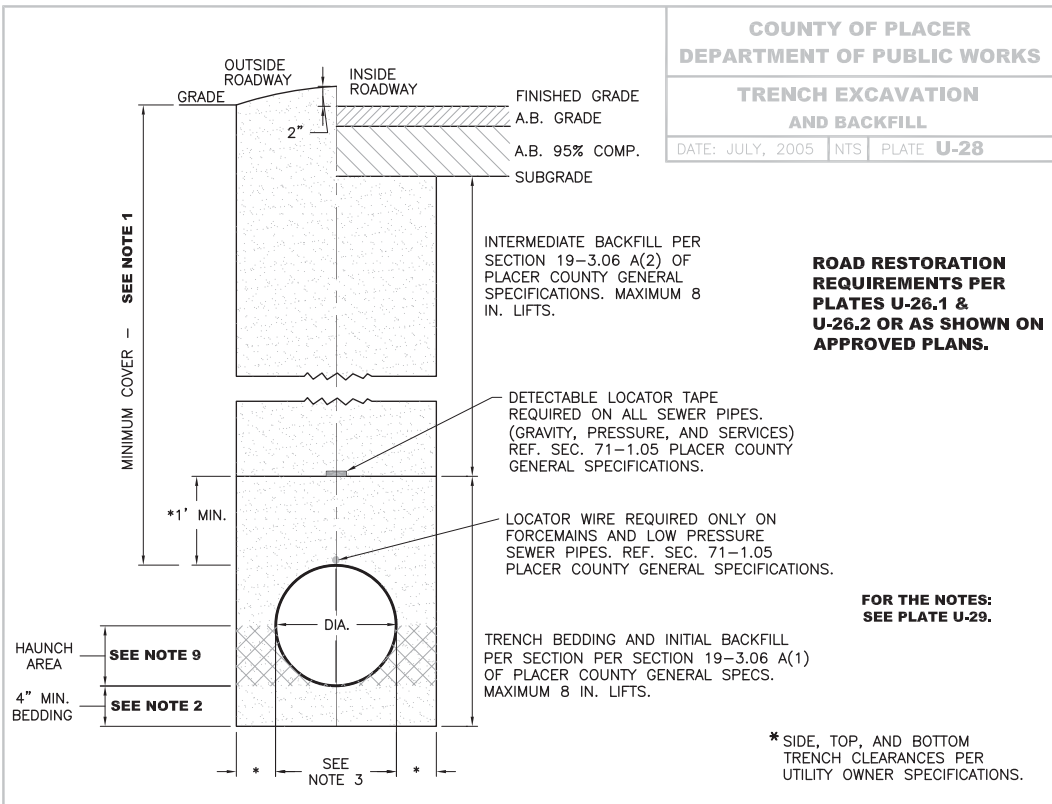


1 RIP-RAP DISSIPATER
D2 N.T.S.



FOR REVIEW
NOT FOR CONSTRUCTION
95% PRELIMINARY
DATE: 07-22-13

811
Know what's below.
Call before you dig.



STORM DRAIN TRENCH
D2 N.T.S.

NOTES:

- UNLESS OTHERWISE APPROVED, MINIMUM COVERAGE FROM TOP OF PIPE TO FINISH GRADE SHALL BE AS FOLLOWS:

SEWER	36 IN.
WATER	30 IN.
CULVERTS	18 IN.
STORM DRAINS	18 IN.
OTHER UTILITIES	30 IN.
- IN WET OR ROCKY MATERIAL, THE DEPTH OF TRENCH BEDDING SHALL BE INCREASED TO THE LARGER OF EITHER 6 IN. OR 1/4 DIA.
- FOR CULVERTS/STORM DRAINS, THE MINIMUM DISTANCE BETWEEN THE SIDE OF THE TRENCH AND THE SIDE OF THE PIPE SHALL BE 12 IN.
- MINIMUM COMPACTION REQUIREMENTS (SEE SECTION 19-3.06 OF THE PLACER COUNTY GENERAL SPECIFICATIONS).

A. WITHIN ROADWAY PRISM-	
BEDDING/INITIAL BACKFILL	95%
INTERMEDIATE BACKFILL	92%
B. OUTSIDE ROADWAY PRISM-	
BEDDING/INITIAL BACKFILL	90%
INTERMEDIATE BACKFILL	90%
- IN AREAS WITH MINIMUM COVER, INTERMEDIATE BACKFILL SHALL BE CLASS 2 AGGREGATE BASE.
- IN AREAS OF NATURAL VEGETATION OR LANDSCAPING, REMOVE TOP 12 IN. OF MATERIAL, STOCKPILE & REPLACE IN A MOUND PER PLATE U-26.1, TYPE 4 AND PLATE U-26.2, TYPE D.
- ALL LANDSCAPING CONDUITS WITHIN THE ROADWAY PRISM AND/OR TRAFFIC AREAS MUST HAVE MINIMUM OF 30 INCHES COVER. MINIMUM COVER WITHIN COUNTY R/W BUT OUTSIDE THE ROADWAY AND TRAFFIC AREAS SHALL BE AS FOLLOWS:

LOW VOLTAGE ELECTRICAL CONDUITS	24 IN. MIN
PRESSURIZED WATERLINES	24 IN. MIN
NONPRESSURIZED (DISCHARGED) LATERALS	12 IN. MIN
- COMPACTION TESTING WITHIN THE PIPE ZONE (BOTTOM OF TRENCH TO 12 IN. ABOVE CONDUIT(S)) SHALL BE PERFORMED BY TESTING LAB AS APPROVED BY THE COUNTY OR DONE BY THE COUNTY AND REIMBURSED BY THE APPLICABLE DEVELOPER OR UTILITY COMPANY.
- SHOVEL SLICE BEDDING MATERIAL UNIFORMLY UNDER PIPE IN HAUNCH AREA. SHOVEL SLICING SHALL BE COMPLETED BEFORE THE BEDDING IS BROUGHT UP TO THE PIPE SPRINGLINE AND PREFERABLY WHEN IT IS NO HIGHER THAN THE QUARTER POINT OF THE PIPE.

**COUNTY OF PLACER
DEPARTMENT OF PUBLIC WORKS**

TRENCH EXCAVATION AND BACKFILL

DATE: JULY, 2005 NTS PLATE **U-29** (41-2)

Nichols Consulting Engineers, Chtd.
1885 S. Arlington Ave. Ste. 111
Reno, Nevada 89509
(775) 329-4955 * Fax (775) 329-5098



**NORTH TAHOE PUBLIC
UTILITY DISTRICT
EROSION CONTROL
PLANNING GRANT
CARNELIAN 500,000
GALLON TANKS AND
ACCESS ROAD**

OWNER

**NORTH TAHOE PUBLIC
UTILITY DISTRICT
P.O. BOX 139
TAHOE VISTA, CA.
96148**

NO.	DATE	DESCRIPTION
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PROJECT NO: A566.01.14

DESIGNED BY: CNH

DRAWN BY: KH

CHECKED BY: JWN DATE: 07-17-13

DATE: 07-22-13

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SHEET TITLE

DETAILS

DRAWING

D2

SHEET 6 OF 6

TAHOE-TRUCKEE SANITATION AGENCY



A Public Agency
13720 Butterfield Drive
TRUCKEE, CALIFORNIA 96161
(530) 587-2525 • FAX (530) 587-5840

Directors
O.R. B
Dale Cox

Erik Henrikson
S. Lane Lewis
Jon Northrop

General Manager
Marcia A. Beals

Letter
14

VIA U.S. MAIL AND E-MAIL

6 January 2014

Tahoe Regional Planning Agency
Attention: Wendy Jepson, Senior Planner
P.O. Box 5310
Stateline, NV 89449
wjepson@trpa.org

RE: CalPeco 625 and 650 Electrical Line Upgrade Project
Comments on Draft EIS/EIS/EIR

Dear Ms. Jepson:

The Tahoe-Truckee Sanitation Agency (T-TSA) is in receipt of the joint Draft Environmental Impact Statement (EIS)/EIS/Environmental Impact Report (EIR) for the California Pacific Electric Company (CalPeco) 625 and 650 Electrical Line Upgrade Project (Project). Our staff has reviewed the document and offers the following comments:

1. On Page 4.11-6, the DEIR states that the Northstar Community Services District (NCSD) is a member agency of T-TSA. Please note that NCSD is not a member agency of T-TSA. Wastewater from the district, however, is conveyed to T-TSA facilities through an agreement with the Truckee Sanitary District (TSD), a member agency of T-TSA.
2. On Page 4.11-9, the DEIR mentions that waste from the Project's portable restrooms would be trucked to T-TSA's facilities. Please be advised that T-TSA has never accepted this type of waste. Please seek out other alternatives for legal disposal of this waste stream.

14-1

14-2

If you have any questions, please do not hesitate to call me at (530) 587-2525.

Sincerely,


Jason A. Parker
Engineering Department Manager

JAP:jp

cc: Marcia Beals, General Manager
Kevin Smith, Tahoe Truckee Airport District

NORTH TAHOE • TAHOE CITY • ALPINE SPRINGS • SQUAW VALLEY • TRUCKEE



PLACER COUNTY
FLOOD CONTROL AND WATER CONSERVATION DISTRICT

Letter
15

Ken Grehm, Executive Director
Brian Keating, District Engineer
Andrew Darrow, Development Coordinator

January 7, 2014

Wendy Jepson, Senior Planner
Tahoe Regional Planning Agency
P.O. Box 5310
Stateline, NV 89449

RE: CalPeco 625 and 650 Electrical Line Upgrade Project - Draft EIS/EIS/EIR

Wendy:

The District has no comments regarding the subject project at this time.

I 15-1

Andrew Darrow, P.E., CFM
Development Coordinator

d:\data\letters\cn14-01.doc

December 3, 2013

Ms. Wendy Jepson
Senior Planner
Tahoe Regional Planning Agency
P.O. Box 5310
Stateline, NV 89449

**Re: California Pacific Electricity Company
625 and 650 Electrical Line Upgrade Project
Draft EIS/EIS/EIR
SCH #2012032066**

Dear Ms. Jepson,

This letter is submitted by the nine member Greater Tahoe City Area Planning Team appointed by Placer County as part of the county's Tahoe Basin Community Plan Update process. The ultimate goal of our effort is to provide thoughtful recommendations for community sustainability and revitalization that will be submitted to the county's Planning Commission for consideration and inclusion within that plan update. As individuals, our team members represent a wide variety of opinions within our community and demonstrate a number of diverse interests, with the single most important interest – an interest shared by all – being the health of Tahoe City and Lake Tahoe.

We are writing to share our comments on the DEIS and proposed project listed above. As Planning Team members, we have spent many hours since the spring of 2011 reviewing parcels both within and outside of the designated Town Center of Tahoe City, taking into consideration land use, heights, density and other important issues. Our conversations have proven lively and passionate, with continued focus on issues within the context of our team's agreed-upon vision statement, which reads: *"Tahoe City, at the headwaters of the Truckee River, is the hub of the Lake Tahoe region and a vibrant commercial center, where visitors and residents are stewards of Tahoe's precious natural environment and rich cultural heritage. Tahoe City businesses thrive as residents live and recreate in close proximity to their jobs".*

We find the aforementioned DEIS and proposed project timely because the opportunity finally presents itself to relocate the Tahoe City Substation, consistent with the direction provided in the 1994 Tahoe City Community Plan. This was addressed in the 1994 Plan for reasons well beyond the scenic improvements that would result. The suggested relocation was about scenic issues, and land use and community character, yet the DEIS rejects looking at this alternative on the mistaken belief that the only important issue was the scenic threshold.

16-1

We believe, as previous Tahoe City Planning teams have stated, that this parcel would better serve the Tahoe City Community without the 1937-era power substation located within the heart of our community. Investing further into this facility is short sighted, and will merely prolong the inevitable. The property is currently situated adjacent to a popular dining establishment, and alongside a mixed use trail that receives heavy use much of the year. This locale is under consideration as part of the proposed "Fanny Bridge/River Walk District," designed to create more walking, biking and recreation opportunities as well as tourism-related business. Additionally, TTD's SR 89/Fanny Bridge Community Revitalization Project Alternatives 1-4 contain a rerouting/redesign of SR 89, alleviating through traffic

16-2

and encouraging more pedestrian and cycling activities, further supporting our recommendation of Substation relocation. We are confident that community leaders as well as other interested parties will work collaboratively to provide a community appropriate alternative location for the Tahoe City Substation, and urge you to require that this alternative be evaluated in detail in the project DEIS.

16-2
cont'd

Very truly yours,
Greater Tahoe City Plan Area Team

Jim Williamson	Hal Slear	Kathie Fenley
Marguerite Sprague	Zach Hymanson	Gary Davis
Marty Spitsen	Judy Friedman	Wally Auerbach

December 12, 2013

Ms. Wendy Jepson
Senior Planner
Tahoe Regional Planning Agency
P.O. Box 5310
Stateline, NV 89449

Re: California Pacific Electricity Company
625 and 650 Electrical Line Upgrade Project
Draft EIS/EIS/EIR
SCH #2012032066

Dear Ms. Jepson:

It was a pleasure speaking with you at the Information Meeting at Kings Beach a few days ago! Following our discussion, I reached out to my fellow members of the Tahoe City Plan Team, and am writing this letter on behalf of the team as a whole. This is an addition to our earlier letter, which you confirmed you received via email on December 5, 2013. Thank you for encouraging me to follow up with this additional point regarding the possible relocation of the Tahoe City Liberty Utility substation, which we understand was originally constructed in 1937.

Upon reflection, we realize there is an additional concern about the Tahoe City substation location that is imperative. The current substation is located in rather close proximity to both the Truckee River and the Lake. The slated refurbishment/reconstruction project presents a great opportunity to think “big picture” and thoughtfully plan for the future, taking advantage of the knowledge we have all gained in the last 80 years, especially with regard to prudent locating of industrial facilities that use strong substances as part of their processes (e.g., transformer oil, sulfur hexafluoride, etc.).

Although extraordinary events such as earthquakes, major fires, and major floods are not commonplace, they do occur and must be planned for. In the Tahoe Basin, geologists tell us faulting allows for a major earthquake and even a tsunami. The Angora Fire provided ample demonstration of the possibility of a major fire. History tells us there has been, at times, flooding as well. And just scanning headlines tells us the surprisingly destructive power of some vehicular accidents, which is relevant for a power substation located on a state highway.

In the case of extraordinary events, which we have seen can destroy both primary and secondary containment structures, it would be better to have this substation

located further away from Lake Tahoe and the Truckee River, to provide a buffer zone that would be easier to protect and remedy.

17-1
cont'd

This is the perfect time for this relocation! We encourage Liberty Utilities (and TRPA) to, rather than invest more funding into changing the current substation, relocate the Tahoe City substation to a more suitable and prudent location, and implement the desired upgrades as part of that process. This would be an efficient use of resources, and would demonstrate sensible and responsible planning on the part of Liberty Utilities and TRPA.

17-2

The members of the Tahoe City Plan Team stand ready to be of service in any way that is helpful in reaching this goal.

Thank you for your consideration,

Very truly yours,

Greater Tahoe City Plan Area Team

Wally Auerbach

Gary Davis

Kathie Fenley

Judy Friedman

Zach Hymanson

Hal Slear

Marty Spitsen

Marguerite Sprague

Jim Williamson

January 7, 2014

Ms. Wendy Jepson
Senior Planner
Tahoe Regional Planning Agency
P.O. Box 5310
Stateline, NV 89449

Re: California Pacific Electricity Company
625 and 650 Electrical Line Upgrade Project
Draft EIS/EIS/EIR
SCH #2012032066

Dear Ms. Jepson:

Happy New Year to you and the TRPA staff! Thank you for allowing us a few minutes at the December Governing Board meeting to reinforce the points the Tahoe City Plan Team made in our earlier letter. Present at that meeting were team members Wally Auerbach, Gary Davis, and Marguerite Sprague: the entire team appreciated the opportunity for comment.

We were delighted that, regarding relocating the Tahoe City substation, Liberty Utilities West (LUW) President Mike Smart is “. . . willing to look at it with Placer County and Tahoe City folks.¹”! However, other sentiments he expressed are confusing, especially, “Here you have a perfectly good substation and location . . .” Nonetheless, we hope very much that he will be able to hear local concerns and appreciate their larger-than-local ramifications.

If the substation is “perfectly good” it is curious that LUW plans to rebuild it at substantial cost. At the TRPA meeting, Smart said they need to rebuild it due to increased need, which renders the current substation *not* “perfectly good” but, in fact, inadequate.

The location is *not* “perfectly good” either. It was a better choice in 1937 than it is in 2014. In 1937, electricity was not omnipresent. In fact, only 10% of rural Americans had electricity. The Rural Electrification Administration (REA), formed by FDR in 1935, was hard at work encouraging the electrification of this area.² Placer County’s population was roughly 24,500, as compared to 248,000 in 2000.³ The average person in the 1930s did not own a car⁴ whereas today the person who does not is the exception. In Tahoe City, the famous Tahoe Tavern was a powerful force in the local economy. It is no surprise—and likely no coincidence—that Tahoe City’s substation was built next to this renowned resort that boasted a famous and wealthy clientele. People were less concerned about or aware of potential negative impacts of some technological advances at that time: most often the

¹ *Sierra Sun*, 12/25/13

² Source: <http://www.rurdev.usda.gov/rbs/pub/aug00/light.html>

³ Source: <http://www.census.gov/population/cencounts/ca190090.txt>.

⁴ Source: http://wiki.answers.com/Q/How_many_cars_did_the_average_person_have_in_the_1930s

negative consequences only emerged later (such as with radioactive suppositories, also from the 1930s⁵). 18-2
cont'd

Mr. Smart's question, "Is it fair for all the other customers in my service territory to pay for it because folks in Tahoe City want it moved?" seems provocative. Changes to any part of the service territory incur costs that are shared, so he could ask this about the entire project. Or even, should Tahoe City users pay for Kings Beach upgrades? Moreover, what if our concerns about potential environmental disaster were to come to pass, Heaven forbid. What if there were a fire or explosion that released "copious amounts of oil" into the Truckee River ("Transformers contain copious amounts of oil, used as insulation. The oil can ignite at 300F. Transformers can not only ignite but . . . can explode."⁶)? Would other customers in the service territory have to help pay for the cleanup costs? We hope Mr. Smart is not attempting to pit customer against customer to avoid relocating this substation. 18-3

It is important to realize this request is not simply local whimsy. Tahoe City's economy relies heavily upon visitor dollars. Visitors prefer scenic areas. Our community needs to safeguard the scenic quality of our area (Dunsmuir, CA is one example of a town economy adversely affected by local environmental disaster⁷). Moving the substation will even improve the scenic quality of our area, enhancing the local economy, which also benefits LUW. Our visitors come from Placer County, across California, every state in the USA and every corner of the world. Thus, this issue impacts a far wider audience than is implied. 18-4

This project offers an opportunity to improve Tahoe City and benefit both locals and visitors. We applaud TRPA and LUW for being willing to consider relocation possibilities and the members of the Tahoe City Plan Team stand ready to be of service in any way that is helpful in reaching this goal.

Thank you for your consideration,

Very truly yours,

Greater Tahoe City Plan Area Team

Wally Auerbach	Gary Davis	Kathie Fenley
Judy Friedman	Zach Hymanson	Hal Slear
Marty Spitsen	Marguerite Sprague	Jim Williamson

⁵ <https://www.orau.org/ptp/collection/quackcures/radsup.html>

⁶ Source: <http://www.powermag.com/fighting-transformer-fires/>

⁷ "... the town of Dunsmuir suffered, too. Businesses that depended on tourism struggled to stay open . . . Some of them actually went out of business and most of them were impacted . . . for several years," said Dunsmuir Chamber of Commerce president David Clarno." Source: <http://abclocal.go.com/kgo/story?id=8126390>



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December 3, 2013

Ms. Wendy Jepson, Senior Planner
Tahoe Regional Planning Agency
P.O. Box 5310
Stateline, NV 89449

Letter
19

**Re: California Pacific Electricity Company
625 and 650 Electrical Line Upgrade Project
Draft EIS/EIS/EIR SCH #2012032066**

Dear Ms. Jepson,

This letter is submitted by the Tahoe City Downtown Association (TCDA) as part of our mission to enhance and promote a vibrant and prosperous commercial and social center for residents and visitors to Tahoe City.

We are writing to share our comments on the DEIS and proposed project listed above. As local business owners and representatives, we have considered many issues and opportunities affecting the livelihood of our community.

We find the aforementioned DEIS and proposed project timely because the opportunity finally presents itself to relocate the Tahoe City Substation, consistent with the direction provided in the 1994 Tahoe City Community Plan. This was addressed in the 1994 Plan for reasons well beyond the scenic improvements that would result. The suggested relocation was about scenic issues, and land use and community character, yet the DEIS rejects looking at this alternative on the mistaken belief that the only important issue was the scenic threshold.

We believe, as previous Tahoe City Planning teams have stated, that this parcel would better serve the Tahoe City Community without the 1937-era power substation located within the heart of our community. Investing further into this facility is short sighted, and will merely prolong the inevitable. The property is currently situated adjacent to a popular dining establishment, and alongside a mixed use trail that receives heavy use much of the year. This locale is under consideration as part of the proposed "Fanny Bridge/River Walk District," designed to create more walking, biking and recreation opportunities as well as tourism-related business. Also consider the possibilities of PCB's leaking into the Truckee River. Additionally, TTD's SR 89/Fanny Bridge Community Revitalization Project Alternatives 1-4 contain a rerouting/redesign of SR 89, alleviating through traffic and encouraging more pedestrian and cycling activities, further supporting our recommendation of Substation relocation. We are confident that community leaders will work collaboratively to provide a community appropriate alternative location for the Substation, and urge you to require that this alternative be evaluated in detail in the project DEIS.

Best Regards,

Gary Davis – President
GaryDavis@garydavisgroup.com

Steve Hoch – Executive Director
Steve@visittahoe.com



December 2, 2013

Ms. Wendy Jepson
Senior Planner
Tahoe Regional Planning Agency
PO Box 5310
Stateline, NV 89449

**Re: California Pacific Electricity Company
625 and 650 Electrical Line Upgrade Project
Draft EIS/EIS/EIR
SCH #2012032066**

Dear Ms. Jepson:

I am writing to convey comment on the above-referenced DEIS and proposed project. These comments are focused on the proposal to rebuild rather than relocate the Tahoe City Substation.

Existing Location of the Tahoe City Substation is Inconsistent with the Goals, Objectives, and Implementation Element of the adopted 1994 Tahoe City Community Plan

On page 4.4-44, under Alternative 1 – PEA Alternative, the DEIS discusses Impact 4.4-1 Cause Inconsistency with adopted plans. The first sentence states: *“The Tahoe City Community Plan (1994) suggests relocation of the Tahoe City Substation to a specific site known as “The Chimneys” as a means of removing it from public view and thereby improving scenic quality.”*

This is a narrow and incomplete interpretation of multiple reasons why the Substation is recommended for relocation in the adopted **Tahoe City Community Plan**. Beyond scenic concerns, the 1994 Plan encouraged/recommended relocation of the substation to facilitate: 1) Redevelopment of the Wye Area (page I-8); Improved Entrance to Tahoe City (page I-13); and Improved River and Lake Access, with a greater emphasis on recreation and transportation improvements on the “64 Acre Tract” (page I-14).

Further, on page I-15, The **Tahoe City Community Plan** states: “Relocate Power Substation – If possible, the relocation of the electric substation by Fanny Bridge to the Chimney site would be encouraged.” SCA notes the other two recommended items under Public Service - expansion of Tahoe City Public Utility District facilities to a portion of the USFS Chimney site and relocation of the Tahoe City Fire Station - have both been accomplished, consistent with the adopted Community Plan.

Note: Specific features listed on Community Plan page I-8 include 2.b: “Create a Visitor Center/Transit Facility/Special Event Area – The Vision Map suggests that the power transmission facilities be relocated and the property south of Fanny Bridge be used as a visitors center area with transit facilities.”

SCA notes the current CalPeco DEIS states, on page 3-81, “*This alternative (relocation) could be feasible from a technical, legal, and regulatory perspective.*”

20-1
cont'd

Existing Substation Location is Inconsistent with Directions of the Tahoe City Area Plan

The decision by CalPeco expressed in the DEIS to rebuild rather than relocate the Tahoe City Substation is **inconsistent**, more specifically, **incompatible**, with the direction of the Greater Tahoe City Area Plan. This Plan builds on the 1994 Community Plan. It is being developed by Placer County based on the provisions of Code Chapter 13 of the adopted 2012 TRPA Regional Plan Update.

20-2

Contrary to the DEIS statement on page 4.2-8 (Land Use), the Placer County Area Plan process (Tahoe Basin Community Plan Update) is no longer in its “*infancy*.” The Area Plan Teams appointed by Placer County have been meeting and planning documents have been in development since the spring of 2011. Published documents for Tahoe City include the Revised Visioning Options Diagram, Draft Vision Statement, Preliminary Draft Zoning District Maps for the Commercial Core, and Draft District Standards and Design Guidelines. The County has also published a draft Existing Conditions Report and Marketing Analysis for all four Plan Areas. This is hardly a planning process in its “*infancy*.” The DEIS fails to include the Greater Tahoe City Area Plan in Table 4.1-2, the Cumulative Project List.

20-3

Unlike the DEIS, planning themes and draft documents for the Tahoe City Area Plan have been the focus of significant public engagement and input. The existing CalPeco substation is located near Fanny Bridge, immediately adjacent to a popular restaurant and just a few steps from the new Tahoe City Transit Center. This western end of Tahoe City is targeted for revitalization around the theme of a “River Walk” district, with enhanced business and recreational opportunities, and additional parking and transportation/transit facility and service improvements, consistent with the goal of a more “walkable, bike-able” Tahoe City.

Note: CalPeco plans to take advantage of its proximity to the Tahoe City Transit Center. DEIS page 4.2-46 and 4.2-47. “*There is a potential for conflicting uses at the Tahoe City Transit Center site as CalPeco intends to use a portion of the parcel to temporarily place transformers during construction on the 625 Line and at the Tahoe City Substation.*” (Subject to Placer County approval).

20-4

The Economic Analysis prepared for the State Route 89/Fanny Bridge Community Revitalization Project underscores the importance of this new direction for this “district” of downtown Tahoe City. “*The degree to which the overall financial and economic impacts of the (SR 89) Project are realized heavily depends on the degree to which the Fanny Bridge area can be revitalized and transformed into a more pedestrian-friendly and appealing tourism district. This proposal depends on a variety of measures, some of which are external to the project itself.*”

One of these “external” factors is the existing CalPeco Tahoe City Substation. **The substation is clearly incompatible with the planned “Fanny Bridge/River Walk District.”** No amount of “*screening through landscaping and non-vegetative means*” as proposed by the project applicant in the DEIS (APM SC-5, DEIS page 4.4-43) will make the substation compatible with an area targeted for more walking, biking, tourism-related business, and other recreational opportunities.

The rationale cited in the DEIS for not relocating the Tahoe City substation is outdated and relies primarily on the TRPA Scenic Travel Route Rating for the immediate area. DEIS pages 3-

20-5

80 and 3-81 state the rationale for elimination of a CalPeco project alternative that would relocate the Tahoe City Substation:

“Further, one of the reasons given in the community plan (1994) for the relocation was to improve scenic quality for the SR 89 TRPA travel route. Since publication of this plan (DEIS), the travel route rating for this section of highway has increased as a result of other improvements in the community plan and the affected unit is now in attainment with the TRPA threshold. Therefore, the need to relocate this facility is significantly diminished and may no longer exist.”

20-5
cont'd

As commented above, this interpretation of the 1994 Community Plan is narrow and incomplete. The “Rationale for Elimination” of the substation relocation (DEIS page 3-81) concedes: *“This alternative could be feasible from a technical, legal, and regulatory perspective.”*

Sustainable Community Advocates challenges the validity of the following DEIS statements, also on page 3-81.

- *“Accordingly, although the substation could be relocated, the increased environmental effects that could result would not justify relocation.”* (Absent further data, this is speculation.)
- *“Moreover, there are no significant adverse effects associated with the modification to the Tahoe City Substation as proposed analyzed in this EIS/EIS/EIR that would warrant consideration of this alternative.”* (The DEIS is inadequate with regard to potential relocation of the substation, including alternative sites, and, accordingly, there is no factual basis for this statement.)
- *“Once all considerations were reviewed and evaluated, it was determined that this alternative (relocation) does not better address of the project goals, would have a substantially increased impact on ratepayers, and would post potential technical hurdles that may not be able to be feasibility addressed within the established schedule. As such, this alternative was rejected.”* (As documented in this letter, all considerations were not reviewed and evaluated. There is no information provided regarding the statement as to “impact on ratepayers,” and no information to support the speculative statement regarding “potential technical hurdles that may not be able to be feasibly addressed.”

20-6

SCA is aware of California Public Utilities Commission (CPUC) General Order No. 131-D. We have reviewed the DEIS statement on DEIS page 3-82:

“Public electric utilities are regulated by the CPUC, which is the lead agency for compliance with CEQA. The CPUC reviews the permit application for adequacy in conjunction with environmental review pursuant to CEQA. CalPeco must comply with the CPUC’s GO 131-D which contains the permitting requirements for the construction of substations and power line facilities and GO 95, which details the requirements for overhead line design, construction, and maintenance. CalPeco is seeking to obtain a Permit to Construct (PTC) from the CPUC for this project pursuant to GO 131-D, and submitted a PEA to the CPUC in August of 2010 as required by the Public Utilities Code.”

20-7

“No local discretionary permits are required, since the CPUC has preemptive jurisdiction over the construction, maintenance, and operation of CalPeco’s facilities, as outlined in Section XIVB of GO 131-D. The applicant would still have to obtain all ministerial building and encroachment permits from local jurisdictions, and GO 131-D requires that the applicant comply with local

building, design, and safety standards to the greatest degree feasible to minimize project conflicts with local conditions." (underline added for emphasis).

Specifically, Section XIV.B states: "*This General Order clarifies that local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the Commission's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters. In instances where the public utilities and local agencies are unable to resolve their differences, the Commission shall set a hearing no later than 30 days after the utility or local agency has notified the Commission of the inability to reach agreement on land use matters,*" (underline added for emphasis).

20-7
cont'd

The current CalPeco Tahoe City Substation is located on National Forest System Lands. CalPeco proposes to rebuild this substation on NFS lands, as described in the DEIS, and will seek to obtain a Special Use Authorization from the USFS Lake Tahoe Basin Management Unit (LTBMU) for this purpose. However, **SCA believes CalPeco should consider the location of the Tahoe City Substation in the context of the adopted Tahoe City Community Plan and the context of the emerging Tahoe City Area Plan.** Placer County and the local residents and business owners of Tahoe City deserve the opportunity to provide input as to the long-term implications of where the Tahoe City Substation is located and its compatibility with existing adopted plans as well as plans for the community's future. SCA sees this opportunity codified in CPUC GO 131-D, Section XIV.B.

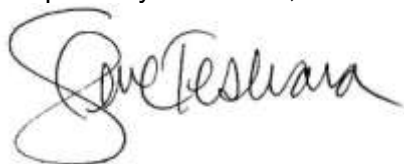
SCA notes that the final Tahoe City Area Plan proposed by Placer County must be found in compliance with the provisions of TRPA Code Chapter 13 by findings and approval of the TRPA Governing Board. Once adopted, the Tahoe City Area Plan is amended into the TRPA Regional Plan. CalPeco should take no action that jeopardizes the opportunity for TRPA to make the appropriate Chapter 13 and related findings for the Tahoe City Area Plan.

20-8

SCA is aware there are community leaders and other interested parties more than willing to assist CalPeco in finding a suitable alternate location for the existing Tahoe City Substation. The reasons cited in the DEIS for eliminating consideration of an alternative location are not consistent with the 1994 Tahoe City Community Plan, nor plans for Tahoe City's future.

20-9

Respectfully submitted,



Steve Teshara
Principal

cc: Mr. Charlie Donohue, Chair
Members, TRPA Advisory Planning Commission
Mr. John Hester, Planning Director, TRPA
Mr. Paul Clanon, Executive Director, California Public Utilities Commission
Ms. Nancy Gibson, Forest Supervisor, USFS Lake Tahoe Basin Management Unit
Mr. Mike LeFavre, Planning Officer, USFS Lake Tahoe Basin Management Unit
Mr. Michael Johnson, Director, Placer County Community Resources Development Agency

Mr. Ken Grehm, Director, Placer County Department of Public Works
Mr. Pater Kraatz, Assistant Director, Placer County Department of Public Works
Mr. Will Garner, Transit Manager, Placer County Department of Public Works
Ms. Jennifer Merchant, Tahoe Manager, Placer County Executive Office
Ms. Cindy Gustafson, General Manager, Tahoe City Public Utility District
Mr. Roger Kahn, Tahoe City Commercial Property Owners Association
Mr. Gary Davis, Tahoe City Downtown Association
Ms. Sandy Evans Hall, North Lake Tahoe Chamber/CVB/Resort Association
Mr. Alfred Knotts, Project Manager, Tahoe Transportation District
Mr. Scott Zumwalt, Bridgetender Restaurant, Tahoe City
Ms. Nanette Hansel, Ascent Environmental
Members, Greater Tahoe City Area Plan Team

RECEIVED

January 2, 2014

JAN 03 2014

Ms. Wendy Jepson
Senior Planner
Tahoe Regional Planning Agency
PO Box 5310
Stateline, NV 89448

TAHOE REGIONAL
PLANNING AGENCY

**Re: Inadequacy of CalPeco Draft EIS/EIS/EIR for Electrical Upgrade Project
Regarding Proposed Upgrade of Tahoe City Substation at Existing Location**

Dear Ms. Jepson:

I have prepared this letter to add to the record of my correspondence of December 2, 2013 and testimony at the December 18, 2013 public hearing conducted by the TRPA Governing Board. As before, my comments and concerns are focused on the location of the Tahoe City Substation.

Before moving to the issue of inadequacies in the environmental document, I want to highlight encouraging comments about relocating the substation as reported in the Tahoe Daily Tribune following the TRPA Board meeting.

"Based upon significant discussion, I believe this is something we can look at more fully between the draft and final," Joanne Marchetta, executive director of TRPA, said of the request.

"We are willing to look at it with Placer County and Tahoe City folks." (said by Mike Smart, President of Liberty Utilities West).

Unfortunately, Mr. Smart also said: *"From my standpoint, being the electric utility provider, moving it doesn't do me any value as far as the cost of service. Here you have a perfectly good substation and good location and people want it moved."*

The existing Tahoe City substation is neither perfectly good nor in a good location.

If the existing substation was good, it would not need to be upgraded as proposed in the Draft EIS. The existing facility is located in the midst of businesses, recreation, and other increasingly popular tourism attractions. Sustainable Community Advocates (SCA) is confident that a comprehensive analysis would confirm the location represents a significant liability for Liberty Utilities West and the Tahoe City community.

Inadequacies in the EIS

The DEIS fails to adequately disclose and analyze the significant environmental and human dangers and liabilities associated with the existing Tahoe City substation location. A review of the literature readily available from reputable sources provides clear indications of the dangers and liabilities present when a substation is located in an area similar to that of the Tahoe City facility. Originally constructed in 1937, it is completely inconsistent with surrounding land uses.

It is adjacent to busy, popular businesses and attractions - the Bridgetender Restaurant, a bike and walking trail, a bank, the Gatekeepers Cabin Museum, Tahoe City Transit Center, and bustling Fanny Bridge. It is also a short distance from the Truckee River and Lake Tahoe.

Below is just one example of information readily available about the potential dangers of an electrical substation, heightened when the facility is located in an area such as that occupied by the Tahoe City Substation.

"Fire in an electrical station is a destructive, demoralizing, disastrous event under most circumstances. Transformer fires - whether at large equipment in major switchgear centers or at smaller distribution centers that serve homes and businesses - are particularly fearsome. They involve fire, explosion, high voltage electrical arcs, oil ignition and dispersion, and potential injuries or death."

- Kennedy Maize, Executive Editor, Managing Power magazine (July 2013)

21-2
cont'd

The DEIS fails to adequately address the following questions:

- What type and quantity of oil or other substances are used at the substation as an insulation medium and coolant?
- Has LUW conducted a site assessment to determine the type of level of potential hazardous materials on the site? In the soil? Are PCB's present at the site? What threats may be posed to water quality in the Truckee River? Are there any threats to water quality or clarity in Lake Tahoe itself?
- Are there any records of site clean-up, such as the removal of toxic materials, since the substation was first constructed?
- Were all public health and safety agencies with jurisdiction in the substation area consulted in the development of the DEIS?

21-3

There is inadequate DEIS information and analysis to support elimination of the alternative to relocate the Tahoe City Substation. ("Rationale for Elimination," page 3-81).

There is inadequate information in the DEIS to support the following statements:

- "Accordingly, although the substation could be relocated, the increased environmental effects that could result would not justify relocation."
- "Moreover, there are no significant adverse effects associated with the modification to the Tahoe City Substation as proposed and analyzed in this EIS/EIS/EIR that would warrant consideration of this alternative."
- "Once all considerations were reviewed and evaluated, it was determined that this alternative (relocation) does not better address any of the project goals, would have a substantially increased impact on the ratepayers, and would pose potential technical hurdles that may not be able to be feasibly addressed within the established schedule. As such, this alternative was rejected."

21-4

The analysis of the impacts of the proposed substation rebuild and upgrade is incomplete and therefore inadequate. LUW failed to undertake a serious attempt to explore options for relocation, hoping the DEIS would justify its intention to upgrade and rebuild at the existing location. The DEIS is inadequate to justify LUW's approach. The "Rationale for Elimination" is based on speculative comments, not on the comparative facts and analysis required for an adequate DEIS.

Mr. Smart has raised the issue of cost for the relocation. *"It is fair for all the other customers in my service territory to pay for it because folks in Tahoe City want it moved?"* Changes to any part of the service territory infrastructure incur costs that are shared, so Mr. Smart could ask this about the entire project.

21-5

If there were an accident at the current Tahoe City Substation location, LUW ratepayers will undoubtedly bear some or all of the expense of clean-up and the legal exposure from potential accident-related litigation. Given the liability associated with the current location, Mr. Smart should be a leading advocate for relocation.

The DEIS is required to analyze impacts on land use. It fails to adequately disclose and discuss impacts on land use as identified in the adopted 1994 Tahoe City Community Plan. It fails to adequately disclose and discuss impacts on the land use directions in the emerging Greater Tahoe City Area Plan currently in development by Placer County.

21-6

If LUW is allowed to upgrade and rebuild the Tahoe City Substation at the existing location, the facility is likely to remain in this location for another 50+ years. This is not prudent risk management on the part of LUW. It does not represent responsible planning for the Tahoe City community, or the environment of Lake Tahoe and the Truckee River watershed.

21-7

Respectfully submitted,



Steve Teshara
Principal

**TAHOE CITY COMMERCIAL PROPERTY
OWNERS ASSOCIATION**

**POST OFFICE BOX 5157
TAHOE CITY, CA 96145**

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DEC 13 2013

**TAHOE REGIONAL
PLANNING AGENCY**

December 12, 2013

Ms. Wendy Jepson
Senior Planner
Tahoe Regional Planning Agency
P.O. Box 5310
Stateline, NV 89449

RE: California Public Electric Company
625 and 650 Electrical Line Upgrade Project
Draft EIS/EIS/EIR
SCH #2012032066

Dear Ms. Jepson;

This letter is submitted by the Tahoe City Commercial Property Owners Association which represents the interests of the downtown property owners in Tahoe City.

We are writing to share our comments on the draft environmental impact statement for the project listed above. Since the substation was built in 1937, the community of Tahoe City has changed a great deal. The location of the power station, once outside the community of Tahoe City, is now located at the gateway of our tourist town.

Almost twenty years ago, in 1994, the Tahoe City Community Plan was adopted by the Tahoe Regional Planning Agency and Placer County. That plan called for the relocation of the substation in Tahoe City for a number of reasons, including scenic issues, land use and community character. In 2012, hundreds of citizens of Tahoe City and the surrounding area developed and adopted a Tahoe City Vision Plan for our community. That vision reiterated the desire for the substation to be relocated. The substation is located in the middle of a proposed Fanny Bridge/River Walk District. The Tahoe Transportation District, with the assistance of our local community, is currently in the process of designing alternatives for the rerouting and redesign of SR 89. This redesign will alleviate through traffic and fast track the development of the Fanny Bridge/River Walk District, encouraging more walking, dining, recreational options and providing a gathering spot for community activities including farmers markets, street dances, etc.

The location of a power generation station is not appropriate for the vision we have for the future of our community. The Tahoe City Commercial Property Owners believe it is not appropriate to make further capital investments in this property. While we support the generation of additional power supply in or community, we believe now is the time to

22-1

22-2

22-3

relocate the power station to a more appropriate location. In collaboration with other entities, we are willing to assist the power company in their efforts to relocate it.

22-4

We appreciate the opportunity to present our views to the Tahoe Regional Planning Agency.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Roger Kahn", followed by a horizontal line extending to the right.

Roger Kahn

On behalf of the Tahoe City Commercial Property Owners Association

northstar property owners association

Letter
23

January 6, 2014

Tahoe Regional Planning Agency
Wendy Jepson, TRPA Senior Planner
P.O. Box 5310
Stateline, NV 89449

Dear Wendy,

Please accept the following comments from the Northstar Property Owners Association (NPOA) regarding the California Pacific Electric Company/Liberty Utilities 625 and 650 Electrical Lines Upgrade Project.

Overall our association is pleased Liberty Utilities is upgrading the 625/650 line through our area; however we do have the following concerns of the DEIR and requests of the project if approval is granted. 23-1

Visual Impacts: Reading through the DEIR, the visual impacts of the new power poles through the Martis Valley and along Highway 267 are considered only from the highway view and not the homes within the Northstar subdivision. All possible steps to keep the power poles at the same height should be considered. The average height proposed is an additional ten feet taller than the current poles. Project approval should guarantee that the poles will rust and not be reflective at any time. 23-2

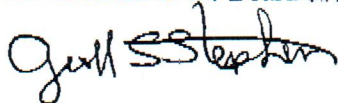
Tree Removal: An estimated 10,000 trees are designated for removal. The report does not provide any visual aids of what the impact of tree removal will be along Highway 267 and on to Kings Beach. NPOA understands the request to increase the "right of way" (ROW) from 25 feet to 40 feet, but it should not be allowed to clear cut the entire path of the power lines. Screening outside of the ROW should be considered as a mitigation measure. 23-3

Construction Hours: Current construction hours in the report state 6:00 am – 8:00 pm Monday – Friday and 8:00 am – 8:00 pm Saturday and Sunday. NPOA respectfully request work within the Martis Valley be scheduled from 7:00 am – 7:00 pm Monday – Friday and 9:00 am – 7:00 pm on Saturdays and no noise producing work on Sundays or Federal Holidays. NPOA has no issues with the hours stated in the report for work along Highway 267 between the one mile sign to Northstar and Kings Beach. 23-4

Construction Commencement: We would like to be informed at least 30 days prior to the commencement of work within the Martis Valley in order to inform our property owners of construction visual and noise impacts. 23-5

Please feel free to contact me if you have any questions on our comments.

At the direction of the Board of Directors,



Geoff Sullivan Stephens
General Manager



Tahoe Regional Planning Agency
Wendy Jepson, Senior Planner
Email: wjepson@trpa.org

Date: January 6, 2013
To: Wendy Jepson, Senior Planner
From: The League to Save Lake Tahoe
Re: Draft EIS/EIR for CalPeco Upgrade Project

Dear Ms. Jepson

The League to Save Lake Tahoe (the League) appreciates the opportunity to comment on the proposed California Pacific Electric Company (CalPeco) Electric Lines upgrade project. We have had the opportunity to review the draft analysis and would like the final analysis to address the comments and questions outlined below. Our concerns fall into impacts on these categories: Scenic, Biological Resources, Recreation and Plan Area Statement Amendment

In general, the analysis document is difficult to follow. The extensive size and disorganization of the document and associated appendices have resulted in areas that are redundant while others completely lack information. This makes the document both difficult to understand and impacts the ability of a reader to comment accordingly. An example is exhibit 4.7-which has two keys and there is an extensive amount of information on the map which makes it difficult to interpret. There is also reference to amending a Plan Area Statement (PAS) 019 to create a new Special Area through the document, but is not explicit as to where the Special Area will be limited. Reorganization and condensing would be helpful for relaying and comparing pertinent information.

24-1

Scenic Impact

Scenic impacts from the point of view of the lake and scenic look outs need to be analyzed in the FEIS. Based on exhibit 4.4-3 it seems that there may be substantial scenic impacts from views on the lake. The photo simulations do not include views from the lake. From page 4.4-13: "...because the landscape is forested, the viewshed shown in Exhibit 4.4-3 vastly overestimates the real viewshed of the project." The scenic impacts may not have been sufficiently analyzed. We suggest that the next analysis include a photo or other simulation from the point of view of someone on the lake. Exhibit 4.4-3 also shows that there may be scenic impacts to the ridge near the California-Nevada border and the Stateline scenic lookout area. Additional photo simulations should be included in the FEIS to show potential scenic impacts from ridges, hills and lookouts.

24-2

Because the project will result in bigger power lines that go through residential and recreation areas, the impact on scenic resources will be significant. Exhibit 4.4-4 show that the power lines may be seen from the Tahoe Rim Trail. The document states, "The new alignment would cross the Tahoe Rim Trail in five

24-3

places: three in the same or similar locations to existing, and two new crossings, one each in Segments 625-7 and 625-8 (see Exhibit 4.8-1)" (page 4.8-15). The document does not appear to include photo simulations for each of these locations. Does "the new alignment" refer only to the 625 line or also to the preferred alternative? The document also states, "Once constructed, the new 650 Line would be visible from the Tahoe Rim Trail at Brockway Summit and potentially from other trails in the vicinity, just as the existing line is currently" (page 4.8-20). What other trails might be affected by the preferred alternative? The FEIS should include additional photo simulations and analysis of scenic impacts to these recreational trails.

Exhibit 4.4-16 demonstrates the difference in scenic impacts at the Tahoe Rim Trail trailhead. The existing power lines appear to have a greater impact than the proposed power lines; is this realistic? The existing power lines appear to have eight lines across the sky and the new lines only have five lines in view. Is this a realistic representation of the proposed power lines? The document also states, "While these viewing conditions are rare and would occur only briefly along a travel route, it is possible that portions of Alternative 1 (PEA Alternative) would be visible from distant locations such as portions of the Tahoe Rim Trail farther removed from the proposed power lines. In addition, public roadways crossing Martis Valley would provide midground and background views of the rebuilt 650 Line" (page 4.4-48). Would sections of the PEA 650 Line have impacts to distant views from the Tahoe Rim Trail? Additional analysis should be done to assess these scenic impacts.

24-3
cont'd

Biological Resources Impacts

The impacts on old growth trees are significant in all alternatives including the preferred. Because old growth trees are irreplaceable, it seems difficult to find mitigation activities that can compensate for the loss of these trees. The analysis details Mitigation Measure 4.7-4 "Conduct a Tree Survey; Avoid Late Seral/Old-Growth Forest; Compensate for Loss of Trees". According to this analysis the impact would be reduced to a less than significant level, but it is not clear how the mitigation measure would do this. The final analysis should articulate how the mitigation measure would do this.

24-4

The following is also stated in the document:

"Despite compiling a floristic inventory of the areas surveyed, these surveys cannot be considered protocol level because surveys did not cover the blooming periods of all potentially occurring special-status plant species and time constraints for completing the reconnaissance surveys did not allow intensive searches of all potentially suitable habitats for all potentially occurring special-status plant species. (Page 4.7-13)"

24-5

Were the surveys sufficient to provide enough information for Table 4.7-4 "Special Status Plant Species and Likelihood to Occur in the Study Area?"

Is the area of Goshawk habitat quantified based on the footprint? Further analysis should analyze impacts outside of the footprint such as construction noise. An example of a disturbance from noise would be the use of helicopters during construction.

24-6

Recreation

The impacts to recreation may be substantial. For example, the recreation area on top of highway 257 and Mount Watson Rd. is extensively used for hiking and snowmobiling. Implementing bigger and wider poles will degrade existing scenic views from those points of recreation.

24-7

Plan Area Statement Amendment

This project would require an amendment to PAS 019 Martis Peak. The document states that the Amendment would designate a new Special Area 1 within Martis Peak (p 3-21). While the document explains that this is necessary for a nonconforming use change within Kings Beach, it does not clearly identify where this area is. It also does not thoroughly explain if there will be other changes within this PAS reaching outside of the Special Area. Without this absolute definition the conclusion that this amendment will not have any impact to TRPA threshold attainment is broad and inconclusive (p. 3-22-25). This needs to be explicit and thoroughly explained. There should also be an explanation on how this amendment will relate to the Placer County Area Plans.

24-8

Thank you for addressing these concerns in the Final documents.

Sincerely,

Darcie Goodman Collins, PhD

Executive Director, League to Save Lake Tahoe





Tahoe Regional Planning Agency
Attn: Ms. Wendy Jepson
P.O. Box 5310
Stateline, NV 89449-5310

January 6, 2014

**Subject: California Pacific Electric Company (CalPeco) 625 and 650 Electrical Line Upgrade
Draft Environment Impact Statement/Environmental Impact
Statement/Environmental Impact Report (DEIS/DEIS/DEIR)**

Dear Ms. Jepson,

The Friends of the West Shore appreciates the opportunity to provide comments on the Draft EIS/EIS/EIR (DEIS/DEIS/DEIR) for the CalPeco 625 and 650 Electrical Line Upgrade. We also incorporate comments submitted by Ellie Waller, the North Tahoe Preservation Alliance, the North Tahoe Citizens Action Alliance/Dave McClure, and the Tahoe Area Sierra Club.

25-1

The Friends of the West Shore (FOWS) works towards the preservation, protection and conservation of the West Shore, our watersheds, wildlife and rural quality of life, for today and future generations. FOWS represents community interests from Tahoma to Tahoe City. We are concerned with the extent of proposed development along the West Shore, North Shore, and areas bordering the Lake Tahoe Basin (e.g. Northstar, Squaw Valley), and the cumulative impacts of these multiple projects on our communities, which include increased Vehicle Miles Traveled (VMT), increased water and air pollution, noise, and other adverse impacts. We are also concerned with the project's impacts on scenic resources, wildlife, forest health, and soil health in the project area. Impacts will cumulatively add to the impacts of other planned projects in the area, including the Homewood Mountain Resort expansion and other projects, and is likely to induce growth in the area. However, the DEIS/DEIS/DEIR fails to adequately examine many of these impacts, as noted in detail below.

25-2

Further, as detailed in comments submitted by the NTCAA, the range of alternatives is inadequate, the stated purpose prevents the consideration of alternatives which are feasible, and alternatives were arbitrarily dismissed through examining them piecemeal – a mechanism which ensured they did not meet all of the objectives. This project will devastate substantial areas in the Basin, will create environmental impacts along the West Shore into the future, will unfairly charge Liberty Energy customers for increases which aim to serve expanding ski resorts, and will do all of this unnecessarily.

25-3

Detailed comments are provided below. Please feel free to contact Jennifer Quashnick at jqtahoe@sbcglobal.net if you have any questions.

Sincerely,

Susan Gearhart,
President,
Friends of the West Shore

Jennifer Quashnick
Conservation Consultant
Friends of the West Shore

Attachments: 4/8/2013
7/25/2012
12/11/2012
11/16/2013

FOWS Comments on Northstar Mountain Master Plan
TASC Comments on the Draft 2011 Threshold Evaluation Report
FOWS & TASC Comments on the final RPU package & Attachments 1-6
FOWS & TASC Comments to TRPA Governing Board regarding City of SLT
Tourist Core Area Plan

25-4

I. Project Purpose, Power Line Capacity, and Demand:

The proposed 625 and 650 Electrical Line Upgrade Project would consist primarily of an upgrade of CalPeco's existing 625 and 650 electrical power lines and associated substations from 60 kilovolt (kV) to 120 kV to allow the entire North Lake Tahoe Transmission System to operate at 120 kV. ... These improvements would increase the ability to maintain the current maximum system loads during an outage on any one of the four sections of the system (described in detail in Chapter 3, Project Alternatives), and decrease reliance on the Kings Beach Diesel Generation Station. In addition, rebuilding and realigning the power lines would reduce the likelihood of outages associated with high winds, downed trees, snow loading, and forest fires, and would improve access to the lines for maintenance, emergency outage response, and repair activities. (ES-1)

25-5

A. Purpose Statement:

The project purpose and need should be based on meeting existing loads. An adequate range of alternatives would include options for improving reliability for existing customers – not increasing capacity. However, the Purpose statement appears to have been carefully selected to include “projected loads,” ensuring the DEIS/DEIS/DEIR would only focus on alternatives which increase the capacity. Further, the summary fails to disclose what ‘projected loads’ are based on. Is this on current use? Future development which has not been examined or approved yet?

B. Unsupported References to “peak situation:”

The DEIS/DEIS/DEIR repeatedly uses one peak demand situation on 12/30/2012¹ as justification for the need for the project – a mechanism that appears more a means to generate concern of future power losses than to provide any useful information regarding the situation. Where was the demand coming from? What other factors were involved? What was the duration of the peak situation? Would non-loop alternatives dismissed by the DEIS/DEIS/DEIR have addressed this issue?

25-6

C. Lack of evidence regarding need and location for increased capacity:

Further, the DEIS/DEIS/DEIR fails to provide information regarding the need for this increased capacity, the locations that need more capacity, and alternatives to provide the increased capacity. Based on information in this document as well as other project proposals, it appears that the bigger ski resorts (Northstar and Squaw Valley) are responsible for increased power demands over the previous decades, and will need more capacity to further expand into the future. Yet the DEIS/DEIS/DEIR appears to take the “trust us” approach by frequently repeating the need for the project without providing the evidence necessary to support the claim.

25-7

Seasonal, economic, and demographic characteristics of the region lend themselves to wide swings in electrical demand. Demand in the North Lake Tahoe Transmission System is greatest during the winter months, and typically peaks in late December and January as a result of electric heating of homes, businesses, and tourist accommodations, and ski resort loads, including ski lifts and snow-making. (2-2) [Emphasis Added].

¹ E.g. “Recently, favorable winter conditions and high levels of tourist activity in the months of December 2012 and January 2013 generated very high electrical demand. On December 30, 2012, in particular, peak demand was extremely high (which is not uncommon in favorable winter conditions) and the system was stressed beyond its design capacity.” (2-2); “A peak electrical demand situation occurred on December 30, 2012 in which the contingency that was of concern was the loss of the 629 Line.” (3-72)

Electrical demand on the North Lake Tahoe Transmission System is the greatest during the winter months, and typically peaks during the week between the Christmas and New Year holidays as a result of electric heating and ski resort loads. Coincident peak demand is the electrical demand at the time when system-wide customer use is expected to be highest. Coincident peak loading of the North Lake Tahoe Transmission System has remained relatively stable over the last six years, between 79 and 88 MVA (see Table 3-1). (3-10) [Emphasis Added].

25-7
cont'd

Table 3-1 includes a list of peak loading over the past six years. The source is “Schlichting 2013”, which in the references is noted as: “Schlichting K. 2013. Personal Communication (e-mail) Re: Coincident peak demand.” (7-2) Where are the detailed reports associated with this information? What was demand for the month prior and after? What were weather conditions like? What were the snowmaking activities during this time?

25-8

D. Reliability Requirements:

With any one component out of service, the system does not currently have the capability to supply peak loads at adequate voltage levels without overloading the system components. As described above, such an overloaded situation has the potential to result in severe damage to system facilities, even with the Kings Beach diesel generators operating at full capacity. This condition does not meet federal and state reliability requirements. (2-3)

25-9

Which reliability requirements are not being met? Would alternatives which provide improved capacity to those who appear to need it – Northstar and Squaw Valley – meet these requirements for those areas?

E. Tahoe System:

Load shedding, or outages that result from downed lines wherein the utility is unable to reroute the power, affects a large sphere. These impacts such as loss of power to medical facilities, or home health care, or street and highway traffic control can result in severe impacts to the health and safety of individuals and businesses. The Tahoe system has historically experienced outages from the current system limitations. (2-5) [Emphasis added]

25-10

Where is the information regarding these historical outages under current system limitations in Tahoe? How frequent, what duration, what were the causes? Were these caused by ski resort usage?

F. Improper Comparison and Executive Summary:

Based solely on impact significance conclusions, there is not a clear distinction in the level of impact among the four action alternatives. As described in the various impact discussions in Chapter 4, Affected Environment, Environmental Consequences, and Mitigation Measures, where there are differences in environmental effects among the action alternatives, it is often a matter of some degree of more or less effect among the alternatives rather than one or more of the alternatives generating an environmental effect that the others do not. (ES-6)

This appears to be someone’s opinion or speculation, not a factual summary, and should be removed from the document. Because one alternative increases pollution less than another does not mean that the former does not have significant impacts, nor that the level of impact (10x more pollution versus 50x more pollution matters) is irrelevant. This ‘summary’ is misleading and should be deleted.

25-11

Because Alternative 4 (Proposed Alternative) would have the second lowest potential for project effects, based on relatively low values in the key issue areas identified in Table ES-1c, and would not result in unmitigable scenic impacts, this alternative is considered the environmentally preferable/environmentally superior alternative. (ES-7)

Table ES-1 (a-c) fail to provide the public and agencies with an informative comparison among alternatives because the impacts of the no action alternative (5) are not listed.

25-12

II. Inadequate Range of Alternatives:

What alternatives are available to increase the capacity to these resorts without degrading Tahoe's environment and charging Liberty Energy customers who will not benefit from the project? According to comments from the NTCAA and others incorporated herein, there appears to be several alternative options available. However, the DEIS/DEIS/DEIR has lumped it all together, and focused solely on variations of the loop concept without any detailed consideration of individual locations and power needs.

The 625 and 650 Electrical Line Upgrade Project is designed to fulfill five primary purposes.

1. Provide normal capacity for current and projected loads.

2. Provide reliable capacity to assure adequate service to all customers during single-contingency outages.

...Improving truck access to the 625 Line for inspections and maintenance would also increase the lines' resilience to outages. (ES-2)

25-13

CalPeco has analyzed the North Lake Tahoe Transmission System based on a 1 percent load growth projection and has concluded that, although the proposed project is necessary to respond to immediate reliability concerns, it is not critical for meeting current normal power demands. (5-6)

What is "normal capacity?" What are the projected loads? The DEIS/DEIS/DEIR needs to disclose this information. Tables of peak loads based on the consultant's personal communication do not suffice. Where are historical records of power supply, power issues and outages, downed trees, etc.? Where are the power demands coming from?

Further, as several alternatives were dismissed for not meeting legal or regulatory requirements (*we refer to NTCAA's comments regarding the inadequacies in how feasible, less damaging and less costly alternatives were dismissed and add the following*), it is odd that Alternatives 1 and 2 were kept although they are not allowed by TRPA's Code:

However, vegetation removal under Alternative 1 (PEA Alternative) and Alternative 2 (Modified Alternative) would result in permanent habitat loss within TRPA-designated disturbance zones around northern goshawk nests, which is prohibited by TRPA. (ES-32)

25-14

If these alternatives are not allowed by TRPA's Code, why are they included and fully analyzed as if they were feasible alternatives? It appears that the project alternatives were not only carefully determined with a very specific purpose in mind (increasing capacity), but that some of the non-preferred alternatives almost appear to be placeholders that would never be feasible.

Reductions in demand through energy conservation programs are part of CalPeco's future operations and are incorporated into its long-term peak load forecasts. Existing demand management conservation programs run by CalPeco include programs that offer energy saving measures and rebates to customers who participate and implement energy saving projects. However, these programs require voluntary participation. As separate and standalone programs, CalPeco cannot guarantee that such voluntary programs would provide sufficient energy conservation to achieve either the capacity or reliability needs of CalPeco in the Tahoe Basin, as

25-15

stated in the objectives for the project. With current energy demands in the North Lake Tahoe Transmission System meeting, and during peak demand periods exceeding, the design capacity of the system, it is not technically feasible to implement sufficient demand-side measures to avoid the need for improvements to delivery infrastructure included in the action alternatives. Although demand management conservation may be feasible from a legal and regulatory perspective, and would eliminate significant environmental effects associated with the action alternatives, because this approach would not meet the project objectives/need, and is not technically feasible, this alternative has been eliminated from further consideration. 3-79

Again, where are the increases in future demand coming from? If the ski resorts make up enough of it, then Placer County can, as part of their expansions, require that they add solar and other clean energy sources on-site, and implement programs to reduce power usage. The DEIS/DEIS/DEIR's failure to examine each smaller area within this project individually, and to identify and examine alternatives based on each area, results in the improper dismissal of what may be feasible, less impactful to the environment, and less costly to ratepayers.

25-15
cont'd

Homewood's Expansion:

Homewood Mountain Resort's approved expansion will also require more power, however the FEIR/FEIS anticipated upgrades to the Tahoe City Substation. Why is this no longer an option, just two years later? The FEIS/FEIS/FEIR should include this option in a revised set of alternatives. Beyond that, the capacity increases appear to be based on plans by Squaw Valley and Northstar, and there are alternative methods for meeting those demands besides those included in the current set (see discussion in NTCAA's comments).

In addition, the FEIR/FEIS, dated September 2011, referred to Nevada Energy's "1.194 million customers" at the time, then ten pages later, after discussing how the HMR expansion would require more power, explained that users will pay their proportional fair share of anticipated capital improvements and expected maintenance (Chapter 16):

Liberty Energy (formerly known as Sierra Pacific Power Company) provides electric service in the Project area. As a regulated utility based in Nevada, NV Energy is required to serve projects within its designated service area, which includes 54,500 square miles, 2.4 million people, and 1.194 million customers in Nevada and northeastern California, including 46,000 customers in the Lake Tahoe area (NV Energy 2010).

25-16

NV Energy establishes service connection and usage fees such that users pay their proportional fair share of anticipated capital improvements and expected maintenance.²

However, the proposed project is anticipated to be paid for by about 49,000 customers in the Tahoe Basin, yet clearly Homewood (and other resorts) will be the primary benefactors. Not only should in-Basin customers not have to deal with the economic and environmental costs of increasing power to Squaw Valley and Northstar, but the current project is certainly not representative of paying a 'fair share.'

² http://www.trpa.org/wp-content/uploads/16_HMR_Pub_Services_FEIR_EIS.pdf HMR FEIR/FEIS.

III. Applicant Proposed Measures (APMs) and environmental impact analysis:

It appears that the APMs, which aim to function like mitigation measures, have been treated differently in the DEIS/DEIS/DEIR with respect to the impact analysis. Page 4.4-40 notes that “*Impact conclusions are determined considering the attenuating effect of the following APMs.*” It is unclear what this means, however, it appears that the impact analyses may only examine post-APM impacts. However, the pre-AMP impacts must be analyzed and shown to be reduced through mitigation (which may be listed as an APM). This will ensure impacts are comprehensively analyzed. Further, some APMs rely on landowner’s permission (p. 4.4-43), which is not shown to be guaranteed, while others rely on far-reaching assumptions (e.g. measures to pile burn trees removed for the project, without any consideration of burn days and air quality impacts).

25-17

IV. Scenic Resources

We incorporate comments by Ellie Waller and NTPA on scenic impacts, including the need to analyze the scenic impacts in the Tahoe Basin using the appropriate methods and requirements.

25-18

V. Traffic Impacts:

The proposed upgrade of the 625 and 650 Lines would be expected to have the potential to affect transportation facilities or increase traffic during the construction phase, but would have little effect on transportation facilities and traffic conditions during the operation and maintenance phase. Typically, the operation of power lines and substations generates very little vehicular traffic. Operation and maintenance associated with the upgraded and relocated power lines and modified substations would generate a similar amount of vehicle trips that occur under existing conditions. The substations would be accessed via existing access roads or public roadways for all of the alternatives. Consequently, the transportation analysis focuses on the project’s construction phase. (4.12-11)

25-19

Due to the project’s increases in growth potential, we disagree that the long term impacts of the project will not affect traffic conditions along the West Shore and North Lake Tahoe. A Squaw Valley and Northstar and draw more people to the area, many of those people will drive into the Tahoe Basin, increasing traffic on Highways 267 and 89; people also tend to drive south on State Route 89 to visit Emerald Bay, increasing traffic on the two-lane highway and creating negative air, water, and noise pollution. The FEIS/FEIS/FEIR must be revised to include an appropriate analysis in the growth-inducing section and then all impacts associated with increased growth (including increased traffic and VMT in the Tahoe Basin) must be revised.

Further, with more construction-related traffic on the roadways, what options will there be for drivers take ‘back roads’ to avoid the highways and areas of construction? What will be the potential for spillover traffic into residential areas? What will the impacts of this spillover?

25-20

Cumulative Traffic Impacts:

The cumulative traffic impacts from the construction of multiple projects in the area fails to include projects outside of the noted areas – Tahoe City, Truckee, and Kings Beach – that will generate traffic on the same roadways. For example, TRPA- and Placer County-approved projects which are anticipated to begin construction in the next few years include the Homewood Mountain Resort (HMR) expansion (State Route 89) and the Boulder Bay project (State Route 267). Although the public comment period for the proposed Ferry Project NOI/NOP just closed, it is possible that if later approved, the construction needed to facilitate that project at the Tahoe City Marina could also contribute to construction-related traffic on the roadways. The FEIS/FEIS/FEIR must include a comprehensive examination of all projects that may generate construction traffic on the affected roadways *during the same time period*.

At the present time, the regional roadway network serving the project area is operating at acceptable levels. During construction of the project, cumulative impacts could occur if any of the action alternatives (Alternatives 1 through 4) were under construction simultaneously with other traffic-generating projects identified in Table 4.1-2 that would use the same roads as the 625 and 650 Electrical Line Upgrade Project for access or require closures of the same or nearby roads. The developments described in the cumulative scenario are spread out in three primary areas: Truckee, Tahoe City, and Kings Beach. The following projects those considered most likely to result in a cumulative interaction with the proposed project related to transportation and traffic:...

The bridge work on SR 89 is planned to occur several years before the 625 Line upgrades would begin in 2018; therefore, no cumulative impacts to traffic would occur. Construction of the Kings Beach Commercial Improvements Project could overlap with upgrade of the 625 Line in Kings Beach. However, since construction has already begun, the project would likely be complete before work on the 625 Line commences. (4.12-31)

25-21

In addition, how often do projects as large as those noted in the document and herein begin and end **on time**? Discounting the potential impacts of these projects utilizing the roadway network during the same times results in a failure to sufficiently consider the impacts of this project. The FEIS/FEIS/FEIR must evaluate all reasonably foreseeable impacts from these major construction projects, as well as other projects like HMR, which will rely on the same roadways. The cumulative impacts analysis must also consider the potential use of back roads, and assess the true capacity of all affected roadways:

4.12-2. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures or generate 100 or more new daily vehicle trip ends (DVTE) in the Lake Tahoe Basin. Construction would temporarily add traffic to the area roadway network. The amount of additional temporary traffic may exceed 100 new DVTE in the Lake Tahoe Basin during construction; however, these DVTE would be generated on a short term and temporary basis, and would be spread over different locations and times of day. The existing roadway network in the overall project area is expected to have adequate capacity to accept the temporary, localized increases in DVTE due to construction of the project components. (ES-43)

Speculation that variations in time and the ‘temporary’ duration (although we do not agree that five years of construction should be written off as temporary) do not substitute for a good, hard look at the potential impacts.

VI. Air Quality:

A. Existing Conditions:

The project area generally experiences warm, dry summers and wet and snowy winters. Local climatology of the project site can be best represented by measurements at the Squaw Valley Lodge and Truckee Airport stations. Maximum temperatures occur during July and reach 80 degrees Fahrenheit on average. Minimum temperatures can be as low as 15 degrees Fahrenheit during winter months (WRCC 2012a). Average annual precipitation of approximately 51 inches (247 inches of snowfall) occurs primarily during the months of November through March (WRCC 2012a). Average annual wind speed is approximately 4 miles per hour from the south (WRCC 2012b). (4.13-13)

25-22

The FEIS/FEIS/FEIR should include the WRCC information for Tahoe City as well.³

The results in “Table 4.13-3 Air Quality Indicator Attainment Status and Trends” for ozone, which state ozone standards are “At or somewhat better than target” are not correct. As noted in comments on TRPA’s 2011 Threshold Evaluation Report (attached; includes 7/25/2012 comments by TASC and 12/11/2012 comments by FOWS & TASC), TRPA’s conclusion is not supported by the evidence. Further, TRPA’s Compact requires TRPA to meet all applicable air quality standards in the state they apply.⁴ For California, this requires TRPA meet two standards for ozone, however the one most pertinent to human health impacts – the 8-hour average – is designated by CARB as nonattainment-transitional in California (for the Lake Tahoe Air Basin). The table needs to be corrected.

Concentrations of CAPs are measured at several monitoring stations in the LTAB and MCAB. The measurements at the Truckee Fire Station, South Lake Tahoe Airport Station, and the South Lake Tahoe-Sandy Way Station are presented here and are generally representative of ambient air quality in the vicinity of the study area. Table 4.13-5 summarizes the air quality data from these stations for 2009–2011.

First, as the Lake Tahoe Air Basin and Mountain Counties Air Basins are unique and different (e.g. they are separate air basins, they have different designations from CARB, etc.), the FEIS/FEIS/FEIR must separate out the analysis to assess the impacts in each air basin separately.

25-23

Second, there has been no ozone monitoring in South Lake Tahoe (or on the CA side of the Basin) since 2009. Placer County installed and is operating an ozone monitor in Tahoe City, however data were not Quality Assured by CARB until this fall (2013). The current table is misleading, due to its combination of the air basins into one table, and the blending of ozone monitoring data. As we have noted exhaustively in comments to TRPA beginning in June 2012,⁵ ozone in the Lake Tahoe Air Basin has been increasing, contrary to trends outside of the Basin. In fact, the discrepancy between air basins is easily illustrated by a glance at the differences in the peak values in 2009 (from SLT) and 2010-2011 (from Truckee). However, as this table is presented, it appears to suggest these concentrations are comparable. The same applies to PM10 and PM2.5 concentrations; air basins should be separately analyzed because the same emissions in one air basin may not have the same impact on ambient air quality as in an adjacent air

³ <http://www.wrcc.dri.edu/weather/index.html>

⁴ http://www.trpa.org/wp-content/uploads/Bistate_Compact.pdf; see Article V(d)

⁵ Footnote to 6/28/2012 comments included elsewhere. In addition, we incorporate our comments to TRPA’s regarding the City of South Lake Tahoe’s Tourist Core Area Plan and the inadequacies related to ozone monitoring and conditions assessment. (attached)

basin. Appendix M⁶ appears to include detailed information regarding the estimated emissions by location, duration, time of year, etc. All of these factors are needed to examine the impacts of each pollutant by air basin, considering time of year, time of day, cumulative impacts of emissions, inversions, etc. in order to assess the impacts on public health. The FEIS/FEIS/FEIR must include this assessment.

25-23
cont'd

B. Assumptions affecting air quality analysis:

The Methods and Assumptions section begins with the following statement:

Because operation and maintenance activities under the proposed project would be similar to existing conditions, little changes in air emissions would occur. Therefore, although air emissions from operations and maintenance are addressed in this section, the focus is on construction generated emissions. (4.13-20)

However, as the proposed project would allow for increases in growth which will generate more air pollution, in addition to potentially substantial cumulative impacts to traffic (and subsequent air quality impacts), we disagree with this assumption. As noted elsewhere, the project's growth-inducing impacts must be reexamined and the analysis of impacts updated.

25-24

Moreover, new access ways would be constructed as part of the proposed project, which would limit the need to use oversnow vehicles and helicopters to access areas with difficult terrain. Therefore, the number of vehicle trips and the level of maintenance activities would not increase as a result of the proposed project and; thus, long-term operational emissions of CAPs, precursors, and GHGs from these sources would not increase above levels existing without the project and were not quantified in the analysis below. (4.13-21)

How often have over-snow vehicle and helicopter access been needed in the past 40 years?

C. Air Quality Impact Analysis:

The following comments apply to all replicated material in the analysis for each action alternative, although page numbers listed are from the assessment of Alternative 1.

There is an error in Impact 4.13, which states:

"Daily construction-generated emissions of ROG, NOX, PM10, PM2.5, and CO. Construction-generated emissions in Placer County would exceed PCAPCD significance thresholds for NOX and PM10. Construction-generated emissions in Nevada County would exceed NSAQMD significance thresholds for NOX. Construction activity would also generate substantial levels of PM2.5. Implementation of Alternative [...] would generate emissions that contribute to nonattainment status of ozone, PM10 and PM2.5 in the MCAB and the nonattainment status of PM10 in the LTAB." (4.13-22 and throughout document)

25-25

Ozone is also not in attainment in the Lake Tahoe Air Basin, and the project emissions would contribute to ozone formation (and therefore, further contribute to the nonattainment status). The FEIS/FEIS/FEIR must be revised as follows:

⁶ The document notes: "For a detailed description of model input and output parameters, and assumptions, refer to Appendix M, Air Quality Data." (4.13-21)

“...Implementation of Alternative [...] would generate emissions that contribute to nonattainment status of ozone, PM10 and PM2.5 in the MCAB and the nonattainment status of ozone and PM10 in the LTAB.”

25-25
cont'd

As discussed above, the project encompasses two separate air basins. Strangely, the estimated impacts are listed by County in table 4.13-6. However, the county jurisdictional boundaries do not follow the air basins. We note emissions have been estimated in phased locations in Appendix M, therefore determining emissions by air basin should not require new modeling, per se. The FEIS/FEIS/FEIR must be revised to evaluate impacts *within each air basin*.

25-26

D. AQ Impact: Proposed APM:

The list of APMs includes the following measure:

If hand-piling and burning is utilized, piles will be located away from the edge of the roadway. Piles will be constructed to minimize residual unburnable material (resulting from pile compaction and/or high dirt content) and damage to remaining trees. Pile burning will be accomplished the following fall or spring, when possible. Pile burning will be planned and implemented to minimize scorching of existing non-fire-killed vegetation. (4.4-40).

25-27

The air quality impact analysis includes no evaluation of this impact, no comparison or discussion of burn days, or other related parameters. If the project proposes to burn as suggested here, this must be included in the impact assessment and mitigation must be included.

Another APM related to particulate matter includes the following:

CalPeco will limit actively graded areas to a cumulative total of 5 acres per day in order to control fugitive dust. The total area of disturbance can exceed this acreage so long as the actively graded portion is below this threshold...This measure would control the amount of earth disturbance occurring simultaneously on different project components in order to keep fugitive dust emissions below established thresholds. (3-90)

25-28

What monitoring will be required to ensure these measures mitigate fugitive dust? How much dust could be generated by 5 acres of disturbance?

E. AQ Impact mitigation (for ozone):

Further, the mitigation for NOx generation (which will contribute to ozone formation in both air basins, both of which are not in attainment of California's standard) provides no assurance that NOx emissions (and subsequent ozone impacts) will be mitigated sufficiently in either air basin. How will these mitigation funds be spent? How will funds mitigate impacts in each air basin? Who will oversee these funds? As it appears now, funds may be fully spent in one air basin, leaving the other to deal with increased ozone pollution. The FEIS/FEIS/FEIR must revise the air quality analysis and evaluate how impacts will be mitigated in each air basin.

25-29

Mitigation Measure 4.13-1b (Alt. 1): Pay off-site mitigation fee to PCAPCD to off-set NOX emissions generated by construction activity in Placer County.
The applicant shall pay an off-site mitigation fee into PCAPCD's Clean Air Grants Program for the purpose of reducing NOX emitted by project construction activities in Placer County to a less-than-significant level (i.e., less than 82 lb/day). The applicant shall provide a detailed construction schedule to PCAPCD before each construction season (i.e., May through October) that identifies when construction activities at different portions of the project site in Placer County

may occur. The applicant shall calculate the fees associated with each construction phase in consultation with PCAPCD staff and the applicant shall pay the specific fee amounts to PCAPCD before each construction phase. The calculation of daily NOX emissions shall be based on the cost rate established by PCAPCD's Clean Air Grants Program at the time each calculation and payment is made. PCAPCD's Clean Air Grants Program is part of ARB's statewide Carl Moyer Memorial Air Quality Standards Attainment Program. The program provides grant funding for cleaner-than-required engines and equipment. Grants are administered by PCAPCD to support reductions in emissions of key pollutants which are necessary to meet clean air commitments under regulatory requirements. Eligible projects include cleaner on-road, off-road, locomotive, lawn & garden, light duty passenger vehicles being scrapped and agricultural equipment (ARB 2012e; PCAPCD 2012b). At the time of writing this EIS/EIS/EIR the cost rate is \$17,080 to reduce 1 ton of NOX (ARB 2011d; Kuklo, pers. comm., 2013). (4.13-25).

25-29
cont'd

Further, ambient ozone monitoring is necessary to assess ozone conditions in the area. The project must require adequate monitoring. In addition, a plan to curb construction during periods of intense inversions, high ozone concentrations, etc., would be a starting point for mitigation. For example, if meteorological and ambient air quality measurements indicate existing or likely conditions that would result in elevated ozone levels for an extended period of time, such that standards may be violated by the project's activities, then measures to change operations during that time could be identified and employed.

F. Toxic Air Contaminant Emissions:

As the DEIS/DEIS/DEIR notes, diesel particulate matter from diesel exhaust have been identified by California as a toxic air contaminant:

Diesel PM was identified as a TAC by ARB in 1998 (ARB 1998) and is the primary TAC that might be released by the proposed project. (4.13-28)

Although the DEIS/DEIS/DEIR includes an estimate of diesel emissions for the project, the document makes an important assumption that is not supported by Tahoe-specific data:

The values in Table 4.13-8 are overall emissions levels from construction activities; diesel PM dissipates quickly and exposure at any one receptor would be far less than the emissions estimate. [Emphasis added].

In fact, as noted in our comments to TRPA on the Draft RPU EIS (reference provided elsewhere), meteorological evidence of Tahoe's thermal inversions indicates pollutants will not dissipate quickly during inversion conditions. Further, our comments include a preliminary study performed by UC Davis (2004), which noted diesel particles lingering in the air at the surface during inversions. This impact must be considered in examination of people's exposure to diesel PM, especially over a 94 week construction period (as estimated in the document). Further, how many of these weeks will occur during the winter months, when inversions may last all day long and overnight? How many during the summer, when inversion conditions are more common overnight, but also when many people will have their windows open at night for cooling?

25-30

As noted for ozone, mitigation measures are needed to address diesel emissions and exposure levels based on conditions in the Lake Tahoe Air Basin.

G. Air Quality – Cumulative Impacts:

The following information needs to be revised to reflect current information. As shown in the air quality documents in our attachments, most ROG and NO_x which form ozone in the Basin are generated from within the Basin, and significant sources include on-road motor vehicles and off-road motor vehicles (e.g. boats, snowmobiles). Current research by CARB, UC Davis, and DRI (see attachments) indicates relatively little transport of ozone into the Tahoe Basin. This information should be corrected so the public is made aware that local emissions are the largest contributors to ozone.

This nonattainment status with respect to the CAAQS for ozone is because of the emissions of ozone precursors, including ROG and NO_x, generated by cumulative development projects in the region and transport from outside the region. (4.13-51)

25-31

With regards to PM₁₀, particles of this size will not travel as long in the air as fine particles (PM_{2.5}). Thus, the analysis of PM₁₀ impacts should focus on more localized impacts of PM₁₀, while the PM_{2.5} analysis must consider longer travel times and the impacts of Tahoe's frequent inversions (both factors allow more accumulation).

The MCAB is designated as nonattainment with respect to the CAAQS for PM_{2.5} but the LTAB is in attainment. Both air basins are unclassified with respect to the NAAQS for PM_{2.5}. Because PCAPCD and NSAQMD do not recommend mass emission thresholds for evaluating PM_{2.5} emissions from a project but do for PM₁₀, the analysis of PM_{2.5} generally follows the analysis of PM₁₀. For the reasons described above for PM₁₀, the action alternatives would not make a significant contribution to a significant regional or local cumulative PM_{2.5} impact. (4.13-52)

VII. Greenhouse Gas Emissions (GHGs):

The DEIS/DEIS/DEIR first identifies two sources of GHG emissions – construction-related sources and removal of trees (p. 4.13-30). However, the document then proclaims the project's impacts to be less than significant because the estimated GHG emissions are *"less than the reporting level of 10,000 MT CO₂e/year established by ARB for stationary sources."* (p. 4.13-32). However, that reporting requirement is specific to stationary sources; construction activities and massive tree removal are not stationary sources.

In summary, the net increase in GHG emissions associated with Alternative 1 (PEA Alternative) would not be substantial because it would not exceed the trigger levels used by ARB to regulate emissions from stationary sources in its Mandatory Reporting regulation, which is a key component of the AB 32 Scoping Plan. For this reason, it is determined that Alternative 1 (PEA Alternative) would not conflict with the reduction goals of AB 32. (4.13-32).

25-32

This conclusion compares apples and oranges. The FEIS/FEIS/FEIR must evaluate an appropriate significance level for GHG emissions associated with the project's construction emissions, the GHG increases related to substantial tree removal, and the ongoing impacts of the project. How do these increases relate to plans by Placer County and TRPA regarding GHG impacts? What are the cumulative GHG increases with other projects (we note sources will be similar to vehicle impacts as well as new development), and the proposed LT Ferry Project (comments available at:

<http://friendswestshore.org/wordpress/wp-content/uploads/2014/01/FOWSTASC-comments-on-Ferry-Project-NOI-NOP-1.2.14.pdf>.)

VII. Water Quality, Soils, and SEZs:

How many trees and acres will be disturbed within the Tahoe Basin? Tree removal as proposed here will have a significant effect on soil health and the forest's ability to prevent runoff and infiltrate water. The proposed project may substantially alter a significant portion of Tahoe's forests. More comments regarding coverage are noted below.

25-33

IX. Growth-Inducing Impacts:

Because the action alternatives would not affect any lands used for agricultural production, zoned for agriculture, or considered important farmland, this issue is not discussed in detail in the EIS/EIS/EIR. Housing is not discussed in detail in this EIS/EIS/EIR as the proposed project does not include construction of housing as part of the project, would not displace existing housing, and would not generate demand for new housing (i.e., no increase in year-round employees that seek housing). Potential project effects on population and employment are addressed in Section 5.5, Growth-Inducing Impacts of the Proposed Project, and Section 5.6, Socioeconomics and Environmental Justice. (1-4)

By increasing power capacity to the resorts intended to expand, including the residential and visitor population (e.g. Squaw Valley, Northstar, Homewood MR), the project will be partially responsible for a demand for new housing. Without the increased power capacity, which as noted in comments from Ellie Waller, Northstar is relying on for its expansion, the resorts could not grow. Further, although the document downplays the increased development allowed by TRPA's 2012 RPU, the RPU will allow significant increases in residential and visitor populations through increases in development, building size, coverage, density, and other RPU amendments.⁷

25-34

Although the focus of the project is to improve the reliability of the system by allowing individual lines to carry more power, a bi-product of this effort is the potential ability to meet electricity demands of future customers. The proposed project does not involve an expansion of the transmission system service area; therefore, the project would not have the potential to generate growth by providing electrical service to an area that does not currently have electrical service. (5-6)

As the document has claimed the existing system is at capacity, and more capacity is needed, clearly this represents an expectation that there will be more customers. Focusing on changes in the area covered by the lines appears a way to avoid the actual question of whether this project, by increasing the power available to these areas, will induce more population growth (not a growth in the 'area' of service provided by the utilities). The answer to this question is yes. As outlined in extensive detail in these and incorporated comments, large ski resorts are relying on this 'upgrade' to expand. Expansion means growth. The FEIS/FEIS/FEIR needs to be revised to eliminate this side-stepping response, and instead to directly and honestly address the growth-inducing impacts of this project. How many new customers will this upgrade allow, including ski resort visitors, new housing, new activities, etc.?

⁷ Discussed in detail in our 6/28/2012 comments on the RPU/RTP DEIS, accessible at: http://www.trpa.org/documents/reisc/2_Other%20Organizations/League%20to%20Save%20Lake%20Tahoe,%20Friends%20Of%20West%20Shore,%20Tahoe%20Area%20Sierra%20Club%20-%20Joint%20Comments.pdf and our 12/11/2012 comments (attached).

Existing TRPA goals, policies, and implementation measures control growth in a manner that meets the requirement of the Tahoe Regional Planning Compact to establish a balance between the natural and built environments... The amount of growth attributable to new development under the recently adopted Regional Plan Update would be limited by the small number of development rights in the region that remain available for residential development and other growth management regulations that are in effect. (5-6)

As TRPA's RPU does allow for significant growth, and facilitates increases in tourists, the RPU can not be relied upon as evidence that growth in the Tahoe Basin, and especially the North and West Shores, will be limited by 'other factors.' Growth will also not be limited by "the small number of development rights...for residential development." For example (refer to our comments on the RPU for details):

- There are over 4,000 remaining development rights, and TRPA created 3,200 new allocations in the RPU.
- 600 of these are Bonus Units, which TRPA can create at any time;
- Not all units will require an allocation (e.g. affordable housing); and
- tourist units can be redeveloped at 4-6 times larger than the original unit (from 300 sq. ft. hotel rooms to 1200-1800 sq. ft. units), which allows more tourists to stay in each unit. This means the same number of tourist units may now house far more tourists.

The FEIS/FEIS/FEIR can not rely on TRPA's Plan to limit growth once the capacity for power is increased. This further reiterates the need to revise the analysis to address the actual growth that may be induced by this project.

In reality, CalPeco's proposed 625 and 650 Electrical Line Upgrade Project would only accommodate planned growth authorized by local land use agencies and, like most electrical utilities, CalPeco would be responding to growth planned and implemented by others and would not be instigating growth. (5-7)

This conclusion appears to suggest CalPeco need not take any responsibility for inducing growth. This is incorrect, as the document has stated that "*although the proposed project is necessary to respond to immediate reliability concerns, it is not critical for meeting current normal power demands.*" (p. 5-7) Further, once there is more power capacity, future project applicants are likely to simply state that they will not induce growth because the available power lines already allow for more growth. This circular argument passes the buck on who will evaluate this impact between the planning agencies and project proponents and thus far, has appeared to allow both sides avoid responsibility for increased growth and cumulative impacts (i.e. in the RPU/Area Plan process; see our comments on the City of SLT's Area Plan).

X. Soil and Coverage:

Because TRPA has implemented policies to bring LCDs 1b and 2 toward attainment on a region-wide basis, and because implementation of the action alternatives would increase coverage consistent with the TRPA land classification system and coverage requirements, these alternatives would not hinder progress toward attainment of the Threshold Standard for impervious land coverage. (5-16)

This conclusion suggests that because TRPA's Plan allows more coverage, the project proponent need not address the impacts of the additional coverage. This defeats the

25-34
cont'd

25-35

purpose of requiring environmental reviews of impacts. Even if there are regulations in place that are supposed to prevent an impact, the project proponent must still fully examine the potential impacts of the project and examine mitigation. The FEIR/FEIR/FEIR needs to be revised to examine the net increase in coverage in the Tahoe Basin and mitigate as necessary.

25-35
cont'd

What are the impacts to soil from the removal of trees?

25-36

XI. Wildlife Resources:

We incorporate comments by Ellie Waller and NTPA on wildlife impacts.

25-37

XII. Forest Resources – Old Growth:

Any unavoidable loss of late seral/old growth forest would be compensated through development and implementation of a forest management plan to facilitate establishment of late seral/old growth forest stands and enhance existing late seral/old growth forest stands. The forest management plan would include management actions, such as fuels and vegetation treatments, to facilitate and enhance old-growth development within the existing 625 Line to be removed and/or other potential treatment areas. The forest management plan would clearly describe how the project would achieve TRPA threshold standards for late seral/old growth forest enhancement, identify priority locations where enhancement actions could be implemented to achieve the plan's objectives, and include a funding component for late seral/old growth forest enhancement projects. The management plan would result in full compensation, over time, for late seral/old growth acreage affected by project implementation. Therefore, implementing any of the action alternatives would not affect the attainment status of this Threshold Standard. 5-23

Mitigation Measure 4.7-4 (Alts. 1-4): Conduct a Tree Survey; Avoid Late Seral/Old-Growth Forest; Compensate for Loss of Trees.

A Registered Professional Forester (RPF) shall conduct a focused tree survey to identify, map, and tabulate the number of trees in each relevant size class (6 inches or greater on non-Federal lands in Placer County, greater than 14 inches within the jurisdiction of TRPA, greater than 24 inches eastside, greater than 30 inches westside) that would be removed as a result of the project.

Following completion of the focused tree survey, a timber harvest/tree removal plan shall be prepared by a RPF. The plan shall include applicable APMs and additional necessary prescriptions for tree removal, water quality protection, protection of preserved trees, slash disposal, fire protection, and tree replacement. The plan shall contain all information required to be in a tree information report under the Placer County tree ordinance, for obtaining a tree removal permit. The plan shall comply with the minimum standards for tree removal, as described under TRPA Code 61.1.6 and with CAL FIRE timber harvesting plan standards, as applicable, under the Forest Practice Act. Before implementing any project activities that involve tree removal, the timber harvest plan shall be submitted to CAL FIRE for review and approval. Once approved, the plan shall be incorporated into the project design and all conditions of approval shall be implemented. CalPeco shall obtain a tree removal permit from TRPA for tree removal within the Lake Tahoe Basin. (ES-30-31)

25-38

There is no mitigation for the removal of an old growth tree. We are unaware of any mechanism to make a tree age faster. Further, all forests will eventually become old growth "over time" (barring disturbances such as major wildfires, etc.). Thus, to claim mitigation will help achieve the threshold 'over time' appears just a means to justify removing old growth trees now. Finally, TRPA has yet to establish any plans for how it will achieve the old growth threshold standards. As noted previously, the

FEIS/FEIS/FEIR must examine a true range of alternatives and evaluate the necessary old growth removal for each alternative.

25-38
cont'd

XIII. TRPA Regional Plan Amendment:

Amendment of Plan Area Statement 019, Martis Peak

Electrical substations are defined as *Public Utility Centers* in Table 21.4-A of the TRPA Code. Although the expanded substation rebuild is proposed on a parcel with an existing Public Utility Center, this use is not permissible on the subject property, which is located in Plan Area 019 – Martis Peak, a Conservation Plan Area, as defined in the Plan Area Statement (PAS). Therefore, the existing Public Utility Center (including the existing Kings Beach Substation and the proposed, new substation) is an approved nonconforming use, by definition, in the TRPA Code (Section 21.2.3). Although the project, as proposed, would allow the decommissioning of the Brockway Substation, the rebuild of the Kings Beach Substation would constitute *expansion, intensification, and/or modification* of a nonconforming use as defined in the TRPA Code (see TRPA Code Sections 21.2.3 and 21.5). To facilitate the proposed expanded substation in the most appropriate location (the site of the existing substation), TRPA proposes to address the nonconforming use through a staff-initiated amendment to PAS 019, Martis Peak, by adding Public Utility Centers as a special use within a new Special Area 1 of the PAS. In accordance with TRPA Code, such a PAS amendment is considered a project, a Regional Plan amendment, and a Plan Area amendment, subject to specific findings requirements, as described below. 3-23

25-39

What other uses in the area might be affected by this amendment? Would this allow increased development of other public service facilities that would not otherwise be allowed in this area?



**Tahoe Area
Sierra Club
Group**

**Letter
26**

Tahoe Regional Planning Agency
Attn: Ms. Wendy Jepson
P.O. Box 5310
Stateline, NV 89449-5310

January 7, 2014

**Subject: California Pacific Electric Company (CalPeco) 625 and 650 Electrical Line Upgrade
Draft Environment Impact Statement/Environmental Impact
Statement/Environmental Impact Report (DEIS/DEIS/DEIR)**

Dear Ms. Jepson,

The Tahoe Area Sierra Club (TASC) appreciates the opportunity to provide comments on the Draft EIS/EIS/EIR (DEIS/DEIS/DEIR) for the CalPeco 625 and 650 Electrical Line Upgrade. We incorporate comments submitted by Ellie Waller, the North Tahoe Preservation Alliance, the North Tahoe Citizens Action Alliance/Dave McClure, and the Friends of the West Shore.

26-1

The TASC echoes concerns raised by these other groups, including but not limited to the DEIS/DEIS/DEIR's failure to adequately examine the following:

- An adequate range of alternatives, which examines alternatives aimed at improving reliability of the existing power network, not increasing capacity;
- A purpose statement which does not exclude such alternatives from evaluation;
- Cumulative impacts in the Basin from multiple construction projects at the same time;
- Cumulative traffic in the Basin resulting from the projects which will be able to grow and develop more with the additional power capacity (e.g. ski resort expansions);
- Growth-inducing impacts of the project;
- Environmental impacts to air and water quality, noise (quiet), scenic resources, wildlife, forest health, and soil health; and
- The importance of and impacts to the Lake Tahoe Basin's Stream Environment Zones (SEZs).

26-2

26-3

26-4

26-5

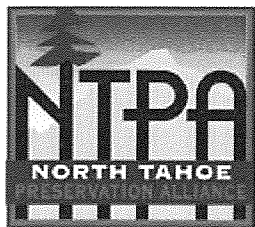
26-6

An adequate range of alternatives must be assessed and the draft EIS/EIS/EIR recirculated with sufficient environmental analysis. Please feel free to contact Laurel Ames at laurel@watershednetwork.org if you have any questions.

26-7

Sincerely,

Laurel Ames,
Conservation Co-Chair,
Tahoe Area Sierra Club



North Tahoe Preservation Alliance

P.O. Box 5

Crystal Bay, Nv. 89402

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www.ntpac.com

"Helping preserve the natural beauty and rural character of North Lake Tahoe"

Power Line Expansion Threatens Tahoe Recreation Area

Today the forests between Kings Beach and Tahoe City are connected by the Tahoe Rim Trail, nature trails, dirt roads and a mostly paved route located at the summit of Hwy 267 known as Mt. Watson Road or the "Fiberboard Freeway". This great North Shore recreation asset has it all: views of Lake Tahoe, access to Watson Lake, jeep and equestrian trails, snowmobiling, cross country skiing, snowshoeing, and hiking. All are close to town, yet not marred by unsightly power lines.

That's all about to change if Liberty Utilities and CalPeco, Liberty's Parent Company, get approval for their proposed \$45m plus project. The company wants to double the existing power to serve the demands of new projects with prominent new power lines; think 1200 units at Squaw, 1000 more at Northstar Highlands, 760 units at the top of Hwy 267 put forth by East West, and the new lifts at Northstar.

The Power Company folks want to run the new power line between Kings Beach and Tahoe City along the Mt. Watson Road. The poles will visually dominate the pristine forest lands. They claim it will be easier to access and maintain the poles. That's a given, but at what environmental cost?

The new thicker and taller poles will exacerbate their visual effect and degrade existing views. Here are some disturbing project highlights:

1. Trees removed : 47,000 (whole project including along Hwy 267)
2. Damaging Stream Environment Zones by removing 1542 trees
3. Power poles increase in diameter from an average of 16" to a maximum of 4.5 feet for self-supporting poles
4. Power Pole heights Increases up to 12' or as much as a total height of 92' (nine stories) -most poles are now 40' high
5. Right of Way Increases width from 30 feet to 40' along the new Mt. Watson Road line
6. Trees and vegetation within 150 feet of the power lines can be cleared producing a scar in the forest
7. 7.5 miles of new right of way within the basin

27-1

27-2

Who will stand the cost of the expansion? A measly 49,000 rate payers between North and West Shore and pay attention folks on the California side of South Shore, you are on the hook too. The power company is guaranteed an 11.8% return on these infrastructure improvements and it is likely we will see our power bills go up 20-30%. This huge project could easily run over \$50m. It's a no lose situation for the power company, a boon for developers, but loaded with adverse effects for tourists, residents and wildlife.

27-3

Let's not lose our Public Areas and diminish the quality of a great recreational experience with the permanent installation of unsightly power poles. Leave the power lines where they are now...they've served us well in that location since the '70s. Underground the new lines that will go through the east Kingswood neighborhood.

27-4

Do we really need five years of traffic impacts and 12,000 one way truck trips? The basin is already 90% built out; is this major project absolutely necessary for Lake Tahoe? Calpeco develop a project that won't negatively impact our beautiful area.

27-5



North Tahoe Preservation Alliance

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"Helping preserve the natural beauty and rural character of North Lake Tahoe"

January 4, 2014

Wendy Jepson Stacy Wydra
TRPA Placer County Planning
128 Market Street Auburn, Ca.
Stateline, Nv. 89449

Re: Calpeco DEIS/EIR

Dear Ms. Jepson and Ms. Wydra:

This letter provides comments on the above mentioned DEIS. The NTPA is a Nevada Nonprofit corporation formed to ensure that North Lake Tahoe retains its natural beauty and easygoing, rustic lifestyle. This letter provides comments on the draft EIS that are in addition to and do not replace or otherwise supersede comments that were previously submitted. We also incorporate the all comments from the following organizations and individuals:

North Tahoe Citizens Action Alliance
Tahoe Area Sierra Club
Friends of Lake Tahoe
Ellie Waller

In our review of the Calpeco EIS, we believe the DEIS did not adequately investigate or disclose the proposed Project's potentially significant effect on the environment.

- 1. The Calpeco Power Line expansion degrades the scenic and natural areas in the Tahoe basin and fails to protect and safeguard the Public's recreational opportunities.**

Today the forests between Kings Beach and Tahoe City are connected by the Tahoe Rim Trail, nature trails, dirt roads and a mostly paved route located at the summit of Hwy 267 known as Mt. Watson Road or the "Fiberboard Freeway". This great North Shore recreation asset has it all: views of Lake Tahoe, access to Watson Lake, jeep and equestrian trails, snowmobiling, cross country skiing, snowshoeing, and hiking. All are close to town, yet not marred by unsightly power lines.

That's all about to change if Liberty Utilities and CalPeco, Liberty's Parent Company, get approval for their proposed \$45m plus project. It is clear the company needs to double the existing power to serve the demands of new projects outside the basin; 1200 units at Squaw, 1000 more at Northstar Highlands, 760 units at the top of Hwy 267 put forth by East West, build out of 670 units at Martis Camp and the new lifts/snowmaking at Northstar. Northstar Mountain Master Plan requires 7MW. The Homewood Project will require 8MW.

The Power Company wants to run the new power line between Kings Beach and Tahoe City along the Mt. Watson Road. The poles will visually dominate the pristine forest lands. They claim it will be easier to access and maintain the poles. But at what environmental cost?

The new thicker and taller poles will exacerbate their visual effect and degrade existing views. Here are some disturbing project highlights:

- a. Trees removed : 47,000 (whole project including along Hwy 267) 25,000 along Mt. Watson Road. (From EIR Page ES-18: 4.3-2. Conversion of forest land to non-forest uses or loss of forest land. Implementation of the action alternatives would result in the removal of between approximately 47,100 (Alt. 4) and 58,000 (Alt. 1) trees in up to 219.8 acres of forest land plus hazard tree border zones as part of project construction and long-term vegetation management in the power line ROW and in new access ways. Considering forest regeneration on land currently maintained in the existing 625 Line ROW, overall permanent forest land impact would be between 66.1 acres (Alt. 4) and 107.0 acres (Alt. 2). Tree removal would not result in substantial changes to adjacent stand structure or regional forest land composition or distribution. Forest land would not be lost or converted to a non-forest use as project-related activities are compatible uses with forest land zoning designations in the project area.)
- b. Damaging Stream Environment Zones by removing 1542 trees
- c. Power poles increase in diameter from an average of 16" to a maximum of 4.5 feet for self-supporting poles
- d. Power Pole heights Increases up to 12' or as much as a total height of 92' (nine stories) - most poles are now 40' high
- e. Over 100 new power poles of unknown size along the Mt. Watson Road where today there are none.
- f. Right of Way Increases width from 30 feet to 40' along the new Mt. Watson Road line
- g. Trees and vegetation within 150 feet of the power lines can be cleared producing a scar in the forest
- h. 7.5 miles of new right of way within the basin.

Considering the preferred alternative 4, adequately describe how many poles, what diameter (base and pole) size and height will be installed along Mt. Watson Road. Analyze and investigate the scenic and recreational impacts on the Tahoe Basin in order that the Public is fully informed and can make an informed comparison of alternatives.

Define and describe in the DEIS the viewshed change due to 150ft requirement noted above (baseline existing condition versus new width required) for Tahoe Rim Trail, Martis Creek

28-2
cont'd

28-3

Lake Recreation Area, Burton Creek State Park, The Fiberboard Freeway, Truckee River Regional Park, Northstar Resort Golf Course, 64-Acre Recreation Site , Gatekeeper's Museum and Lake Tahoe Dam, River Rafting, Kings Beach Snowmobile activities as a result of required 150 foot width of tree removal.

(From EIR Page 4.4-34: **The Tahoe Rim Trail**, shown in Exhibit 4.4-5, is a 165-mile, single-track, multi-use trail encircling Lake Tahoe. Throughout the project vicinity, the trail is located on LTBMU lands and is open to hikers, equestrians, and mountain bikers. Winter use by cross-country skiers and snowshoers is also popular. There is a trailhead in Tahoe City near the Community Center on Fairway Drive. From that location, the trail ascends to overlook the Truckee River Canyon, and then extends north and east past Watson Lake more than 20 miles to the trailhead on SR 267, 0.5-mile south of Brockway Summit. Along this segment, the trail generally parallels the existing and proposed 625 Line alignments, crossing under the existing 625 Line twice (see Exhibit 4.8-5). Trail users can cross SR 267 and beneath the existing 650 Line to a trailhead on the east side of the highway. From there, the trail continues northeastward, crosses beneath the existing 625 Line again, and continues toward Martis Peak. As shown in Exhibit 4.4-4, trail users are exposed to views of the power lines only briefly because the viewshed of the existing line is highly localized due to the screening effect of the forest.)

28-3
cont'd

Define and describe the rationale why the DEIS doesn't consider over 100 new power poles along Mt. Watson Rd. significant?

Given the above significant changes, (i.e. # of poles, size, height, new locations) Describe and analyze how this project adequately and rationally meets the following standard from the TRPA Compact, "Environmental threshold carrying capacity" means an environmental standard necessary to maintain a significant scenic, recreational, educational, scientific or natural value of the region or to maintain public health and safety within the region. Such standards shall include but not be limited to standards for air quality, water quality, soil conservation, vegetation preservation and noise.

28-4

2. The DEIS fails to consider a viable alternative that would supply power required for Martis Valley development, while at the same time retaining the existing 625 line.

Let's not lose our Public Areas and diminish the quality of a great recreational experience with the permanent installation of unsightly power poles.

a. Leave the 625 lines where they are now...they've served us well in that location since the '70s. At the very least a couple of other alternatives must be explored in the DEIR showing independent loop systems for Northstar and Squaw instead of one large loop. The DEIS documentation should include an alternative that doesn't require an entire looping system. An independent needs assessment analysis must be completed before a down-select to a preferred alternative can be made. The lack of range of alternatives renders the DEIS inadequate.

28-5

b. Underground the new lines that will go through the east Kingswood neighborhood. In many cases, proposed new larger poles will be within 60 feet of residential

28-6

homes/bedrooms. Enumerate in the DEIS the distances between poles and dwellings in 200+ affected homes.

Electro Magnetic readings: Provide in the DEIS impact analysis the EMF increase as the line size is being increased. What will the increase be with the new upgraded lines?

Consider undergrounding lines in the Kingswood neighborhood. Provide cost breakdown in the DEIS for undergrounding this line segment or any other line segment in a neighborhood. (From EIR Page 4.10-25: Since electric fields are effectively blocked by most materials, such as trees and walls, the majority of the following information related to EMF focuses on exposure to magnetic fields.) Since tree removal will be required for line safety, define and describe how these larger lines won't be a significant impact on Kingswood East residents?

28-6
cont'd

- c. The 650 line should be undergrounded or set back along Hwy 267 to improve that scenic corridor. Define and describe why this was not considered? This is a \$46m project as described, what would be the cost of undergrounding or setting poles back so they are screened by the forest?

28-7

3. The DEIS failed to adequately analyze why the project expansion is necessary for reliability for the Tahoe Basin which is has limited growth potential due to TRPA ordinances.

The basin is already 90% built out; is this major project absolutely necessary for Lake Tahoe?

At the December 4, 2013 TRPA Advisory Planning Commission meeting Mr. Smart was asked if this project was required. He stated- NO- he was just being proactive to make his job easier in managing the potential for outages and overloading of the system.

7 MW new electrical demand will be required by the Northstar Mountain Master Plan (NMMP). The proposed NMMP project- and program-level components would result in the following new electrical demand (see Table 14.6-4 NMMP DEIS):

- (i) TABLE 14.6-4
- (ii) ANNUAL NMMP ELECTRICAL DEMAND BY PROJECT COMPONENT
- (iii) Project Component Electrical Demand in Kilowatts
- (iv) Project-Level Components
- (v) Detachable Lift J 642,082
- (vi) Detachable Lift C 428,055
- (vii) Fixed Grip Lifts V and W 856,110
- (viii) Surface Tow Lift Z 9,310
- (ix) Snowmaking for 83,500 linear feet 3,036,220
- (x) Backside Warming Hut/Skier Services 240,000
- (xi) Summit Deck and Grille Improvements 138,000
- (xii) Castle Peak Parking Lot Transport Gondola 1,070,137
- (xiii) Lift Q 214,022
- (xiv) Skier Services 184,000
- (xv) Sawmill Lake Campground/Relocated Cross-Country Center/Skier Services 224,250

28-8

- (xvi) Backside Campground 20,000
- (xvii) Total 7,062,191 7 MW

1 MW is enough to supply 400-600 homes, so 7 MW is enough to supply at least 2800 homes.

Per Table 4 in Calpeco's 2010 North Tahoe Load Projections (see attached Exhibit 1)), Northstar used 8.6 MW during peak load. The NMMP with a projected 7MW increase is an 81% increase in load for Northstar.

What is the rationale for the conclusion that the current infrastructure is adequate considering that at the December 2013 TRPA Governing Board Meeting, Michael Smart, CEO of Liberty Energy testified that if someone came to him today requesting a will serve letter for a subdivision of 250 homes he would turn them down? 250 homes uses less than 1 MW. (In 2011, the average annual electricity consumption for a U.S. residential utility customer was 11,280 kWh, an average of 940 kilowatthours (kWh) per month per US Energy information.)

28-8
cont'd

4. The DEIS failed to adequately investigate or analyze how the project supports the Kings Beach and Tahoe Vista existing and proposed Community Plans.

The DEIS analyzes how the project affects the Tahoe City Community plan, but fails to analyze or investigate how the project complies with the North Tahoe existing and proposed Community Plans. (From EIR Page 4.4-10 and 11: Tahoe City Community Plan

The Tahoe City Community Plan (1994) contains goals and objectives for urban design and development, traffic and parking, public service facilities, commercial development, and recreation. The objectives of the plan are implemented through enforceable policies. The plan also describes a vision for the future of Tahoe City and identifies various projects in the immediate Tahoe City area that are intended to improve scenic quality. It identifies opportunities for scenic improvements along SR 89 at the entrance to Tahoe City through relocating or screening existing non-compatible uses including public service facilities.)

Since Hwy 267 bi-sects the Tahoe Vista and Kings Beach Community Plans and in each plan emphasis is on the recreational destination amenities in our area and the visual impacts of the entry along 267; an analysis of compliance with these existing and proposed Community Plans must be investigated in the DEIS.

28-9

5. The DEIS fails to adequately analyze and describe the impacts of removing 25,000 trees in along 7.5 miles of Mt. Watson Rd. on Wildlife.

What are the impacts on wildlife of 12,000 one way truck trips?

The area west of Hwy 267 is a flyway migration for birds. Define and describe how this project, the traffic and significant tree removal is not a significant impact on wildlife?

28-10

The EIS claims "Because these habitats are locally and regionally common and abundant, and implementation of APMs (Applicant Proposed Measures)", explain and define how this is an adequate explanation for the conclusion of "no mitigation required"? Pre-project conditions would include large trees and tree stands- provide details in DEIS how CalPeco can/will replace 20-50+ year old trees to maintain an appropriate habitat? It will take many years for the habitat to be the same and viable for the special species that nest there

28-10
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Provide details on how this conflict does not require Calpeco to seek another location for the increased power lines to avoid conflict with the special species habitat.

For each of these reasons, the NTPA, respectfully request that the TRPA revise the DEIS and re-circulate for Public review and comment a legally adequate DEIS that fully complies with the law and is supported by substantial evidence in light of the whole record.

28-11

Sincerely,



Ann Nichols

On behalf of the North Tahoe Preservation Alliance

EXHIBIT 1

This study used a growth rate of 1.0% per year, as provided by CalPECo. The 2010 winter peak load provided by CalPECo was 85.9 MW and operates at 1PU. Winter peak base cases were developed for 2011-2018 using the projected system loading listed in Table 3 below.

Year	Projected Load
2011	86.8
2012	87.6
2013	88.5
2014	89.4
2015	90.3
2016	91.2
2017	92.1
2018	93.0

Table 3: Projected Winter Peak Loading

Table 4 below provides a breakdown of the individual substation loads for the 2011 and 2018 winter peak.

Substation	Actual Peak Load (2010)	Average Annual Growth 2010-2018	Estimated Winter Peak Load (2011)*	Estimated Winter Peak Load (2018)*
Squaw Valley	11.5	1%	11.6	12.5
Tahoe City	26.1	1%	26.4	28.3
Kings Beach / Brockway	14.9	1%	15.0	16.1
Northstar	8.6	1%	8.7	9.3
Glenshire	2.8	1%	2.8	3.0
Truckee 60	3.8	1%	3.8	4.1
TDPUD Martis	8.6	1%	8.7	9.3
TDPUD Truckee	9.6	1%	9.7	10.4
Total (North Tahoe System)	85.9	1%	86.8	93.0

Table 4: North Tahoe Load Projections

Table 5 below presents the contingency scenarios studied.

North Tahoe Citizen Action Alliance

Letter
29

January 7, 2014

Michael Rosauer, CPUC Project Manager
California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102

Via electronic mail
michael.rosauer@cpuc.ca.gov
wjepson@trpa.org

Wendy Jepson, TRPA Senior Planner
Tahoe Regional Planning Agency
PO Box 5310
Stateline, NV 89449

**Subject: California Pacific Electric Company 625 and 650 Electrical Line Upgrade
Draft EIS/EIS/EIR**

Dear Lead Agencies:

The North Tahoe Citizen Action Alliance appreciates the opportunity to provide comment on the Draft EIS/EIS/EIR (DEIR) for the CalPeco 625 and 650 Electrical Line Upgrade Project. We also incorporate comments submitted by Friends of Tahoe Vista/Ellie Waller, the North Tahoe Preservation Alliance/Ann Nichols, Friends of the West Shore, the Tahoe Area Sierra Club, Joy Dahlgren, Traffic Expert and Trent Orr, Attorney, Earthjustice.

North Tahoe Citizen Action Alliance is a non-profit environmental community-based organization incorporated under the laws of the State of California. North Tahoe Citizens serves as a public education organization for the North Lake Tahoe area, with its work focused on practical, workable solutions that protect the North Lake Tahoe region's outstanding environmental resources and encourage creative, practical solutions.

The following comments are preliminary comments and will be supplemented soon once our technical experts have reviewed the recently released technical reports. Necessary load data and assumptions used for 1)purpose and need, 2)choice of action alternatives, and 3)alternatives considered and eliminated are just now coming to light with the technical analysis. Please contact me at mccluretahoe@yahoo.com if you have any questions.

Sincerely,

David McClure
President, NTCAA

29-1

The North Tahoe Citizen Action Alliance appreciates the opportunity to provide comment on the Draft EIS/EIS/EIR (DEIR) for the CalPeco 625 and 650 Electrical Line Upgrade Project. We also incorporate comments submitted by Friends of Tahoe Vista/Ellie Waller, the North Tahoe Preservation Alliance/Ann Nichols, Friends of the West Shore, the Tahoe Area Sierra Club, Joy Dahlgren, Traffic Expert and Trent Orr, Attorney, Earthjustice.

29-1
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Pursuant to the California Environmental Quality Act (CEQA), the North Tahoe Citizen Action Alliance ("North Tahoe Citizens") fully intended to provide in-depth, substantive comments on the draft EIS/EIR for the California Pacific Electricity Company 625 and 650 Electrical Line Upgrade Project (SCH #2012032066) ("Project") by the published deadline, January 7, 2014. However, North Tahoe Citizens was unable to prepare CEQA comments because the Project proponent, CalPeco, and staffs from both the California Public Utility Commission and Tahoe Regional Planning Agency refused to provide North Tahoe Citizens with requested key foundational studies and data that underlie the central analyses and conclusions contained in the draft EIS/EIR in a timely fashion. Specifically, decision makers and the public cannot accurately evaluate, among other things, the Project's environmental impacts, purpose, need, and range of potentially feasible alternatives without the following documents:

29-2

- Sierra Pacific Power's "North Tahoe Capacity Plan" (1996)
- Liberty's "Capacity Plan Validation Report" (2011, prepared by ZGlobal)
- Liberty's Electric Transmission System Upgrade (2011, Tri Sage Consulting)

These three documents are included by reference in the administrative record. North Tahoe Citizens first requested these documents from Commission staff on January 8, 2013. This request was referred to a Tri Sage employee working for Liberty, and ignored. Between January 8, 2013 and December 20, 2013, North Tahoe Citizens made numerous email, telephonic and letter requests for this information to: Commission staff (January 8, 2013), Tri Sage Consulting (January 10, 2013), the Commission's Division of Ratepayer Advocates (February 7, 2013), the Tahoe Regional Planning Agency (December 2 and 9, 2013), and the President of Liberty

Utilities (December 20, 2013). After nearly one year of repeated requests, North Tahoe Citizens finally received the North Tahoe Capacity Plan on December 23, 2013; and CalPeco's updated study and the ZGlobal document on January 3, 2013. Faced with the holidays and only a few days left to digest these complex documents prior to the January 7, 2013 deadline, North Tahoe Citizens' technical expert was unable to prepare substantive comments on the EIR/EIS. Nevertheless, North Tahoe Citizens will submit comments as quickly as possible now that the basic informational documents are available.

North Tahoe Citizens is comprised of and represents the interest of residential and small commercial customers in Liberty Utilities ("CalPeco") service area. Balanced environmental protection benefits local businesses, promotes recreation and leads to sustainable regional economies. Over the years, North Tahoe Citizens Alliance has actively participated in various development projects such as the North Tahoe Biomass Energy Facility, and a number of Tahoe Basin projects.

Under CEQA, an EIR consists of "a compilation of all relevant data into a single formal report which would facilitate both public input and the decision making process." (*Russian Hill Improvement Association v. Board of Permit Appeals* (1975) 44 Cal.App.3d 158, 168.) Here, the lead agencies utterly failed to provide the public with the EIR's supporting documentation despite this data being an integral, foundational, and inseparable component of the EIR itself.

By withholding these documents, the lead agencies betrayed the public and violated CEQA. CEQA rests on the fundamental requirement that "[a]ll local agencies shall prepare ... an environmental impact report on any project that they intend to carry out or approve which may have a significant effect on the environment." The EIR and all of its constituent parts serve to provide public agencies and the public in general with information about the effect that a proposed project is likely to have on the environment and to "[i]dentify ways that environmental damage can be avoided or significantly reduced." (CEQA § 21151; Guidelines § 15002(a)(2).) "Its purpose is to inform the public and its responsible officials of the environmental consequences of their decisions *before* they are made. Thus, the EIR 'protects not only the

29-2
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environment but also informed self-government.' (*Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 564.)

In addition to “provid[ing] public agencies and the public in general with detailed information about the effect which a proposed project is likely to have on the environment” (CEQA § 21061), the EIR must “describe feasible measures which could minimize significant adverse impacts” and “describe a range of reasonable alternatives to the project.” (Guidelines, §§ 15126.4(a)(1), 15126.6(a).) Among the alternatives, the EIR must evaluate a “no project” alternative. (Guidelines, § 15126(e)(1).) These requirements reflect the legislative policy “that public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects” (CEQA § 21002.) When lead agencies withhold critical studies from the public, the public is unable to verify whether the lead agencies have complied with these CEQA mandates.

29-2
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The NEPA process, Section 102 of NEPA and the CEQ implementing regulations, specify minimum requirements for engaging the public in the development of an EIS in terms of notice, comment procedures, and public outreach. A more collaborative approach in determining project Purpose and Need, and Alternatives Development could have improved the quality of decision-making and increase the public trust and confidence in agency decisions. Certainly in this case, as an investor-owned but regulated public utility monopoly, Liberty's action is assumed to be funded by the utility's ratepayers. Instead of a deeply collaborative NEPA process Liberty chose to simply substitute themselves (after their purchase of a small California service area) for Sierra Pacific Power Company's project conceived in 1996.

29-3

CalPeco inherited a project from Sierra Pacific Power based on the 1996 Study. CalPeco retained this loop upgrade as the defining answer to the reliable capacity problem, and this loop became the purpose and only alternative for the project.

On September 30, 2011 CalPeco submitted to the CPUC an Amendment to SPP's Application (A 10-08-024) to substitute themselves for SPP on the single-loop Project. The purpose of the project was clearly stated as follows:

While CalPeco is proposing that the Project be constructed in three distinct chronological phases, the Project remains one integrated project. The primary purpose of the Project remains to establish a 120kV loop of CalPeco's North Lake Tahoe Transmission system. (p.10)

The project was already conceived as upgrading the existing 60 kilovolt (kV) loop to 120 kV loop, and therefore there was no need for any collaborative engagement with the ratepayers. The Purpose and Need was to improve reliable capacity, and the Alternatives were minor variations of the same single loop which included about 15 miles through the Lake Tahoe Basin.

29-3
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Project Description; The 625 and 650 Electrical Line Upgrade

CEQA requires that an EIR include a project description that includes the project's location, and a description of the environmental setting, both local and regional, in which the project will occur. All of this information must be presented in an easily identifiable EIR section. (CEQA Guidelines, § 15124.) Here the EIR contains a section entitled "Project Requiring Environmental Analysis" but does not disclose the pertinent information required by Guidelines § 15124.) For example, § 15124 (c) states, "A general description of the project's technical, economic, and environmental characteristics, considering the principal engineering proposals if any and the supporting public services." There is no description of economic characteristics other than an estimated price tag, but that is not how the project is being paid for. It would have not required detailed analysis to translate a single number into the practical economic reality of rate increase necessary to cover the carrying cost of the improvement.

29-4

As far as North Tahoe Citizens can discern, the Project consists of an upgrade of CalPeco's existing 625 and 650 electrical power lines and six associated substations from 60 kilovolt (kV) to 120 kV. The Project would include six primary components: 1) removal of the existing 625 Line and construction of a new, rerouted 625 Line; 2) rebuild of the existing 650 Line with potential for realignments based on the action alternatives considered; 3) realignment of two short segments of the 650 Line and removal of the replaced segments; 4) rebuild of the Northstar Tap into a fold, which allows for service to be maintained at a substation in the event of an interruption in service on either side of the power line feeding it); 5) rebuild of a 1.6-mile

29-5

long section of the existing 132 Line in the Town of Truckee; and 6) upgrade, modification, and/or decommissioning of six substations. (Page ES-1)

The draft EIR fails to identify the other substations (Glenshire, Truckee 60, TDPUD Martis, TDPUD Truckee) which serve about 30% of the North Tahoe system loads, and are used in the calculation of system peak demand to demonstrate the loop is already exceeding system design. (DEIR Table 3-1, page 3-10 Coincident Peak Loading). The draft EIR fails to even mention the loop's connection to Incline Village (Knotty substation) and the loop's connection to South Lake Tahoe. Both of these connections can feed into or out of the loop, but also connect to other systems with the potential to close the loop. The 625 line from Kings Beach to Tahoe City is not the only possibility to close a loop. The discussion of the Existing Electrical System (page 3-2 or the DEIR) completely ignores this information which is relevant and essential to the public's understanding of the proposed project.

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Purpose and Need

The Project is supposed to fulfill five primary objectives:

1. Provide normal capacity for current and projected loads.
2. Provide reliable capacity to assure adequate service to all customers during single-contingency outages.
3. Reduce dependence on the Kings Beach Diesel Generation Station.
4. Reduce the risk of fire hazards and outage durations associated with wooden poles and encroaching vegetation.
5. Provide more reliable access to the 625 Line for operation and maintenance activities.

29-6

The 625 line was designed to minimize negative scenic impacts in the Lake Tahoe Basin (Rodman, USFS). Where is the specific evidence that SPP had significant problems maintaining and operating the 625 line? There would be maintenance records which show higher than necessary costs, or extended outages due to lack of "reliable" access. Objectives #4 and #5 are less a project objective than maintenance goal that increases as more lines are replaced. So the larger the project (650 and 625 lines comprising 25 miles) the more this benefit can be used. Where is the evidence that this is a necessary objective prior to 1996 when the upgrade was

conceived? Vegetation management funds have been increased (more than doubled) since Liberty's new rates went into effect in January 2013. Is not replacing wooden poles with steel poles also standard practice for any transmission line replacement projects as they occur? When a project solution (the loop) is conceived of fifteen years before the environmental review process, then project objectives are designed to be satisfied only by the preconceived project. The last two objectives are simply consequences of the 625 and 650 line upgrades that can only be met by the line upgrade.

Using the loop's benefits to define a project objective suffers the logical fallacy of circular reasoning, and any individual alternative analysis will come up short because it not the loop.

In addition, there are two project objectives which are notably absent, and relate directly to the fact that Liberty Utilities (CalPeco) is granted a monopoly franchise and therefore is regulated by the CPUC.

The first is that the project be affordable to the ratepayers who are required by law to pay for it. This objective would prevent a "gold-plated" system improvement that is sure to raise controversy as unaffordable and unnecessary.

The second is that the project not only minimize environmental impacts overall, but achieve environmental gains in the Lake Tahoe Basin. Both the 650 line in the Basin and part of the 625 line from Brockway Summit into Kings Beach have the opportunity to not just improve the minimum TRPA Threshold requirements, but to actually produce a significant gain for the environment in this federally protected Outstanding National Resource Water. The Tahoe City substation relocation also can produce significant gain. However, the approach in the DEIR is simply to minimize negative impacts. This reframing of these issues would have been properly the result of a deeper NEPA collaboration.

Project Alternatives

Although North Tahoe Citizens was unable to complete technical comments in the very short period between the time they received the Project studies and the comment deadline, they do intend to submit detailed comments on a number topics. Our hurried, initial review indicates

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29-7

that the EIR's alternatives analysis is flawed. Rather than investigate and disclose a reasonable range of alternatives, aside from the No Action alternative, the EIR presented only slight variations of the proposed Project so that in all cases the 625 and 650 Lines would be built and operated identically; however, there could be slight variations on the actual routes of very small portions of individual segments. (ES-4).

The draft EIR failed to present any alternatives that may have combined one or more of the "alternatives considered but eliminated" that would include upgrade approaches for the west side (609,132,629 lines) and the east side (650 line) as a combined strategy. The draft EIR failed to present a natural gas peak generator plant, and instead presented only an outdated diesel powered plant option from the 1996 North Tahoe Capacity Plan analysis. The draft EIR failed to integrate Placer County's 2 MW Biomass power plant at Cabin Creek, its intertie, and a possible peaking plant in conjunction with the Biomass Plant to strengthen the west side of the loop. The draft EIR failed to examine shorter loops in the immediate proximity of the significant load growth areas of Martis Valley and Northstar/Squaw Valley Resorts. There are undoubtedly other alternatives that target where the system loads have grown during the past fifteen years (since the first 1996 Capacity Plan) and where approved subdivisions are filling in, and where ski resort expansion plans and additional real estate projects are in the application pipeline for approval with local jurisdictions. These and other approaches would achieve most of the Project's objectives, connect more directly cost and causation, and improve reliable service on a more targeted and much less expensive scale. The draft EIR fails to provide any of this information and analysis for an informed decision.

It is critical the lead agencies provide a robust alternatives analysis here, because an EIR's alternatives analysis is the "core of an EIR." *Citizens of Goleta Valley v. County of Santa Barbara*, 52 Cal. 3d 553, 564 (1990). "Without meaningful analysis of alternatives in the EIR, neither the courts nor the public can fulfill their proper roles in the CEQA process [Courts will not] countenance a result that would require blind trust by the public, especially in light of CEQA's fundamental goal that the public be fully informed as to the environmental consequences of action by its public officials." *Laurel Heights I*, 47 Cal. 3d at 404. Here, it appears all of the alternatives, aside from the no action, are simply slight variations of one

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another. In addition, Project objectives are impermissibly narrow so as to favor only the Project as proposed.

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The Project's Environmental Impacts

The project is comprised of three phases, but as one integrated project. The Phase 3 is located entirely in the Lake Tahoe Basin and would cause the most environmental degradation to the Lake Tahoe Basin. Phase 3 calls for reconstruction of the 625 line for about 13 miles through the only undeveloped, passive recreational forest between Tahoe City and Kings Beach. It is the home of the Tahoe Rim Trail. Under the least damaging preferred alternative, about 25,000 trees would be removed just for the 625 line. Wildlife habitat would be disrupted for years, and the 12,000 trips along Mt Watson road by logging trucks and heavy equipment will forever alter the area. Given the obvious severity of environmental impacts to an Outstanding National Resource Water caused by Phase 3, it raises the issue of necessity and alternatives that would reduce any and all of these environmental impacts. And absolute necessity due to no other alternatives available is precisely why the technical documents were requested and are being reviewed, and will be the subject of forthcoming comments.

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System Reliability

DEIR Section 2.1.4 System Reliability

The North American Electric Reliability Corporation (NERC) is an industry-driven, and technically accredited organization that develops the standards and definitions for reliability. Any federal or state requirements related to reliability fall back on NERC standards and requirements.

There are many different metrics for measuring reliability, but the most common measures used are required by the CPUC and available in annual reports filed with the CPUC. The Liberty Utilities 2012 System Reliability Statistics (April 2013, U933-E), includes data from 1989 through 2010 under SPP ownership, and data from 2011 and 2012 under CalPeco's recent ownership. This full report is incorporated by reference into this administrative record.

29-9

The largest Significant Outage Event since 2003 occurred in 2011 due to an outage by NV Energy, the supplier of wholesale power into Liberty's system. No matter what transmission line configuration was in place, without the source of power from NV Energy there is no power to the transmission system. Even the single loop would fail to supply power if the wholesale source incurred an outage.

The DEIR overstates the risks of wind, tree limbs, and snow loads as causing outages that can be "commonplace," and fails to distinguish between localized outages in the distribution system versus larger scale outages in the transmission system. We request the specific incident data that supports the top ten Significant Outage Events as reported to the CPUC from 2000 through 2012. Only then can the exact location of the outage be determined. The data is system-wide and many of the outages reported occurred in South Lake Tahoe and in areas outside of the North Tahoe system. The record of outages filed with the CPUC does not support the characterization made about the reliability of the North Tahoe system in the DEIR.

In addition, a Customer Satisfaction Survey conducted by Luth Research for Liberty Utilities was submitted as part of the recent General Rate Case (GRC) (A12-02-14). This survey also does not support the characterization that reliability and outages are "commonplace." This GRC and all documents comprising the record of the GRC (A12-02-14) are incorporated by reference into this administrative record. Reliability of power services was rated as satisfactory/very satisfactory by 84% of respondents. Energy interruptions were resolved quickly in all areas as reported by 81% of affected respondents. Since the survey was conducted in November 2011 (less than one year after the purchase by Liberty Utilities) the respondents reflect system performance under SPPCo. over the last several years. Respondents agreed that SPP/Liberty provides reliable electric supply (90% of those surveyed on the North Shore).

In heavily forested areas the system reliability is a direct function of ratepayer revenue devoted to vegetation management. The DEIR states, "While electrical outages can be commonplace in areas with such hazards as extreme weather and dense forest (in which falling trees can damage lines), a highly reliable electrical system is one that has the ability to respond quickly to such hazards..." Obviously the risk of outages in both the distribution system (localized and more

29-9
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common) or the transmission system is reduced by preventative measures such as vegetation management.

The following is a record of vegetation management spending by SPP and Liberty Utilities obtained from a CPUC official during the Liberty's recent General Rate Case proceedings:

2007:	\$ 1.3 million	(SPP)
2008:	\$ 1.367 million	(SPP)
2009:	\$ 1.403 million	(SPP)
2010:	\$ 1.668 million	(SPP)
2011	\$ 856,000	(Liberty)

Liberty clearly deferred vegetation management during 2011, which would likely lead to more outages. Liberty requested a separate vegetation management line item on all ratepayer's bills during the GRC and was granted a rate increase to \$ 2.5 million per year beginning in 2013. Surely this doubling of historic expenditure on vegetation management should translate into fewer outages due to vegetation affecting both distribution and transmission lines. How much of this new revenue will Liberty Utilities spend to maintain the 625 line, which they claim is responsible for most of the outages?

The DEIR states, "Currently, the 625 line experiences the most outages in the North Lake Tahoe Transmission System, with the primary causes being snow loading and downed trees." This statement does not comport with the Reliability reports filed with the CPUC nor does it reflect what customers on the North Shore have experienced. So we are asking for the maintenance records which demonstrate the SPP and Liberty emergency responses to the 625 line's outages. These maintenance records must be considered part of the record of this proceeding, to either ascertain an unconfirmed assertion or bring into question the validity of the claim.

At the November TRPA Advisory Planning Commission meeting that was a public hearing for this project, the APC's Chairman asked Liberty's President if he had the maintenance records to support this statement that would show the high cost of the outages on the 625 line. If the

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maintenance of the 625 line truly represented a "severe challenge due to its remote location and lack of adequate roadways," as stated in the DEIR, then why has this problem not been a major issue, with a record of problems, since the line was installed over 40 years ago?

The evidence supports the assertion that the North Tahoe system has been very reliable. It is perceived that way overwhelmingly by the ratepayers, and has an admirable record of reliability according to the reports filed with those in charge of regulating the monopoly. However, the loads have been increasing in certain areas of the transmission loop, especially over the last fifteen years (after the 1996 North Tahoe Capacity Plan) raising the risk of inadequate capacity to serve peak loads.

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The problem of the system reaching design capacity was well known, as stated on page 4 of the 1996 North Tahoe Capacity Plan, "Reliable capacity has run out and this shortfall is only aggravated by the continued additions of load at the ski areas." This was in the mid 90's, nearly twenty years ago, before Northstar Village, Highlands, Lahontan, Martis Camp, and Schaffer's Mill. And this was long before the Great Recession caused a 17% reduction in the population of Placer County in the Lake Tahoe Basin (North Tahoe Community Plan Economic and Market Analysis, prepared by Economic & Planning Systems, Inc. July 2013). And finally, this was long before SPP was to sell a small slice of their system, with only 49,000 customers instead of 1.1 million customers to pay for the single-loop concept.

29-10

Failure to Establish Economic Feasibility

The assumed economic feasibility of the Project started by SPP changed radically when SPP sold the California portion of their system to Liberty Utilities (CalPeco) in January 2011. During the CPUC proceedings on the sale, the Division of Ratepayer Advocates (DRA) expressed the following concern,

"Moreover, DRA has serious concerns about the potential losses of economies of scale and efficiencies that may result from this transaction." (A.09-10-028 Filed October 16, 2009, Protest of the DRA, p5)

CalPeco purchased so small a portion of SPP's service area that the same Project would be paid for by only 49,000 customers. Most of the customers (South Lake Tahoe to Meyers, and Portola south to Truckee) will receive no benefit from the estimated \$46 million cost, as their power lines are not part of the North Tahoe infrastructure. The Project is estimated to cost about 40% of CalPeco's total net plant investment, which \$121 million. Were SPP to undertake a project of CalPeco's size in relation to their \$ 8 billion rate base that project would cost \$3.2 billion. Would there be no concern or treatment of the economics in the EIR/EIS for a project of this scale? In the 1996 Capacity Plan the estimated cost of the same basic project was \$14,500,000. Latest estimates (\$46,000,000) are in 2011 dollars with a 20% variability factor. It is not therefore inconceivable that the project cost could reach \$ 60 million. Assuming a standard 15% carrying cost could require Liberty Utilities to raise \$ 9 million per year in revenue by increasing rates. According to the last General Rate Case settlement in December 2012, operating revenues increased from about \$ 26 million in 2012 to about \$38 million beginning in 2013. The impact on rates would be significant by any standards.

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As CalPeco ratepayers are expected to pay for the proposed Project the economic feasibility of the Project as proposed has not been established. CEQA's definition of feasibility includes the term economic. Real alternatives exist that can economically match cause of the loads with the cost to serve the loads, while improving reliability and public safety.

But CalPeco's adoption of SPP's single-loop purpose has skewed the creativity and analysis required for economically feasible alternatives. Project objectives were designed that only the single-loop could answer, and the action alternatives are all minor tweaking of the single-loop Project.

The single-loop's final phase is to reconstruct the 625 line between Kings Beach and Tahoe City inside the Lake Tahoe Basin. This final link at 120kV serves only as a path to feed loads outside the Tahoe Basin. If Northstar lost the 650 line link to Truckee, then power could be fed through Squaw Valley to Tahoe City to Kings Beach and back to Northstar. If the 132 line to from Truckee to Squaw Valley was lost then power could flow from Northstar through the Basin again back to Squaw Valley. So the 15 miles of 625 line in the Lake Tahoe Basin is simply being used as a conveyance for single contingency power needs outside of the Basin.

29-11

Economic feasibility of the preferred alternative in relation lower cost alternatives more targeted by cost-causation is entirely absent, constitutes a fundamental flaw in this Draft EIR/EIS/EIS, and must be adequately addressed in a recirculated DEIR.

29-12



Friends of Lake Tahoe

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January 3, 2014

Wendy Jepson, TRPA Senior Planner
Tahoe Regional Planning Agency
P.O. Box 5310
Stateline, NV 89449
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Mike Florio, Commissioner
California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102
c/o joan.dahlgren@cpuc.ca.gov;
c/o amy.brodrick@cpuc.ca.gov

Re: North Tahoe / Truckee 625/650 Power Line Project

Dear Ms Jepson and Mr. Florio,

This letter is written in ardent opposition to what Liberty Utilities refers to as its “625/650 Electric Line Upgrade Project.”

Friends of Lake Tahoe (FLT) is a 501 (c) (4) nonprofit corporation that represents primarily non-resident property owners in the Lake Tahoe Basin. And, as you know, this constituency comprises the bulk of home owners in the Basin. Therefore, after careful consideration and study, FLT has concluded that most of this project, as currently structured, is unnecessary and accompanied by mostly negative consequences for those whom we represent.

30-1

While we agree that an upgrade of the existing 60kV 650 line to a 120 kV line extending to **Northstar** is mandated by the expansion of that resort area, the same is **not** true of **either** the existing 60 kV line that continues over the ridge and into the North Tahoe Basin **or** the existing 60kV 625 line that serves the North Shore from Kings Beach to Tahoe City.

30-2

The North Shore in the Basin is almost entirely built out and does not need a 120kV line to serve the existing home or business owners. The monumental expense of this project is, therefore, also unnecessary and terrifically burdensome to the ratepayers in the Basin who are more than adequately served by the existing lines. If the concern is a loop for Northstar in order to promote

more reliability to that region due to anticipated growth, then the upgrade of the 650 line from Truckee to Northstar could be accompanied by a loop back to Truckee from Northstar, not unlike the looping comprised by the 609 and 132 lines that serve the Squaw Valley area.

30-2
cont'd

Moreover, FLT feels compelled to point out that in addition to causing a totally unnecessary economic hardship for property owners / rate payers in the area of the Basin concerned, the project also brings unwelcomed environmental consequences that are, again, totally unnecessary. We do not need to suffer the ecological damage caused by the removal of trees to facilitate the new lines, or the damage to wildlife and SEZs by this action, let alone the scarring of the land from the standpoint of scenic and other considerations that govern the Basin. Trees removed by just the North Shore's 625 line rebuild (entirely in the Lake Tahoe Basin) range from 25,000 to 36,000 – the largest Basin tree removal in over 100 years.

30-3

Yes, upgrade the line to Northstar and loop it back to Truckee if you must, but leave the Basin alone! We do not need to be either unfairly billed nor have our Basin damaged in order to facilitate the profits of those who want more energy in order to develop Northstar and other similar resort developments outside of the Lake Tahoe Basin.

30-4

The cost of this project as currently proposed is estimated at \$46 million and could easily exceed \$50 million. This expense would have to be borne by a tiny group of only 49,000 ratepayers, most of whom in the Basin will gain absolutely nothing. This imbalanced cost to payer ratio, which will cause rates to skyrocket, is almost without historical precedence.

In concert with other "comments" that we are certain have been, and will be, submitted by other organizations and individuals that detail the folly of this "upgrade" in terms of its necessity, the deleterious subsequent rate increases that will be required to fund it, the wholesale irreversible ecological damage emanating from it, and the political-economic inequities at its core, we believe it is clear that this project cannot be justified and must not be allowed to go forward.

30-5

Sincerely,

Roger Patching
President/CEO

Public Comment: The irony of today's agenda is the Tahoe Basin is under assault and the basin residents will be paying for it !!!!

Agenda item 1: The Liberty Utilities Upgrade project will be paid for by basin ratepayers and is estimated at \$50 + million. This project could raise rates 20-30% for all of Liberty Utility customers in the Basin when the actual project cost is identified. Liberty's reason for the upgrade is "reliability" yet Vail Corporation outside the basin needs the power upgrade for Northstar and Squaw's proposed expansions. With a no-growth Regional Plan within the basin is this really needed? in the Basin.

31-1

Agenda item 2: The Lake Tahoe Ferry Project Ski-Run Marina to Tahoe City will have to prove economic sustainability- will the basin residents be asked to help pay for this by a sales tax increase specific to transportation upgrades like those proposed at the Transportation Summit for "free bus" services for tourists? Analysis from the Summit stated that free transportation is a must to compete with other ski resorts and resort destinations. Will passenger fees cover the cost of the ferry? Is this really needed? In the Basin.

31-2

Agenda item 3: A Notice of Preparation (NOP) for Heavenly's proposed Epic Discovery Project and subsequent EIR/EIS along with the Northstar Master Plan EIR recently released, will usher in Disneyland-like amusements in our Outstanding National Resource Water. The basin residents will see increased traffic, air quality issues, irreversible environmental impacts. Vail Corporation says it is responding to a need to improve summer-time visitation. Is this really need? In the Basin.

CalPeco EIS for the 625/650 electrical line upgrade

More detailed comments to be submitted before deadline.

Cumulative Impacts need to be adequately and correctly addressed for the proposed CalPeco utility line upgrade. The CalPeco proposed upgrade project potentially induces growth with increased capacity inside and outside the basin. The project list for cumulative impacts Table 4.1-2 must be updated to include TRPA approved Homewood Mountain anticipated number of units and TRPA approved Boulder Bay anticipated number of units.

31-3

31-4

Under Local Agencies section: Why only note the Tahoe City Community Plan? The Kings Beach Community Plan and Tahoe Vista Community Plan (until replaced by Area Plans) should be added to list of Local Agencies section (pg 4.4-10) as those plans are bi-sected by the Hwy 267 utility lines and scenic routes identified in the SQIP as well as the FibreBoard freeway.

31-5

Scenic issues include but are not limited to adding power lines along some of the FibreBoard freeway corridor where they do not exist today. The Hwy 267 corridor lines and poles will be larger and more visible as noted in the depictions in the EIR. The Tahoe Rim Trail will also have more visible lines and poles disturbing the natural beauty of the trail and the hiking experience. Hwy 267 is a registered scenic route and must be improved for threshold attainment. Removing the lines completely or relocated to be buffered by trees would be a desirable condition for this highway.

31-6

Noise issues. CalPeco will provide notification of construction to all properties owners 300 feet of project and post a phone number within 1000 feet of residences for disturbances. The flight path of helicopters is a much larger area and will generate noise levels that could exceed CNEL as could blasting activities. CalPeco should, at a minimum, post proposed activities and expected hours of operations on their website and post in all local newspapers a minimum of one week before activities commencement. Construction activities will occur 8:00a-6:30p in TRPA jurisdiction, 6:00a-8:00p and 8:00a-8:00p weekends Placer County with certain exceptions for night-time activities that are required. TRPA and Placer overlap- which ordinance takes precedent? (NOI-4 pg 3-117)

31-7

Biological Resources

NORTHERN GOSHAWK HABITAT, PACS, AND TRPA DISTURBANCE ZONES

Implementation of Alternative 4 (Proposed Alternative) would affect the least amount of habitat for northern goshawk among the action alternatives, including habitat within PACs and TRPA disturbance zones. Overall, implementation of Alternative 4 (Proposed Alternative) would initially result in the permanent loss or disturbance of up to 72.6 acres of potential habitat for northern goshawk over the study area (compared to 124, 121.1, and 73.9 acres

31-8

Over the long term, because the existing 625 Line would be decommissioned and vegetation would be allowed to reestablish within the existing 20-foot vegetation management corridor, the net permanent disturbance/loss would be reduced to approximately 49.8 acres overall

Stating over the long term is somewhat misleading –how long is it for the trees to fully mature to pre-construction conditions Page 4.7-133

As stated in EIR: Goshawk nesting season is Feb thru Sept. If a Goshawk nest is found this could hinder schedule. Describe impacts if schedule is interrupted.

31-9

Impact 4.2-1 for Alternative 4 the Proposed Alternative

Amendment to the Martis Peak PAS 019 and necessary special use findings could be made. I'm not stating this is a bad decision but the Plan Area Statement Amendment needs to be fully vetted and not just a Consent Calendar approval.

31-10

Identify who owns the Fibreboard Freeway, and bears the cost of maintenance, including repairs and snow removal? Does CalPeco have to pay the owner for its use and the wear and tear from construction of the project?

Placer County Planning response: From: Michael Johnson
<MJohnson@placer.ca.gov>

To: Ellie <tahoellie@yahoo.com>; Paul Thompson <PKThomps@placer.ca.gov>

Sent: Tuesday, December 3, 2013 12:50 PM

Subject: RE: Fibreboard Freeway

31-11

My speculation would be that the underlying property owner, which is SPI for the most part, maintains and is responsible for the Fiberboard Freeway. It is their logging trucks that utilize the facility.

MICHAEL J. JOHNSON, AICP Agency Director / Planning Director

Community Development / Resource Agency Placer County

Passenger Ferry from Ski Run Marina to Tahoe City

Tiering off the TMPO Mobility 2035 Plan for certain environmental impacts is not sufficient because this was only evaluated at a program-level as stated in NOP. This is project specific.

As stated in NOP: “Probable environmental effects associated with the proposed project are described briefly below. Mitigation measures will be recommended for any identified significant or potentially significant effects. Because the Lake Tahoe Passenger Ferry Project was one of the transportation improvement projects contemplated and evaluated at a program-level in the *Mobility 2035: Regional Transportation Plan/Sustainable Communities Strategy EIR/EIS (RTP/SCS EIR/EIS)*, certified by the TRPA Governing Board and the Tahoe Metropolitan Organization (TMPO) Board on December 12, 2013, the EIS/EIR/EIS analysis will consider environmental issues already addressed in the program-level analysis and incorporate by reference specific information contained in that document. For purpose of the CEQA process, the proposed project is a “later activity” that is consistent with the previous program EIR, in accordance with CEQA Guidelines Section 15168(c).”

31-12

Scenic issues for pier modification and expansion. From NOP: “Modifications to the existing piers would involve increasing the length of the piers, adding ramped access that meets ADA standards, and construction of a proposed floating pier platform that would be long enough to accommodate the ferry and at least 16 feet in width. The area surrounding the proposed pier expansions and floating platforms would require dredging for construction and maintenance dredging to provide sufficient depth during low lake level periods. As well as security requirements “The security requirements at each ferry terminal would likely include fencing, gates, security cameras, lighting, and alarms to comply with Homeland Security Act requirements.” **Detailed environmental analysis of construction dredging and maintenance dredging a must ! Fencing, gates, lighting – scenic analysis a must. The potential for pier expansion, ferry operations buildings, lighting and parking visual impacts must be analyzed ! Coverage analysis for any proposed expansion of parking at ferry terminal sites must be analyzed.**

From NOP: "Based on the results of the final screening evaluation, it was recommended that cross-lake ferry service between South Lake Tahoe and Tahoe City (the proposed project) be identified as the LPA. The proposed project would serve 1,600 to 1,800 riders per day for travel between South Lake Tahoe and Tahoe City, using two vessels. Additional destinations could be added with minimal investment. Vessels are anticipated to have a lifespan of 25 years, accommodate up to 150 passengers, and allow for transport of 10 bicycles per ferry."

Provide analysis that determined ridership numbers are an accurate representation of how many passengers will utilize the service. Provide a seasonal break-down. Provide price point to ride the ferry. Provide lead times analysis for bus transportation routes to be in sync with proposed ferry operations. Provide parking needs assessment based on ridership. Enforcement issues could arise from Ferry passengers using dedicated parking for Safeway at North Shore, Riva Grill restaurant at South Shore and other near-by businesses at both locations. Describe what recourse the on-site and nearby businesses will have for enforcement.

31-12
cont'd

From NOP: Additional destinations may require pier expansions, dredging etc. so minimal investment for additional piers is not the issue. **The addition of using other piers is not the issue- it's the required dredging, fuel services, etc. as already stated and environmental impact analysis will be required for additional pier use.**

From NOP: Other Resource Effects: Some resources requiring consideration during environmental review are not expected to experience significant effects as a result of the proposed project. These include socio-economic impacts,...

Identify the initial private investment cost for the ferry, fuel to run it, and storage fees/location. Identify what/who the funding source is for initial investment. Provide annual operating costs when program is underway and if the project is sustainable.

From the NOP : Cumulative Impacts analysis in the EIS/EIR/EIS will use the analysis included in RTP/SCS EIR/EIS to extent feasible. **With the proposed Heavenly Epic Discovery summer-time expansion additional summer-time VMT should be expected. Air Quality at ferry terminal locations could be impacted with increased parking capacity and possible traffic back-ups at both North and South Shore parking locations and must be analyzed. The same newly proposed summer-time visitation should be expected from the proposed Northstar expansion, Boulder Bay project, and Homewood expansion. The Ferry transit choice WILL be courting all new summer-time visitors to get out of their cars, but they must first arrive at the parking location.**

From the NOP: There are no fueling facilities located at the Grove Street Pier; however, fueling is available at the adjacent Tahoe City Marina. **Has the Tahoe City Marina been analyzed to be capable of handling the Ferry vessel ? A Tahoe City Marina Pier analysis for possible modification to accommodate the ferry must be included.**

31-12
cont'd

Yes, this is an alternative mode of transportation but nothing assures tourists or residents will not take their cars to get to the ferry terminal. This VMT much be analyzed based on proposed ridership.

Provide results of the Shorezone Committee meetings for public review.

Provide qualitative analysis info for public review.

Has a safe shelter been identified on the North Shore in the in case of bad weather and inability to return?

Aquatic Invasive Species affects the entire lake. The vessel could transport milfoil, etc. from South to North Shore. Provide vessel analysis and the potential for AIS movement across the lake.

Heavenly Mountain Epic Discovery

Good morning, I'm here today to comment on the Heavenly Mtn Resort Epic Discovery amusement park. I will be providing links to several sources that you should read in their entirety.

Reported July 19, 2012 6:32 pm • By CATHERINE TSAI / The Associated Press

http://journalstar.com/ap/business/vail-plans-more-diverse-summer-patronage-under-federal-law/article_bb68e07a-ec93-5031-8bf4-5b5050a747a5.html

Vail Resorts said it has submitted a proposal to the U.S. Forest Service -- called Epic Discovery -- for summer activities at Vail Mountain and plans to do the same for its Breckenridge, Keystone and Beaver Creek resorts in coming months. If approved, construction at Vail could begin in summer or fall 2013.

The Vail proposal is among the first in the country submitted under legislation signed into law last fall allowing for year-round recreation on developed U.S. Forest Service land already used by ski areas. The bill was pushed by Sen. Mark Udall, D-Colo.

Vail Resorts CEO Rob Katz said the summer activities should bring new people to the resort beyond the mostly white, more affluent group that typically goes skiing.

From the checklist : Plan a Breckenridge vacation October 2013

<http://blog.breckenridge.com/2013/10/08/checklist-plan-breckenridge-vacation/>

Vail calls it a roller coaster !

“Family vacation, college reunion trip, girls shred weekend: Who’s coming with? Where you stay, the slopes you hit and what your après scene looks like varies by company. Breck serves up terrain for every level, loads of quality family time (think [on-mountain roller coaster](#) and kid’s zone runs) and real mountain town nightlife”

31-12
cont'd

Lawsuit over Vail Resorts' planned roller coaster -- or is it an alpine slide? By [Alan Prendergast](#) Fri., Oct. 4 2013 at 11:30 AM

http://blogs.westword.com/latestword/2013/10/vail_resorts_roller_coaster_alpine_slide_lawsuit.php

When you've dropped two or five or ten million on that second or third home in one of the more desirable Colorado mountain resorts, there are a few items that you take for granted will not be next door. Walmarts, trailer parks and rendering plants are probably high on the list. But so are roller coasters -- which is why hundreds of riled-up, deeply invested Beaver Creek homeowners announced the filing of a lawsuit against Vail Resorts this week, alleging a long string of broken promises and scheming behind proposed construction of what critics are calling "amusement park rides" at the base of the ski area.

"You can put lipstick on a pig, and it's still a pig," says Chuck Montera, spokesman for the Beaver Creek Property Owners Association, which represents more than 700 households. "You can see it a mile away, and their plan is to operate it year-round."



A larger view of the proposed "forest flyer."

31-12
cont'd

Negotiations over the new attractions have been protracted and complex. But amusement parks aren't considered an acceptable use by the USFS, and homeowners felt betrayed when Vail Resorts announced it was proceeding with this particular project on land it already owned -- while carefully avoiding terminology such as "roller coaster," "amusement park" and "tourist trap."

"We don't know where this will go. Will there be more roller coasters? Will there be a Ferris wheel? Where will it stop?" said Barry Parker, vice-president of the homeowners association. "We are not against development. We are pro-Beaver Creek. We are pro-Colorado. We just want to protect and maintain the beauty of these very, very special outside environments."

From the lawsuit

<http://www.scribd.com/doc/173180422/Beaver-Creek-Property-Owners-Association-lawsuit-against-Vail-Resorts-over-proposed-forest-flyer-alpine-coaster-at-the-base-of-the-ski-area-Filed-O>

14. The portion of Tract S where Vail Resorts sought to construct the alpine slide is designated as Open Space Recreation (" **OSR** ") under the Beaver Creek PUD and is subject to a conservation easement.

15. The Associations, along with other neighboring associations, opposed Vail Resorts' efforts, which resulted in this litigation.

16. This litigation was "administrative closed" in 2008 in order for Vail Resorts to pursue approval from the United States Forest Service (" **USFS** ") for an alpine slide, coaster or other similar gravity-driven activity (an "**Alpine Slide/Coaster**") to be located and operated on USFS property at the Beaver Creek ski area.

17. Vail Resorts never pursued such approval from the USFS.

18. Instead, Vail Resorts undertook plans to instead develop a larger, mountainside amusement complex in Beaver Creek that will include, at a minimum, an Alpine Slide/Coaster, a ropes challenge course, a summer tubing course, ticketing operations, a food and beverage facility and separate restroom facilities (the "**Proposed Amusement Complex** ").

31-12
cont'd

Scenic issues are not only related to road and lake, in this projects case the nationally recognized Tahoe Rim Trail within scenic corridor of amusements must be analyzed the potential to disrupt the hiking experience is great.

Identify and execute a hiring policy that includes a percentage of locals before outside basin/country help is enlisted.

I commented extensively on the Vail Northstar proposed Forest Flyer. A 20-25 ft path must be cleared and is necessary for installation and operation of tracks which must be analyzed. Provide analysis of snow removal operations and snow clearing for operational affectivity. Provide a safety analysis of the Forest Flyer. Restrict operating hours to no later than 5:00p not sundown as requested for Northstar. No night time (5:00p) should be allowed. Provide tree removal and vegetation removal counts and analysis. Provide wildlife disruption analysis. Provide SEZ and stream analysis.

Provide an air quality analysis for the tour excursion vehicle operations. How many vehicles will be in operation daily? Provide info on proposed operating hours. Provide analysis of the dirt maintenance road usage for the tour excursion vehicles. Will maintenance road need to be widened? If so, provide tree removal and vegetation removal counts and analysis. Provide wildlife disruption analysis.

Provide environmental analysis of the trail widening as noted in NOP for the mountain bike park (9-10 miles) Provide analysis of any trail widening required for any of the proposed amenities which must include vegetation and tree removal counts.

Provide an economic analysis of one zip line versus three (four with the kids zip).

Explain why water activities are necessary- Lake Tahoe provides kayaking, boating, etc. This amenity will take away from "local" businesses sustainability.

Provide scenic analysis for Skycycle.

Provide scenic analysis of all amenities that could impact Van Sickle State Park.

Provide detailed VMT analysis for the newly proposed summertime crowds these amusements anticipate drawing people to the Vail property and surrounding South Shore community properties.

Will the Master Plan amendments be a separate process or combined with the EIS/EIS/EIR process and approval cycle? Are any Area Plan amendments required and will those amendments be a separate process or combined with the EIS/EIS/EIR process and approval cycle. If any separate amendments are proposed, ensure public noticing of these meetings. These amendments are controversial and so amendments should be fully vetted not held at the Hearings Officer Level or as Consent Calendar items.

31-12
cont'd

I'll close with one of my favorite comments from the Breckenridge Peak 6 EIR that also incorporated a Forest Flyer.

"Our national forest is not an amusement park. The unique features of 'nature' should be preserved and promoted and the 'man-made' impact mitigated. I support many of the proposed resort expansions, but cannot support zipline tours or elevated rail flyers that exist primarily to provide an adrenaline rush (speed, height, etc.) to amuse or entertain visitors. These types of 'rides' are mechanical, commercial, amusement activities and do not further the goals of natural appreciation or environmental sensitivity. Neither are they location-dependent — they can be found anywhere in the U.S.

Save our national forests. And promote the 'inherent' beauty and values that exist in nature and the "human-powered" recreational activities that will nurture our next generation earth stewards."

Articles to read in entirety provided to APC members

1). Reported July 19, 2012 6:32 pm • By CATHERINE TSAI / The Associated Press

http://journalstar.com/ap/business/vail-plans-more-diverse-summer-patronage-under-federal-law/article_bb68e07a-ec93-5031-8bf4-5b5050a747a5.html

31-12
cont'd

2). From the checklist : Plan a Breckenridge vacation October 2013

<http://blog.breckenridge.com/2013/10/08/checklist-plan-breckenridge-vacation/>

Vail calls it a roller coaster !

3). Lawsuit over Vail Resorts' planned roller coaster -- or is it an alpine slide? By Alan Prendergast Fri., Oct. 4 2013 at 11:30 AM

http://blogs.westword.com/latestword/2013/10/vail_resorts_roller_coaster_alpine_slide_lawsuit.php

4). From the lawsuit

<http://www.scribd.com/doc/173180422/Beaver-Creek-Property-Owners-Association-lawsuit-against-Vail-Resorts-over-proposed-forest-flyer-alpine-coaster-at-the-base-of-the-ski-area-Filed-O>

CalPeco (Liberty Utilities) EIS for the 625/650 electrical line upgrade

The Liberty Utilities Upgrade project will be paid for by basin ratepayers and is estimated at \$50 + million. This project could raise rates 20-30% for all of Liberty Utility customers in the Basin when the actual project cost is identified. Liberty's reason for the upgrade is "reliability" yet Vail Corporation outside the basin needs the power upgrade for Northstar and Squaw's proposed expansions. **With a regulated growth Regional Plan managed by the Growth Management section Chapters 50-53 of TRPA Code within the basin, define why this needed for Basin reliability? Provide statistics for the past 10 years for the Tahoe basin usage versus resorts in the FEIR.**

32-1

At the December 4, 2013 TRPA Advisory Planning Commission meeting Mr. Smart was asked if this project was required. He stated- NO- he was just being proactive to make his job easier in managing the potential for outages and overloading of the system.

I completely understand not re-inventing the wheel with the environmental documentation but **at the very least a couple of other alternatives must be explored in the FEIR showing independent loop systems for Northstar and Squaw instead of one large loop. The FEIR documentation should include an alternative that doesn't require an entire looping system. An independent needs assessment analysis must be completed before a down-select to a preferred alternative can be made. The lack of range of alternatives renders the DEIR inadequate.**

32-2

From EIR Page 3-10: 3.2.4 SYSTEM RELIABILITY, OPERATION, AND CAPACITY
System capacity can be quantified in terms of megavolt amperes (MVA), which is a measure of electrical power that considers voltage and amperes, similar to a watt. The North Lake Tahoe Transmission System has a normal capacity of 88 MVA. The Kings Beach Diesel Generation Station is capable of providing 11 MVA of additional (or back-up) capacity.

Electrical demand on the North Lake Tahoe Transmission System is the greatest during the winter months, and typically peaks during the week between the Christmas and New Year holidays as a result of electric heating and ski resort loads. Coincident peak demand is the electrical demand at the time when system-wide customer use is expected to be highest. Coincident peak loading of the North Lake Tahoe Transmission System has remained relatively stable over the last six years, between 79 and 88 MVA (see Table 3-1 Page 3-10)

32-3

Table 3-1 North Lake Tahoe Transmission System Coincident Peak Demand 2007 – 2012

Year	Coincident Peak
2007	86.7 MVA
2008	82.9 MVA
2009	78.6 MVA
2010	86.0 MVA
2011	85.9 MVA
2012	88.4 MVA

MVA= megavolt-amperes.
Source: Schlichting 2013

Provide in the FEIR snow making stats for 2007-2012 as related to coincident peak numbers in Table 3-1 above.

32-3
cont'd

From EIR Page 3-11: Customer demand in the North Lake Tahoe Transmission System is essentially at the system's capacity, and there are circumstances where the system load has exceeded its current capacity. For example, on December 30, 2012 the North Tahoe area experienced extremely heavy tourism and ski resort activity. The result was an extremely large electric demand peak. The North Lake Tahoe Transmission System was forced to run at an overloaded capacity. Where the system is designed to supply a maximum of 88 MVA of electricity to the north Lake Tahoe area, on December 30, 2012 there was a system peak of 88.4 MVA. During this event, the Kings Beach diesel generators were run to provide sufficient power and the system operators were monitoring the line temperature and other elements of the system. This exceedence of design capacity resulted in a risk of damage to the line conductors. In addition, had one of the lines or other parts of the system gone out of service, there would have been blackouts over a significant area.

32-4

Provide in FEIR: Independent Needs Assessments of loads served from each substation to prove adequacy of the EIR proposed alternative is necessary. Accuracy of the needs assessment is a must. Provide Needs Assessments for:

- 1) Kings Beach to Tahoe City residential and current motels/hotels
- 2) Each major ski resort (Northstar, Squaw Valley/Alpine Meadows) and the Placer County approved developments in Martis Valley (Lahonton, Martis Camp, Schafer's Mill, Northstar Highlands, etc.)
- 3) Westshore and the TRPA approved Homewood Project
- 4) Incline Village/Crystal Bay feed from Kings Beach supplying Boulder Bay Resort (approved by TRPA but not yet built)

Provide a chart in the EIR for reliability target and describe what is pushing that target.

From the Northstar Master Plan : "Because the existing and proposed infrastructure would be adequate to provide electrical service to buildout the proposed project (NMMP) this impact is considered less than significant." Define in the FEIR impacts to the proposed Northstar Master Plan build-out upgrade if the project is modified to prove proposed reliability is the key issue.

32-5

The Phasing of this project must be provided and should be consistent with the needs assessment conclusions that must be provided in the FEIR. The phasing may and should show the potential for 5+ out years to upgrade to provide needs not just reliability for proposed Northstar and Squaw expansions.

32-6

Provide a graph in the FEIR of the last 20 years of potential system failures as it applies to the need for this system upgrade for the Tahoe Basin portion of the proposed upgrade. Prove EIR adequacy of the proposed alternative reliability needs for the

Tahoe Basin versus the resorts. Provide a graph in the FEIR showing peak snowmaking against load during those years the system was threatened. Provide in the FEIR detailed analysis of power requirements for snowmaking. Provide requirements breakdown in the FEIR by resort: Squaw, Northstar, Homewood

32-6
cont'd

Cumulative Impacts need to be adequately and correctly addressed for the proposed CalPeco utility line upgrade. The CalPeco proposed upgrade project potentially induces growth with increased capacity inside and outside the basin.

32-7

The project list for cumulative impacts Table 4.1-2 (pages 4.1-5 thru 4.1-9) must be updated in the FEIR to include TRPA approved Homewood Mountain anticipated number of units and TRPA approved Boulder Bay anticipated number of units.

Under Local Agencies section: Why only note the Tahoe City Community Plan? The Kings Beach Community Plan and Tahoe Vista Community Plan (until replaced by Area Plans) must be added to list of Local Agencies section in the FEIR (pg 4.4-10) as those plans are bi-sected by the Hwy 267 utility lines and scenic routes identified in the SQIP as well as the FibreBoard freeway.

From EIR Page 4.4-10 and 11: Tahoe City Community Plan

The Tahoe City Community Plan (1994) contains goals and objectives for urban design and development, traffic and parking, public service facilities, commercial development, and recreation. The objectives of the plan are implemented through enforceable policies. The plan also describes a vision for the future of Tahoe City and identifies various projects in the immediate Tahoe City area that are intended to improve scenic quality. It identifies opportunities for scenic improvements along SR 89 at the entrance to Tahoe City through relocating or screening existing non-compatible uses including public service facilities.

32-8

A similar statement for Tahoe Vista and Kings Beach must be added to FEIR documentation. Hwy 267 bi-sects the Tahoe Vista and Kings Beach Community Plans.

At the Dec 10th Calpeco open-house meeting in Kings Beach: The USFS (Mr. Rodman) acknowledged Sierra Pacific Industries (SPI) ownership of the Fibreboard Freeway but is still unclear what measures will be taken or requirements to be imposed. Define in the FEIR what financial obligations/responsibilities CalPeco will have to the USFS for its use and the wear and tear from construction of the project and on-going use requirements for maintenance and emergency fixes. Provide any correspondence that CalPeco/Liberty Utilities has with SPI on the proposed project. Financial obligations are not required by CEQA, etc. but this information must be provided along with other financial info on undergrounding, etc. to prove or disprove this alternative or any alternative is financially feasible.

32-9

Provide any correspondence in FEIR that CalPeco has with (CREW) East West Partners as there is potential land swap underway with Sierra Pacific Industries for property that has line segments on that land (ie. Martis Valley West Parcel).

32-10

Identify in the FEIR the number of construction trips anticipated for the FibreBoard segment of the project.

32-11

Identify in the FEIR the process for snow removal and access for maintenance issues on the FibreBoard Freeway.

32-12

Identify USFS easements on maps in the FEIR.

Identify in the FEIR where the FibreBoard freeway as well as other dirt or existing roads will be modified to accommodate construction equipment on maps. Identify how many trees will be removed at each dirt or existing road that will be modified for any required modifications and approximate width of roads required to accommodate construction vehicles for each identified road.

32-13

From EIR Page 4.4-11: 4.4.2 EXISTING CONDITIONS/AFFECTED ENVIRONMENT CONCEPTS RELATED TO SCENIC RESOURCES

Scenic or visual resources are generally defined as both the natural and built features of the landscape that contribute to the experience and appreciation of the environment by the general public. Depending on the extent to which a project would adversely alter the perceived visual character and quality of the environment, a visual or scenic impact may occur. Familiarity with the following terms and concepts will aid the reader in understanding the content of this chapter. These terms and definitions are not specific to any one visual resource assessment methodology (i.e., neither TRPA nor USFS), but instead are general in nature such that the setting can be described in a manner that allows for adequate assessment of visual impacts under either framework. These concepts are routinely used by the California Public Utilities Commission (CPUC) in visual impact assessment of projects throughout California for which it serves as lead agency under the California Environmental Quality Act (CEQA).

32-14

Lake Tahoe is an Outstanding National Resource Water and must be treated as such! Any Scenic Assessment to achieve a compromise between TRPA and USFS is not acceptable. The scenic corridors specifically in the Tahoe Basin must adhere to the various Scenic regulations, code and other methods for deriving scenic analysis in relationship to Threshold Attainment required by The Compact. Revise Scenic analysis of the Tahoe Basin line segments in the FEIR to reflect compliance with TRPA's code of ordinances. Considering comments but not adhering to TRPA ordinances renders the FEIR inadequate. The TRPA Compact overrides USFS assessments and methodology.

TAHOE REGIONAL PLANNING COMPACT
ARTICLE I. - FINDINGS AND DECLARATIONS OF POLICY

(a) It is found and declared that:

(6) Maintenance of the social and economic health of the region depends on **maintaining the significant scenic**, recreational, educational, scientific, natural public health values provided by the Lake Tahoe Basin.

(8) Responsibilities for providing recreational and scientific opportunities, **preserving scenic and natural areas**, and safeguarding the public who live, work and play in or visit the region are divided among local governments, regional agencies, the States of California and Nevada, and the Federal Government.

(10) **In order to preserve the scenic beauty** and outdoor recreational opportunities of the region, there is a need to insure an equilibrium between the region's natural endowment and its manmade environment.

ARTICLE II. – DEFINITIONS

As used in this compact:

(i) **“Environmental threshold carrying capacity” means an environmental standard necessary to maintain a significant scenic**, recreational, educational, scientific or natural value of the region or to maintain public health and safety within the region. Such standards shall include but not be limited to standards for air quality, water quality, soil conservation, vegetation preservation and noise.

Scenic issues include but are not limited to: adding power lines along some of the FibreBoard freeway corridor where they do not exist today, the Hwy 267 corridor lines and poles will be larger and more visible as noted in the depictions in the EIR, The Tahoe Rim Trail and Truckee River corridor will also have more visible lines and poles disturbing the natural beauty of the trail and river and the hiking and rafting experience. Hwy 267 is a registered scenic route and must be improved for threshold attainment. Removing the lines completely or relocation that can be buffered by trees would be a desirable condition for this highway.

Consider undergrounding or relocation of the Hwy 267 scenic corridor portion of the lines for scenic improvement. Provide funding breakdown for undergrounding of that line segment in FEIR. This would be a desirable condition for the scenic corridor. Considering comments but not adhering to TPRA or Placer County ordinances renders the EIR inadequate. Address in the FEIR the project's consistency with the adopted policies not only in the Placer County General Plan, Northstar Master Plan also in the Martis Valley Community Plan and the Placer County Community Plans (as previously noted) within the Tahoe Basin as well as TRPA ordinances.

From TRPA Code: 66.2.4. Scenic Highway Corridor Design Standards

All projects that are within the scenic highway corridors designated in subsection 66.2.2 shall meet the design standards listed in subparagraphs A and B below, in addition to other applicable design standards. All projects that are within the natural scenic highway corridor shall also meet the design standards listed in subparagraph C

32-14
cont'd

below, in addition to other applicable design standards.

A. Utilities

1. Electrical Lines

All new electrical lines that operate at 32 kilovolts or less, including service connection lines, shall be placed underground. Exceptions to this requirement may be allowed, provided TRPA finds that undergrounding would produce a greater environmental impact than above ground installation. If new electrical lines are permitted to be installed above ground, the new lines, poles, and hardware shall be screened from views from scenic highways to the maximum extent possible.

32-14
cont'd

From EIR Page 4.4-38: OVERALL APPROACH: METHODS AND ASSUMPTIONS
Potential project-related impacts to scenic resources were analyzed by determining the nature and extent of anticipated changes to the existing visual environment that would result from construction and operation of the proposed project and comparing those anticipated changes to the criteria of significance described above. The analysis involved field reviews of the project area plus reviews of project data, including maps and drawings provided by the applicant, aerial and ground-level photographs of the project area, planning documents, and the preparation of computer-based visual simulations. Specific project data included the Proponent's Environmental Assessment (Sierra Pacific 2010), power line pole designs and configurations, pole heights and locations, substation plans and elevation drawings, and proposed construction methods and long term maintenance practices. There are several before and after depictions of the poles. Provide a depiction in the FEIR with detailed info of an existing pole and a proposed pole on the same chart for comparison and scenic analysis. Details should include but not be limited to: material and color of pole as well as diameter, height and number of lines on existing pole versus proposed pole.

32-15

Explain selection process for line location in the FEIR. Provide alternative line location depictions as part of the scenic analysis. Detailed scenic analysis of the aforementioned must be clearly stated in the FEIR.

Trade-offs is not scenic improvements and do not positively affect the scenic threshold and could possibly be a negative impact on current scenic rating. Define "not improving but not exceeding" as the poles will be wider and taller. Mitigation doesn't fix or correct the scenic impact. Considering comments but not adhering to TRPA or Placer County ordinances renders the EIR inadequate and inaccurate.

32-16

From TRPA website GOALS and POLICIES:

CD-1.1 THE SCENIC QUALITY RATINGS ESTABLISHED BY THE ENVIRONMENTAL THRESHOLDS SHALL BE MAINTAINED OR IMPROVED.

GOAL CD-2

REGIONAL BUILDING AND COMMUNITY DESIGN CRITERIA **SHALL BE ESTABLISHED TO ENSURE ATTAINMENT OF THE SCENIC THRESHOLDS**, MAINTENANCE OF DESIRED COMMUNITY CHARACTER, COMPATIBILITY OF LAND USES, AND COORDINATED PROJECT REVIEW.

From TRPA website: **TRPA maintains applicable threshold standards for scenic resources in its threshold carrying capacities.** For the purposes of this analysis, a significant scenic resource impact would result if implementation of the proposed project would result in one or more of the following:

- ☐ a decrease in Roadway travel route ratings below the minimum required for threshold attainment;
- ☐ a decrease in Scenic Quality Ratings;
- ☐ a decrease in Public Recreation Areas and Bike Trails Ratings; or
- ☐ violation of the adopted Community Design threshold by failing to comply with site planning or design principles contained in the TRPA Code.

From EIR Page 5-26 and 27: ROADWAY AND SHORELINE UNITS

Some components of the 625 and 650 Electrical Line Upgrade Project would occur within TRPA Roadway Travel Units. The Tahoe City Substation would be seen within Roadway Travel Unit 14 – Tahoe Tavern and Roadway Travel Unit 15 – Tahoe City. Segment 625-1 would be seen within Roadway Travel Unit 42 – Outlet to Lower Truckee River and Roadway Travel Unit 15 – Tahoe City. **Segment 650-2 would be seen within Roadway Travel Unit 41 – Brockway Summit.** Existing components that would be upgraded by the project are in view in each of these units. The Tahoe City Substation would be upgraded in all four of the action alternatives.

The rebuilt Tahoe City Substation would be more visible from SR 89 than the existing substation because trees that provide screening from the highway would have to be removed. The poles used to rebuild the power lines would be larger than the existing poles in segments 625-1 and 650-2. The increased visual presence of the substation and the larger power poles would add to the amount of man-made features that are visible. This could cause a reduction in travel route ratings due to lower man-made features subcomponent scores.

The original travel route rating assigned to Roadway Travel Unit 42 – Outlet to Lower Truckee River was 10. This was below the scenic threshold target of 15.5. Over time, some improvement projects within the unit resulted in increases in the travel route rating from 10 to 13, where it stands today. This rating is below the scenic threshold target of 15.5. The original travel route rating assigned to Roadway Travel Unit 14 – Tahoe Tavern was 13. This was below the scenic threshold target of 15.5. Over time, various improvement projects within the unit resulted in increases in the travel route rating from 13 to 15.5, where it currently stands. This rating meets the scenic threshold target but does not exceed it. The original travel route rating assigned to Unit 15 – Tahoe City was 12. Improvement projects implemented over time produced increases in the travel route

32-16
cont'd

rating from 12 to 16.5, which exceeds the scenic threshold target. The original travel route rating assigned to Unit 41 in 1982 was 21 and was thereby established as the threshold standard for this unit because it exceeded the minimum target rating of 15.5. The rating for this unit has remained at 21 since 1982, consistently exceeding the threshold target.

Any reduction in the travel route rating of Unit 42 – Outlet to Lower Truckee River would cause the rating to fall further below the threshold target of 15.5 than it currently is. Any reduction in the travel route rating of Unit 14 – Tahoe Tavern would fail to meet the threshold target of 15.5. Any reduction in the travel route rating of Unit 41 – Brockway Summit would fail to meet the threshold target of 21. A reduction of 0.5 to 1.0 in the travel route rating of Unit 15 – Tahoe City would still meet the threshold target of 15.5 but a reduction greater than 1.0 would drop the rating below the threshold target.

Scenic quality ratings within Roadway Travel Unit 14 – Tahoe Tavern, Unit 15 – Tahoe City, Unit 41- Brockway Summit, and Unit 42 – Outlet to Lower Truckee River could be adversely affected by implementing any of the action alternatives. Within Roadway Travel Unit 14 – Tahoe Tavern, Scenic Resource 14.1 consists of views of the landscape from SR 89 adjacent to the 64-Acre Recreation Site. The rebuilt Tahoe City Substation would be seen in such views. Within Roadway Travel Unit 15 – Tahoe City, Scenic Resource 15.6 includes views down the Truckee River and surrounding areas from Fanny Bridge. The rebuilt 625 Line would be seen on the south bank of the river under Alternative 1 (PEA Alternative), 3 (Road Focused Alternative), and Alternative 4 (Proposed Alternative). Within Roadway Travel Unit 41 – Brockway Summit, Scenic Resource 41.1 consists of views looking south from SR 267 that include the highway corridor with Lake Tahoe seen in the distance. The rebuilt 650 Line would be seen along the east side of the highway under Alternative 1 (PEA Alternative) and Alternative 3 (Road Focused Alternative). Within Roadway Travel Unit 42 – Outlet to the Truckee River, Scenic Resource 42.6 consists of views of the landscape from SR 89 that include the Truckee River.

Scenic quality ratings are non-degradation standards; that is, the numerical rating assigned to individual scenic resources in 1982 must be maintained. The Scenic Quality Rating for each of the scenic resource listed above has not changed from the original 1982 rating. Thus, the ratings meet the Threshold Standard for Scenic Quality Ratings. Some proposed project components would be seen within the same landscape context as the four scenic resources. The visual presence of the action alternatives could negatively affect one or more of the composite rating subcomponents which include unity, vividness, variety, and intactness. This in turn would cause a reduction in the scenic quality ratings.

Causing reduction in scenic quality ratings violates the scenic threshold thus rendering the EIR inadequate.

OTHER AREAS

Segment 625-1 under Alternative 1 (PEA Alternative), Alternative 3 (Road Focused Alternative), and Alternative 4 (Proposed Alternative) would be seen from the Truckee River Bike Trail. Under Alternative 2 (Modified Alternative), Segment 625-1A would be in view from inside the 64-Acre Recreation Site. TRPA's 1993 inventory of public

32-16
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recreation areas and bike trails does not include the 64-Acre Recreation Site that now serves as a recreation area for the Truckee River Bike Trail because these recreation facilities did not exist at the time the inventory was developed. The TRPA intends to update the inventory by adding these and other recreation facilities that have been built since 1993.

The inventory identifies and rates scenic resources that are viewed from or within each recreation site. It also gives an assessment of the visual quality of the man-made recreation facilities themselves. Because some components of the action alternatives would be in view from public recreation facilities, they could affect the numerical ratings of scenic resources. However, scenic resources associated with these facilities have not yet been formally identified or given baseline scenic quality ratings. Even so, it is reasonable to assume that views from the bike trail where it crosses the Truckee River and runs parallel to the river would be considered scenic resources, as would views of the forested backdrop to the south and west from inside the 64-Acre Recreation Site. The visual presence of larger poles within the river corridor seen from the bike trail under Alternative 1 (PEA Alternative), Alternative 3 (Road Focused Alternative), and Alternative 4 (Proposed Alternative) could negatively affect scenic quality. This would not be the case under Alternative 2 (Modified Alternative), since Segment 625-1A would be located near the north edge of the 64-Acre Recreation Area instead of within the river corridor. Segment 625-1A likely would not have a negative effect on scenic resources within the 64-Acre Recreation Site since the most attractive views are to the west and south.

Provide a Table in the FEIR showing current Roadway Travel Unit ratings as well as recreation site impacts and the degradation and reduction in scenic quality ratings. Just the increase in size of the pole itself is a degradation factor that cannot be mitigated. Considering comments but not adhering to TRPA ordinances and thresholds renders the EIR inadequate and inaccurate.

32-16
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Placer County also has requirements for undergrounding.

K.5 - "The County shall require that new roads, parking, and utilities be designed to minimize visual impacts. Unless limited by geological or engineering constraints, utilities should be installed underground and roadways and parking areas should be designed to fit the natural terrain".

1.L.3 - The County shall protect and enhance scenic corridors through such means as design review, sign control, undergrounding utilities, scenic setbacks, density limitations, planned unit developments, grading and tree removal standards, open space easements, and land conservation contracts.

4.A.4 - The County shall require proposed new development in identified underground conversion districts and along scenic corridors to underground utility lines on and adjacent to the site of proposed development or, when this is infeasible, to contribute funding for future undergrounding.

32-17

TRPA and Placer County Scenic ordinances require undergrounding and improvement to threshold standards. Define and describe why these ordinances are not being adhered to in the FEIR- mitigation and compromise are not sufficient. Considering comments but not adhering to ordinances and thresholds renders the EIR inadequate and inaccurate.

32-17
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From EIR Page 4.4-40: **APM SCE-1:** The following measures will be implemented during construction:

If hand-piling and burning is utilized, piles will be located away from the edge of the roadway. Piles will be constructed to minimize residual unburnable material (resulting from pile compaction and/or high dirt content) and damage to remaining trees. **Pile burning** will be accomplished the following fall or spring, when possible. Pile burning will be planned and implemented to minimize scorching of existing non-fire-killed vegetation.

32-18

Define and describe in the FEIR potential Air Quality impacts created by pile burning as a separate APM or mitigation measure under Air Quality section. Provide documentation that Placer County and TRPA have agreed to the pile burning as a viable measure.

This News Release is incorporated for the record.

http://www.trpa.org/wp-content/uploads/Threshold_Evaluation_Press_Release.4.25.12.pdf

These documents are incorporated for the record.

http://www.trpa.org/wp-content/uploads/Scenic_Res_82_Roadways.pdf

<http://www.trpa.org/wp-content/uploads/2011-Scenic-Evaluation-Roadway-Units.pdf>

<http://www.trpa.org/wp-content/uploads/2011-Scenic-Evaluation-Report.pdf>

From TRPA website: • **Scenic Resources:** the Tahoe Basin made gains in scenic quality over the last five years. Overall, compliance with scenic quality standards is at 93 percent with an improving trend in scenic quality for the built environment.

Developed areas along roadways and Lake Tahoe's shoreline continue to be the locations where scenic improvements are needed.

32-19

Define that impacts in the FEIR do not violate the Scenic Threshold. Trade-offs is not scenic improvements and do not positively affect the scenic threshold and could possibly be a negative impact on current threshold rating. Considering comments but not adhering to TRPA ordinances renders the EIR inadequate and inaccurate.

From Scenic Threshold Report: "Travel route ratings consist of a numeric composite index (score) that represents the relative scenic quality within and throughout the entire

travel unit. Each travel unit must achieve a minimum composite score (i.e., Threshold Standard) to be determined "in attainment."

Thus, there are 54 Threshold Standards associated with Roadway Travel Units."

"Roadway travel unit ratings reflect all six aspects. Each aspect is rated from one (has a strong negative effect on scenic quality) to five (has a strong positive effect on scenic quality). A composite rating is obtained by summing the ratings of the six aspects.

Therefore, the composite rating for an individual roadway travel unit can range from five to 30. The aspects themselves cannot be quantitatively measured in the strictest sense as, for example, the chemical constituents of water samples or ambient noise levels can. They are, by nature, qualitative characteristics that are assigned relative numerical ratings based on direct observation by qualified scenic quality experts. They are not measured with instrumentation. Instead, field researchers make direct visual observations of their characteristics, attributes, or conditions and then record their observations.

32-19
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From EIR Page 4.8-19: APM NOI-2: CalPeco will post a telephone number for excessive noise complaints in conspicuous locations in the vicinity of the project site when within 1,000 feet of residences.

The flight path of helicopters is a much larger area (than just the nearby residences) and will generate noise levels that could exceed CNEL. Blasting activities could possibly be heard from several miles away. CalPeco should, at a minimum, post proposed activities and expected hours of operations on their website and post in all local newspapers a minimum of one week before helicopter or blasting activities commencement. Construction activities will occur 8:00a-6:30p in TRPA jurisdiction, 6:00a-8:00p and 8:00a-8:00p weekends Placer County with certain exceptions for night-time activities that are required. TRPA and Placer overlap- which ordinance takes precedent? (NOI-4 pg 3-117) State in the FEIR that activities will be posted and note related code restrictions by actual codereference along with a number to call for complaints.

32-20

From EIR Page 4.14-4 Table 4.14-2 TRPA Environmental Threshold Carrying Capacity Noise Standards Notes: CNEL = community noise equivalent level

1. Highway corridors expand to 300 feet from the highway edge on each side. In any instance of overlap between highway corridor noise standards and a PAS or Community Plan, the highway corridor noise standard supersedes all others.

Source: TRPA 2012b

32-21

Identify and cite in the FEIR the actual TRPA Code that allows: highway corridor noise standards supercede TRPA maximum standards.

From EIR Page 4.14-5: TRPA conducts a comprehensive evaluation of threshold standard status every five years. The most recent evaluation was completed in 2011 (TRPA 2012c). According to the 2011 Threshold Evaluation, attainment status for Cumulative Noise Events was somewhat worse than the attainment target (TRPA 2012c). Project consistency with TRPA ETCCs and single event noise standards is described in Section 5.8, Consequences for TRPA Environmental Threshold Carrying Capacities.

32-21
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From EIR page 3-33: STAGING AREAS

Multiple staging areas would be required to store, stage, and distribute construction equipment and materials. A variety of potential staging areas have been included for study as part of this EIS/EIS/EIR (see Table 3-4, Staging Area Summary, below). The same staging areas are being considered for each action alternative, and all of the staging areas evaluated may not be required. The Tahoe City, Northstar Parking Lot, Northstar Golf Course and Sierra Pacific Industries (SPI) staging areas would only be used if an agreement can be reached with the landowner. Additionally, only one of the Airport 1, Airport 2, Airport 3, and USACE staging areas would be used, if an agreement can be reached with a landowner. All four are evaluated because it is unclear at this time which, if any, might ultimately become available.

From EIR Page 3-33 and 34
Table 3-4 Staging Area Summary

Kings Beach	Material and equipment storage and staging, and helicopter landing	Vegetation clearing, minor access improvements, tree removal, and installation of temporary construction fencing
SPI	Material and equipment storage and staging	Vegetation clearing, improvement to existing dirt access road and new access way, and installation of temporary construction fencing

32-22

Define and describe improvements in FEIR for: "minor access improvement" for Kings Beach and "improvement to existing dirt access and new access way" for SPI

From EIR page 3-34: The staging areas considered in this EIS/EIS/EIR are generally situated in areas with pre-existing soil disturbance; however, some sites may require **minimal** vegetation removal and grading. There are existing paved or dirt access roads for all of the staging areas; only access to the SPI staging area would require new, **temporary disturbance**.

Define and describe in FEIR “minimal” vegetation removal and grading. Define and describe “temporary disturbance” for SPI staging area.

From EIR Page 3-35: Kings Beach

The Kings Beach Staging Area would be located just north of the Kings Beach Substation on NFS land, and would be accessed by an existing dirt road located at the end of Canterbury Drive. This staging area would be used as a helicopter landing zone and for material storage and equipment staging. **This site was formerly used as a landfill** and, as a result, has a previously-disturbed area that measures approximately 300 feet by 300 feet. Activity at this location would be focused in this previously-disturbed area (based on USFS review and authorization). The vegetation within the planned staging area mainly consists of bunch grasses and scattered Jeffrey pines (*Pinus jeffreyi*) under 10 feet in height. **Minor improvements to the access road**—including the removal of approximately 10 trees—would be required and a temporary fence would be installed around its perimeter. Define and describe existing conditions in the FEIR of the formerly used as landfill area. Define in FEIR grading that is required for helicopter landing site. Define in FEIR helicopter landing site requirements. Describe and define in the FEIR if any temporary access issues for the neighborhood are anticipated during helicopter operations and preparation of the site for helicopter operations and equipment storage. CalPeco must notify the neighborhood of any anticipated access issues.

32-22
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From EIR Page 3-35: SPI

The SPI Staging Area would be located near the 625 Line east of SR 267. The staging area would be accessed off of Martis Peak Road and existing dirt access roads that would require limited improvements (e.g., trimming of vegetation encroaching on the road, minor grading). This staging area would also require approximately 0.3 acres of new disturbance for temporary access ways. Most of the staging area site has been previously disturbed. Define and describe in the FEIR minor grading.

From EIR Page 3-36: POWER LINE CONSTRUCTION METHODS

Stringing Site Preparation

Multiple stringing sites would be required during the removal and installation of the conductors. In general, stringing sites would be approximately 300 feet in diameter (approximately 1.6 acres) and would be spaced at distances between approximately 500 feet and 8,000 feet apart depending on the terrain and surface conditions along the ROW, as well as the placement of angle structures. On average, they would be located approximately 2,500 feet (approximately 0.5 mile) apart. Table 3-5, Estimated Number of Stringing Sites Required Under the Action Alternatives, shows the approximate

32-23

number of stringing sites that required within and outside of the Lake Tahoe Basin. Stringing sites would require a relatively flat surface; therefore, they would need to be cleared and could need to be graded to allow for safe equipment operation. Site preparation would require heavy equipment for removing obstacles (e.g., large rocks, trees, brush). Vegetation would be removed, as necessary, to provide safe and efficient work areas. Mowing or grubbing would be the preferred method for clearing vegetation.

32-23
cont'd

Define in FEIR site location of all 45 stringing locations for Alt 4. Show on a map in the FEIR. Provide anticipated tree removal counts for each location required to insure area is cleared for safe equipment operation in the FEIR.

Staging Areas

The project has identified up to seven staging areas ranging from 0.2 acres to 3.4 acres that will be required to build the project. The FEIS should provide the details on each of these staging areas including timing and duration of use, amount of materials and equipment storage, and access to the site. Provide current zoning of the property where the staging area is placed.

32-24

From EIR Page 4.3-7: 4.3.2 EXISTING CONDITIONS/AFFECTED ENVIRONMENT
The forest land study area includes the permanent 40-foot power line right-of-way (ROW) for single-circuit segments, the temporary 65-foot power line ROW (inclusive of the permanent ROW) for single-circuit segments, the permanent 65-foot power line ROW for double-circuit segments, new roads, staging areas, stringing/ pulling sites, substations, and all other project-related facilities plus a hazard tree border zone for the project alternatives. The hazard tree border zone includes the area within 150 feet of a power line center line and was included in the forest land study area to analyze the impacts associated with hazard tree removal. The 150 foot width of the hazard tree border zone was agreed to by the lead agencies as a reasonable area where a vast majority of hazardous tree removal would occur. The permanent 40-foot ROW, new roads, and substations would require permanent tree removal, while the temporary ROW (12.5 feet on either side of the permanent 40-foot ROW for single-circuit segments), staging areas, and stringing/pulling sites would be abandoned following construction and would be allowed to re-grow trees. Tree removal in the hazard tree border zone would be restricted to individual trees which have the potential for falling into the constructed line; whereas, all trees within permanent and temporary impact areas would be removed. Hazard tree removal would occur concurrently with ROW tree removal.

32-25

Provide in the FEIR the documentation of approval for tree removal at 150 foot width from lead agencies. Provide estimated hazard tree removal numbers from ROW in FEIR.

From EIR Page 4.4-34: **The Tahoe Rim Trail**, shown in Exhibit 4.4-5, is a 165-mile, single-track, multi-use trail encircling Lake Tahoe. Throughout the project vicinity, the trail is located on LTBMU lands and is open to hikers, equestrians, and mountain bikers. Winter use by cross-country skiers and snowshoers is also popular. There is a trailhead in Tahoe City near the Community Center on Fairway Drive. From that location, the trail ascends to overlook the Truckee River Canyon, and then extends north and east past Watson Lake more than 20 miles to the trailhead on SR 267, 0.5-mile south of Brockway Summit. Along this segment, the trail generally parallels the existing and proposed 625 Line alignments, crossing under the existing 625 Line twice (see Exhibit 4.8-5). Trail users can cross SR 267 and beneath the existing 650 Line to a trailhead on the east side of the highway. From there, the trail continues northeastward, crosses beneath the existing 625 Line again, and continues toward Martis Peak. As shown in Exhibit 4.4-4, trail users are exposed to views of the power lines only briefly because the viewshed of the existing line is highly localized due to the screening effect of the forest. As mentioned above: The 150 foot width of the hazard tree border zone was agreed to by the lead agencies as a reasonable area where a vast majority of hazardous tree removal would occur. Define and describe in the FEIR the viewshed change due to 150ft requirement noted above (baseline existing condition versus new width required) for Tahoe Rim Trail, Martis Creek Lake Recreation Area, Burton Creek State Park, The Fiberboard Freeway, Truckee River Regional Park, Northstar Resort Golf Course, 64-Acre Recreation Site , Gatekeeper's Museum and Lake Tahoe Dam, River Rafting, Kings Beach Snowmobile activities as a result of required 150 foot width of tree removal.

32-26

Define and describe in the FEIR the relationship to TRPA Threshold standards for all key viewpoints identified in Table 4.4-1 Viewer Types, Visual Exposures, and Visual Quality. Identify negative or positive threshold changes in the FEIR due to required 150 foot width hazard tree zone requirement. Negative impacts are not acceptable by TRPA threshold standards and code of ordinances and thus causing EIR to be inadequate if not addressed properly.

From EIR: Biological Resources

http://www.trpa.org/wp-content/uploads/TEVAL2011_Ch8_Wildlife_Oct2012_Final.pdf

The Wildlife Chapter of the 2011 Threshold Evaluation is incorporated in this comment for reference and for the record.

32-27

From EIR Page 4.7-63: Impact 4.7-1 : Disturbance or loss of common vegetation communities and wildlife habitats. Implementing the action alternatives would result in the removal or disturbance of up to 157 acres of common vegetation communities.... Sierran mixed confer, Red fir, Jeffrey pine... Because these habitats are locally and regionally common and abundant, and implementation of APMs (Applicant Proposed

Measures) would minimize vegetation removal and require that habitat is restored to pre-project conditions the action alternatives would not substantially reduce the size , continuity or integrity of any common vegetation community.... No mitigation is required. Pre-project conditions would include large trees and tree stands- provide details in FEIR how CalPeco can/will replace 20-50+ year old trees to maintain an appropriate habitat. It will take many years for the habitat to be the same and viable for the special species that nest there. Stating that there are adjacent properties is not a viable mitigation.

Provide details on how this conflict does not require Calpeco to seek another location for the lines to avoid conflict with the special species habitat.

From TRPA web: Code 62.4.1. Disturbance Zones

Perching sites and nesting trees of goshawks, peregrines, eagles, and osprey as shown on the TRPA Regional Plan Overlay Maps shall not be physically disturbed in any manner nor shall the habitat in the disturbance zone be manipulated in any manner unless such manipulation is necessary to enhance the quality of the habitat. The threshold shall apply not only to the number of known population sites but also to the disturbance and influence zone buffers to sites found in the future.

A. The disturbance zone for goshawks is the 500 acres of best suitable habitat surrounding a population site, which shall include a 0.25-mile radius around each nest site.

B. The disturbance zone for osprey and peregrines is 0.25 mile radius around each nest site.

C. The disturbance zones for wintering bald eagles are as shown on the TRPA maps.

D. The disturbance zone for nesting bald eagles is 0.5 mile radius around each nest.

E. The disturbance zone for golden eagles is 0.25 mile radius around each nest site.

TRPA Code 62.4.2. Adverse Impacts

Uses, projects, or activities outside existing urban areas and within the disturbance zone of special interest, threatened, endangered, or rare species shall not, directly or indirectly, significantly adversely affect the habitat or cause the displacement or extirpation of the population.

Define in the FEIR how many of the 70+ acres affects the special species habitat in the Tahoe Basin and what measures will be taken not to disrupt the habitat as required by TRPA code. Stating unavoidable and immitigable is not acceptable. This project cannot violate a TRPA threshold. Considering comments but not adhering to TRPA ordinances renders the EIR inadequate and inaccurate.

32-27
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Define in the FEIR how the CalPeco project addresses and adheres to the Sierra Watch/MAPF agreement limitations for the Habitat Plan for the Northstar Master Plan.

32-28

Provide in the FEIR impact analysis of the Northstar HMP boundaries that bi-sect this project.

From EIR Page ES-26: 4.7-2 Disturbance or loss of sensitive habitats (jurisdictional wetlands, riparian vegetation, and SEZ). Implementing the action alternatives would result in direct removal and disturbance of sensitive habitats, including waters of the United States, waters of the state, riparian habitat and SEZs. Mitigation Measure 4.7-2a Compensate for unavoidable Loss of Stream and Riparian Habitat. Calpeco shall compensate for permanent riparian habitat impacts at a minimum of a 1:1 ratio through contributions to a CDFW approved wetland mitigation bank.... This does not correct the damage done ! Mitigation Banks do not correct the on-site destruction. If a mitigation bank contribution is established, the contribution must mitigate within the Tahoe Basin and be identified in the FEIR. The Permit must identify when mitigation is to be completed and should be identified and completed by Phase. Each Phase must contribute to the fund to offset damage within the Tahoe basin if that Phase is within the basin.

32-29

From TRPA website Goals and Policies: WL-1.2 RIPARIAN VEGETATION SHALL BE PROTECTED AND MANAGED FOR WILDLIFE.

Riparian vegetation is the single most important habitat for wildlife in the Region.

Riparian plant communities need to be preserved to help protect the wildlife resource and to attain environmental thresholds for vegetation, wildlife, and soils. This policy requires an on-going program of management and regulated use of riparian vegetation.

WL-2.1 ENDANGERED, THREATENED, RARE, AND SPECIAL INTEREST SPECIES SHALL BE PROTECTED AND BUFFERED AGAINST CONFLICTING LAND USES.

Species in the above categories need extra protection to ensure their longevity in the Region. Critical habitat sites of these animals need to be protected and buffered from disturbing land uses. This will be accomplished by regulating uses within the disturbance and influence zones of species for which thresholds have been adopted.

From EIR Page ES-31: 4.7-5 Introduction and spread of invasive weeds. Mitigation measure states: Utilize Local Native Seed and Notify Noxious Weed Coordinator. It further states after project completion a USFS weed coordinator shall be notified so the project area can be monitored by USFS if desired. Monitoring could be up to three years as funding allows.... This mitigation does not mandate or require any action by stating if desired. Mandate a requirement in the FEIR.

32-30

From EIR Pages ES-31-32: 4.7-6 Disturbance or loss of special-status wildlife species and habitats. No feasible mitigation has been identified. The Resource Topic states: would result in permanent habitat loss within TRPA-designated disturbance zones around goshawks nests, which is prohibited by TRPA. Explain in the FEIR, “which is prohibited by TRPA”, how the project can go forward with this activity by creating a permanent loss with-in a TRPA-designated disturbance zone. This project cannot violate a TRPA threshold or supercede TRPA code this renders the EIR inadequate.

From EIR Page 4.7-133: Overall, implementation of Alternative 4 (Proposed Alternative) would result in the temporary loss or disturbance of up to 61.4 acres of potential habitat for northern goshawk (compared to 66.9, 58.2, and 62.8 acres under Alternative 1 [PEA Alternative], Alternative 2 [Modified Alternative], and Alternative 3 [Road Focused Alternative], respectively); of this amount, none would occur in the Griff Creek goshawk PAC (compared to 0.2, 0, and 0 acre under Alternative 1 [PEA Alternative], Alternative 2 [Modified Alternative], and Alternative 3 [Road Focused Alternative], respectively), and 0.6 acre would occur within the nonurban portion of three partially-overlapping TRPA disturbance zones (compared to 4.4, 1.6, and 0–0.6 [depending on option] acre under Alternative 1 [PEA Alternative], Alternative 2 [Modified Alternative], and Alternative 3 [Road Focused Alternative], respectively) (Table 4.7-10; Exhibit 4.7-5).

From EIR Page 4.7-133 : NORTHERN GOSHAWK HABITAT, PACS, AND TRPA DISTURBANCE ZONES Implementation of Alternative 4 (Proposed Alternative) would affect the least amount of habitat for northern goshawk among the action alternatives, including habitat within PACs and TRPA disturbance zones. Overall, implementation of Alternative 4 (Proposed Alternative) would initially result in the permanent loss or disturbance of up to 72.6 acres of potential habitat for northern goshawk over the study area (compared to 124, 121.1, and 73.9 acres under Alternative 1 [PEA Alternative], Alternative 2 [Modified Alternative], and Alternative 3 [Road Focused Alternative], respectively). Of this total amount, 0.2 acre would occur in the Griff Creek goshawk PAC (compared to 0.1, 0.2, and 0–0.2 [depending on option] acre under Alternative 1 [PEA Alternative], Alternative 2 [Modified Alternative], and Alternative 3 [Road Focused Alternative], respectively), and 1.6 acres would occur within the nonurban portion of three partially-overlapping TRPA disturbance zones (compared to 3.9, 7.1, and 0–1.6 [depending on option] acres under Alternative 1 [PEA Alternative], Alternative 2 [Modified Alternative], and Alternative 3 [Road Focused Alternative], respectively) (Table 4.7-10; Exhibit 4.7-5). Over the long term, because the existing 625 Line would be decommissioned and vegetation would be allowed to reestablish within the existing 20-foot vegetation management corridor, the net permanent disturbance/loss would be reduced to approximately 49.8 acres overall (compared to 103.3, 101.2, and 51.1 acres under Alternative 1 [PEA Alternative], Alternative 2 [Modified Alternative], and Alternative 3 [Road Focused Alternative], respectively); and a net gain or enhancement of 0.3 acre within the nonurban portion of the TRPA disturbance zones would occur

32-31

(compared to the disturbance/loss of 3.2 and 6.4 acres under Alternative 1 [PEA Alternative] and Alternative 2 [Modified Alternative], and a net gain or enhancement of 0.3– 2.3 acres [depending on option] under Alternative 3 [Road Focused Alternative], respectively).

Overall, implementation of Alternative 4 (Proposed Alternative) would result in the temporary loss or disturbance of up to 61.4 acres of potential habitat for northern goshawk (compared to 66.9, 58.2, and 62.8 acres under Alternative 1 [PEA Alternative], Alternative 2 [Modified Alternative], and Alternative 3 [Road Focused Alternative], respectively); of this amount, none would occur in the Griff Creek goshawk PAC (compared to 0.2, 0, and 0 acre under Alternative 1 [PEA Alternative], Alternative 2 [Modified Alternative], and Alternative 3 [Road Focused Alternative], respectively), and 0.6 acre would occur within the nonurban portion of three partially-overlapping TRPA disturbance zones (compared to 4.4, 1.6, and 0–0.6 [depending on option] acre under Alternative 1 [PEA Alternative], Alternative 2 [Modified Alternative], and Alternative 3 [Road Focused Alternative], respectively) (Table 4.7-10; Exhibit 4.7-5).

32-31
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From TRPA website: Code 62.4.3. Environmental Documents

Applicants for projects within disturbance zones shall submit with their applications appropriate environmental documentation prepared by a biologist that includes specific recommendations for avoiding significant adverse impacts to the special interest, threatened, endangered, or rare species. Provide the appropriate environmental documentation prepared by a biologist for public review in the FEIR.

32-32

TRPA Code 62.4.4. Special Conditions

Special conditions of project approval may be required to mitigate or avoid significant adverse impacts to special interest species listed by TRPA or the U.S. Forest Service for the Lake Tahoe Basin, or for threatened, endangered, and rare species. Define in the FEIR “special conditions of project approval”.

32-33

From EIR Page 4.2-45: Impact 4.2-1 for Alternative 4 the Proposed Alternative

Amendment to the Martis Peak PAS 019 and necessary special use findings could be made. The Plan Area Statement Amendment needs to be fully vetted and not just a TRPA Consent Calendar approval and defined in the EIR. The outcome of the change is positive but still should follow be publically vetted.

32-34

Identify in FEIR if this proposed upgrade services the approved Boulder Bay project at North Stateline.

Identify in the FEIR how this project benefits the Nevada Energy tie-in to Incline Village portion of the line upgrade. Identify if Nevada Energy will supplement funding for the project if it benefits the Incline tie-in. If Nevada Energy benefits from this upgrade, define how much in the way of funding it should provide.

32-35

Incorporate (2) articles for the record

Articles on snow making and the need for additional utility upgrades

1). Margaret Moran mmoran@sierrasun.com November 29, 2013

<http://www.tahodailytribune.com/newsletter/9107673-113/snow-tahoe-snowmaking-resorts>

Snowmaking: Lake Tahoe's 'insurance policy' Snow Making on Squaw Valley's upper mountain. The practice has come in handy the past couple winters at Lake Tahoe, which saw little snow, and is coming in handy again this winter, which is off to a slow start. (Note: applicant reported outages in 2010 and 2012- possibly due to snowmaking efforts.)

Inside Squaw Valley's snowmaking building, with the resort's new fully-automated system.

Early season snowmaking at Squaw Valley.

EDITOR'S NOTE: This story originally appeared in the 2013-14 winter edition of Tahoe Magazine, which hit newsstands around the Truckee/Tahoe region on Thursday. The magazine is a joint publication of the Sierra Sun, North Lake Tahoe Bonanza, Tahoe Daily Tribune and Lake Tahoe Action. To view a digital version of the magazine, click [here](#).

TAHOE/TRUCKEE — When Mother Nature is stingy with the snow, Tahoe ski resorts can turn to their backup plan. Using water and compressed air, local resorts create their own snow-covered runs to ensure winter success.

"Snowmaking is a form of an insurance policy," explains Amelia Richmond, senior public relations manager for Squaw Valley and Alpine Meadows.

It ensures that resorts can open in time for the holiday season — be it Thanksgiving or Christmas — fill in areas with subpar snow coverage and provide good skiing and riding until the end of the season.

"It's a guest service piece," said Jim Larmore, director of mountain operations for Northstar California. "It's a piece we provide our guests so they can make planned vacations and provide a better ski experience than if they just relied on Mother Nature's natural snow."

Yet to make snow, resorts still rely on Mother Nature — to a degree.

THE 'ART AND SCIENCE' OF SNOWMAKING

To make snow, resorts need freezing temperatures and low relative humidity.

32-36

“The humidity is huge — probably the single biggest factor,” said Dave Hahl, snowmaking and grooming manager of Mt. Rose Ski Tahoe.

He added that low humidity allows the atmosphere to be saturated with water to create “that much more snow.” If humidity is high, however, the atmosphere is too saturated to produce significant amounts of snow.

Secondary snowmaking factors are winds and cloud-cover.

“When you’re making snow in the Sierra, you’ve got to catch every window you can,” said Jack Coughlin, slope maintenance manager for Diamond Peak. “I used to make snow back East, and back East, you know you can make snow four, five days a week.

“Here, when it’s cold, you grab it, and then you’re going to get the beautiful warm weather after that.”

When conditions are right, resorts pump water — stored in ponds, reservoirs or other sources — through pumphouses, up pipes running up the mountain to specific snow guns. Depending on the guns in a resort’s fleet, compressed air must also be pumped to the gun.

Together — air and water — under the right conditions, form snow.

“You don’t want to pick it up and squeeze it, and you’ve got slush coming out,” explained Coughlin, who’s looking for a hard snowball at the end of the process. “So you really have to pay attention to what you’re doing.”

Once made, the snow is left to cure, perking out some of the excess water, before groomers move and flatten the snow into a favorable skiing and riding surface.

“(Making snow) it’s a science and an art,” Hahl said. “... The science part of it, it’s the technology — the technology improves like anything else. Yet it still takes the guy on the ground to get it right. You can’t overestimate the human link.”

HOW SNOWMAKING SAVED WINTER BUSINESS

With two consecutive mild winters at Lake Tahoe, resorts have had to heavily rely on their snowmaking systems.

According to Squaw Valley’s snowfall tracker, it snowed 183 inches at 6,200 feet and 326 inches at 8,200 feet in 2012-13. For 2011-12, it snowed 182.5 inches and 355 inches, respectively.

The average snowfall for the Lake Tahoe region is 430 inches.

32-36
cont'd

"Two years ago when there was a complete lack of snow, we still did great business through the Christmas period with snowmaking," Hahl said. "... (People are) just realizing that even if there hasn't been many natural storms, they can still book a vacation and still come up and get good skiing."

Being a winter destination spot, resort success is closely tied to community success.

"Particularly in the lean years, if we didn't have snowmaking, people wouldn't be coming," Coughlin said. "You've got to have those resorts open. (For) the local business, the restaurants, it's devastating when you have a bad winter."

Yet the ability to make snow when Mother Nature fails to comes at a cost.

COST OF DOING BUSINESS

"It's extremely expensive to make snow," Coughlin said. "... We're running up **electric bills** running our water pumps and running out air compressors."

When asked how much it costs to make snow, the consensus was it varies, based on weather conditions and equipment.

Rather, as Richmond agrees, it's all about the guest and the guest experience.

"At the end of the day, it gets you out on the mountain, and you're able to pursue the sports that you love," she said.

2). By Kathryn Reed

<http://www.laketahoenews.net/2013/12/expanding-n-shore-electric-lines-studied/>

Five routes for a massive electrical line on the North Shore are being studied in the environmental documents that were released in November.

CalPeco – short for California Pacific Electric Company – wants to strengthen its ability to provide power to that area. CalPeco is the parent company of Liberty Utilities, the electric company for the California side of the Lake Tahoe Basin, Truckee and Alpine County.

For Northstar to be able to grow it needs to be able to tap into more power. These upgrades would allow for the ski resort to grow as outlined in its [master plan](#).

32-36
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From the Northstar Master Plan EIR

3.11.8 ELECTRICITY

Liberty Utilities California Pacific Energy Company provides electric service to the Northstar resort community. Liberty serves the Northstar resort from a substation located near the intersection of SR 267 and Northstar Drive, near the Northstar maintenance yard and office buildings. Liberty would provide electrical service to the proposed project. Define in the FEIR the current consumption needs Northstar uses versus the proposed Master Plan by Phase to prove adequacy of the proposed reliability needs.

14.0 PUBLIC SERVICES

This section describes the public services that would be required to serve the proposed project. Public services include fire protection and emergency medical services, law enforcement, electrical, natural gas, and telecommunications service, cable television service, parks and recreation, water, wastewater, and energy use.

14.6 ELECTRICITY, NATURAL GAS, AND TELECOMMUNICATIONS SERVICES

14.6.1 EXISTING SETTING

Electricity

Liberty Utilities CalPeco

Liberty Utilities CalPeco currently provides electric service to Northstar and serves the project study area from a substation in Truckee. This arrangement is sufficient to supply a small area of development, including Northstar and other Martis Valley development, provided the load is in close proximity to the development areas. Northstar Mountain Master Plan EIR November 2013 Page 14-29/30 DEIR Define in the FEIR how the lines will be located in close proximity to the proposed development in the Master Plan-show on a map. Define in FEIR "sufficient to supply a small area of development".

32-37

Table 14.6-1 identifies 2012 electrical demand for the Northstar ski resort. As shown in the table, current electrical demand is the highest during the winter ski season associated with the operation of resort facilities, with ski lifts and snowmaking facilities being the largest users of power.

Define "highest demand" and include in FEIR for defining reliability needs for the Tahoe Basin versus resort demand on system and upgrade for reliability.

TABLE 14.6-1

2012 NORTHSTAR RESORT ELECTRICAL DEMAND

Month Electrical Demand in Kilowatts

August 402,209

September 360,858

October 374,264

November 2,563,742

December 4,092,661
January 3,172,365
February 1,762,109
March 1,474,373
April 1,075,805
May 309,991
June 358,040
July 397,272
Total for 2012 **16,343,510**

Source: Northstar California Resort 2013 November 2013 Page 14-30 DEIR

TABLE 14.6-3

MARTIS VALLEY COMMUNITY PLAN CONSISTENCY ANALYSIS – ELECTRICITY, NATURAL GAS, AND TELECOMMUNICATIONS SERVICE

Policies Consistency

Determination Determination Analysis

Policy 6.A.2: The County shall ensure through the development review process that adequate public facilities and services are available to serve new The County shall not approve new development where existing facilities are inadequate unless the following conditions are met:

- a. The applicant can demonstrate that all necessary public facilities will be installed or adequately financed (through fees or other means); and
- b. The facility improvements are consistent with applicable facility plans approved by the County or with agency plans where the County is a participant.

Policy 6.A.3: The County shall require proposed new development in identified underground conversion districts and along scenic corridors to underground utility lines on and adjacent to the site of proposed development or, when this is infeasible, to contribute funding for future undergrounding.

Define in the FEIR how the County is going to “ensure” there are adequate services? The proposed CalPeco utility upgrade is contentious and may not be approved as documented in the FEIR thus this renders the EIR inaccurate.

Define Placer County’s versus Nevada County’s responsibility to ensure services are available in the EIR. The EIR must define “responsibility to ensure”.

Identify in the EIR which fund Northstar will pay a fee as the Hwy 267 lines in the scenic corridor may not be undergrounded.

14.6.3 IMPACTS AND MITIGATION MEASURES

Standards of Significance

Electrical, natural gas, and telecommunications facilities impacts are considered significant if implementation of the project results in the following (based on State CEQA Guidelines Appendices F and G): 1) Result in substantial adverse physical impacts associated with the provision of new or physically altered electricity, natural gas, or

32-37
cont'd

telephone facilities, need for new or physically altered electricity, natural gas, or telephone facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service and performance objectives.

Methodology

Evaluation of potential impacts related to electricity, natural gas, and telecommunications service was based on consultation with utility service providers as well as evaluation of electrical demands of the project. The analysis below addresses both proposed NMMP project- and program-level components.

Impacts and Mitigation Measures

IMPACT 14.6.1: Electrical, Natural Gas, and Telecommunications Service and Infrastructure Impacts Because the proposed project is located near existing developed land uses, electrical infrastructure exists in the project vicinity. Liberty Utilities CalPeco has indicated that infrastructure exists for overhead and underground electric distribution. **This infrastructure can be expanded and extended with the appropriate participation by the developer** according to applicable CPUC rules. It is currently anticipated that the proposed NMMP improvements would connect to existing electrical infrastructure and would not require new distribution facilities, upgrades to the Northstar substation or any other off-site improvements (e.g., proposed California Pacific Electric Company 625 and 650 Electrical Line Upgrade Project). Joint trenches would be excavated to accommodate the new utility lines (including the extension of natural gas and telecommunications facilities if needed for the NMMP), including electrical lines from the Northstar substation to the proposed NMMP components. These trenches would be located along seasonal spur roads and ski runs.

32-37
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The proposed NMMP project- and program-level components would result in the following new electrical demand (see **Table 14.6-4**):

TABLE 14.6-4

ANNUAL NMMP ELECTRICAL DEMAND BY PROJECT COMPONENT

Project Component Electrical Demand in Kilowatts

Project-Level Components

Detachable Lift J 642,082

Detachable Lift C 428,055

Fixed Grip Lifts V and W 856,110

Surface Tow Lift Z 9,310

Snowmaking for 83,500 linear feet 3,036,220

Backside Warming Hut/Skier Services 240,000

Summit Deck and Grille Improvements 138,000

Castle Peak Parking Lot Transport Gondola 1,070,137

Lift Q 214,022

Skier Services 184,000

Sawmill Lake Campground/Relocated Cross-Country Center/Skier Services 224,250

Backside Campground 20,000

Total 7,062,191

In addition to these measures, new buildings would be required to meet current to comply with Title 24 of the California Code of Regulations regarding energy efficiency. **While the proposed NMMP would increase electrical demands**, it would not utilize energy in an inefficient or wasteful manner. This impact is **less than significant**.

Stating “would not utilize energy in an inefficient or wasteful manner” does not analyze use consumption and impact on the system.

This is a SIGNIFICANT impact to the winter peak loads which are already beyond system capacity design, causing stress, and reducing reliability. Northstar's proposed expansion should pay for the power infrastructure necessary to enable their plans. It is not economically feasible for the 49,000 ratepayers to fund a \$50 million infrastructure upgrade.

The MV CP states (noted above) the developer can pay for upgrade. Breakdown in FEIR Northstars cost for the Master Plan proposed expansion (each new lift requirement, new snow making equipment requirement, residential development requirements by proposed project, commercial development requirements, etc.) Provide by Phase which lends to the need for Northstar, Squaw, Homewood phasing to support proposed upgrade adequacy for the DEIR reliability and need statement.

The proposed project would also be considered to have a significant impact if it would be in conflict with the AB 32 goals for reducing GHG emissions (standard of significance 2 above). As shown under the impact analysis below, the proposed project would contribute to the generation of GHG emissions primarily from electricity consumption and tree removal activities. Therefore, this DEIR assesses the project's potential to result in a significant GHG impact by determining its consistency with the AB 32 Scoping Plan and Senate Bill X-2 (Renewables Portfolio Standard), which both require 33 percent of supply from renewable energy sources by 2020, and its consistency with AB 32 Scoping Plan GHG reduction measure F-1, Sustainable Forest Target. As stated previously, the AB 32 Scoping Plan contains the main strategies California is implementing to achieve a reduction of 169 MMT of CO₂e, or approximately 30 percent from the State's projected 2020 emissions level of 596 MMT of CO₂e under a business-as-usual scenario. Thus, the impact analysis evaluates whether the project's electrical provider would meet the Renewables Portfolio Standard or if project features would conflict with AB 32 greenhouse gas reduction measures.

32-37
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16.3.2 METHODOLOGY

The proposed project would result in a **substantial increase of electricity consumption** as a result of new ski lifts and snowmaking facilities. GHG emissions generated by -increased electricity consumption are projected based on anticipated energy consumption in kilowatthours provided by the project applicant. The increase of traffic over existing conditions as a result of the project was obtained from LSC Transportation Consultants, Inc. (see **Appendix 9**).

Provide details in the FEIR for “substantial increase of electricity consumption”. Provide a breakdown of snowmaking electrical consumption requirements and new ski lift electrical consumption requirements for Northstar, Squaw Valley and Homewood.

IMPACT 16.2: AB 32 Compliance

In terms of electric service, the project site is currently within the service area of the energy provider Liberty Utilities CalPeco. Therefore, for the purposes of this analysis, project estimated electrical use consumption is compared to Liberty Utilities CalPeco’s ability to comply with AB 32 Scoping Plan Strategy E-3, Renewables Portfolio Standard. According to the California Public Utilities Commission (2012), Liberty Utility CalPeco currently serves approximately 49,000 customers in California. **Table 16-7** identifies the most recently available electric energy information for Liberty Utilities CalPeco as well as the current renewable energy mix.

32-37
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**TABLE 16-7
TOTAL ELECTRIC ENERGY CONSUMPTION AND RENEWABLE ENERGY MIX –
LIBERTY UTILITIES CALPECO**

Source: Smart 2013

As shown in **Table 16-7**, Liberty Utilities CalPeco delivered 6,433,570,000 kilowatthours (kWh) over the course of one year, of which 20 percent was supplied from renewable energy sources. As noted under **Table 16-6**, full implementation of both project- and program-level components would result in an increase in electricity consumption of 7,062,191 kilowatt-hours per year. Adding this total to the amount Liberty Utilities CalPeco delivered in 2012 (6,433,570,000 kWh) would equal 6,440,632,191 kWh. Such an immediate addition of energy consumption would reduce Liberty Utilities CalPeco’s current renewable energy mix percentage to 19.9 percent. However, such a scenario is not likely, if not impossible, since the project-level components alone would take at least 10 years to construct.

32-38

Provide Northstar Master Plan electrical consumption requirements by phase.
Provide Squaw Valley Expansion electrical consumption requirements by phase.
Provide Homewood Mountain electrical consumption requirements by phase.
Provide in a Table in the FEIR how the upgrade proposal (Alt 4) meets these proposed needs by year by specific line upgrade starting with first year of completion.

As noted in **Table 18-1**,

there are currently proposed plans to improve electrical distribution that would be designed to accommodate future growth of the region (proposed California Pacific Electric Company 625 and 650 Electrical Line Upgrade Project). Therefore, this impact would be **less than cumulatively considerable**

32-39

This states that Northstar is depending on this upgrade- define impact to Northstar in the FEIR if the CalPeco project is modified.

From Liberty Utilities website:625/650 Electrical Lines Upgrade Project

http://www.libertyutilities.com/west/community/reliability_625-650_summary.html

Project Proponent:

California Pacific Electric Company (CalPeco) dba Liberty Utilities. CalPeco purchased the electric service territory and assets from Sierra Pacific/NV Energy in January 2011, and currently serves approximately 49,000 electric customers in the north and south shores of Lake Tahoe.

Project Location:

Northeastern Placer County and southeastern Nevada County, California.

Project Description:

These major transmission lines (known as the 625 and 650 power lines) serve the areas of Northstar, Kings Beach, Tahoe City and Squaw Valley and are some of the oldest in the State of California.

Project Benefit:

Upgrading the lines will improve reliability, even if a portion of the closed loop system is damaged, by allowing greater load transfer and switching ability that benefits the entire system.

Proposed Project:

Upgrade of the existing 625 and 650 power lines and associated substations from 60 kilovolt (kV) to 120 kV to allow the entire transmission loop to operate at 120 kV.

Project Components:

1. Removal of existing 625 line and construction of a new, rerouted 625 line
2. Rebuild of the existing 650 line
3. Realignment of two short segments of the 650 line and removal of the re-routed segments
4. Rebuild of the Northstar Tap into a Fold (allows for service to be maintained at a substation in the event of an interruption anywhere in the line)
5. Rebuild of a 1.6 mile long section of the existing 132 line

32-39
con'd

6. Upgrade , modification, and/or decommissioning of six substations and/or switching stations

32-39
cont'd

Provide detailed analysis of the Kings Beach substation and the Northstar substation and how each substation affects reliability.

Project Need:

As far back as the 1980s, the need to upgrade the 625 and 650 lines was identified. These lines often operate at maximum capacity and must be supplemented by diesel generation to meet peak loads. The aging power lines were never designed to provide a reliable closed loop system which would reduce both the frequency and impact of outages, nor was it designed to carry the current peak load demands.

Project Timeline:

CalPeco is currently in the permitting stage. Once permits are obtained, construction can begin tentatively scheduled in 2014. The project will be constructed in 3 phases over an estimated six-year period.

Project Status:

CalPeco has applied for permitting of the project under a Memorandum of Understanding (MOU) with the following lead agencies: Tahoe Regional Planning Agency (TRPA), U.S. Department of Agriculture Forest Service-Lake Tahoe Basin Management Unit, and the California Public Utilities Commission. These three agencies are responsible for the review of the application, solicitation of public comment, and recommendation to the TRPA Governing Board for final approval and/or permitting. 625/650 Electric Lines Upgrade Project Informational Meetings will be held on Tuesday, December 10th from 2-4 p.m. at the USFS Tahoe National Forest Truckee Ranger District Office at 10811 Stockcrest Springs Road, Truckee, CA and from 6-8 p.m. at the North Tahoe Events Center, 8318 No. Tahoe Blvd., Kings Beach, CA. Additionally, the proposal will come before the Tahoe Regional Planning Agency's Advisory Planning Commission on December 4 and the TRPA Governing Board on December 18. Public comment will be taken at both meetings. Visit www.trpa.org for meeting locations and times.

32-40

Project Environmental Impacts.

The proposed project's environmental document addresses scenic resources, agricultural and forestry resources, biological resources, recreation, earth resources (geology, soils, seismicity, land capability and coverage), hydrology and water quality, cultural resources, hazardous materials, transportation, parking and circulation, air quality and climate change, noise and vibration, socioeconomic and economic justice,

public services and utilities, and growth-inducing impacts. Mitigation measures and alternatives are identified to address each of the potential impacts.

32-40
cont'd

From EIR page 4.10-25: ELECTRIC AND MAGNETIC FIELDS

This section does not consider electric and magnetic fields (EMF) in the context of the National Environmental Protection Act (NEPA), California Environmental Quality Act (CEQA), and TRPA regulations and determination of environmental impact, first because there is no agreement among scientists that EMF does create a potential health risk, and second, because there are no defined or adopted CEQA/NEPA or TRPA standards for defining health risk from EMF. To illustrate, on behalf of the CPUC, three scientists that work for the California Department of Health Services were asked to review studies by the National Institutes of Environmental Health Sciences Working Group, the International Agency for Research on Cancer, and the British National Radiological Protection Board regarding possible health problems from electric and magnetic fields from power lines, wiring in buildings, some jobs, and appliances (Neutra et al. 2002). The results of their evaluation noted "important differences between the three Department of Health Services reviewer's conclusions" and made no recommendations about actions to be taken to address potential health risks (Id.). However, recognizing that there is a great deal of public interest and concern regarding potential health effects from human exposure to EMF from power lines, this document does provide information regarding EMF associated with electric utility facilities and human health and safety. The EMF information presented in this environmental document is presented for the benefit of the public and decision-makers.

32-41

Electro Magnetic readings. Provide in the FEIR impact analysis of the EMF increase as the line size is being increased. What will the increase be with the new upgraded lines? Consider undergrounding lines in the Kingswoods neighborhood. Provide cost breakdown in the FEIR for undergrounding this line segment or any other line segment in a neighborhood.

From EIR Page 4.10-25: Since electric fields are effectively blocked by most materials, such as trees and walls, the majority of the following information related to EMF focuses on exposure to magnetic fields. This is a conundrum as tree removal will be required for line safety. Define in the FEIR where tree removal will no longer block electric fields. This is another case for undergrounding portions of line segments in neighborhoods.

From EIR Page ES-18: **4.3-2. Conversion of forest land to non-forest uses or loss of forest land.** Implementation of the action alternatives would result in the removal of between approximately 47,100 (Alt. 4) and 58,000 (Alt. 1) trees in up to 219.8 acres of forest land plus hazard tree border zones as part of project construction and long-term vegetation management in the power line ROW and in new access ways. Considering forest regeneration on land currently maintained in the existing 625 Line ROW, overall permanent forest land impact would be between 66.1 acres (Alt. 4) and 107.0 acres (Alt. 2). Tree removal would not result in substantial changes to adjacent stand structure or regional forest land composition or distribution. Forest land would not be lost or

32-42

converted to a non-forest use as project-related activities are compatible uses with forest land zoning designations in the project area.

4.7-4 page ES-29: Tree removal and loss of late seral/old growth forest. Implementing the action alternatives would result in substantial tree removal, as defined by TRPA, and could result in the loss of late seral/old growth forest stands, which could interfere with attainment of late seral/old growth forest threshold standards.

Interfering with threshold attainment renders this EIR inadequate

This document is incorporated for the record.

http://www.trpa.org/wp-content/uploads/TEVAL2011_Ch6_Vegetation_Oct2012_Final.pdf

Define in the FEIR what method was used to determine the number of trees that will be removed. Reasonable estimate or modeling is not defined in the EIR and does not give an accurate enough number. Define the modeling process in the FEIR. Provide a Table in the FEIR showing a breakdown of how many trees in the basin versus outside the Basin are anticipated to be removed.

32-42
cont'd

According to the USFS official at the Kings Beach Public Meeting in December 2013, this CalPeco project is the largest roadbuilding and tree removal project ever undertaken in the Lake Tahoe Basin since the Comstock deforestation. There are alternative approaches to capacity and reliability that must be considered in the FEIR with additional alternatives proposed to protect the significant impacts that will be created by the tree removal, habitat disturbance and riparian zone disturbance and scenic corridors, recreation areas, etc. in the Lake Tahoe basin.

From EIR Pages 4.5-2 and 3 : 4.5.1 REGULATORY SETTING

The following provides an overview of the laws and regulations related

LAKE TAHOE BASIN MANAGEMENT UNIT

The majority of the project study area is located on NFS lands that are managed by the USFS Lake Tahoe Basin Management Unit (LTBMU). The LTBMU was formed in 1973 by Presidential proclamation to provide special protection for the unique features of Lake Tahoe and its watershed. The LTBMU consists of a portion of the Tahoe National Forest (28,833 acres), along with portions of the Toiyabe and El Dorado National Forests. The LTBMU is not covered by the Forest Plan, described above, although it is still legally part of the Tahoe National Forest. Rather, management of the LTBMU is guided by the 1988 LTBMU Forest Plan and the 2001 Sierra Nevada Forest Plan Amendment. All activities within the LTMBU are required to comply with Forest Plan Standards and Guidelines, including the following:

32-43

- ☐ employ Forest Service BMPs to effectively control erosion, and
- ☐ implement project-specific resource protection measures or mitigations as prescribed to maintain soil productivity.

Furthermore, Section 43, "Soil Resource," of the LTBMU Forest Plan includes the following directives:

- ☐ Maintain surface litter, duff, and adequate coarse woody debris to maintain organic matter reserves and recycle nutrients.

- ☐ Maintain protective groundcover (litter, duff, or slash) or vegetative cover to minimize soil erosion. Areas in which the soil resource is continuously impacted by recreation use will be considered an ongoing priority.
- ☐ Minimize soil displacement when grading slopes or when piling brush or slash.
- ☐ Where past management activities have reduced soil productivity, improve soil productivity by respreading displaced topsoil, by using tillage to increase porosity, by increasing nutrient supplies through the addition of fertilizer (utilizing the Tahoe Regional Planning Agency [TRPA] guidelines for fertilizer use), or by increasing nutrient holding capacity through the addition of organic matter.
- ☐ Where soils are susceptible to compaction and puddling, minimize the area covered by heavy equipment or operate when soils are least susceptible to damage.
- ☐ Design projects to reduce potential soil erosion and the loss of soil productivity caused by loss of vegetation and ground cover. Examples are activities that would: 1) provide for adequate soil cover in the short term; 2) accelerate the dispersal of coarse woody debris; 3) reduce the potential impacts of fire on water quality; and 4) carefully plan restoration/salvage activities to minimize additional short-term effects. Recommend restoration practices in: 1) areas with compaction in excess of soil quality standards, 2) areas with lowered water tables, or 3) areas that are either actively down cutting or that have historic gullies. Identify other management practices, for example, road building, recreational use, grazing, and timber harvests, that may be contributing to the observed degradation.

Provide a Table in the FEIR, for compliance of TRPA versus LTBMU for all listed above as noted in Section 43 Soil Resource of the LTBMU directives for areas of the project in the Tahoe Basin. Provide TRPA code references not just Chapter but actual code numbers. Policies provided in DEIR are goals not descriptive requirements.

From EIR Page 4.5-3 and 4: BUILDING CODES

The State of California provides minimum standards for building design through the California Building Standards Code (California Code of Regulations, Title 24). The current 2010 California Building Code (CBC) is based on the 2009 International Building Code, with modifications for California's conditions, and more detailed and more stringent regulations. The state earthquake protection law (California Health and Safety Code Section 19100 et seq.) requires that structures be designed to resist stresses produced by lateral forces caused by wind and earthquakes. Specific minimum seismic safety and structural design requirements are set forth in Chapter 16 of the CBC. The CBC identifies seismic factors that must be considered in structural design. Chapter 18 of the CBC regulates the excavation of foundations and retaining walls, while Chapter 18A regulates construction on unstable soils, such as expansive soils and areas subject to liquefaction. Appendix J regulates grading activities, including drainage and erosion control.

Provide a Table in the FEIR, for compliance of Placer County Building Codes versus CBC codes. Provide Placer County code references not just Chapter but actual code numbers. Policies provided in DEIR are goals not descriptive requirements.

32-43
cont'd

From EIR Page 4.12-3 : CODE OF ORDINANCES

The TRPA Code of Ordinances is designed, among other things, to implement the Goals and Policies contained in the Regional Plan in a manner that attains and maintains the TRPA environmental threshold standards. The Code addresses many subjects, including required permits for development, projects subject to TRPA review and approval, findings required for approval of projects, allowable land use, density and land coverage, development standards, grading and construction practices, resource management, water quality, air quality and transportation, and other topics. Changes in daily vehicle trip ends (DVTE) as a result of a change in project operation are discussed in Section 65.2, Traffic and Air Quality Mitigation Program, of the Code of Ordinances.

The Code does not address transportation or traffic related to construction activities

The code may not address traffic related construction activities but it does address temporary activities that include closure of a traffic lane....

From TRPA code 22.7.6. Traffic Mitigation

For a temporary activity that includes the closure of a traffic lane or intersection of a state or federal highway for more than one hour, or the closure of U.S. 50 at any point between the South Y and Kingsbury Grade for any period of time, the applicant shall submit a traffic analysis pursuant to subparagraph 65.2.4.B. Other temporary activities are exempt from the requirements of Section 65.2.. Provide Traffic analysis in FEIS.

From EIR Page 4.12-14: APM TRAN-1: The applicant will develop and implement a Traffic Control Plan to minimize disruptions to surface travel and protect the safety of workers and the traveling public. The Traffic Control Plan will include, but not be limited to, the following:

☐ coordination with local transportation agencies and emergency service providers for temporary lane and road closures and implementation of measures to maintain emergency vehicle access; This APM is not a Traffic Analysis as required by TRPA.

From EIR Page 4.12-15: APM TRAN-1, in addition to other APMs adopted by the applicant and the dispersed nature of construction activities, would effectively minimize the adverse effects of project construction on the performance of transportation systems in the project area and temporary disruptions to various modes of surface travel (transit, automobile, truck, bicycle, and pedestrian). These construction period impacts on transportation system operations are considered less than significant. This APM is not a Traffic Analysis as required by TRPA code

From EIR Page 4.12-26 Impact 4.12-1 is not traffic analysis as required by TRPA code

IMPACT 4.12-1 (Alt.4)

Create an adverse effect on existing transportation systems including highway, transit, bicycle, or pedestrian facilities. Construction of Alternative 4 (Proposed Alternative) would generate temporary construction-related traffic on the road network in the project area and would

32-44

require temporary lane/shoulder closures in work zones resulting in traffic delays. Construction period impacts could result in a substantial (although temporary) disruption to various modes of surface travel (transit, automobile, truck, bicycle, and pedestrian); however, implementation of various APMs would prevent and minimize and adverse effects on the performance of these systems. This impact would be less than significant.

From EIR Page ES-6: ES.5 ENVIRONMENTAL IMPACTS AND MITIGATION Chapter 4, Affected Environment, Environmental Consequences, and Mitigation Measures, of this Draft EIS/EIS/EIR describes in detail the environmental effects that would result from implementation of the project alternatives. Impacts are determined to be: 1) no impact; 2) less than significant (adverse or potentially adverse effects that are not substantial); 3) significant or potentially significant (substantial or potentially substantial adverse changes in the environment, for which mitigation measures are required); and 4) significant and unavoidable (substantial or potentially substantial adverse changes in the environment that cannot be feasibly reduced to a less-than-significant levels with mitigation measures).

The project includes applicant proposed measures (APMs) developed to avoid, minimize, or compensate for the impacts of the project. These APMs were originally proposed in the June 2010 PEA, and have been modified by the applicant during project development and in response to environmental review. These measures are listed in Chapter 3, Project Alternatives. CalPeco has committed to implementing these measures to reduce the potential direct and indirect impacts that could result from the action alternatives. Therefore, the APMs are considered part of the project description. Where impacts are identified that are not addressed by these APMs, or where the APMs are not adequate to reduce impacts to less than significant levels, the EIS/EIS/EIR recommends additional mitigation measures. APMs will be incorporated into the Mitigation Monitoring, Compliance, and Reporting Program developed for this proposed project, and implementation of the APMs will be monitored in the same fashion as the mitigation measures developed in this EIS/EIS/EIR.

From TRPA web Goals and Policies

DP-4.1 NEW AND REDEVELOPED RESIDENTIAL, COMMERCIAL, AND PUBLIC PROJECTS SHALL COMPLETELY OFFSET THEIR WATER QUALITY IMPACTS THROUGH ONE OF THE FOLLOWING METHODS:

A. Implementing on-site and/or off-site erosion and runoff control projects concurrent with the impact from the project as a condition of project approval and subject to Agency concurrence as to effectiveness, or

32-44
cont'd

B. Contributing to a water quality mitigation fund for implementing off-site erosion and runoff control projects. The amount of such contributions is established by Agency ordinance.

This policy continues the water quality mitigation funds established as part of TRPA's Lake Tahoe Basin Water Quality Management Plan. The fee schedules and distribution formula shall be reviewed and revised as part of the Agency's implementing ordinances and programs.

DP-4.2 ALL PROJECTS SHALL OFFSET THE TRANSPORTATION AND AIR QUALITY IMPACTS OF THEIR DEVELOPMENT.

The implementing ordinances for the Regional Plan will define stationary sources of air pollution which may locate in the Region, and define what constitutes a significant environmental impact on air quality from stationary sources. Commercial and residential development contribute indirect impacts to air quality by increasing the number of vehicle trips in the Region. The cumulative impact of such trips is significant.

The ordinances will establish a fee to offset the impacts from minor projects. The fee will be assessed on both commercial and residential development. The ordinances will also define what projects have significant environmental impacts; these projects will be required to complete an EIS and mitigate air quality and traffic impacts with specific projects or programs.

32-44
cont'd

From EIR Page 4.2-8: Environmental Improvement Program

Launched in 1997, the Lake Tahoe EIP is a cooperative effort to preserve, restore and enhance the unique natural and human environment of the Lake Tahoe Region. The EIP program defines restoration needs for attaining environmental goals or thresholds and, through a substantial investment of resources, increases the pace at which the thresholds will be attained. Key to this strategy is reliance upon partnerships with all sectors of the community, including the private sector, local, state and federal government. The EIP identifies hundreds of specific projects and programs to be undertaken by more than 50 funding partners, including federal, state, and local agencies and the private sector. The projects focus on improving air, water, and scenic quality, forest health, fish and wildlife, and public access to the Lake and other recreation areas. The prime directive of the EIP is to move the Tahoe Region closer to environmental threshold standard attainment. The project's consistency with this directive is addressed in each of the resource sections for which a TRPA threshold standard has been established, including Section 4.4, Scenic Resources; Section 4.5, Geology, Soils, Land Capability and Coverage; Section 4.6, Hydrology and Water Quality; Section 4.7, Biological Resources; Section 4.8, Recreation; Section 4.13, Air Quality, Greenhouse Gas Emissions, and Climate Change; and Section 4.14, Noise

From the NOP: RIGHT OF WAY REQUIREMENTS

To accommodate construction, temporary ROWs would be required for the new 625 Line, 650 Line, Northstar Fold, and 132 Line. The total temporary ROW needed would be approximately 221 acres. Calpeco would negotiate with landowners for right-of-way.

32-45

Calpeco currently holds easements from the USFS, USACE, Placer County, and various public and private landowners whose properties are crossed by the existing 625 Line, 650 Line, 132 Line, and Northstar Fold. The existing easements are on average 30 feet wide, but would need to be expanded to 40 feet for the 625 Line and 650 Line for operation and maintenance purposes. Calpeco would negotiate with the existing landowners in order to obtain a permanent easement of 40 feet for the new 625 Line and 650 Line. No land acquisition would be needed for the substation and switching station facilities because all new facilities would remain on existing Calpeco-owned parcels.

Provide documentation in the FEIR of correspondence for acquiring a permanent 40 foot easement from existing landowners.

32-45
cont'd

The FEIR should identify any other future electrical line upgrades (West Shore, South Shore, Squaw, Northstar) proposed in and around Lake Tahoe that will be in addition to the proposed upgrade Alt 4.

32-46

From EIR Page 3-84 : 3.7

Table 3-8 identifies CalPeco's APMs. These APMs were originally proposed in the June 2010 PEA, and have been modified slightly during project development. All APMs would be followed during project-related construction activity. CalPeco has committed to implementing these measures in order to reduce the potential direct and indirect impacts that could result from the action alternatives. Therefore, the APMs are considered part of the project description.

The impact analysis in this EIS/EIS/EIR assumes implementation of all APMs. However, where other impacts are identified that are not addressed by these APMs, or where the APMs are not adequate to reduce impacts to less than significant levels, the EIS/EIS/EIR recommends additional mitigation measures. APMs will be incorporated into the Mitigation Monitoring, Compliance, and Reporting Program developed for this Proposed Project, and implementation of the APMs will be monitored in the same fashion as the mitigation measures developed in this EIS/EIS/EIR.

32-47

The impact analysis in this EIS/EIS/EIR assumes implementation of all APMs. All Applicant Proposed Measures (APMs) must be made conditions of permit and identified in the FEIR as permit conditions to insure implementation, completion, monitoring, etc. is actually accomplished. Assuming implementation is not a guarantee.

The inconvenient truth is that this project was proposed and an initial environmental analysis was undertaken by Nevada Energy in 2010 with a customer base of over two (2) million. CalPeco/Liberty Utilities then purchased a smaller market share of customers which is approximately 49,000. CalPeco found it easier and of course cheaper to piggy-back off the NV Energy enviro documentation.

32-48

The number of customers and economics of this project **MUST** be a factor and an option for no upgrade to the Tahoe Basin line segments which could minimize or

eliminate rate hikes of up to 30% on basin ratepayers must be studied in the FEIR. This is a SIGNIFICANT IMPACT to the rate-payer.

32-48
cont'd

Provide in the FEIR a Table showing all mitigation measures that will pay a fee and how much each of those fees is.

32-49

I am Requesting an Amended EIR be re-circulated for the following issues but not limited to: 1) substation capacity assessment, 2) undergrounding feasibility for portions of the upgrade, 3) needs assessment by resort versus Tahoe Basin 4) TRPA and Placer County code compliance (ie. Scenic, Habitat and SEZ Disturbance, Noise, etc.)

32-50

The ratepayers should not be responsible for an investment made by Calpeco/Liberty Utilities with a proposed upgrade that is not financially feasible for the current ratepayer base (two million+ Nevada Energy customers versus 49,000 Liberty Utilities customers). A 5-15 year upgrade alternative using current capacity versus proposed Northstar and Squaw upgrade needs should have been proposed instead of using the Nevada Energy PEA as the baseline. Financial feasibility is a significant factor and must be analyzed in FEIR.

32-51

TRPA Code CHAPTER 2: APPLICABILITY OF THE CODE OF ORDINANCES

CHAPTER 2: APPLICABILITY OF THE CODE OF ORDINANCES

2.1. GENERAL PROVISIONS

2.1.1. Purpose

This chapter implements the Compact provisions relating to projects and permits. This chapter also implements Article VI(a) of the Compact, which requires TRPA to prescribe by ordinance those activities that the agency has determined will not have a substantial effect on the land, water, air, space, or any other natural resources in the Tahoe region and therefore are exempt from the agency's review and approval.

2.1.2. Applicability

This chapter identifies activities that may have a substantial effect on the land, air, water, space or any other natural resources and therefore are projects subject to TRPA review and approval. This chapter also identifies activities that will not have a substantial effect on the land, air, water, space and any other natural resource in the region and therefore are exempt from TRPA review and approval. Exemption of activities from TRPA review and approval shall not be construed to exempt such activities from applicable provisions of the Code.

32-52

2.1.3. Organization of this Chapter

A. Section 2.2 implements the Compact provisions relating to projects and permits. An activity that is not exempt or granted a qualified exemption from

this Code pursuant to Section 2.3 is a project subject to TRPA review and approval pursuant to Section 2.2.

BY the EIR's own admission Page 4.4-11, "These terms and definitions are not specific to any one visual resource assessment methodology (i.e., neither TRPA nor USFS), but instead are general in nature such that the setting can be described in a manner that allows for adequate assessment of visual impacts under either framework" thus rendering the EIR inadequate and inaccurate.

32-52
cont'd

We also incorporate all comments from the following organizations

North Tahoe Preservation Alliance, Tahoe Area Sierra Club, Friends of West Shore

North Tahoe Citizens Action Alliance

These documents are incorporated for the record.

http://www.trpa.org/wp-content/uploads/Resolution-82-11_12-2012.pdf

<http://www.trpa.org/regional-plan/threshold-evaluation/>

<http://www.placer.ca.gov/departments/communitydevelopment/planning/documentlibrary/commpans/martisvalleycp>

<http://www.placer.ca.gov/Departments/CommunityDevelopment/EnvCoordSvcs/EIR/NortheastMMP.aspx>

http://www.trpa.org/wp-content/uploads/Bistate_Compact.pdf

http://www.trpa.org/wp-content/uploads/TRPA_Code_of_Ordinances.pdf

http://www.trpa.org/wp-content/uploads/Regional_Plan_Goals_Policies_Final-2012-12-12.pdf

http://www.trpa.org/wp-content/uploads/12-12-2012_RP_Final_Adopted_Attachments_clean.pdf

32-53

January 7, 2014

Tahoe Regional Planning Agency
Attention: Wendy Jepson, Senior Planner
P.O. Box 5310
Stateline, NV 89449
Email: wjepson@trpa.org

California Public Utilities Commission
Attention: Mike Florio or Michael Rosauer 505 Van Ness Avenue, 4th Floor
San Francisco, CA 94102
michael.rosauer@cpuc.ca.gov

Re: California Pacific Electric Company (CalPeco) 625 and 650 Electrical Line Upgrade Project (California State Clearinghouse #2012032066, TRPA project file #530-201-00/ERSP 2009-3591, TRPA EIS file #ENVR2010-0001, TRPA Plan Area Amendment #PLAN2013-0004, and CPUC Application #CPUC A. 10-08-024)

While I am unsure of CEQA requirements regarding socioeconomic and environmental justice issues, I am concerned that the Draft EIS/EIR/EIS did not adequately address socioeconomic and environmental justice issues related to the cost of the project (and who bears the cost of the project). This issue was identified during the scoping phase in comments by the EPA regarding NEPA requirements, and in Town of Truckee comments regarding future rate increases to customers.

33-1

The Notice of Preparation promised that: “The EIS/EIS/EIR will identify and address any disproportionately high and adverse human health and environmental effects, including the interrelated social and economic effects on minority and low-income populations.”

For an adequate analysis of these socioeconomic and environmental justice impacts, the draft EIS/EIR/EIS needs to look beyond the project area identified in Section ES.1.1, to evaluate socioeconomic and environmental justice impacts on the relatively small number (approximately 50,000) CalPECO ratepayers (many or most of which live in the South Lake Tahoe area outside of the defined “project area”). While the NOP asserted that “Project financing is not in the purview of CEQA, NEPA, or the TRPA environmental review; other than as potential justification for classifying an alternative as economically infeasible”, consideration of socioeconomic and environmental justice issues should address impacts to all CalPeco ratepayers. If, for example, high project costs (which were not specified in the draft EIS/EIR/EIS) are largely borne by ratepayers in South Lake Tahoe communities with high percentages of persons below poverty level, there may be disproportionately high and adverse impacts on minority or low-income populations in South Lake Tahoe (who are unlikely to receive positive effects on their local economy).

33-2

In reviewing Socioeconomics and Environmental Justice in Section 5.6, the draft EIR/EIS/EIR includes Washoe County, Nevada in the discussion of Regional Setting, but does not include the CalPeco customers in the City of South Lake Tahoe or unincorporated sections of El Dorado County within the Tahoe Basin. These areas should be included in discussion of the regional setting, and their inclusion would likely indicate a larger percentages of affected persons (CalPeco) below the poverty level. Tables 5-1 through 5-5 should be modified to include these affected areas.

To evaluate impacts on areas with high percentages of minority or below poverty level populations, there should be at least some discussion of the impacts of costs of this project on utility bills. Information on the increase to utility bills to pay for the project should be made available in the draft EIR/EIS/EIR, and is essential for an adequate evaluation of the significance of these socioeconomic impacts. If significant rate increases would create a disproportionately high and adverse impact on minority or low-income populations, additional consideration of reduced project scope, or a modified project-funding mechanisms which would reduce the high and adverse impacts on minority or low-income populations should be evaluated. In addition to an analysis in the EIR/EIS/EIR, these impacts on ratepayers should be evaluated during other phases of project review by responsible agencies, e.g., PUC.

33-2
cont'd

Thank you for your consideration.

Robert Erlich
843 Clement St
South Lake Tahoe, CA 96150
Email: erterlich@gmail.com

From: Ken Wittman [<mailto:Ken.Wittman@libertyutilities.com>]
Sent: Tuesday, January 07, 2014 10:46 AM
To: Wendy Jepson
Subject: FW: Liberty Utilities 625/650 Electric Lines Upgrade Project

Wendy –

Please add the email listed below to the public record.

Thanks

Ken Wittman | **Liberty Utilities (CalPeco Electric) LLC** | Manager of Rates & Regulatory Affairs
O: 530-543-5267 | C: 530-721-0357
E: ken.wittman@libertyutilities.com
933 Eloise Avenue, South Lake Tahoe, CA 96150

From: Steve Yonker [<mailto:steveyonker@gmail.com>]
Sent: Monday, January 06, 2014 11:03 PM
To: public.advisor@cpuc.ca.gov; Ken Wittman
Subject: Liberty Utilities 625/650 Electric Lines Upgrade Project

To: California Public Utilities Commission
Ken Wittman, Liberty Utilities

Having reviewed documents for the proposed 625/650 Electric Lines Upgrade Project I am disturbed to find no analysis of economic impact to Liberty customers, particularly for those for which there is no nexus of benefit derived from the project.

34-1

I own 3 properties in El Dorado and Alpine Counties which may be subject to rate increases as a result of this upgrade project with no benefit accruing to these properties.

Of peripheral interest, I have had several conversations with Liberty employees at the South Tahoe office who have concerns about inefficiencies in management of operations in administration and in the field.

34-2

I strongly encourage review of operations, administrative procedures and employee performance with an eye toward overstaffing of field crews, abuse of overtime and meal allowances and underperforming employees occurring with the tacit knowledge of supervisors.

To tolerate these inefficiencies and pass along the attendant costs to rate payers should not be acceptable.

Thank you for your attention and consideration.

Steve Yonker
96 Sunrise Trail
Woodfords, CA 96120

CONFIDENTIALITY NOTICE

The information contained in this e-mail and all attachments may contain privileged or confidential information. If you are not the intended recipient or received this communication by error, please notify the sender and delete the message and all attachments from your system without copying or disclosing it.

From: Gerald Rucker [<mailto:ruckergl@jps.net>]

Sent: Tuesday, December 31, 2013 7:56 AM

To: Wendy Jepson

Cc: John Nelson; John Mearns; Ki Nyborg; Dan Flores; Glenn Karnofsky; Gary Green

Subject: Power line proposal- Kingswood Estates

Hello - my name is Gerald Rucker. I am President of the Kingswood Estates Homeowners Association. As the official representative of the nearly 500 property owners, I want to let you know that we STRONGLY oppose the power line proposal.

35-1

Other alternatives need to be addressed and the full range of beneficiaries identified.

Please advise me of future forums as I would like to further explain our position.

35-2

Thank you,
Gerald Rucker, President
KRA
916.342.7176
ruckergl@jps.net

Sent from my iPad

From: KATHY STARBARD [<mailto:kathystarbard@yahoo.com>]
Sent: Thursday, January 02, 2014 6:24 PM
To: Wendy Jepson
Subject: CaPeco 625 and 650 Electrical line upgrade

Letter
36

Please be advised there is much concern regarding the above project. This time frame for public response has been difficult conflicting with Tahoe commercial interests around holidays (tourism, our main source of income). We should have more time to debate the following negative effects:

36-1

Overhead power lines have serious health impact on people living too close...much of this line is already too close to homes built near them...increase voltage indicates an even greater risk...The EMF and Corona discharge needs to be addressed.

36-2

The worry about the above causes sufferers much stress and decreased quality of life.

Property values will decrease 25% adding to the stress.

36-3

Views will be destroyed adding to decreased quality of life.

36-4

Underground lines are the only way if spending this much on upgrades, especially considering our sometimes extreme weather.

36-5

From: Ken Arnett [<mailto:ken@arnettconsultants.com>]
Sent: Tuesday, December 31, 2013 11:23 AM
To: Wendy Jepson
Subject: Re: Calpeco Project- Draft EIS response
Importance: High

Letter
37

Ms. Jepson,

In response to the Draft EIS and comment period, please find attached comments / response letter related to the proposed Calpeco 625 and 650 Electrical Line Upgrade Project. Please incorporate these and the below additional comments into your review and findings for the proposed project.

Specifically I request that your findings support only the Draft EIS alternative to re-route and underground a portion of the proposed line from the Kings Beach Substation along Specked Avenue and north along Hwy 267. This preferred undergrounding and re-routing alternative provides for the necessary bypassing of the Kingswood East Subdivision and the obvious negative and un-mitigated impacts associated with the proposed overhead line alternative immediately adjacent to the Kingswood Subdivision.

37-1

The proposed overhead powerline alternative along the Kingswood East Subdivision would result in an *overburdening of the existing easement*, poses health hazards to residents, detrimental environmental impacts to nearby SEZ and forested areas and represents a degradation of our property values, violation of the scenic vista, in addition to those issues cited in my original comments (attached for reference).

Thank you for your assistance in this matter.

Sincerely,

Kenneth R. Arnett, PLS

----- Original Message -----

Subject:Re: Response to Calpeco 625 and 650 Electrical Line Upgrade Project

Date:Mon, 23 Apr 2012 12:16:51 -0700

From:Ken Arnett <ken@arnettconsultants.com>

Organization:Arnett & Associates, Inc.

To:wjepson@trpa.org

Ms. Jepson,

Please find attached comments / response letter related to the Calpeco 625 and 650 Electrical Line Upgrade Project. Please incorporate these comments into your review and findings for the proposed project.

Sincerely,

Kenneth R. Arnett, PLS

FROM THE DESK OF
Kenneth R. Arnett
P.O. Box 336
Crystal Bay
Nevada 89402
(775) 997-8618

April 23, 2012

Tahoe Regional Planning Association
P.O. Box 5310
Stateline, Nevada 89449

Attn: Wendy Jepson, Senior Planner

Re: Proposed Calpeco 625 and 650 Electrical Line Project

Dear Ms. Jepson,

I am writing today in response to the NOP/NOI for the proposed Calpeco 625 and 650 Electrical Line Project and to respectfully request that the following written comments be incorporated into the project public response period and Draft EIR/EIS and project documents. As a 30 + year Tahoe Basin resident and Owner of a Residence within The Kingswood Subdivision immediately abutting the proposed 120KV Transmission Line, I have serious scientific and factual concerns regarding this proposal. I believe that construction of a proposed 120 KV Transmission line within the existing power line Easement adjacent to my property is both detrimental to the Environment and poses a serious Health Hazard to myself and my family, along with neighboring Property Owners. The negative affects of this proposal cannot be understated and cannot be mitigated.

37-2

Specifically, the project Draft EIR/EIS and supplemental project studies must address the following shortcomings and detrimental affects:

Proposed Project located within a Stream Environment Zone/Water Quality Concerns

A portion of the proposed Transmission Line is proposed within an existing Utility corridor and Easement originating at the Kings Beach, California Switching Station and running in a northerly direction and parallel with a Stream Environment Zone (SEZ) located along Griff Creek. Many of the existing 60KV power poles are actually constructed in the SEZ and SEZ Setback areas. Disturbance from Construction and maintenance of the very large proposed 120KV Power poles in this present alignment and SEZ represents an unacceptable environmental degradation of the SEZ and is not consistent with the goals and objectives of TRPA to protect such environmentally sensitive areas. The Lake Tahoe Basin is unique in that the surface waters and resulting water quality are affected by disturbance within Stream Environment Zones.

37-3

Public Safety/ Fire Risk Management.

The proposed alignment calls for placement of High Voltage Transmission Lines within both remote forested areas and areas of Urban Interface (Kingswood Subdivision). This approach poses increase risk of catastrophic Wild Fire due to utility line failures when exposed or snow and wind loading. Evidence of these risks can be found with recent Wildland Fires occurring on the Eastern Slope of the Sierra causing millions of dollars in Residential property loss and destruction of Forest and Wildlands.

37-4

Visual Impacts/ Degradation of Property Values

Visual Impacts from this proposal include the replacement of the existing wooden power poles with massive steel and concrete poles which have a significant scenic impact due to the height and massing of the poles, crossbars insulators and electrical lines. It is anticipated that established conifer trees which currently screen the existing smaller 60KV distribution line will need to be removed as part of the construction and line maintenance process. Property values of the abutting Residences and Properties will be adversely affected due to the visual impacts resulting from tree clearing and screening for the proposed 120 KV line.

37-5

Health Hazard/ EMF/ Corona induced Current Affects/ Exposure to abutting Residents

The Project EIR/EIS must acknowledge and recognize that the proposed 120 KV Transmission Line poses Health Hazards in the form of High Voltage Electrical Fields to abutting Residents. These affects are well documented by the Federal EPA, California Energy Commission and in numerous published Studies on the subject. These affects are observed as audible electrical noise; radio, television and computer monitor interference, gaseous effluents, shock potential and fuel ignition. These Electro Magnetic Energy fields typically eminent several hundred feet from the source. *In the case of the Kingswood Subdivision, numerous Residences are located well within this sphere of influence.* The proposed increase output from the existing 60KV Line to the proposed 120 KV Line greatly increases the Health risks and detrimental affects. These affects are significant and cannot be mitigated.

37-6

Overburdening of Existing Easement

The existing Easement abutting the Kingswood Subdivision was granted by the US Forest Service in connection with permitting and placement of the existing 60 KV Service and Distribution Line. Expansion of this Easement use to accommodate the proposed 120KV Transmission Line represents an overburdening of the Existing Easement.

37-7

Lack of Alternative Site Analysis:

The Draft NOP/NOI document fails to adequately identify an alternative alignment for the proposed Transmission Line. The Project EIR/EIS must include a detailed study to incorporate the preferred and alignment alternatives. One such alternative is to realign the primary segment of the line along Speckled Avenue(an existing Placer County commercial and industrial Roadway) and within the State Highway 267 Corridors.

37-8

Please incorporate the above comments and route alternative in your analysis, as well as addressing all of the above issues in moving forward with the formal project EIR/RIS and project scoping.

Thank you for your attention to these critical matters.

Sincerely,



Kenneth R. Arnett

From: Jay Shaw [<mailto:drjay.s@att.net>]
Sent: Wednesday, January 01, 2014 11:48 AM
To: Wendy Jepson
Subject: Proposed Calpeco Power Line Upgrade

Letter
38

Wendy Jepson,
TRPA Senior Planner

Dear Ms. Jepson,

I am writing to share my concerns regarding the proposed Calpeco Power Line Upgrade. Let me say at the outset that I am not adverse to an upgrade of this power line nor am I generally adverse to development along The North Shore.

But... I find it outrageous that Tahoe residents will be asked to pay for this improvement. Calpeco, as you know, is **guaranteed an 11.8% return** on infrastructure improvements. As I understand it, Calpeco will thus be empowered to raise all North Shore electric rates enough to ensure realization of this 11.8% return. Given the currently very low rates of return on fixed income investments, **is it not in Calpeco's interest to put as much money as possible into a project such as this, if only as an investment opportunity?** It is you and I, along with the developers, who will be paying for this. Who will benefit?

38-1

The power company wants to run the new power line between Kings Beach and Tahoe City along the Mt. Watson Road. The poles will visually dominate the pristine forest lands, and increase the right of way width from 30 feet to 40 feet along the new Mt. Watson Road/"Fiberboard Freeway" line. Calpeco needs to develop a project that won't so negatively impact our beautiful area.

38-2

Why not improve the current right of way instead? This would be certain to lower the cost and greatly reduce the adverse environmental effects for the North Rim of Tahoe. Please upgrade the power lines where they are now ... they've served us well in that location since the '70s.

38-3

Jay Shaw
Tahoe Vista

7.15 224

**California Pacific Electric Company
625 and 650 Electrical Lines Upgrade Project**

Informational Meeting — December 10, 2013



TAHOE
REGIONAL
PLANNING
AGENCY



Comment Card

Thank you for your interest in the environmental review process for the California Pacific Electric Company's proposed 625 and 650 Electrical Lines Upgrade Project. Please share your comments regarding the environmental topics discussed in the Draft EIS/EIS/EIR. It helps us if you are specific. You can submit your written comments in several ways: (1) write your comment below now and drop it in the box; (2) take a comment card home, write your comment, and drop it in the mail (TRPA's address is already on the comment card); (3) email your comment to wjepson@trpa.org. All comments must be received by January 7, 2014. Visit <http://www.trpa.org/get-involved/major-projects/> for more information.

Relocate SUBSTATION out of BASIN & closer
to new golf course subdivisions and ski
areas. Remove all Diesel generators from
inside the BASIN. (smell can be overpowering - health
hazard). If unable to ^{RELOCATE} entire electrical lines
Upgrade Project cover all footings (i.e. Pole 224)
with natural rock. All in all a typical plan for
moneyed interests with no regard for TAHOE BASIN

39-1

39-2

39-3

Please provide your contact information.

Name (required): Greg Gilmore
Title and organization/business (if applicable): RETIRED TAHOE RESIDENT 45 yrs
Email address (required): CR Billy @ gmail.com
Mailing address (required): 8031 CRIT. LANE Kings Beach
Phone: 530-546-8737

From: Laurie Stevenson [<mailto:lauriebs@sbcglobal.net>]
Sent: Tuesday, December 31, 2013 12:04 PM
To: Wendy Jepson
Subject: north tahoe proposed power line expansion

Letter
40

After reviewing your proposal to expand the power lines in north lake Tahoe along hwy 267, I STRONGLY DISAPPROVE. This is an environmental invasion --92 foot towers?? Ruining pristine land along the Mt Watson road and impacting the views with power lines? Damaging streams and removing 47,00 tress? Construction trucks up and down an already overused highway. Not to mention the impact on the existing homes in Kingswood -- their market values would reduce and health issues could arise. And this is to accommodate Northstar and Squaw? As usual, the developers think only of making money. This is their problem--we are built out in the basin and our power lines have been fine. The only help would be to bury the existing lines through Kingswood. Please do not support this proposal. This is very harmful to everyone except the developers and Liberty Energy.

Thanks you
Laurie Stevenson
Kingswood resident

From: Jen Mader [<mailto:jmader@vailresorts.com>]

Sent: Tuesday, January 07, 2014 10:18 AM

To: Wendy Jepson

Cc: Jerusha Hall; Andrew Strain

Subject: CalPeco 625 and 650 Electrical Line Upgrade Project Comments (Draft EIS/EIS/EIR)

**Letter
41**

Thank you for the opportunity to comment on the Draft EIS/EIS/EIR for the CalPeco 625 and 650 Electrical Line Upgrade Project. Below are Northstar comments on the document:

1. CalPeco has identified the use of the Northstar Castle Peak Park and Ride parking lots for construction and helicopter staging (3.5 ac and 7.1 ac). Additionally, the document identifies construction access along Sawmill Flat Road immediately adjacent to the Northstar Golf Course. CalPeco should contact Northstar as soon as possible to discuss use of the lots and access road. Construction staging and access must not impact resort uses or summer events. 41-1
2. A Right of Entry agreement for construction activities on Northstar lands will be required prior to construction mobilization. CalPeco should contact Northstar as soon as possible to discuss preparation of this agreement.
3. Pages 4.8-30 and 4.8-31 discuss future potential projects at Northstar. The proposed CalPeco project conflicts with the alignment of the proposed Northstar Mountain Master Plan Castle Peak Gondola. Northstar requests that this segment of electric line be placed underground to avoid conflicts with the proposed gondola. Additionally, the CalPeco project potentially conflicts with the Employee Parking Lot (previously approved by Placer County in the Highlands EIR) and passes adjacent to the existing Northstar horse stables. CalPeco should coordinate with Northstar to facilitate future projects and existing uses. 41-2
4. In order to reduce disturbance and tree removal, CalPeco should utilize the existing easement to the extent practicable. Areas impacted by construction or existing easement areas that will be abandoned should be restored with native vegetation and monitored for vegetation establishment after construction. 41-3

Thank you for keeping us apprised on the status of this environmental document. We look forward to working with you on this project. Please give me a call should you have any questions.

Sincerely,
Jen Mader, CPESC, AICP
Environmental Planner
Northstar California Resort
PO Box 129
Truckee, CA 96160
Direct Line: 530.562.8044
Cell: 530.263.0194
www.NorthstarCalifornia.com



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From: FTomase842@aol.com [<mailto:FTomase842@aol.com>]
Sent: Friday, January 03, 2014 4:52 PM
To: Wendy Jepson
Subject: Against New Transmission lines through Kingsbeach

Letter
42

Dear Wendy--Please post my objection for the proposed transmission line that would go through Kingsbeach. It does make more sense to me to just give Northstar and that area the extra power they may need.

Thank you for your consideration.

Sincerely, Frank Tomasello---Kingswood Village

42-1

From: Gordon Leach [<mailto:dglsenior@sbcglobal.net>]
Sent: Friday, January 03, 2014 5:04 PM
To: Wendy Jepson
Subject: North Tahoe/Truckee 625/650 Power Line Project

Letter
43

I am a permanent resident of Kings Beach, 1001 Commonwealth Dr., #60. I have read the position of Friends of Lake Tahoe concerning the captioned project and agree completely. This would be terrible and unnecessary within the lake basin. It stacks up completely with the biomass plant. A huge error. Let's stop it!

D. Gordon Leach
PO Box 864,
Tahoe City, CA 96145

From: Jeanne Nestle [<mailto:jeannenestle@charter.net>]
Sent: Saturday, January 04, 2014 5:17 PM
To: Wendy Jepson
Subject: Proposal to Double Transmission Lines

Letter
44

Dear Wendy Jepson,

We are writing to let you know that we oppose this Double Transmission Lines proposal. We have lived in Lake Tahoe for 30 years, 23 years of it in Kingswood Estates and are shocked 90' poles inside the Basin should be installed to service resorts outside the Basin. Lake Tahoe is suppose to be protected from this type of development.

44-1

In a recent utility bill (copy attached) stating the justification for this project, we do not agree with their assertion! Within the effected TRPA jurisdiction, Kings Beach to Tahoe City we would assert that usage has been stable or less due to lighting technology, building regulations, and other conservation measures. Our own utility usage has dropped in half compared to 20 years ago due to energy efficient appliances and energy savings bulbs. Conversely, several developments outside the basin, namely Squaw Valley, Northstar and Martis Valley have dramatically increased the electrical demand due to resort development and MASSIVE snow making expansions. We believe big corporations should not be able to use their lawyers to lobby the Power company to make the entire community pay for their impact. Impact fees should be paying for this project and/or they should be generating their own power on their own vast property with solar, wind or whatever outside the Basin. The best defense the Basin has from this type of development is the TRPA. When a normal citizen developes a property, he/she is expected to be responsible to the community by paying their own impact fees, BMP's etc. It's not fair that a large corporation can lobby the Power Company to get others to pay for their impact. If they can do it, it sets a precedent for the rest of the public to ignore all TRPA regulations!!!

44-2

44-3

Please reconsider the approval of this project. If you have information contrary to our assertion that the vast majority of new electrical demand is from inside the basin and not from resorts outside the Basin please mail us the documentation.

44-4

Thank you for you consideration,
Sincerely,

David Nestle and Jeanne Nestle

P.O. Box 12
Tahoe Vista, Ca 96148

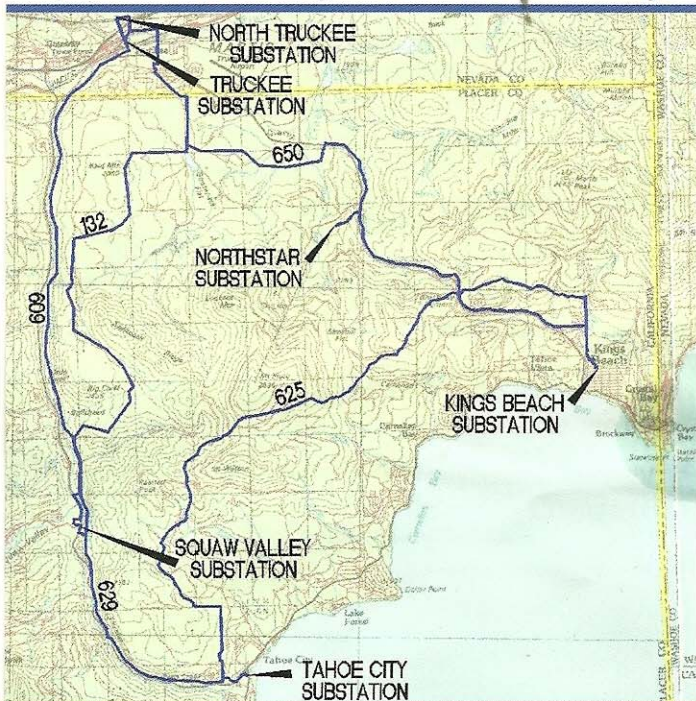
625/650 Electric Line Upgrade Project

Two major transmission lines, known as the 625 and 650 power lines, primarily serve the areas of Northstar, Kings Beach, Tahoe City and Squaw Valley. They are some of the oldest lines in California.

As far back as the 1980s, the need to upgrade the 625 and 650 lines was identified. When California Pacific Electric Company (dba Liberty Utilities) purchased the NV Energy service territory in early 2011, it acquired these aging lines and, after confirming the need for improvements, began the process to upgrade the system.

Plans were filed to upgrade the existing 625 and 650 power lines and associated substations from 60 kilovolt (kV) to 120 kV to allow the entire transmission loop to operate at 120 kV. This upgraded closed loop system will allow for greater load transfer and switching ability resulting in better reliability for our customers.

To learn more about the project, please visit www.libertyutilities.com/west/reliability



Local. Responsive. We Care.



Liberty UtilitiesSM

December 2013

We Need Your Help Meeting Winter Peak

Most of us would agree that Tahoe peaks at its finest during the winter with lots of snow-related activities and the beauty of snow-crested pines around the lake.

Liberty Utilities also peaks during the winter—that's when our customers use the most electricity. Typically, our peak (measured as the most demand on the system) is the week between Christmas and New Years between 5 and 9 p.m.

Liberty customers set a new winter peak last year. On December 30, 2012 around 7 p.m., Liberty's demand was 144.5 MW— that's 20 MW more than the last peak set two years prior! Lots of snow, accessible roads for tourists, and just the usual increase in load all contributed to setting a new peak. ★ ★

If something adverse happens to the system—such as a snow-laden tree branch falling on a transmission line—the aging power line is especially vulnerable. We're in the process to improve these transmission lines to allow load transfer and switching, but in the meantime we need your help.

We need you to conserve energy during these near-peak periods.

Through our customers' voluntary conservation efforts, we hope to avoid both unplanned and planned outages that affect our customers, our electrical system, and even our economy.

Visit www.libertyutilities.com/west and click on the "Save Energy and Money" option to learn about ways to conserve and save money!



From: Alan Roskos [<mailto:aroskos@sbcglobal.net>]
Sent: Monday, January 06, 2014 9:28 AM
To: Wendy Jepson
Subject: North Tahoe proposed power line expansion

Letter
45

After reviewing the information I am opposed to Liberty Energy's power line expansion. Keep the power lines out of the Tahoe Basin! Save our trees, view and our wilderness along the Fiberboard Freeway, Hwy. 267 and the Kingswood Estates neighborhood. 45-1

Alan Roskos POBox 441 Tahoe Vista, CA 96148

Subject: FW: Power line project

**Letter
46**

From: erents1 . [<mailto:erents1@gmail.com>]

Sent: Saturday, January 04, 2014 5:57 PM

To: Wendy Jepson

Subject: Power line project

Hello Wendy,

My wife and I are 30+ year residents of Kings Beach and we are both adamantly opposed to this project and will do what ever we can to stop it! We hike,bike,ski in this area everyday.We also work and live in this area. We also own a green business in town that depends on this areas scenic beauty and are truly shocked that anyone would consider impacting this fragile scenic eco system in this way.This specific area is a safe haven for the goshawk, spotted owls, bears to name just a few. As you know this area also has many streams, wetlands riparian zones and springs that are in need of restoration not derogation from more roads and construction projects.

I feel I must also say that these developers do not have good track records remember when Squaw Valley flooded Squaw creek and the Truckee river with over 50,000 gals of diesel fuel and didn't care enough to report it. How about the times they cut down trees without permits.These corporations don't deserve the right to expand, they can't be trusted. Please protect Lake Tahoe and stop this project!

Thank You,

Harry and Sandi King

p.o.box 1903

Kings Beach Ca.96143

46-1

Tahoe Regional Planning Agency
Attention: Wendy Jepson, Senior Planner
P.O. Box 5310
Stateline, NV 89449

January 7, 2014

Subject: Proposed 625/650 Powerline Upgrade Project

Dear Ms. Jepson:

I am writing to express my support, and encourage the approval, of Liberty Utilities' proposed 625/650 Powerline Upgrade Project. The electrical transmission system in Liberty Utilities' service area, which was owned and managed by another company not long ago, did not receive the upgrades or investment necessary to meet or maintain public electric utility standards.

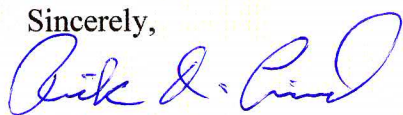
The proposed project upgrades will substantially improve the quality and reliability of electric service, which is important to every sector of the Tahoe region's commerce as well as the public health and safety of the region's residents and sensitive environmental resources. The project will have some adverse environmental effects, but because it will utilize existing utility and other public use corridors to the extent feasible, and because it will establish critical bi-directional, single contingency reliability to this portion of the service area, the increased reliability and quality of service will have considerably greater public and environmental benefits than costs.

More specifically, the proposed project will reduce the geographic extent, number, duration, and severity of future electric grid outage events caused by lightning, fire, snowfall, and extreme winds. This will greatly improve reliability in public electric service for: 1) emergency response, communications, and public facilities that have limited or no power supply back-up, 2) fire fighting that depends on pressurized water systems, 3) residents' health and safety and the continuation of business operations during extended periods of snow and ice build-up caused by severe winter storms, and 4) periodic extreme wind events that often result in unpredictable and sometimes unexpected tree fall/power line outages.

As a business owner and homeowner in the Lake Tahoe Basin, I view this upgrade project as an important first step for Liberty Utilities to bring key portions of its system up to current regulatory standards, while doing so with limited adverse environmental effects. This and several other electric grid improvement projects are needed for the short- and long-term economic and environmental prosperity of our region.

Thank you in advance for your consideration of these reasons to approve the proposed project.

Sincerely,



Rick A. Lind

47-1

From: Casey Beyer [<mailto:cbeyer@svlg.org>]
Sent: Friday, December 20, 2013 5:31 PM
To: John Hester; Wendy Jepson
Cc: Joanne Marchetta
Subject: Fwd: Energy project in SE San Jose

Dear John and Wendy:

Attached please find information for an innovative energy option that could potentially replace the diesel generation systems in the CalPeco project.

As I noted - there are 'other more sustainable' energy options that could be explored. Of course, the pass through cost to the customer through rate increases should be a part I the conversation. All about balance. Please pass this along to the applicant as you see appropriate.

Happy holidays to you all!

Casey

Sent from my iPhone

Begin forwarded message:

From: "Lomax, Karla" <KIR2@pge.com>
Date: December 20, 2013 at 2:31:41 PM PST
To: Casey Beyer <cbeyer@svlg.org>
Cc: "tmcrae@svlg.org" <tmcrae@svlg.org>, "fwahl@svlg.org" <fwahl@svlg.org>
Subject: RE: Energy project in SE San Jose

Casey-

Attached is a fact sheet on the project and a link to the release. There is also an article on our blog which includes a video. I hope this helps.

Karla

<http://www.pgecurrents.com/2013/05/23/largest-battery-energy-storage-system-in-california-to-improve-electric-reliability-for-customers/>

http://www.pge.com/about/newsroom/newsreleases/20130523/pge_energy_commission_unveil_battery_energy_storage_in_san_jose.shtml

Karla Rodriguez Lomax

Government Relations
PG&E
Direct: 408-282-7450
Cell: 408-206-8744
Email: kir2@pge.com

-----Original Message-----

From: Casey Beyer [<mailto:cbeyer@svlg.org>]
Sent: Wednesday, December 18, 2013 6:25 AM
To: Lomax, Karla
Cc: tmcrae@svlg.org; fwahl@svlg.org
Subject: Energy project in SE San Jose

Karla- earlier this year - Carl was a speaker at the opening of the power station at a SVLG member company site in SE San Jose.

I am traveling today in Lake Tahoe for my monthly TRPA board meeting (I am a California Governor appointee to this bi-state board). We have a project on our agenda - Cal Peco which is a Sierra Nevada-Pacific Electric proposal to upgrade miles of transmission lines in the Lake Tahoe basin.

The proposal calls out for upgrading their backup substations- which are diesel generators. Under current California PUC rules and Air quality requirements those diesel generators have limited hour use. And in the past they have either overused the backup systems in violation of code or shut down the generators this limiting power during critical times.

I thought the specifications for the SE San Jose power supply site may be an alternative- more environmental friendly.

Can you have a PG&E colleague send me the specs.

I know this is not a Leadership Group policy issue, but it is fundamentally a state policy issue that is looking for a solution. Thank you in advance for any assistance you might be able to provide.

Casey

Sent from my iPhone

PG&E is committed to protecting our customers' privacy.

To learn more, please visit <http://www.pge.com/about/company/privacy/customer/>



Battery modules being loaded into cabinets at PG&E's NaS battery system installation underway in San Jose

Planning for the future: 4 MW Battery Energy Storage System at HGST

PG&E Electric Operations is installing a 4 MW/28 MWh Sodium-Sulfur Battery Energy Storage System (NaS BESS) at the Hitachi Global Storage Technologies (HGST) facility in San Jose, California. The system began operation in May 2013.

This project aims to provide critical real-world data on the technical and financial performance of battery energy storage to inform our understanding of how battery storage devices can serve PG&E's customers and the overall electric grid.



Helping to enable greater integration of intermittent renewable generation is a key potential benefit of battery storage

About The System

The sodium-sulfur (NaS) battery energy storage system (BESS) is one of the most advanced battery storage technologies available, with 7 hours of energy storage, a high efficiency, and a long life span of 15 years. The batteries are manufactured by NGK Insulators, a Japanese company with over 300 MW of NaS storage projects deployed worldwide. The S&C Electric Company is the EPC contractor for the project, is providing the power conversion and battery management systems that manage the battery's interaction with the grid.



Testing Plans:

PG&E, working in coordination with Electric Power Research Institute via a grant from the California Energy Commission to study the system's performance, will undertake testing to evaluate how the NaS BESS can:

- Improve power quality and reliability
- Support greater integration of intermittent renewables
- Supply services to California electricity (CAL-ISO) markets

In line with project objectives, the BESS implementation will follow the multi-phase approach outlined below:

Phase I, System Evaluation: A series of tests to evaluate system operating boundaries across a variety of metrics.

Phase II, Basic Performance: Demonstration of the BESS for peak shaving, CAISO market participation, and basic smoothing of renewable resources, as well as the testing and deployment of a new battery dispatch control application.

Phase III, Advanced Performance: Demonstration of the BESS for providing ancillary services in CAISO markets, multi-function operations, islanding, and automation of system response to CAISO awards. The battery will be operated under CAISO's new Non-Generator Resource (NGR) market model, a model that PG&E staff has played key roles in developing.

PG&E and EPRI will make the results of these evaluations available to the public.

December 23, 2013

Mike Florio
California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102

Re: Liberty Utilities proposed 30% rate hike for Alpine County, CA

Dear Mr. Florio,

As a resident of Alpine County, CA, I urge the California Public Utilities Commission to deny the request of Liberty Utilities for a 30% rate increase. In these continuing times of financial difficulty, it is unconscionable that a company would consider raising rates by such a substantial amount as 30%. Such a significant increase will most certainly cause undo financial hardship on many Liberty Utilities consumers.

There are no choices available to the consumer as to who provides this service and with that in mind, the company has decided to seriously and adversely impact their customers with this outrageous increase request. This is the truest form of corporate squeeze on the consumer that has no option for alternate service.

Please deny this request and ask that Liberty Utilities “sharpen their pencil” and find a way to make a reasonable rate increase request if one is absolutely necessary.

Thanking you in advance.

Sincerely,

Gail Taylor
2020 Emigrant Trail
Woodfords, CA 96120

Mailing Address:
PO Box 18284
South Lake Tahoe, CA 96151

49-1

From: Ken Wittman [<mailto:Ken.Wittman@libertyutilities.com>]
Sent: Thursday, December 26, 2013 7:05 AM
To: Wendy Jepson
Subject: FW: LU.com - Contact Us - ELECTRIC California

Wendy –

We received this email the other day. Could you included it in the record?

Thanks

Ken Wittman | **Liberty Utilities (CalPeco Electric) LLC** | Manager of Rates & Regulatory Affairs
O: 530-543-5267 | C: 530-721-0357
E: ken.wittman@libertyutilities.com
933 Eloise Avenue, South Lake Tahoe, CA 96150

From: contact@libertyutilities.com [<mailto:contact@libertyutilities.com>]
Sent: Monday, December 23, 2013 3:18 PM
To: SM CA Customer Service
Subject: LU.com - Contact Us - ELECTRIC California

LU.com - Contact Us - ELECTRIC California

NAME: Jerry and Juliana Joldersma
EMAIL ADDRESS: julianajoldersma@gmail.com
UTILITY: Electric
STATE/COMMUNITY: California

COMMENTS/QUESTIONS:

We are dismayed to hear of your plans to possibly raise electrical rates in our area (Markleeville, CA) by 20 to 30 percent. Ours is a rural area of high unemployment, an aging population, and 30 percent of the people live on a tribal reservation. What part of that population do you think can afford higher electrical rates, that would be raised to pay for a plan benefiting developments and developers entirely outside our area and outside the Lake Tahoe Basin? It would be unfair and hurtful, pure and simple. 50-1

Submitted: 2013-12-23 18:17:36

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From: Ken Wittman [<mailto:Ken.Wittman@libertyutilities.com>]
Sent: Thursday, December 26, 2013 9:59 PM
To: Wendy Jepson
Subject: FW: FW: Fwd: FW: 30% ELECTRIC RATE INCREASE FOR ALL LIBERTY UTILITIES CUSTOMERS
Wendy –

Please see the below and attached comments for the official record.

Thanks

Ken Wittman | **Liberty Utilities (CalPeco Electric) LLC** | Manager of Rates & Regulatory Affairs
O: 530-543-5267 | C: 530-721-0357
E: ken.wittman@libertyutilities.com
933 Eloise Avenue, South Lake Tahoe, CA 96150

From: Jerry Joldersma [<mailto:jerryjoldersma@gmail.com>]
Sent: Thursday, December 26, 2013 3:41 PM
To: Ken Wittman
Subject: Fwd: FW: Fwd: FW: 30% ELECTRIC RATE INCREASE FOR ALL LIBERTY UTILITIES CUSTOMERS
TO: Ken Wittman

I totally oppose the proposed 30% increase by Liberty Utilities.
Why should we pay for improvements not in our area?

51-1

Best wishes,
Jerry Joldersma

From: Bill Morgan [<mailto:morganhwy88@gmail.com>]
Sent: Sunday, December 15, 2013 4:46 PM
To: Nancy Thornburg
Cc: Erin and Doug Hardy
Subject: Fwd: 30% ELECTRIC RATE INCREASE FOR ALL LIBERTY UTILITIES CUSTOMERS
Bill and Carole -

Attached is the Guest Editorial from the December, 2013 issue of the Mountain News regarding the proposed 30% electric rate increase for all Liberty Utilities customers.

Liberty Utilities released their draft regarding this electric rate increase on November 7th, 2013, and the public comment period is open until January 7th, 2014.

Please ask everybody that you know to send a letter to protest this project and electric rate increase!

Erin Kelly,
20865 State Route 88
Markleeville, CA 96120

--

Tom Sweeney tsweeneyac@gmail.com 530-694-2919

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David McClure

Out-of-basin power upgrades to impact your utility bills

Editor's note: This month's guest column is by David McClure, president of the North Tahoe Citizen Action Alliance and a former North Tahoe Public Utility District Board member.

By David McClure

Do you think your cost of electricity is reasonable? If your rates went up 20 percent 30 percent to pay Liberty Utilities for a system upgrade to serve development outside the Tahoe Basin, is that justified?

South Lake Tahoe's California residents and second homeowners, anyone who pays Liberty Utilities for electricity, will pay for reconstructing a transmission loop serving Northstar, several Martis Valley developments, and Squaw Valley, all located outside the Lake Tahoe Basin.

How did this happen? The project dubbed "the 650 and 625 Power Line Upgrade" was first proposed by Sierra Pacific Power Company (SPP) in 2010, at a cost of \$26 million. The single loop upgrade was technically ideal if it was not partially located in Lake Tahoe. In their original application to the California Public Utilities Commission the cost would have been spread

among SPP's 2.5 million ratepayers and adding slightly to their \$8 billion net plant rate base. The cost to ratepayers would have been negligible.

But in January 2012, SPP sold a slice of their distribution system, just 49,000 California customers, to Liberty Utilities (CalPeco is Liberty's parent corporation owned by two multi-billion dollar Canadian utility companies, Algonquin and Emera).

CalPeco filed to take over the Upgrade Project from SPP as if nothing had changed. But much had changed. The project's estimated cost had doubled, and the utility's ratepayers were reduced by 2.45 million.

CalPeco's net plant rate base is only \$125 million, so this Upgrade Project is about 40 percent of their current rate base.

The greatest concentration of Liberty's customers is on the California side of South Lake Tahoe, so you will bear the greatest financial burden of this project.

North Lake Tahoe customers are just beginning to realize that this upgrade project is not caused by the small steady demand in the Basin. Current Tahoe Basin demand is easily served by the existing 60kV lines.

What has exploded in electrical load over the last fifteen years

is from Northstar (real estate development, snowmaking, and resort expansion), Lahontan, and Martis Camp, all located outside the Tahoe Basin. Future loads are almost entirely outside the Basin.

Growth restrictions in the Tahoe Basin, to protect and preserve our "Outstanding National Resource Water" were the result of federal legislation. But an unintended consequence of preserving Tahoe's beauty is growth pressure outside the Basin identifying with the Lake. Now we are expected to pay for the infrastructure to enable more growth in Placer County outside the Tahoe Basin. There is something wrong with this picture.

Liberty Utilities released their Draft EIR/EIS November 7, and the public comment period is open until January 7th. Now is the time to let the California PUC know the automatic rate increase for their plant investment is not equitable, nor is it justified. There are lower cost alternatives available to technically address the power demands, but the single loop upgrade is not one of them.

Letters regarding this should be sent directly to the California Public Utilities Commission: Mike Florio
California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102

From: Ken Wittman [<mailto:Ken.Wittman@libertyutilities.com>]
Sent: Sunday, December 29, 2013 8:22 PM
To: Wendy Jepson
Subject: Fwd: proposed transmission loop project

Wendy

Please add to the official public comment.

Regards,

Ken Wittman
Liberty Utilities (CalPeco Electric) LLC
530-721-0357

Begin forwarded message:

From: Karen Dustman <kdustman21@gmail.com>
Date: December 28, 2013 at 10:46:38 PM EST
To: <Ken.Wittman@libertyutilities.com>
Subject: proposed transmission loop project

Dear Mr. Wittman,

Here is a copy of a letter we sent to the CPUC, opposing the impact on small rate-payers like ourselves. I know you are getting quite a lot of correspondence on this issue, and there is no need to send us a stock response. This is just to provide you a courtesy copy.

52-1

Thank you and have a happy holiday.

All best,

Karen & Rick Dustman

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Rick & Karen Dustman

Tel (530) 694-2122

**21 Nevada Road
Markleeville, CA 96120**

December 26, 2013

Mike Florio
Calif. Public Utilities Commission
505 Van Ness Avenue
San Francisco CA 94102

Re: Liberty Utilities application/EIR

Dear CPUC:

We are writing to oppose the Liberty Utilities/CalPeco Power Line Upgrade application, as currently proposed.

52-2

As you know, in the original 2010 application by Sierra Pacific, the \$26 million cost of this project would have been spread among that company's 2.5 million ratepayers. With Liberty Utilities and its parent company, CalPeco taking over the project, the cost has skyrocketed to double the original cost projection (close to \$50 million, now). However, the number of ratepayers slated to absorb this cost has plummeted to just 49,000 customers – a drop of 2.45 million.

52-3

Liberty Utilities is apparently arguing that this upgrade is necessary just to maintain quality service, without brown-outs or black-outs. However, the existing lines remain adequate for the current Tahoe Basin demand. The excess utility demand is coming, not from small individual customers, but rather from the big real estate developments of Northstar, Lahontan, and Martis Camp, all *outside* the Tahoe Basin. In essence, we are being asked to pay an estimated 20 to 30 percent more in our domestic rates, to enable future growth and more snow-making by large resorts in Placer County.

52-4

Some 47,000 trees are said to be slated for destruction if this project goes forward – a sad impact on an area prized for its rustic beauty. The Sierra Club argues that these upgrades will only spur more growth and development. Dave McClure of the North Lake Tahoe Citizens Action Alliance similarly notes that this “resort loop” will enable Northstar and Squaw Valley to keep growing. The relocation of the Tahoe City substation has apparently not been part of the environmental documents, and there are concerns that approval of this project could hamper future efforts to move the substation.

52-5

52-6

For all of these reasons, especially the disproportionate financial burden that will be imposed on a tiny group of rate-payers not responsible for the demand, we urge you to deny the proposed application, or to impose mitigation measures relieving current residential rate-payers from the financial burden caused by this “resort loop” improvement.

52-7

Sincerely,

Rick and Karen Dustman

-----Original Message-----

From: Ken Wittman [<mailto:Ken.Wittman@libertyutilities.com>]
Sent: Tuesday, January 07, 2014 9:09 AM
To: Wendy Jepson
Subject: FW: Rate Increase

Wendy -

Can you please add the email below to the public record.

Thanks

Ken Wittman | Liberty Utilities (CalPeco Electric) LLC | Manager of Rates & Regulatory Affairs
O: 530-543-5267 | C: 530-721-0357
E: ken.wittman@libertyutilities.com
933 Eloise Avenue, South Lake Tahoe, CA 96150

-----Original Message-----

From: Jane Starratt [<mailto:je.starratt@gmail.com>]
Sent: Friday, December 27, 2013 7:53 AM
To: Ken Wittman
Subject: Rate Increase

I am very much opposed to the rate increase for power in Alpine County. This past year, under Liberty has seen the worst service in the 18 years that we have resided here. This increase is to pay for improved service to benefit development in El Dorado County. And a 30 % increase is outrageous!

Jane Starratt

53-1

Sent from my iPad
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-----Original Message-----

From: Ken Wittman [<mailto:Ken.Wittman@libertyutilities.com>]
Sent: Wednesday, January 08, 2014 9:20 AM
To: Wendy Jepson
Subject: FW: 30 % increase

Wendy -

Please include the email below in the public record.

Thanks

Ken Wittman | Liberty Utilities (CalPeco Electric) LLC | Manager of Rates & Regulatory Affairs
O: 530-543-5267 | C: 530-721-0357
E: ken.wittman@libertyutilities.com
933 Eloise Avenue, South Lake Tahoe, CA 96150

-----Original Message-----

From: Teresa Grabham [<mailto:grabstudio@aol.com>]
Sent: Tuesday, January 07, 2014 9:48 AM
To: Ken Wittman
Subject: 30 % increase

Your proposed increase will be a huge burden. How can you do this when people are struggling already? Jobs are hard enough to find in the winter when electric use goes up and you are proposing a huge increase. This is unconscionable! Please reconsider. Teresa Grabham

54-1

Sent from my iPad
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TAHOE REGIONAL PLANNING AGENCY
ADVISORY PLANNING COMMISSION
DECEMBER 4, 2013

AUDIO TRANSCRIPTION FILE FROM 45:15 to 1:13:32

JAN BROWN & ASSOCIATES
WORLDWIDE DEPOSITION & VIDEOGRAPHY SERVICES
701 Battery Street, 3rd Floor, San Francisco, CA 94111
(415) 981-3498 or (800) 522-7096

1 CHAIRMAN DONOHUE: Thank you, Sean. Questions?
2 Comments from the APC members before I open it up for
3 public comment? Steve?

4 MR. BUELNA: Yeah, I've got some comments. I'm just
5 trying to go through these. One of the comments I had has
6 to do with community plan consistency. And I'm -- I'm
7 just looking at the letter from Sustainable Community
8 Advocates and finding myself in agreement with a number of
9 the issues raised, particularly as it relates to the
10 relocation of the Tahoe City substation. Understanding,
11 you know, there's costs associated, but, you know, some of
12 the questions are what exactly would that cost be and how
13 thoroughly have we evaluated the opportunity to relocate
14 this. I'm thinking that, you know, if it doesn't happen
15 now, when will we have the opportunity to relocate that.

16 Also the big concern particularly with that as it
17 relates to the potential conflict with the recreation
18 opportunities. You know, we -- Placer County just put in
19 the transit center there that Mr. Teshara references in
20 his letter. You know, there's the rafting opportunities,
21 plus the restaurants in that area and just the potential
22 conflict for the interaction.

23 Also speaking to community plan consistency,
24 the -- our community plan speaks to the undergrounding of
25 utilities and I'm wondering, you know, how much of that is

1 planned to occur through this process. Understanding
2 there are some areas that, you know, it may not make sense
3 or it may not be within that particular plan area
4 statement or community plan, but I'd like some more
5 information along with that.

6 And the one alternative that I was actually
7 hoping to get a little bit more information on was the no
8 action alternative that we didn't speak about. If this
9 project doesn't go forward what kind of impacts would we
10 have from that. So I tried to keep my comments short. I
11 may have some more, but I think that gives it -- an overview.

12 CHAIRMAN DONOHUE: That's fine. Okay. Other
13 members? You know, I'll take public comment before I open
14 my mouth. I only have one individual who signed in to
15 speak on this, but I'll give other folks an opportunity.
16 But I will call up Ellie. Would you like to come up and
17 comment on this?

18 MS. WALLER: Good morning. Ellie Waller
19 representing Friends of Tahoe Vista for the record. I
20 will be submitting more detailed comments before the
21 deadline. Cumulative impacts need to be adequately and
22 correctly addressed. The CalPeco upgrade project
23 potentially induces growth with increased capacity inside
24 and outside the basin. The project list for cumulative
25 impacts Table 4.12 should be updated for the Homewood

1 numbers. There is an approved project. They can put the
2 numbers in. The same with Boulder Bay. It doesn't show
3 the number of units.

4 Under the local agency sections, why only note
5 the Tahoe City community plan. The Kings Beach community
6 plan and the Tahoe Vista community plan until replaced by
7 area plans are affected because the Highway 267 utility
8 lines and the scenic route bifurcate those two community
9 plans. Scenic issues include, but are not limited to,
10 adding power lines that are increased the Fiberboard
11 Freeway where you don't see the girth of the poles. You
12 will see these bigger poles. The Highway 267 corridor
13 lines are larger. You can see in the visual that they
14 provided you today and that's in the document, it does
15 change that scenic route. Removing the lines completely
16 or relocating them to be buffered by trees would be a
17 desirable condition for that highway.

18 Noise issues. CalPeco will provide notification
19 of construction to all property owners 300 feet of the
20 project and post a phone number within a thousand feet.
21 Flight paths of helicopters are beyond that. Same with
22 blasting activities. You can hear blasting a mile away.
23 I think CalPeco should at minimum post this in local
24 newspapers on the TRPA website so people in the area
25 aren't freaking out over blasting noise. Helicopters we

1 all kind of get used to.

2 Also construction activities are posted as TRPA
3 jurisdiction hours as well as Placer County with some
4 exceptions. At this point I'm assuming that the TRPA more
5 strict hours should be enforced. Biological resources.
6 The goshawk was brought up as unavoidable. When you read
7 the statistics and the number of acres that will be
8 disturbed between the differences, staying over the
9 long-term because the existing 625 line would be
10 decommissioned and vegetation would be allowed to
11 reestablish within the existing 20-foot vegetation
12 corridor, the net disturbances would be reduced. Well, how
13 long does it take for those trees to grow back and provide
14 that habitat? And if the nesting period is February
15 through September and you find an active nest, you could
16 have issues with your schedule.

17 And the impact 4.2-1 for Alternative 4, the
18 amendment of the plan area statement. This should not be
19 on the content calendar and should be part of this
20 process. It should not be pulled out. And identify who
21 the Fiberboard Freeway is owned by and bears the cost of
22 maintenance. If CalPeco has to go and use this road and
23 the wear and tear of the construction. I asked Placer
24 County agency director of planning Michael Johnson. He
25 said his speculation is it's SPI for the most part, but

1 that should be identified. Thank you.

2 CHAIRMAN DONOHUE: Ellie, SPI stands for Sierra
3 Pacific Industries? Okay. Thank you for your comments.
4 Other members of public interested, please step forward.
5 State your name for the record. Good morning.

6 MR. ZUMWALT: Sorry. Got it. Good. My name is
7 Scott Zumwalt. Owner of Bridetender Tavern & Grill, Tahoe
8 City. I'm here to support the letter that Mr. Teshara
9 submitted and also the comments from the board member.
10 Our property borders -- or is adjacent to the substation
11 there in Tahoe City. And as was stated earlier, I think
12 if there is going to be a revamping of the substation,
13 this would probably be the time to look at relocation. If
14 we're trying to improve the Y area of Tahoe City and the
15 entrance to Tahoe City, I think now would be the time. I
16 do know there is a cost associated, but I do believe that
17 now is the appropriate time. Thank you.

18 CHAIRMAN DONOHUE: Thank you for your comments.
19 Other members of the public interested in addressing the
20 APC? Dave? Good morning.

21 MR. McCLURE: Good morning. Good morning. Oops.
22 Good morning members of the commission. My name is Dave
23 McClure with the North Tahoe Citizens Action Alliance.
24 And I just have a few comments given this forum, and we
25 will have much more detailed comments for the

1 environmental document.

2 One of the terms that's constantly used with
3 feasibility is not just technical or legal, but also
4 economic, economic feasible. Is this economically
5 feasible. And I would submit at this point that that is a
6 very arguable point because of the high cost of this
7 project and how those costs are being paid for, allocated,
8 in order to allow construction of the project.

9 I think at this point it ties in directly with
10 the alternatives discussion and how the alternatives
11 discussion, how many of them were rejected quickly
12 because, for instance, one alternative said what if we
13 just build the 650 line into Kings Beach and that's it.
14 Will that solve the problem? Well, obviously one little
15 part like that wouldn't solve the whole problem. Okay?
16 Then another -- so it was rejected. Then another
17 alternative was what if we continued the 120 kilovolt
18 capacity all the way to Tahoe City, would that solve the
19 problem. And that wouldn't solve the problem. But for
20 some reason there was no effort to look at combining
21 possible alternatives into a scheme that might end up
22 being a legitimate alternative. And I felt as though as I
23 was reading all these alternatives it was clear that there
24 was a predisposition for a decision about a 120 kilovolt
25 loop no matter what. In other words, that's what is the

1 project, that's what is wanted, and everything goes into
2 justifying that particular project.

3 So there's a real problem with feasibility in
4 terms of cost. There's no economic analysis at all
5 regarding that, the alternatives as well. And if, in
6 fact, there is an immediate need for the system to be
7 upgraded to handle existing demand and capacity and so on,
8 then the phasing element of this project needs to be
9 clarified a lot more because the 625 line through the
10 Tahoe Basin, okay, is now set up as phase 3 may or may not
11 ever be necessary. It's certainly not necessary based on
12 any kind of demand in the basin. And we're trying to get
13 actual demand numbers from CalPeco that justify that. But
14 here's the problem. You're dealing with 15 or 16 miles of
15 an upgraded line to 120 kilovolts. This is the sized
16 lines that feed all of South Lake Tahoe, all of South Lake
17 Tahoe with the casinos and the huge residential, and we're
18 putting that size line in the basin on the north shore for
19 16 miles. And our demand up there is Kings Beach and
20 Tahoe City. No, the reason for that line is to allow us
21 flow the circuit to feed Northstar, Squaw Valley, Alpine
22 Meadows, Lahontan, Martis Camp, all these developments
23 outside the basin.

24 So there's got to be a harder look at this. This
25 is not a simple loop like a lasso rope, a single loop.

1 There's a loop to Squaw Valley now. So when we talk about
2 what if we lose a line to Squaw Valley, we're going to
3 have to run the power back through the basin to feed Squaw
4 Valley. Well, Squaw Valley has a loop now, so what we're
5 talking about is losing two lines to Squaw Valley. And
6 then if we have a double circuit into Kings Beach from 267
7 where the lines cross and we're going to run a double
8 circuit into Kings Beach, what if we lose that double
9 circuit line? Then Kings Beach has nothing.

10 So the idea of the N minus 1, the single
11 contingency reliability thing can't be just used selectively
12 on certain segments in order to try to prove a point. It
13 needs to be thoroughly analyzed, if at all, on all the
14 segments and on the proposed project.

15 So I think there's a lot more here that needs to
16 be looked at. This is a huge project that somebody
17 alluded to earlier. Has any project in the last 35 years
18 removed 47,000 trees? And even if down to one inch.
19 Okay. So maybe half those, trees 25,000 trees are of a
20 substantial nature. This is a huge impact to the North
21 Tahoe Basin. This is an outstanding national resource
22 water.

23 Also along 267, if somebody's going to spend 50
24 million dollars on a project, once in maybe 50 years would
25 it ever be done, you're telling me that coming down 267

1 we're not going to move those power lines out of the
2 scenic corridor where 15,000 people a day or vehicles a
3 day drive up and down 267? What an opportunity to shift
4 it over about 150 feet so there's a tree buffer. The
5 lines are not visible from 267. Tremendous opportunity.

6 We're not here to just meet minimum thresholds.
7 We're here to improve an outstanding national resource
8 water. And finally, I would just like to add that I
9 believe since references, numerous references have been
10 made to the original Sierra Pacific application on this
11 project and followed with an amendment made by CalPeco to
12 take over this project from what the Sierra Pacific had
13 originally requested, that these documents and all other
14 documents related to this project that are filed with the
15 PUC actually be entered into the record, be part of the
16 record of this particular proceeding. We'll save more
17 comments for later. Thank you.

18 CHAIRMAN DONOHUE: Thank you, Dave. Other members of
19 the public interested in commenting on this?

20 MS. AMES: Good morning, you all.

21 CHAIRMAN DONOHUE: Good morning.

22 MS. AMES: And thank you for the opportunity to
23 comment. The Tahoe Area Sierra Club, Laurel Ames for the
24 record. And the Tahoe Area Sierra Club is really
25 interested in this project in terms of growth inducing and

1 cumulative impacts. And resiliency is a separate
2 argument. I understand that's their argument, but in
3 terms of the environmental impacts, they really have to
4 look at the environmental impacts. And CEQA requires
5 clearly a cumulative impacts report. That will be very,
6 very important in this discussion.

7 And as Mr. -- as Dave has mentioned just
8 previously, there are all kinds of issues relating to the
9 actual need and whether it's there or not. And if it's
10 not there but you're going to do it anyhow, that's growth
11 inducing. Other than that, I will limit my comments. We
12 will be submitting written comments. Thank you.

13 CHAIRMAN DONOHUE: Thank you. Other members of the
14 public interested in addressing the APC on this issue?
15 Okay. Seeing none, I'm going to close the public comment.
16 I want to thanks the public for your comments. I
17 appreciate those comments and they will become part of the
18 record on this project as the applicant's rolled out in
19 terms of their schedule and the process for CEQA and NEPA.

20 I would like to bring it back to the APC. Are
21 there any other comments or questions that APC has?
22 Steve, go ahead.

23 MR. BUELNA: I just wanted to quickly add on to the
24 discussion about community plan consistency and just note
25 for the record that our area plan, you know, we're going

1 through the process of updating our area plan. And the
2 group for Tahoe City has been discussing the -- this
3 particular relocation of the substation. And it's also
4 something that was identified in the '94 community plan,
5 so I'd like to add that. Thank you.

6 CHAIRMAN DONOHUE: Good. I'm glad you added that.
7 Peter?

8 MR. MAURER: A couple comments and a question. I'll
9 start with the question. So there's multiple agencies
10 that have different actions. Does one supersede another?
11 I don't know, John, if you know the answer to this or if
12 the, say, TRPA does not approve the plan amendment, can
13 the CPUC override that and still grant the order to
14 construct or -- I'm curious about that.

15 MR. MARSHALL: No, no.

16 MR. MAURER: Okay.

17 I like short, sweet answers.
18 Good. Thank you. And then as far as comments, you know,
19 I think that the issues that Mr. Teshara brought up in his
20 letter that Mr. Buelna has -- has elaborated about on
21 a bit, you know, are worth pursuing further.

22 It seems as though several alternatives or
23 potential combinations that result in other alternatives
24 were -- appeared to have been rejected out of hand due to
25 costs. And it would probably be good to see, you know,

1 how did those costs stack up and just see, you know, how
2 viable some other alternative is. I don't pretend to be
3 an electrical engineer and understand all the operations
4 of the utility. I'm very it's very, very complex. I
5 appreciate the hard work that goes into making sure we can
6 turn on the lights. We need them. But at the same time,
7 you know, Tahoe is a unique environment and I think we
8 have to be very careful looking at how we can minimize
9 both the visual impacts and all the impacts of the
10 resources in the basin.

11 CHAIRMAN DONOHUE: Okay. I had two questions. I
12 think they're for Mike. Mike, you -- you discussed quite
13 a bit the six diesel generators that you have over in
14 Kings Beach and your limitation of 720 hours. I was
15 really pretty surprised that we didn't have a chart or a
16 graph that said historically over years. How close are
17 you even getting to that 720 hours?

18 MR. SMART: This is Mike Smart. I think right
19 now last count was 80, but we've been holding back and
20 preserving for the next couple weeks. I do get a
21 reallocation of hours on January 1 for 2014 as well.

22 CHAIRMAN DONOHUE: That runs on a calendar basis.
23 720 for year 6. Okay. And it's January to the end of
24 December.

25 MR. SMART: Correct.

1 CHAIRMAN DONOHUE: Okay. All right. And currently
2 this year you've used 80?

3 MR. SMART: I think we're at 80.

4 CHAIRMAN DONOHUE: And is that an average year?

5 MR. SMART: Low.

6 CHAIRMAN DONOHUE: That's low.

7 MR. SMART: That's low. I do have some --

8 CHAIRMAN DONOHUE: What's your high?

9 MR. SMART: I do have some history from -- I
10 don't have it with me handy, but there is history of NV
11 Energy, Sierra Pacific, when we had the units and it goes
12 back over time in numbers of years and they have had some
13 years where they've run those up to 4- or 500 hours.

14 CHAIRMAN DONOHUE: Okay. So 50 percent. A little
15 bit more than 50 percent.

16 MR. SMART: Well, there are also some years where
17 they hit the limit too.

18 CHAIRMAN DONOHUE: Okay. Okay.

19 MR. SMART: That was during the -- remember the
20 California energy crisis back 12 years ago, 13 years ago?

21 CHAIRMAN DONOHUE: I was out of the country.

22 MR. SMART: California has gone through some
23 rolling blackouts --

24 CHAIRMAN DONOHUE: Okay.

25 MR. SMART: -- so they've dispatched those,

1 everybody in the west coast right now to California.

2 CHAIRMAN DONOHUE: Okay. And another question I had,
3 I'm just trying to understand the process. You talked
4 about -- one of your slides talked about state electric
5 reliability regulations. Has the commission come to you
6 or pointed to you and say you have to do this or is there
7 a time that they will say you have to do this? Or are you
8 being proactive? It seems like you're being proactive.

9 MR. SMART: I am being proactive. I have not
10 been called in front of them to, you know -- how that
11 would probably start is through a customer complaint where
12 they felt that their reliability has been subpar, and then I
13 would have to show them evidence of, you know, kind of
14 what the reliability of the system has been currently as
15 well as past.

16 I will say this. Over the last few years that
17 CalPeco has had the service charge, our reliability has
18 improved. And the reason it's improved is a focused
19 effort on vegetation management, you know, cleaning up the
20 right-of-ways. Because that was the number one cause of
21 outages, and now it's not even in the top -- it's not even
22 in the top five.

23 So our reliability has been improved, but that's
24 on the distribution system. When we look at customer by
25 customer and we look at it two ways and we look at how

1 many times does a customer get impacted in a year on
2 average. And then if they were impacted, what was the
3 average duration of the outage. You know, was it an hour,
4 two hours or five hours. So my statistics are pretty good
5 so I don't see getting in trouble that way. Operating a
6 transmission system and then having a single contingency
7 event causing that to cascade to a lot -- because when
8 transmission has a problem, like a substation, you affect
9 so many more customers at the same time. Where if you had
10 a little problem like a car/pole accident on a street or
11 whatever, you might affect that transformer and that
12 service and maybe two or three customers. So it's not
13 quite a big event.

14 When you get into a situation when you're getting
15 back into the bulk system, which is the transmission,
16 and some generation, and it has a problem, you could
17 literally have a lot of customers, 20-, 30,000 of them
18 out. And my statistics for that my event will go real
19 high and the duration depending upon how long did I -- how
20 long did I expose those customers to that outage.

21 CHAIRMAN DONOHUE: All right. Yes, John.

22 MR. MARSHALL: We just -- just FYI, we looked into
23 that, is there a regulatory requirement to do this, and
24 there was not a present regulatory requirement. There's
25 nothing specific in CPUC regs that require a particular

1 like 120 AB line. That has to do with more maintaining
2 reliability, which is -- can be done obviously in terms of
3 how regulatory requirements mandate that they do this, but
4 it certainly would be their reliability.

5 CHAIRMAN DONOHUE: Thanks for explaining that a
6 little bit more. And my final question is you mentioned
7 this accessibility on 6 --

8 MR. SMART: 25.

9 CHAIRMAN DONOHUE: 625, yeah, that is proposed to
10 be moved up to the Fiberboard Freeway.

11 MR. SMART: Highway.

12 CHAIRMAN DONOHUE: Highway. And can you go into a
13 little bit more detail in terms are what are the
14 accessibility restrictions on that route? Because that's
15 been there since the '70s, and it sounds like you got
16 issues, but I'm not -- I don't fully grasp that.

17 MR. SMART: I think what this was was on the
18 reroute of the -- of that line segment was to move it.
19 There was an opportunity to move closer to the existing
20 road you would and it would be easier to get to the -- to
21 the line that was needing repair. If the rebuilt line
22 needed repair. Currently the line routing is not adjacent
23 to the road. It's further away. It causes a higher
24 difficulty to get back to it. So that's all it was was
25 trying to get it closer to an existing roadway.

1 CHAIRMAN DONOHUE: Right. So when you're talking
2 about higher level of difficulty to get to it, I mean, in
3 the winter you're going to have the snow mobile in
4 there --

5 MR. SMART: Snow cat.

6 CHAIRMAN DONOHUE: Snow cat. And are we talking
7 outages that are going to go up a magnitude. I mean, not
8 at lengths of period that outages.

9 MR. SMART: I don't know. They're unique it
10 depends on what --

11 CHAIRMAN DONOHUE: What the problem is.

12 MR. SMART: -- what failed.

13 CHAIRMAN DONOHUE: Okay.

14 MR. SMART: Because a tree can cause an outage
15 just between two poles or a tree could actually take poles
16 down. It just depends on how big of a tree and what did
17 it really do because we've had both.

18 CHAIRMAN DONOHUE: And just -- so you have records
19 and maintenance records in terms of frequency on that
20 line?

21 MR. SMART: Yes.

22 CHAIRMAN DONOHUE: Can you tell me --

23 MR. SMART: Well, I don't have them with me,
24 but --

25 CHAIRMAN DONOHUE: But you have those and those are

1 analyzed in terms of it is, however we want to say, so
 2 frequent that we've got to move it up to the Fiberboard
 3 Freeway because it's just -- it doesn't meet our
 4 standards.

5 MR. SMART: I wasn't in that part of the
 6 conversation of moving it closer to the road, but just
 7 standing back to the 50,000 foot level closer to the road
 8 is good for me because it's easy to get -- it's just
 9 logical. It's easy to get to. My bucket trucks can get
 10 there and it's easier. When you have to do snow cats and
 11 you have to pull stuff up, like do replacement poles and
 12 all of that, the logistics of all that causes more work
 13 and also time.

14 CHAIRMAN DONOHUE: You're going to have to get back
 15 in there and decommission that line; right? As part of
 16 the permit requirements, so you would be pulling that
 17 line, the old line --

18 MR. SMART: Yeah.

19 CHAIRMAN DONOHUE: -- if you're rerouting it.

20 MR. SMART: Yeah, we would. We would be doing
 21 that not in the winter. We would be doing that in the
 22 summertime.

23 CHAIRMAN DONOHUE: Right, the summertime. Okay. All
 24 right. Thanks. So, John, this is not -- this has no
 25 action by the APC, so --

1 MR. HESTER: That's correct.

2 CHAIRMAN DONOHUE: All right.

3 MR. HESTER: It's comment gathering. No response
4 is --

5 CHAIRMAN DONOHUE: Okay. Peter has one more comment.

6 MR MAURER: Just something I was thinking of. There've
7 have been a couple of public comments about locating the
8 line that right now is along the 267 right-of-way and
9 moving that out of the right-of-way as a means to improve
10 the visual impact. I would be concerned, I'm not sure how
11 that would be, but, you know, by moving that outside, then
12 there would be another swath adjacent to it that might
13 have an equal or worse visual impact. That's just
14 something that should be considered while looking at that
15 alternative. You know, it may be a nicer view from the
16 road, but away from the road you've got this parallel
17 swath and cleared, you know, path. That should be
18 considered.

19 MS. COATSWORTH: Hello, Mr. Chairman. Sydney
20 Coatsworth with Ascent Environmental. I realize we're not
21 responding to comments today. We are going to be
22 preparing detailed comments in writing, however, this has
23 come up enough times I think we need to address it.

24 There is an applicant proposed measure that does
25 involve setback, setting the line back from 267. So those

1 visual simulations that you saw in the show are the
2 pre-APM condition. And so in moving that back, and to
3 your comment, Peter, we did evaluate the impacts too of
4 a setback. Thank you.

5 CHAIRMAN DONOHUE: Yeah. And Sean -- excuse me.
6 Sean talked about all those APN proposals that were done
7 at the initial submittal. How come this wasn't one of
8 them?

9 MS. COATSWORTH: It actually is one of them. We
10 -- we took those and they were modified and discussed with
11 the applicant as we were going through the environmental
12 analysis to determine whether they are willing to commit
13 to them and make them permit conditions.

14 CHAIRMAN DONOHUE: Okay. Thanks for that
15 clarification. All right. I'm going to move on and
16 close -- I'd like to close the hearing on this agenda item
17 and move on to public hearing agenda item 6-B.

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TAHOE REGIONAL PLANNING AGENCY

GOVERNING BOARD

DECEMBER 18, 2013

AUDIO TRANSCRIPTION FILE FROM 1:41:30 to 2:05:06

and 2:42:40 to 3:32:16

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1 CHAIRWOMAN ALDEAN: Then we will go ahead and
2 proceed with public comment. Marguerite Sprague, Sprague.
3 Forgive me for mispronouncing your last name if I did.
4 Followed by David Caultier and Kim Whitman.

5 MS. SPRAGUE: Does it work? Good morning. Thank
6 you very much. First off, thanks very much for all of
7 this work that you're putting into this. I appreciate it
8 very much.

9 I'm here right now to represent -- beg your
10 pardon? My name is Marguerite Sprague. Or Sprague. I
11 accept it both ways. I'm here representing the Tahoe City
12 plan area team. There are a couple of other team members
13 here as well to try to put face to the team. Basically
14 I'll be brief. I'm here to reinforce the points we've
15 made in our two letters, which I believe Ms. Jepson is in
16 receipt of, and say very quickly that I appreciate that
17 there is some serious consideration being given mulling
18 about the moving of the Tahoe City substation. That was
19 our primary point of interest.

20 I'd just like to note that the timing of this
21 project has interesting intersection with both the State
22 Route 89/Fanny Bridge work as well as the community
23 planning work, and we encourage that it is thoughtful to
24 coordinate such efforts when it's possible. It's shows
25 efficiency and foresight when things are working in

1 concert with each other.

2 Also a note, as we say in our letter, when it
3 comes to environmental issues, we don't -- we aren't
4 objecting to the use of strong substances in these
5 substations. We sure appreciate their benefits a lot.
6 Just the heat and light is enough to remind us of that,
7 but the prudent use of these things is very important,
8 especially when you have a substation located in close
9 proximity to both Lake Tahoe and the Truckee River. Our
10 letter explains more. I'm assuming you will all get
11 copies of this and see our specifics. But just to say,
12 prudent foresight will indicate moving of the substation.
13 This will be better to serve our community, our basin, and
14 the lake.

15 Also there are people in Tahoe City who would be
16 delighted to assist in helping to find and determine
17 possible locations for the moving of the substation. The
18 plan team would be happy to serve in any way we can to
19 help with this. And please just you can reach out to me
20 or any of us at any point. Thank you very much for your
21 time.

22 CHAIRWOMAN ALDEAN: Thank you, Marguerite. Next is
23 David Caultier. Is David here? I'm sorry? No, it's
24 right here. David Caultier. Oh, oh, all right. Okay.
25 He -- I'm sorry. He wanted to speak on the AutoZone issue

1 and that was approved on consent, so I gather he wasn't
2 here at the time the consent was approved. So we'll move
3 on to Steve Teshara and then Dave McClure.

4 MR. TESHARA: Good morning, Madam Chair, Members
5 of the Board, staff, ladies and gentlemen. For the
6 record, Steve Teshara, Sustainable Community Advocates.
7 Happy holidays. Thanks for holding this hearing. Very
8 important issue. And having lived in that part of the
9 basin as well as other parts of the basin, I can certainly
10 speak to the need for the project. Very important project
11 to upgrade the electrical system. And the community does
12 indeed deserve to have reliable and safe power provided in
13 an efficient and environmentally compatible way and
14 compatible with the community.

15 And so I believe the board has a copy of the
16 letter that I submitted to the APC, so I won't reinforce
17 those points, but I appreciated the discussion that you
18 had earlier with the issue of this is an environmental
19 document, but it's also a planning agency. So the issue
20 of the substation in Tahoe City and the existing location,
21 that's the issue that we're raising saying that that
22 really needs to move. Not only from a compatibility with
23 existing adopted plans, the 1994 Tahoe City Community
24 Plan, but with where the area plan is going for Tahoe
25 City.

1 And I think to -- I want to suggest, respectfully
2 suggest that the current environmental document is
3 inadequate with respect to analyzing the issues of the
4 impacts of the Tahoe City substation in terms of where it
5 is. It's been there since 1937, and I think there is an
6 inadequate job done, and another letter will be forth
7 coming that sorts of highlights that in terms of your
8 consideration of the environmental impacts, let alone the
9 impacts on the planning.

10 So there are available, as the prior speaker, Ms.
11 Sprague said, there are available alternatives. My
12 understanding of the presentation this morning is that
13 there is some type. This is not the high priority part of
14 the project. That's the Truckee to Kings Beach component
15 of the project. So there is some time to look at
16 alternative locations for the Tahoe City substation.

17 So thank you again for your time, and we'll send
18 another letter in before the deadline of January 7th.
19 Thanks.

20 CHAIRWOMAN ALDEAN: Thanks, Steve. Dave McClure
21 followed by Ellie Waller.

22 MR. MCCLURE: Madam Chair, members of the board.
23 I'm -- my name is Dave McClure representing the North
24 Tahoe Citizens Action Alliance today as well as hundreds
25 of ratepayers and citizens on the north shore of Lake

1 Tahoe. I just want to mention a few key points. There's
2 no way that the comments that we're assembling at this
3 point can all be expressed in such a short few minutes
4 period of time, but there is no question that there is a
5 lot of history here regarding this project, low demand,
6 how that demand has evolved over the last 15 years, and
7 how it's been distributed within this loop.

8 We've come up with a name for the loop. The loop
9 is a resort loop. And the reason for that is in the last
10 15 years and certainly since the line was put in, the 625
11 line was put in in 1972, the Tahoe Basin growth and load
12 demand on that line has been minimal. There's no
13 question. Minimal. And based on census data and number
14 of units, a megawatt will be required to serve about 400
15 to 600 residential units. That's a very common industry
16 practice, and that's under peak conditions, two and a half
17 kilowatts per unit, peak conditions. One megawatt. Okay.
18 We have 9,000 homes in our -- in the area between Kings
19 Beach and Tahoe Vista, so that's between 15 and 23
20 megawatts. Okay? That is a very small demand. And
21 that's assuming everybody is present. Peak demand
22 conditions, which never happens.

23 So you add a few megawatts for commercial, you're
24 still way below any kind of push in demand on the basin
25 side. What's happened in the last 15 years outside the

1 basin? Huge growth. The number of projects and the size
2 and the scale of homes in these projects. Lahontan,
3 Martis Camp, Northstar. Sierra Pacific Industries is now
4 launching another project. Squaw Valley. This is where
5 all the demand is coming from. And the whole purpose of
6 the single loop concept, and it is just a design concept,
7 when Sierra Pacific first put it out there was to be able
8 to wheel power all around this loop no matter where it's
9 needed. And so if the link to Truckee, if one of the
10 links is lost, that they can wheel power all the way
11 around through the Tahoe Basin to service Northstar.

12 So basically the Lake Tahoe Basin is becoming the
13 conveyance system for power to service the loads that have
14 developed in the last 15 years and continue to develop
15 outside the Tahoe Basin. Our position is clearly that
16 this is the 625 line in the basin between Tahoe City and
17 Kings Beach does not have to be upgraded right now to 120
18 kilovolts. It may be 20 years, it may be 30 years, it may
19 be never that it's necessary. But it's not necessary
20 today.

21 The reliability assertion is a great way to raise
22 our fears as if, my God, tomorrow the whole system is
23 going to collapse. Sierra Pacific was doing a great job
24 in managing and operating this system prior to CalPeco's
25 purchase. And the evidence of this is in two forms. The

1 customer survey that was taken by CalPeco for their
2 general rate case that they just finished was -- showed a
3 very high satisfaction rate on the part of customers with
4 Sierra Pacific services. Also, CalPeco has to submit to
5 the Public Utilities Commission system reliability
6 statistics.

7 And based on this information that goes back
8 about 15, 20 years, there are no major reliability
9 problems today with this system. Yes, portions of it are
10 causing capacity issues. No question. Guess where those
11 portions are. Outside the Tahoe Basin by a long shot.
12 These will all be covered in a lot more details in our
13 comments.

14 The alternatives. There's four action
15 alternatives. They're all the same. They're all based on
16 the same concept of a single loop system, a resort loop
17 system to service that area. There's no --

18 CHAIRWOMAN ALDEAN: Could you wrap up your remarks?

19 MR. McCLURE: Okay. There's no alternatives such
20 as a peaking power plant for Northstar. There's no
21 alternatives such as running the 120 kilavolt line to the
22 Northstar substation and being able to service them. They
23 reject it because it's not the loop. That's plain and
24 simple in all the alternatives. It's rejected in the
25 alternatives, rejected because it's not the loop.

1 CHAIRWOMAN ALDEAN: Thank you, Dave.

2 MR. McCLURE: Okay. Thank you.

3 CHAIRWOMAN ALDEAN: You bet. Ellie?

4 MS. WALLER: Good morning. Ellie Waller, Friends
5 of Tahoe Vista. The Liberty Utilities upgrade will
6 primarily be paid for by basin ratepayers and the system
7 is estimated at 50 million dollars. This could raise our
8 rates 20 to 30 percent. Yet, the upgrade reliability will
9 service Vail Corporation outside the basin and KSL for
10 Squaw and Northstar again for Vail. It will also help the
11 proposed Homewood Mountain.

12 Mr. Smart was asked at the APC meeting and stated
13 that he's being proactive in getting this system to avoid
14 a catastrophic issue, but it was not required by the
15 utility commission to do this upgrade.

16 I'm just going to touch on a couple items. The
17 EIR must include a cost breakdown of each phase of the
18 proposed project alternative. The environmental documentation
19 must also provide an individual breakdown and needs
20 assessment for the proposed expansions of Northstar and
21 Squaw, as well as Homewood needs. The EIR should and must
22 provide a separate needs assessment for the regulated
23 growth needs of the Tahoe Basin portion.

24 Scenic issues were touched upon. The Highway 267
25 corridor is a scenic route. A desirable outcome would be

1 to remove, underground, or offset with trees to enhance that
2 threshold. Removing lines completely probably isn't going
3 to be done. A depiction of the existing poles and the
4 proposed poles should be on the same chart with detailed
5 information talking about diameter, height, number of
6 lines that will go on the pole versus the existing poles
7 today. This information should also provide a scenic
8 tradeoff in the EIR.

9 At the December 10th CalPeco open house in Kings
10 Beach, the U.S. Forest Service, Mr. Rodman, who I think is
11 here, acknowledged that he is the -- in ownership or
12 monitors the Fiberboard Freeway, but is unclear what the
13 measures that will be taken. Does CalPeco have to pay the
14 U.S. Forest Service for wear and tear on construction of
15 the project and ongoing use requirements. This should be
16 identified in the EIR. Also the number of construction
17 trips that are anticipated on the Fiberboard Freeway and
18 identify all the U.S. Forest Service requirements in the
19 EIR which aren't there today.

20 Noise issues. Construction notification will go
21 to owners 300 feet of the project and a phone number will
22 be listed in a thousand feet for residences for
23 disturbances. The flight path of helicopters is a much
24 larger area than just the construction area. And blasting
25 activities could probably be heard one to two miles. At

1 minimum CalPeco should post the activities on their
2 website, in mailers if possible, although people as
3 stated probably don't look at them. Same thing with
4 blasting activities should be posed at least a minimum of
5 a week before in the newspapers.

6 There is a TRPA in Placer County overlap on hours
7 of operation in the EIR. It should state what takes
8 precedent, even though most of us know, and what are the
9 enforcement obligations. Identify CNEL levels for each
10 community affected by the construction activities in the
11 TRPA basin in the environmental document.

12 And biological resources. The wildlife chapter
13 of the 2011 threshold evaluation is incorporated by
14 comment. And I will hand in the pages that I looked at
15 from that section. The CalPeco EIR does state:
16 Implementation of alternative 4, the proposed alternative
17 would affect the least amount of the habitat for the
18 northern goshawk among the action alternatives, including
19 habitat within PAC and TRPA disturbance zones. Overall
20 implementation of alternative 4 would initially result in
21 permanent loss or disturbance of up to 72 acres versus 120
22 acres in alternatives 1 and 2.

23 TRPA code is very specific on disturbance zones.
24 I'm not going to read that. Everybody should look at
25 those. That's TRPA Code 62.4.2 adverse impacts, 62.4.1

1 disturbance zones. In the EIR it needs to be explained
2 how many of those 70 acres are affected by all special
3 species. Stating unavoidable and unmitigatable is not
4 acceptable.

5 Also they talk about unavoidable loss of stream
6 and riparian habitat. To compensate for that, it will be
7 a minimum of one-to-one ratio through contributions to a
8 CDFW-approved wetland mitigation bank. This does not
9 correct the damage of -- doesn't correct the damage. Each
10 phase must contribute to --

11 CHAIRWOMAN ALDEAN: Ellie, your time is up. Could
12 you wrap up, please?

13 MS. WALLER: Okay. The inconvenient truth is
14 this project was proposed in an initial environmental
15 analysis was undertaken by Nevada Energy in 2010 with two
16 million customers. Now we're down to 49,000 customers
17 that are going to bear the cost of this. This is a
18 significant impact to the ratepayer. Thank you.

19 CHAIRWOMAN ALDEAN: Thank you, Ellie. Next Ann
20 Nichols followed by Laurel Ames.

21 MS. NICHOLS: Happy holidays. Ann Nichols, North
22 Tahoe Preservation Alliance. One of my favorite places to
23 recreate on the north shore is the Tahoe Rim Trail,
24 Martis Valley Road between the top of Highway 267 and Tahoe
25 City. It's fabulous. There's no power poles. There's

1 views of Lake Tahoe. It's really the most accessible area
2 on the north shore for recreation. This new design, I
3 know it's going to be easier for them to take care of the
4 power poles, that's a given, but is that a worthwhile
5 tradeoff. This is a fly way for animals. As we saw, 37
6 deer crossed 267 the other morning. So this is not
7 nothing in here. And it's 7.5 miles of new right-of-way
8 within the basin. The whole project is 47,000 trees. I
9 don't know how many thousand trees will be inside the
10 basin.

11 This is a big deal. It's not, oh, you know, we
12 just need this. I mean, the sales pitch, Joanne, I was
13 kind of surprised that you were so promoting the need. At
14 the APC I was disappointed you didn't get the minutes from
15 the meeting because at the APC, the chair said can we get
16 a record of outages on the 625 line. But I guess we don't
17 have that.

18 But anyway, I think there's other options that
19 could be analyzed. For instance, a loop that-- leave the
20 625 line in the location it's at. Redo it where it is,
21 where it doesn't impact the recreation and the scenic. Or
22 do a loop down in the Northstar area. There's other ways
23 to do this. So let's think about that. It does go
24 through Kingswood east too, right through the residential
25 area. That should be undergrounded that part. There's a

1 number of single-family homes in there. So there's some
2 serious impacts and we'll be trying to educate you on
3 them.Thanks.

4 CHAIRWOMAN ALDEAN:Thank you, Ann. Laurel.

5 MS. AMES: Good morning. I'm Laurel Ames from
6 the Tahoe Area Sierra Club. I'm sorry that the minutes
7 weren't included from the APC because I did make comments
8 at that point.

9 I think that the really -- the biggest problem
10 for me for the Sierra Club is the growth-inducing impacts.
11 And it's really important for the draft to disclose, which
12 we'll discover when we open it up, to disclose that
13 increase. Based on the well-understood concept that
14 growth factors related to increases in services generate
15 growth above and beyond the today's needs. That includes
16 roads, sewer are growth generators. Water supply is a
17 growth generator.

18 And it's very interesting because the issue of
19 water raises the issue of TROA, which is the Truckee River
20 Operating Agreement, and the limits on water use. And
21 that ties to this project because the peak use times are
22 in December and January. The increase was 20 percent over
23 whatever period of time that was. And that all ties into
24 snowmaking. So if you have an increase in snowmaking, you
25 have an increase in water use and you have an increase in

1 energy need. Do the people in the Tahoe Basin need more
2 energy for snowmaking? This is a question that you need
3 outside the basin. This is a question you need to grapple
4 with carefully in this environmental document.

5 I appreciate the opportunity to comment and look
6 forward to reading the draft.

7 CHAIRWOMAN ALDEAN: Thank you, Laurel. Last speaker
8 is Steve Buelna from Placer County. I apologize for -- I
9 don't know if I've ever known your last name, Steve. I
10 think I just know you by Steve.

11 MR. BUELNA: I think you nailed it, so --

12 CHAIRWOMAN ALDEAN: I know. Literally, yes. Last
13 nail in the coffin.

14 MR. BUELNA: Don't feel bad about it. I trip
15 over it sometimes myself, so -- for the record, Steve
16 Buelna, Community Development Resource Agency for Placer
17 County.

18 Thank you, Madam Chair, Members of the Board.
19 And since the theme of the day is being pithy, I'll try to
20 just real -- be very brief with my comments and reference
21 the fact that the county has commented on the NOP already
22 in written form as well as provide the comments that were
23 mentioned at the APC meeting earlier this month.

24 I should also note though that Placer County has
25 received several public comment letters from area business

1 groups particularly with concern over the relocation of
2 the Tahoe City substation. Some of the concerns raised
3 were similar to our comments at APC, which are consistency
4 with the community, existing community plans.

5 As you're well aware, the county is also
6 undergoing the process of updating our area plans, so some
7 of the comments from these groups include comments about
8 the location of the Tahoe City substation within the town
9 center as opposed to within an industrial area. Because
10 of all this and some of the comments that were raised
11 earlier, the county feels that the analysis should also
12 consider a -- consider the cost of relocation versus the
13 preferred alternative and what that impact would have on
14 the citizens so that they can be informed in making their
15 decision and comments.

16 Last, Joanne mentioned the jurisdictional
17 complexity. And to that end, we would like to continue to
18 work with TRPA to make sure that the process moves forward
19 as seamlessly as possible. So that concludes my comments
20 unless anyone has any questions.

21 CHAIRWOMAN ALDEAN: Very pithy. Thank you, Steve.

22 MR. BUELNA: Thank you.

23 CHAIRWOMAN ALDEAN: We're now at 11:45, so I'm
24 assuming there's no further public comment on this matter.
25 We will be reconvening to take board comment, give the

1 board an opportunity to ask questions of our presenters
 2 later on. I'm assuming after lunch. So if anybody is
 3 interested, any member of the public would like to remain
 4 and ask any additional questions, we would certainly be
 5 receptive to that. So thank you.

6 (Transcription end time: 2:05:06.)

7 (Transcription begin time: 2:42:40.)

8 CHAIRWOMAN ALDEAN: We're going to go ahead and
 9 resume our discussion of the environmental document for
 10 CalPeco and the alternatives that have been proposed. So
 11 we can either -- I can entertain any additional public
 12 comment before we turn to the board for board input. It
 13 doesn't appear that there are any people who want to
 14 testify from the audience, so I'll go ahead and open this
 15 up for a discussion by members of the board.

16 Does anyone have any questions? I think we have
 17 all of the principals still in the audience who testified
 18 earlier as parts of the presentation this morning. So if
 19 you have any person specific questions, we can drag them
 20 up to the mic and have them respond. Go ahead.

21 MS. CARMEL: I just have a procedural question.
 22 Joanne and I talked about this briefly at the break, but
 23 I'm trying to understand sort of a global overview of what
 24 our purview is in dealing with this matter and what
 25 specific approvals we're going to be giving for this

1 project and -- because we've heard everything from
2 complaints about increasing rates to, you know, issues
3 with scenic corridors to desire to relocate a substation.
4 And so I just need an overview of where we're going and
5 what our authority is.

6 MS. MARCHETTA: The fundamental answer to that
7 question was on one of the last slides in the presentation.
8 So we will be certifying in the final EIS for purposes of
9 TRPA, but I think -- I think the real answer to that
10 question, Elizabeth, is that we're going to have to take in
11 all of the comments, all of the issues, and then as an
12 agency team we're going to have to sort out what are
13 matters of specifically of TRPA's purview.

14 The response to comments will be a combined
15 response to comments, but that's what I alluded to
16 earlier. When we ultimately get to TRPA's decision, we're
17 going to have to I think provide you with good guidance
18 about what are matters for which we have decision-making
19 authority and what are matters that we would have to
20 differ to a different regulatory authority to resolve.
21 The most obvious on that, of course, is rates. But
22 judgments about safety and reliability may also be within
23 the purview, more within the purview of the CPUC. And I
24 don't know if you want to add to that, John.

25 MR. MARSHALL: Maybe the way to think about this is

1 what they're applying for because you're acting on a
2 application. The environmental document supports your
3 action on the application. What they're applying for is a
4 project that is partly within the basin and partly without
5 the basin. So your jurisdiction extends to that part of
6 the project that is within the basin. The environmental
7 document, which is serving a bunch of different purposes,
8 is for the entire project. So it discloses the
9 environmental impacts associated with the entire project.
10 So when it comes back to you, it will be for -- it's
11 basically a construction project for redoing these lines,
12 and that's essentially what will be before you for
13 permitting which will be a permit to reconstruct and redo
14 these various elements.

15 It won't -- you know, there's different ways in
16 which some of those considerations may come into play, but
17 some of the more obvious ones that won't will be like the
18 rate question. But, you know, really it's defined by what
19 they're applying, and what they're applying for is really
20 a reconstruction of a utility system.

21 MS. CARMEL: So we'll be approving basically a
22 construction permit.

23 MR. MARSHALL: Yes.

24 MS. CARMEL: Some sort of, you know, use permit
25 or I don't know what the official --

1 MR. MARSHALL: Just a project.

2 MS. CARMEL: Project.

3 MR. MARSHALL: Just a standard project permit.

4 MS. CARMEL: And then what about the plan area
5 amendments that's under the TRPA action?

6 MR. MARSHALL: That's part of to facilitate the
7 project. So that's another element. It is a plan area
8 amendment. It's not just a -- I probably broadly
9 characterized this, but it is a plan area of statement
10 that is necessary if you approve the project in order to
11 expand the nonconforming use in the -- in the one
12 substation.

13 So basically it converts that nonconforming use
14 to a conforming use so it can expand. Otherwise it's --
15 under our rules you couldn't expand.

16 MS. CARMEL: Okay.

17 MR SHUTE: Quick follow-up on that and then I have
18 some other questions. When we vote to certify the EIS,
19 are we going to be certifying it for adequacy for TRPA or
20 adequacy for legal document for its all purposes.

21 MR. MARSHALL: All purposes for TRPA which would be
22 a TRPA Article VII document for the impacts associated with
23 or that relate to that in basin portion. So it's -- you
24 will not be certifying it as a CEQA document or as any
25 sort of NPEA document.

1 MR. SHUTE: So if it's inadequate for some purpose,
2 having it outside the basin, that's not -- and we vote to
3 certify it, we're not creating a liability by doing that.

4 MR. MARSHALL: Correct, but it's -- you know,
there

are -- for TRPA purposes, the document still has to disclose impacts. And if it's not disclosing impacts associated with the TRPA portion, however that is direct or indirect impacts. So it probably really depends on exactly what it is -- what element you're talking about.

MS. SANTIAGO: I just want to follow up a little bit on Elizabeth's question. So another thing that came out a lot on public testimony was the relocation of this -- of the substation in Tahoe City and that that was part of the Tahoe City Community Plan as an approved plan. So nothing's more frustrating for local jurisdictions than there's a potential for us to move forward on something that we've approved, but we're kind of figuring out where it is that we should be going with this. So what are the steps -- how are those folks being advised if we're looking at -- you know, we're just looking at this overall project and there's these other things that are coming to it, what are we advising these folks in terms of is this more of a Placer County issue that we should be going to Placer County and having them come on board on those particular things? Because obviously the relocation of a

1 substation, according to the slide it says alternatives
2 considered but rejected and these -- one of the additional
3 alternatives that were screened was relocating the Tahoe
4 City substation and that was rejected, so -- and yet it
5 came up three, four times in public testimony. So where's
6 the line drawn there?

7 MS. MARCHETTA: So this is the issue I alluded to
8 earlier and this issue has bubbled up differently now more
9 recently than the way that we understood it as the
10 document was being prepared.

11 So Placer County, you know, it's not just random
12 members of the APC. The Placer County representatives of
13 the APC actually raised this issue. Okay. Now we need to
14 start to think about how do we address this. And it is a
15 planning issue, and so to Shelly's point we're going to
16 have to engage representatives of the county and say, you
17 know, how do we address this? How do we address this?

18 CHAIRWOMAN ALDEAN: Question, and maybe this is a
19 question for Mike Smart. Could you come to the mic, Mike?
20 He's reluctant I know. I promise not to drag you to the
21 mic. I'm going to invite you to the mic. My co-chair took
22 me to task or my vice chair.

23 MR. BEYER: That's my job.

24 CHAIRWOMAN ALDEAN: Thank you. You're doing it
25 well. Within the context of alternative 4, which is the

1 preferred alternative, Mike, obviously the upgrading of
2 the existing Tahoe City substation is part of the plan.
3 What phase would that occur in?

4 MR. SMART: That would be the phase 3, which is
5 the furthest out.

6 CHAIRWOMAN ALDEAN: Okay. Okay.

7 MR. SMART: So there is time.

8 CHAIRWOMAN ALDEAN: There is time. That's what I
9 wanted to confirm. Okay. Thank you.

10 CHAIRWOMAN ALDEAN: Did you want to say something?

11 MR. SHUTE: I wanted to follow up on the substation
12 thing because there are a couple of questions there. One
13 is if it gets evaluated between the draft and the final
14 and it raises new potentially significant impacts, you're
15 in the recirculation of the whole document. And so I
16 think there's a risk there with how that's handled. Also
17 to me unless there's a particular site or sites
18 identified, it's pretty abstract and not very useful and
19 it won't satisfy anybody.

20 And the other concern I have is that there's
21 discussions as part of the area planning process in Tahoe
22 City about adding the 64 acre parcel or parts thereof.
23 Which comes first, moving the substation or deciding what
24 happens to that property as part of the area plan? So
25 that's something that I'm thinking about.

1 MR. MARSHALL: I think the way that we anticipate
2 handling this issue is it's a comment that's been raised
3 and so we'll be responding to that comment. And how that
4 response is shaped and what frame it takes, but I think
5 there will be lots of eyes on that and with a lot of the
6 considerations that you've just raised in terms of the
7 impact to the timing of the approvals, but also wanting to
8 allow -- I think the greater message is there's time
9 between now and production of the final to figure out
10 what's the best way to approach this issue given all the
11 considerations that you've heard today, pro, con, timing,
12 and et cetera.

13 MR. SHUTE: All right. Well, then I have one other
14 question which is in the summary done by Ascent. There
15 was no reference to growth inducing. It was the
16 alternatives, et cetera. During the testimony of the
17 utility president, he indicated that they couldn't hook up
18 a substantial number of homes without this system. So I'm
19 very interested in how growth-inducing impacts are going
20 to be handled. It could be said that this is facilitating
21 maybe not so much in the Tahoe Basin, but outside the
22 basin a lot of potential growth.

23 MR. MARSHALL: It is part of the environmental
24 document. It is disclosed as -- Syd, do you want to come
25 up and -- but basically growth -- what, growth inducing

1 or --

2 MS. COATSWORTH: It is -- it is -- it is
3 addressed in the document. There is a comprehensive
4 growth inducing impact -- or growth inducing impact
5 chapter.

6 CHAIRWOMAN ALDEAN: We need your name for the
7 record.

8 MS. COATSWORTH: Oh, I'm sorry. Sydney
9 Coatsworth, Ascent Environmental. It is addressed in the
10 document.

11 MR. MARSHALL: What chapter? I think it's 4 --

12 MS. COATSWORTH: 5. Sean tells me it's 5. We
13 identified the project as growth inducing. It has the --
14 it has the ability to address the current shortfall, the
15 current need, and it creates additional capacity, so we
16 called it growth inducing. CPUC documents because --
17 because the utilities aren't land use agencies and aren't
18 approving projects and they're responding to approvals
19 that are made by local governments, their typical approach
20 is to call it growth accommodating. And so we did both in
21 this document for both CPUC and for CEQA and TRPA
22 purposes.

23 MR. SHUTE: What did you say about it being growth
24 inducing?

25 MS. COATSWORTH: That it -- that it had the

1 ability to facility additional growth.

2 MR. SHUTE: Did you say where?

3 MS. COATSWORTH: Yes. On the loop -- on the loop
4 system, on those properties that could access in that are
5 served by this loop system.

6 CHAIRWOMAN ALDEAN: Okay.

7 MR. MARSHALL: But it's not an analysis of the
8 impacts of those -- whatever, you know, those growth along
9 those corridors or whatever, so it's -- you know, it's an
10 identification of growth inducing, but not an analysis of
11 wherever that growth -- you know, the impacts associated
12 with whatever that growth may be.

13 CHAIRWOMAN ALDEAN: Larry and then Casey.

14 MR. SEVISON: I have not gotten any direction from
15 Placer County on how to react to this at this point, so
16 I'm not really qualified to speak for or against or
17 anything. I would, however, say that I know that one of
18 the goals of the planning team, as I understand it, is to
19 improve the image of Tahoe City as you enter it from Squaw
20 Valley, let's say. And of course one of the things --
21 these are some of the things that they've considered to
22 make that a better plan area as you come in, and that's to
23 improve, mitigate, and do away with anything that's
24 unsightly if they can.

25 And I think they haven't identified alternative

1 sites so they know where there are -- there is an
2 alternative site that would be suitable for this facility
3 that would be out of sight. But I think a lot of issue is
4 being raised here that I think needs to be clarified for
5 next time because I can -- I can envision that if in fact
6 they push hard enough, that they'll have to amend the EIS
7 or environmental document to include these options because
8 if the -- if the county feels it's so strongly about how
9 they're going to improve the entrance to Tahoe City as
10 part of the new plan, then these other things have to be
11 considered along with it.

12 And so I just -- I'm not trying to muddy the
13 water any worse than it already is I guess, but I would
14 like to hear from Placer County, you know, what their
15 attitude is about this and if, in fact, they're most
16 interested in making the best improvements possible to the
17 entrance to Tahoe City, that this in fact would be a
18 mitigation issue.

19 So at any rate, that's the best I can do here to
20 help steer us through this, but certainly if the county
21 wants to push that issue, I would certainly suggest that
22 we amend the impact report to include those as options.

23 CHAIRWOMAN ALDEAN: Casey and then Mark.

24 MR. BEYER: Mr. Smart, perhaps you would come back
25 to the -- to one of the mics. In your -- thank you.

1 Great presentation by the way and I appreciate it.

2 MR. SMART: Thank you.

3 MR. BEYER: In your earlier slide you talked about
4 your service territory of 1476 square miles, seven
5 counties and approximately 49,000 customers. You also
6 went into a very clear definition that at peak load during
7 last year, that there was a bit difficulty to have enough
8 power to wheel to the areas of need without using
9 alternatives, a diesel generator, for instance. And I
10 think the question from the audience was this is whether
11 we call growth inducing by the document or accommodating.

12 We're looking at it from a basin standpoint, but
13 from a policy standpoint and from a business standpoint,
14 you're trying to accommodate what type of growth beyond
15 40,000 -- 49,000 customers. Or another way to look at it,
16 how much energy load are you trying to accommodate in
17 terms of next generation use?

18 MR. SMART: Well, I have to have a system that
19 can handle peak. It's just the nature of the electric,
20 and so whatever the peak is I have to be able to handle
21 that peak. But like I said, normal growth up in this
22 area, the service territory is usually about 1 to 2
23 percent electrical growth. And I've got to tell you, it
24 surprised us and quite a few folks of what happened last
25 winter because the previous peak was 120 -- get this

1 right. 124 megawatts and then the last winter's peak was
2 144. That's a 20 megawatt growth in 23 months. That's
3 like 8 percent compound over one year to the next. So it
4 was quite alarming and it advanced the need of this
5 project up just like real up close and personal.

6 Am I helping you at all? Normally, like I say, 1
7 to 2 percent load growth is kind of what you would see.

8 MR. BEYER: What I'm looking for, Mike, is the
9 comments from the public have led or assumed the belief
10 that this is a growth-inducing measure. And that growth
11 is not going to come into the basin because of the
12 particular growth restrictions we have in our regional
13 plan. You can't grow beyond what the regional plan is.

14 So that would force development outside of the
15 basin, which actually impacts the overall area. So I
16 think the question to the audience and to this board is
17 you're doing something that's in the best interest of
18 providing power to the area, the region.

19 MR. SMART: The whole North Tahoe region.

20 MR. BEYER: Exactly.

21 MR. SMART: All the way -- all the way from
22 Truckee all the way up to --

23 MR. BEYER: Which goes into a CPUC conversation
24 about rates when somebody from the public says that the
25 basin residents and customers are going to be paying for

1 the development outside of the basin. And that's not
2 really the purview of this board, but it's obviously a
3 concern to the constituents that this board represents.
4 So I just want to kind of get my hands around how you're
5 looking at the customer growth. How you're looking at
6 providing reliable energy sources for in basin and outside
7 basin and the need to do it in an environmentally sound
8 way.

9 MR. SMART: Yeah, I'm trying to do all that. As
10 far as the rate setting and the rate making process and
11 who pays what, that would occur later after we did the
12 project and the commission -- once the number is set that
13 I spent to build the project and I go in and seek what's
14 called rate recovery, they look at things like among the
15 rate classes there's large industrial customers, there's
16 small, medium customers, there's residential, and they
17 look for proper allocations of the rate.

18 They -- they in my territory anyway for right
19 now, they don't do -- I think it's called zonal rates
20 where you can go in on a certain area of the system and
21 have those folks pay a different rate than other folks.
22 Right now, my customers in Portola pay the same rate as
23 they do at South Shore or North Shore or down in Colville
24 Walker. So I have one residential rate all across the
25 jurisdiction. So all 49,000 customers are paying a piece

1 or will pay a piece of this infrastructure improvement in
2 north, even if they don't live there. That's how the
3 rates are set currently.

4 MR. BEYER: One more question. Madam Chair, I'm
5 going to shift discussion a little bit. You mentioned a
6 in a question from our board early on about renewable or
7 alternative energy sources and that you're looking at
8 alternatives, buying it from NV to accommodate the needs.
9 And you cited I think 20 percent by 2020?

10 MR. SMART: You know, I've got to be 30 percent
11 by 2020. So 30 percent of the total retail kilowatt-hour
12 sales that I have, 30 percent of that has to come from the
13 renewable.

14 MR. BEYER: Which brings me to the point of AB 32
15 in California and the majority of your customers that are
16 in California and the push by the state to increase that
17 load beyond that estimation --

18 MR. SMART: It's currently 20 and it is going up
19 to 30.

20 MR. BEYER: With that said, are you looking at any
21 alternatives to be in compliance with the new standards
22 the State of California is putting on to utility
23 throughout the state.

24 MR. SMART: I have to. I have to comply. So
25 yes, so the answer is yes, I am.

1 MR. BEYER: And how are you -- how are you looking
2 at moving from the current status quo when obviously one
3 renewable energy source, solar, does not really work well
4 in the mountain region where there's a forest because you
5 can't cut all the trees down to put up the panel. It
6 doesn't mean -- it's cost prohibitive, one, and, number
7 two, it's probably just a scenic violation of our code.
8 So are you looking at any other alternatives to help you
9 reach those goals?

10 MR. SMART: Sure. You remember I mentioned that
11 I've been in conversations already with NV Energy about
12 another contract into the future, would they be willing
13 and could they accommodate the increased reliable
14 requirement that I have. They also have an increasing
15 requirement in Nevada as well, and they said that, yes,
16 they would be willing to accommodate that if I so choose
17 to go with them on another contract.

18 Aside from that, I'm looking at -- and there has
19 been other folks that have contacted me that are
20 developing additional renewable supplies as well. So I
21 have to look what's the best cost and the least cost for
22 the customers to accommodate that requirement that I have
23 to comply or I'll get fined, you know, penalized. So it's
24 a mandated requirement.

25 MR. BEYER: Thank you for answering that question.

1 One final question. The Kings Beach diesel generator, you
2 mentioned that it's been upgraded and it's a quote -- I
3 don't know if we call it state of the art, but it is a
4 better standard system today than existed in the past and
5 it can only run on certain number of hours in a year
6 without violating the air quality standard of the basins;
7 is that correct?

8 MR. SMART: That's correct.

9 MR. BEYER: Has there been any discussion or
10 alternative to look at something else besides diesel for
11 that particular generation, which is basically going to be
12 used during a peak load or energy use time frame?

13 MR. SMART: Not in the past two years that I've
14 been here there has not been. Like you mean to repower
15 maybe into a natural gas or some other --

16 MR. BEYER: Correct.

17 MR. SMART: -- alternate field? No.

18 MR. BEYER: I would encourage you because I've
19 worked in other jurisdictions where there's alternatives
20 to diesel for that particular purpose especially in high
21 use areas. In the technology community that I work in,
22 they are looking at alternatives that meet the standards or
23 providing what I'll call cleaner energy sources than the
24 current diesels that are out there. Just a comment.

25 MR. SMART: It's a good comment, ideally I

1 wouldn't run the diesels at all.

2 MR. BRUCE: Thank you, Mr. Smart. With respect to
3 the December 30th, 2012 peak day of 144 kilowatts, do we
4 know, do we have any idea what's the best information with
5 respect to why that happened and where the power
6 requirements were being drawn from inside the basin or
7 outside the basin? Do we know that?

8 MR. SMART: Yeah, I can go back and analyze on a
9 like a substation -- remember the substations? I can go
10 back and look at the feeder loading or the transformer
11 loading for that, you know, that hour, that peak hour and
12 grab, you know -- and I'll just hypothetically, you know,
13 was 20 megawatts being served out of the Kings Beach
14 station. Was, you know, 40 megawatts being served out of
15 Tahoe City. You know, how much was Squaw Valley serving?
16 How much was Northstar serving?

17 I will say this. The 144 and a half megawatts
18 including also the South Tahoe load. That was my total
19 system peak. So it includes loads over here.

20 MR. BRUCE: And, I'm sorry, yeah, megawatts. So
21 can you explain -- can you help me understand generally
22 what the proportion is inside the basin and outside the
23 basin.

24 MR. SMART: Oh, I can't do that sitting here
25 today.

1 MR. BRUCE: Right, but I mean just generally, just
2 in a general -- in a general way is there more power used
3 inside the basin or outside the basin?

4 MR. SMART: I can tell you about -- what, 90 of
5 144 was served out of Truckee, but I can't take that 90
6 today sitting here, I could later and say, okay, this much
7 was -- you know, probably like Northstar would be out of
8 basin, but the Kings Beach, Tahoe City, and is Squaw in
9 the basin? Okay, so it wouldn't be Squaw. So it would be
10 Tahoe City and Kings Beach. We could look at that and
11 say, okay, of the 90, this much was this way and this much
12 was that, you know, approximately.

13 MR. BRUCE: Yeah. With respect to the page 73 of
14 the packet here, we had environmental impacts. And I'm
15 trying to understand the language in the biological
16 resources paragraph. What I'm trying to understand is it
17 seems to me that it starts out by saying that there are --
18 there are restraints with respect to alternatives 1 and 2.

19 My question is just kind of getting a little lost
20 in the language after that in that I'm trying to figure
21 out where the -- the alternative that actually works in
22 that paragraph is. Where is the alternative that doesn't
23 create a -- a problem for approval.

24 MS. JEPSON: Correct, right. Only alternatives 1
25 and 2 have an impact to the goshawk habitat. Three and 4

1 do not because of the different alignments. So it may not
2 be in clear as it should be, so -- I don't know if Sean
3 wants to come and speak to that.

4 MR. BECHTA: We have [inaudible].

5 MS. JEPSON: Oh, good, very good. We have our --
6 great. Okay. Thank you.

7 MR. HENDERSON: Good afternoon, Madam Chair,
8 Members of the Board. My name is Steve Henderson with
9 Ascent Environmental. I'm a senior wildlife biologist.
10 So you're talking specifically about the goshawk issue and
11 the fact that --

12 MR. BRUCE: Well, not necessarily. I'm talking
13 about the whole paragraph. What I'm trying to figure out
14 from the paragraph is, you know, it keeps referring back
15 to it would result in the same impacts language, and I'm
16 trying to understand whether or not which alternatives
17 work with respect to the biological resources paragraph.

18 MR. MARSHALL: I think I can take a stab at it.

19 MR. HENDERSON: Gotcha.

20 MR. MARSHALL: Okay. I think what was trying to be
21 portrayed here is that if you have a significant
22 unavoidable associated with alternatives 1 and 2 regarding
23 goshawk. So if you're going to try to avoid that, you
24 need to relocate the lines. And once you relocate the
25 lines, depending on the alternative, you're going to have

1 additional or similar habitat and grading impacts I think
2 for the alternatives, and I think that was for 3 and 4.
3 So that's -- you would look to 3 and 4 as a way of, okay,
4 we can't have -- we can't route the lines as in
5 alternatives 1 and 2 for goshawk purposes and then you
6 shift over to 3 and 4 look at the various other habitat
7 and land disturbing or grading impacts associated with
8 those alternatives. Did I get that?

9 MR. BRUCE: Okay. But then when you get to 3 and 4
10 does that work?

11 MR. MARSHALL: Yes, for goshawks.

12 MR. BRUCE: Okay. But does it work -- does it work
13 for biological resource I guess is my question.

14 MR. MARSHALL: Yeah. There aren't any for 3 and 4,
15 and correct me if I'm wrong, but the basic conclusion
16 there aren't any significant and unavoidable impacts that
17 would lead from TRPA's perspective to not be able to
18 approve the project.

19 MR. BRUCE: Okay. For 3 and 4.

20 MR. MARSHALL: Correct.

21 MR. HENDERSON: That's correct. And can I just add
22 to that and clarify? On the goshawk issue there would --
23 which is a subset of the biological resources that are
24 addressed in the environmental document. Under 3 and 4
25 there would be affects on potential habitat for goshawk,

1 there would be no code conflict and therefore no
2 significant impact under significant and unavoidable
3 impact under those two alternatives.

4 MR. BRUCE: Okay. And then the same question
5 basically for air quality. Are we good to go with respect
6 to -- again the language just kind of gets me to a point
7 where I need to understand which alternatives are okay
8 under air quality.

9 MR. BECHTA: Hi, Sean Bechta again, Ascent
10 Environmental. Yeah, so approval of the project relative
11 to air quality is not an issue. Yes, there is a
12 significant and unavoidable impact, but in CEQA and NEPA
13 and environmental regulations you can have a significant
14 and unavoidable impact and still approve the project and
15 certify the document. So as I explained in the
16 presentation, that impact relates to the North Sierra Air
17 Quality Management District.

18 In the more detail, the construction emissions
19 resulting in emissions of reactive organic gases that
20 exceeds a daily threshold for the air quality management
21 district. The Placer County Air Quality Management
22 District has a program that if that threshold or other
23 thresholds are exceeded, you can pay into a program and
24 they use that money to switch out engines, do other
25 measures that reduce reactive organic emissions overall.

1 And so because that program is available, that impact is
 2 less than significant. Northern Sierra Air Quality
 3 Management District doesn't have such a program, so that
 4 mitigation option is not available, therefore significant
 5 and unavoidable.

6 MR. BRUCE: Okay. And so if it's not --

7 MR. BECHTA: And it's outside the basin.

8 MR. BRUCE: It's outside the basin.

9 MR. BECHTA: Yes, that's outside of the basin.

10 MR. BRUCE: Okay. Great. Thank you.

11 MR. BECHTA: Yep.

12 MR. MARSHALL: If I could just clarify one thing
 13 also, Mark. We need to remember that there are certain
 14 kinds of impacts that TRPA can't make overriding findings
 15 for if they're in the basin and they affect a threshold or
 16 there's a code violation or something like that. But like
 17 with the regional plan there was a significant but
 18 unavoidable -- potentially significant but unavoidable
 19 impact associated with greenhouse gas emissions. We were
 20 able to override that because it's not -- we don't have a
 21 threshold directly on that that would require us or
 22 preclude us from making that finding.

23 MR. BRUCE: Okay.

24 MR. MARSHALL: So there's -- sometimes when you
 25 see significant impacts that are associated with the

1 threshold, sometimes they're not.

2 MR. BRUCE: Thank you.

3 MR. YEATES: To follow up on all of that, there
4 was one public statement that said despite the fact that the
5 language here on page 73 says that it's only alternatives 1
6 and 2 will result in permanent habitat loss, there was some
7 testimony about at least 72 acres of goshawk habitat would
8 be disturbed and that's a species that has a threshold
9 requirement for us to address, so we would have to make
10 appropriate findings for making that decision.

11 And then we also have comments that were made
12 about the conflicts with significant scenic resources,
13 recreational areas that are used and the realignment of
14 some of these things, all of which we do have thresholds
15 for. And so as we're balancing alternatives, we may very
16 well find ourselves in a situation where, okay, this is
17 good for the goshawk, but it's bad for recreation. Or
18 it's good for recreation and scenic and it's horrible for
19 goshawk. And so, I mean -- and we have this issue that we
20 need to make the finding that this is not going to help
21 prevent us from achieving and maintaining our thresholds.

22 I mean, do we -- how do we address balancing
23 those things out? And hopefully staff could give us some
24 guidance on how we're going to address clearly
25 basin-related impacts that affect those kind of threshold

1 decisions. I mean, we don't -- I mean, I don't have that
2 now in any kind of staff report, so I'm just curious as
3 to --

4 MR. MARSHALL: I think -- let's kind of distinguish
5 between threshold impacts which to some degree I think are
6 disclosed in the document, but aren't necessarily the sole
7 purpose of the document.

8 MR. YEATES: Right.

9 MR. MARSHALL: The document examines and compares
10 the whole -- I mean a range of environmental impacts
11 associated with the proposed project and the alternatives.
12 So, for example, we do have a threshold on Scenic on 267,
13 right, going up that corridor? We don't have a threshold
14 on Fiberboard Freeway. Okay?

15 MR. YEATES: Okay.

16 MR. MARSHALL: So you have a scenic impact associated
17 with the project on Fiberboard, but it's not a
18 threshold-related --

19 MR. YEATES: Do we have a recreation threshold?

20 MR. MARSHALL: We do have a recreation threshold, and
21 whether or not -- you know, we can analyze whether or not
22 that's going to affect that threshold.

23 MR. YEATES: Okay.

24 MR. MARSHALL: But just in terms of scenic, that's an
25 illustration of where we might -- we might not be able to

1 do something on scenic because we would be prohibited from
2 making -- we could not make the necessary findings on
3 thresholds related to putting an expanded power line up to
4 267. But for Fiberboard Freeway, there's no -- it's still
5 a matter of policy for you to try to determine those
6 tradeoffs between exactly what you're talking about, but
7 there's no inherent inability to make those findings,
8 threshold -- threshold-related findings.

9 So like with a number of projects I think that
10 you have, there are some tradeoffs between an impact
11 associated, but they are not -- they're not -- you cannot
12 override a threshold impact, and that's what I think we're
13 trying to identify as those significant impacts that could
14 not be mitigated or to cause a code violation or a
15 threshold violation.

16 MR. YEATES: So I remember from the tour we were
17 looking and -- Shelly and I we were looking down at the
18 road at those towers and there was a discussion about we
19 push those further into the trees maybe to kind of avoid
20 looking at the lines I suppose would have another impact.
21 So is that all being evaluated in this document because we
22 may have to push this line to address --

23 MR. MARSHALL: Yes.

24 MR. YEATES: -- threshold issues?

25 MR. MARSHALL: Yes. So part of the proposal is to

1 move the 267 line into the forest to hide it, hide it,
2 essentially screen it for scenic and for threshold
3 purposes. But as a consequence of that, you're taking
4 down trees.

5 MR. YEATES: Right.

6 MR. MARSHALL: Right. And so there is those tradeoffs
7 in terms of -- but those impacts were determined not to be
8 significant at least from that habitat loss and the tree
9 loss. And we're having threshold gain as a result of
10 moving the power line into the -- you know, X number of
11 feet off the road and into the forest.

12 MR. YEATES: And so if we wanted to say, well, one
13 solution would be to put it underground, and then we would
14 have to then balance the impact of that cost on the
15 ratepayer or would we just say that's your problem PUC,
16 you figure that one out. We're dealing with our issue which
17 is scenic quality versus knocking down trees and we think
18 for our purposes it's better to stick it underground.

19 MR. MARSHALL: Yes, but I think -- let me just -- I
20 want to talk about underground just for a second because
21 it kind of struck me as something interesting in the
22 document that I didn't immediately grasp because, I mean,
23 generally whenever we have a project, we want to
24 underground.

25 MR. YEATES: Uh-huh.

1 MR. MARSHALL: This is different from most of the
2 projects we see because this is a transmission line, not a
3 distribution line and so there's different considerations
4 that come into play when you're trying to underground
5 transmission lines. It's significantly more difficult,
6 I've been told, and there's all sorts of other issues that
7 you have to take into account that are discussed in the
8 document. So there was an alternative considered but
9 rejected that talked about undergrounding. So I would
10 recommend that you look at that, and we were very careful
11 to make certain that that's -- that does not preclude us
12 from requiring distribution lines to be undergrounded. But
13 it's a distinct set of characters, but you're also
14 talking, you know, yes, it's a possibility to underground,
15 but there's costs, there's associated -- you know, is it
16 economically feasible? Is it technologically feasible to
17 do those things and what are the consequences associated
18 of that to traffic on 267. You know, there's lots of
19 different impacts associated with that determination. So
20 the alternative that was considered was not
21 undergrounding, but moving it into the forest.

22 MR. YEATES: And our response to essentially let's
23 say our public, the people that are concerned about
24 the Tahoe Basin would be to have an analysis and whatever
25 comes to us of those options. And some people may say,

1 well, why not underground it, and then we can have a
2 discussion about distribution versus transmission and the
3 manholes that have to be up and the snow cover and all of
4 these issues, but nonetheless, you balance that against
5 some other things. But we're not talking about a great
6 length of that transmission line.

7 MR. MARSHALL: I would foresee us doing the same
8 thing as we did with the RPU and say not only do we have a
9 response to comments section, but we also have --
10 potentially have significant issues that were raised and
11 you can pull pieces from different documents and say
12 here's kind of an undergrounding discussion.

13 MR. YEATES: Okay.

14 MR. MARSHALL: But it's also hopefully to inform
15 the public and the board on those issues.

16 MR. YEATES: And then if I may go back to that
17 substation in Tahoe City. One of the ways that we're
18 going to mitigate the impact of that transmission line, as
19 I recall from the tour, as it currently goes right down
20 the river, and so we're going to put a bigger tower up
21 there and there was a picture of that pretty significant
22 view. And so we would just step over that first tree line
23 and the line would then run to the existing substation.
24 Well, that's encroaching, is it not, that 64-acre
25 recreation area. So then we are then making a decision

1 for Tahoe City and Placer County as to a permanent
2 location for a power line in an area where they're trying
3 to think about whether that 64 acres should or shouldn't
4 be in the town center or how we're going to deal with
5 things. So doesn't that really kind of require us to do
6 some work with Placer County on what to do with this
7 substation? Because we're going to -- we're going to make
8 a decision that will either determine for several years
9 that transmission line and, therefore, the location of
10 that substation or we deal with it now, you know, as
11 something that maybe we should address as we look to the
12 future and the infrastructure necessary for some of our
13 communities to do what's necessary to implement our
14 regional plan, which is concentrate development and do
15 things differently than we did before and have the
16 infrastructures where private development could do that
17 would be a great thing. And if they want to enhance that
18 entrance to Tahoe City, that would be -- it's not like
19 it's -- nothing is going to happen. We're going to put
20 bigger poles going along the river there or we're going
21 to push it on the other side of the trees and it's going
22 to have a planning impact. My comments are on the record?

23 MR. MARSHALL: Yes, definitely.

24 CHAIRWOMAN ALDEAN: Did you want a response, Bill?

25 MR. MARSHALL: I mean, I think the response is that's

1 the -- that's the type of discussions that need to happen.

2 MR. YEATES: Okay.

3 MR. MARSHALL: And all those are factors into it.
4 And the fact that, you know, let's just -- I mean, to be
5 clear, our planning documents encourage the removal of the
6 substation; they don't require it.

7 MR. YEATES: No, I understand.

8 MR. MARSHALL: And so it's -- it's -- you know, we're
9 talking about an applicant that comes in with the project
10 that does not include it, and so it's a discussion now --

11 MR. YEATES: No, I understand.

12 MR. MARSHALL: -- how we --

13 MR. YEATES: The substation is baseline, I get that.
14 And someone talked about it's just -- this there doesn't
15 have an impact, but, well, we're going to move a
16 transmission line, a bigger transmission line to affect
17 the view along the river, maybe even public safety along
18 the river. To move that tower to the other side even
19 though the substation isn't going to -- it's creating the
20 need for that change.

21 MR. MARSHALL: Don't get me wrong. I think a
22 definite, as you said, a consequence of the project as
23 proposed would be to potentially make it more difficult to
24 relocate and that -- but that's not necessarily an
25 environmental impact, per se, but it's more of a planning

1 matter that is a legitimate consideration for the board to
2 take up when it takes up the merits of the project.

3 MR. YEATES: Okay.

4 MR. MARSHALL: That's the way that I view it.

5 CHAIRWOMAN ALDEAN: Sure.

6 CHAIRWOMAN ALDEAN: Marsha and then Hal.

7 MS. BERKBIGLER: Thank you. This substation, what --
8 is the only reason -- I guess the only reason for relocating
9 or for discussion about relocating it is to -- for image
10 purposes, to beautify. I mean, it's currently not
11 polluting anything, I mean, it's by the river, but it's
12 not creating anything other than a visual problem;
13 correct? Anybody?

14 MR. MARSHALL: No one is willing to come forward.

15 MS. MARCHETTA: Here's how I would like to deal with
16 this issue. It's been raised, we have clearly -- I think
17 we have been really -- we've tried to be really clear on
18 the record. The first phone call that's going to happen
19 after this hearing is to Placer County. And rather than
20 try to -- you know, we've heard loud and clear this is now
21 an issue that is in play. Because this is a draft
22 environmental statement, answering the question of what
23 are the effects of this substation relative to its current
24 location versus a different location, that is going to
25 have to be the subject of considerable discussion,

1 probably additional analysis, and we can't even begin to
2 conjecture on it, what the -- you know, what the purpose
3 is to keep it in its current location until we pull out
4 those factors and those discussions from those who have
5 raised the various interests. And honestly, this bubbled
6 up to us relatively recently, so that's why it's not --
7 you know, it's in the posture that it is in the documents.
8 So we're going to have to take a hard look at that.

9 CHAIRWOMAN ALDEAN: Joanne, when we have that
10 conversation I think it's-- maybe I'm misunderstanding the
11 process, but I think this is multi-jurisdictional. We've
12 got the PUC, you know, who may or may not reimburse
13 Liberty. If they decide to front the cost of relocating
14 this substation, the PUC may say: Look it, it's not
15 integral. You know, relocating a substation has nothing
16 to do with providing reliable power. We're not going to
17 allow you to pass that cost on to your ratepayers, you
18 know, and then Liberty Mutual -- Liberty Mutual. Liberty
19 -- they may have -- they may have to be Liberty Mutual to
20 get this accomplished. But Liberty Utilities may not get
21 reimbursed, and that's a huge potential problem for a
22 company that has to meet payroll and, you know, is
23 accountable to its stockholders and shareholders. So
24 anyway, I'll just put that in the record.

25 MS. BERKBIGLER: Thank you. That's precisely what I

1 was just going to say is that there's a huge cost
2 associated with that, and so --

3 MR. COLE: I -- I appreciated the input. The
4 presentation was very educational. I also just wanted to
5 go on record with the two concerns. The Tahoe City
6 substation, I just always want to give deference to our
7 local planning agencies. So I would like to know what
8 their long-range goals are with that. And if we can
9 accommodate their area plans that are going to come
10 through or the existing community plans by relocating
11 them, just suggesting it now and letting the -- letting
12 the utility company know that that is a preference because
13 we have area plans that are wanting to use this area for
14 something else.

15 And then as far as the Kings Beach diesel
16 generators, I would just like them to look into what
17 natural gas generators cost instead of the diesel. I
18 think that's a small step for air quality, but otherwise,
19 I thought it was a very good presentation.

20 CHAIRWOMAN ALDEAN: Any other member of the board
21 wish to make a comment? Elizabeth?

22 MS. CARMEL: One of the issues I've been wondering
23 about is under alternatives considered but rejected,
24 there's a bullet for managing demand. And I'm not sure
25 who the best person to respond to this is, but I would be

1 interested in seeing a discussion about were more
2 aggressive retrofit or conservation measures analyzed, to
3 what extent does having a very aggressive program to
4 change out LED bulbs or, you know, do real energy
5 conservation -- strict energy conservation requirements,
6 how could that help meet peak demand. And I'm happy to
7 hear your comments on that.

8 MR. SMART: Mike Smart with Liberty Utilities.
9 We do have quite a portfolio of energy conservation
10 programs that we have. Some of them are targeted to low
11 income and some are targeted to schools and such as that.
12 On the specifics of the peak demand where you could go in
13 and load shed of some fashion, like a noncritical load
14 where you can maybe pay someone to come off line, that
15 currently is not in our terrace, but there will be
16 something that I will add for the future to extend out,
17 maybe having to build something. But right now we don't
18 really have that. Other than we have the interruptible
19 rate, but it's for irrigation, for irrigation, but we
20 don't have that for like an industrial.

21 MS. CARMEL: And then what kind of programs do you
22 have to encourage businesses to trade out LED bulbs?

23 MR. SMART: We have our refrigerator program. We
24 have a CFL, you know, compact fluorescent light. But I
25 only have a fixed budget. I don't have an infinite amount

1 of money to throw at those programs. It think it's about
2 400,000 a year. And I went in on the last rate case and
3 set that target amount on these programs and literally
4 inherited the programs that came from the previous
5 utility. Okay. Thank you. We have a commercial rebate
6 program for retrofitting.

7 MS. CARMEL: Okay. There you go.

8 MR. SMART: We have a whole bunch. It's on our
9 website.

10 MS. CARMEL: Well, I think for the purposes of the
11 EIR environmental document, I think it would be
12 interesting to see an analysis of that quantified to
13 determine, you know, how much power savings can result
14 from that and if that is a viable alternative.

15 MR. SMART: Yeah, how much participation would be
16 willing --

17 MS. CARMEL: Yeah.

18 MR. SMART: And how many people would be
19 willing --

20 MS. CARMEL: And if expanding a program may have
21 cost benefits, you know, in relation to, you know,
22 dramatically expanding capacity.

23 MR. SMART: In the alternative section I would
24 recommend that you take a look at that section because it
25 provides a screen by which alternative -- or they were

1 considered but rejected. And it's not just, you know, can
2 you meet the entire -- or can you reduce your demand to a
3 point where you don't need the -- your peak is not pushing
4 up against the maximum, system maximum. Also does it meet
5 other project needs like providing, I think, the 625 --
6 the 625 line -- do I have that right? Access in order for
7 to increase the reliability of that line.

8 So it's not -- it's not just premised on that
9 analysis and it's not just premised on the reduction in
10 capacity or the reduction in energy demand that we created
11 by those change-out programs. So that's just -- that's
12 how the analysis was constructed.

13 CHAIRWOMAN ALDEAN: Okay. Good discussion. Any
14 other questions or comments? One last chance for public
15 participation. Any comments regarding this environmental
16 document?

17 All right. With that, we'll go ahead and close
18 the public hearing. Thank you everyone.

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Assessment of the Proposed 625 & 650 Electrical Line Upgrade Project

By Thomas A. Besich, Electric Utility Power Engineer

April 28, 2014

Introduction

I have been retained by NTCOA to provide a technical assessment of the validity of various documents obtained, directly or indirectly, from the Project Proponent [Liberty Utilities, "LU"], the CPUC, and the TRPA, as well as the advisability of LU's proposed Upgrade Project itself.

My background in brief includes a degree in electrical engineering from UC Santa Barbara with 25 years at Southern California Edison working in departments responsible for transmission planning, system operations, and power contracts – including 5 years of power flow computer studies of about half of Edison's 66kV and all of Edison's 115kV systems, plus 7 years of power flow and stability studies of Edison's 220kV and 500kV grid as well as the entire WECC system.

My more detailed background is set forth on my curricula vitae attached hereto. In the interest of full disclosure, I was later approached by Ascent Environmental on behalf of TRPA to do a "peer review" of these technical reports, to which I suggested a possible "win-win" in which I would do the review for both parties to minimize delays and disputes. Ascent seemed receptive to the idea, but I never heard back from Ascent.

Documents Reviewed

- 1) "North Tahoe Capacity Plan" prepared by SPP in 1996, which is missing several attachments and references other study reports not provided – referred to as "SPP 1996";
- 2) "North Tahoe System Capacity Plan Validation Report" dated August 2011, commissioned by LU and prepared by ZGlobal with the assistance of, and managed by, Tri Sage – referred to as "ZGlobal";
- 3) "North Lake Tahoe Electric Transmission System Upgrade Scoping Document" dated September 2011, commissioned by LU and prepared by Tri Sage -- referred to as "Tri Sage"; and
- 4) Portions of the Draft Environmental Impact Report dated November 2013, prepared by Ascent for TRPA, CPUC, and USFS – referred to as "DEIR", and
- 5) A chart of daily max/min loads for the entire LU California system [all of North Tahoe and South Tahoe] for the 12 months from August 2012 through July 2013, titled "2012 Peak that Exceeded Capacity" believed to have been provided by LU at public meeting(s) in December 2013 – referred to as "LU's Load Chart". LU declined to provide any other load information.

57-1

Unique Load and Environment

All the above documents state -- as confirmed by LU's Load Chart -- that the North Tahoe load peaks in winter around the Christmas to New Year holidays. Tri Sage and the DEIR describe the peak as the "result of electric heating and ski resort loads". SPP 1996 was more explicit: "the ski resorts ... have lift loads that peak during the day, and snow-making compressors ... usually at night. The rest of the load at Truckee, Tahoe City, and Brockway substations tends to peak at night as temperatures drop and people return from the ski resort areas."

It is very important to understand this when evaluating the North Tahoe system. As LU's Load Chart clearly shows, outside the 9 days of December 26 through January 3, the winter load did not exceed 85% [119/140] of the December 30 peak; and outside the 4 winter months from early November to early March the highest load [July 4 weekend] was only 66% [93/140] of the December 30 peak. Clearly, this system peaks only in winter.

Again, as the DEIR and Tri Sage state ["electric heating"] and SPP described ["at night as temperatures drop"], the system load is the direct result of cold temperatures at night. And as SPP stated: snow-making compressors run "usually at night". Why is this important to remember? Because the singular uniqueness of this North Tahoe system is the solid link between dropping temperatures [well below freezing] and rising load. This characteristic is actually a benefit to the transmission system because transmission conductors can experience a 25 to 30% increase in thermal ratings in such cold conditions compared to summer. AND, all the conductor ratings used in the SPP and ZGlobal studies appear to be summer ratings [77 degree F ambient conditions]. To the extent snow-making adds to the night-time peak, such loads would be ideal candidates for Demand-Side Management ["DSM"] as interruptible loads.

Conclusions and Recommendations

A. The 3.3 mile section of smaller conductor [2/0 ACSR] in the 650 line between Truckee and Northstar should be reconductored [with 397.5 AA], and rebuilt for eventual 120kV operation, as soon as possible.

B. The 5.9 mile section of smaller conductor [2/0 ACSR] in the 650 line between Northstar and Kings Beach does not need to be reconductored until there is sufficient load grow in the Brockway/Tahoe City area, or it is determined that system conditions [load growth, thermal over-loads, and/or uncorrectable poor voltage] require the entire 650 line from Truckee to Kings Beach be operated at 120kV.

C. Nothing else in the Proposed Project -- especially rebuilding the 625 line [between Kings Beach and Tahoe City] -- appears to be justified due to the deficiencies, contradictions, and fatal flaws in the supporting documents [SPP 1996, ZGlobal, Tri Sage, and DEIR]. An example of fatal flaws is in ZGlobal Appendix H where the power flow plots [figures H1, H2, and H3] all show the entire voltage drop is in the lightly loaded 120-60kV transformer at Kings Beach, which is NOT possible. This huge, and obvious, data error should have been discovered by anyone interested in study accuracy.

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Technical Assessment

The proposed Project tries to accomplish more than has been justified in the supporting documents. I do not understand the almost total absence of factual proof and lack of proper and accurate power flow cases within the various reports to support the Proponent's conclusions and recommendations in the proposed Project. SPP went 15 years and LU another 3 years exposing the North Tahoe system to what is described as dangerous conditions involving threats to public safety without accomplishing the single most important element of the Proposed Project, which also appears to be the simplest element to accomplish with minimal environmental impact. That is reconductoring 3.3 miles of Line 650 between Truckee and Northstar. I do not understand why they would delay a relatively simple and inexpensive 650 line upgrade by including the far more expensive system additions that appear to be unjustified.

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Based on information in the 5 documents above, I conclude and/or would recommend the following:

- 1) Rebuilding the 3.3 miles 2/0 ACSR segment of the 650 line between Truckee and Northstar should be separated from the over-reaching efforts to prematurely rebuild almost the entire system. This 650 Line rebuilding should proceed without delay, independent of the other questionable components of the Proposed Project.
- 2) The rated capability of the 609 line [which SPP said is 310 amps, and ZGlobal said is 240 amps without any explanation of why the change], in addition to future load growth, appears to be a contributing factor in the step to "partial 120kV loop" operation [650 line at 120kV]. LU needs to prove which conductor [1/0 copper (SPP) or 1/0 ACSR (ZGlobal)] is in the line. The manner in which this issue is confused and conflicted in the ZGlobal report [and even in Tri Sage where all 4 of the system diagrams say "1/0 cu"] makes it appear to have been manipulated. It should be noted that these 2 ratings [310 and 240] are both summer ratings and each could be 25-30% higher, not including the N-1 overload capability under the very cold ambient conditions of winter peaks. This subject is discussed in more detail in item 13 below.
- 3) If there is sufficient future load growth, and/or the 609 line is found to be severely limited [not just 1/0 ACSR, but other electrical problems] portions of the proposed Project such as rebuilding the Kings Beach leg of Line 650 and adding facilities at Truckee, Northstar, and Kings Beach to enable "partial 120kV loop" operation should be re-evaluated, and may be justified. As noted, the ZGlobal power flow studies are too fatally flawed to justify any of these actions.
- 4) Regarding the Kings Beach diesels: SPP 1996 rated them 15 MW and intended to "make full use of" them. Apparently air quality restrictions have reduced the diesels to 12 MW [which the DEIR occasionally calls 11 MVA]. Neither ZGlobal nor Tri Sage explained the operating restrictions other than having a 721 hour/year limit with half dedicated to SPP. That 20% reduction [from 15 to 12MW] could unload each unit enough to add greatly to their VAR output – perhaps as much as 1-2 MVAR each in an emergency, depending on the generator design. This added voltage support could delay for many years any need for Project elements beyond

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reconductoring the 650 line. Unfortunately, none of the ZGlobal power flow plots include VAR flows on lines or through transformers, which is irresponsible in a voltage-sensitive study. When all the errors and deficiencies in the ZGlobal studies are corrected, the reactive capability of these diesels should be included.

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- 5) LU should expedite its efforts to identify existing and future demand side management [“DSM”] opportunities, especially the ability to interrupt loads, such as snow-making and water heating, during N-1 contingencies. The apparent failure to pursue this, especially in the DEIR, is inexcusable. If it was examined in depth and determined infeasible, the DEIR should have said so. Why? Because the DEIR states: “CPUC regulatory requirements dictate that supply-side (e.g., ... delivery infrastructure) and demand-side ... options should be considered on an equal basis in a utility’s plan” Clearly, no thought was given to DSM beyond a superficial mention and dismissal of energy conservation and efficiency.

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- 6) All of the alternatives chosen in the DEIR appear to be variations of the proposed Project – in fact on page 3-12 under “Action Alternatives” the DEIR states that their selected “alternatives” are essentially all the same: “The four action alternatives considered in this EIS/EIS/EIR are variations on addressing six key project components ...” followed by a list of everything in the Proposed Project. The DEIR might as well have said no real alternatives were evaluated. Besides evaluating DSM, they should have evaluated “rolling” load from Brockway to the SPP system in the same manner SPP rolls load from its Incline Substation to Brockway and Glenbrook for SPP’s N-1s at Incline. Load rolling also may be feasible between Tahoe City and one of LU’s substations serving South Tahoe.

57-12

- 7) There does not appear to be sufficient justification to rebuild the 625 line for full 120kV loop operation. This major expense [which appears to be the majority of adverse environmental impacts] is being “justified” based on what appears to be non-existent voltage problems. This is because the ZGlobal, Tri Sage, and DEIR evaluations of such voltage problems are fatally flawed by extreme errors in transformer modeling and are totally inadequate. LU [or TRPA or CPUC] needs to conduct a competent technical re-evaluation of voltage to determine at what future load level and under what system conditions and contingencies voltage problems exist that can’t be corrected with a minimal amount of shunt capacitors. It was inappropriate to recommend to LU only the extreme solution of rebuilding the 625 line [which already has the largest 397.5 AA conductor] for 120kV operation.

57-13

- 8) If there are “harmonic resonance” conditions that limit the application of shunt capacitors to correct voltage problems, LU needs to share this specific information rather than suggest it as a vague possibility. The DEIR on page 3-79 mentions the “large scale installation of capacitors” as causing such problems, but there is no indication that anything close to “large scale” would be necessary. It would be unfortunate if the DEIR based this on ZGlobal’s excessive and

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unsupported application of capacitors at Tahoe City listed in Appendix D, or ZGlobal's fatally flawed Appendix H.

The DEIR makes two other misleading or apparently false statements about capacitors: i) space limitations at Brockway and Squaw Valley substations and ii) leading power factor concerns. None of the studies recommend adding capacitors to Brockway, and Brockway is being retired and moved to Kings Beach where there is no mention of space limitations [the view from Google Earth shows plenty of space at and around Kings Beach Substation]. There is no demonstrated need for any capacitors at Squaw Valley within the next 20 years [and the view from Google Earth clearly shows plenty of room at and around Squaw Valley Substation]. As for creating a leading power factor, there is no demonstrated need for capacitors sufficient to create enough of a leading power factor to be a problem. The purpose and benefit of a minimal amount of capacitors applied where needed, if needed, would be to delay the most expensive parts of the Proposed Project [partial and then full loop 120kV operation].

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- 9) Northstar presently is served by a 60kV tap on the 650 line. An expensive part of the Proposed Project is to split the 650 line and provide a 2nd line into Northstar, plus rebuild the substation for eventual 120kV operation. But no outage information or other justification is provided, so it is impossible to recommend this expense. A very cost-effective way to minimize any outage duration at Northstar would be to install remote-controlled, motorized disconnect switches on the Truckee and Kings Beach legs of the 650 line at the Northstar tap point.

If there are existing operating restrictions that prevent reclosing breakers [as during a summer/fall "fire season"] without visually inspecting the relayed line or examining relay targets at the substations [assuming old relays], then the outage duration could be up to an hour or more. But if either leg does not have such a restriction [as during winter], then testing the relayed line on that unrestricted leg first [after opening the disconnect switches] could reduce to a few minutes or less presently experienced outage durations. The 2nd line may be well justified, but unfortunately, no information/explanation of any kind is provided.

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- 10) As with Tri Sage, the DEIR mentions "access" to the existing 625 line as a problem, but I found nothing to support this. DEIR exhibits 3-4a through d show the existing line route and the proposed and alternative routings criss-crossing each other. It's difficult to believe the entire existing line has access problems, but it might be justified to improve access to problem locations, implement better vegetation controls in those problem areas, replace a number of wood poles with steel poles, and/or relocate the worst of these problem line sections. It would be desirable to retain as much of the existing line as possible because it already has the largest [397.5 AA] conductor LU is proposing and never overloads in any of the studies.

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Unfortunately, no specific information on outages or problem areas is provided. Depending on future load growth expectations, it might be prudent to build such relocated sections, including

individual poles replaced, as 120kV for future use. It should be noted that from an N-1 perspective, loss of Line 625 is less important than any other N-1 except 609. Outage of the 625 line would not pose a problem of poor voltage or cause other lines to overload. In none of the SPP or ZGlobal studies is the existing 625 line itself shown to come close to overloading. And SPP 1996 indicated no such access concerns, and clearly said SPP intended to rebuild this line on its existing right of way.

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cont'd

- 11) The lack of action [other than rebuilding Line 629] over the last 18 years implies the state and federal “requirements” applied to this North Tahoe system probably are more guidelines than the mandatory absolutes that the DEIR seems to suggest. The NERC standards apply to Bulk Power Systems, which LU’s is not. The California “Reliable Electric Service Investments Act” covers a lot more than just “safe” and “reliable” – there’s “affordable”, “prudent”, “environmentally sustainable”, and “efficient”. Section 399.2 (a)(1) says “...each electrical corporation shall continue to operate its electric distribution grid in its service territory and shall do so in a safe, reliable, efficient, and cost-effective manner.” There is nothing cost-effective about needlessly over-building a system. Many loads under 10 MW, or more, served at almost any voltage have one-line service, unless they are willing to pay for a 2nd line. Designing for N-1 is important, but all loads do not receive redundant services -- the majority of load interruptions are on the distribution level [16kV and below].

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It should be noted that the proposed Project includes double-circuiting future 120kV lines on common poles, or routing them on common rights-of-way, which would expose them to common mode failures and reduce reliability. This is both at the Truckee end for several miles [lines 132 and 650], including not far from the end of the local airport runway, and at the Kings Beach end for a couple miles [lines 625 and 650]. With such an emphasis on “reliability”, LU might want to reconsider these physical line arrangements.

- 12) A comment about which loads to study is important. Clearly, Tahoe City and Brockway [soon to be Kings Beach] plus Northstar and Squaw Valley are the loads – and load growth – that drive any study of this North Tahoe loop system. These 4 substations total about 70% [62/88] of the North Tahoe peak load. As noted by NTCAA, all the load growth in the last 15+ years has been outside these 4 substations. And with the DEIR and SPP statements about the areas served by Tahoe City and Brockway being close to “built-out”, it seems inappropriate to assign 70% of the future load growth to these 4 substations.

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The SPP and ZGlobal studies clearly show future load growth – especially at Tahoe City and Brockway -- determines when any upgrades beyond Line 650 reconductoring [and maybe a 2 MVAR capacitor at Tahoe City] become necessary. Identifying need dates by using forecast numbers for the entire North Tahoe region masks which loads are really important and adds confusion to the whole process. And confusion is only compounded by statements that “the Project is needed without load growth”, implying the whole Project when it’s just Line 650 and maybe a small capacitor.

13) Finally, comments on summer vs. winter ratings. The conductor ratings listed in the studies appear to be for a 50 degrees Celsius [“50 C”] rise over an ambient temperature of 25 C [which is 77 F, a pleasant summer day] for a final conductor temperature of 75 C. This 75 C is generally accepted as a non-emergency [all lines in service, aka N minus zero or “N-0”] rating limit. During emergencies [e.g. N-1] conductor temperatures are generally allowed to rise to 90 C without concern because “annealing” does not even begin until about 100 C, and requires many hours at that temperature. In the SPP 1996 and ZGlobal studies, the existing 2/0 ACSR in Line 650 doesn’t come close to annealing. In fact, ACSR is less susceptible to annealing than AA conductor.

As ambient temperature drops, so does the conductor temperature, and that 50 C rise for the same ampere flow on the conductor declines a little, too -- perhaps 3 to 4 C in an ambient of 0 C. What this means is in an ambient of 0 C [32 F] the conductor temperature will be less than 50 C, giving a margin of over 40 C for outages [and still staying under 90 C]. For example, with a minimum of about -18 to -20 C the night of December 30, 2012, if we assumed only -10 C [14 F] at the time of peak load, there would have been over 50 C [possibly 55 C] margin for conductor rise with an N-1 [still staying under 90 C]. The Westinghouse “T&D” Reference Book on page 48, Figure 26, shows the increasing current capability without exceeding 75 C conductor temperature as ambient temperature drops. At 0 C ambient, 2/0 ACSR is good for 350 amps without exceeding 75 C conductor temperature. At 0 F that capability is closer to 400 amps. And the 75 C conductor temperature leaves plenty of margin for a much higher N-1 current while not exceeding 90 C conductor temperature.

57-19

Why would SPP and LU use summer [77 F] ambient assumptions for winter peak conditions [0 to 14 F]? Perhaps they have over-current relays, and don’t want to reset relays for the winter peak period. But ZGlobal and Tri Sage recommended installing a “transfer-trip” scheme to open Line 609 whenever Line 132 relays out in winter. Over-current relays would accomplish the same thing, and do it automatically.

An analysis of system loads as a function of ambient temperatures would likely reveal that Line 609 would not exceed the conductor’s thermal rating any time of year for many years to come, eliminating any need for the transfer-trip scheme. The added benefit of keeping Line 609 in service whenever Line 132 relays is the greatly improved voltage at Squaw Valley, without adding capacitors.

Summary Conclusion

The proper plan would be to:

- o reconductor Line 650 north of Northstar as a relatively inexpensive safety net;
- o determine the real winter peak ratings of Line 609 and the 650 line south of Northstar;
- o install remotely controlled motor-operated disconnect switches at the Northstar tap if appropriate;

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- o determine the coincidence/non-coincidence of the various substation loads and their power factors;
- o identify and quantify the “harmonic resonance” exposure;
- o determine the VAR capability of the diesels at their restricted power outputs;
- o determine the ability to roll loads in an emergency between Brockway/Kings Beach and SPP’s Incline substation and possibly between Tahoe City and LU’s other substations serving South Lake Tahoe;
- o document outage histories for Northstar, for the 625 line, and for the other lines;
- o identify specific access problem areas for the 625 line and justify if possible the great cost of relocating that line; and
- o conduct a competent power flow study including correct transformer models and more realistic line ratings.

The study results will likely demonstrate that the present 625 line will be adequate until there is substantial load growth [beyond what could be anticipated in a nearly built-out area].

If my remarks above are unclear in any manner, I would be glad to attend a meeting, by phone or in person, with the CPUC and/or TRPA to discuss my views in greater detail.

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Several post graduate technical classes and seminars at various universities.

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- 1967-1981 in Electric System Planning, as Junior Engineer to Senior Engineer.
- 8 years studying EHV transmission systems of interconnected utilities in the Western US [loadflow and stability]—
- Western System Coordinating Council [now WECC] committees: Technical Studies Subcommittee; System Review Working Group [which did most of the work].
- Other inter-utility committees: ANPP [Palo Verde Nuclear] Transmission Planning Committee; SouthWest Area Transmission [SWAT] Planning Committee; Four Corners Transmission Committee; Navajo [coal-fired] Transmission group.
- Determined transmission requirements for future generation projects and interconnected system design and operating ratings [Palo Verde, Four Corners, Navajo, Pacific Intertie AC & DC, Arizona-to-California, PGandE-to-Edison, Edison-to-SDG&E, etc].
- Among major accomplishments: defeated Arizona utilities' parochial objectives for ANPP transmission and ensured maximum energy transfer capability from Arizona to California, a difference of 1000 MW.
- 1981 to December 1992 in Power Contracts and System Operation divisions [two separate organizations]:
 - 7 years [1981-1984, 1987-1991] negotiating and administrating [and defending before the CPUC] inter-utility and QF contracts as a Senior Engineer, Supervising Engineer, and Manager. Annual payments for the 400+ QF contracts totaled about \$2 Billion.
 - Major accomplishments: saved tens of millions of dollars in contract administration. Corrected initial defects in many contracts [eg: wind generation power factor correction].
- 4 years [1985-1987, 1991-1992] planning daily operation, solving problems, and ensuring that future contracts didn't cause operating problems, as a Senior Engineer and as Manager of System Operating and Protection Engineering in System Operation division.
- Major accomplishments: avoided multiple problems in inter-utility contracts; initiated installation of Power System Stabilizers for nuclear plant that was operating in violation of WSCC standard.

1993 Minor consulting activities.

1993-1995: Hawaiian Electric as Director of Power Purchase Contracts [for Oahu, Maui, and the Big Island] and as Consultant. Major accomplishment: Primary technical support and strategy developer [and witness] in binding arbitration overwhelming victory in dispute with international consortium QF [Japanese financial, European equipment, and East Coast American utility operator] on Oahu.

1995-1998 Retired, addressing family concerns.

1998 Testified [pro bono] in CPUC hearing involving utility administration of QF contracts.

1999-present Various consulting, including: technical advisor [depositions and discovery] in oil refinery litigation against utility for major damage in August 10, 1996 blackout; technical advisor [evaluating system performance] to litigants in major 2003 blackout; technical advisor [power flow analysis] in arbitration over proposed 500kV transmission line and impacts on underlying western Pennsylvania systems; technical advisor [power flow and stability analysis] in dispute over proposed EHV transmission for nuclear power plants in Canada; technical advisor [power flow, reliability, telecommunications] for major wind and solar developments in California; and numerous other projects in the lower 48 States, Canada, and Hawaii.

Appendix P2a

**Letter from NV Energy to Liberty
Regarding Emergency Backup**

6100 Neil Road, P. O. Box 10100 • Reno, Nevada 89520-0024 • 775.834.5874 • Fax: 775.834.3047

Michael R. Smart P.E.
President - Liberty Utilities
P.O. Box 107
Tahoe Vista, CA 96148

February 19, 2014

Dear Mr. Smart,

NV Energy regards with high esteem all of the noble efforts that the Liberty Utilities operations team provides during storms and prolonged outage events. I would like to take this opportunity to also remind Liberty that NV Energy will continue to provide energy delivery to the Liberty customers located in the Brockway and Kings Beach area from the Incline Village substation only on an “emergency” and “as available” basis. Liberty Utilities should not consider our prior ability to assist as an indication of our future ability to provide any permanent solution for Liberty’s loading issues in the North Lake Tahoe area. Again, we will only accommodate this configuration temporarily and “as available”, and accordingly, Liberty should only utilize this in an “emergency” case basis.

As I’m sure you can appreciate, NV Energy cannot facilitate backup service to Liberty Utility customers at the detriment of our own Incline Village customers in the NVE territory. Service to our own customers must necessarily be the priority for us, just as your customers are the highest priority for you. In the event of an outage or excessive loading issue, NV Energy will advise Liberty Utilities of the condition and proceed to isolate its Incline Village customers from the Liberty Utilities tie. Emergency events can happen at any time during the year. Liberty Utilities is advised of the prudence to maintain its own load serving capacity and contingency planning for such events in order to avoid prolonged outages to the Liberty Utilities customers.

NV Energy looks forward to continuing our valued, long-standing relationship with Liberty Utilities in the Lake Tahoe Basin and bordering areas. If you have any other questions, please feel to contact me.

Sincerely,



Rich Salgo
Executive, Grid Operations and Reliability
NV Energy

Appendix P2b

**Report of Findings Regarding the Need
for Upgrade of the North Lake Tahoe
Transmission System**

MEMORANDUM

To: John Marshall, Tahoe Regional Planning Agency (TRPA); Sydney Coastworth, Ascent Environmental

From: Jennifer Johnson, Dudek

Subject: Draft EIS/EIS/EIR for the California Pacific Electric Company (CalPeco) 625 and 650 Electrical Line Upgrade Project

Date: March 28, 2014

cc: Mike Rosauer & Jack Mulligan, California Public Utilities Commission (CPUC)

Attachment(s): Resume of Paul G. Scheuerman, P.E.; Report of Findings Re: Need for Upgrade of North Lake Tahoe Electric Transmission System; Memo: Response to comments from North Tahoe Citizen Action Alliance; and Memo: Review of Alternatives considered but rejected.

Paul Scheuerman, a consultant to the CPUC, has over 45 years of professional experience as an electrical engineer working in the electric utility industry. To assist the decision makers associated with the CalPeco 625 and 650 Electrical Line Upgrade Project, it was requested that Mr. Scheuerman provide an independent assessment of the data and documentation supporting the need for certain upgrades to the North Lake Tahoe electric transmission system as well as the reasonableness of the project to meet said need; review and comment on the *Technical Comments on the Draft EIS/EIS/EIR CalPeco/Liberty Utilities 625 and 650 Electrical Line Upgrade* submitted by the North Tahoe Citizen Action Alliance and February 14, 2014; and to review the alternatives considered but rejected in the *Draft EIS/EIS/EIR for the CalPeco 625 and 650 Electrical Line Upgrade Project* released for public review on November 8, 2013 and determine if the technical rationale for rejection was reasonable given standard utility practices.

Attached are Mr. Scheuerman's resume as well as three memos that contain his work. The CPUC has reviewed these memos and determined they are adequate and meet the needs of the CPUC.

PAUL G. SCHEUERMANN, P.E.

Washington University, Missouri: B.S. Electrical Engineering

Registered Professional Engineer

SCHEUERMANN CONSULTING

3915 Rawhide Rd.

Rocklin Ca. 95677

Phone 916-630-7073

E-Mail pgs@ieee.org

Mr. Scheuerman has over 45 years of professional experience as an electrical engineer working in the electric utility industry. He has worked with both investor owned and publicly owned utilities. Prior to starting his own company, Scheuerman Consulting in 1999, he was employed by R. W. Beck Inc. working in their Sacramento office for over nineteen years. Previous to this he was employed by the Delmarva Power and Light Company for twelve years.

His utility experience includes areas such as developing and negotiating inter-utility agreements, power marketing, resource feasibility analysis for both conventional and hydro projects, system operations studies, load forecasting and distribution, transmission and interconnection planning. Assignments have included the, analysis of power pooling benefits, negotiation of interconnection agreements, analysis of hydro plant operations, the negotiation of transmission wheeling and co-tenancy agreements, development of econometric models for load forecasting, and the supervision of distribution planning for a major suburban area. Mr. Scheuerman has presented testimony on behalf of a number of clients, before the Federal Regulatory Commission in matters concerning the deregulation of the electric utility system within California.

REPRESENTATIVE EXPERIENCE

ELECTRIC UTILITY INDUSTRY RESTRUCTURING

Mr. Scheuerman has conducted analysis of potential opportunities and consequences resulting from the ongoing restructuring of the California utility industry. He routinely monitors the ongoing process of restructuring the state's electric utility

industry. In addition, he has worked for clients in FERC venues, including the electric refund proceedings and has also testified on behalf of a client in matters dealing with access to CAISO markets.

TRANSMISSION SYSTEM PLANNING / OPERATIONS

Mr. Scheuerman has performed various transmission system planning functions involving 500-, 230-, 138- and 69-kV levels. Work has consisted of analysis of proposed and current system conditions under various operating scenarios. He has provided data and results to system operations personnel regarding system performance during contingency conditions with suggested remedial actions. Participated with interconnected utilities to develop joint planning for the expansion of interconnected transmission networks. Work has also included tasks involving the analysis of alternative transmission system expansion plans and the recommendation of suitable plans. System expansion work has been performed for transmission owners as well as merchant transmission projects and municipal entities seeking transmission access.

ENVIRONMENTAL STUDIES

Mr. Scheuerman has directed the study of major hydroelectric systems in order to provide data for analysis of operational changes based on environmental parameters. Work included the development of analytical tools to simulate hourly operations at regulating facilities and upstream peaking facilities, as well as impacts on other available resources.

He has provided input with respect to the purpose and need for various transmission facilities for incorporation in state CEQA/CPCN processes as well as the identification of system related project alternatives. His work has included analysis associated with the following transmission and substation projects:

- Antelope-Pardee 500kV Line
- Devers-Palo Verde #2 500kV Line
- Northeast San Jose 230kV Line
- Tri-Valley 230kV Line
- Jefferson-Martin 230kV Line
- Valley-Rainbow 500kV Line
- Miguel-Mission 230kV Line
- Otay Mesa Power Purchase Agreement 230kV Line
- Antelope Transmission Segments 2&3
- San Joaquin Cross Valley Transmission Project
- Central Ca Clean Energy Transmission Project
- SCE Presidential, Alberhill, Falcon Ridge and Lakeview Substations

SDG&E East County 500/230/69 kV Substation Project

Embarcadero-Potrero 230kV Line

West of Devers 230kV upgrades

Coolwater-Lugo Transmission project

DISTRIBUTION SYSTEM PLANNING

Responsible for planning 12-kV and 34-kV distribution and subtransmission systems in suburban areas. Work included the development of area distribution substations together with coordination of high voltage supply. Undertook analysis and forecast of area requirements, developed switching alternatives to meet the requirements and provided management with recommendations.

SYSTEM RELIABILITY ASSESSMENT AND POOLING ANALYSIS

Has participated in the analysis of pooling and assessment of system reliability associated with the dispatch of pooled resources. Tasks involved reviewing analysis of system reliability and projected economies associated with pooling of resources. He also has directed the study of feasibility of full-time association and membership in Pennsylvania–New Jersey–Maryland interconnection.

RESOURCE PLANNING

Directed analysis of resource planning options for various clients. Developed criteria for assessment of various resource expansion options, directed production cost simulation studies and system reliability analysis. Directed analysis of various hydro-based systems, including the Central Valley Project, to determine hydro-thermal support requirements. Has assisted clients with the identification of alternatives.

RESOURCE PURCHASE AGREEMENTS

Provide assistance to clients in identification of future resource requirements. Developed and evaluated alternative resource expansion plans. Work with clients in negotiating power purchase and ownership arrangements with various suppliers.

ECONOMETRIC FORECASTING

Supervised the development of Econometric Forecasting Methodologies utilized to project future energy sales and peak demand requirements. Studied the effects of numerous factors on load growth and has prepared and presented testimony in various "need for power" hearings.

DRAFT

**Report of Findings Re: Need for Upgrade of North Lake Tahoe Electric
Transmission System
3/24/2014**

I. Introduction and Background

Scheuerman Consulting was requested to provide an independent assessment of the data and documentation supporting the need for certain upgrades to the North Lake Tahoe electric transmission system (NTS) as well as the reasonableness of the project to meet said need. The need and associated upgrades have been defined by the California Pacific Electric Company (CalPeco), the owner and operator of the NTS. The project, to address this need, is being evaluated under the Tahoe Regional Planning Compact (Public Law 96-551) and Tahoe Regional Planning Agency (TRPA) Code of Ordinances and Rules of Procedure; the National Environmental Policy Act (NEPA) (42 U.S. Code 4321-4347), the Council on Environmental Quality (CEQ) Regulations Implementing NEPA (40 Code of Federal Regulations 1500-1508), Forest Service Manual 1950, and Forest Service Handbook 1909.15; and the California Environmental Quality Act (CEQA) (Public Resources Code Sections 21000 et seq.) and State CEQA Guidelines (California Code of Regulations Section 15000 et seq.). TRPA, US Forest Service (USFS), Lake Tahoe Basin Management Unit (LTBMU) and Tahoe National Forest, and California Public Utilities Commission (CPUC) are the lead agencies for preparation of this joint Environmental Impact Statement (EIS)/EIS/Environmental Impact Report (EIR).

II. Executive Summary

Based on its review of materials and information provided and based on current applicable North American Electric Reliability Corporation (NERC) and Western Electricity Coordinating Council (WECC) transmission planning criteria, as discussed herein, Scheuerman Consulting finds the need for a project in the area served by the NTS to be justified. Scheuerman Consulting

also finds the project as defined in project documents to be in general agreement with Prudent Utility Practices¹ and a reasonable approach to addressing the electric system problems identified.

III. Discussion of Project Need

The NTS currently consists of four 60kV transmission lines and one 120 kV transmission line configured as a single interconnected electrical network to provide service to a number of area substations. Given the basic network nature of the system, modifications to one section of the network will have impacts throughout the remainder of the network.

Review of the NTS Capacity Plan Validation Report, prepared by Z Global in August 2011 confirmed the need for a project to upgrade the NTS. The report was prepared to validate earlier findings by Sierra Pacific Power Company prior to selling its California electric service territory to CalPeco. The findings contained within the Z Global report were based primarily on results obtained from the modeling of the NTS using the GE Positive Sequence Load Flow (PSLF) software. The PSLF software is used by many major transmission planning organizations and is designed to provide comprehensive and accurate load flow, dynamic simulation, and short circuit analysis. The model relies on input information that provides a mathematical description of the transmission system as well as the loads and generation connected thereto. The mathematical model of the system was obtained from the 2010 WECC base case model.

In the case of the NTS the most significant assumption utilized in the modeling was the load forecast. This forecast was for peak load conditions experienced on the NTS generally during severe winter weather. The forecast used in the Z Global work was based on an assumed 1% annual growth commencing in 2010. The growth rate was applied to the 2010 NTS winter peak load at each substation (85.9 MW in aggregate). Given the inherent

¹ Prudent Utility Practice is a common term encompassing any of the practices, methods, and acts, including levels of reserves and provisions for contingencies that in the exercise of reasonable judgment would have been expected to accomplish the desired result at the lowest reasonable cost consistent with reliability, safety, expedition, prevention of adverse effects on neighboring systems and all applicable laws and governmental rules, regulations and orders. Such practices, methods, and acts shall consist of those commonly used by utilities operating in the WECC.

uncertainties involved in the load forecasting process especially when considering the impacts from the recent economic downturn, potential for new resort development/improvements and the managed growth conditions in the area served by the NTS, the 1% rate is considered to be within the range of reason and appears to be a conservative assumption. It should be recognized that the region has maintained a strong presence in the winter tourist industry, and it will need to maintain and upgrade existing infrastructure in order to maintain a competitive position going forward. Upgrades to the existing NTS will also be necessary in order to comply with prescribed reliability criteria so as to reliably serve the needs of the customers.

The Z Global studies indicated the NTS (as it existed in 2011) was capable of meeting 2011 system peak load (86.8 MW) with all system components in service. However, with one of the five lines comprising the NTS out of service (an N-1 condition) the remaining facilities of the NTS were not capable of meeting the full 2011 peak load. Planning and operating standards of NERC and WECC require all loads to be met under a single contingency (N-1). This requires that sufficient transmission be in place so as to fully deliver the power requirements of all of the customers served by it after sustaining the loss of a single system element. NERC and WECC not only require that the system be operated to this standard but also require planning to meet this criteria. At the time the Z Global study was conducted compliance with these standards was considered to be voluntary and was self-policed. However, since then the standards have become mandatory and violators are subject to significant fines. It should be understood that failure to study and plan for meeting the N-1 criteria is a violation even if the system does not actually experience an outage. Based on study results presented in the Z Global report, a project to mitigate the NERC and WECC standard violations identified within the Z Global work is required.

IV. Conceptual Description of the Project

The nature of the NTS problems experienced under N-1 conditions essentially is two-fold. First is the overloading (physical energy flowing on the line that exceeds the safe operating limit set for the facility) of certain line conductors during the loss of another line within the NTS, which can result in damage to the line or substation equipment. The second is the voltage decay (reduction in voltage with distance along the line) resulting from the overloaded

facilities. Both of these issues are a result of attempting to transfer excessive amounts of energy through a conductor not designed to transfer the required amount. To some extent the voltage decay problem may be mitigated through the application of capacitors at the various NTS substations. These would serve to provide local var (volt-ampere-reactive) support via shunt capacitors thereby reducing the need to transmit vars over the NTS and also assist in decreasing the overall flow on the lines. While such an approach to the problems may buy time, the short-lived approach coupled with the harmonic issues² associated with variable speed motors used by the area ski resorts would not result in a well-designed solution of the problems. A more reasonable and longer term solution is to replace the small and limiting conductor within the NTS. This reconductoring approach (upgrading all conductors to at least 397.5 kcmil AA) would result in the lines being capable of transferring up to 59.8 megavolt amperes (MVA). (Note this rating is a long-term rating and may be exceeded by approximately 15% for short periods of time). This action could require the replacement of many, if not all, of the existing poles and should provide adequate load carrying capability under N-1 conditions for the near future. However, given the environmental constraints and sensitivities associated with the 609 line outlined in the September 2012 “North Lake Tahoe Electric Transmission System Upgrade Scoping Document” prepared by Tri Sage Consulting, as well as the remoteness of the line it appears impractical to reductor this line. Given that some sections of the existing 60 kV lines comprising the NTS have been rebuilt for 120 kV operation, and if a line sections must be rebuilt to accommodate new conductor, it makes sense to configure the new facilities so that it can eventually be energized at 120kV at some future point. This increase from 60kV to 120 kV represents the next logical step in system voltage commonly used within the industry.

² When a transmission systems voltage is distorted due to the introduction of harmonics from devices such as variable speed motors, transformers and compensation capacitors can be damaged. In particular, capacitors can cause resonance conditions that can unacceptably magnify harmonic levels.

V. Conclusion

The proposed rebuilding, reconductoring of lines and energizing the NTS at 120kV, with the exception of the 609 line, represents a reasonable long term approach to solving the current NTS problems. Upgrading from a 60 kV system to a 120 kV system will result in doubling the line conductor MVA rating and cutting the load current on them by half. Not only is the ability of the system enhanced to withstand greater loads, the voltage decay issues are resolved since the conductor is now transmitting the same energy but at only half the line current and associated voltage drop.

Respectfully Submitted:

Paul G. Scheuerman, P.E.
Scheuerman Consulting

3/24/2014

Memo: Response to comments from North Tahoe Citizen Action Alliance

The comments presented generally involve two issues; load forecasts and bifurcating the North Lake Tahoe Transmission System (NTS) into two portions, a “Resort-Tahoe Loop” (RTL) (defined by the commenter as the Northstar, Kings Beach/Brockway, Tahoe City, and Squaw Valley substations and the power lines which connect these substations) and the remainder of the NTS system.

With respect to load forecasts the comments note that the loads making up the RTL decreased slightly from 61.5 megawatts (MW) in 1996 to 61.1 MW 2010. These numbers are essentially unchanged and there is no information presented regarding intermediate years. The presentation seems to assume no growth however what is unknown (not identified in the Z Global report or elsewhere) is what the intervening year loads were. It may well be that the period from 1996 to 2007 saw increasing loads only to have these loads decrease with the 2008 recession. The commenter notes that the decrease was a result a decrease in resort loading on the RTL portion of the NTS, such that there is an appearance of no or slightly negative growth. The data presented seems to confirm a decrease in resort related load with growth in other load not directly associated with resorts. In my judgment, given the inherent uncertainties involved in the load forecasting process especially when considering impacts from the recent economic downturn, potential for new resort development and improvements and the managed growth conditions in the area served by the NTS, the 1% rate within the range of reason and appears to be a conservative assumption. It should be recognized that the region has maintained a strong presence in the winter tourist industry, and it will need to maintain and upgrade existing infrastructure in order to meet reliability criteria and maintain a competitive position going forward. Planning on zero growth could be short sighted with negative

economic impacts and could place the system operator in jeopardy of not meeting its regulatory obligations under NERC and WECC planning criteria.

Any analysis of the NTS based on the performance of two separate load sectors (RTL and remainder of NTS) does not recognize the networked nature of the current system. The NTS currently consists of four 60kV power lines and one 120 kV transmission line in a single interconnected electrical network configured to provide service to a number of regional substations. Given the basic network nature of the system, modifications to one section of the network would have impacts throughout the remainder of the network. Thus load growth on the non-RTL portion would impact the power flowing on the RTL portion and visa-versa. Z-Global study results for winter 2011 indicated the NTS did not meet NERC and WECC reliability criteria. The NTS load modeled by Z-Global for 2011 was only 0.9MW (900kW) above the previous year. This minor load increase is the only thing between meeting reliability criteria (including N-1 contingency) and being in violation of the criteria. I have not seen any load data for 2011, 2012 or 2013.

It is also important to note that the final Alternative staging sequence provided on pg. 11 of 12 of the comments is not materially different in end point from the proposed project. It does differ in time but that is based on differences in load growth assumptions. Another area of difference involves the proposed placement of switched shunt capacitors on the NTS. There is considerable literature on the interaction of such devices with variable speed motors similar to those used by the area ski resorts and the resultant harmonic issues. The application of these devices could help relieve voltage issues (low voltage) during various line outage conditions but will do little to relieve overloading violations.

3/12/2014

Memo: Review of Alternatives considered but rejected.

I have reviewed the discussion of alternatives considered but rejected contained in the Draft EIS/EIS/EIR for the “California Pacific Electricity Company 625 and 650 Electrical Line Upgrade Project (Section3.5). Review of the draft alternatives and the associated reasoning for rejection was conducted based on engineering and reliability criteria. In each case where engineering or reliability issues were involved in the reasoning for rejection, the technical basis for such decision was found to be reasonable and in line with general utility practice.

Appendix P3

**Attachments to the Friends of the West
Shore's January 6, 2014 Letter (Letter 25)**

The following provides additional detailed comments related to the final 2011 Threshold Evaluation Report.

As noted throughout our main comments (December 2012) and attachments, we first reiterate the following messages:

- The TER serves as the baseline document to the RPU EIS and RTP EIR/S and therefore should be subject to the same EIS process (and response to comments);
- Although we appreciate the general response to comments in Attachment C of the final EIS, the responses misrepresent our detailed technical comments, questions, and critiques (from our June and July 2012 comments), and fail to respond to most of the key issues we raised.
- TRPA's response to comments by the peer reviewers (App. E in Final TER) documents a purposeful failure to respond to significant technical comments related to the methods, data, and analyses in the TER report. This also has an effect on TRPA's responses to our comments, where TRPA frequently refers to the TER as being "peer-reviewed" and therefore, must be "scientifically sound;"
- The new methodology in the TER, combined with selective statistics, appears to promote favorable conclusions utilized by the RPU EIS to support Alt. 3, which has been the preferred alternative for over a year (well before the environmental analysis was available). These conclusions are not supported by the evidence in many cases.

Finally, we apply our previous comments on the draft TER with equal force to the final TER.

Although we appreciate TRPA's time in creating Appendix C as a means to address our significant and details comments on the draft TER, our concerns have not been addressed, nor have our detailed, scientific comments been responded to. Big concerns include the following:

- 1) TRPA has clearly utilized the TER as a 'baseline' document which compiles the threshold information into a report, makes statements regarding the data, sources, recommendations for future actions, and recommended future changes to the thresholds (see our June and July comments).
- 2) The TER is then used as a stepping stone to the RPU EIS. Although TRPA may 're-state' the data from the TER, this does not disconnect the RPU analysis from the TER. However, TRPA continues to claim the TER is a separate document and not affected by the EIS process or requirements.

A1. TASC-FOWS Additional Comments on Final TER

- a. Although we submitted extensive comments, including numerous examples, to illustrate the clear link between the TER and the RPU, TRPA failed to respond to these questions.¹
 - i. In some responses, TRPA refers to Master Response 1, rather than address our questions.
 - ii. TRPA also repeatedly “skipped” pages of detailed questions and comments and lumped them into one “comment number” – which then includes a short reference to Master Response One, and/or reasserts TRPA is correct, etc.
 - iii. In other cases, TRPA states the comments are not relevant to the Final RPU EIS, and thus dismisses them.
 - iv. TRPA often repeatedly avoids responding, and instead refers to the “peer reviewed report” in Appendix C as if the peer review done on a pre-draft release version of the document somehow justifies all future TRPA actions related to the 2011 TER. Nothing in the final RPU package indicates that the peer reviewers were asked to review the final version of the TER, or that they provided any comments on it.

Additional comments:

Chapter 1

As prescribed by the Regional Plan (TRPA 1986; TRPA 1987a as amended in 2012), this evaluation summarizes current and available monitoring data and information that addresses required reporting elements, and includes recommendations to the TRPA Governing Board to support adjustments to Threshold Standards and the Regional Plan. This evaluation focuses on addressing reporting requirements outlined in the Regional Plan, and as a consequence, should not be viewed or considered to be an exhaustive and integrated synthesis of all available research and monitoring conducted in the Lake Tahoe Basin—it is primarily focused on addressing progress in the attainment of Threshold Standards as adopted. However, where appropriate, references to current and related applied research are provided to guide the reader toward more in-depth discussion materials.

¹ We will provide examples of responses to our EIS comments (which included many TER comments as well) in subsequent comments.

A1. TASC-FOWS Additional Comments on Final TER

In Resolution 82-11, the TRPA Governing Board adopted Policy Statements to provide specific direction to Agency staff in developing the *Regional Plan*. Policy Statements are not Numerical Standards or Management Standards, rather they are principles intended to guide decisions toward desired outcomes or values. To evaluate Policy Statements, the following questions were addressed:

- ~~Has~~ *Have* TRPA ~~and/or other agencies~~ adopted policies, regulations or implemented other programmatic efforts to satisfy the Policy Statement adopted in Resolution 82-11?
- Is there evidence to suggest these actions are effective at achieving the intent of the Policy Statement?

A qualitative evaluation and narrative description of the Policy Statement's implementation is included as an element of each Threshold Category related chapter in the Report.

Peer Review of the 2011 Threshold Evaluation

The 2011 Threshold Evaluation is the fifth evaluation report completed by TRPA and the first to undergo an independent scientific peer review- (Appendix D). The purpose of the peer review was to ensure the status and trend determinations presented in this document were scientifically supportable and to identify areas where TRPA can improve the quality of information presented to the TRPA Governing Board and the public. ~~Peer~~ Most of the peer review comments ~~are have been~~ addressed in this Report ~~and the complete Peer Review Report is included in~~ (Appendix E); ~~peer review input not addressed will need to be addressed as a component of the overall agency monitoring program.~~

As TRPA notes, not all peer review comments were addressed. Although the above change would imply that the comments not noted are related to monitoring, many of the comments not addressed are related to how available data were handled, and/or the analysis and 'determinations' in the TER were made. Further, this is yet another example of the circular 'response' – the report was peer reviewed, but TRPA chose not to address many comments; we provided comments and critiques of the TER and TRPA chose not to address most of them, instead referring to the TER having been "peer reviewed." The agency can't have it both ways.

AIR QUALITY:

Recommendations for Additional Actions – Given that the current status of this indicator is not in attainment with the most conservative standard, and modestly improving in trend, suggests that the existing programs and actions could be more effectively implemented, such as more frequent street sweeping to control entrained road dust, continue to implement requirement that residential wood stoves meet EPA emission standards, and perhaps, if conditions decline, consider options for restricting residential wood burning during periods of elevated ambient PM concentrations. Respective state air quality management authorities already regulate prescribed burning of forest biomass, where burning in the Region is only allowed during appropriate meteorological conditions and follow a burn plan. The current TRPA Threshold Standards for wood smoke and suspended soil particles should be ~~reviewed and~~ replaced with appropriate state and/or federal particulate matter concentration standards, to improve the agency's ability to objectively determine status and trends

Monitoring Approach – PM concentrations evaluated in this summary were monitored at one location in the Lake Tahoe Basin, located on Sandy Way in South Lake Tahoe. ~~This monitoring site represents a near-worst case/condition scenario site because it is closely located to a segment of Highway 50 in the South Shore of Lake Tahoe that receives some of the highest traffic volumes.~~ Data are collected, analyzed, and reported by the California Air Resources Board (CARB 2011a).

Strangely, a new statement has been added to the TER regarding CARB's Sandy Way site. This also conveniently represents the monitoring site that shows an exceedance of CA's PM10 standard. TRPA is claiming that the site represents "near-worst case/condition scenario" because it's located near highway 50. Although the site location is near highway 50, what matters is what people are breathing. That said, most people in the Basin, proportionally speaking, live relatively close to a major highway. People also use those major highways, ride their bikes along them, walk along them, etc. Thus, TRPA should be more concerned that the site most representative of where people are breathing

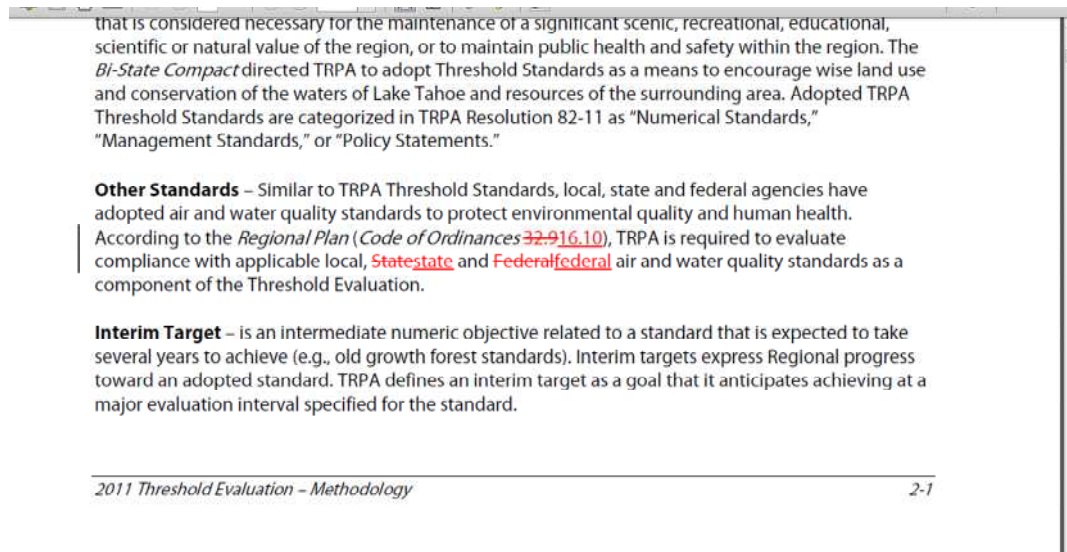
A1. TASC-FOWS Additional Comments on Final TER

is the site reflecting PM conditions that are not healthy. Instead, TRPA appears to write this off, stating the CA standard is expected to be attained in 2040 (p. 3-48, Final TER), and adding this new ‘disclaimer’ that appears to suggest the public shouldn’t worry so much about this location. Yet TRPA should also consider that CARB located in South Lake Tahoe to monitor public health – and selected this location. Has CARB reviewed the TER report? Has CARB reviewed the final?

TRPA also failed to address our comments regarding the changing trend in PM10 emissions since around 2006. Instead, TRPA has ‘adjusted’ the final TER language to simply group trends from the early 1980’s to 2011. However, if TRPA had actually examined the full set of historical peak data we compiled and submitted in June, TRPA would see that although PM10 concentrations are notably improved when compared to the 1980’s, they have been getting worse since around 2006. The proper response – that called for by the TRPA Compact, which requires TRPA to protect human health – would be to investigate why PM is getting worse, and then take measures to improve air quality. Further twisting the 2011 TER report with revised wording does nothing to protect public health.

As noted above, TRPA also denies the TER is subject to the same provisions as the EIS because TRPA claims the report was simply one report of many used to develop the EIS. However, a review of the examples provided in our June and July comment letters provides numerous examples of how directly linked these documents are. Consider again how the final TER report suggests the “existing TRPA threshold standards for wood smoke and suspended soil particles should be replaced with state or federal standards for PM because there is no established baseline” an surprise, these standards are deleted in the draft and final EIS documents. However, TRPA has provided no analysis of whether other standards should be considered, a new baseline established, or other options that would first consider the impacts from these sources in the Basin. Instead, the TER proposes it and the EIS includes the changes, without any technical environmental analysis. Rather than repeat all of the examples, we simply reiterate our previous, lengthy, and well-supported comments.

A1. TASC-FOWS Additional Comments on Final TER



We remind TRPA of these obligations to report the status of all standards. The final TER fails to do so. The status of federal and state standards, and how it is reported and designated, does not change because TRPA has changed how it wants to evaluate threshold attainment status. Thus, TRPA must still examine and report compliance with the federal and state standards. However, the final TER has stated “conclusions” related to the state and federal standards without actually noting the official designation status of those standards. In the case of the CA standard for 8-hour ozone, CARB has the Lake Tahoe Air Basin classified as non-attainment – transitional. Yet the final TER states: “The Region was in attainment with the CA standard in 1984, 2004, and 2005, 2010, and 2011; otherwise, the Region has not attained this standard.” CARB designated the Lake Tahoe Air Basin as non-attainment in 2010.²

² <http://www.arb.ca.gov/regact/2010/area10/area10frodc.pdf>

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§ 60201. Table of Area Designations for Ozone (continued)

Area	Designation
Mojave Desert Air Basin	Nonattainment
Salton Sea Air Basin	Nonattainment
Mountain Counties Air Basin	
Amador, Calaveras, El Dorado, Nevada, Placer, Mariposa, and Tuolumne Counties	Nonattainment
Plumas and Sierra Counties	Unclassified
Lake County Air Basin	Attainment
Lake Tahoe Air Basin	Unclassified <i>Nonattainment</i>

NOTE: Authority cited: Sections 39600, 39601, and 39608, Health and Safety Code.
Reference: Sections 39608 and 40925.5, Health and Safety Code.

1 / 55 1.59%

- Restrict algal productivity (rate of growth) to levels that do not impair beneficial uses or deteriorate existing water quality conditions in the Lake Tahoe Basin
- Prevent degradation of the water quality of Lake Tahoe and its tributaries to preserve the Lake for future generations
- Restore all watersheds in the Basin to reflect natural hydrologic conditions and functions such that runoff is treated by natural process rather than engineered solutions

This chapter presents an evaluation of available data on water quality conditions and trends for the Tahoe Basin's aquatic system, relative to TRPA Threshold Standards and applicable state and federal water quality standards (Table 4-1). Previous Threshold Evaluations have categorized water quality standards according to the Basin's aquatic system components, and this evaluation uses the same approach. Specifically, each aquatic system component is treated as an Indicator Reporting Category; indicators for relevant standards are grouped within each category. Unfortunately, current and consistently collected data (i.e., consistent data collected between 2006 and 2010) were insufficient to analyze status and trends (and thus specifically address attainment status) for Lake Tahoe's littoral zone, ~~surface and stormwater runoff~~ to surface water, stormwater runoff to groundwater, and other lakes. Previous Threshold Evaluations (TRPA 2001, TRPA 2007) and reports (Lico 2004, NDEP 2004, 2nd

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2011 Threshold Evaluation – Water Quality 4-1

TRPA failed to address our concerns regarding the trends in ozone and PM in the Basin. We reference those comments again with equal force. Also, besides providing misleading information regarding the status of the CA ozone standard, TRPA has ignored the data. We note that a report released by DRI in August 2012 reiterates the increasing trends in ozone in the Basin.³

Many people don't realize Lake Tahoe's air quality affects its water clarity, and the air quality is getting worse. Alan Gertler, a Desert Research Institute (DRI) scientist for 33 years, studies air quality around the globe. According to Gerler, the Tahoe Basin is suffering from elevated ozone levels. "The increased ozone has both human and environmental consequences. It

³ <http://www.dri.edu/2012-tahoe-summit>

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doesn't violate the federal standard, but it does violate the California standard and is one of the few areas in California where ozone is getting worse." [Emphasis added].

Programs and Actions Implemented to Improve Conditions – Urban growth control limits, best management practices (BMPs) to reduce nutrient and sediment discharge from disturbed soils, retrofit regulations for private and commercial property BMPs, reducing private automobile use through improvements to public transit and alternative transportation modes (with the goal of reducing air pollution and the subsequent deposition of nitrogen and fine sediment), and ongoing allocation of water quality mitigation funds to support erosion control and stormwater pollution control projects.

Effectiveness of Programs and Actions – Changes in primary productivity are considered an integrated response to individual actions or programs. As such it is not possible to evaluate the effects of the individual programs or actions. Although each of the programs and actions are thought to aid in improving the transparency of Lake Tahoe, the most current information shows phytoplankton PPR continues to increase at a rate of 8.3 percent/yr relative to the Threshold Standard, suggesting more effective actions are needed.

Recommendations for Additional Actions – TRPA, in collaboration with federal, state, and local agencies, should pursue the strategies and actions identified in the Lake Tahoe TMDL with a goal of reducing tributary loading of sediment and nutrients, and achieving the interim target for Lake Tahoe transparency by 2026. TRPA's near-term implementation role should focus on program areas that it has the existing authority to lead: (1) accelerating implementation of its water quality BMP retrofit regulations including implementation of area-wide stormwater treatment strategies, (2) pursuing innovative redevelopment strategies that aim to accelerate water quality improvements, (3) reducing atmospheric sources of pollutants known to impact aquatic habitats, and (4) considering the phasing out of phosphorus-containing fertilizers in the Region. Additionally and indirectly related to phytoplankton productivity is the need to consider adopting a Threshold Standard for nearshore periphyton (attached) algae. TERC (2011a) reported that periphyton algae have increased in abundance and distribution in recent years.

Although the final TER did not respond to our technical comments regarding air quality data and trends, the final TER includes a new discussion related to the Air Quality Index (AQI). Of note is the AQI is a modeled value not based on Tahoe Basin conditions or all applicable standards. We questioned why TRPA added this discussion as the TRPA has never adopted or evaluated any type of AQI for the Basin, so it was a bit surprising to suddenly find this new topic. However, we located the following "explanation" in the chapter:

The indicators presented here are related to state, federal and TRPA standards. In most instances, each indicator only takes into account the highest recorded measurement (e.g. highest, second highest) and do not take into account the distribution of measurements throughout a given year. As a consequence, these indicators do not provide complete characterization of the range of conditions that occur and how they vary within a year. Thus, the measurements could be significantly better than the standard most of the year, but one high measurement could cause the status determination for that year to be worse than the standard. The EPA AQI information (Table 3-1, above) has been included to provide a characterization of the "within year" air quality conditions.

It appears this was added in an attempt to "cover" the failure to monitor conditions year round. The language also appears to suggest that because the modeled AQI value followed a certain 'trend,' air quality likely followed the same trend. However, the simple fact of the matter is TRPA has not adequately monitored for air quality, and has specifically drafted the TER and RPU EIS documents to avoid directly admitting that monitoring has been reduced or shut down. This omission was made worse when TRPA's Executive Director, at the 11/15/2012 GB meeting, provided a presentation related to monitoring and claimed there are currently "six" air quality monitoring sites in the Basin. This was in response to public concerns regarding public health and the lack of monitoring. However, what the Executive Director did not mention was the location of these six sites or the type of monitoring being performed. As far as we know as of

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11/29/2012, there is one ozone monitor in Incline Village, one PM10 monitor in South Lake Tahoe (CARB's Sandy Way site), and the TRPA building (where TRPA placed monitoring equipment in 2011, however the location is not representative of where most people breathe). Thus, there are two sites that could be said to monitor for public health, however, each site monitors a *different* pollutant. This is an important distinction because air pollutants behave differently and have different physical effects on people. Thus, monitoring for ozone in Incline Village does not negate the need to monitor for PM2.5 and PM10.

Further, the final EIS has included a modification to add the more recent ozone data from the Incline Village site, but the table still lumps the sites together and now claims that the "Concentrations of criteria air pollutants are measured at three ~~two~~ monitoring stations in the LTAB:" and proceeds to list the Incline Village site, SLT Sandy Way site, and the SLT Airport Rd. site. Worse yet, the final EIS document proposes to delete the factual statement that the Airport site has not operated since 2009. This appears to be a direct attempt to create the perception that more monitoring is occurring, plus that there are more measurements available for the purported "findings" that air quality is stable or improving. The statement that pollutants "are" measured at the three sites listed is simply not true. Please note that the three air pollutants in discussion are pollutants that first impact public health, and that the Compact, state, and federal laws require protection of public health.

SOIL CONSERVATION

The Final Chapter of the Soil Conservation Threshold Evaluation has little new information as to conserving soil and meeting the plain language of the California-Nevada Compact. In fact, the chapter does not mention conserving soil at all, despite the title of the threshold standard in the Compact and the Chapter - - Soil Conservation. The Chapter is focused on the two indicators called out in Resolution 82-11, impervious cover (pavement and roofs) and SEZ (meadows, wetlands and streams) and fails to connect the dots from ignoring the science of protecting and conserving soil and restoring SEZs, to the arithmetic of changing the analysis of impervious cover from the developable lands, such as private lands in rural and urbanizing areas, to all the lands in the basin, to the point, which is to protect the resources of the Lake Tahoe Basin.

Simple Arithmetic and Public Lands

While the impervious cover numeric standard has been transferred from its presentation as a ceiling for additional coverage, the TRPA has generally, and erroneously used it as a floor and thus as a tool to allow more coverage. Over time, as the lake lost clarity, the agency added exemptions to the coverage standard, further eroding its intent.

And that decision has resulted in the next, and most significant re-interpretation of the impervious coverage ceiling, to a new version based not on science, but on simple arithmetic and an unexplained shift from Bailey's interpretation.

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The 2007 NRCS soil survey needs to be reflected in the *Code of Ordinances* Section 53.9. This requires adjustment of the land capability systems, as many of the soil map units described in the Bailey Land Capability system have been replaced or removed, including some SEZ soil map units. The Impervious Cover Threshold Standard language needs to be modified, as it is only possible to achieve the current standard if the old soil survey components used in Bailey's 1974 report remain in place. It is in the public interest to use the best available science, which is the 2007 updated soil survey from NRCS, rather than the outdated 1972 soil survey. One possibility is to reference the Bailey report, but remove it directly from the language of the Threshold Standard itself.

Soft coverage is treated similarly to hard coverage in TRPA coverage policies even though it may have varying effects on erosion potential and water quality. A separate Threshold Standard may need to be developed for soft coverage. Impervious cover estimates historically have solely focused on hard impervious cover due to the difficulty of measuring soft coverage, even when using more contemporary and advanced mapping technologies and analytical methods. The soft coverage analysis and recommendations in this report should continue to be updated as additional analysis findings become available.
(TER, Chapter 5, p. 5-18)

This is the TRPA process - - if the threshold standard analysis does not meet the needs of the economic community, then the agency will work out a way to re-interpret it to allow further degradation - - in this case to diminish the science of the functions of soil in a fragile ecosystem; the biological phenomena of soil, productive vegetation, nearshore water quality, flood attenuation, and, eventually, as the pollutants in the soil reach the lake and circulate in the water column - - to the deep-water clarity of the lake.

The Bailey report is cited often in the final report, but not in its full context. For example, the Bailey Guidelines were quoted as

Robert G. Bailey wrote that impervious cover is "...the most critical element in the land disturbance that has created the basic environmental problems facing the Lake Tahoe basin—water quality degradation, flooding, and soil erosion."

The concluding, but missing, sentence of this statement is: *"It [impervious surface] is also considered the most accurately measurable and constant expression of development impact."* (Bailey, 1974, p.25)

And, in fact, the impact of development continues to reduce the deep-water clarity of the lake in the summer. The nearshore, clogging with invasive aquatic plants, clams, mussels and is reaching panic levels of invasive plants, clams, mussels and is haunted by warm-water fish. Hundreds of studies around the country have been completed on the impacts of impervious cover since 1974, from many different angles, and all agree that pavement and buildings increase stormwater runoff exponentially compared to natural runoff traveling over and infiltrating into undisturbed soil. The runoff causes damage to recipient wetlands, streams, and lakes in terms of biological integrity, riparian vegetation damage, reduced fisheries, vanishing native aquatic biota, as well as increased widening and deepening of stream channels, reduction in protective forest canopy, and more.

But the Threshold Evaluation ignored the above Bailey statement of fact, ignored biologists and embarked on an engineers' mechanical solution - - and that was to count all the undeveloped public land in the basin, ranging from the lake to the mountain peaks as a part of the total land available for more coverage! And this in the face of the actual numbers. The total basin is close to 202,000 acres, the public owns approximately 168,000 acres, or 83% of basin soils. Fortunately, the public owners, primarily in the

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form of the US Forest Service managers and the two state park system managers, are not determined to cover the public's soil in the basin with acres of pavement.

This "evaluation" report counts public lands as developable, yet not developed, as a partner of developed land in order to mask the extent of the damage on private land, Please note that Table 5-3, through the miracle of totaling the acres of all lands, developed or undevelopable in the urban sense, because they are public, and then multiplying the acres by the percent coverage allowed by land classification, results in a product that shows that only 9.9 % of all the land in the basin is actually covered. This conclusion is not soil science, it is only simple arithmetic, unrelated to the issue of loss of healthy soils, unknowing about the fragile, and "often extremely delicate", balance of ecological factors, and "consequently the limits of vegetative disturbance permissible.....has led to land development in places where only ecological damage can be expected." [All quotes are from Bailey, 1974, pg. 2]

The spectacular photos of the Lake Tahoe basin, from almost any angle, often reveal the amazing spread of the undeveloped backdrop of mountains that surround the lake. It is those pictures that reveal that there is a lot of land in the basin that does not appear to be developable for urban uses, even if one is overlooking the fact that it is mostly owned by the taxpayers of the United States.

In terms of soil conservation, the "evaluation" gets worse. Not only do the new calculations result in an opportunity for adding a substantial and significant amount of new acres of impervious coverage in the basin, that amount totals 12,025 to 15,716 acres (TER, Chapter 5, p 5-8 and 5-9) of more coverage, or 52 to 68 million square feet.

Further, that exercise results in masking the impact of extensive impervious cover that is and will be close to the lakeshore. In fact, in the Tahoe basin, almost all the developed and paved lands are near the lake, while much of the public lands for infiltration are above and behind the private land, protecting the native soil and forests, and providing the benefits of generally undisturbed soil. Thus the soils that protected the lake for 80,000 years and are now recovered from the 1880s Comstock logging, through natural processes, allow unpolluted runoff to reach the acres of pavement. But the pavement merely provides a non-porous surface to mix the clean water with all the detritus of urban living – drips and deposits from cars, animal waste, fertilizer, dirt, and nitrogen from car exhausts. Now the public land can no longer benefit lake by filtering out the runoff pollutants before the runoff reaches the lake. The problem is that, once the runoff reaches the acres of pavement and roofs (impervious coverage), there is no possibility of infiltration and adequate water treatment before the runoff is directed into the slowly degrading waters of Lake Tahoe, unless Engineer-Man arrives with another engineering solution.

The latest water quality protection proposal is the TMDL, which we have discussed in the Water Quality section. Suffice it to say that it uses some forms of detention and infiltration, but relies on collection and pipes, bypasses stormwater flows, and eventually delivers 85% of that untreated runoff to Lake Tahoe or its tributaries.

Conserve Soil

The second problem with the Soil Conservation Threshold Evaluation is that it failed to evaluate the benefits of protecting and conserving soil. Thus the entire analysis is dedicated to explaining away and promoting additional coverage, with no thought at all to comparing that exercise to conserving soil, which is the Threshold named in the Compact (Article II,iii). There is no comparison to be evaluated, and no acknowledgment that the impervious coverage measurement is designed to conserve soil.

An evaluation would be expected to produce usable information to assess the science involved and to reach conclusions as to benefits and impacts. But this evaluation quickly jumps to the rationalization of replacing soil science with arithmetic, and abandoning the concepts involved and the goals of conserving soil.

In fact, the evaluation even recommends that additional coverage be used as an incentive for additional development and coverage, in the name of improving the environment. (i.e. P. 5-17, Recommendations for Additional Actions; Chapter 13, p. 13-2 and 13-3). The bottom line is that this Soil Conservation Evaluation was used to twist the standard, the soil science, and plain thinking to be a promotion of more coverage and more development as a “scientific” report to endorse coverage well beyond the limits recommended in Bailey, and later found to be too generous. (Schueler 1994⁴).

An evaluation would be expected to produce usable information to assess the science involved and to reach conclusions as to benefits and impacts. But this evaluation provides no information as to the benefits of removing impervious coverage and restoring natural vegetation, infiltration, and reducing velocity and volume of stormwater runoff, as described in the studies cited previously. In addition, areas throughout the country, including Los Angeles, Seattle and all of King County, the state of Maryland, the Bay Area of California, and Duluth, Minnesota, are doing exactly that – prying up concrete and asphalt, daylighting and restoring streams, reducing parking lot sizes, and requiring significant improvements in their stormwater runoff.

Hard/Soft Coverage Issue

The TER has also taken up the issue of converting soft coverage to hard coverage as a policy to allow unlimited conversions - - on paper - - of soft coverage to hard coverage, in order to increase the supply of hard coverage as “incentives” for increased coverage in urbanizing areas, or “centers”.

In order to claim that soft coverage is hard coverage, without field verification, the report claims that LIDAR can identify hard coverage in the form of “relevant feature types, including 1) buildings, 2) roads, 3) trails, or 4) other (parking lots/surfaces, driveways,etc.).”p5-5, 4th paragraph, line 13).

⁴ Schueler, T. 1994. The importance of imperviousness. Watershed Protection Techniques 1(3): 100-111.

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While LIDAR is the newest tech toy for learning about the geography, watersheds, canopy cover, and large surfaces of impervious cover, it cannot determine the functional infiltration rate of different dirt roads, in different locations, with different levels of use over time. Are ancient logging roads hard cover? Are newly bulldozed roads hard cover? The fallacy here is the assumption that all dirt roads are hard coverage. Some may be, some are not. Only field verification can tell, and more difficult, each road must be field verified within reasonable distances to assure that differences in use, aspect, vegetation growth, and other attributes have been measured. The report raises similar questions as to the accuracy of the mapping and notes that “the estimates of impervious coverage must be taken as educated approximations based on best available data.”(p 5-6, paragraph 2 in its entirety.)

Unfortunately for conserving soil, the possibility of conserving the soil that is easiest to conserve, after protecting it from disturbance, is soil that is slightly disturbed, or has fill on top, which according to the new survey, is now called “soft” coverage. But soft coverage is just low-hanging fruit for those who want to expand hard coverage in urbanizing areas due to the change in the RPU that allows soft coverage to be bought, sold and converted, equally and evenly, to pavement and buildings - - to be, in fact, newly created hard coverage to be transferred as if it were factually hard coverage.

There is no evidence that soft coverage can be converted through the magic of a statement to hard coverage and not create adverse impacts. Such impacts include the lost opportunity costs of restoring soft coverage to effectively functioning soil, which is significantly cheaper than restoring pavement to effectively functioning soil. Second is the loss to the basin’s need for infiltration areas that could be provided by restoring soft coverage to effectively functioning soil that can effectively infiltrate stormwater runoff. Third is the impact on existing vegetation on existing dirt roads, that, over time have become narrower, through the natural processes of vegetation re-growth over lightly or unused dirt roads. In fact, recent events have produced a well-vegetated road as re-classified by the TRPA as “soft” coverage, despite the presence of a healthy population of native shrubs. (2010 - see our comments related to Homewood Mountain Resort and associated documents).

In short, the TER misses the mark by trying too hard to rationalize converting previously mapped soft coverage to hard coverage in order to facilitate economic needs as the important objective of the conversion proposal. Nowhere in this Chapter does the report compare this objective with the Compact’s threshold objective to Conserve Soil.

Coverage and other Threshold values:

The new “interpretation” of the soils threshold is based on a 2007 NRCS soil survey. However, this 2007 survey basically treats soil as a “platform for development” (p.1, Chapter 5, Final TER). The survey tightly focused on parameters only focused on the soil; the survey failed to consider the soil as part of a functional ecosystem. Healthy soils support the healthy forests which contain the beautiful scenic mountain vistas we all

enjoy. Healthy soils support vegetation growth, which supports the entire ecosystem – the forests, meadows, wildlife, air quality, water quality, etc.

Role of Vegetation in Soil Conservation

The chapter acknowledges the role of vegetation in the function of soil in the first two paragraphs, and from then on, focuses on arguments to support justifying more impervious coverage, through flawed assumptions about the role of undeveloped land in the basin's ecosystem and strategies to declare soil fungible in terms of economic needs. Soil scientists have generally included productivity of vegetation and healthy vegetation as functions of soil, since vegetation is dependent on healthy soil, and is a well-known part of the ecosystem that includes soil, vegetation, micorrhiza, other fungi, bacteria, earthworms, water and air.

The 1974 Bailey geomorphic report credited the importance of vegetation and included vegetation as an element of its soil classification. Note that Bailey calls out the role of vegetation in terms of ecological balance, stating that “nature has balanced physical variations in the local environment with differing vegetative covers, resulting in stable slopes” as well as “the nature of the balance, and consequently the limits of vegetative disturbance permissible before such balances are upset.”.(Bailey, 1974, p.2)

Yet, the new soil survey (NRCS 2007) and the consequent classifications are “based only on three elements: soil type, erodability, and slope (Table 5-2)” (Emphasis added). Thus the concept of a fragile ecosystem balance referred to in Bailey is lost. The damage to the basin is that encompassed in the study by considering soil as an adjunct to development (Chapter 5, p.5-1, “providing a platform for urban development” is to ignore the protection of the native vegetation [a Threshold Standard] and in important element in the broad picture of Tahoe's scenery [a Scenic Threshold].)

In addition, the beautiful forest in the basin provides other key values. Forests help improve air quality; healthy forests are components of healthy watersheds, which provide us with safe drinking water. They also serve as a carbon sink – an important factor in reducing greenhouse gases. That the trees need healthy soil is a significant factor in considering the impacts of additional disturbance to soils through the policies of the Regional Plan and the Code of Ordinances that implement the flawed soil analysis and conclusions recommended by this study.

On this note, regardless of what maps say or don't say about soil classifications, the lake's mid-lake clarity (most notably summer) and nearshore conditions have continued to decline (degrade), and as noted above, soil conditions affect the entire ecological function of the Basin's environment. This is not changed by the arithmetic exercise that resulted in the map changes to land coverage. Evidence of the impacts of unhealthy soils and too much coverage – including declining nearshore conditions, declining mid-lake clarity, etc. - indicates we are not doing enough to conserve soil functions. Maps and surveys also do not override or negate what measured values are telling us, like stream

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chemistry, nearshore conditions (algal growth), or the declining summertime mid-lake clarity.

Stream Environment Zones (SEZs)

There is no plan for how the SEZ threshold standard will be achieved. Although the Plan claims to improve transfer ratios to incentivize more transfer of development from SEZs, there is no plan for how the standard will be achieved. How many acres of SEZ will be restored by the proposed Plan? How many acres of potential coverage versus actual coverage removal from SEZ (with subsequent restoration of the SEZ) will occur? The TER includes recommended actions but no comprehensive analysis of these questions. Further, we note the proposed Plan actually exempts uncounted amounts of new square feet of coverage, including coverage in SEZs, for bike trails, ADA compliance, decks, large public facilities, and other activities, without any evaluation of the impacts to the SEZ threshold.

Over-covered to “under-covered”?

What are the numbers (acres, etc.) associated with these “pockets” of high capability land that would not otherwise be developed? TRPA uses an example from Desolation Wilderness. Does this mean the new interpretation will ‘transfer’ coverage from Desolation Wilderness, where it would never be built?

Further, public land ownership alone is not sufficient to conclude that land will never be developed. There are land swaps all of the time. In fact, the USFS and CTC have recently swapped land in the Angora burn area. Unlike the USFS, under CTC ownership we often see the construction of “public facilities” rampant (not just bike paths), as the coverage associated with these facilities is being provided even more exemptions in the proposed RPU. This is a net increase in coverage that would otherwise not have existed under the original 1987 Plan, nor without the land swap done by the government agencies that are supposed to “manage” the land for public benefit.

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As ~~noted~~ previously ~~acknowledged~~, the land capability concept developed by Bailey (1974) was ~~conducted~~ ~~applied~~ at the ~~landscape~~ ~~regional~~ planning ~~level~~ ~~scale~~. Central to the land capability concept was identifying lands suitable for development, based not only on soil type, but also on landscape position or “geomorphic hazard.” Geomorphic hazard is divided into three categories: low, moderate, and high hazard lands (only high hazard lands are considered unsuitable for development). During the land capability analysis and mapping effort, Bailey found instances where pockets of high capability lands (determined by soil type) were fully enveloped within a geomorphic high hazard area. For example, there are small pockets of gently sloping, deep soils within the Desolation Wilderness. While high capability, these pockets are essentially inaccessible from a development standpoint as they are fully surrounded by high hazard areas (e.g. steep, erodible, rocky and stony slopes). Thus, ~~at the time~~, Bailey reclassified these pockets of high capability soils as low capability lands (i.e. Class 1a, only 1 percent allowable coverage).

The 2007 soil survey ~~was~~ ~~did not~~ ~~used to~~ reclassify land capability classes in this way ~~in~~ ~~because it resulted in a misrepresentation of the recent effort~~ ~~actual distribution and abundance of land capability classes across Tahoe’s landscape. As represented here~~, land capability classification was based only on soil type, erodability, and slope (Table 5-2). These pockets of high capability land, and commensurate allowable coverage, are incorporated in the impervious coverage analysis depicted in Table 5-3 and Table 5-4. This ~~interpretation~~ accounts for some of the changes to total acreages for each land capability class in the Basin as a whole. These small pockets of higher capability land are still protected from development through public land ownership and existing regulations. Pockets of higher capability lands were included in the acreage calculation, because they provided the most accurate and science-based representation of the status of regional land capability.

The result of using the new soils survey, in conjunction with the existing land capability system, is that the acreage within each land capability class has changed. Because the allowable impervious coverage within each capability class is a percentage (1-30 percent) of the total area in each land capability class, allowable impervious coverage has therefore also changed.

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Estimated impervious coverage ~~estimates~~ from ~~data acquired in~~ 2010 and 2002 were compared with allowable land coverage in each ~~land~~ ~~capability class~~ (~~both used the as determined from~~ 2007 ~~Soil Survey~~ ~~soil survey~~ data) to determine the attainment status within each land capability class ~~for two evaluation periods~~ (Table 5-3 and Table 5-4). As indicated, land capability class 1b is shown by both the 2010 and the 2002 estimates ~~exceeded to exceed~~ the allowable cover for the class. ~~The 2010 data indicated that land capability class 2 is over covered when soft coverage is added to hard coverage.~~ All the other land capability classes are estimated to be below the allowable cover for their respective classes. ~~It is important to note that the 2010 preliminary impervious cover estimate, and the 2002 estimate, is for hard coverage only. Until soft coverage for the Basin can be determined, the impervious cover estimates presented in this evaluation (and in past evaluations) are underestimating (by an unknown amount) total impervious cover (both hard and soft cover) in the Lake Tahoe Basin. Research efforts are currently underway to map and classify soft coverage and refine the estimates for hard impervious coverage. It is anticipated that these interpretation and mapping efforts will considerably improve the accuracy of future impervious cover estimates. Region-wide, the 2010 data indicated that there is approximately 7,959 acres (3.9%) of hard and soft coverage, while the 2002 data indicated that there was about 4,269 acres (2.1%) of coverage. Differences in coverage estimates between 2010 and 2002 are most likely a function of higher resolution remote sensing data and more accurate mapping techniques rather than any significant increases in coverage (Figure 5-1). The 2002 impervious cover analysis did not attempt to estimate soft cover and did not include a three-pass supervised classification (as was done to classify data collected in 2010).~~

Table 5-3 and 5-4 represent the “new” land coverage estimates from the change in how TRPA is “interpreting” the threshold. Suddenly, the Basin has gone from over covered to “under covered” in higher capability classes and over covered only in Class 1b and 2.

The environmental impacts of coverage do not suddenly decline due to the “announcement” that we are not over-covered based on new mapping technique. TRPA can not simply declare more coverage is available, especially by transferring in from remote areas that would not otherwise ever be developed, without performing a full environmental analysis, which includes on the ground measurements (field verification), consideration of other factors (e.g. precipitation and soil type on monthly if not weekly or daily patterns, not just annual), stream and soil chemistry, climate change, etc. Instead, TRPA has completely avoided any environmental analysis. And somehow, contrary to everything that is known scientifically about impervious coverage, runoff, flooding, climate change, rain on snow...and so on, the TER, along with the RPU EIS, declare

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more can be built and it will somehow improve the environment. The facts simply do not support this assertion. Further, TRPA's process for making this change lacks the environmental analysis required for making changes to threshold standards and indicators.

Table 5-4. Estimates of hard land coverage within the Lake Tahoe Basin relative to land capability classes in 2002 and reported in the 2006 Threshold Evaluation. Land capability class 1b (highlighted) is shown to be exceeding allowable cover by 365 acres. All the other land capability classes are in compliance with coverage limitations. Land capability data were based on updated soil data provided by NRCS (NRCS 2007). Hard land coverage estimates were derived from an interpretation of IKONOS multispectral imagery (2002).⁵⁴ Note that data are for hard land coverage only; soft land coverage is not included. User's classification error was reported to be 87%.

Land Capability Class	Total Acres Within Class	Allowable Impervious Cover (%)	Acres of Impervious Cover Allowed Within Class	Estimated Acres of Impervious Cover	Acres Over (+) or Below (-) Allowable Cover
1a	23,558	1%	236	56	-180
1b	11,304	1%	113	478	365
1c	53,957	1%	540	236	-304
2	23,648	1%	236	81	-155
3	16,920	5%	846	120	-726
4	32,386	20%	6,477	538	-5,939
5	10,347	25%	2,587	664	-1,923
6	24,308	30%	7,292	1,222	-6,070
7	5,525	30%	1,658	874	-784
Total	201,953	9.9%	19,984	4,269	-15,716

New Land Coverage

In addition to total impervious cover estimates for the Basin based on aerial imagery, new land coverage permitted by TRPA between 2006 and 2010 was calculated based on water quality mitigation fees collected for permitted projects in the Basin (Figure 5-1). The Code of Ordinances requires that a water quality mitigation fee, currently \$1.86 per square foot, be paid for new land coverage created in the Lake Tahoe Basin. Thus, the total fees collected indicate were used to estimate the total area of new land coverage created within that same timeframe.

In total, 341 acres of new land coverage has been permitted by TRPA since 1991. There was a 50 percent decrease in the amount of new land coverage created from 2006-2010 (52 acres) when compared to 2001-2005 (103 acres). This decrease may be attributed to the recent economic recession, and/or a reduction in vacant land remaining in the Region that can be developed. New land coverage estimated for the period 1996-2000 was 92 acres. For the period 1991-1995, it was 94 acres. These numbers estimates of new land coverage provided here do not account for transferred or relocated land coverage, nor do they consider decreases in land coverage due to banking coverage or pursuant to excess land coverage mitigation programs. While these factors may shift land coverage within the Basin, they would not result in a net increase of land coverage within the Basin.

⁵ Minor, T. and M.E. Cablik. 2004. Estimation of Impervious Cover in the Lake Tahoe Basin Using Remote Sensing and Geographic Information Systems Data Integration. *Journal of Nevada Water Resources Association*. 1(1):58-75.
⁶ Cablik, M.E. and T. Minor. 2003. Detecting and discriminating impervious cover with high-resolution IKONOS data using principal component analysis and morphological operators. *International Journal of Remote Sensing* 24(23):4627-4645.

Page 5-9 concludes: "While these factors may shift land coverage within the Basin, they would not result in a net increase of land coverage within the Basin" is not true. The new method TRPA has chosen in the TER results in a net increase in coverage within the Basin.

Figure 5-1. New land coverage estimated for the Lake Tahoe Region., 1991 to 2010. These numbers do not account for land coverage that is was transferred, relocated, or banked, nor do they include land coverage in excess land coverage mitigation programs.

Land coverage is land coverage, whether it was transferred or came from a mitigation program. Not including actual new coverage misrepresents the data. Further, if TRPA is going to rely on the TER to assess coverage, then the TER must also assess the coverage that is available for use from the land banks now.

Page 5-16 states:

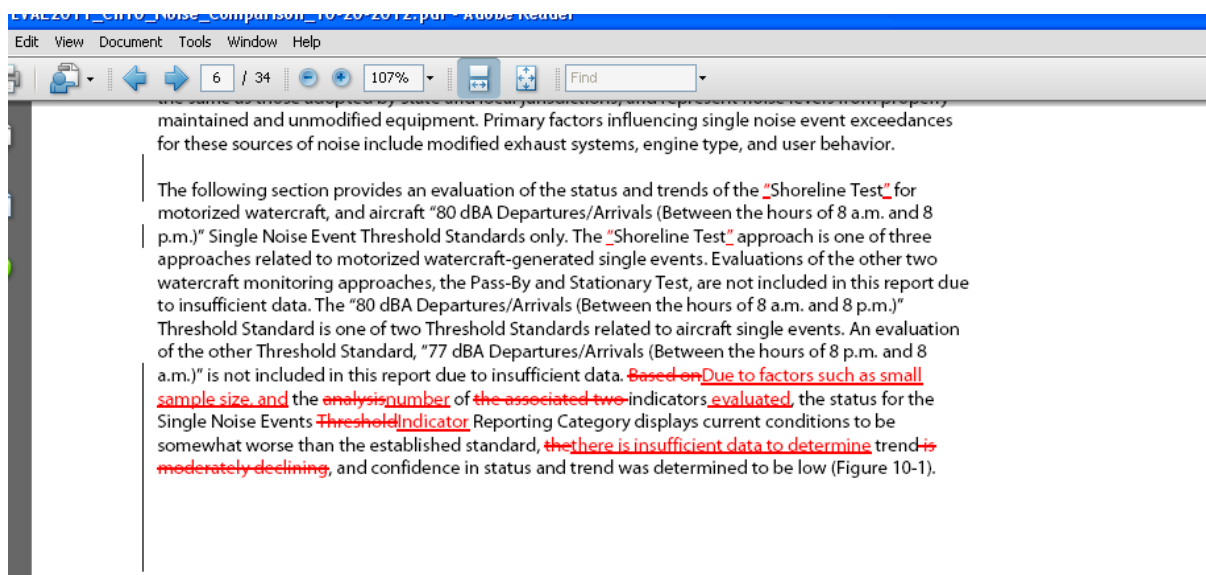
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Status – There is “moderate” confidence in the current estimates of impervious cover because an accuracy assessment of the resulting impervious surface layer resulted in an overall accuracy of 94%, ranging by surface type (soft, hard, undisturbed) from a producer’s accuracy of 72% to 98%, and an user’s accuracy of 90% to 95%.

We note that this ‘accuracy’ was determined by comparing the new LiDAR data to aerial images – not by performing field verification.

Noise

We reiterate previous comments related to the need to actually measure noise to ensure achievement with the threshold standards. The use of “models” or rare measurements is not adequate to “assess” noise conditions in the Basin, or determine whether standards are being met, or to state that no additional actions are required to protect quiet in the Basin.



Find

Summary Evaluation of Adopted Policy Statement: Establish CNEL Levels for Transportation Corridors

Relevance – Noise by definition, is “unwanted sound,” and is therefore a subjective reaction to acoustical energy or sound levels. Due to the rural nature of the communities and the pristine natural areas in the Lake Tahoe Basin, excessive noise levels have the potential to negatively impact community ambiance, one’s recreational experience, and wildlife behavior. Based on data from previous noise research, primary drivers of noise levels in the Basin have been attributed to anthropogenic activities and actions. More specifically, noise levels from major transportation corridors and the airport have been identified as the main sources.

Cumulative noise, or Community Noise Equivalent Level (CNEL), is a noise level value that is based upon the weighted average of all measured noise over a 24-hour period. ~~To account for the idea that areas should be quieter during the nighttime hours, the CNEL applies a +1.77 dBA penalty to noise levels during the evening period (7 p.m. to 10 p.m.) and a +10 dBA penalty to noise levels during the nighttime period (10 p.m. to 7 a.m.).~~ As a component of the Cumulative Noise Events ~~indicator~~ Indicator Reporting Category in TRPA Resolution 82-11, the Governing Board adopted a policy statement to establish CNEL for transportation corridors ~~indicator is a statement of policy.~~ The policy ~~states statement provides,~~ “it shall be a policy of TRPA Governing Body in development of the Regional Plan to define, locate, and establish CNEL levels for transportation corridors” (TRPA ~~2007e, Resolution 82-11, Exhibit A).~~

Type of Standard – Policy Statement

Evaluation Criteria – This Policy Statement ~~is was~~ evaluated by determining whether the agency has ~~adopted met two criteria: first the adoption of a definition for transportation corridors. As an additional criterion, this statement is also evaluated by determining, and second, a determination of whether the~~ agency has established ~~Numerical Standards for CNEL~~ CNELs (Community Noise Equivalent Level) for transportation corridors. ~~The policy statement does not direct the agency specifically to adopt CNEL Threshold Standards for transportation corridors.~~

Interim Target – None, the Threshold Standard is currently in attainment.

Target Attainment Date – None, the Threshold Standard is currently in attainment.

Attainment Status – The Threshold Standard is in attainment. A review of the current adopted policies for Cumulative Noise Events, pertaining specifically to transportation corridors, supports the conclusion of ~~attainment implementation~~ of the Policy Statement. TRPA ~~has adopted definition definitions for Transportation Corridors,~~ and ~~Numerical Standards for~~ has adopted recommended CNEL ~~in for~~ transportation corridors ~~in TRPA’s Goals and Policies (1986). In addition, CNELs for transportation corridors are listed geographically in TRPA Plan Area Statements.~~

- Development of transportation corridor definition:**
Attainment of this Policy Statement is supported by having identified all of the major transportation highways and routes within the Basin as within the definition of a “transportation corridor” and these corridors as a component in the noise sub element of the 1986 Regional Plan Goals and Policies. These road designations include US Highway 50, and

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2011 Threshold Evaluation – Noise

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State Routes 28, 89, 207, 267, 431, and South Lake Tahoe Airport (TRPA 1986). Reference to recommended CNELs is also documented in applicable Plan Area Statements (TRPA 1987b).

2. Establishment of CNEL levels for transportation corridors:
Numerical Standards, categorized as "average noise level or Recommended CNEL range (dBA)," have been established/adopted for all major transportation corridors in the Basin. Also a component of the (TRPA 1986 Regional Plan_ Goals and Policies, individual average noise level Threshold Standards were adopted for). CNEL for each identified transportation corridor in the Basin. Each corridor and associated average noise level (CNEL) are recommended as follows: US Highway 50 (65 dBA); State Routes 89, 207, 28, 267 and 431 (55 dBA); and South Lake Tahoe Airport (60 dBA) (TRPA 1986). The 1986 document Goals and Policies also established a geographic limitation of these average noise levels "...to an area within 300 feet from the edge of the road" (TRPA 1986). The document Goals and Policies further defines/define average noise levels for the South Lake Tahoe Airport transportation corridor, which "...applies to areas impacted by the approved flight paths" (TRPA 1986).

Recommendation for Additional Actions – Based on the review of current TRPA policy, it appears that TRPA has sufficiently taken action to support the adopted Policy Statement for this indicator. The development of an improved Cumulative Noise Level monitoring program is recommended to supplement future management policy decisions regarding transportation corridor noise level standards. This plan should be comprised of a peer-reviewed-accepted and standardized methodology/field and analysis methods, which includes protocol and procedures to be used in noise monitoring efforts Basin-wide. It is further recommended that there be a comprehensive evaluation of the feasibility of achieving adopted noise Threshold Standards as set forth in specific recommendations in this Chapter.

TRPA has made sweeping changes to the Noise chapter of the final TER as well, with no documentation. In previous TERs, the Noise standard included an assessment of the status of noise along the transportation corridors. Strangely, the final TER now changes direction, and claims the threshold standard was merely a requirement that TRPA *adopt a policy statement* related to recommended CNEL levels for transportation corridors. Thus, because TRPA adopted a policy statement in the 1987 Plan, this is now considered "in attainment." Yet the common practice for previous threshold evaluations includes an assessment of the CNEL levels and whether they meet the standards, which have included the transportation corridors. This sudden and complete shift TRPA has taken in the final TER speaks of yet another break in pattern that is used to get around the on-the-ground conditions of the threshold value being protected. Rather than compare the noise measurements (or lack thereof) to the CNEL standards, or policy recommendations as it may be, TRPA has created a mechanism whereby the actual noise levels along transportation corridors can be completely ignored.

As noted, the previous two TERs listed these as a Noise standard. Images from 2006 and 2001 are pasted below, resp.

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2006:

TRPA 2006 Threshold Evaluation CHAPTER 9 – NOISE		September 2007 Page 9-3	

THRESHOLD AREA AND INDICATOR	STANDARD
N-3 Community Noise Equivalent Level (CNEL)	Background noise levels shall not exceed existing levels or the following levels, whichever is less:
	<u>Average Noise Level or CNEL Range (dBA)</u>
	Land Use Category
	High density residential areas 55
	Low density residential areas 50
	Hotel Areas 60
	Commercial Areas 60
	Industrial Areas 65
	Urban outdoor recreation areas 55
	Rural outdoor recreation areas 50
	Wilderness and roadless areas 45
	Critical wildlife habitat areas 45
	Highway Corridors
	Highway 50 65
	Highways 89, 207, 28, 267, and 431 55
	South Lake Tahoe Airport 60
*All Measurements in dB	

The Community Noise Equivalent Level (CNEL), which is the metric used by TRPA for determining land use compatibility, is the annual average community noise level represented by the repeated number of operations, or measured noise levels throughout a 24-hour period. The CNEL is based upon the weighted average of all noise over a 24-hour period in that area. However, to account for the idea that areas should be quieter during the nighttime hours, the CNEL applies a +4.77 dB penalty to noise levels during the evening period (7:00pm to 10:00pm) and a +10 dB penalty to noise levels during the nighttime period (10 pm to 7 am). Table 9-1 shows the typical noise standard for each of the land use categories and roadways

2001:

Standard (Sand Harbor). This is a very popular beach, and thus human activity, including traffic, voices, and children playing, is the likely cause of this exceedance.	
<u>Traffic Corridors:</u> In 2000, no exceedances occurred for the Highway 50 noise level standard of 65 dBA and for the Lake Tahoe Airport (Highway 50) standard of 60 dBA. Using the predicted values from the FHWA model output, the following exceedances occurred (see Table 9-5 in Section VII for specific locations-exceedances of the applicable standards are shaded):	
<ul style="list-style-type: none">On State Route 89, the 55 dBA CNEL criterion was exceeded at four sites.On State Route 28, the 55 dBA CNEL criterion was exceeded at seven sites.On State Route 267, the 55 dBA CNEL criterion was exceeded at the two sites that were measured.	
4. Trends	
Based upon the results of the noise measurement program, it is apparent that in most cases noise levels increased. Using a 3 dBA increase in CNEL as the test of significance, locations where significant increases in measured noise levels occurred, when compared to the 1996 results, were in the following plan areas:	
TRPA 2001 Threshold Evaluation DRAFT CHAPTER 9 – NOISE	July 2002 Page 9-20

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Chapter 12

In addition, a cumulative accounting of Regional planning activities is provided. By design, this chapter fulfills reporting requirements established in the Code of Ordinances ~~Section 32.5, 32.7.A and 32.8.A(2) (TRPA 1987a)~~, 16.6 (Compliance Measures), 16.8.2 (Cumulative Accounts), and 16.9.1.A (Periodic Progress Reports).

12-1

This last statement is confusing to the reader and irrelevant to the threshold standards.

The Pelagic Lake Tahoe Primary Phytoplankton Productivity indicator, which responds to nutrient loading to Lake Tahoe, ~~has shown improvement over the last two years amidst a long term trend of~~ continues to show rapid decline relative to the standard. Despite the fact that many of these indicators have yet to achieve prescribed standards adopted over 25 years ago, other non-threshold indicators suggest that Lake Tahoe is still maintaining its unique ecological status as an “ultraoligotrophic” lake (Figure 12-1).

p. 12-3

Ultraoligotrophic is a limnology based term that may describe Tahoe’s waters, however, the thresholds specify a certain mid-lake clarity (transparency) for which the lake is afforded many protections (e.g. ONRW). The TER should clarify the difference.

Fish inventories also revealed that Tahoe streams support non-native species that may negatively affect the quality of ~~stream habitat for native species~~. steam habitat for native species. Recently initiated stream bioassessment monitoring (started in 2009) conducted by TRPA in partnership with several state and federal agencies is providing an alternative, more scientifically supported approach to characterizing the status and trends of stream habitats and should be continued.

The Code requirement assessing compliance measures may need to be reconsidered, but not for the reasons TRPA specifies below -- that it’s too difficult.

Appendix IE-1 in this Threshold Evaluation lists compliance measures in place and supplemental compliance measures by Threshold Category. To satisfy requirements that compliance measures be listed for each Threshold Standard, implemented actions are generalized and provided in each indicator summary narrative in the “Programs and Actions Implemented to Improve Conditions” section. The requirement that TRPA show how much and at what rate a compliance measure will contribute to the attainment of a Threshold Standard is problematic, and needs to be addressed as a component of the Regional Plan update, or through subsequent Regional Plan amendments. In many instances, this requirement fails to account for frequently complex, natural and anthropogenic factors that contribute to the rate at which the Region will attain a Threshold Standard. To determine a compliance measure’s relative contribution to Threshold Standard attainment would be unfeasible to research and model. This provision of the Code of Ordinances should be reconsidered and amended because it is not implementable in its present form.

Rather, TRPA has not taken the evaluation of compliance measures seriously. At each TER interval, TRPA has listed out compliance measures for each threshold, current and supplemental, but never analyzed the efficacy of the compliance measures. It has rather remained primarily a paper exercise every five years. Thus, an appropriate environmental analysis would examine all of the factors which affect thresholds (note we have a far better understanding of these factors now than 25 years ago) and analyze which controls may be needed to achieve them. This would also include an estimate of the environmental benefits of the compliance measures, which in many cases can be done – TRPA has just failed to do so. The TER should not recommend an abandonment of the compliance measure requirements, but rather, should instead complete an adequate environmental analysis and determine what it will take to achieve the thresholds. Such an analysis can consider the external factors that affect threshold achievement...including

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this does not negate the ability to examine actions TRPA can take to reduce environmental degradation.

This statement below reiterates our comments that VMT reductions are temporary – once the factors that resulted in reduced VMT are reversed, VMT will again increase.

As Table 12-6 indicates, VMT and DVTE each decreased during the five-year reporting period. This may be due to a declining local population and the economic effects of the “great recession” since improvements to public transportation were relatively limited when compared to projects that occurred in the previous reporting period (e.g., Heavenly Gondola Project). (p. 12-33)

Chapter 13

Regarding this statement below in Chapter 13 of the TER, we note TRPA must perform a true threshold evaluation report, as outlined by the Code. This report should be the mechanism where TRPA fully examines the thresholds, new science, potentially needed amendments, etc. – all of which is currently required by the Code and has been discussed in each 5 year evaluation. Now, this is even more imperative as TRPA proposes a new Regional Plan, which allows significantly more development, yet perpetuates the continued lack of analysis and understanding of the factors which affect threshold achievement and maintenance.

- **Restructure Threshold Categories and Threshold Standards represented in Resolution 82-11 to integrate monitoring and reduce redundancy and cross-referencing.** Currently, Threshold Standards are organized around nine major resource and socioeconomic categories known as Threshold Categories. This organizational structure lends itself to redundancy and confusing cross-referencing, and does not advance opportunities to integrate monitoring efforts. For example, there are nine Threshold Standards articulated across five different Threshold Categories that relate to stream environment zones. Reorganizing Threshold Categories around major landscape features (e.g., stream zones, Lake Tahoe’s nearshore, and upland forests) and issues (e.g., air pollutants, urban stormwater, and recreation experience) would improve the assimilation of field measurements and provide for a more integrated and multidisciplinary reporting of conditions. Additional indicator classification is needed to clarify whether indicators measure system stress, desired conditions, or institutional responses. Recommended changes would improve the efficiency of Threshold Evaluations and the public’s understanding of the status of Regional conditions. The Tahoe Status and... p. 13-12

Some references were added to the threshold report but are not noted in the TER. This is confusing. There is also no discussion or explanation of many of the changes to the final report, which we also expect would discuss the new references and demonstrate why they were included.

The failure of the TRPA to adequately perform a review and to demonstrate how and why changes that have been made to the TER provide better outcomes for the basin ecosystem, in scientific terms, is unconscionable.

Added to References:

Engineering Dynamics. 1991. Noise Monitoring Survey Lake Tahoe Region. Final Report. September, 1991. Prepared for the Tahoe Regional Planning Agency. Englewood, CO.

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Gertler A., E. Weinroth, L. Menachem, and J. Karacin. 2008. Development of an Air Pollutant Emissions Inventory for the Tahoe Basin that Incorporates Current and Future Land Use Scenarios. Report to EPA.

Hawkins, Charles P., Richard H. Norris, James N. Hogue, and Jack W. Feminella. 2000. Development and Evaluation of Predictive Models for Measuring the Biological Integrity of Streams. *Ecological Applications* 10:1456–1477.

_____. 2004. TRPA Noise Thresholds Update Report. Prepared by Brown-Buntin Associates, Inc. for TRPA. Fair Oaks, CA.

_____. 2011c. Shorezone ~~Noise Monitoring Data Set, 2009–2014~~ noise monitoring data set.

_____. 2011d. Cumulative noise events data set.

A2: TASC-FOWS – Examples of TRPA Responses to Peer Reviewers on TER

As stated in our previous comments, based on the documents provided on April 25th, 2012, it was unclear what version of the TER peer reviewers had commented on. Eventually we learned (see our July comments) that peer reviewers had commented on a pre-April draft of the TER, and that TRPA staff had “made changes” to the draft TER based on those comments before releasing it to the public in April. When questioned about the changes, staff indicated an excel spreadsheet was being developed to document how TRPA responded to the peer reviewer comments, however this spreadsheet was not available for review during the comment period on the draft RPU/RTP documents (6/28) nor before the final deadline for comments on the draft TER (7/25). Finally, on 10/24, the public was provided what appears to be a truncated version of this spreadsheet (or TRPA did not document how every comment was responded to).

There are several problems with this document (Final TER, Appendix E), in addition to the fact it was not made available during the public comment periods. Although TRPA continues to claim the TER is not part of the EIS and therefore the TER is not subject to EIS requirements (including a response to comments), TRPA provides no evidence to counter the examples we provided in our June and July comments regarding the EIS’ reliance on the TER’s “favorable” findings. Even as TRPA discounts the foundational role the TER plays to the RPU (in TRPA’s response to comments), TRPA also makes changes which emphasize reliance on the final TER.¹ The introduction chapter even states the TER was used to make recommendations for the RPU. Further, in the responses provided to our detailed comments on the TER (contained in Exhibit / Attachment C, excerpt below), TRPA defends the TER report as scientifically-sound primarily because it was “peer reviewed.” In fact, this term is used 19 times alone in Attachment C. *The message is clear – solely because the TER was peer reviewed, the TER is adequate and therefore our technical critiques are to be easily dismissed.*

Attachment C – Response to Comments on the 2011 Threshold Evaluation, April 2012 Draft

TRPA presented the Draft 2011 Threshold Evaluation to the Governing Board and public in April. In the spirit of openness and transparency, Agency staff solicited feedback from the public, agencies, and stakeholders. The following table summarizes comments submitted jointly to TRPA by the Tahoe Area Sierra Club (TASC), Friends of the West Shore, and the League to Save Lake Tahoe on the 2011 Threshold Evaluation, Draft April 2012 (hereinafter, “2011 Draft Report”).¹ TASC submitted two letters dated – June 28, 2012 and July 25, 2012. TRPA grouped comments into generalized areas of concern for response. While TRPA is required to respond to comments submitted for environmental impact disclosure documents (e.g., Environmental Impact Statements), there is no requirement under the Regional Plan or Compact to respond to public comments on a Threshold Evaluation Report. Likewise, there is no requirement in the Compact or Regional Plan to adhere to any particular Report format. TRPA responses are provided in appreciation of the extensive input of the commenters and to aid in clarifying any misunderstandings or errors.

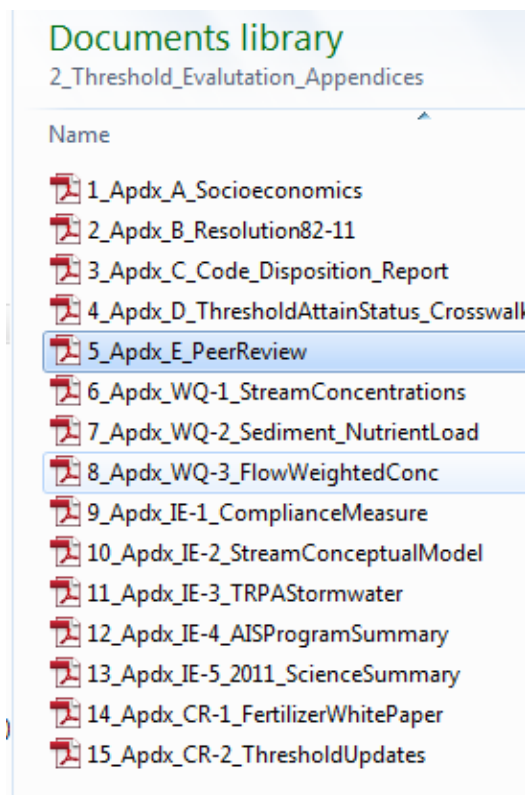
We do appreciate the time TRPA put into responding to our TER comments although TRPA did not believe this was required (we still believe the TER should be included as part of the EIS if TRPA is going to rely on the report’s findings as is being done in the final documents). Unfortunately, the responses fail to address our concerns and do not respond to the extensive technical information provided in our comments. But we are not alone – a review of the new Appendix E (as well as the original peer review comments and the April draft TER) reveals TRPA chose not to address many of the significant

¹ Discussed elsewhere in our comments.

A2: TASC-FOWS – Examples of TRPA Responses to Peer Reviewers on TER

comments made by peer reviewers which relate to some of the same key issues in the TER. In yet another example of the circular “logic” that has plagued this RPU process, TRPA claims the TER report is scientifically sound as the primary (non-)response to our comments on the technical problems in the draft TER – yet TRPA rejected significant concerns regarding the scientific rigor of the report from the peer reviewers in the first place (see details below). TRPA can’t have it both ways. There are also other problems which result in an even more confusing, difficult process for the public to follow.

1. **Replacing File Names:** First, due to changes in file names, it was not clear to the public this file had even been released on 10/24. In April 2012, the draft TER was released with attachments, including “Appendix E: Executive Summary of the 2011 Draft Threshold Evaluation Peer Review, including individual panel members review reports.” This file was provided as Appendix E on TRPA’s website as well as on the thumb drives TRPA sold to the public that held copies of all of the draft RPU, RTP, and TER documents. It contained a summary and full text versions of the peer reviewers’ comments on the pre-draft TER. Below is an image of the file list in the “Threshold_Evaluation_Appendices” subfolder on the thumb drive:



However, without any explanation or clear identification to the public, TRPA swapped file names when releasing the final TER, replacing the original

Appendix E that contained the peer reviewers' comments with a "new" Appendix E, which contains the "Response to Peer Review Table":²

Appendices Individual Chapter Download Format

A Socioeconomics
B Resolution 82-11
C Threshold Attainment Status Crosswalk
D Peer Review
E Response to Peer Review Table
WQ-1 Stream Concentrations
WQ-2 Sediment NutrientLoad
WQ-3 Flow Weighted Concentrations
IE-1 Compliance Measures
IE-2 Stream Conceptual Model
IE-3 Stormwater Management/BMP Retrofit Program
IE-4 AIS Program Summary
IE-5 2011 ScienceSummary
CR-1 Fertilizer White Paper
CR-2 Threshold Updates

The previous "Appendix E- Peer Review" was changed to Appendix D in the final TER. In fact, when one opens the original Appendix E file from April 2012 and compares it to the current Appendix D in the final released on 10/24, everything is exactly the same, except for the letter E versus D. TRPA provides no discussion regarding this change. But it is reasonable to assume that as a result of this quiet 'swap,' and the lack of changes in file names associated with the other 14 Appendices, the public may view the final TER list of Appendices and not notice the change, thus missing the information provided in this new Appendix E (which is not favorable to TRPA as explained later). This is a frustrating change that only leads to further confusion for the public attempting to review the final TER and RPU/RTP documents (see our discussion regarding the complex 'structure' of the Final RPU/RTP/TER "package").

2. **Table in Final TER Appendix E does not show response to all peer review comments:** Second, it is clear TRPA has selectively chosen to show how some comments were responded to but not others. Although the Table begins with the following "description," TRPA's responses to the peer reviewers remain unclear.

² Image inserted from TRPA's website page for the final TER on 11/12/12: <http://www.trpa.org/default.aspx?tabindex=2&tabid=414>. Light blue text for Appendix D is a result of when image was copied.

A2: TASC-FOWS – Examples of TRPA Responses to Peer Reviewers on TER

2011 Threshold Evaluation – Appendix E E-1 **Appendix E.** A table showing chapter contributor's responses to constructive peer-review input of a draft version of 2011 Threshold Evaluation, submitted to the peer review panel in February, 2012. Responses indicate how comments were addressed and/or incorporated into a draft version of the 2011 Threshold Evaluation that was presented at the April, 2012 Governing Board Meeting. Peer review comments that affirmed reported content are not included in this table. Those comments can be found in the peer review report.

The last part of this introduction is confusing. The language suggests that where peer reviewers' comments supported what TRPA had done, TRPA did not record whether changes were made. This is certainly far from transparent since the public has never seen the pre-draft document the comments are associated with. This would also suggest that if comments did not support the TER, they are included in this table and TRPA's response provided. However, there appear to be several comments that recommended changes in the TER that TRPA did not make, yet they are not included in this table. For example, Gary Hunt commented on the air quality and VMT thresholds as listed below, however no changes were made to the final TER that we can see, and no response was provided in the Table.

4] Current economic conditions in the Lake Tahoe Region as well as the country as a whole are impacting population growth and development. For example data provided in the Introduction of the report document notes a decline in population in the region as evidenced by comparison of 2000 and 2010 census figures (Figure 1-2), a downward trend in school enrollment (Figure 1-4), high unemployment rates (Table 1-3) and a steady decline in employment in the gaming industry (Figure 1-6). These factors are likely influencing air quality indicators in a positive manner. The majority of the air quality threshold indicators are in attainment with respective standards and a number are trending downward. The TRPA, however, should maintain an aggressive campaign to further reduce emissions attributable to human activities (vehicles, wood stoves etc) such that an attainment "cushion" can be maintained in the event that the economy within the region begins to rebound once again. Complacency with the current situation should not be the recommended course of action.³

3. **Peer reviewers were not provided with all relevant information.** We suggested this in our comments on the draft TER as it was clear some reviewers were not provided with all of the relevant information. This is important in its own right, but given Tahoe's unique local conditions, unique regulatory structure, etc., available relevant technical information should certainly be provided to a peer reviewer that is being asked to evaluate the technical adequacy of a report. Unfortunately, in Appendix C, our comments regarding this issue were misrepresented as "critiques" of the peer reviewers:

"Commenters assert that TRPA intentionally biased the data to skew the outcome of RPU recommendations. To the contrary, TRPA presented available data in a technically appropriate, objective, and transparent manner. Qualified experts contributed on various topics reported in the 2011 Draft Report, including an independent peer-review by experts from outside of the Basin. Experts included academic researchers and environmental professionals cited as chapter contributors or referenced in the acknowledgement section of the 2011 Draft Report. There is no objective or credible basis to suggest that these

³ P. D-64; http://www.trpa.org/documents/rp_update/Final_TVAL/2_2011_TEVAL%20Appendices_2012-10-24/4_AppendixD_Peer%20Review.pdf

A2: TASC-FOWS – Examples of TRPA Responses to Peer Reviewers on TER

professional authors and contributors intentionally biased information, results, or recommendations in the 2011 Draft Report.” (Attachment C, p. 10).

A typical reader of this statement would likely assume our comments critiqued the credibility of the peer reviewers in some way. However, this is not true. Rather, as pointed out with examples in our June and July comments, it was apparent that:

- The peer reviewers were not familiar with unique Tahoe conditions (which is expected because non-local reviewers were specifically sought out)
- Were not provided with some of the most basic relevant information (e.g. Bailey report 1974, Lake Tahoe Atmospheric Deposition Study) needed to understand local factors and history, and
- TRPA did not address many of the comments from peer reviewers – a fact now reiterated by Appendix E.

Examples of peer reviewer comments that were not utilized to make changes to the TER:

The following examples show peer reviewer comments (as listed in the final TER, Appendix E) in regular text, the response from the right hand column in *italics*, and our comments in bulleted format. Sections are divided by “****”

“Atmospheric Deposition” (The table appears to just refer to this topic rather than include Dr. Axler’s comments).

Presented below are some of Dr. Axler’s comments from Appendix D on this topic:

...Chapter 3. Air Quality

As noted previously, I would like to have seen clear links to the atmospheric deposition data collected by TRG/TERC since the mid-late 1970s and to the nitrogen (and phosphorus) budgets for the lake. The public and legislators need to know that that there are extremely important linkages between the Tahoe Basin Watershed and Airshed – with some things more readily controllable than others...

...There are also many omitted, but important data sets: such as nitrate/nitrite-N (+ammonium-N) accumulation in the lake over time; atmospheric deposition of TN and DIN over time; depth (and perhaps duration) of winter mixing over time; chlorophyll-a in surface water and per square meter (integrated water column) over time; fine suspended sediment over time; temperature, etc. These trends, or lack of trend, are important ancillary data for determining cause and effect. They also provide important linkages for telling the complex “story” to the general public and to decision makers about the changing water quality in the lake and the most plausible hypotheses that have been tested using all available data...

TERC provides loading and concentration data in its State of the Lake Report. This data was not included in the WQ chapter, I suspect, because it is not a formal or ambiguous Threshold for WQ. This information was included in the AQ chapter under 'nitrate deposition'. This dovetails into the peer review comments by both reviewers that the data selected for the Thresholds Evaluation Report is just a slice of what is available. Also

A2: TASC-FOWS – Examples of TRPA Responses to Peer Reviewers on TER

note that the Threshold Evaluation provides references to UC Davis reports (e.g., state of the lake) as well as other relevant publications for the more engaged reader.

- The AQ chapter for atmospheric deposition is short, and only includes estimated DIN loading. Dr. Axler's comments request far more information.
- We also disagree that the most up-to-date, reputable research was not one of the largest components of the threshold evaluation report – that is, TERC's reports. Merely referencing their reports does a disservice to readers who expect the TER to relay the current state of knowledge regarding the threshold standards and indicators.

Annual yield: It would be helpful to see these data normalized to watershed area and to annual water yield (flow-weighted in order to highlight the differences between the streams.

Agree that this is something that can be easily done. It has been done in the past by the USGS and it would be beneficial to do an update in the future. Summaries of FWC pollutants were added as WQ appendixes

- If it's easy to do and beneficial information, why would it not be incorporated into the main chapter of the TER? This is yet another example of TRPA not responding to an important comment by a peer reviewer.

Are the multiple working hypotheses that are advanced in the scientific literature adequately addressed

Not at all consistent with the TRPA requests when asked for this information. They requested a status and trends evaluation with no more detailed scientific understanding. Most topics would require an in-depth technical analysis that has never been funded. Agency focus has been on relationship to standards/thresholds. NLA: The focus of the tributary section was on status and trends related to TPRA thresholds and state standards for tributaries, and the format of presenting the information was provided by TRPA in the form of an "indicator summaries."

- This response confirms the extremely limited scope of the TER. As noted in the response, "[TRPA] requested a status and trends evaluation with no more detailed scientific understanding." This is yet another reflection of the lack of scientific adequacy of the TER, and another key point raised by a peer reviewer that TRPA did not address.

Saying the declining trend in sediment and nutrient load from streams and the slowing rate of lake transparency decline coincides with the implementation dates of the 1987 Regional Plan and 1997 EIP (see Water Quality Chapter of this evaluation) may be true as a coincident, but a cause/effect relationship is difficult to establish

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Two comments: (1) is it said in the report that the monitoring program provides direct evidence for a declining trend in loading - it should not. (2) This peer review comments confirms long-standing position on the difficulty of establishing a cause/effect relationship unless the changes are large. NLA: The analysis of trends in stream loading is based on linear regressions that probably do not meet the assumptions and therefore should not be used. If the regression lines are left on the figures it should be clear that the regressions meet/do not meet the assumptions, are not significant and therefore there is no statistically significant trend. All definitive statements made about cause and effect relationships removed from report narrative; and Regression lines removed from tributary loading indicator summaries in draft public report. Added write-ups on flow-weighted pollutants concentrations as appendix to the public report to show alternative way of showing trends in conditions. Remove simple linear trend analysis from public draft.

- Although changes were made to the chapter, the comment is notable because it addresses the lack of cause/effect analysis in the TER. We have discussed our concerns with this elsewhere, but in general, the TER fails to analyze cause/effect, the EIS does not analyze cause/effect (but often refers to the TER), and thus significant proposed development is moving forward based on speculations and assumptions about cause and effect. This is a huge gap in the analysis.

(Canfield on fine sediment from urban?)

It appears that the reviewer was not provided with sufficient background material (see TMDL Technical Report) on the distinction between total sediments and the ultra-fine particles that affect transparency. Most researchers are not accustomed to thinking about particles this small. The sediment budget in the TMDL Technical Report clearly shows that stream input of total suspended sediment (from non-urban and stream channel erosion) is high at ~60%. It is equally as high for the sediment <63 µm (typically considered fine by most researchers); however, this value drops to 10-15% when the <16 µm fraction is considered. It is this <16 µm fraction that has been identified as critical for transparency. This document is referenced multiple times in the draft public report.
[Emphasis added]

- The response appears to confirm the concerns we raised in our June and July comments regarding the extent of information provided to the peer reviewers. Dr. Canfield was noted as the reviewer for: “water quality, soil conservation and fisheries” (Appendix D, Final TER, p. D-5). However, even the response notes Dr. Canfield was not provided with sufficient background materials. The response also notes that most researchers are not accustomed to thinking about particles this small – which again supports the need to provide non-local peer reviewers with adequate technical information to be able to provide an adequate technical peer review.

(Canfield: Tone of comments)

Reviewers also display 'parental affection' for their view of the world. The purpose of the Thresholds Evaluation needs to be clearly stated but at the same time integrated with all the other activities. Revisions made to introduction to address issues raised

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- What does this mean – parental affection for their view of the world? This appears to be another response related to peer reviewers not having the information needed to understand local Tahoe Basin nuances.

Confidence: a statistical framework for determining confidence in status and trends indicators need to be based on measures of uncertainty which need to be clearly shown in all figures and tables, and clearly discussed. This is a recurring flaw in most chapters, especially that involving water quality

GAM statistical analysis for Secchi depth provides a measure of statistical significance. GAM trend included in the revised Threshold Evaluation Report. Again, this being said, I agree that a "statistical framework" for trend analysis for stream data is needed. NLA: Agree. To be completed as part of a SNPLMA Round 12 research project. Will not be solved with this report

- The level of confidence in a data analysis is one of the key factors in determining whether a conclusion is supported by the data. Yet it appears that what the peer reviewer saw “in most chapters” was not resolved for the draft/final TER. This is a significant comment and the additional of some ‘caveat’ language to the TER does not change the final outcome and perception given by the TER report. The general public is not likely to understand the significance of this technical problem.

This reviewer disagrees with the practice of not using a status score in calculation of overall indicator status when the following conditions exist: 1] due to insufficient data or 2] because a standard had not been established. The overall score should reflect the unavailability of these data regardless of these circumstances. I have the same criticism for this practice used in calculation of indicator trend scores. The ultimate outcome is that confidence scores are affected in those instances where status and trends scores were artificially biased high due to insufficient data or lack of standards (page 2-12).

Comment noted, but no change in methodology made. *We could not devise an objective method to account for status or trend outcomes with insufficient data or where a standard is lacking in the aggregation process. Further, in some cases several indicators within an indicator category have status and trends with insufficient data. We are concerned that these 'unknowns' could overwhelm the 'known' results*[Emphasis added]

- The TER is supposed to report on the status and trends of the thresholds. If a status or trend can not be determined, this should be stated, not hidden under umbrellas of aggregated indicators.
- We note that TRPA made no change in methodology to address this concern.

The approach for estimating interim targets and attainment dates appears reasonable for indicators trending towards the standard and for those standards found to be in attainment. For those indicators trending away from the standard it is not clear why literature reviews were the preferred approach. It was not clear why actual TRPA data (if available) could not

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be used? Further, if nothing was yielded from the literature review no interim target or attainment date was identified

Comment noted. A more conservative approach was taken in the development of interim targets to reduce the chance of subjective or unsubstantiated selections of interim targets.

- This comment reflects our concern that TRPA has not prioritized monitoring, and has carefully avoided raising attention to the lack of monitoring behind the TER ‘findings.’ Why wouldn’t the response just admit TRPA does not have data in many cases?
- It appears no change was made based on this comment.

In this document, simple linear regression was used to estimate indicator trends from available data unless otherwise specified in the Data Evaluation and Interpretation narrative. When evaluating trends with data collected over multiple years, it is possible because of the N to obtain a statistically significant relationship, but it is not meaningful. Dr. Yves Prairie of Canada and Bryhn and Dimberg of Sweden (Prairie, Y.T. 1996. Evaluating the predictive power of regression models. Canadian Journal of Fish and Aquatic Sciences 53:490-492.; Bryhn, A.C. and P.H. Dimberg. 2011. An operational definition of a statistically meaningful trend. PLoS ONE 6(4):1-9.) have shown that when the R² value is less than 0.64 the relationship is not statistically meaningful. This is important as weak trends are reported in the document when there is no time relationship.

Comment noted, but no change in methodology made. TRPA used a $r^2 < 0.5$ as the cutoff for point for weak correlations

- This is yet another scientific critique presented by a peer reviewer that TRPA decided to ignore, yet this relates directly to the data upon which the TER’s “findings” of status have been made.
- We note that TRPA made no change in methodology to address this concern.

Estimating the time it will take an indicator to reach attainment using regression analysis is a standard scientific approach. However, the predicted value from a regression equation is only an estimate and is subject to error. It is clearly necessary to provide confidence intervals around the estimated value because as the x values gets farther from the mean value the confidence intervals become so large the prediction is essentially meaningless. For this reason, extrapolating outside the range of data used to establish a regression has proven over time to often lead to erroneous predictions. Many scientists do this, but the confidence in the prediction should be classified as very, very, very low or to put it bluntly useless.

It is generally agreed that TRPA can do a better job of reporting the variability associated with data, when available. However, it is difficult for many non-scientists to understand the importance of variability, and its inclusion can lead to greater confusion. Addition caveats added to relevant sections. [Emphasis added]

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- The peer reviewer’s comment essentially raises concerns with basing the TER findings on future predictions based on statistics, which as we have noted in our comments, TRPA has frequently done (e.g. the TER states that a standard is expected to be attained by a given year based on regression). The response does not appear to actually address the comment – the comment is more about whether predictions are useful, not whether the variability in them should be reported.
- We note that TRPA made no change in methodology to address this concern.

Another major concern is the apparent limitations placed by the preparers of this Threshold Evaluation, on themselves, as to what data would be considered for analysis. There is a wealth of important information in the scientific literature and agency reports that could prove most useful in trying to solve the Lake Tahoe puzzle. For example, Dr. Goldman’s publications of 1965 and 1988 (and the references cited) are particularly helpful as is the UC-Davis Tahoe: State of the Lake Report 2011 (see Chapter 4, Water Quality).

*Comment noted, but no change in methodology was made. **The primary purpose of this report is to evaluate the status and trends of indicators relative to established standards or targets.** Solving the puzzle of why these conditions occur is generally left to focused research and beyond reporting requirements followed to produce this report. Additional narrative and references were added to relevant section of the report to further call out factors known to impact various indicators [Emphasis added]*

- The response to this peer reviewer’s comment confirms many of the concerns we raised in our comments on the TER. The TER fails to consider cause and effect, and instead often notes what is ‘generally known’ to be a causal factor, not what we know about cause/effect specifically in Lake Tahoe. However, the RPU EIS (and package) is based on many assumptions regarding the sources of pollution and often refers to the TER report regarding the “cause/effect” information. In fact, in response to some of our comments on this exact subject, TRPA has noted (in excerpts from Volume 1):

The second paragraph on page 180 of comment letter O16, under the heading “PM10 and PM2.5,” appears to address the Threshold Evaluation Report rather than the Draft EIS. The Threshold Evaluation Report shows that baseline PM conditions are improving, but the comment appears to be concerned that PM conditions are worsening. The Threshold Evaluation Report uses the best available information regarding air quality monitoring and emissions trends, as well as widely accepted statistical methods, and has undergone a peer review to verify its accuracy. Please refer to Master Response 1, Comments Pertaining to the Draft Plans, Code of Ordinances, or Threshold Evaluation.

...

Mobile sources of NOX are the most important source of atmospheric nitrogen *as it relates to the proposed Regional Plan Update and RTP/SCS*. TRPA acknowledges that there are other important sources of atmospheric nitrogen and phosphorus (i.e., forest fires, residential wood burning, out-of-Basin transport) that affect the Lake. However, these sources are not directly affected by land use changes that would take place under the Regional Plan Update. It is notable that NOX from residential wood burning is an important factor for consideration (and is considered in Impact 3.4-3), but this source is controlled by TRPA’s wood stove emissions controls since only new wood-burning

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appliances that meet these stringent standards would be permitted in new development. Thus, the types of NOX emissions sources attributable to the Regional Plan Update and RTP/SCS have been evaluated in Impact 3.4-7.

- First, the TER obviously does not use the best available information, as shown by our comments on the data as well as the peer reviewers' critiques. In a separate comment we identified, in detail, why the conclusions regarding PM trends were not supported, however, as shown in this example, this is one of many areas where TRPA does not directly respond, but instead simply reasserts the TRPA's analysis is "correct" and the TER report was "peer reviewed" and thus we should apparently not question it.
- Second, TRPA acknowledges that the RPU EIS has not considered the source contribution of all sources. However, it appears TRPA feels the RPU need only examine the new sources – yet the Regional Plan itself is required, per the Compact, to achieve and maintain the thresholds. The purpose of the update is not to simply compare the relative impacts of new development, but to examine the status of the thresholds and what RP amendments are needed to achieve and maintain them.
- Finally, 'solving the puzzle of why these conditions occur' should be paramount to all decision-making by TRPA. In order to ensure thresholds are achieved and maintained, TRPA must monitor and take action when they are not. In order to know what action to take (e.g. which pollution source to control), TRPA must have information regarding the reason the threshold is not being attained. Further, this cause/effect information is needed to identify which control measures or regulations are needed to achieve the thresholds. Yet the TER, and the RPU EIS, fail to evaluate the conditions and cause/effect relationships specific to the Basin's environmental thresholds and federal, state, and local standards, as relevant.

This chapter does a good job of presenting TRPA's approach to determining status and trends for their prescribed set of indicators. Their new metrics for evaluating progress in relation to targets may be an improvement over previous 5-year evaluations. However, there are still some important methodology questions that need to be addressed. The major one relates to the lack of adequate statistical analysis and the potential use of incorrect techniques based on the characteristics of the data set (i.e. how much data, missing data, levels of detection, confidence limits, normality or non-normality assumptions, etc.). These analyses are not trivial to carry out and are usually the result of extensive discussions between the scientists who designed the monitoring and research programs and statisticians who have had prior experience evaluating these kinds of long-term environmental data sets. A linear regression analysis has assumptions built into it, such as normally distributed data – which is not the case for many environmental variables. There are other non-parametric models and tests for trends that are well vetted by the U.S. Geological Survey (USGS) for use in streams in particular, but also for lakes. It does not appear to me that the scientists from TRPA's Partners had much to do with the statistical methodology used for the Report or the presentation of their own data; and I think they are the folks that should be doing the analysis.

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and then working with TRPA and Extension Educators to best communicate results in words and graphics. [Emphasis added]

Comment noted. TRPA did the best it could with the time and funding available for this effort, but there always be room for improvement. Scientists and technical staff from partner agencies were involved in the analysis and development of chapters 3-11. Analytical approaches were adjusted in several cases in response to this (and other) peer review comments related to analysis. Addition description of the quality of the data is provided in each indicators summary.

- We noted concerns with this in our comments on the draft TER. This is another significant concern regarding the data analysis raised by a peer reviewer that has not been addressed in the TER.
- Most people don't read the "quality of the data". They just focus on the findings. We provided many examples of this in our comments. TRPA has failed to respond.

I also think it's inappropriate to use a ratio of current annual Secchi (or any other indicator) and the target value as a measure of "attainment" for a couple of reasons. The first is that the parameter may not be linear – such as light attenuation as estimated by Secchi depth. One meter of loss of Secchi depth from 25-24 m is due to a tiny fraction of particles in the water needed to decrease it from 15 to 14 meters or 5 to 4 meters. Such data may be "linearized" by using a Ln transformation or by using $1/[\text{Secchi depth}]$. Also, we have no reason to expect progress to be linear over time and I would argue that this creates false expectations. Most ecological processes that I know of are distinctly non-linear. And the installation of stormwater BMPs and the repair of SEZs, for example, can require several years for construction impacts to wash away and revegetation to occur. Sediment discharge may be worse after a project than before if heavy rainstorms occur before the project area is fully remediated.

Comment noted, and changes were made to the methodology write-up. Text was added to page 2-4 explicitly pointing out the drawback to the categorization approach is that it assumes changes in an indicator occur in a linear fashion over the entire range of the indicator. Yet we know this is not the case for many indicators. In most cases, however, the distance between an indicator and the standard or interim target is only a portion of the full potential range, and it is assumed that this distance can change in a linear fashion. [Emphasis added]

- This is another comment from a peer reviewer regarding the statistics used to evaluate and forecast trends in the TER (which are then relied on by the RPU EIS).
- It appears TRPA did not address the scientific component of this, but rather, acknowledged the flaws...however making no changes other than adding another text 'caveat' to the report.

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Definitions of what constitutes a change as in Table 2-2 are useful only to the extent that you can accurately assess the values of the indicators and their uncertainty. It may be better to simply report an Indicator Trend Category as Improving, Declining, Essentially No Change, and Insufficient Data to Evaluate. Where a rate of change can be calculated, it should be reported along with the confidence intervals. The detail in some of the indicator descriptions seems unwarranted given the uncertainties in the values of some of these indicators. [Emphasis added]

Comment noted, but no change in methodology made. TRPA staff and consultants discussed this issue at length during the development of the methodologies. In the end it was thought that more categories in trend would communicate more information. This is something that will be assessed after the report is completed, and may be changed in future[Emphasis added]

- We note that TRPA made no change in methodology to address this concern.

There is also an important need to have some index of the weather in most of the water quality, and perhaps also some of the air quality, and even socioeconomic indicators. For more than 30 years it has been clear to the TRG (now TERC) that annual Secchi, and in particular winter Secchi, increased (more transparent) in low precipitation Water Years. Weather has direct control of the water budget in the basin such as stream flows, but also is important to lake productivity in terms of how early summer stratification breaks down, how long the lake remains isothermal, how strong and frequent wind storms are, how early or late does spring arrive, and how dry and how hot is summer? I think TRPA has also spent too much attention comparing one year to other. There's ample data presumably to do a good job of addressing the influence of the weather – which would then need to be summarized for the 5 year evaluation period and used when discussing changes between evaluation periods and in discussing the individual “bumps and grinds” of the data – particularly the Secchi and 14C-PPr data.

Comment noted, but not change made to methodology chapter. This is a good point. Some information was added to the beginning of the water quality chapter to point out the important influence of weather and water year variation; however, additional data analysis was not completed [Emphasis added]

- Our comments also identified the important differences throughout the year and the variable impacts of weather factors on the thresholds (and the cause/effect relationships). This is paramount to some of the key assumptions used in the RPU – e.g. whether the 20-year storm requirement is appropriate given climate change and other relevant scientific information, whether we should be increasing our protection of flood plains, which affects where development is placed, etc.. However, the responses to our comments make no changes and provide the same generalized ‘brush off’ as apparently provided to the peer reviewer.
- We note that TRPA made no change in methodology to address this concern.

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Another major concern is the apparent limitation placed by the preparers of this Threshold Evaluation, on themselves, as to what data would be considered for analysis.

This comment provides very good justification revising the Thresholds and Regional Plan reporting guidelines. Science and managers are currently conducting such a formalized process for nearshore indicators. Threshold updates acknowledge in the recommendations section of the public draft. Some limitations on data analysis stem from existing ordinance language where the agency is to "continuously monitor" threshold related indicators. Conducting a "meta-analysis" proposed by commenter is appropriate but outside the scope of the Threshold Evaluation and staff capacity.

- This does not address the concern. Rather, it ‘talks around’ the issue – that the TER report did not consider all available information.
- We are also unclear why a requirement to continuously monitor would prevent TRPA from including any available information in the report. Even if not enough to officially determine status, because the TER is used as the baseline information for the EIS, all relevant data must be included – somewhere.
- What happened to the technical reports from the Pathway 2007 Technical Working Groups for each threshold research area? It appears a significant amount of information was gathered and then not used.

As pointed out by Axler, indicators and levels of attainment can be complicated by the bio-physical processes at play. Things cannot be multiplied, divided, added or subtracted at will without an understanding of the underlying mechanisms. This is why the accumulation of a number of indicators into an "uber-indicator" with a single value may not be scientifically correct. While it may meet the temporary needs of decision makers, it can lead to disappointment in the long run. These caveats are recognized and noted in the public draft of the 2011 Threshold Evaluation. Additionally, data from all monitored streams is presented in the public draft to address this comment. [Emphasis added]

- We agree that the aggregation methods used in the TER are not scientifically correct. We also agree the long term results can be disappointing. Yet, TRPA has advertised the TER as the baseline for the RPU, which proposes significant new development, and has advertised the TER status ‘findings’ in a favorable manner that is not supported by the data. See our previous comments from June and July 2012.

Weather data to support status and trends data

Both statistical and mechanistic models have been developed by TERC to investigate this (Jassby et al. 2003 and Sahoo, G.B., S.G. Schladow and J.E. Reuter. 2010) and are referenced in the TEVAL). Effect of sediment and nutrient loading on Lake Tahoe optical conditions and restoration opportunities using a newly developed lake clarity model. Water Resources Research, Vol. 46, W10505, doi:10.1029/2009WR008447. The importance of hydrology and precipitation is very well appreciated. The most important question is 'can BMPs and other restoration actions change the watershed so that high flow years function as low flow years with regard to loading'?

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In other words, can load reduction be achieved even if flow is high? While I agree that the current stream data set could shed light on this general issue, not enough is known about the specific effect land use has on the actual measured load. To do this would require a very intensive set of monitoring sites in the watersheds. In the TMDL Pollutant Reduction Opportunity Report we took a first stab at this for urban stormwater loading. While the LTIMP stream data does provide a good data base to better understand the relationship between flow, load and concentration, it's ultimate connection to land-use policy has uncertainties. An evaluation of the BMP and restoration projects to date typically reveals that the projects were conceptually appropriate - pollutant source control, stormwater treatment and hydrologic source control. What is needed is a thorough evaluation of what type of response can be expected based on anticipated projects. Expectations need to be managed based on scientific uncertainty. The LTIMP data base, as it exists, can only go so far in reducing this uncertainty. A 'back of the envelope' calculation may be helpful. In rough numbers, over the past decade, a total of \$1.5B has been spent on environmental protection and restoration. Of this, it might be reasonable to guesstimate that no more than 25 percent actually stopped sediment and nutrients from actually entering Lake Tahoe as money was spent on a wide variety of projects. The Tahoe TMDL estimated that a total of \$1.5B (additional) would need to be spent on targeted WQ projects that actually reduced load to the lake. At this level of funding (\$37.5M per year), is it reasonable to see changes on anything less than a decadal time scale? The point being that analysis of monitoring data needs to consider whether significant changes are likely over the period of record. [Emphasis added]

- Although this response doesn't necessarily address the peer reviewer's comments, we do note important feedback. First, we agree that the importance of hydrology and precipitation should be well appreciated. But we also believe it should be used in the TER and EIS in order to assess what's appropriate for the Basin.
- Second, we agree that stream data are useful but certainly can't be used to evaluate land use policy (alone). More measurements are needed.
- Finally, we agree that conclusions about water clarity based on just a few years are not supported by the facts. However, the TER and RPU EIS carefully make a point that mid-lake clarity (annual average) has "stabilized" with the implication that this is due in part to TRPA actions. But, it could be related primarily to weather and other factors, climate change, etc., and thus these other parameters should also be assessed. This further reiterates the importance of field measurements of streams, tributaries, pipes, etc. – all sources to Lake Tahoe's waters.

My major concern with the Draft Thresholds Report was in regard to its lack of statistical rigor in the status and trends analyses, and not doing a better job of linking the large effects of annual weather differences to lake and stream water quality and the natural variability of the data in the context of available measurement methods.

On the surface this is a very reasonable comment. For the stream data we took this into account by presenting the long-term data in terms of flow weighted concentration (FWC) - annual load÷annual flow (added WQ appendixes showing FWC). While the two are related FWC does give a picture of how flow (wet vs. dry years) affects the concentration. We also included a plot of running average in the original analysis to provide a more time integrated view of long-term changes. This is a very common technique use by the USGS. These analyses are now included in the draft Threshold Evaluation Report as an appendix to the Water Quality Chapter (see appendix WQ-3). The relationship between annual weather differences and stream loading has been recognized and appreciated for many years, actually starting with the work of Dr. Axler at Tahoe.

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This is why data on flow is provided on the same graph as the load estimates. The USGS and TERC did not produce the simple liner trend lines that appeared in the draft version of the report to describe the trend in loading - the TRPA did so because the agency is mandated to show program in attainment in threshold attainment. Since load is directly related to flow, we decided to use the FWC as discussed above and removed the SLR from stream graphics. The use of more traditional time-series analyses statistics (Mann-Kendall test) does not account for influence of wet vs. dry variability. That being said, the USGS and TERC are currently working on the application a more sophisticated approach. NLA: Typically when USGS calculates loads all the concentration data for several years is used to develop the regression equations, and therefore it is not deemed appropriate to analyze for trends in annual (yearly) loads due to auto-correlation. However, the Tahoe stream data and loading techniques are unique in that UCD calculates annual load based on that water year's data. Because of this the annual loads probably are not auto-correlated (although this needs to be checked) and therefore appropriate trend analysis should be able to be performed. USGS and TERC are looking into the appropriate statistical techniques for this, but as J. Reuter stated, tests such as the Mann-Kendall test will not account for the variability due to stream flow that is due to variability in precipitation. This is why looking at the data in different ways is important, such as using flow-weighted concentrations (presented in appendix WO-3) or other "indicators". Although flow-weighted concentrations do not fall within TRPA's thresholds, they do shed light for status and trends of concentrations over time. With regard to the affect of meteorological variability on water quality, TERC has published a model that takes this and the depth of mixing into account in searching for trends (Jassby, A.D., J.E. Reuter and C.R. Goldman. 2003. Determining long-term water quality change in the presence of climatic variability: Lake Tahoe (USA). Can. J. Fish. Aquat. Sci. 60: 1452-1461). This tool has not received much traction within the Basin, despite being discussed in the TMDL Technical Report. Recently, TERC also employed a much more sophisticated approach for evaluating the long-term trend in Secchi data-a Generalized Additive Model (GAM). This has been reported in the State of the Lake Report but not used in past Thresholds Evaluation Reports or the version that was submitted to the peer-review committee. ...

...

This is the typical approach by USGS. To look at trends in concentrations (instead of loads) using statistical tests (Seasonal Kendall test) that allows for the removal of flow variability in concentration data to improve the performance of the statistical trend test. An update using this technique for trends of concentrations could be performed; however, TRPA thresholds are in terms of trends of loads, not concentrations. [Emphasis added]

- This response contains some extremely important information. As suspected, the trend information⁴ presented in the report was not done by the researchers who best understand the science, but rather, by TRPA.
- The comments also note other important information that should be considered, however, it is not included in the threshold language. However, information related to thresholds should be evaluated in the threshold evaluation report, and if not, then in the EIS that presumes to take actions that are supposed to benefit water quality.

I was disappointed the report did not do a good job of presenting information in a landscape perspective highlighting how certain key indicators cut across major areas (i.e Chapters)...

These are all very important issues that have been discussed by agency researchers and staff. While the Thresholds Evaluation Report does not delve into these questions there are other

⁴ At least related to the analysis the peer reviewer was commenting on.

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reports and scientific papers, reports, etc., that do. This report appeared to have a very specific purpose; however, the reviewer's comments [are] noteworthy in the sense that TRPA and other agencies may need an overall report, aimed at a quasi-technical audience that pulls all the pieces together. At the moment, as far as an outsider is concerned, the total is much less than the sum of the parts. [Emphasis added]

- How can a scientific assessment not consider the scientific relationships between the different threshold categories? Further, how can TRPA evaluate the environmental impacts (and purported benefits) to the thresholds if an analysis of their relationship has not been performed? This comment has noted another deficiency in the technical adequacy of the TER, and again, no changes were made by TRPA other than some caveat language.
- If not prior to the Regional Plan update, when will TRPA “pull all of the pieces together?” We note without adequate scientific rigor, TRPA can not adequately assess status, trends, or the impacts of the EIS alternatives.
- We note no changes in methodology were made as a result of this peer reviewer's comment.

(Outreach is important and needed)

Not within the scope of this report, but it provides another good example of my comment above – TERC's outreach and education is world-class, yet the reader of this report would not know about this and all the other work being done by the many stakeholders. [Emphasis added]

- We agree. If the TER report is being relied upon to assess the current status of thresholds, examine sources and cause/effect, and make predictions about future status, then the report should be based on the best available information, and this should be clearly included for the reader.
- TRPA considers this “not within the scope of the [TER] report.” We disagree. But this is yet another example of the inadequacies of the TER report to serve as the baseline information for the RPU.

Not convinced that a comparison between the current assessment of impervious cover and the 2006 assessment are inappropriate. If no comparison is done, a better justification for why this cannot be done is needed.

Comment Addressed In Report. A table has been added to compare the 2002 hard impervious cover estimates for the Lake Tahoe Basin with the 2010 estimates. Both use the new 2007 soil survey data.

- See our comments regarding the problems with the 2007 soil survey.

Text needs to be better supported by literature. More description is needed on importance of SEZ to soil conservation.

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Comment Addressed In Report. Additional discussion is provided and additional references added.

- The TER still fails to address the full importance of SEZs, soils, and how this relates to other environmental areas. See our comments on the final TER for additional details.

Reviewer states that no indicator has been developed to verify preservation of SEZs. This should be pointed out in introductory paragraphs and it should be noted that only restoration projects are being monitored for status and trend, but not the area of naturally functioning SEZs in the Basin

Comment Addressed In Report. Additional discussion is provided and additional references added as appropriate.

- It appears some discussion was added to the report.

Preservation has never been defined in the Threshold Standard, but it is commonly interpreted to mean that no new development should occur in naturally functioning SEZs. TRPA regulations are in place to limit new development in SEZs and minimize their disturbance. SEZ land acquisitions by TRPA partner agencies also help achieve this threshold component. No indicator has been developed for the preservation of SEZs. While agencies such as the U.S. Forest Service, California State Parks, or Nevada Division of Environmental Protection may be monitoring naturally functioning SEZs, TRPA currently has no method of tracking this component of the SEZ Threshold Standard Indicator Reporting Category.

Reviewer disagrees with the way acreages are portrayed in Table 5-2. The analysis has set a somewhat arbitrary allowance for impervious surfaces within classes and then allowed impervious surface cover to increase to this maximum. It seems imprudent and flawed to have a policy to allow further conversion to impervious surfaces as a "target" since the Lake is an impaired water body. A reasonable policy would be to not increase impervious surfaces with a class with exceptions. Duluth, MN has a development ordinance regarding no net increase in impervious surfaces. [Emphasis added].

This is the policy that TRPA has adopted and this report only addresses the extent to which Region is in compliance with the Policy. Comment Addressed In Report. Table 5-2 and new Table 5-3 have been modified to remove "target" language, replacing it with "maximum allowable" to be more accurate. The reviewer's other points regarding policy are noted. However, this report evaluates the threshold standard as currently adopted. [Emphasis added]

- TRPA's dismissal of this recommendation is yet another example of TRPA picking and choosing which comments from the peer reviewers to address.
- Although the response appears to dismiss the comment because the TER report is limited to just the "threshold standard as currently adopted," the TER report makes numerous recommendations for the Regional Plan update. Thus, the scientific recommendation from the peer reviewers TRPA advertises so heavily should be considered.

A2: TASC-FOWS – Examples of TRPA Responses to Peer Reviewers on TER

Reviewer disagrees with Interim Target statement which specifies that interim targets are not needed for land capability classes where impervious cover is below target for reasons given above. Impervious surfaces lead to excess flow, high peak flows, lower base flows, increase channel and bank erosion, increase sediment and nutrient discharge. A no net increase in runoff guideline or ordinance at least for many areas of the Basin seems warranted. Reviewer agrees with the rest of the section including recommendations. [Emphasis added]

It is mandated by Regional Plan–code of ordinances to identify interim targets and target attainment dates for those indicators currently out of attainment. TRPA regulations are already in place for a "no net increase in runoff" through stormwater regulations which require that all runoff from impervious surfaces (new or existing) in the Region be addressed by infiltrating the 20 year-1 hour storm on site. Any change to the land capability class allowable coverage would require a revision to the threshold standard. A recommendation has been made to detach the Bailey land capability report from the threshold standard, and additional considerations such as those of the reviewer's made be pursued in the future.

- We reiterate comments above.

Bar graphs should be plotted on true time scale with three bars centered at 1990, 1992, and 1995. A rate calculated for these numbers indicate that SEZ restoration is slowing down over time

Comment Noted.

- We find it interesting that as the peer reviewer noted SEZ restoration has been slowing down over time, there is no discussion about this with regards to the threshold which requires SEZ restoration – a threshold which has not been attained.

Reviewer expected a major discussion on soil erosion control projects given the effect of fine sediment on Lake water clarity.

Mandated by Threshold Standard. The chapter focuses on the impervious cover and SEZ indicator reporting categories to address the primary purpose of the threshold evaluation report in evaluating status attainment. Discussion on soil conservation/erosion control included in the Implementation and Effectiveness chapter. [Emphasis added]

- This is another comment which speaks to the failure of the TER to discuss the relationships among the different environmental thresholds. This discussion should be included in the main chapters for resource areas, not buried in the Implementation and Effectiveness Chapter.

A2: TASC-FOWS – Examples of TRPA Responses to Peer Reviewers on TER

Include a recommendation that the soft coverage analysis will be updated once the results from the current work on quantifying soft coverage become available.

Comment Addressed In Report. Recommendation has been added

TRPA should consider evaluating what the word "restore" means, providing a working definition, and evaluating past projects to determine which projects meet that definition. Make a recommendation that TRPA will work with partner agencies to come up with clear definitions for restoration and enhancement.

Comment Noted. The need to clearly define restoration and enhancement is already in the recommendations.

One approach to understanding the extent of naturally functioning SEZs that are being preserved is to get an estimate of the number of SEZ acres that have been transferred from private to public landownership. This is a form of preservation that is often used, and the assumption is that SEZs are at risk of loss in private ownership but not in public ownership. [Emphasis added]

Address in Future Reporting Efforts. Comment is noted. The approach will be considered in the next Threshold Evaluation.

- This is yet another important concern that was not included in the TER.
- Why would a change in approach not be considered for the current TER, which is being used as the baseline for the 20-year RPU?

What is the confidence in numbers of total SEZ acres and total acres disturbed?

Comment Noted. Current total SEZ acreage of 21,944 acres for the Basin are based on the 2001 Threshold Evaluation, which replaces a previous figure of 17,000+ acres in previous Evaluations. We recognize that total SEZ acres for the Basin and acres of disturbed SEZs need to be updated using best available science and technology and this is reflected in the interagency SEZ Roadmap

- The data used here are over 10 years old. This comment is significant. How does an “interagency roadmap” equate to a technically-sound scientific review?

Secchi disk discussion is buried

Comment Noted. Given the hyper-focus the Basin has on transparency, this statement is just not well informed. In fact a common thought is that there is too much emphasis on Secchi and not enough on other important issues

A2: TASC-FOWS – Examples of TRPA Responses to Peer Reviewers on TER

- This supports our concern that the peer reviewers were not provided enough information.
- We also agree – the cause/effect factors related to clarity should be considered as well, however, TRPA has chosen to stick to annual averages although science suggests seasonal variations must be considered.

Annual, winter and summer data should be presented: The discussion should begin with the annual average changes in Secchi depth followed by winter changes and summer changes..

Comment Addressed In Report. Agree, which is why Thresholds need modification based on many years of new science. Winter, Annual and summer status addressed in public draft.

- This supports our comments that more emphasis and study is needed regarding seasonal differences.
- There is no graph in the TER for summer clarity.

(Internal Sources) comments by Dan Canfield

Again, this over-simplified comment suggests that the reviewer was not aware of the detail loading analysis done as part of the TMDL. The stream data presented is not the only source. It is very difficult to ask a peer reviewer to not look beyond the material presented. A background on water quality would have been helpful; however, I completely acknowledge that the TRPA's purpose in this report was not to provide a complete scientific treatise. This is where the TMDL Technical Report needs to come into play. TMDL documents are referenced several time in the draft report.
[Emphasis added]

- This is interesting because it confirms the limited amount of information provided to the peer reviewers and the difficulty in understanding local nuances without full local knowledge or experience, as appears to be the case. The credentials advertised in the TER Appendix D (peer review comments) indicate water quality knowledge.
- The second point also clarifies a point we have raised, although TRPA's references have been somewhat contradictory. The TER report has a very narrow focus and does not consider many factors beyond certain data points, yet the TER report is used to suggest conclusions regarding cause/effect that are utilized in the assumptions in the EIS. Further, the TER makes recommendations for the RPU, and serves as the baseline for the EIS, although in some areas, TRPA states this is not the case, and in others, TRPA states it is (examples of both are provided in our comments).

Sufficient samples: page 4-21. How is the number of sufficient samples defined? How are years with few samples handled in the plots? It seems tome that there should be a minimum

A2: TASC-FOWS – Examples of TRPA Responses to Peer Reviewers on TER

number of samples, perhaps with a caveat regarding how they are distributed across hydrologic regimes. For example, if 4 samples are collected during baseflow for the year, one would expect low TSS and relatively high DIN and TN. TRG/TERC/USGS have traditionally conducted event based sampling with a balance between high and low flow sample collections

Report states the following "Currently, a total of 20-35 individual samples are collected each water year from each of the ten regularly monitored streams. This sampling frequency is considered sufficient to characterize different inflow conditions observed during the water year. The sampling frequency has varied over the period of record. The stream monitoring program focuses on both event-based conditions (large runoff events associated with rainfall and snowmelt) and baseline conditions (low inflow during summer when precipitation is negligible)". The term sufficient is used in the sense that there is monthly sampling during based-flow and event-based samples during the precipitation and runoff season. NLA: The question of how many samples are sufficient is a good question and USGS asked this question to NDEP when calculating annual averages for each water year. There are some years where only 2 samples are available. We thought that the calculations should only be made when there are samples across all hydrologic regimes in a given water year. However, we were told by NDEP that they are required by EPA to use any available data when calculating annual average and the minimum number of samples needed/required was 2. Hence if there were at least 2 samples in a given water year we calculated an annual mean. We could update the table in WQ-1 to list the number of samples used for each water year's annual average (n). [Emphasis added]

- This again speaks to the confidence in the data, which in the report is noted as high for status. However, as noted here, there were concerns by the peer reviewers and the chapter contributors that an annual mean would be calculated off just two samples. TRPA does not appear to have provided a direct answer to this concern. Instead, the only discussion in the TER appears to be a small statement below the graphs: "A total of 2-157 individual samples were collected, depending on the water year..."
- We note TRPA did not change methodology based on this peer reviewer's comments.

A3: TASC-FOWS Comparison of Mitigation Measures Draft to Final						
Draft EIS Package			Mitigation Measure	Alternative	Final EIS Package	
Summary p. number	Topic	Mit Msr	Description	Alts	Final EIS (Attachment 4)?	Explanation?
s-26	Resort Rec	3.2-2	<p>Mitigation Measure 3.2-2: Revise Requirements for Development in the Recreation District. For Alternative 3, TRPA will allow additional development involving commercial uses, residential uses, tourist accommodation uses and/or subdivisions in a Recreation Area within an Area Plan or Master Plan only if the development results in a development pattern that is compatible with recreation district uses, does not induce substantial growth in the area (either directly or indirectly), and does not conflict with any environmental policies or regulations, as analyzed and demonstrated by the subsequent environmental analysis for the Area or Master Plan. To the extent that environmental analysis indicates mitigation measures are required, those measures may include, but are not limited to, the following:</p> <ol style="list-style-type: none">1. the development shall be an accessory use to a primary recreation use as defined by Code Section 21.3;2. the development shall not increase the number of existing units of use at the site unless it is the result of transfers of existing residential and tourist units of use and existing commercial floor area from outside designated Town Centers, the Regional Center, and the High Density Tourist District;3. the development shall transfer existing units of use at a ratio of more than 1:1 or require that units of use4. the development shall provide transportation options such as bike trails, chairlifts, dedicated transit, sidewalk5. the geographic extent of development shall be limited.	2-5	N	"Mitigation is addressed with Resort Recreation Provisions" (Plan and Code Amendments Table)

s-28	Trans	3.3-1	<p>3.3□1: Phased Release of Allocations / LOS Monitoring / Travel Demand Management. The level of service standard under evaluation for Impact 3.3□1 is oriented toward alleviating congestion during the peak hour of peak travel times in the Region. The Compact directs TRPA to focus transportation improvements on transit investments and enhancements to nonauto modes, rather than new roadway capacity. Therefore, the mitigation measures below seek first to provide additional travel capacity in the form of bicycle, pedestrian, and transit improvements, with an ongoing monitoring program. New roadway improvements beyond those already listed in the RTP, are proposed if other measures are not able to meet community needs during peak travel times.</p> <p>TRPA will develop and implement a program for the phased release of land use allocations in four□year cycles in conjunction with future updates of the Regional Plan and RTP. Two years after each release, monitoring of existing and near□term LOS will occur at intersections and roadways to evaluate compliance with applicable LOS policies. Should LOS projections indicate that applicable LOS goals and</p> <ol style="list-style-type: none"> 1. TRPA will prioritize, and cause to be implemented, if feasible, enhanced non□motorized and public tra 2. TRPA will modify the land use allocation releases to reduce travel demand. 3. To the extent that roadway capacity expansions do not result in significant, unavoidable environmental <ul style="list-style-type: none"> □ US 50 between the South Y and South Stateline – modify US 50 to consist of enhanced access control □ US 50 between SR 89 and Pioneer Trail – modify US 50 to consist of enhanced access control (e.g., ra 	All	N	Added to Code in Final: 50.4.3. "LOS and VMT Monitoring" ...
s-30	Trans	3.3-3	<p>3.3□3: Implement Additional VMT Reduction. Additional mitigation will be required for all alternatives to further reduce VMT to achieve the VMT Threshold Standard. The following percent reductions would be necessary for each alternative:</p> <ul style="list-style-type: none"> □ Alternative 1: 3.4 percent reduction □ Alternative 2: 1.3 percent reduction □ Alternative 3: 3.0 percent reduction □ Alternative 4: 7.9 percent reduction □ Alternative 5: 10.9 percent reduction <p>To ensure that the VMT Threshold Standard is achieved, TRPA will develop and implement a program for the phased release of land use allocations followed by monitoring and forecasting of actual roadway traffic counts and VMT. New CFA, TAU, and residential allocations will be authorized for release by the TRPA Governing Board every four years, beginning with the approval of the Regional Plan. Approval of the release of allocations will be contingent upon demonstrating, through modeling and the use of actual traffic counts, that the VMT Threshold Standard will be maintained over the subsequent four□year period.</p>	All	N	

s-32	AQ	3.4-2	3.4□2: Develop and Implement a Best Construction Practices Policy for Construction Emissions. Within 12 months of adoption of an updated Regional Plan, TRPA will coordinate implementation of Best Construction Practices for Construction Emissions through TRPA approved plans, project□ permitting, or projects/programs developed in coordination with local or other governments that require, as a condition of project approval, implementation of feasible measures and Best Management Practices to reduce construction□ generated emissions to the extent feasible. Until that time, TRPA will continue existing practice to require measures developed on a project□ specific basis. Where local ordinances, rules, or regulations already require Best Construction Practices for construction emissions, no further action is necessary. Where local government ordinances, rules, or regulations do not adequately address Best Construction Practices, those practices will be implemented through local government and/or TRPA permitting activities. Such measures may include, but are not limited to, the following (list...)	All	Y	
s-35	AQ	3.4-5	3.4□5: Develop and Implement a Best Construction Practices Policy for TAC Emissions during Construction. Within twelve months of adoption of an updated Regional Plan, TRPA will coordinate implementation of Best Construction Practices for Construction Emissions through TRPA approved plans, project□ permitting, or projects/programs developed in coordination with local or other governments that requires, as a condition of project approval, implementation of feasible measures to reduce exposure of sensitive receptors to construction□ related TAC emissions. Until that time, TRPA will continue the existing practice to require measures developed on a project□ specific basis. Where local ordinances, rules, or regulations already require Best Construction Practices for construction emissions, no further action is necessary. Where local government ordinances, rules, or regulations do not adequately address Best Construction Practices, those practices will be implemented through local government and/or TRPA permitting activities. Such measures may include, but are not limited to, the following: (list...)	All	Y	
s-37	AQ	3.4-9	Mitigation Measure 3.4□9: Maintain Level of Air Quality Mitigation Improvements. For Alternative 4, TRPA will evaluate and adjust the Air Quality Mitigation Fee program to ensure that no decrease in the level of air quality improvements would result from the change in the eligible time period for a previous use from 2 to 5 years. Adjustments to the mitigation fee program may include, but are not limited to the following: <input type="checkbox"/> Increase Air Quality Mitigation Fees on new developments to offset the reduction in fees from the proposed change. <input type="checkbox"/> Implement regulatory changes that would ensure the same level of air quality improvements could occur with reduced fees. <input type="checkbox"/> Develop an additional Air Quality Mitigation Fee for additional uses that would offset the reduction in mitigation fees from the proposed change	All	N	Only explanation appears to be response to comments stating TRPA "researched this" and it would likely only be about \$20,000 less...so TRPA concludes it is not significant - and apparently has removed the Mitigation from the final for this reason...
s-37	GHG	3.5-1	Mitigation Measure 3.5□1: Implement Sustainability Measures with Performance Standard. Within twelve months of adoption of an updated Regional Plan, TRPA will coordinate implementation of a GHG Emission Reduction Policy through TRPA approved plans, project□ permitting, or projects/programs developed in coordination with local or other governments addressing Best Construction Practices and ongoing operational efficiency. Until that time, TRPA will continue existing practice to require measures developed on a project□ specific basis. The policy will require implementation of measures for the reduction of GHG emissions generated by demolition and construction activity in the Region and by ongoing building and property operations. Where local ordinances already require GHG Emission Reductions consistent with the Policy, no further action is necessary. Where local government ordinances do not adequately address GHG reduction practices, those practices will be implemented through local government and/or TRPA permitting activities. Such measures may include, but are not limited to, the following: (list...)	All	Y	

s-39	GHG	3.5-2	3.5:2: Prepare Alternative Planning Strategy. For Alternatives 1, 4, and 5, TMPO shall prepare an Alternative Planning Strategy (APS) that demonstrates how the regional SB 375 GHG reduction targets for the California portion of the Region would be achieved, in accordance with California SB 375. The APS would need to include strategies for bringing the alternative into compliance, such as additional transportation projects, development right transfer incentives, a compact land use pattern, reduced allocations, and energy efficiency measures that would result in achievement of SB 375 targets.	1, 4, 5	N	Because TRPA is proposing Alt. 3.
s-40	Noise	3.6-1	3.6:1: Establish and Implement a Region-Wide Traffic Noise Mitigation Program. Within 12 months of adoption of an updated Regional Plan, TRPA will coordinate implementation of a Regionwide traffic noise reduction program through TRPA approved plans, project permitting, or projects/programs developed in coordination with local or other governments that will implement measures for reducing attaining and maintaining traffic noise levels to below applicable CNEL standards. Until that time, TRPA will continue its existing practice of requiring measures to be developed on a project-specific basis. Measures may include those required as conditions of approval for development projects and those to be implemented by TRPA to address cumulative, regional noise levels. Traffic noise mitigation measures will be implemented through local government and/or TRPA permitting activities. Such measures may include, but are not limited to, the following: (list...)	All	Y	
s-43	Noise	3.6-2	3.6:2: Develop and Implement a Best Construction Practices Policy for the Minimization of Exposure to Construction Generated Noise and Ground Vibration. Within 12 months of adoption of an updated Regional Plan, TRPA will coordinate implementation of a Best Construction Practices Policy for Minimization of Construction Generated Noise and Ground Vibration through TRPA approved plans, project permitting, or projects/programs developed in coordination with local or other governments. Until that time, TRPA will continue existing practice to require measures developed on a project-specific basis. The policy will require implementation of measures for the reduction of noise generated by demolition and construction activity in the Region. Where local ordinances already require Best Construction Practices for construction noise, no further action is necessary. Where local government ordinances do not adequately address Best Construction Practices, those practices will be implemented through local government and/or TRPA permitting activities. Measures for minimizing exposure to construction generated noise may include, but are not limited to, the following:	All	Y	
s-43	Noise	3.6-3	Mitigation Measure 3.6:3: Develop and Implement a Best Construction Practices Policy for the Minimization of Construction Generated Noise and Ground Vibration. The Best Construction Practices Policy for the Minimization of Construction Noise and Ground Vibration, which is required by Mitigation Measure 3.6:2, will also include measures to address vibration generated during construction and demolition activity. Measures required by the policy to reduce ground vibration may include, but are not limited to, the following: (list...)	All	Y	
s-45	Noise	3.6-4	Mitigation Measure 3.6:4: Develop and Implement an Exterior Noise Policy for Mixed Use Development. Within 12 months of adoption of an updated Regional Plan, TRPA will coordinate implementation through TRPA approved plans, project permitting, or projects/programs developed in coordination with local or other governments of an exterior noise standard, and related policies, for outdoor activity areas of mixed use development. Until that time, TRPA will continue existing practice to require measures developed on a project-specific basis. Traffic noise mitigation measures will be implemented through local government and/or TRPA permitting activities. Development of the exterior noise standard will be based on health criteria for noise exposure and will take into account the following: (list...)	All	Y	

s-50	WQ	3.8-3	3.8-3: Facilitate Improved Roadway Operations and Maintenance Practices that Protect Water Quality. For Alternatives 1 and 5: TRPA will adopt a policy that supports load reduction plans developed under the TMDL, including elements that improve road operations and maintenance to benefit water quality. TRPA will coordinate implementation through TRPA approved plans, project permitting, or projects/programs developed in coordination with local or other governments. As part of this policy, TRPA will require that public road operations and maintenance minimize the discharge of deicers, FSP, traction abrasives, and other contaminants associated with roads consistent with public safety objectives. Specific actions that will be evaluated for incorporation into TRPA Code include: (list...)	1,5	N	Apparently not included because TRPA is endorsing Alt. 3
s-51	Soils	3.8-4	3.8-4: Coverage Exemption Requirements. For Alternatives 3 and 4, as applicable, TRPA will through Code amendments, TRPA approved plans, project permitting, or projects/programs developed in coordination with local or other governments: A. Temporary Coverage...(list) B. Pervious Decks...(list) C. Pervious Coverage Exemption...(list) D. Aggregate of Coverage Exemptions and Credits on Developed Parcels...(list) E. Non-Motorized Trail Exemption...(list) F. ADA Exemption (Alternative 4)...(list)	All	N	Added to Code section 30.4.6: Exemptions and Partial Exemptions from Calculation of Land Coverage
s-54	Scenic	3.9-1a	3.9-1a: Comply with Specific Findings and Performance Standards for Additional Building Height. To mitigate for potentially significant scenic impacts resulting from three or four story buildings in the 10 Town Centers (Alternative 3) and 12 PTODs (Alternative 4), and from three to six story buildings in the Regional Center (Alternative 3), TRPA will apply the applicable TRPA Code of Ordinances, Chapter 37, Height Standards; Section 37.7, Findings for Additional building Height; or equivalent findings established in an Area Plan.	All	N	Added to Code Chapter 13.5.3.D. Community Design Standards
s-54	Scenic	3.9-1b	Mitigation Measure 3.9-1b: Permit Redevelopment of the High Density Tourist District/South Stateline Casino Core Tourist District of Existing Buildings within Existing Visual Prominence. To mitigate for potentially significant scenic impacts resulting from buildings up to 197 feet in the High Density Tourist District (Alternative 3) and redevelopment of the existing high rise buildings in the South Stateline Casino Core Tourist District (Alternative 4), TRPA will require that any proposed development in the High Density Tourist District (Alternative 3) or the South Stateline Casino Core Tourist District (Alternative 4) achieve the following performance standard: (list)	3,4	N	Added to Code Chapter 13.6.5.D: D. Additional Review Standards for Area Plans within the High-Density Tourist District
s-66	Housing	3.12-2	Mitigation Measure 3.12-2: Prepare a Regional Housing Needs Program and Implement Recommendations. Within 12 months of adoption of an updated Regional Plan, TRPA shall coordinate with local governments and other organizations to develop and implement a Regional Housing Needs Program. The Housing Needs Program will evaluate progress towards the adopted housing goals and recommend policy and ordinance changes necessary to achieve housing goals. Changes may include, but are not limited to, the conversion of residential allocations to bonus units that would be available only for the construction of affordable and/or moderate income housing, the creation of new bonus units for affordable housing and modification of development standards to promote housing affordability.	All	Y	

A.4 TASC & FOWS comments on RPU package – process with color coding

12/4/2012 Note:

The below is a summary of our attempts to figure out the relationship among the documents after receiving the package on 10/24/2012. Colors were used to discern various chapters and documents as much as possible. We note that a typical final EIR/S would provide basic documents, including revisions to the EIS, Response to Comments, Master Comments, and attachments (e.g. proposed regulatory language changes.)

However, in the final RPU package released 10/24/2012, the public has been bombarded with a confusing mix of documents. To review the final RPU EIS, and see the proposed project (aka RPU) that would be associated with it, the public must search through staff summaries, multiple attachments, two lengthy “Volumes,” and various other documents. This is yet another example of how flawed the RPU process has been.

Additionally, changes have been made since the 10/24 documents were released, adding further confusion and difficulty in assessing the final EIS package.

Final Proposals – difficult to ascertain:

The changes to the EIS are different than changes to Code and G&P...or should be. Thus, the Final EIS should evaluate impacts of the new Alt. 3 in a revised EIS document. The new Code language/G&P for the new Final Alt. 3 should be separate in those respective documents. However, the final RPU package mixes this all together.

Changes to Final:

In the end, the primary changes have not been reflected in the EIS, but rather, spread out among the other documents. This is not only confusing, but also reflects the lack of adequate environmental analysis in the final EIS.

Changes to proposed Mitigation:

Where the changes to proposed mitigation should be disclosed and analyzed, the EIS has not been "revised" to reflect those changes (should be in Chapter 4), so if one just looks at changes to the EIS (< 10 pages in Chapter 4), it will not be clear that the mitigations have changed since the draft EIS.

An adequate Final EIS would present a new revised Summary Background chapter with the changes included. However, no such summary is provided. There is simply not one document or location where the public can go to see the summary of the final EIS and the changes made (to the EIS, proposed Code, proposed G&P, maps, etc.) compared to the draft.

Plan changes, draft to final:

The 10/24 staff summary, 40 pages, is the overall "summary" of the changes between the draft Plan and Final Plan. It appears this summarizes what should be reflected in Chapter 2: Revisions to Alternative 3: Final Draft Plan... As a staff summary for the Board meeting, the legal position of the 10/24 staff summary is unclear. The RPU refers to the

A.4 TASC & FOWS comments on RPU package – process with color coding

staff summary (in Volume 1), which would tie the staff summary to the EIS. However, why is the staff summary not included as part of the EIS (for example, as a chapter in the EIS)? This is confusing and unclear.

The Chapter 2: REVISIONS TO ALTERNATIVE 3: FINAL DRAFT PLAN in Volume 1 of the Final is the section that provides a different summary (than the 10/24 staff summary) of the FEIS-based discussion of the differences (16 p).

One can go directly to this section (in Volume 1, Chapter 2) at:

http://www.trpa.org/documents/rp_update/Final_Draft/Final_EIS_2012-10-24/1_RPU_Final_EIS_Volume%201/02_V1_Changes%20to%20the%20Regional%20Plan-Final%20Draft%20Plan_RPU_FEIS.pdf

The 72 pager - S.1 SUMMARY BACKGROUND OF THE REGIONAL PLAN UPDATE - is the summary section in the draft EIS. However, the public is not provided with an updated version of this section in the Final EIS. Thus the public is still looking at the draft SUMMARY, now as the "final" - so to see any changes, the public must instead to the 10 page "[Chapter] 4 REVISIONS AND CORRECTIONS TO THE DRAFT EIS", which is found in Volume 1, or via direct link at:

http://www.trpa.org/documents/rp_update/Final_Draft/Final_EIS_2012-10-24/1_RPU_Final_EIS_Volume%201/04_V1_CorrectionsAndRevisions_RPU_FEIS.pdf

Next, "[Chapter] 4 REVISIONS AND CORRECTIONS TO THE DRAFT EIS" - which should include the new scientific analysis of the environmental impacts of the "final Alt. 3" – instead refers readers back to the final PLAN changes for assessing differences in the final Alt. 3. *Clearly, the environmental impact analysis of the changes to the final has been completely skipped over.*

And finally, to see the new final G&P language and Code language associated with the revised Final Alt. 3, the public must read:

Final EIS: Appendix A, Final Draft Goals and Policies

Final EIS: Appendix B, Final Draft Code of Ordinances.

These two documents are included in Volume 1 as Appendix A and B, but are also found on TRPA's website under the header: **Final Draft Lake Tahoe Regional Plan Goals & Policies.**

(Using Vol. 1, readers have to wade through to the appendices; using TRPA's links takes readers right to each section. This adds to the confusion of the entire package).

Below is a description from the intro in "[Chapter] 4 REVISIONS AND CORRECTIONS TO THE DRAFT EIS"

4.1 INTRODUCTION

This chapter includes revisions to the text in the Regional Plan Update Draft EIS following its publication and circulation for public review. The changes are presented in the order they appear in the original Draft EIS and are identified by Draft EIS page number, where relevant. The changes shown in this chapter

A.4 TASC & FOWS comments on RPU package – process with color coding

originate either from comments received on the Draft EIS that resulted in text modifications or corrections or from modifications included by TRPA staff that occurred after circulation of the Draft EIS for public review. Modifications to the Draft Regional Plan that were made in response to comments are summarized separately in Chapter 2 of this Final EIS. In some instances where a comment provides information or a correction that does not contribute substantively to the environmental analysis, the response incorporates the requested change by reference only.

In addition to the revisions indicated in this chapter, **substantive modifications have been made to the description of Alternative 3 at the request of the TRPA Governing Board**, both in response to comments and through extensive consultation with stakeholders and agencies. This revision process, the revisions themselves, and the environmental effect of the revisions are described in **Chapter 2 of the Final EIS, Revisions to Alternative 3: Final Draft Plan**. Because of the nature of these modifications to the Plan description, the changes to the concepts that are being modified are provided as descriptive text rather than indicated as textual revisions (with strikethrough and underline text) in Chapter 4. Accompanying revisions to the Goals and Policies are provided in the **Final EIS as Appendix A, Final Draft Goals and Policies**, and accompanying revisions to the Code of Ordinances are provided as **Appendix B, Final Draft Code of Ordinances**.

The Draft EIS modifications do not result in new significant effects or substantial increases in previously identified significant effects, so there is no need to recirculate the EIS for additional public review. Revisions shown as excerpts from the Draft EIS text include strikethrough (strikethrough) text for deletions and underline (underline) text for additions.

A5: Examples of TRPA Responses to Conservation Community Comments									
Alt. #	What we said...	What TRPA said we said...	Correct Summary Comment(s)?	If not, what's different	TRPA Response:	Did not Address	Addressed	Revised	Referred to Manager
01						3	3	3	3
6									
1	Executive Summary	Executive Summary							
1	The Compact advocates for appropriate development within the Tahoe Basin as long as development complements or supports the Compact's goal of achieving and maintaining the environmental thresholds.	In summary, the comment advocated for appropriate development within the Compact's goal of achieving and maintaining thresholds.	N	as long as that development vs. advocating for development in the first place	the purpose of the Regional Plan Update is, in accordance with the Tahoe Regional Planning Compact (Compact), to make adjustments to the Goals, Policies, and Implementation measures of the Regional Plan that are reflective of current conditions and that will move the Lake Tahoe Region toward attainment and maintenance of environmental threshold standards. All five proposed alternatives, as analyzed in the Draft EIS, are designed to meet the intended purpose of the Regional Plan Update, and the Draft EIS provides a comprehensive programmatic analysis of the environmental effects of each alternative.				
1	The preferred Alternative (Alternative 3) is a tremendous step backwards, contravening the progress made in the 1980 Compact. The 1980 Compact rejected the original Compact's method of allowing local cities and counties to control development and project approvals without the affirmative approval of the TRPA Governing Board.	The commenter expresses opposition to Alternative 3 in its current form because of the amount of development authorized and the level of authority delegated to local jurisdictions	N	"In its current form" is not true. We opposed the amount of development authorized and the level of delegation of authority.	With regard to concerns about the level of authority delegated to local jurisdictions, important changes have been made to Alternative 3 since release of the Draft EIS for public review, as described in Chapter 2 of this Final EIS. Revisions to Alternative 3: Final Draft Plan.	X		X	
1		suggests that the EIS is insufficient to inform the Governing Board of the impacts of each alternative.		TRPA does not mention environmental impacts that threshold report setting	See MR 2	X			X
1	(disagreed with placing DEIS before threshold report) & referenced difficulty in reviewing all in 60 days	is expresses disagreement with a 60-day threshold report that additional time is needed.	N	TRPA does not mention environmental impacts that threshold report setting					
2	The EIS fails to evaluate the amount of increased accessory floor space and associated impacts as a result of the proposed land use policies.	The commenter expresses concern about the amount of accessory floor space that may result from land use policies.	N	ES fails to increase numerical impacts - this is expressing concern about the amount	With regard to accessory uses, it is beyond the scope of the programmatic analysis appropriate for the Regional Plan Update EIS to attempt to identify the accessory uses that may be proposed with specific development projects. Pursuant to TRPA Code of Ordinances, accessory space is regulated by the provisions applicable to the primary use.	X		X	
3	Allowing development and subdivisions in Recreation Areas changes the purpose of 13.5.2.C.3 is inconsistent with LU-2.2 and Plan 208.	and about the potential for development in Recreation-designated lands.			(Does not address not change allowing development in Recreation Lands; instead says that EIS Alt. 3 does increase (only) allows change in 2 areas via Resort Recreation)	X		X	
	In fact, Alternative 3 would have very significant impacts on coverage in the Region by allowing coverage in Recreation Areas and evaluating coverage on a region-wide basis instead of a parcel by parcel basis. Many individual parcels would be severely impacted and would not be consistent with the impervious coverage standard due to numerous coverage exemptions including allowances up to 70%, including on Class 4 land), exemptions for bike trails, pervious coverage, sheds, pervious decks, and comprehensive coverage management areas, 2) the plan would reduce soft coverage at the expense of increasing hard coverage, which has a significant impact and 3) there are no mitigations provided for these significant impacts.								

[illegible]

87	mix/match time periods TER v RPU																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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						The comment states that TRPA 2011 Threshold Evaluation Report and the Regional Plan Update Draft EIS fail to consider all available information and fail to perform a thorough review of the thresholds. Please see Master Response 1, Comments Pertaining to the Draft Plans, Code Ordinances, or Threshold Evaluation. In addition, please see Response to Comment O16-6, which addresses why an EA was completed for the 2008 Threshold Evaluation, but not for the 2011 Threshold Evaluation. Furthermore, Chapter 3 of the Draft EIS, Affected Environment and Environmental Consequences Alternatives, contains comprehensive analyses of 14 resources areas, the cumulative impacts of which are discussed in Cumulative Impacts. Each resource section includes a section titled "Affected Environment," in which existing regional conditions relevant to the specific technical issue are described. The section titled "Environmental Consequences and Recommended Mitigation Measures" identifies and describes the methods and assumptions used in the analysis, the level of significance	X	X	X	
91	(pages and details regarding concerns and sources for CO standard/indicator)	The comment expresses concerns regarding the CO threshold standard (AQ -1) in the 2011 Threshold Evaluation Report.	N			See MR #1.	X	X	X	
92	(pages and details regarding concerns and sources for ozone standard/indicator)	The comment expresses concerns regarding the Ozone Threshold Standard (AQ -2) in the 2011 Threshold Evaluation Report.	N			See Master Responses	X	X	X	
93	pages and details re PM		N			See Master Responses	X	X	X	
94	PM plus concern with separate state standards	PM concerns in Threshold Report plus concerns about Area Plans (V7)	N		Their own Draft ES shows proposed changes (by state)	The comment states that different PM standards for the different states are proposed for the Region. This recommendation is not part of the Regional Plan Update alternatives. P. A1-12 in Final Plan documents titled: "Final Draft RP Attachments," TK Chgs. 201 21024-RP shows PM standards are being updated to better align gauge reading by state than current standards. Current standards are being proposed for TRPA adoption. No response is necessary. See Master Responses	X	X	X	
96	pages re: vis and wood smoke...According to Appendix CR-2 (and also reflected in the RPU DEIS Appendix B), TRPA is proposing to delete the wood stove emissions and suspended particulate standards. The original thresholds were created with protection of visibility in mind, and the associated wood stove and suspended particulate reduction standards created to assist in visibility and clarity improvements. These reductions still aid in reducing air pollution	The comment expresses concerns regarding the Visibility Standard (AQ -4) and Wood Smoke Standard (AQ -6) in the 2011 Threshold Evaluation Report. It states that the Regional Plan Update Draft EIS indicates a bias toward Alternative 3.	N	Falls to mention concern is deletion of thresholds (Note: still proposed in final plan update (FAS))	Please see Master Response 1, Comments Pertaining to the Draft Plans, Code Ordinances, or Threshold Evaluation, as the comment specifically pertains to the 2011 Threshold Evaluation Report. Also, see Response to Comment O16-6, which addresses why an EA was completed for the 2008 Threshold Evaluation, but not for the 2011 Threshold Evaluation. Furthermore, the Draft EIS Chapter 3, Affected Environment and Environmental Consequences of the Alternatives, contains comprehensive analyses of 14 resources areas, the cumulative impacts of which are discussed in Chapter 4, Cumulative Impacts.			X	X	
98	Via and TER recommending future action vs why P7 DC not included		N			See Master Responses	X	X	X	
97	Many pages re VMT, threshold standards, changes in VMT, scoping document, etc.		N			Generic Gov't speak and See Master Responses (Vol 1, p. 3-267)	X	X	X	
	Yet the RPU DEIS (see detailed comments below) proposes to delete the reference to the reduction in the Sub-regional category as the Atmospheric Deposition (AQ-8) threshold standard.	The comment states that the Regional Plan Update Draft EIS proposes to delete the reference to Sub-regional category VMT tied to only the Atmospheric Deposition (AQ -8) threshold standard.	N			Section 2.4.4 of the Regional Plan Update Draft EIS addresses proposed Threshold Standard amendments. No changes related to VMT are proposed for the Regional Plan Update alternatives.				

97	<p>The 2011 TER finds that the VMT standard has been in attainment since 2007, and is currently estimated to be 1,987,794 VMT per day.⁶⁰ The TER report includes a technical explanation of how the VMT estimates were derived. However, as noted in our comments on the RPU DEIS and RTP DEIR/DEIS, different values are used for the 2010 VMT (apparently due to different models). How can TRPA assess compliance with the VMT standard using different methodology? Let alone when two different values are used for the baseline conditions?</p>	<p>The comment asks how TRPA can justify using different values for the 2010 VMT standard using a different methodology.</p>	N	<p>We noted the VMT standard attainment value was different from previous years. VMT is calculated for multiple areas of the TER and RPU. Shouldn't the same value be used for 2011 for analysis?</p>	<p>Page 3.3-3 of the Draft EIS describes how the VMT Threshold Standard attainment value was different from previous years. VMT is calculated for multiple areas of the TER and RPU. Shouldn't the same value be used for 2011 for analysis?</p>	X	X	X
	<p>(First we identified the wording TRPA used - we acknowledged that correlate was technically true, but the way it was used, and following with "but more can be done..." implies TRPA is taking responsibility for the VMT decrease and fails to address or leave room for VMT to again increase.) As noted in our comments on the RPU DEIS below, there are numerous reasons that there would need to be a decrease in VMT since 2006, and most of them are not related to actions by TRPA (or are related to TRPA actions that have resulted in a temporary reduction in units and visitors, e.g., the removal of TAUs for the Convention Center, which to this day remains the infamous "Hole in the Ground," generating no VMT). Therefore, it is expected that VMT will again increase and this should be acknowledged in the report, and additional actions taken to ensure VMT levels do not again exceed the standard.</p>	<p>The comment states that in the 2011 Threshold Evaluation Report, TRPA assigns credit for VMT reductions to actions implemented through the Regional Transportation Plan (RTP) and the Draft Regional Transportation Plan (DRTP). The 2011 Threshold Evaluation Report explains that VMT reductions may be related to external factors (gas prices, oil prices, etc.) and not TRPA actions (e.g., in secondary home ownership). The comment says that through the 2011 Threshold Evaluation Report TRPA is assigning credit for VMT reductions to factors not under TRPA's control.</p>			<p>TRPA notes that the language in the 2011 Threshold Evaluation Report that the comment has quoted states that the actions taken through the Regional Plan correlate [emphasis added] well in time with reductions in traffic volume and vehicle miles traveled, and that "more can be done to aid the maintenance or attainment of air quality standards and other related traffic volume Threshold Standards. Use of the word 'correlate' as opposed to 'using it to ensure' does not correlate causality. It is not clear that the TRPA, and not the other actions, caused the VMT reductions. VMT reductions may have occurred at the same time as Regional Plan actions, but that those actions may not necessarily be the cause of the VMT reductions. The comment also states that it is expected that VMT will again increase and that additional actions should be taken to ensure that VMT does not exceed the standard. TRPA has taken actions to ensure that VMT does not exceed the standard; please refer to the Land Use and Transportation Goals and Policies in the Final Draft Plan, Chapters 4 (Existing and Planned Transportation System).</p>	X	X	X
98	<p>Yet, the 2011 TER simply focuses on the one standard and indicator for DIN, adopted over 25 years ago, and repeatedly documented to require updates (as noted in the Pathway 2007 Report).</p>							
97	<p>In 2000, TRPA worked with researchers from UC Davis to develop a scoping research plan that outlined what was needed in the basin to adequately evaluate air quality and the relationship between air quality and water quality. This relationship was outlined in the summary below. However, TRPA essentially failed to follow-up on this document. Although some additional sites were temporarily installed, other sites were removed (e.g. the SOLA site in 2004), and the CARB LTADS study that was supposed to examine⁶² what is outlined in this document instead focuses solely on atmospheric deposition, and included only temporary monitoring in the Basin. Either way, this relationship remains unexamined, and thus there is no evidence to support any proposed changes to the air or water quality standards associated with VMT until an adequate study is done. Further, we again question exactly how many more five-year periods will pass before TRPA finally follows through on its own recommendations?</p>	<p>The comment refers to a research proposal, prepared in coordination with UC Davis in 2000, to examine the relationship between air quality, water quality, and water quantity. The comment states that TRPA did not follow up on implementing the proposal.</p>	N	<p>Document was included to provide more information on the link between VMT and air quality. The comment suggests the information is needed prior to adopting a proposal to allow more information to be used in the VMT.</p>	<p>This comment does not address the completeness or adequacy of the Draft EIS. Please refer to Master Response 1, Comments Pertaining to the Draft Plans, Code of Ordinances, or Threshold Evaluation, for more information on how comments on the proposed plans and Threshold Evaluation are addressed.</p>	X	X	X
97	<p>It's time TRPA puts the thresholds first, as the Compact mandates. Any changes to the thresholds must be based on a comprehensive and thorough environmental review and public process, separate from any changes to the Regional Plan (so that desired Policies do not influence the changes to thresholds, must be based on science, not politics).</p>	<p>The comment also states that any changes to the thresholds must be based on a comprehensive and thorough environmental review and public process, separate from any changes to the Regional Plan.</p>	N	<p>fails to include the reason we stated.</p>	<p>Please see Master Response 1, Comments Pertaining to the Draft Plans, Code of Ordinances, or Threshold Evaluation. Also, please see Response to Comment O16, which addresses how the Draft EIS describes and analyzes the proposed Threshold Standard amendments.</p>	X	X	X

98	(The atmospheric deposition standard is outdated. TRPA documents have recommended updates and more research since 1983. We provide examples of these repeated recommendations throughout the years. State that TRPA promised to update after TMDL research available, and it's been available for years. Need to update before new Plan because new Plan will need to include strategies to achieve threshold!	The comment expresses concerns regarding the Atmospheric Deposition Standard (A2.3) in the 2011 Threshold Standard. The comment states that the TRPA dis-regarded language in previous threshold evaluation reports that suggested that an update to the standard was needed. The comment specifically questions analysis of total measure load to the entire Region and measures to reduce atmospheric sources of nitrate.	N	ignores most of our points re: why update is needed, what is available and how long it as been available, examples of TRPA's recommendations to update, etc.	Please see Master Response 1, Comments Pertaining to the Draft Plans, Code of Ordinances, or Threshold Evaluation. Also, see Response to Comment O16: 6, which addresses why an EA was completed for the 2006 Threshold Evaluation, but not for the 2011 Threshold Evaluation and that the Draft EIS describes and analyzes the proposed Threshold Standard amendments. Furthermore, the Draft EIS Chapter 3, Affected Environment and Environmental Consequences of the Alternatives, contains comprehensive environmental analyses of 14 resources areas, the cumulative impacts of which are discussed in Chapter 4, Cumulative Impacts.	X	X	X
	We also reiterate the comments from Dr. Gertler included in the report (quote included in our comments with underline). There are significant information gaps that were not addressed by the TMDL, and therefore further research is needed.	Ignored		none		X		
99 (more detail)...Atmospheric deposition of nutrients also contributes to near-shore clarity degradation, as noted in the 2011 TER Chapter 13, but this has not been addressed in the atmospheric deposition standard, nor are updates to the air quality standards suggested, even though it is well documented that N, P, and PM deposit from the air.	The comment states that nutrient loading is a concern, but that this has not been addressed in the atmospheric deposition standard of the 2011 Threshold Evaluation Report.	N		Please see Master Response 1, Comments Pertaining to the Draft Plans, Code of Ordinances, or Threshold Evaluation. Also, see Response to Comment O16: 6, which addresses how the Draft EIS describes and analyzes the proposed Threshold Standard amendments.	X		
100	In addition to comments on water quality in the letters incorporated from other groups and members of the public (see introduction), we provide the following comments on water quality. First, we note the comments provided by Dr. Richard Axler in the peer review. It is unclear what changes TRPA made in response to these comments, however it appears TRPA has failed to take most of them into account. The comment raises concerns regarding the statistical rigor and inadequate representation of the data used in the 2011 Threshold Evaluation Report. Including the following listed below. Also, examples of all of the following critiques have been demonstrated in detail in the previous comments regarding the air quality indicators): Statistical Rigor (as we have also identified above in the comments on the air quality section)... (followed by several quotes from Dr. Axler)	The comment raises concerns regarding the statistical rigor and inadequate representation of the data used in the 2011 Threshold Evaluation Report.			Please see Master Response 1, Comments Pertaining to the Draft Plans, Code of Ordinances, or Threshold Evaluation. Also, see Response to Comment O16: 6, which addresses why an EA was completed for the 2006 Threshold Evaluation, but not for the 2011 Threshold Evaluation and that the Draft EIS describes and analyzes the proposed Threshold Standard amendments.	X	X	
101	As noted previously, TRPA is supposed to review and amend thresholds as needed based on new information. Given the resource value in this case is the clarity of Lake Tahoe (which the public has never said mattered more in one season than another, so far as we know), and the ONRW designation does not just apply during the winter months, this should suggest the need to consider addressing the decline in summer mid-lake clarity. However, Recommended Actions (p. 4-23) include no such recommendation. Much like TRPA's approach with air quality, it appears TRPA has assumed the perpetuation of past actions will somehow magically fix what is getting worse.	The comment raises concerns regarding the ONRW designation and that the ONRW designation does not just apply to Lake Tahoe during winter months.	N	TRPA fails to mention declining summer clarity issue, for one...	Please see Master Response 1, Comments Pertaining to the Draft Plans, Code of Ordinances, or Threshold Evaluation. Also, see Response to Comment O16: 6, which addresses why an EA was completed for the 2006 Threshold Evaluation, but not for the 2011 Threshold Evaluation and that the Draft EIS describes and analyzes the proposed Threshold Standard amendments.	X	X	X

105	Neanshore Litoral Lake Clarity: Where are specific references to nutrients?	The comment, which is focused on the 2011 Threshold Update Report and air nearshore littoral lake clarity, asks where specific references to nutrients are.			Please see Master Response 1, Comments Pertaining to the Draft Plans, Code of Ordinances, or Threshold Evaluation.	X		X
106	We agree. However, the RPU DEIS and 2011 should to explain to public why it has been evaluated as 6ppm for over 20 years and is suddenly said to be 9ppm in these documents	The comment requests that the Regional Plan Update Draft EIS explain why carbon monoxide is evaluated as 6ppm per mile (ppm) rather than 6 ppm.	N	We asked the RPU to disclose why all previous TRPA documents listed 6ppm as the standard for CO, but now it's back to 9 and proposed to be 6. This is a potential confusion of residents.	Please see Response to Comment A38: 11, which recognizes a typo in Table 3.4: 4 of the Draft EIS, and makes a text correction to the National Ambient Air Quality Standard for 8-hour CO from 9 ppm to 6 ppm. Impact 3.4: 4, Long-Term Operational Localized Exposure to Mobile Source Carbon Monoxide Emissions, and Impact 3.4: 8, Implementation of Proposed Air Quality Environmental Threshold Carrying Capacity Amendments, evaluate impacts of CO with respect to the 6 ppm 8-hour CO standard applicable in the Lake Tahoe Air Basin. Further, as explained on page 3.4: 36 of the Draft EIS, the Regional Plan Update proposes to align the TRPA Standard for CO with the more stringent California and Nevada 8-hour CO standards of 6 ppm, which are more stringent standards already in effect at the state level and the Basin currently attains the state ambient air quality standards for CO, the impact associated with changing the TRPA standard to match the state standards would be less than sign	X	X	X
107	The RPU DEIS should evaluate a threshold update which adopts the most protective standards so that the entire Basin is protected equally. The update also needs to evaluate the impacts of ozone in pine trees and the Basin's overall forests.	The comment states that the Regional Plan Update Draft EIS should evaluate a threshold update that adopts the most protective standards for ozone and that evaluate the impacts of ozone in pine trees and the Region's forests.			Please see Master Response 1, Comments Pertaining to the Draft Plans, Code of Ordinances, or Threshold Evaluation. Also, see Response to Comment O16: 6, which addresses how the Draft EIS describes and analyzes the proposed Threshold Standard amendments.	X		X
108	Air Quality: Viability: Evidence does not support the proposed deletions: The impacts of removing wood smoke and suspended sediment standards have not been evaluated. We have discussed this in more detail in other sections of our comments.	The comment, which is focused on the 2011 Threshold Update Report, states that the impacts of removing wood smoke and suspended sediment threshold standards have not been evaluated.			Please see Master Response 1, Comments Pertaining to the Draft Plans, Code of Ordinances, or Threshold Evaluation. Also, see Response to Comment O16: 6, which addresses why an EA was completed for the 2006 Threshold Evaluation, but not for the 2011 Threshold Evaluation and that the Draft EIS describes and analyzes the proposed Threshold Standard amendments.	X		X
109	With regards to PM and ozone standards aimed to protect human health, the Governing Board made a decision to protect human health by adopting the most protective standards in the TRPA's preferred Alternative at that time (July 2010). Two years later, the proposal (rooted in Alternative 4 in the image of the July 2010 document below) is not found in any of the RPU DEIS alternatives. Thus, without any environmental assessment, the Board's decision has now resulted in the exclusion from review the adoption of the most protective standards for the entire Basin, including the Nevada portion. This also results in no evaluation of what air quality planning strategies are appropriate for the Basin (e.g. are per day emission limits on construction appropriate in the Basin, and if so, what should they be to protect human health).	The comment, which is focused on the 2011 Threshold Update Report and the Regional Plan alternatives, states that the Regional Plan Update excludes Alternative 4 in the image of the July 2010 document below) is not found in any of the RPU DEIS alternatives. Thus, without any environmental assessment, the Board's decision has now resulted in the exclusion from review the adoption of the most protective standards for the entire Basin, including the Nevada portion. This also results in no evaluation of what air quality planning strategies are appropriate for the Basin (e.g. are per day emission limits on construction appropriate in the Basin, and if so, what should they be to protect human health).			Please see Master Response 1, Comments Pertaining to the Draft Plans, Code of Ordinances, or Threshold Evaluation. Also, see Response to Comment O16: 6, which addresses why an EA was completed for the 2006 Threshold Evaluation, but not for the 2011 Threshold Evaluation and that the Draft EIS describes and analyzes the proposed Threshold Standard amendments.	X		X
110	We included image of 2010 TRPA fact sheet where board originally included most protective CA standards to be evaluated for adoption by TRPA in Alt. 4 of the RPU (at that time). This supported our request that at least one alternative evaluate the adoption of the most protective ozone and PM standards for the Basin.	The comment, which is focused on the 2011 Threshold Update Report and air nearshore littoral lake clarity, asks where specific references to nutrients are.			Please see Master Response 1, Comments Pertaining to the Draft Plans, Code of Ordinances, or Threshold Evaluation. Also, see Response to Comment O16: 6, which addresses how the Draft EIS describes and analyzes the proposed Threshold Standard amendments.	X		X

110	Air Quality: Atmospheric Deposition. No changes are proposed, although there are years of data available to support standards for other pollutants which affect lake clarity, including phosphorus and particulate matter. This is the third threshold evaluation that has delayed the adoption of improved standards for deposition, even as information and measurement techniques have been available for monitoring. Detailed comments are provided below.	and first improved standards for atmospheric deposition should be adopted.			same	X		
111	We asked why the proposed Goshawk Threshold and Code did not include a 0.25 mile radius around the nest site for a limited operating period, as the USFS regulations require. This was also originally going to be proposed but is now not....				TRPA agrees that a limited operating period (LOP) or similar measure would be considered a standard requirement during project-level review, for construction disturbances near an active goshawk nest. The typical LOP radius around a goshawk nest used by USFS is 0.25 mile. The Code of Ordinances applies a non-degradation standard within goshawk disturbance zones, but does not specifically require a construction LOP. LOPs are applied as a special permit requirement to achieve the non-degradation standard, but the Code retains flexibility to account for the type of activity, topography, and other factors.	X		
112	We question Chapter 13 of the TER and the DEIS in that they propose/suggest deletion of threshold standards because TRPA lacks enforcement authority. However, if TRPA is approving land uses that contribute to further non-attainment, TRPA has responsibility to ensure no harm....	The comment, which is focused on the 2011 Threshold Update Report, states that Regional Plan Update Draft EIS standards are not enforceable. The comment then focuses on what revisions could be considered that would protect human health and recognize the impacts of external sources.			Please see Master Response 1, Comments Pertaining to the Draft Plans, Code of Ordinances, or Threshold Evaluation. Also, see Response to Comment O16.6, how the Draft EIS describes and analyzes the proposed Threshold Standard amendments.	X		
113	Our comments raised detailed questions and examples regarding the failure to implement the 1987 Plan, and whether this is the reason many thresholds are not attained or improving...we lead into two questions: "1. Does the 1987 Plan really need to be dramatically changed, or would the most environmentally-protective option be to simply make the recommended changes to the 1987 Plan, update the thresholds where warranted by new science (e.g. water clarity standards), and finish the remaining approved allocations?" 2. If TRPA were to adopt a new Plan that regulates development with a completely different approach than the 1987 Plan, would TRPA fail to implement the Plan in the future, just as it has failed with the 1987 Plan?"	The comment states that the 1987 Plan has components that are not enforceable. The comment also states that TRPA's implementation is flawed, rather than TRPA's implementation and lack of updates are the flaw.			Please see Master Response 1, Comments Pertaining to the Draft Plans, Code of Ordinances, or Threshold Evaluation. Also, see Response to Comment O16.6, which addresses how the Draft EIS describes and analyzes the proposed Threshold Standard amendments.	X		
113	We include extensive information regarding the VMT decline since 2006, and the economy, and comment on the need for TRPA to anticipate that this VMT will eventually increase regardless of TRPA action because of the other factors that will turn around. We included details, references, graphs, etc.				NONE: lumped in to comment number 113 but never answers this question	X		
114	Documents defer mitigation...examples are provided. P.158	The comment states that the Regional Plan Update Draft EIS (as well as the RTPSCS Draft ERIES) defer mitigation measures to future plans and does not complete the VMT reduction. The comment asks where the analysis is that shows that the Region will be able to meet VMT standards.			This comment is addressed in Master Response 13, Programmatic Mitigation Measures and Proper Deferral of Mitigation Details and the Response to Comment O16.141 on the potential for VMT to change over time due to factors out of TRPA's control. Draft EIS Impact 3.3.3: Vehicle Miles Traveled Threshold Standard, presents the analysis of impacts to VMT.	X	X	

115	<p>Examples of Deferred Mitigation: What will these BMPs be? Where is the analysis of how they will reduce construction emissions? What will be the net emissions generated by construction (see further comments related to construction)? What information will be used? Why has TRPA not formulated this before?</p>	<p>The comment also asks what the mitigation measures would be and how they are formulated a Best Construction Practices Policy before.</p>	N	See all Os	<p>As described on Draft EIS pages 3.4 :26 through 3.4 :28, it is not possible or meaningful to estimate construction emissions that would occur as a result of the impacts of the proposed project. The Regional Plan would build out in the form of individual development projects. TRPA will evaluate project-related construction emissions on an individual basis. TRPA has relied on individual jurisdiction rules, regulations, and codes and has implemented mitigation on a project-by-project basis until this time. TRPA wishes to use the Regional Plan. Update as an opportunity to develop a consistent approach to application of air quality mitigation and will enforce its application either through its Code or through conditions of project approval.</p>	X	X		
116	<p>Examples of Deferred Mitigation: What is the GHG Emission Reduction Policy? How will it work? Where are the analyses?</p>	<p>The comment asks for an explanation of the Greenhouse Gas (GHG) Emission Reduction Policy identified in Mitigation Measure 3.5.1.1.</p>			<p>The GHG Emission Reduction Policy is described in Mitigation Measure 3.5.1.1 on page 3.5 :24 of the Draft EIS. The GHG Emission Reduction Policy has not yet been defined, and its development is the directive of this mitigation measure. TRPA will develop and implement a plan that demonstrates achievement of a GHG reduction target deemed consistent with AB 32 goals. It is anticipated that the work on the Regional Sustainability Plan currently underway by the Regional Sustainability Collaborative will provide local information that can inform the development of the GHG Emission Reduction Policy. The plan will include GHG reduction actions such as those listed under Mitigation Measure 3.5.1.1. Please see Master Response 13, Programmatic Mitigation Measures and Proper Deferral of Mitigation Details, in response to the request for analysis.</p>	X	X		
116	<p>Examples of Deferred Mitigation: We apply the same questions to the Alternative Planning Strategy. If TRPA has already figured out how to meet the SB 375 reduction targets without harming TRPA's environmental thresholds, why has this not been provided to the public for review?</p>	<p>The comment also asks a similar question regarding Mitigation Measure 3.5.2 on the Alternative Planning Scenario (APS).</p>			<p>California SB 375, Section 1 requires that Metropolitan Planning Organizations (MPOs) adopt an APS in the event that the Sustainable Communities Strategy proposed is unable to achieve the greenhouse gas emission reduction targets for the region. The APS would show alternative development patterns, infrastructure, or additional transportation modes that would be used to meet the targets. TRPA has determined that it is feasible to meet SB 375 targets through Alternatives 2 and 3. Mitigation Measure 3.5 :2 directs TRPA to prepare an APS for Alternatives 1, 4, and 5, in the case that they are adopted, which could include making Alternatives 1, 4, and 5 more like Alternatives 2 and 3. The analysis that shows that Alternatives 2 and 3 are consistent with SB 375 requirements is provided in Impact 3.5 :2 (pages 3.5 :25 to 3.5 :30) of the Draft EIS. If TRPA chooses to adopt an APS, further analysis would be required that would be beyond the scope of the environmental review of the Regional Plan. Update or RTP/SCS. Please also see Respor</p>	X	X	X	X
117	<p>Example of Deferred Mitigation for Noise...</p>	<p>The comment asserts that Mitigation Measures 3.6.1, 3.6.2, and 3.6 :4 are deferred mitigation. These mitigation measures require TRPA to coordinate with the public and other agencies on mitigation and policies within 12 months of adoption of an updated Regional Plan.</p>							

	However, this is contrary to the Compact's requirement that TRPA prepare a detailed EIS that includes "mitigation measures which must be implemented to assure meeting standards of the region. . . ."	The comment also cites CEQA case law that disallows deferring the formulation of mitigation measures to post-approval studies and asserts that the programmatic mitigation measures included in the Draft Regional Plan Update are consistent with the development of those mitigation programs and policies.				Please see Master Response 13. Programmatic Mitigation Measures and Proper Deferral of Mitigation Details.	x					
117	the formulation of mitigation measures to comply to CEQA, which disallows deferring the formulation of mitigation measures to post-approval studies and asserts that the programmatic mitigation measures included in the Draft Regional Plan Update are consistent with the development of those mitigation programs and policies.											
	Deferral precludes public participation (included in detailed discussion).					NONE	x					
117	However, even though the alternatives are not an adequate range of alternatives (see the discussions throughout these comments about important alternatives ignored in the RPU DEIS and RTP DEIS), the RPU DEIS has not adequately analyzed the individual concepts in the alternatives in any way that would be sufficient to mix and match them together. Further, it appears to suggest that the TRPA Board could essentially go for the "max" and pick from the alternatives in a way that results in the most development, least restriction regulations, and least restoration. This is simply not supported by the DEIS. . . Moreover, the only draft ordinances provided are those intended to carry out Alternative 3, which further impedes the GB's ability to create a "mix and match" alternative.	The comment states that the Regional Plan Update Draft EIS does not present an adequate range of alternatives and that the Draft EIS has not adequately analyzed the individual concepts in the alternatives to allow mixing and matching components of the alternatives. The comment states that the only draft ordinances are those intended to carry out Alternative 3, which impedes the TRPA Governing Board's ability to create a mix and match alternative.				The Draft EIS presents a reasonable range of Regional Plan Update alternatives, which were developed based on many years of public outreach. As described in Section 1.10 of the Draft EIS and discussed further in Master Response 2, Duration of Public Comment Period, TRPA facilitated a robust public outreach effort to develop the Regional Plan Update alternatives and EIS scope. The Draft EIS presents a reasonable range of Regional Plan Update alternatives, which were developed based on many years of public outreach. As described in Section 1.10 of the Draft EIS and discussed further in Master Response 2, Duration of Public Comment Period, TRPA facilitated a robust public outreach effort to develop the Regional Plan Update alternatives and EIS scope. The environmental review process for the Regional Plan Update EIS began with efforts to gather information to establish the scope of environmental review. (This is followed by a long discussion of the years of process. . .)	x					
118	(continued from above); note we said inadequate technical analysis of components... response seems to suggest policy-related approvals are sufficient.					As explained in Chapter 2, Revisions to Alternative 3: Final Draft Plan of the Final EIS, the Final Draft Plan is a modified version of Alternative 3 (Draft Plan), which was developed by the RPUC, of the TRPA Governing Board. In the Draft Plan, the RPUC conducted a page-by-page review of the existing Regional Plan and various amendment proposals at a series of 15 full-day public meetings between October 2011 and March 2012. The RPUC endorsed 89 percent of the provisions in the Draft Plan by a unanimous vote. The other 11 percent were advanced by a nonunanimous vote of the RPUC. (This then goes on to discuss Bl-State process, public comment letters, supposed RPUC response to public comments, etc.)	x					x

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124	Instead, the air quality analysis in the RPU DEIS and RTP DERIS seems more like a quick chapter throw together to justify proposed increases in density rather than an analysis of impacts on air quality. Moreover, the TRPA RPU must meet CEQA requirements as well as the TMPO's RTP is relying on the RPU (SCS) document to meet California SB 375 requirements, making the RTP and SCS both subject to CEQA.	This comment also notes that the RTP/SCS Draft EIR/ES must also meet CEQA requirements.	N	We said the RPU must meet CEQA.	TMPO and TRPA are the lead agencies for preparation of the RTP/SCS Draft EIR/ES. The RPU is preparing the draft EIR/ES in coordination with CEQA. The State CEQA Guidelines (including CEQA Guidelines Section 15168, Program EIR), and an EIS prepared in accordance with TRPA's Code of Ordinances and Rules of Procedure. The State CEQA Guidelines were followed for the RTP/SCS Draft EIR/ES and the document meets CEQA requirements.	X	X
125	The RPU DEIS appears to rely on information from just one meteorological station in the Basin. On page 3.4-16, the document states "Local meteorological conditions representative of the study area are recorded at the South Lake Tahoe Airport Station." No evidence or reference is provided to explain how this one site represents conditions for the entire Lake Tahoe Basin. However, adequate evidence exists to show that this one location is not representative of the entire Basin.	The comment questions the validity of the meteorological data presented from the South Lake Tahoe Airport to represent the entire Basin. The comment suggests additional meteorological data but suggests that precipitation patterns vary in different parts of the Basin; some areas receive more precipitation than others. Precipitation is in the form of snow rather than rain.			While this may be accurate information, impact conclusions in Draft EIS Section 3.4 are based on emissions modeling and are not heavily influenced by precipitation data.		
126	Clearly, there are very distinct differences in the weather patterns at the many individual locations throughout the Tahoe Basin, and it is imperative that air quality analyses address these differences. This need is also addressed by CARB: (LTADS quoted)	This comment also provides additional information regarding wind patterns and highlights challenges in characterizing the influence of wind patterns on dispersion in the Basin. The comment notes that additional air quality monitoring data are available for the Basin.	N		The impact conclusions in Draft EIS Section 3.4 are based on dispersion modeling, not on mass emissions modeling of pollutants attributable to the Regional Plan. Update and RTP/SCS alternatives under consideration. Wind pattern data presented on pages 3.4: 15 through 3.4: 16 of the Draft EIS are sufficient and proportional to the level of consideration these data were given as they relate to associated impact conclusions.	X	X
128	Additionally, as discussed below, the document also fails to include all available air quality data for the Lake Tahoe Air Basin. Not only does this provide important information regarding the variable impacts of air pollution on individual areas throughout the Basin, but a mere glance at the recorded measurements for one pollutant at different sites over the past 20-30 years clearly illustrates the differences in ambient air pollution concentrations as well.94	The comment notes that additional air quality monitoring data are available for the Basin.			Please see Response to Comment A38: 13 where additional monitoring data are provided.	X	X
128	Further, recent passive ozone sampling by DRI has indicated significant variations in ozone concentrations throughout the Basin.95				None	X	
128	The EIS states: "Concentrations of criteria air pollutants are measured two monitoring stations in the LTAB. The South Lake Tahoe-Sandy Way station and South Lake Tahoe-1801 Airport Road station. In general, the measurements of ambient air quality at these two stations are representative of the air quality in the vicinity of the study area. Table 3.4-6 summarizes the air quality data from these stations for 2008-2010." (p. 3.4-17).				MONITORING STATION DATA AND ATTAINMENT AREA DESIGNATIONS Concentrations of criteria air pollutants are measured at three monitoring stations in the LTAB: the South Lake Tahoe-Sandy Way station, the South Lake Tahoe-1801 Airport Road station, and the Incline Village-Crystal Bay station. In general, the measurements of ambient air quality at these three stations are representative of the air quality in the vicinity of the study area. Table 3.4-6 summarizes the air quality data from these stations for 2008-2011.		
128	The Statement that the two SLT monitoring sites are representative of the "study area" which is the entire Tahoe Basin, is not supported by fact. Rather, a review of all available air quality data for the Tahoe Basin indicates there are significant variations in the ambient pollutant concentrations throughout the Basin's individual areas.				THIS IS NOT TRUE. THIS IS ALSO NOT TRUE		
128	The South Lake Tahoe Airport station has been shut down since 2009. Therefore, it is improper to say "are" measured as it leads the reader to think there are more monitoring sites than actually exist as of 2011 and 2012.						
	The SLT- Sandy Way station only measures						

	Additionally, Table 3.4-6 summarizes the air quality data from these stations for just two years. In order to assess the current conditions and historical trends (as needed to perform a proper air quality assessment), the entire suite of available data for the Basin must be included (refer again to the comment letter). Further, the differences throughout the Basin must be addressed, as well as the impacts of the proposed developments in each of those areas on population, VMT, and other factors which affect air emissions.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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COMMENTS RELATED TO THE 12/5/2012 STAFF SUMMARY AND MATERIALS

The following comments address information provided in the 12/5/12 staff summary for the 12/12/12 TRPA Board hearing. Due to the late nature of the public receiving over 640 additional pages, and associated time constraints, comments below may touch on subjects already included or discussed above.

Threshold Evaluation, p. 29

and Final 2011 Threshold Evaluation. Since the April 2012 Governing Board meeting, public comments were received and addressed either in response to comments or through the inclusion of additional data, analysis and/or narrative in the report.

As noted in our comments, TRPA did not address many of our comments on the draft TER. TRPA also chose not to address many of the peer reviewer comments.

Also, the required motions and findings listed in the Dec. 2012 packet for the 2011 TER are different than those required for the 2001 and 2006 threshold evaluations. It is unclear why. Also, the 2011 TER does not include compliance forms to be adopted. TRPA staff have stated this is because the same information is included throughout the TER. However, the motions and findings for the 2011 TER propose adoption of a “resolution” that “issues” the TER report. Thus, there is no adoption of the recommendations, compliance measures, target dates, and other information, that had been previously listed in prior compliance forms and adopted by the Board. There also appears to be no ‘comparable’ adoption of such information through any of the other RPU documents. This change in how the TER is addressed through motions and findings is not explained.

The required motions in 2001 and 2006 (resp.) included the following¹ inserted below. We also note that the last truly thorough TER conducted was the 2001 TER (see our comments on the 2006 TER and EA dated May 2007). The 2001 TER required the TER to be “approved,” the compliance forms and measures to be “adopted,” and the Recommendations and Implementation Schedule to be “adopted.” The 2011 TER purports to follow the same Code requirements (now included in Chapter 16 per the March 2012 Code changes), yet the 2011 TER does not contain the same information, nor does TRPA propose to adopt anything in the report.

2001: Motions and Findings

¹ From July 2002 GB packet and September 2007 GB packet.

A.6 TASC-FOWS.Comments on 12/5/12 Staff Summary including Findings

Subject: Resolution Issuing the 2001 Threshold Evaluation Report and Adopting the Amended Compliance Forms (Targets, Indicators, Factors, Compliance Measures, Attainment Schedules, and Related Items) Pursuant to Chapter 32 of the Code

Proposed Action: TRPA Governing Board to issue the 2001 Threshold Evaluation Report, approve the revised compliance forms and Appendix B pursuant to Chapter 32 of the Code. The Final Draft 2001 Threshold Evaluation Report was sent in an earlier mailing. Attached is the draft Resolution which:

1. Approves the 2001 Evaluation Report (July, 2002),
2. Adopts the updated compliance forms and compliance measures, and
3. Adopts the amended Appendix B, 2001 Threshold Evaluation Recommendation Implementation Schedule.

Items recommended by the Report for immediate action are addressed in agenda items XI.C.1-5.

Staff Recommendation: Staff recommends that the Governing Board conduct the public hearing as noticed and approve adoption of the proposed Resolution.

APC Recommendation: The results of the APC hearing of July 17, 2002 will be presented at the Board meeting.

Requested Action: Staff requests the Governing Board take the following action:

Make a motion to adopt the implementing resolution issuing the 2001 Threshold Evaluation Report and adopting the amended Compliance Forms.

2006 Motions and Findings:

Staff Recommendation: Staff, along with the APC, recommend that the Governing Board make the required findings (Attachment A), adopt the proposed Resolution issuing the 2006 Evaluation Report and adopt the updated Compliance Forms and Compliance Measures.

Required Motion(s): To approve the proposed project, the Board must make the following motions, based on this staff summary and the evidence in the record:

- 1) A motion to approve the required findings (see Attachment A), including a finding of no significant effect for the adoption of the compliance forms; and
- 2) A motion to approve the attached resolution (see Attachment B).

In order for the motion to pass, a 4-4 vote of the Board is required

...

Required Findings
Chapter 6 Findings

1. Finding: The project is consistent with, and will not adversely affect implementation of the Regional Plan, including all applicable Goals and Policies, Plan Area Statements and Maps, the Code, and other TRPA plans and programs.

Rationale: The Threshold Evaluation Report makes recommendations for improvement to the Regional Plan, but takes no action which would effect implementation of the Regional Plan. The adoption

A.6 TASC-FOWS.Comments on 12/5/12 Staff Summary including Findings

of the amendments to the Compliance Forms is consistent with Chapter 32 of the Code.

2. Finding: The project will not cause the environmental thresholds to be exceeded.

Rationale: The Threshold Evaluation Report makes recommendations for improvements to the environmental thresholds, but takes no action which would cause the environmental thresholds to be exceeded. The adoption of the amendments to the Compliance Forms will not cause the environmental thresholds to be exceeded as the actions taking within the Compliance Forms are designed to facilitate attainment of the thresholds.

3. Finding: Wherever federal, state, and local air and water quality standards applicable to the Region, whichever are stricter, must be attained and maintained pursuant to Article V(d) of the Compact, the project meets or exceeds such standards.

Rationale: The issuance of the Threshold Evaluation Report involves no action which would effect the attainment and maintenance of federal, state and local air and water quality standards. The adoption of the amendments to the Compliance Forms will not cause the environmental thresholds to be exceeded as the actions taken within the Compliance Forms are designed to facilitate attainment of air and water quality standards.

4. Finding: The Regional Plan and all of its elements, as implemented through the Code, Rules and other TRPA plans and programs, as amended, achieves and maintains the thresholds.

Rationale: See findings 1 and 2 above.

5. Finding: Based on the information submitted in the Initial Environmental Checklist, and other information known to TRPA, the proposed project could not have a significant effect on the environment and a finding of no significant effect can be made.

Rationale: The issuance of the Threshold evaluation report involves no action which would result in a significant impact on the environment. The Initial Environmental Checklist found there would not be a significant effect on the environment as a result of the adoption of the Compliance Forms.

2011 Motions and Findings:

In general, the findings in the December 2012 packet do not appear to be ‘findings,’ but rather mere statements that echo the unsupported claims in the RPU package. Substantial evidence based on sound science has not been provided to support these claims, and thus, the findings.

We reiterate that none of the findings related to the EIS are supported by substantial evidence. As explained in our comment letters, the EIS fails to properly study significant impacts, fully describe the project, specify feasible mitigation measures, study a reasonable range of alternatives, and adequately respond to comments.

MOTIONS FOR ISSUANCE OF THE 2011 THRESHOLD EVALUATION

a. Advisory Planning Commission

A motion to recommend that the Governing Board adopt Resolution 2012-17 issuing the 2011 Threshold Evaluation

b. Governing Board

A motion to make the findings required by the Compact and Code, as shown in Exhibit B

c. Governing Board

A motion to adopt Resolution 2012-17 issuing the 2011 Threshold Evaluation

1. Finding: Section 16.9.1 states that no later than five years from the effective date of the Regional Plan, and every five years thereafter, and more frequently if necessary to ensure adequate monitoring of progress toward attainment and maintenance of thresholds and standards, TRPA shall issue a progress report.

Rationale: The timing of the 2011 Threshold Evaluation meets code section 16.9.1 where TRPA is required to produce Threshold Evaluation reports (i.e., progress reports) every 5 years starting in 1987. To date, the TRPA has now produced and publicly released Threshold Evaluation reports representing evaluations ending in 1991, 1996, 2001, 2006, and 2011.
2. Finding: Periodic progress report shall report on the degree (status) and rate of progress (trends) toward attainment of: 1) adopted Threshold Standards, 2) applicable local, state and federal air and water quality standards, and 3) interim targets pursuant to Code Sections 16.4.3 (Identification of Current Status), 16.9 (Reports), 16.9.1.A (Progress in

A.6 TASC-FOWS.Comments on 12/5/12 Staff Summary including Findings

Threshold Attainment), 16.9.1.D (target dates and interim targets), and 16.10 (local, state and federal standards).

Rationale: The status and trends of Threshold Standard-related indicators are reported in the 'Status' and 'Trend' subsection of each Indicator Summary along with supporting status graphics and trend charts that are based on empirically derived data. Personnel responsible for addressing the status of indicators related to adopted standards were technical experts in the threshold categories or topical area for which they contributed. The *Implementation and Effectiveness* Chapter characterizes the implementation of the Regional Plan and to the extent practical addresses the effectiveness of various Regional Plan elements in achieving Threshold Standards (see also finding 5). Together, reporting elements included in the Final 2011 Threshold Evaluation satisfy Code sections 16.4.3, 16.9, 16.9.1.A, 16.9.1.D and 16.10.

3. Finding: Section 16.9.1.B directs the agency to report on the current cumulative impacts on each threshold of projects approved by TRPA from the effective date of the Regional Plan and from the date of the previous periodic report, including but not limited to: 1) Units of use: residential, commercial, tourist, and recreational allocations (Code Section 16.8.2.A), 2) Resource utilization: additional vehicle miles traveled, vehicle trip ends, impervious coverage, water demand, sewage disposal capacity, area of SEZ disturbance (Code Section 16.8.2.B), and 3) Threshold attainment and maintenance: value of investments in water quality, air quality, transportation and coverage mitigation programs; area of SEZ restoration (Code Section 16.8.2.C).

Rationale: The *Implementation and Effectiveness* Chapter of the Final 2011 Threshold Evaluation provides a detailed cumulative accounting of *Units of Use, Resource Utilization* and *Value of Threshold Investments* consistent with Code section 16.8.2.A, 16.8.2.B, and 16.8.2.C respectively, and reporting requirements found in Code section 16.9.1.B related to the effectiveness of the Regional Plan in achieving and maintaining Threshold Standards. Trend analysis included in each of the Threshold Category chapters provides additional evidence of the potential response of various Threshold Standard-related indicators to the implementation of the Regional Plan.

4. Finding: Pursuant to Code Section 16.4.5, TRPA shall identify and report on the status of additional factors which may be useful as short-term or

EXHIBIT B
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indirect measures of attainment or maintenance of thresholds and standards. Such factors shall not substitute for or override the indicators identified pursuant to 16.4.1 (Identification and Monitoring of Indicators), but may be used to evaluate progress toward threshold attainment or maintenance.

Rationale: Where appropriate, the Final 2011 Threshold Evaluation reports on the status of “*addition factors*” (i.e., alternative ways to measure a resources status/condition) consistent with Code Section 16.4.4 (Reliance on Indicators), 16.4.5 (Additional Factors) and 16.9.1.C (reporting of Additional Factors) in the “*Status*” section of Indicator Summaries prepared for each Threshold Standard or applicable local, state, and/or federal air and water quality standard. Threshold Standard attainment status was not based on “*additional factors*” as detailed in the *Methodology* Chapter of the Final 2011 Threshold Evaluation and in compliance with Code Section 16.4.5.

5. Finding: TRPA shall address Code section 16.6 (*‘Compliance Measures’* – measures currently implemented through the Regional Plan that contribute to threshold attainment and maintenance) and 16.7 (*‘Supplemental Compliance Measures’* – measures that could be implemented through the Regional Plan to aid in threshold attainment and maintenance) as part of periodic progress reporting (Code Section 16.9.1.A).

Rationale: The Final 2011 Threshold Evaluation provides a discussion on the contribution of ‘*compliance measures*’ implemented to aid in the achievement and maintenance of each Threshold Standard to the extent practical in the *Implementation and Effectiveness* Chapter and in the *Programs and Actions Implemented to Improve Condition* subsection of each Indicator Summary page pursuant to Code sections 16.9.1.A and 16.6. A detailed list of ‘*compliance measures*’ in place and ‘*supplemental compliance measures*’ is provided in report Appendix IE-1 pursuant to Code section 16.6.1 and 16.7.1. The adequacy of existing ‘*compliance measures*’ is addressed in each Threshold Standard-specific Indicator Summary page under the “*Effectiveness of Programs and Actions*” subsection and further discussed in the “*Implementation and Effectiveness*”, and the “*Conclusions and Recommendation*” Chapters of the 2011 Threshold Evaluation pursuant to Code section 16.6.4. The *Recommendations for Additional Actions* subsection of each Indicator Summary and the “*Conclusions and Recommendation*” Chapter address requirements

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associated with *'supplemental compliance measures'* (Code Section 16.7). See also finding 7.

6. Finding: Pursuant to Code Sections 16.9.1.D, 16.5.1, and 16.5.2, TRPA shall establish and maintain an updated list of *'Target Dates'* and *'Interim Targets'*, and report on the status of indicators relative to established dates.
- Rationale: The *'target attainment date'* and *'interim target'* subsections of each Indicator Summary found in the 2011 Threshold Evaluation includes estimates of *'target dates'* and *'interim targets'* for each threshold related indicator pursuant to Code sections 16.5.1 and 16.5.2, respectively.
7. Finding: According to Code Section 16.9.1.E, TRPA shall include recommendations in periodic progress reports.
- Rationale: The 2011 Threshold Evaluation provides recommendations in the *"Conclusions and Recommendations"* Chapter on additional actions that can be implemented to facilitate Threshold Standard attainment and maintenance, or otherwise improve the effectiveness of the TRPA Regional Plan pursuant to Code Section 16.9.1.E. In addition, for each Indicator Summary, more specific recommendations are found in the *"Recommendations for Additional Actions"* subsection.

Where are the following findings for the 2011 TER?

1. Finding: The project is consistent with, and will not adversely affect implementation of the Regional Plan, including all applicable Goals and Policies, Plan Area Statements and Maps, the Code, and other TRPA plans and programs.
2. Finding: The project will not cause the environmental thresholds to be exceeded.
3. Finding: Wherever federal, state, and local air and water quality standards applicable to the Region, whichever are stricter, must be attained and maintained pursuant to Article V(d) of the Compact, the project meets or exceeds such standards.
4. Finding: The Regional Plan and all of its elements, as implemented through the Code, Rules and other TRPA plans and programs, as amended, achieves and maintains the thresholds.
5. Finding: Based on the information submitted in the Initial Environmental Checklist, and other information known to TRPA, the proposed project could not have a significant effect on the environment and a finding of no significant effect can be made.

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Why are these findings not required for the 2011 TER? What are the legal ramifications of this? (As noted by staff, the 2011 TER supposedly contains the same information that used to be adopted in the Compliance Forms; the TER also makes recommendations regarding actions in the RP, as well as proposed threshold changes which are included in the RPU EIS, so there does not appear to be a legal reason why the 2011 TER should not be subject to the same findings).

Page 39:

4. Finding: Consult the public during the environmental impact statement process and solicit views during a public comment period of not less than 60 days.
- Rationale: TRPA made the Draft EIS available to public agencies, citizen groups, and interested individuals for a 63-day public review period, from April 25 through June 28, 2012. Copies of the Draft EIS were available for public review during normal business hours at TRPA and at four libraries within the Region. Copies of the Draft EIS were also available for review on TRPA's website, and were made available for purchase on thumb drives. In addition, TRPA consulted the public in a series of six public hearings and two public workshops during the public comment period on the Draft EIS.

Page 40:

5. Finding: Make available to States, counties, municipalities, institutions and individuals, advice and information useful in restoring, maintaining and enhancing the quality of the region's environment.
- Rationale: The Final EIS makes available to states, counties, municipalities, institutions and individuals, advice and information useful in restoring, maintaining and enhancing the quality of the Region's environment. Chapter 3 of the Draft EIS, Affected Environment and Environmental Consequences of the Alternatives, contains discussion of 14 technical topics in Sections 3.2 through 3.15. These sections each contain information relevant to that topic on the regulatory background, affected environment, environmental consequences and feasible mitigation measures that could reduce potentially significant impacts. (See also Draft EIS, Summary, Table S-2, Summary of Resource Topics/Impacts and Mitigation Measures, at pgs. S-25 to S-72, and Chapter 4, Cumulative Impacts).

As noted in our comments, a great deal of information utilized by TRPA in the EIS was not provided to the public and/or was not provided prior to the public comment period. Further, additional information has never been provided, including the data used in the 2011 TER (e.g. the peak or average numbers were included, but the full data sets,

A.6 TASC-FOWS.Comments on 12/5/12 Staff Summary including Findings

including information which allows the public to observe the historic measurements and measurements from various locations throughout the Basin, have not been provided).

Pages 40-41:

2. Finding: The significant environmental impacts of the proposed project.
- Rationale: The Final EIS includes the identified significant environmental impacts of the proposed project. The Draft EIS identified a number
- :

of significant and potentially significant environmental effects (or impacts) that each Regional Plan Update alternative would cause or contribute to. These significant effects can be avoided or substantially lessened through the adoption of feasible mitigation measures.

(See Draft EIS Summary, Table S-2 – Summary of Resource Topics/Impacts and Mitigation Measures; Draft EIS Chapter 3, Affected Environment and Environmental Consequences of the Alternatives; and Draft EIS Chapter 4, Cumulative Impacts.)

We do not believe this finding can be made or supported by the evidence.

Page 41:

3. Finding: Any significant adverse environmental effects which cannot be avoided should the project be implemented.
- Rationale: The Final EIS analysis determines that all of the environmental impacts associated with Alternative 3 may be substantially lessened or avoided with the adoption of the mitigation measures set forth in these findings, with the exception of the following impact:

- 3.5-1, Increase in GHG Emissions

(See Draft EIS, Chapter 3, Section 3.5 at pgs. 3.5-15 through 3.5-25; and Draft EIS Chapter 5, Section 5.2, Significant Environmental Effects that Cannot be Avoided)

The EIS does not contain sufficient evidence to support this finding. Further, lessening the extent of significant impacts alone does not mean they are not still significant and adverse. As noted throughout our comments, there are environmental impacts to far more resource areas than just GHG emissions. Further, that there could be a net increase in GHG emissions (associated mostly with vehicle travel in the Basin) yet not a net increase in VMT certainly defies logic. We again reiterate our comments regarding the inadequacy of the analysis of VMT impacts and the proposed “mitigation” (which is that TRPA promises to try to figure out how to reduce VMT in the future).

Page 42:

5. Finding: Mitigation measures which must be implemented to assure meeting standards of the region.
- Rationale: The Final EIS includes an analysis of mitigation measures that must be implemented to assure meeting standards of the Region. See Attachment E-1 of the RPU Adoption Findings (Exhibit E) for the mitigation measures that have been proposed for adoption. All required mitigation measures have been incorporated into the Final Draft Code of Ordinances or the Final Draft Goals and Policies. In adopting these findings and the Final Draft Plan, the Governing Board hereby adopts and commits to implement the Mitigation Measures as incorporated into the Final Draft Plan. The measures incorporated into the Final Draft Plan represent binding commitments with which TRPA must comply.
- (See Draft EIR Summary, Table S-2 – Summary of Resource Topics/Impacts and Mitigation Measures; see also Draft EIS Chapter 3 Affected Environment and Environmental Consequences of the Alternatives; and Draft EIS Chapter 4, Cumulative Impacts.)

As noted, the mitigation measures do not meet TRPA Compact, NEPA or CEQA requirements for mitigation. An agency “commitment” to do something in the future, which has not been formulated, and for which the claimed outcomes of mitigation are not supported by any evidence, does not suffice.

Page 43:

8. Finding: The growth-inducing impact of the proposed project.
- Rationale: The Final EIS includes an analysis of the growth-inducing impact of the alternatives.
- (See Draft EIS, Chapter 5, Section 5.5, Growth-Inducing Impacts, at pgs. 5-5 through 5-6.)

The EIS has not performed an adequate examination of the growth-inducing impacts of the Plan.

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2. Finding: Summary: A draft EIS in excess of 30 pages shall include a summary, preferably less than 10 pages in length, which identifies at a minimum: a brief project description; each significant adverse effect with a summary of proposed mitigation measures or alternatives that would reduce or avoid that effect; and areas of controversy known to TRPA.

Rationale: The Draft EIS includes a Summary which includes a brief description of the Proposed Project and Alternatives, including each significant adverse effect with a summary of proposed mitigation measures or alternatives that would reduce or avoid that effect, and areas of controversy known to TRPA.

(See Draft EIS, Summary, pgs. S-1 through S-72.)

The Summary chapter in the DEIS has not been updated to reflect changes in the final.

Proposed Resolution 82-11 as found in Staff Summary:

The proposed Resolution in the staff summary (2012-18) begins with:

TAHOE REGIONAL PLANNING AGENCY RESOLUTION 2012-18

RESOLUTION OF THE GOVERNING BOARD OF THE TAHOE REGIONAL PLANNING AGENCY TO AMEND EXHIBIT A OF RESOLUTION 82-11, AS AMENDED, TO AMEND ENVIRONMENTAL THRESHOLD CARRYING CAPACITIES

Strangely, this Resolution is significantly different than the Resolutions associated with at least the last two TER reports. It is unclear why these dramatic changes have been made. We also note that the previous Resolutions frequently referred to the Code requirements related to threshold evaluations – previously Chapter 32, now chapter 16. Yet any such mention of the Chapter 16 requirements for the TER is completely missing from the proposed Resolution to “amend” the thresholds.

The proposed Resolution also states that the threshold amendments were analyzed in an EIS and follow the substantive and procedural requirements of the Compact. However, we note that the EIS did not examine any other alternatives. Although promised otherwise in previous RPU process hearings (noted in our June and July comments), the EIS only analyzed one set of threshold amendments: those included in the proposed Alternative. There was no analysis of alternative thresholds, or of the impacts of the different RP alternatives to the current or proposed thresholds, etc. Thus, we do not believe this statement is supported by substantial evidence (Resolution 2012-18, p. 54 of staff summary):

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WHEREAS, TRPA prepared and circulated an Environmental Impact Statement analyzing the potential for significant environmental impacts from this amendment in accordance with the substantive and procedural requirements of Article VII of the Compact, Chapter 3 of the Code, Article 6 of the Rules of Procedure, and all other applicable rules and regulations; and

As noted in our comments on the TER (previous and in this letter), we do not believe the proposed threshold amendments, or lack thereof in some cases (e.g. changing to fine particulates for water clarity), follow the requirements of 82-11:

WHEREAS, Resolution 82-11 requires the amendment of the pertinent threshold standard where scientific evidence and technical information indicate: (1) two or more threshold standards are mutually exclusive; (2) substantial evidence to provide a basis for a threshold standard does not exist; (3) a threshold standard cannot be achieved; or (4) a threshold standard is not sufficient to maintain a significant value of the Region or additional threshold standards are required to maintain a significant value; and

The next statement is confusing. Is TRPA trying to set the stage to make threshold amendments at its own discretion? What does this mean? Does this change the process for threshold amendments?

WHEREAS, TRPA has determined that the threshold standards to be amended meet the criteria of Resolution 82-11, and, further, TRPA may amend the threshold standards pursuant to its discretion; and

We reiterate our current and previous comments on the proposed changes to Resolution 82-11. Also, the final still appears to propose AQ standards for PM_{2.5} and PM₁₀ which conflict with TRPA's response to comments. Although we have asked TRPA to adopt the most protective standards for the entire Basin, TRPA has repeatedly contended that it will adopt PM standards that are applicable to each state. However, the language in the 10/24 final, and the 12/5 staff summary, reflects adoption of the most protective standards by TRPA, which means they will apply Basin-wide. We would support this if it is the final proposal; however it is confusing because of the conflicting statements elsewhere that make it clear the PM standards will be adopted by state lines, not Basin-wide.

There is an error in the list of "2012 Threshold Amendments Adoption Findings" on page 69 of the staff summary, which is supposed to show the "threshold standard amendments, additions, or deletions proposed as an element of the Regional Plan Update." The proposed changes include the deletion of VMT from the Visibility/Particulate Matter threshold categories; however this is not stated in the list of findings. We have noted our objections to this deletion, and others, in our current and previous comments.

~~Reduce suspended soil particles by 30% of the 1981 base values through technology, management practices and educational programs. Reduce wood smoke emissions by 15% of the 1981 base values through technology, management practices and educational programs. Reduce vehicle miles of travel by 10% of the 1981 base values.~~

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Deletions:

- **Air Quality - Wood smoke from Regional Visibility (numerical standard).** The proposed change is to delete this Threshold Standard and replace with applicable state standards for particulate matter (see above, proposed additions).
- **Air Quality - Wood smoke and suspended soil particle from Sub-regional Visibility (numerical standard).** The proposed change is to delete this Threshold Standard and replace with applicable state standards for particulate matter (see above, proposed additions).

The EIS analysis of threshold amendments failed to consider many (alternative) changes dictated by ample scientific evidence that would avoid or reduce further harm to certain thresholds. For example, the water quality amendments fail to specifically address what we know about fine particulates, nitrogen, and phosphorous loading from both the land and air. TRPA notes in the Rationale discussion that “The proposed amendments to deep water transparency would not result in additional (or lesser) water quality protections.” Also, the air quality amendments did not consider the adoption of the most protective standards Basin-wide. Thus, we do not believe the finding can be made that changes or alterations have been incorporated that would avoid or reduce adverse effects.

TRPA Code Section 3.7 – Findings for Environmental Impact Statement:

The TRPA Regional Planning Compact Article VII(d) requires that TRPA make the following written finding before approving Threshold Standard amendments for which an environmental impact statement was prepared:

- | | | |
|---|------------|--|
| 1 | Finding: | <u>Changes or alterations have been required in or incorporated into such Threshold Standard amendments which avoid or reduce the significant adverse environmental effects to a less than significant level;</u> |
| | Rationale: | Based on the Regional Plan Update Final EIS, the proposed Threshold Standard amendments will not result in an adverse environmental impact to the Region. As a consequence, no changes or alterations have been required in or incorporated into the proposed Threshold Standard amendments. |

Because the RPU EIS is technically inadequate, we do not believe this finding can be supported.

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2. Finding: The Threshold Standard amendments will not cause the environmental thresholds to be exceeded.
- Rationale: The Threshold Standard amendments are designed to further enhance and protect environmental quality in the Region and, based on the Regional Plan Update Final EIS, will not result in the exceedance of environmental thresholds. The amendments will improve the consistency

We disagree with the conclusion that the proposed amendments (p. 79) “are needed” to accelerate attainment and ensure maintenance of the thresholds. Rather, they will likely contribute to further harm to the thresholds. Of course, that they are “*desired*” (by TRPA) is true.

- 1.30 It is necessary and desirable to amend TRPA Ordinance 87-9, as amended, which ordinance relates to the Regional Plan of the Tahoe Regional Planning Agency (TRPA) by amending the Goals & Policies pursuant to Article VI(a) and other applicable provisions of the Tahoe Regional Planning Compact in order to accelerate attainment and ensure maintenance of the threshold standards.

Page 84 states the following:

TRPA Code Section 4.4 – Findings to Amend the Regional Plan, Including Goals and Policies:

1. Finding: The Goals and Policies and Code amendments are consistent with and will not adversely affect implementation of the Regional Plan, including all applicable Goals and Policies, Plan Area Statements and maps, the Code and other TRPA plans and programs.

Rationale: Based on the analysis in the TRPA RPU Staff Reports, the Regional Plan Update Final EIS (October 2012), the 2011 Threshold Evaluation (October 2012), the Governing Board finds the amendments to the Regional Plan and Code of Ordinances are consistent with, and will not adversely affect implementation of the Regional Plan, including all applicable Goals and Policies, Plan Area Statements and maps, the Code, and other TRPA plans and programs (as amended).

As described in the TRPA RPU Staff Reports, the Final EIS and Attachments E-1 and E-2 hereto, the proposed amendments to the Goals and Policies and Code complement and accelerate implementation of the Regional Plan and its objectives: achievement and maintenance of Thresholds while providing opportunities for reasonable growth. As explained in the Final EIS and Attachments E-1 and 2, Alternative 3, along with the mitigation measures included in the Final EIS, is consistent with the Regional Plan, including all applicable Goals and Policies, plan area statements and maps, the Code, other TRPA plans and programs and are otherwise consistent with and will not adversely affect all applicable compliance measures, indicators, additional factors and supplemental compliance measures and attainment of target dates as identified in the 2011 Threshold Evaluation. For the amendments' specific mitigation measures, TRPA has identified in the Final EIS an adequate means by which the mitigation measure's effectiveness will be evaluated.

However, we remind TRPA that the Compact does not state that the objective of the Regional Plan is "achievement and maintenance of the thresholds while providing opportunities for reasonable growth." Rather, the Compact (Article I (b)) clearly states: "...to adopt and enforce a regional plan and implementing ordinances which will achieve and maintain such capacities while providing opportunities for orderly growth and development consistent with such capacities." [Emphasis added].

This is a very distinctive yet important difference. Although we are unclear what TRPA means by "reasonable," and how "reasonableness" would be determined, the Compact is clear that development must be consistent with the environmental threshold carrying capacities. This change is unfortunately reflective of the approach we see in the entire RPU package – that being pro-development first, threshold attainment later.

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The staff summary includes “Attachment E-1: Compact Article VII(d) and Chapter 3 Findings. In the introductory section, TRPA states that part of the Board’s “discretionary action” is to consider whether...the proposed language represents a clear improvement, from an environmental standpoint, over the Draft Plan...” We remind TRPA that the purpose of the Final EIS is not to compare the environmental benefits and adverse effects to the draft EIS, but to compare these outcomes among the different alternatives. That the final Alt. 3 proposes less “adverse impacts” than the draft Alt. 3 does not suffice as evidence the findings can be met.

In considering recommended revisions to the Draft Plan (i.e., Draft EIS Alternative 3), TRPA has been cognizant of its legal obligation under the Compact to avoid or reduce the significant adverse environmental effects to a less-than-significant level, to the extent feasible. The Board’s discretionary action to incorporate these revisions into the Final EIS involved the consideration of whether the proposed suggestion relates to an environmental effect discussed in the Draft EIS, if the proposed language represents a clear improvement, from an environmental standpoint, over the Draft Plan, that the recommendations are feasible from an economic, technical, and legal standpoint, and that the proposed language is consistent with the objectives of the Plan. Chapter 2 of the Final EIS describes the Final Draft Plan, which consists of Alternative 3 from the Draft EIS as revised by the Regional Plan Update Committee (RPUC) and Governing Board. With the adoption of these findings, TRPA is hereby approving the Final Draft Plan as the updated Regional Plan.

The Findings provided below summarize the significant environmental effects presented in the EIS, the extent to which any applicable revisions would affect the environmental analysis, and a discussion of the rationale supporting these findings.

The summary reads on, touching on the development of the Resort Recreation Districts. First, the EIS has not demonstrated that the impacts of this change, including to the two areas included in the Bi-State Agreement, are mitigated to less than significant, let alone that they would benefit thresholds. Second, we note the careful wording that leaves the opening for future changes to Resort Recreation, as the conclusion reads that the “development of vacant lands not previously contemplated for resort recreation uses would result in a less-than-significant land use impact.” We note that the definition of lands that were “not previously contemplated for resort recreation uses” include many areas currently zoned recreation, or even conservation. This appears to be yet another very carefully worded statement that does not exclude additional resort recreation district areas.

Recreation District by means of an Area Plan or Master Plan. Although the Draft Plan evaluated in the Draft EIS would have resulted in a potentially significant land use impacts related to allow such developments uses in Recreation areas, because the Final Draft Plan’s land use classification change and Code amendment include development restrictions and limitations that adequately protect the environment, development of vacant lands not previously contemplated for resort recreation uses would result in a less-than-significant land use impact.

We remind TRPA that the impacts of Alt. 3 in the final must be compared to no action, not to the draft Alt. 3 (from page 88):

TRPA has revised the Draft Plan to effectively reduce the potential for land use impacts by Alternative 3. These provisions are presented as follows.

From page 88:

C. ORIGINAL IMPACTS OF ALTERNATIVE 3 AND MITIGATION

The original proposal for Alternative 3 evaluated in the Draft EIS involved land classification changes from Conservation to the Recreation District that would have allowed additional development beyond what was previously contemplated. Mitigation Measure 3.2-2 in the Draft EIS revised requirements for development in the Recreation District, which sought to ensure that inappropriate or incompatible land uses would not be implemented within Recreation lands and that the Code amendments and land use classification changes would not increase development potential within the Region. This mitigation measure would have reduced impacts from originally proposed land use classification change to a less-than-significant level.

The EIS analysis did not support this conclusion in the draft. Further, TRPA has failed to address the differences in where development is placed and how, and the differences in how impacts affect thresholds in different seasons, years, etc. Thus, the general reference to “development potential within the Region” is not a sufficient parameter for judging impacts to the thresholds. In the final package, TRPA has not provided any additional evidence to support the claim that this Region-wide approach is adequate for protection of the thresholds.

Further, TRPA’s explanation of why the proposed Resort Recreation areas are “mitigated” fails to address many of the concerns we have raised. Also, the conclusion noted below is not correct. TRPA’s proposed changes to the WQMP indicate the expectation that a 3rd Resort Recreation area will be approved within the next four years, thus, it is not accurate to say that the Final Draft Plan – for which the WQMP implements – limits the geographic scope of lands to just the two areas.

As described above, the Final Draft Plan would limit the geographic scope of lands affected by new allowable uses to two Resort Recreation District sites that adjoin two of the Region’s largest and busiest activity centers.

The following statement is also not supported by the facts. We also reiterate the differences between transferring existing development and restoring land versus purchasing development that was never constructed, or never would be constructed, from the land banks, which creates a net increase in on-the-ground impacts.

With incorporation of the revisions described above, the Final Draft Plan would safeguard against inappropriate or incompatible land uses in areas where allowances apply, would adequately protect the environment, and would prevent any increase in development potential within the Region. Therefore, approval of the land use classification changes and Code amendment related to the Resort Recreation District would result in less-than-significant environmental effects.

Transportation, beginning on p. 90 of staff summary.

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The proposed mitigation measures from the draft to final have changed. TRPA now states that the Code and G&P incorporate this mitigation, however, the changes remain undefined.

The discussion related to VMT increases begins as follows (p. 92):

Implementation of the Final Draft Plan would generate additional VMT. Because the VMT generated by planned future development would exceed the Visibility: Vehicle Miles Traveled Threshold Standard, the impact of increased VMT would be significant.

First, we note the VMT threshold standard is not just for visibility. Strangely, TRPA proposes to delete VMT from its inclusion in the visibility category, leaving it only mentioned in the Atmospheric Deposition threshold. Thus this reference is also confusing. Further, as noted in multiple studies and documents, including TRPA's own studies and TERs (e.g. 2000 Air Quality Research Scoping Document, 2001 Threshold Evaluation, etc.), VMT affects far more than just visibility and NO_x. That TRPA has failed to adequately analyze VMT impacts based on more recent science does not justify ignoring VMT's impacts on other thresholds.

In the Rationale, the summary explains that TRPA will monitor and update VMT projections two years after the release of additional commodities. However, TRPA was supposed to be doing this throughout the implementation of the 1987 Plan. That TRPA promises to "do it" now is not a new mitigation. Nor has evidence been provided to demonstrate that unlike the last 25 years, TRPA will actually follow-through this time. Further, TRPA must do more than "monitor VMT." Because VMT directly impacts numerous other environmental thresholds, TRPA must also evaluate the status of the other thresholds and ensure that VMT is not causing them to be exceeded. This means monitoring the affected thresholds as well.

TRPA also proposes a mitigation measure which requires TRPA to "develop and implement" a program for the phase release of allocations and demonstrate the VMT threshold will be achieved over the next four years. Again, we repeat our comments regarding the past 25 years.

To ensure that the VMT Threshold Standard is achieved, TRPA will develop and implement a program for the phased release of land use allocations followed by monitoring and forecasting of actual roadway traffic counts and VMT. New CFA, TAUs, and residential allocations will be authorized for release by the TRPA Governing Board every four years, beginning with the approval of the Regional Plan. Approval of the release of allocations will be contingent upon demonstrating, through modeling and the use of actual traffic counts, that the VMT Threshold Standard will be maintained over the subsequent four-year period.

Further, as noted elsewhere, as each TER has documented the VMT standard to be out of attainment (1991, 1996, 2001, 2006), TRPA was required to take action to bring the standard back into attainment. TRPA never succeeded. As noted, VMT is down now primarily due to national/global factors. Thus, TRPA's "promise" to figure out how to do this in the future is not supported by any factual evidence. Further, it remains interesting to note that TRPA acknowledges a net increase in GHG emissions with the Plan, but happens to "mitigate" a net increase in VMT (and associated pollutant impacts) through this undefined measure, and therefore concludes elsewhere in the RPU package that all

TRPA “Threshold” impacts are mitigated to less-than-significant. Such an assertion is simply not supported by the facts.

Findings for Air Quality: Short Term Construction, TAC Emissions (short term construction and long term operational), and Long Term Operational Emissions: The findings for these impacts² can not be made. As noted in our comments, the EIS failed to analyze potential air pollutant emissions as well as the proposed strategies to simply generate “fewer new emissions” than could be generated. The EIS also failed to consider the impacts of Tahoe’s inversions on emissions, and whether existing County-based limits are appropriate for Lake Tahoe. The EIS also failed to consider the evidence that due to thermal inversions, exposures to TACs during construction or near highways may be higher than in other locations.

The EIS also failed to address increasing exposure to vehicle emissions through the addition of new residential units along major highways in the Basin, as noted in our comments on the draft EIS as well.

The rationale for making findings related to a reduction in air quality mitigation fees appears to be more “after the fact” justification for a proposed political request. Also, the summary raises another speculative argument that because the economy has downturned, fewer businesses would be opening anyway, and therefore the fees would not be collected regardless. Not only is this mere speculation, but it also completely ignores the reason for the 2 year timeline in the first place – air quality. If a business has closed for two years (or 3, 5 or more), regardless of whether it paid air quality mitigation fees years ago, what matters currently is what the air quality conditions are currently. In fact, this is why our recommendations have repeatedly included developing changes to the mitigation fee programs to account for ongoing traffic impacts.

However, of issue here is the proposed reduction in fees. If a business has been closed for 4.5 years, for example, and reopens, that business will generate additional VMT that have not been generated in 4.5 years. But, TRPA has relied on current air quality conditions, not conditions from 4.5 years ago, for the claimed conclusions in the RPU EIS. Even peer reviewers have noted the reduction in VMT should be viewed as temporary, and a “cushion” included to account for the eventual increases in VMT that are likely to occur when the economy turns around. This simply does not make technical sense. There has been no examination of the impacts to air quality associated with this change. Although the response to comments includes a ‘back of the envelope’ estimate of the funds that could be lost, the relationship to air quality improvements was not assessed. Further, the EIS failed to analyze the appropriateness of the existing AQ Mitigation Fee and whether it is adequate to address air quality impacts of development.

The rationale also explains “However, because the rationale for the proposal is to encourage business development...” This comment makes our point for us. TRPA’s role should be to achieve and maintain the thresholds. A relaxation in regulations based on

² That “Changes or alterations have been required in or incorporated into such project which avoid or reduce the significant adverse environmental effects to a less than significant level.”

economic gain, not on threshold improvements, is contrary to the role of TRPA that is outlined in the Compact.

The summary also includes extensive discussion of the proposed Plan versus Alternative 4. However, we remind TRPA that the proposed Plan must be compared to the no action alternative

The original proposal for Alternative 4 amended Code Section 65.2.4.F to permit new businesses to include trips generated from a prior business for purposes of calculating air quality mitigation fees, if that prior use had been active for at least 90 days within the last five years. The potential extent of the decrease in funds was somewhat speculative because it was unknown how many projects that would otherwise pay fees would not be required to do so under the proposed Code amendment. Conversely, it may be that the closed business had already paid an air quality mitigation fee prior to closing, thereby mitigating for increased trips that would not have occurred. However, because the rationale for the proposal is to encourage business development, and a substantial number of businesses have closed due to the recent economic downturn, it is reasonable to assume that fewer resources would be available to fund air quality mitigation projects and thus, fewer would be implemented. Therefore, due to a conceivable reduction in the anticipated air quality funds and implementation of associated projects, the Draft Plan was considered to result in potentially significant impacts associated with an extension in air quality mitigation fee basis.

To reduce the potentially significant impact associated with the proposed extension of time for air quality mitigation fee basis, Mitigation Measure 3.4-9 was identified. This mitigation measure proposed adjustments to the air quality mitigation fee program, in such a way to ensure no decrease in the level of air quality improvement. The following examples of possible adjustments were presented in the Draft EIS:

- Increase Air Quality Mitigation Fees on new developments to offset the reduction in fees from the proposed change.
- Implement regulatory changes that would ensure the same level of air quality improvements could occur with reduced fees.
- Develop an additional Air Quality Mitigation Fee for additional uses that would offset the reduction in mitigation fees from the proposed change.

Implementation of Mitigation Measure 3.4-9 would have eliminated any reduction in the amount of air quality mitigation improvements, because it would require new fee mechanisms to ensure that adequate funding for air quality enhancement projects remains available. This would ensure that this impact would be mitigated to a less-than-significant level with mitigation incorporated.

Page 99 appears to include a round-about “discussion” which speculates that the fee reduction from business will apparently be “offset” by the coverage exemption that will make bike trails cheaper to construct. First, there is no evidence which shows that bike trails in the Lake Tahoe Basin will reduce VMT by the same amount that would be generated by businesses “re-opening” after a period of time. Second, this completely ignores the environmental loss associated with the coverage exemptions for bike trails. What extent of pollution will be generated by the coverage from all of the proposed bike trails? How much more nitrogen may enter Lake Tahoe (for lack of infiltration plus the runoff from pavement) and how does that compare to the potential reduction in a small portion of VMT from the bike trails (and typically just during the summer months)? These questions have not been analyzed in the EIS, or anywhere. Also, as we have heard from bicyclists, the “recreational” bike paths, like the path which extends from the SLT Y to Baldwin Beach, do not “replace” many vehicle trips. Rather, they are used primarily for recreation. Commuters want quick and direct – and tend to prefer the straight trails

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along main roadway shoulders. How many of the bike trails that use AQ mitigation fees actually reduce air quality, versus provide additional recreational opportunities? How does this compare to the loss of mitigation fees from businesses? Again, this is a policy decision that the documents attempt to justify after the fact.

- The fees currently collected from businesses that re-open under the current basis are very small (less than \$20,000 over eight years, as compared to over \$3.5 million total air quality mitigation fees collected over the same period, or 0.6 percent). Extending the prior use basis from two to five years could reduce this proportion of the air quality mitigation fee budget, but even with the very conservative and unlikely assumption of total loss of revenue, this amount of revenue reduction over a multi-year period would not hinder TRPA's ability to implement air quality mitigation projects in the Region, particularly when coupled with the aforementioned features of Alternative 3. A small potential loss of revenue would be more than recovered by the proposed coverage exemption for non-motorized trails. As one example, CTC estimates that the coverage exemption alone will save approximately \$800,000 in costs for one 0.6-mile section of the South Tahoe Greenway Shared Use Trail project. These cost savings would be available to construct additional phases of the project or to plan or construct other similar projects, which would result in additional air quality improvements.

The staff summary reiterates the justification for the net increase in GHG emissions from the proposed Plan, beginning on page 100. First, we note the obvious logic that is missing in the VMT discussion:

TRPA and TMPO have considered and committed to implement all feasible mitigation measures for GHG emissions reduction and, despite these actions, the total increase in GHG emissions in the Region from all alternatives may be greater than 25,000 tons per year (see the discussion for Impact 3.5-1). Therefore, Impact 3.5-1 is recognized as significant and unavoidable. Because additional measures to further mitigate this impact do not have identified funding sources (for example additional transportation projects) or would require the implementation of regulations requiring use among the general population of technology not yet developed or very expensive technologies (such as new energy-efficient vehicles or appliances), the Governing Board finds that legal, economic, social, and technical considerations make further mitigation of this impact infeasible.

TRPA admits that there are challenges to the mitigation that would further reduce transportation emissions, yet claims in the VMT discussion that TRPA will reduce VMT by a certain amount for each alternative. TRPA can not have it both ways.

Regarding the increase in GHGs, as noted in our comments on the EIS, the environmental analysis is flawed, and there is insufficient information to support the assertion that the proposed Plan with "reduce per capita VMT" or "per capita GHG emissions." Rather, it is more likely to significantly increase both. Further, for a Basin that is and will be significantly impacted by climate change, it is outright irresponsible to have an updated Regional Plan that will contribute further to climate change. On that same note, there is an unfortunate neglect among the proposed Plan to address the impacts of climate change on the Basin. There is no doubt the Basin will experience more rain, less snow, more rain-on-snow, more flooding events, etc., yet water quality regulations remain based on the outdated 20-year storm (one inch per hour). Not only will our storms change (which we have already seen in the last few years) and produce increased flooding, but the 20-year storm rule itself is not supported by science. As noted in our comments on the EIS, and as documented in the Boulder Bay EIS (for which TRPA was the lead agency), the variations in localized climate, precipitation factors, meteorology, soil type, soil saturation levels, duration of storm, etc., all play a role in assessing how the environment handles rain and flooding. These factors must be considered for each area in the Basin.

However, the Plan is based on the persistence of this one-size-fits-all approach. As climate change continues to influence our weather, the Basin needs to be able to handle additional flooding.

The staff summary also states (p. 100) that:

The Governing Board further finds that specific considerations make infeasible, any reasonable alternatives that would both meet the objectives of the Regional Plan Update and reduce the significant and unavoidable impact of increased overall GHG emissions. To meet TRPA requirements for the consideration of alternatives, the Draft

We remind TRPA the purpose of the Regional Plan, according to the TRPA Compact, is to achieve and maintain thresholds first. The objectives of the proposed Plan, which are generally based on purported economic improvements, are contrary to the Compact.

Many of the mitigation measures include actions to minimize or reduce emissions “to the maximum extent feasible” or “possible.” This statement provides little assurance that these reductions will actually occur.

The findings for noise are not supported by the EIS. Also, the exemption for construction during daytime hours does not negate the noise produced by those activities. Therefore, TRPA can not conclude construction noise is “mitigated” during these hours simply because the regulations say it doesn’t count.

The EIS also includes no analysis or potential identified mitigation for noise in exterior levels of mixed use areas. The “mitigation measure” is essentially a reference to other documents or promises for the future, but provides no evidence to suggest that noise in mixed use areas can be reduced. Once a building is constructed, and people are staying there and walking around “mixed use” areas around the building, TRPA can not “remove” the people or development to mitigate high noise. We also noted in our comments that in the Tahoe environment, people tend to open their windows more than use air conditioning. Thus, the noise levels intruding from outside areas into a building will be higher than other areas. This has not been addressed in the EIS.

Also, we note meeting the existing CNEL standards for areas does not mitigate for increased exposure to exterior noise levels. In fact, for years (decades) there has been much discussion about whether the existing CNEL standards for Plan Areas are adequate, especially when shorter term noise is present. The CNEL is a good back ground standard but does not address shorter durations of high noise levels which may be unhealthy for humans and wildlife. TRPA has instead made a complete reversal, not only failing to consider improved noise standards to address shorter term impacts (although recommended in previous TRPA documents, including Pathway 2007), but now proposing to expose more people to more noise.

Water Quality (p. 107):

The EIS does not support the finding here that “Changes or alterations have been required in or incorporated into such project which avoid or reduce the significant adverse environmental effects to a less than significant level.” Strangely, this section is titled “VI. Hydrology and Water Quality: significant effect: stormwater runoff and pollutant

loads...” yet nothing listed in the section reduces stormwater runoff and pollutant loads. Rather, the section explains that the Plan will:

- increase allowed temporary coverage,
- increase allowable coverage from decks, and
- exempt coverage from more activities

This will all result in a net increase in coverage and associated stormwater runoff and pollutant loads. Therefore, it is unclear how this translates to a reduction in stormwater runoff. The finding for this effect is not supported by the EIS analysis. We also note that requiring BMPs in order to exempt more coverage does not provide any demonstrated reduction in stormwater runoff when compared to existing conditions, when BMPs are already required.

Scenic Impacts:

Much like the section for coverage, the scenic section claims the findings can be made yet then explains all of the increases in height and mass that will be allowed under the proposed Plan. We note as well that visual prominence is not defined, nor has TRPA presented any clear criteria that will be used to evaluate “prominence.” Instead, the proposed Plan includes numerous proposals that will only further impede view sheds throughout the Region.

The staff summary (p. 111-112) includes a new discussion not seen in previous RPU documents. It appears that TRPA is concluding that the agency need not consider future mitigation. This makes little sense. Also, TRPA’s response to comments on the EIS does not provide a substitute mechanism for evaluation of the necessity and efficacy of additional mitigation measures, let alone a conclusion that additional mitigation measures are not appropriate or necessary.

VIII. INFEASIBILITY OF ADDITIONAL MITIGATION MEASURES

A. FINDING

Specific considerations such as economic, social or technical, make infeasible the mitigation measure or project alternatives discussed in the environmental impact statement on the project

B. RATIONALE

Some comments on the Draft EIS propose new mitigation measures, or modifications of existing mitigation measures, for impacts already found to be less than significant. The Final EIS reflects TRPA’s response to all such proposals. The Governing Board hereby adopts the responses set forth in the Final EIS. The Governing Board

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notes further that, because these impacts have already been determined to be less than significant, the TRPA need not adopt new or additional mitigation measures with respect to such impacts.

Implementation of any of the RPU alternatives would occur in conjunction with land use development and population growth anticipated during the Plan horizon. Because of the nature of the RPU process, feasible operational mitigation measures have been considered within the context of the range of land use and transportation strategies already included in one or more of the RPU alternatives. No additional feasible mitigation is available.

TRPA has apparently dismissed additional mitigation under the claim that it's all "infeasible." It is unclear how TRPA defines infeasible, or how TRPA evaluated the feasibility of mitigation measures, or how TRPA evaluated the feasibility of suggested mitigation concepts and found them all to be "infeasible."

Page 112 states:

The purpose of the Regional Plan Update is, in accordance with the Tahoe Regional Planning Compact, to make adjustments to the goals, policies, and implementation measures of the Regional Plan that are reflective of current conditions and that will achieve and maintain the environmental Threshold Standards. The Regional Plan Update is focused on priorities established by the TRPA Governing Board, which include:

We refer to our discussion in the comments associated with this attachment regarding the purpose of the Regional Plan Update, noting that the stated purpose in the Compact is not clearly reflected throughout the stated purpose in the RPU package. The phrase "reflective of current conditions" is new, and does not originate from the Compact. Rather, the Compact states the purpose of the Regional Plan is to first, achieve and maintain thresholds (Article I):

"...to adopt and enforce a regional plan and implementing ordinances which will achieve and maintain such capacities while providing opportunities for orderly growth and development consistent with such capacities."

TRPA makes the following assertion on page 113:

The Governing Board finds that that a good faith effort was made to evaluate a range of feasible alternatives in the EIS that are reasonable alternatives to the Final Draft Plan, even when the alternatives might not fully achieve the Regional Plan Update objectives or might be more costly. As a result, the scope of alternatives analyzed in the EIS is not unduly limited or narrow.

This appears to suggest TRPA asserts that a reasonable range of alternatives has been considered in the EIS, and therefore the EIS is not unduly limited or narrow. This appears to be a mere statement of opinion by TRPA and provides no evidentiary support. The summary next states that TRPA has provided "detailed responses to all public comments on the adequacy or completeness of the environmental review." As noted in our comments, this is not correct. For example, pages of detailed technical comments and questions were lumped together into one "comment number" and then often generally addressed, or referred to a Master Response, in the response to comments. Other examples are provided with these comments.

The summary reads on to state that the GB adopts the following findings with respect to each alternative. After this, alternatives are briefly summarized then rejected for the following stated reasons:

Alternative 1, according to TRPA, does not attain and maintain threshold standards “as quickly as other alternatives” (we object to this conclusion, as demonstrated throughout our comments), that it does not meet CA GHG law, and that it does not meet the Board’s priorities. What about the Compact’s requirements?

Alternative 2 is stated to create more construction emissions (although the EIS claims that all construction emissions can be mitigated), to reduce VMT, meet CA GHG laws, but not provide for “other threshold-related benefits” and only meets some of the Board’s priorities. What about the Compact’s requirements?

Alternative 2 would result in 51 beneficial or less-than-significant impacts, nine significant or potentially significant impacts that would be reduced to less-than-significant levels with mitigation, and two significant and unavoidable impacts. With respect to some air quality emissions and overall VMT, Alternative 2 has either the lowest or second lowest overall impact of all the alternatives, due to the relatively low level of new development, moderate level of concentration of development in centers, and intensive level of transportation strategies that encourage a shift to non-auto modes of transportation. Compared to the other alternatives, Alternative 2 has lower levels of construction-related impacts related to new development than Alternatives 4, 5, and the Final Draft Plan, but greater levels than Alternative 1. However, Alternative 2 has the highest level of construction-related impacts related to transportation projects, because it has the greatest number of transportation projects of all the alternatives. Alternative 2 realizes the lowest total VMT of all the alternatives and also provides significant recreation opportunities through new bicycle and pedestrian facilities, but does not achieve other threshold-related benefits as well as some other alternatives, such as protecting and restoring sensitive lands, improving scenic quality, and improving water quality through incentives to transfer coverage and development out of SEZs and increasing BMP effectiveness. Alternative 2 would comply with applicable California legislation adopted for the purpose of reducing greenhouse gas (GHG) emissions, and it would meet some of the priorities established by the TRPA Governing Board for the Regional Plan Update. Because Alternative 2 does not meet all of the priorities established by the TRPA Governing Board for the Regional Plan Update; because reasonably foreseeable funding is not available to fund many of the transportation improvements listed in Alternative 2; and because Alternative 2 is less effective than other alternatives at improving water quality, reducing coverage in sensitive lands, and benefiting other thresholds, the Governing Board rejects Alternative 2.

Alternative 3:

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The Final Draft Plan would result in 50 beneficial or less-than-significant impacts, 11 significant or potentially significant impacts that would be reduced to less-than-significant levels with mitigation, and one significant and unavoidable impact. The Final Draft Plan has advantages and disadvantages compared to the other alternatives. The Final Draft Plan has the second lowest total VMT of all the alternatives, and the lowest per-capita VMT and GHG emissions. The Final Draft Plan has lower levels of construction-related impacts related to new development than Alternatives 4 and 5, greater levels than Alternatives 1 and 2. With respect to construction-related impacts related to transportation projects, the Final Draft Plan has a similar level of impacts to Alternative 4, lower impacts than Alternative 2, and greater impacts than Alternatives 1 and 5 because the number of transportation projects in the Final Draft Plan represents the medium number of projects. The Final Draft Plan attains and maintains many Threshold Standards quicker and to a greater extent than the other alternatives, particularly in the areas of water quality, land coverage and scenic quality. The Final Draft Plan provides the greatest level of incentives for protecting and restoring sensitive lands through removal and transfer of development and coverage, and also provides for increased BMP effectiveness. Because of the strong linkage between land-use policies that incentivize concentrated development, and transportation projects and policies to encourage more bicycling, walking, and transit use, the Final Draft Plan has the lowest VMT and GHG per capita of all the alternatives and is best able to comply with applicable California legislation adopted for the purpose of reducing greenhouse gas (GHG) emissions. The Final Draft Plan meets all of the priorities established by the TRPA Governing Board for the Regional Plan Update. This alternative reflects the changes made by the Governing Board, based on public input, and would attain and maintain many Threshold Standards quicker and to a greater extent than the other alternatives.

The evidence does not support this “finding.”

The final “finding” for this discussion states:

Based on the above, the Final EIR/EIS for the RTP/SCS Plan is in compliance, procedurally and substantively, with the Compact, the Code, and the Rules of Procedure.

However, we note that the previous section was merely a repeated summary of the claims in the EIS, which are not supported by additional evidence. TRPA has often simply restated a claim without providing additional information. This “trust us approach” does not substitute for substantial evidence in the record.

The Achieve and Maintain Discussion:

TRPA appears to aim to reinterpret the requirements of the Compact to achieve and maintain thresholds. The staff summary appears to suggest TRPA can not choose to take greater actions to achieve and maintain the thresholds, or rather, that TRPA must play a more passive role and rely on other entities. This discussion is new, unique, and confusing.

Enforcement:

It is revealing to search the staff summary for “enforcement” to see if there has been any discussion added by TRPA suggesting improved enforcement of its Plan by the agency. We found references to “continued enforcement” (of watercraft rules, for example), but no discussion regarding TRPA improving its enforcement of the Plan. We refer to our many comments questioning TRPA’s failure to adequately enforce the 1987 Plan.

Pages 118-125 appear to simply reassert TRPA’s claimed benefits from the proposed Plan, and changes made to the draft Alternative 3. The following pages appear to

summarize TRPA's claims from the TER and desired planning approaches. However, it is unclear how this purports to support the finding in the conclusion. No additional information has been included to address the technical deficiencies in the TER identified by peer reviewers and public comment.

V. CONCLUSION

Based on the foregoing, the Regional Plan, as amended, and as implemented by the Code of Ordinances, as amended, achieves and maintains the adopted thresholds.

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We apply the same comments above to all comparable sections in the staff summary (e.g. RTP/SCS Final EIS Certification Findings). We also do not believe the findings related to CEQA compliance can be made because the environmental analysis of the RPU, which the RTP/SCS relies on, does not meet CEQA requirements.

TRPA's Additional Response to comments:

On page 354 of the staff summary, TRPA provides responses to comments that have been received since 10/23. We note the final RPU package was released on 10/24, and thus comments up to and on that day were made prior to the public having a chance to review the final.

As TRPA has provided "responses" on the new issues that have been raised since the draft, we provide the following comments (staff summary language is inserted and our comments follow the insertions).

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Comments from Friends of the West Shore (FOWS) submitted October 24, 2012

- 1) **Comment Summary:** The comment states the items on the “to-do” list (the preliminary list of priority projects included as Attachment 5 to the Final Draft Goals and Policies) requires environmental review.

Response: The “to do” list is a colloquial reference to Regional Plan Policy ME-3.6 and is included in the Final Draft Goals and Policies as Attachment 5. As specified in Policy ME-3.6, Attachment 5 identifies topics that should be considered by the Governing Board when setting future work priorities. These topics were identified as priorities by members of the Governing Board during the development of the RPU, but were not within the scope of the current RPU. None of the topics on Attachment 5 include specific proposals, and none are presently required to be addressed and may never be addressed in the future. The attachment is drafted to inform future optional and discretionary priority setting and work program development, but does not require the endorsement or implementation of any specific amendment. Adoption of the RPU would not authorize or require action on any topics on the list, and the Final Draft Plan is not dependent on implementation of items on Attachment 5. Because there is no current or future known proposal for either implementation or specific amendments associated with topics listed on Attachment 5, environmental analysis is not needed or possible. If and when specific proposals are developed, they would be subject to environmental review as required by Code Chapter 3. See also Final EIS response to comments A7-10, A19-4, and A32-1 for more information on this topic.

As noted elsewhere, these items are reasonably foreseeable and must be analyzed. Setting work priorities for staff which essentially implement the To Do list has essentially the same outcome as adoption of the List in the Code, or the mitigation measures TRPA “commits” to implementing in the next year.

- 2) **Comment Summary:** The comment also states that the appeal process places an additional burden on the public to file separate lawsuits pursuant to CEQA and TRPA in order to overturn an approved project because the TRPA appeal decision timeline exceeds the 30-day CEQA statute of limitations.

TRPA misrepresents the intent of the comments, and fails to respond to the question. Part of the issue is the Compact’s requirement that TRPA implement the Regional Plan, however TRPA proposes to hand that authority over to the local jurisdictions, who have a different legal process than the TRPA Compact. See our comments on the Compact’s requirements in our letter.

- 3) **Comment Summary:** The comment raises concerns about “the potentially illegal delegation of permitting authority” and requests increased specificity regarding Area Plan findings of conformance.

Response: The Final Draft Plan and Code specify all Area Plan approval requirements and are consistent with applicable laws (see Final Draft Code Chapter 13). Provisions allowing for delegated TRPA permitting have been in place for decades through Memoranda of Understanding with other agencies, and local jurisdictions have years of experience implementing TRPA policies and regulations. Area Plan conformance review requires Board approval through a public process. Approval of an Area Plan is subject to TRPA environmental review and all findings required for a Plan Amendment, including findings that the Plan as amended will attain and maintain Thresholds.

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We note the MOUs TRPA has had “for decades” have never delegated the amount of permitting authority that the Plan will delegate. MOUs for development with the local jurisdictions allow them to permit single family homes and multi-family housing up to four units. This certainly does not compare to the overwhelming extent of development that is proposed for delegation in the final Plan.

regulations. Area Plan conformance review requires Board approval through a public process. Approval of an Area Plan is subject to TRPA environmental review and all findings required for a Plan Amendment, including findings that the Plan as amended will attain and maintain Thresholds.

TRPA has yet to provide specific criteria that it will use to determine conformance. The proposed Code language is a list of general concepts, not a specified list of requirements.

- 4) **Comment Summary:** The comment also questions whether TRPA will disseminate additional guiding principles regarding Area Plan conformance, how TRPA will determine whether an Area Plan furthers attainment of Thresholds, how TRPA will determine whether to rescind delegated permitting authority, and whether TRPA can rescind permits issued by a local jurisdiction under an Area Plan.

Response: The Regional Plan and Code address conformance review requirements and will not be modified or augmented administratively. TRPA is actively working with staff of local jurisdictions to provide assistance in implementing the Area Plan conformance review procedures and requirements, and will continue to provide support in implementing the Code through collaboration and sharing of resources among agencies to implement the area planning process.

Conformance review will be completed in accordance with adopted policies and ordinances, including but not limited to Chapter 3, Environmental Documentation; Chapter 4, Required Findings; and Chapter 13, Area Plans.

Provisions describing the revocation of delegated permitting authority are described in Final Draft Code Section 13.8. Provisions regarding appeal and nullification of delegated project approvals are described in Final Draft Code Section 13.9.

See our comments regarding the Area Plans, Appeals Process, and Delegation of Authority, and a comparison to Compact requirements. Further, if TRPA staff are also part of the planning teams creating Area Plans, there is a clear lack of objectivity if in the future, TRPA is making recommendations on whether an appeal is viewed as ‘frivolous.’

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Comments from Tahoe Area Sierra Club (TASC) on October 23, and November 13 and 15, 2012

- 1) **Comment Summary:** Comment letters submitted on 11/13 and 10/23 summarize and provide a list of previous comments submitted by the TASC.

Response: The previous comments submitted by TASC were all considered when they were first submitted and TASC proposed amendments to the Regional Plan have been incorporated into RPU alternatives (primarily Alternative 2). The January 2011 staff report summarizes these comments and how TRPA applied objective criteria to identify comments that could be incorporated into an RPU alternative. In January 2011, the Governing Board also voted to re-scope the RPU alternatives to focus on identified priorities. This re-scope applied objective criteria to all alternatives to include only proposed changes that address priorities identified by the Board.

Previous comments have not been adequately considered. Further, as one of the groups who authored the Conservation Alternative in October 2010, we know that our proposals are not reflected in Alternative 2. As for a “re-scoping” in January 2011, there was no official scoping announcement or public comment period provided.

- 6) **Comment Summary:** The comment letter submitted on 10/23 also objects to the update process for the 208 Water Quality Management Plan.

Response: The update of the 208 Water Quality Management Plan is a step required to make the 208 Plan consistent with the Regional Plan and federal regulations. The update of the 208 Plan does not incorporate any new substantive changes that are not already included in the Final Draft Regional Plan and the Lake Tahoe TMDL, each of which was developed through lengthy public processes and detailed environmental review.

The statement that the 208 Plan does not incorporate any new substantive changes is not true. See our comments on the 208 WQMP, including the 3rd recreation resort area language and the sunset of the Bi-State Agreement, neither of which were evaluated in the RPU.

Response: This comment is addressed in Master Response 2, Duration of Public Comment Period in the Final EIS. TRPA has conducted an extraordinary public participation process for the RPU spanning almost 10 years. The TASC has submitted nearly 400 pages of comments since the release of the Draft EIS (all of which have been responded to), TASC representatives have participated in almost every public meeting related to the RPU since the release of the Draft EIS and TASC representatives have spent many hours in meetings with TRPA staff and board members to address their concerns.

TRPA has misrepresented the concerns we expressed. First, we clearly stated there is a difference between the EIS comment period and the fact that numerous changes have been made since the end of the public comment period. Thus, references to Master Response 2 do not respond to our comments here. As we have clearly stated numerous times, changes have been made to the Plan since the 6/28 deadline that have not been analyzed in the EIS.

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The revisions to Alternative 3 were developed in response to stakeholder comments and concerns, and were fully described in a public RPU Committee meeting in August 2012. Many members of the public, including TASC representatives, participated in this meeting. These revisions to Alternative 3 are clearly presented in the Final EIS (see Volume 1, Chapter 2, Revisions to Alternative 3: Final Draft Plan). These revisions were also fully described at the October 24, 2012 Governing Board meeting, which was well attended by members of the public, including TASC representatives. In addition, a few minor revisions to the Final Draft Plan were made at the November 2012 RPU Committee meeting. These changes were primarily made at the request of and in response to comments submitted by TASC and other environmental advocacy groups. At the RPU Committee meeting and a subsequent Governing Board meeting in November, these changes were discussed in detail. Both the November RPU Committee meeting and Governing Board meeting were well attended by members of the public including TASC representatives. The November revisions in response to TASC and associated groups requests were clearly described in the Staff Summary and Staff Summary Addendum for the November 14, 2012 meetings, are identified in Exhibit I of this Staff Summary, and are also reflected in the Final Drafts of the Regional Plan and Code, dated December 12, 2012. In addition, all information related to each step of the development of the Final Draft Plan has consistently been available to the public on TRPA's website, and numerous questions and requests for information from TASC and other environmental advocacy groups have been responded to by TRPA staff, typically within 24 hours of receiving the request. See also the response to comment 1 from the Friends of Tahoe Vista, below.

We note the 11/14 staff summary could not have possibly responded to the concerns raised in letters we submitted at 10pm on 11/13 (FOWS) and on 11/15 (TASC). Nor could the public have been reasonably expected to review on comment on the 11/14 packet at the 11/14 Board meeting, or even the 11/15 meeting, because the lengthy packet was not provided to the public until the morning of 11/14. Thus, for those who could not drop everything the night of 11/14 and review the packet, the only chance to comment to the Board on items in the packet is essentially 12/12/12. Additionally, as TRPA notes, TASC and FOWS representatives have done our best to participate in all public hearings related to the RPU. This has involved ongoing reviews of ever-changing proposals related to the public meetings, frequent requests for additional information related to the new/changed proposals, and other efforts, at the same time as TASC and FOWS representatives were attempting to review the thousands of pages of new information provided in the final RPU package on 10/24/2012. Additionally, as noted in our comments, other processes have gone on which have a direct impact on the RPU package and the claimed basis for benefits, including changes among the land banks. Thus, for the public to truly follow and participate in the RPU process, the public has had to:

- Review thousands of pages of information, which often require a complex system of references from one document to another, which then reference yet another document, etc.;
- Review the scientific information used by TRPA to support approaches;
- Question this information, and seek all available research in the Tahoe Basin because TRPA chose not to;
- Participate in all TRPA APC, GB, RPUC, and other meetings, which often involve additional information that must be reviewed, digested, and commented on;

A.6 TASC-FOWS.Comments on 12/5/12 Staff Summary including Findings

- Participate in other agency processes related to the RPU, including but not limited to the CTC, Placer County Planning process, etc.
- And continue to review the final package of documents, request lacking information, then review the 700+ page staff summary released on December 5th, and so on.

In summary, that TRPA has made a majority of the documents publicly available does not negate the extensive ongoing process the public has had to embark on to simply follow the RPU changes, let alone have the chance to review them, raise questions, and comment on them.

- 9) **Comment Summary:** The second comment letter submitted on 11/15 also summarizes TASCs interpretation of how Threshold Standards should be achieved. The comment includes a list of general principles such as “adhere to the principles of soil science in order to conserve soil”, “protect views of Lake Tahoe...”, and “Adequate number of [air quality monitoring] sites basin-wide”. The comment also includes some specific proposals such as limiting allowable coverage to 50 percent in all cases.

TRPA again misrepresents our comments. Our concerns are supported by hundreds of pages of technical comments and questions we have raised in our comments on the RPU which have still not been addressed. TRPA stating that the documents use the best science does not make it so. As our comments note, the scientific analysis and TER are technically inadequate. We also provided extensive examples and references to support our comments, for which TRPA has essentially ignored.

Comments from Friends of Tahoe Vista (FOTV) on November 14 and 15, 2012

- 1) **Comment Summary:** A comment letter and oral comments submitted on 11/14 suggests that the EIS should be re-circulated because revisions to Alternative 3 were made after the close of the public comment period and because the EIS does not prove that the RPU will achieve and maintain all thresholds.

Response: None of the revisions to Alternative 3 would create new significant impacts or increase the severity of identified impacts. To the contrary, the revisions are generally additional environmental safeguards and narrowing of the applicability and/or scope of some RPU policies. As such, recirculation of the EIS is not required. Under TRPA’s environmental review requirements, outlined in the Compact, Goals and Policies, and Code of Ordinances, TRPA has the flexibility to modify an Alternative after close of the public review period for the EIS without recirculating the EIS. This is consistent with the intent of the public review period because it allows TRPA to incorporate public input into a revised alternative, and it is supported by both NEPA and CEQA case law. In State of California v. Block, 690 F.2d 753, 771 (9th Cir. 1982), the Ninth Circuit found that NEPA doesn't

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require an agency "to repeat the public comment process" even if the agency's proposed project is a "slightly modified version of an alternative evaluated in the initial draft EIS." The court explained that "agencies must have some flexibility to modify alternatives canvassed in the draft EIS to reflect public input." As such, TRPA has flexibility to modify any of the alternatives evaluated in the draft EIS, particularly in response to public input, such as that input provided to TRPA by the Bi-State Consultation. Similarly, in County of Inyo v. City of Los Angeles, 71 Cal.App.3d 185, 199 (1977), the court found that under CEQA, an agency's "ultimate proposal" is not required to be frozen in the "precise mold of the initial project." Subsequent CEQA case law has relied on this principle to find that revised project descriptions do not necessarily require recirculation. See, e.g., Western Placer Citizens for an Agric. & Rural Env't v. County of Placer, 144 Cal.App.4th 890 (2006) (revision to a mining project's phasing plan that reduced environmental impacts did not require revision or recirculation of EIR); Dusek v. Anaheim Redevelopment Agency, 173 Cal.App.3d 1029 (lead agency may approve a smaller project than that described in the EIR). The revisions to Alternative 3 are refinements of the proposed project, and in and of themselves, do not require TRPA to recirculate the EIS.

The revisions to Alternative 3 also do not meet the criteria for recirculation under the CEQA Guidelines. The relevant criterion of "significant new information" triggering recirculation is: "A feasible project alternative . . . considerably different from others previously analyzed would clearly lessen the significant environmental impacts of the project, but the project's proponents decline to adopt it." CEQA Guideline 15088.5(a)(3). The revisions to Alternative 3 do not meet this criteria because the revisions to Alternative 3 reflect minor modifications that provide additional environmental protections and are not "considerably different" from Alternative 3 as described in the Draft EIS. Secondly, the revised version of Alternative 3 represents the RPU alternative the Governing Board is scheduled to consider for adoption. As such, it's not an alternative that the Governing Board has "declined to adopt," in the sense that it constitutes the preferred alternative for adoption. See also the response to comment 2 from the TASC, above.

The purpose of the EIS is described in the Draft EIS on page 1-5, which states in part "The purpose of this EIS is to identify and assess the anticipated environmental effects of implementing each of the Regional Plan Update alternatives, with a focus on significant and potentially significant environmental impacts." As such, the EIS is consistent with TRPA's environmental review requirements as detailed in Chapter 3 of the Code of Ordinances (see also Exhibit C of this staff summary for a detailed description of how the RPU EIS complies with TRPA's requirements). Chapter 4 of the Code of Ordinances lists required findings that TRPA must make prior to approval of an amendment to the Regional Plan, including findings that the Regional Plan as amended achieves and maintains the Thresholds. These findings are included in Exhibit E of this staff summary, consistent with the requirements of Chapter 4.

The Compact does not include any references to recirculation of information when changes are proposed after the close of public comment. (Article VII). Code Chapter 3 also does not include any such reference, nor do the Goals and Policies.

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The comments claim that the Final Draft Plan would authorize new TAUs is mistaken. The Final Draft Plan would not authorize any new TAUs beyond those authorized under the 1987 Regional Plan. The number of new commodities authorized by the Final Draft Plan is clearly described throughout the Final Draft Plan and EIS, including in table 3.2-13, New Development Potential under Alternative 3 (Draft EIS page 3.2-47).

The questions related to recent market prices for TAUs do not relate to the effectiveness of the RPU or the environmental effects analyzed in the EIS.

This is not true. See our comments regarding the changes that allow new conversions of units to TAUs. We also disagree that the market factors affecting TAUs do not relate to the effectiveness of the RPU – as the RPU has relied on several transfer programs and “incentives” to claim environmental benefits will occur. But if these transfer programs do not work due to economic factors, then it would follow suit that the “benefits” supposedly gained by these transfer programs would not be realized...and therefore an environmental impact would occur. TRPA can not propose a Plan that relies on certain economic conditions and then ignore what happens when those conditions change.

- 4) **Comment Summary:** The comment asserts that CTC’s banked development rights or potential coverage, sale of asset lands, or transfers of land to other agencies will increase development.

Response: Transfers, sales, or acquisition or sale of development rights by CTC or any other entity would not affect the development potential authorized under the RPU. All new development would be limited by the number of commodities authorized in the RPU. Banked development rights are addressed in the Final EIS, Master Response 9, Consideration of Banked Commodities. Sales or transfers of land may affect the potential uses of a specific parcel, but would not affect the total development potential under the RPU. See the Draft EIS section 2.3.6, Essential Concept: Marketable Rights Transfer Programs, and Draft EIS section 5.5 Growth-Inducing Impacts, which summarize TRPA’s growth control system.

- 14) **Comment Summary:** The comment also questions why bonus units are provided for transfers of development rights from the most sensitive lands, which are unbuildable under current regulations.

Response: Many of the most sensitive lands have portions of a parcel that could be developed (i.e., pockets of high capability land), which could impact the sensitive land through associated activities (e.g., landscaping, trampling) even if the building site is not located in the most sensitive land. Some parcels containing the most sensitive lands are completely unbuildable, and transfer of development rights from those lands would still provide environmental benefits by removing development rights that could otherwise be transferred to other sensitive sites, increasing the amount of sensitive land permanently retired and not available for other uses, and increasing the proportion of future development that occurs in a Center as opposed to outlying areas.

TRPA’s response is circular. The question raised is why bonus units are provided to transfer development from places where it would never be developed. TRPA’s response appears to ignore the issue of the areas (or coverage) never being built regardless, and suggest that TRPA would allow the development rights to be transferred to sensitive areas but that the proposed Plan will circumvent that and transfer the development to less sensitive areas. Would TRPA currently allow someone to transfer development that

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would never have been used to lands that are sensitive? We do not believe the existing Plan would allow this in the first place.

29) Comment Summary: The comment cites Code Section 13.5.3.e - Modifications of Town Centers, and asks "Parcel is considered developed if there is 30% of allowed coverage on site. Is that hard or soft coverage?"

Response: In this context 30 percent coverage refers to legally existing coverage, which can be legally existing hard or soft coverage.

We expressed concerns elsewhere that the 30% developed was too open-ended and it would be too easy to justify expanding center boundaries based on the 'requirements' for doing so. This answer only serves to reiterate our point. This is made worse by TRPA's claim that all non-covered or slightly compacted soils are "soft coverage" and therefore legally transferrable. Without requirements to first measure the infiltration of these areas, there is no way to truly assess whether they should be classified as soft coverage which has an impact. We also note now many unpaved areas are parked on throughout the Basin. This essentially opens the door to many more parcels being included.

This response is revealing. If the TDR program doesn't work, then the existing land use pattern would be used. However, that result would mean that TRPA has added more allocations to the existing land use pattern, which creates far more impacts than increased VMT. That said, if the TDR program does not work, TRPA can not automatically increase allocations, as TRPA has already noted increased allocations under the existing development pattern would create negative impacts.

Page 386 includes:

6. Grammatical Modifications to TRPA Compact References in the Regional Plan

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Modified Regional Plan Chapter II: Land Use Element Introduction (Page II-1)

Article V(c)(1) of the Tahoe Regional Planning Agency Bi-State Compact calls for a "land use plan for the integrated arrangement and general location and extent of, and the criteria and standards for, the uses of land, water, air, space and other natural resources within the region, including but not limited to indication or allocation of maximum population densities and permitted uses."....

Modified Regional Plan Preface – Statement of Principles #3b (Page V-2)

- b. *Adopt and enforce a Regional plan and implementing ordinances which will achieve and maintain such capacities while providing opportunities for orderly growth and development consistent with such capacities; and*

Modified Regional Plan Chapter I: Regional Plan Introduction (Page I-1)

The Regional Plan describes the needs and goals of the Region and provides statements of policy to guide decision making as it affects the Region's resources and remaining capacities. The plan with all of its elements, as implemented through Agency ordinances and rules and regulations, will achieve and maintain ~~provides for the achievement and maintenance of~~ the adopted environmental threshold carrying capacities (thresholds) while providing opportunities for orderly growth and development.

Because these revisions are only grammatical clarifications in explanatory text, the modified language would not generate new environmental impacts or increase the severity of any adverse environmental impacts evaluated in the EIS.

We support the above noted changes made at the 11/15/12 Board meeting. However as noted in our comments, there are other places in the RPU package where TRPA has used terms not included in the compact, although referring to concepts clearly from the compact. This must be corrected in all places it has occurred.



Placer County Planning Department
Gerry Haas, Project Planner
3091 County Center Drive
Auburn, CA 95603
ghaas@placer.ca.gov

April 8, 2013

Subject: Northstar MMP and potential adverse impacts in the Lake Tahoe Basin

Dear Mr. Haas:

The Friends of the West Shore appreciates this opportunity to provide comments on the proposed Northstar expansion¹ prior to the release of the draft EIR/S document. We also incorporate comments submitted on the Notice of Preparation by the Friends of Tahoe Vista and the North Tahoe Preservation Alliance, and subsequent comments provided by the Tahoe Area Sierra Club.

The Friends of the West Shore (FOWS) works towards the preservation, protection and conservation of the West Shore, our watersheds, wildlife and rural quality of life, for today and future generations. FOWS represents community interests from Tahoma to Tahoe City. We are concerned with the extent of proposed development along the West Shore, North Shore, and areas bordering the Lake Tahoe Basin (e.g. Northstar), and the cumulative impacts of these multiple projects on our communities. Cumulative impacts from these projects include increased Vehicle Miles Traveled (VMT) in the Basin, increased water and air pollution, noise, and other adverse impacts associated with increasing visitor and resident populations, both in the Basin and surrounding areas.

Impacts of Northstar visitor and residents traveling into the Basin:

As a result, we are especially concerned with the impacts that the proposed Project will create within the Tahoe Basin, and along the West Shore's already congested roadways. The DEIR/S must adequately analyze the increased VMT generated by increasing the resident and visitor populations of Northstar, as well as the associated air pollution, water pollution, noise (especially from increased traffic), and the impacts of the additional populations this will also bring to Tahoe. More people in the area will generate increased demand for other recreational activities, many of which negatively impact the TRPA environmental thresholds (e.g. pollution and noise from motorized recreation). The DEIR/S must sufficiently analyze the increased visitation that will occur along the State Route 89 route (from Truckee to Tahoe City) and along the Highway 267 route (Northstar to Kings Beach). Many visitors to Northstar, especially those with second homes or staying overnight, are likely to take a drive to – and often *around* - Lake Tahoe. Further, the DEIR/S must analyze the additional growth that Northstar's expansion may bring to the area in general, including surrounding communities like Truckee, and the

¹ Northstar refers to the ski resort as well as all properties owned by Vail or related companies, both within and outside of the Lake Tahoe Basin.

increased VMT and other impacts that will result in the Lake Tahoe Basin and specifically along West Shore and Tahoe City communities.

Impacts of expansion within the Tahoe Basin must be fully analyzed:

Although Northstar states that the expansion of the Northstar ski resort into the Lake Tahoe Basin is not included in the expansion,² there are numerous indicators that this is likely to be proposed in the near future, and the impacts of this within the Lake Tahoe Basin must also be examined. For example:

- The revisions to TRPA's Regional Land Use map in November 2011 revealed a new "blue" area zoned Recreation, within the Basin's borders and adjacent to the ski resort;
- The last minute changes to the 208 Water Quality Management Plan (adopted by TRPA on 12/12/12) allowed for a third area zoned "Resort Recreation," over the next four years, without further review under the 208 Plan's requirements;
- The proposed upgrades to the CalPECO electrical lines within the Basin that will increase the capacity to for more power *within* the Lake Tahoe Basin; and
- The request by Vail/Trimont to rezone Timber Production Zones in all of Placer County (discussed in TASC's April 2013 comments).

As CEQA requires all reasonably foreseeable impacts to be included in the environmental analysis, the rezone and expansion of Northstar into the Tahoe Basin must be fully analyzed, along with the cumulative impacts of other proposed or approved but not-yet-built projects, including Homewood Mountain Resort and Squaw Valley's proposed ski area expansions. Further, as these resorts aim to draw visitors year-round, the impacts from increased populations and VMT **during the entire year** must be analyzed. The impacts to the TRPA environmental thresholds must also be analyzed.

Impacts to Recreational Capacity in the Lake Tahoe Basin:

Further, the assessment of the impacts of the proposed project, including the reasonably foreseeable expansion into the Lake Tahoe Basin, must also evaluate the impacts to recreation capacity. Drawing more visitors to areas within and just miles away from the Lake Tahoe Basin will increase the use of existing recreation facilities – many of which are already taxed with over-use - including but not limited to Lake Tahoe's beaches, hiking and biking trails, and boat use on the Lake.

Please feel free to contact Jennifer Quashnick at jqtahoe@sbcglobal.net if you have any questions. We look forward to reviewing the upcoming draft EIR/S.

Sincerely,



Susan Gearhart,
President,
Friends of the West Shore

Jennifer Quashnick
Conservation Consultant,
Friends of the West Shore

Cc: Maywan Krach, Environmental Coordination Services
Laurel Ames, Tahoe Area Sierra Club

² <http://www.northstarattahoe.com/info/ski/northstar-mountain-master-plan-faqs.asp>



Tahoe Regional Planning Agency
128 Market St.
Stateline, NV 89949

December 11, 2012

Subject: Comments on Final Regional Plan ‘Package’ and 2011 Threshold Evaluation Report

Dear Chair Norma Santiago, Members of the TRPA Governing Board, Advisory Planning Commission, and TRPA staff:

Please consider the following comments submitted on behalf of the Tahoe Area Sierra Club (TASC) and the Friends of the West Shore (FOWS) on the final 2011 Threshold Evaluation Report (“2011 TER”), final TRPA Regional Plan Update Draft Environmental Impact Statement (“RPU DEIS”), final Regional Transportation Plan Update Environmental Impact Report/Environmental Impact Statement (“RTP DEIR/DEIS”) and final proposed changes to related RP documents, including the Code of Ordinances, Goals & Policies, Resolution 82-11, 208 Water Quality Management Plan (WQMP), and all associated documents (collectively referred to as the “RPU package”). We also incorporate comments submitted by the Ellie Waller and Ann Nichols.

In the ongoing interest of TASC and FOWS and assuring TRPA that we have been faithfully and responsively discussing the same issues for ten years, we provide the following comments on components of the final RPU package, many of which reinforce previous comments we have submitted verbally and in writing.

TASC and FOWS have maintained a consistent level of intense participation in the RPU process, and have done our best to review an overwhelming number of pages, raise questions, propose alternatives, and participate in the ongoing and ever-changing RPU process. Since the close of the public comment period for the draft RPU EIS and draft RTP EIR/S,¹ we have also provided extensive comments on the draft 2011 Threshold Evaluation Report, and on the proposed Code of Ordinances (Code), Goals & Policies (G&P), other related attachments, maps, and associated documents. On 11/15/2012, we again summarized our involvement by submitting additional comments and a history of TASC and FOWS involvement going back over 10 years.

Our previous review of the draft RPU documents identified significant and overwhelming technical flaws related to the adequacy of the EIS. These have not been resolved in the final EIS. We also identified many problems with the threshold evaluation report, which have also not been addressed. Further, we have attempted to follow the ever-changing proposals that

¹ In this letter when we refer to EIS, we also apply those comments to the RTP EIR/S as well.

have occurred since the close of the public comment period on the draft documents, and provide written and verbal comments, but have received little response.²

As noted throughout our many comments,³ past and present, the proposed alternative is riddled with exceptions in the interest of development, and especially development by large corporations. Further, by shifting more authority back to the local governments, acquiescing to Nevada's development interests, and neglecting threshold achievement in favor of presumed local economic improvements, the RPU ignores that the Lake Tahoe Basin is a National Treasure, a federally-designated Outstanding National Resource Water that is protected by the Clean Water Act, and a place that is to be protected for not just those who live here, but those who visit, and for future generations.

The following comments focus on the following subjects.⁴ Note that our comments on the 2011 TER apply to all related changes proposed to the RPU package, including to the Code of Ordinances (Code) and Goals and Policies (G&Ps), where such amendments are based on information from the 2011 TER. As demonstrated in our previous and current comments, the 2011 TER is technically flawed and TASC and FOWS object to any amendments based upon the 2011 TER.⁵ Additionally, all comments on the RPU package apply to the RTP documents as well.

- 1. TRPA Compact**
- 2. TRPA Environmental Threshold Carrying Capacities**
- 3. Relationship of Threshold Evaluation Report (TER) to Regional Plan Update**
- 4. 2011 Threshold Evaluation Report (TER)**
- 5. Purpose of the Regional Plan (RP) and RP Update**
- 6. Technical Inadequacy of the EIS and EIR/S documents**
- 7. Flawed RPU process**
- 8. Failure to address cumulative and reasonably foreseeable projects and Plans**
- 9. TRPA's Response to Comments**
- 10. Area Plans, Delegation of Authority, and Appeals Process**
- 11. 208 Water Quality Management Plan**
- 12. 12/5 Staff Summary and Findings**

Sincerely,



Laurel Ames,
Tahoe Area Sierra Club



Susan Gearhart,
Friends of the West Shore



Jennifer Quashnick,
Technical Consultant

² We noted some responses were provided on 12/5/12 in the Staff Summary for the Dec. Board packet; because those arrived late in the process, we discuss them in the attached comment A6.

³ Including TASC's 12/6/2012 Letter to the Governors of California and Nevada.

⁴ Where applicable in our comments, we have included the color-coded formatting found in the RPU documents.

⁵ For example, our TER comments identify extensive technical flaws with the evaluation of soil coverage and changes to methodology, which have been used to propose amendments to the Code and G&P. We do not repeat the comments on the TER in our discussions of related amendments to the Code and G&Ps, however where we commented on soil conservation in the TER, those comments also extend to all other areas in the RPU package which rely on the same information as in the TER.

1. TRPA COMPACT

Due to the political pressure from Nevada exerted through SB 271, TRPA and California representatives are extremely concerned that if the RPU is not adopted by the end of 2012, and if it does not provide certain “compromises”⁶ for development in Nevada, that the state of Nevada will pull out of the Bi-State Compact.

Whether this happens or not, the proposed Regional Plan Update is contrary to the requirements of the Bi-State Compact it is supposedly intended to ‘save.’ Further, the proposed Plan places extensive permitting authority back into the hands of the local jurisdictions – thus re-creating one of the biggest problems that contributed to the need to establish TRPA in the first place.

First, the counties are primarily motivated by economic factors. This is how they were established and how they operate. As a result, prior to the 1980 TRPA Compact, development throughout the Basin was rampant, forever destroying sensitive resources including the Upper Truckee watershed (e.g. Tahoe Keys development), and resulting in ‘legacy’ development which continues to pollute the environment today. There was no regional coordination or consideration of the environment. Cumulative impacts resulting from multiple projects throughout the Basin were not considered. There was no one entity that was watching out for the entire Basin, as a whole.

Thus, the TRPA was established to ensure environmental protection. The first Compact in 1969 was not strong enough, and did not contain a voting structure that prevented the local jurisdictions from approving more bad development, so it was updated by Congress in 1980. Voting structures were changed to reduce the influence of the local governments and expand the representation of people beyond the Basin’s borders. The requirement for environmental threshold carrying capacities (ETCCs), and a Regional Plan which would achieve and maintain them, was included. Eventually, the ETCCs were adopted, and then the 1987 Regional Plan, which significantly limited the rate of growth that had until then been destroying the Basin’s fragile environment. Although the Plan did help slow the rate of development, other requirements in the Plan have not been enforced. Amendments dictated by science or other conditions were frequently recommended but never updated. Development has been allowed without adequate monitoring of the impacts, and there has been a large shift from examining measured values to relying on predictive models that tend to be highly uncertain. Although it is not possible to know how much of the continued degradation is due to legacy development versus poor implementation of the 1987 Plan (and the more recent economic downfall), as discussed in our 6/28/2012 comments,⁷ there are significant questions regarding TRPA’s assertion that the 1987 Plan failed or needs to be significantly changed.

⁶ As discussed elsewhere herein, these negotiated items essentially compromise the Compact itself and provide Nevada with extensive development potential.

⁷ In this letter we often reference our “previous comments” or “our comments” on the RPU EIS and overall package. This includes all comments from TASC and FOWS submitted beginning in April 2012. Previous comments also include comments made, as noted in our 10/24 and 11/15 letters outlining the history of TASC and FOWS involvement in the RPU process.

Rather, we examine the requirements of the TRPA Bi-State Compact,⁸ which after a brief introduction, states:

TAHOE REGIONAL PLANNING COMPACT

ARTICLE I. - FINDINGS AND DECLARATIONS OF POLICY

(a) It is found and declared that:

- (1) The waters of Lake Tahoe and other resources of the region are threatened with deterioration or degeneration, which endangers the natural beauty and economic productivity of the region.
- (2) The public and private interests and investments in the region are substantial.
- (3) The region exhibits unique environmental and ecological values which are irreplaceable.
- (4) By virtue of the special conditions and circumstances of the region's natural ecology, developmental pattern, population distributions and human needs, the region is experiencing problems of resource use and deficiencies of environmental control.
- (5) Increasing urbanization is threatening the ecological values of the region and threatening the public opportunities for use of the public lands.
- (6) Maintenance of the social and economic health of the region depends on maintaining the significant scenic, recreational, educational, scientific, natural public health values provided by the Lake Tahoe Basin.
- (7) There is a public interest in protecting, preserving and enhancing these values for the residents of the region and for visitors to the region.
- (8) Responsibilities for providing recreational and scientific opportunities, preserving scenic and natural areas, and safeguarding the public who live, work and play in or visit the region are divided among local governments, regional agencies, the States of California and Nevada, and the Federal Government.
- (9) In recognition of the public investment and multi-state and national significance of the recreational values, the Federal Government has an interest in the acquisition of recreational property and the management of resources in the region to preserve environmental and recreational values, and the Federal Government should assist the States in fulfilling their responsibilities.
- (10) In order to preserve the scenic beauty and outdoor recreational opportunities of the region, there is a need to insure an equilibrium between the region's natural endowment and its manmade environment.

(b) In order to enhance the efficiency and governmental effectiveness of the region, it is imperative that there be established a Tahoe Regional Planning Agency with the powers conferred by this compact including the power to establish environmental threshold carrying capacities and to adopt and enforce a regional plan and implementing ordinances which will achieve and maintain such capacities while providing opportunities for orderly growth and development consistent with such capacities.

(c) The Tahoe Regional Planning Agency shall interpret and administer its plans, ordinances, rules and regulations in accordance with the provision of this compact.

⁸ 79-139 O -81 (402) 1 PUBLIC LAW 96-551 – DEC. 19, 1980

As noted above, the 1980 TRPA Compact created the TRPA and the structure it now comprises in order to protect the environment. Development may be allowed but only if consistent with achievement and maintenance of the environmental thresholds. Thus, the role of TRPA is to protect the natural values of the Region. When it was first formed, it appeared TRPA would assume this role and implement the Compact's requirements. In fact, the Introduction chapter to the Code of Ordinances is quoted below (1987 Code language is included where different).

[Original 1987 Code]:

1.4 General Provisions: The Code represents the coordination of a series of documents relating to land use regulation and environmental protection in the Tahoe Region. The documents are the Tahoe Regional Planning Compact, as amended ("Compact"), the environmental threshold carrying capacities adopted in Resolution 82-11, the Goals and Policies Plan, the Plan Area Statements and Maps, and other TRPA plans and programs.

[March 2012 Code]

The Code represents the coordination of a series of documents relating to land use regulation and environmental protection in the Tahoe region. The documents are:

- A. The Tahoe Regional Planning Compact, as amended ("Compact");
- B. The environmental threshold carrying capacities adopted in Resolution 82-11;
- C. The Goals and Policies Plan;
- D. The Plan Area Statements and Maps; and
- E. Other TRPA plans and programs.

1.4.2 Tahoe Regional Planning Compact As Amended:

(1) The Compact represents an endeavor by the States of California and Nevada, approved by Congress, to address numerous pressing environmental and other problems facing the Tahoe Region. Originally enacted in 1969 (P.L. 91-148, 83 Stat. 360), the Compact was amended in 1980 (P.L. 96-551, 94 Stat. 3233). The factual background against which the amended Compact was adopted is set forth in Article I(a) where it is declared, among other things, that:...

[This is followed by (1)-(10) as noted above].

As required by the Compact, TRPA adopted Environmental Threshold Carrying Capacities ("thresholds") in 1982, also noted in the Code language:

1.4.3 Environmental Threshold Carrying Capacities: Article V(b) of the Compact requires TRPA to adopt environmental threshold carrying capacities for the Tahoe Region. Article II (i) of the Compact defines "environmental threshold carrying capacity" as "an environmental standard necessary to maintain a significant scenic, recreational, educational, scientific or natural value of the region or to maintain public health and safety within the region." Thresholds are required to address matters such as air quality, water quality, soil conservation, vegetation preservation and noise. After preparation and review of a study report for establishment of environmental thresholds, as well as an environmental impact statement, the TRPA Governing Board enacted Resolution No. 82-11 on August 26, 1982, adopting environmental threshold carrying capacities for the Tahoe Region.

TRPA's Obligation to Achieve and Maintain Thresholds:

We also remind TRPA that the Agency's obligation, under the Compact, is to achieve and maintain thresholds. However, the RPU package instead proposes to:

- Change or delete thresholds that are inconvenient or difficult to achieve
 - i. For example, suspended soil particles;
 - ii. The TER recommends noise standards be changed or deleted in the future;
- Change or delete thresholds that should be updated to reflect current science – often recommended through several 5-year threshold reviews;
 - i. For example, wood smoke;
 - ii. In another example, changes to the relationship of where VMT is considered are proposed, and the TER suggests future changes to the VMT threshold itself;
- To claim threshold achievement can be delayed for years or decades so long as they are ‘eventually’ achieved
 - i. Trends and forecasts are used in the TER to state thresholds will eventually be attained, so no additional actions are necessary;

and/or

- To avoid “interfering with” achievement and maintenance.
 - i. For example, although visibility is a threshold standard, the G&P proposed language states:

ATTAIN AND MAINTAIN AIR QUALITY IN THE REGION AT LEVELS THAT ARE HEALTHY FOR HUMANS AND THE ECOSYSTEM, ACHIEVE AND MAINTAIN ENVIRONMENTAL THRESHOLDS AND DO NOT INTERFERE WITH RESIDENTS’ AND VISITORS’ VISUAL EXPERIENCE. [Emphasis added].

We also note TRPA’s change from VMT to “VMT per capita” is a California regulation, not a Compact requirement. TRPA’s thresholds focus on basinwide VMT, however most discussions and summaries of the VMT impacts of the Plan are carefully crafted to state “VMT per capita.” This is likely misleading to members of the public unfamiliar with California state law or air quality/transportation terminology.

Additionally, although TRPA has brushed over the facts of the Shorezone ruling,⁹ the court did rule against TRPA related to TRPA’s claimed findings regarding the Regional Plan amendments.¹⁰

⁹ EIS Chapter 2 states: “The Shorezone Subelement of the Conservation Element was amended in 2008 by the TRPA Governing Board as part of the Shorezone Ordinance Amendments and associated EIS. A court ruling in 2010 recalled those amendments, an appeal was filed by TRPA on a portion of the decision, a favorable ruling was received from the Appellate Court in 2011, and the case remanded back to the agency. Once resolved, those affected portions will be incorporated into the Regional Plan, consistent with but on a separate track from the Regional Plan Update.”

¹⁰ Case 2:08-cv-02828-LKK-GGH Document 118 Filed 09/16/10 by Judge Lawrence K. Karlton.

“More fundamentally, however, TRPA misunderstands the nature of the obligation to achieve and maintain the thresholds. It is not enough to show that the Amendments do not make the problem worse. TRPA must ensure that the ordinances, as amended, implement the regional plan in a way that will actually achieve the thresholds. With regard to thresholds not presently in attainment, TRPA’s finding that the Amendments will not aggravate the problem is inadequate.”

...

“Under these provisions, amendments to the ordinances face a higher burden than individual projects. In approving individual projects, article V(g) merely requires that TRPA find that the project will not cause any threshold to be “exceeded.” Id. A finding that the project will not make matters worse suffices under this standard. Article V(g) applies to amendments to the ordinances because an amendment is a “project” under the Compact. Id. art. I(h). Such amendments are also subject to the higher standard under Code § 6.5, however, which requires a finding that “the Regional Plan . . . , *as implemented through the Code . . . as amended*, achieves and maintains the thresholds.” (emphasis added).

Section 6.5 explains that this finding is “in addition to” the findings required for projects generally. Where a threshold is not in attainment, a finding that the problem is not getting worse does not satisfy this provision. Nor is it sufficient to find that, metaphorically, the ball is moving forward. By requiring that the Regional Plan be implemented so as to “achieve,” rather than merely “approach,” the thresholds, the Compact and Ordinances require a finding that TRPA will make it to the goal. TRPA is correct that Code section 6.5 looks to the entire package of the regional plan, ordinances, etc., rather than to effects specifically attributable to the proposed amendment. Thus, it does not matter whether the proposal at issue will make the scoring shot, or even whether it will be involved in the play. The key is the finding that, one way or another, the thresholds will be achieved.⁴”

Many proposed Goals and Policies fail to follow this as well. Rather than actually having a goal to achieve a threshold, proposed language often includes passive terms which provide little authority. Examples include “promote, encourage, limit,” etc. That the proposed Goals do not even take the approach of threshold achievement and maintenance is significant in itself. The G&Ps guide the proposed Code, which is meant to implement the Plan in order to achieve and maintain thresholds. Yet the G&P and Code being proposed show a clear focus on more development and purported economic gains¹¹ while diminishing the value of the thresholds through the changes in the TER and the remaining RPU package (detailed examples were included in our June and July comments). As noted elsewhere in these comments, this is clearly reflected by the conscious change in wording to place “economy” first – *in front of* the environment.

¹¹ Although advertised for the ‘communities’ these gains appear to primarily reward large corporations at the expense of the local communities.

2. TRPA ENVIRONMENTAL THRESHOLD CARRYING CAPACITIES

View of the thresholds

As explained in our 6/28/2012 and 7/25/2012 comments, the way TRPA has addressed the thresholds has changed in ways which result in diminishing the value of the thresholds. We will not repeat our detailed comments herein, however, we provided substantial references and quotes from TRPA documents which reveal a shift in focusing on the environment first (1991, 1996, 2001, and 2006 Threshold Evaluation Reports) to the economy (2011 Threshold Evaluation Report).

The commitment to the environment

Further, discussions among the TRPA Board have indicated a lack of understanding of the original intent and significance of the TRPA Compact. Further, when confronted with requests that TRPA actually monitor environmental standards to ensure the purported environmental gains happen, concerns are raised regarding language that would *commit* TRPA to anything (as noted in the minutes from the November Hearings¹²).

This concern is further represented by the opinions expressed by many of the Board members regarding amendments to the proposed Goals & Policies language. When presented with language that would change goals from “encourage” a reduction in pollution to “reduce” pollution (as one example), most members of the Board objected. As noted by Board member Byron Sher at the 11/14 hearing, the proposals were simply *goals*, not requirements, but would reflect TRPA’s intent to reduce environmental pollution. However, the RPU Committee, and later the Board, voted to reject these changes – in essence, rejecting to acknowledge a simple goal to improve the environment.

Code Requirements for Threshold Evaluation

TRPA Code Chapter 16 on Regional Plan and Environmental Threshold Review provides a detailed outline of TRPA’s obligations with respect to measuring, monitoring, and reporting compliance with the threshold standards. Most significantly, it requires the collection of reliable monitoring data to inform its threshold reviews; a schedule showing that “compliance measures” will effectively achieve and maintain the thresholds, as well as an analysis of the effectiveness of any additional “supplemental compliance measures” that might be needed; and a “periodic progress report” (i.e., the Threshold Evaluation Report) reporting the status of the thresholds and recommending any “supplemental compliance measures”

¹² Ms. Aldean said she appreciates Ms. Bresnick’s recommendations with respect to the nuances of the terminology, but she is concerned when you go from “should” to “shall” and make something mandatory that you have to be prepared to spend the dollars necessary to implement that portion of the policy and if we do not have the money then we are setting ourselves up for failure. (excerpt from 10/24 & 25 Board Minutes)

needed to meet goals for attainment. This latter provision seems to be key to informing the implementation details of the Regional Plan Update: Without a reliable Threshold Evaluation Report that accurately reports on the current status of the thresholds and the need for and effectiveness of supplemental compliance measures, there would be inadequate evidentiary support for a finding that TRPA's updated Regional Plan "achieves and maintains" the thresholds.

Indicators Must be Adequately Measured and Monitored

"Indicators" are central to determining whether the thresholds are being achieved and maintained. An "indicator" is: "Any measurable physical phenomena within the Tahoe region whose status, according to the best available scientific information, has a direct relationship to the status of attainment or maintenance of one or more thresholds or standards (e.g., traffic volume)." Code § 16.3.3. A measurement standard is "[a] standard scientific unit for the measurement of the status of a threshold, standard, or indicator..." Code § 16.3.6.

TRPA distinguishes the "environmental threshold carrying capacities" or "thresholds" from "applicable local, state, and federal air and water quality standards" or "standards." Code § 16.1. These are further distinguished from "indicators," as the above definitions suggest. For example, the ozone threshold has four indicators in the 2011 Threshold Evaluation Report: the highest 1-hour average ozone indicator, the highest 8-hour average ozone indicator, the 3-year fourth highest 8-hour average ozone indicator, and the modeled oxide of nitrogen indicator. (Note: the highest 8-hour average ozone indicator is also a "standard" that must be met in California.) Unless specified otherwise in the adopted standard, if one violation of a TRPA standard is measured, the threshold is assessed as non-attainment.

To ensure an accurate and reliable accounting of threshold compliance, the Code requires the identification of "sufficient indicators for each threshold and standard," "appropriate measurement standards" for indicators, the use of "consistent measurement standards over time," and "accurate" measurements of threshold status "on a continuing basis":

TRPA shall identify sufficient indicators for each threshold and standard so that, evaluated *separately or in combination*, the indicators shall *accurately measure, on a continuing basis*, the status of attainment or maintenance of that threshold or standard, taking into account the impacts of both development in the region and implementation of compliance measures. In monitoring and reporting on the status of indicators, as called for in this chapter, TRPA shall use the appropriate measurement standards for those indicators. *TRPA shall use consistent measurement standards over time so that reports will provide easily comparable data throughout the evaluation period.* Code § 16.4.1 (emphasis added).

The Code Imposes Extensive Requirements to Ensure Sufficient and Reliable Monitoring Data

Monitoring of the indicators is critical. The Code requires the preparation and implementation of a "Monitoring Program, including a "long-term monitoring

strategy and short-term monitoring work plans.” Code § 16.11. “The monitoring program shall evaluate environmental quality, indicators, compliance measures, interim targets, and other related items by the specific methods set forth in the Monitoring Program.” *Id.*¹³ To the extent that other jurisdictions’ standards “are more stringent than the TRPA thresholds” in portions of the Tahoe region to which they are applicable, “TRPA *shall monitor* and ensure the attainment and maintenance of such standards...” Code § 16.10 (emphasis added).

In addition, the Code requires an annual “status report” that must identify areas where sufficient monitoring data is lacking and develop a program to address insufficient monitoring:

To ensure adequate monitoring of progress toward attaining and maintaining thresholds and standards, at least annually, TRPA shall provide the following status report:

- A. List the current status, expressed using the appropriate measurement standard, of each indicator *for which TRPA has reliable data*; and
- B. *List those indicators for which TRPA lacks reliable data sufficient to identify current status, and a program, including an implementation timetable, to provide sufficient reliable data to allow TRPA to report, on a continuing basis, the status of that indicator.*

Code § 16.4.3 (emphasis added). *See also* Code § 16.9.2 (reiterating annual status report requirement: “At least annually, TRPA shall issue a report on the status of each program identified by TRPA pursuant to subsection 16.4.3 to ensure the provision of *reliable and sufficient data* for all indicators.” (emphasis added)).

Although already required in the 1987 Regional Plan, TRPA has failed to perform this annual reporting. Identification of areas identified as lacking sufficient reliable data has generally, if at all, been part of the five-year threshold evaluation reports. Further, as there has been no annual reporting of threshold status, there has been no identification of “a program, including an implementation timetable, to provide sufficient reliable data”¹⁴ In fact, this has not been a regular part of the five-year threshold evaluation reports either. TRPA advertises “annual reports” as part of the new RP as well, however, there is no evidence provided to assure that TRPA will do in the future what it has failed to do for over twenty years.

¹³ An “interim target” is “a goal expressed in terms of the applicable measurement standard that reflects the status of a threshold of standard that TRPA expects to achieve at a major evaluation interval specified for that threshold or standard.” Code § 16.3.4. A “major evaluation interval” is “a fixed period of time during which TRPA will monitor and at the end of which TRPA will evaluate and report upon the interim status of a threshold or standard. Such intervals may be different for each threshold or standard.” Code § 16.3.5. Relatedly, a “target date” is the date “on which TRPA expects to attain a threshold or standard that is not now in attainment.” Code § 16.3.7.

¹⁴ For example, we have known for years that nearshore conditions have been hastily declining (degrading), however there remains no program or plan with timetables or information regarding how TRPA will provide sufficient reliable data. The same can be said for several air quality indicators and noise indicators, where monitoring has been seriously lacking or often not done at all.

Where monitoring data is insufficient to determine the status of a threshold indicator, the Code does not allow reliance on that data in the assessment of threshold attainment status:

For as long as TRPA lacks reliable data sufficient to identify the current status of any indicator identified pursuant to subsection 16.4.1, *TRPA shall not rely on that indicator to determine the status of or progress toward attainment and maintenance of any threshold or standard.*

Code § 16.4.4 (emphasis added). Thus, we refer back to the requirements stated above which require TRPA to monitor thresholds, and where monitoring is insufficient, to develop a plan and implementation schedule to show how sufficient data will be collected.

Instead, TRPA has failed to address gaps in monitoring. Further, there has been no consequence for not monitoring. The TERs report the conditions, development is approved, and meanwhile monitoring resources are “hoped for.” The lack of monitoring in some cases appears to actually provide a benefit to TRPA. If it’s not being monitored, then it can’t be determined to be out of attainment, and approvals can move forward. This potential *disincentive* to monitor was touched upon by proposals brought forward by two board members, which would provide a consequence where air quality is not being monitored to protect human health (e.g. large projects that would create air quality impacts could not be permitted if there were no monitoring data in the area to reflect public health). This proposal was rejected by the Board. We have also repeatedly requested that development be tied to measured conditions; this would also require ongoing monitoring and would provide the assurance that thresholds are being achieved and maintained.

Periodic Progress Reports on Threshold Attainment Are Required

The Code requires periodic progress reports at least every five years “on the attainment and maintenance of threshold standards.” Code § 16.9. This requirement is met through TRPA’s Threshold Evaluation Report. Specifically, the Code requires “at a minimum” that the Threshold Evaluation Report report on:

- A. “the amount and rate of actual progress toward threshold and standard attainment contributed by each compliance measure listed pursuant to Section 16.6, and toward the interim targets established pursuant to Section 16.5, using the applicable measurement standards for each compliance measure;”
- B. “the current cumulative impacts on each threshold of projects approved by TRPA;”
- C. “the status of each of the additional factors identified pursuant to subsection 16.4.5;”¹⁵
- D. “the extent to which the region, or applicable sub-region, is making progress toward achieving each threshold and standard, the *current status* of any applicable indicators identified pursuant

¹⁵ “Additional factors... may be useful as short-term or indirect measures of attainment or maintenance of thresholds and standards.” Code § 16.4.5. They “shall not substitute or override” indicators, but “may be used to evaluate progress toward threshold attainment or maintenance.” *Id.*

to subsection 16.4.1, *the relationship of that status to meeting or failing to meet applicable target dates and interim targets established pursuant to Section 16.5.;*” and

- E. “Recommendations... for implementation of any supplemental compliance measures identified pursuant to Section 16.4 or otherwise, or modification or elimination of compliance measures listed pursuant to Section 16.6, to ensure that progress toward attainment and maintenance of all thresholds and standards is consistent with the target dates established pursuant to subsection 16.5.1.”

Code § 16.9.1 (emphasis added). Obviously, the above provisions can only be carried out meaningfully if TRPA adequately measures and monitors indicators and collects reliable data, in compliance with the Code. Moreover, nothing requires that TRPA adopt or approve the progress report, or that it be incorporated into the Regional Plan. Nevertheless, because the Threshold Evaluation Report identifies areas in which the Regional Plan is failing to achieve and maintain the thresholds and must recommend “supplemental compliance measures” to address those areas, Code § 16.9.1(E), the Threshold Evaluation Report should play a key role in informing the Regional Plan Update, as discussed below.

Threshold Evaluation Report’s Analysis and Recommendations Should Inform the Regional Plan Update

As noted above, the Threshold Evaluation Report must identify areas where thresholds are not being adequately achieved and maintained and recommend supplemental compliance measures, Code § 16.9.1.E, which seems critical to informing the implementation details of the Regional Plan Update. Chapter 16 imposes specific requirements on TRPA to ensure that compliance and supplemental compliance measurements are adequate to “ensure attainment and maintenance of thresholds and standards.”¹⁶ Code §§ 16.6, 16.7.

A “compliance measure” is “[a] program regulation, or measure including, but not limited to, capital improvements, operational improvements, or controls on additional development to reduce, avoid, or remedy an environmental impact of activities within the Tahoe region or to promote attainment or maintenance of any threshold or standard.” Code § 16.3.2. A “supplemental compliance measure” is “[a] compliance measure that is not being implemented at a given time but that TRPA may employ to attain or maintain a threshold or standard at a later date.” Code § 16.3.8.

For each threshold or standard, TRPA must maintain a separate list of compliance measures that are “actually being implemented to attain or maintain that threshold or standard.” Code § 16.6.1. Similarly, it must maintain a list of supplemental compliance measures “that it plans to implement or could implement if necessary, to ensure the attainment and maintenance of all thresholds and standards.” Code § 16.7.1. Significantly, each list must contain for each compliance measure “a schedule showing how much and at what rate that measure is contributing and is expected to contribute to the attainment or maintenance of the affected threshold or standard,” or

¹⁶ Although the Compact specifies “achieve and maintain,” we note the Code uses “attain and maintain” in these sections.

for each supplemental compliance measure, the amount and rate that measure “will contribute” to compliance. Code §§ 16.6.2, 16.7.2. “These schedules shall be at a level of detail consistent with the best scientific information available on cause and effect relationships.” Code §§ 16.6.2, 16.7.2.¹⁷ With respect to supplemental compliance measures, the Code makes clear that “the expected contribution of each supplemental compliance measure shall be expressed, as to any threshold, in the applicable measurement standard.” *Id.* In other words, a supplemental compliance measure’s precise, measurable contribution to attainment of a threshold must be specified.

Fulfilling these requirements of identifying, assessing the effectiveness of, and recommending supplemental compliance measures seems to be critical to informing the Regional Plan Update, including what changes are needed and whether the updated Regional Plan will actually achieve and maintain the thresholds. A reliable Threshold Evaluation Report based on reliable data and science is therefore key to a meaningful and effective Regional Plan Update.

¹⁷ As discussed elsewhere in our comments, TRPA has stated the TER is not intended to analyze specific cause and effect relationships related to the Basin or TRPA thresholds, but rather, summarizes “typical” cause/effect relationships.

3. RELATIONSHIP OF THRESHOLD EVALUATION REPORT (TER) TO REGIONAL PLAN UPDATE

As stated multiple times in previous comments, we believe that the TER – in its role of making recommendations to the RPU and providing baseline conditions for the EIS – should be subject to the same legal public disclosure and review requirements as the EIS.

Our previous comments included detailed examples of how the TER directly related to the draft EIS documents. However, in response to our comments, and questions regarding the legal process surrounding the TER, TRPA generally refers to Master Response 1, which explains that TRPA need not respond to comments on the TER. Excerpts include the following references:

Because the policy comments do not address environmental impacts or the adequacy of the Draft EIS, they are not directly responded to in the Final EIS. Instead, the October 24, 2012 TRPA Staff Summary that accompanies this Final EIS summarizes policy comments and the resulting changes that were made to the Draft Plan (Alternative 3).

Laws and regulations pertaining to the environmental documents (i.e., Compact, Code of Ordinances, Rules of Procedure, and for the RTP/SCS EIR/EIS, also the California Environmental Quality Act [CEQA] and CEQA Guidelines) require written responses to significant environmental issues raised in public comments. Accordingly, this final environmental document provides required responses to comments on such issues as the completeness, accuracy, and adequacy of the environmental analysis and documents. Many comments, letters, and much of the oral testimony received since release of the draft documents, however, do not address the environmental review. They express opinions, make suggestions, pose questions, and express concerns about the substance of the planning proposals – the Regional Plan Update and RTP/SCS, themselves; about the Threshold Evaluation; or about how the Draft Plans are proposed to be implemented (e.g., through Area Plans and amendments to the Code of Ordinances). Comments that do not address significant environmental issues raised during the public review period are summarized and identified in this Final EIS, but as noted above, specific responses are not provided herein.

The TER recommends changes to the RP that have been included in the proposed RPU, therefore the TER should be subject to the same environmental laws and regulations that the EIS is subject to. TRPA would have to respond to comments on the TER and the responses would have to address comments regarding the technical adequacy of the TER. Although TRPA did provide an Appendix C Table that outlines generalized responses to our comments, the responses include misrepresentations of our comments and often fail to address our concerns. Further, our detailed comments are not noted in Volume 2 or assigned individual numbers and responded to accordingly. Instead, TRPA's interpretation of what we said has been presented, and then generalized answers provided in tabular format.

TER as baseline conditions for RPU EIS:

The Final RPU EIS reiterates that the year used for baseline examination is 2010. As shown below, the TER has been used to represent the existing conditions for the RPU analysis. Below we detail out the conflicting responses related to this matter.

The 10/24/2012 TRPA Staff Summary that is referenced by the FEIS (Master Response 1), includes the following summary regarding the 2011 TER:

2011 Threshold Evaluation:

In April 2012, TRPA completed and publically presented a Draft 2011 Threshold Evaluation outlining environmental conditions and trends.

Like prior evaluations, the 2011 Threshold Evaluation was developed in accordance with the Regional Plan directives and through a science-based process that involved the compilation and analysis of Basin-specific monitoring data regarding environmental conditions and the status of Threshold attainment. Additionally, to provide the strongest possible foundation for 2012 Regional Plan Update, 2011 Threshold Evaluation underwent an independent peer review by a diverse panel of environmental scientist not affiliated with the Lake Tahoe Region. The comprehensive nature of the 2011 Threshold Evaluation and recommendations from peer reviewers have helped clarify current status and trends in environmental conditions and potential factors that may contribute to conditions and trends. Information and findings from the 2011 Threshold Evaluation were publically reported to the Regional Plan Update Committee throughout the plan drafting process. Responses to public comments regarding the April Draft Threshold Evaluation are provided in Exhibit C. Modifications made in response to public comments are identified in the “compare version” copy of the Final Draft 2011 Threshold Evaluation. Changes include a number of clarifications, but do not reflect the restructuring of the document that was recommended by some commenters. [Emphasis added]

In Attachment C, Response to Comments on the 2011 Threshold Evaluation, April 2012 Draft, TRPA explains “*In the spirit of openness and transparency, Agency staff solicited feedback from the public, agencies, and stakeholders.*” However, because TRPA has relied on the Threshold Evaluation report as essentially the “existing conditions” for the RPU EIS, why would it not be subject to the same legal requirements?

Further, TRPA states:

“The 2011 Threshold Evaluation Report serves as the baseline for TRPA threshold standards, including for air quality impacts. The contribution of emissions from recreational watercraft is included in the air quality monitoring data used to determine attainment of TRPA thresholds in the 2011 Threshold Evaluation. Thus, emissions from recreational watercraft are included in the baseline.” (Volume 1, p. 3-297). [Emphasis added].

The Threshold Evaluation Report is inextricably tied to the RPU EIS and RTP EIS/R. There are no changes in the final package of documents that sever the close relationship we identified and discussed in our June and July 2012 comments. In fact, the final package only further ties the TER “findings” to the RPU/RTP proposals.

This is taken a step farther in the final package of documents, as changes proposed to the thresholds in the draft TER and draft RPU EIS have been both modified and proposed as changes to Resolution 82-11 (Final EIS, Volume One, Appendix A). Neither the draft nor the final EIS analyzes the impacts of the proposed changes or compares the changes to the No Action alternative, or to other possible alternatives.¹⁸ Yet changes include

¹⁸ With regards to the changes to the AQ standards for PM2.5 and PM10, in the draft EIS, the proposed changes to the thresholds included language which designated separate standards for California versus

significant amendments and deletions (e.g. deletion of air quality indicators for wood smoke and suspended soil particles).

When questioned regarding the relationship of the TER to the EIS and our concerns that the TER proposed changes not analyzed in the TER or the RPU EIS, TRPA answers a slightly different question, although the implication is still relevant to our concern.

“The 2011 Threshold Evaluation is purely an evaluation of threshold attainment status. TRPA did not take any discretionary action related to any changes to the thresholds and therefore, no environmental review was required.” (Vol. 1, p. 3-230).

Yet this claim is contrary to the Introduction to the TER report, which clearly states the TER makes recommendations regarding the Threshold and RPU updates, and the response to comment O8-142, which states the TER is not a stand-alone document but part of the final EIS:

Introduction to TER:

As prescribed by the Regional Plan (TRPA 1986; TRPA 1987a as amended in 2012), this evaluation summarizes current and available monitoring data and information that addresses required reporting elements, and includes recommendations to the TRPA Governing Board to support adjustments to Threshold Standards and the Regional Plan. This evaluation focuses on addressing reporting requirements outlined in the Regional Plan, and as a consequence, should not be viewed or considered to be an exhaustive and integrated synthesis of all available research and monitoring conducted in the Lake Tahoe Basin—it is primarily focused on addressing progress in the attainment of Threshold Standards as adopted. However, where appropriate, references to current and related applied research are provided to guide the reader toward more in-depth discussion materials. (Chapter 1). [Emphasis added].

Response to comment O8-142:

O8-142 The comment states that the EIS must incorporate the Goals and Policies, the Code, and the Threshold Evaluation and that these documents must not be stand alone. As described on page 2-1 of Draft EIS Chapter 2, Regional Plan Update Alternatives, “The Goals and Policies identifies regional goals and provides policy direction to achieve these goals...The Code of Ordinances is the collection of regulations and measures developed to implement the Goals and Policies.” These documents are part of the Regional Plan Update, the project that is being evaluating in the EIS. The Threshold Evaluation is a five-year review of the threshold standards and the amount of progress being made toward their attainment. This document contributes to the environmental analysis by providing documentation of existing conditions and trends in progress toward achieving or maintaining attainment. None of these documents is considered a stand-alone document in the EIS. [Emphasis added].

Nevada. We contested this, as we feel residents and visitors on the Nevada side should be protected equally from harmful pollution. However, the final EIS includes no discussion of this, the policies still advocate for separate state standards, however the proposed changes to Resolution 82-11 include adoption of California’s more protective standards for some of these parameters. We assume this is an error given all other references and responses by TRPA defend the decision to maintain separate standards for California versus Nevada. *According to the December 2012 GB packet released on 12/6, we were correct and TRPA still proposes separate PM standards for each state; however amendments to 82-11 included in the staff summary do not include this distinction.*

TRPA's own statements serve to reiterate our comments regarding the tie between the TER and the RPU and the need for the TER – as part of the baseline conditions for the EIS analysis - to be considered under the same legal process as the EIS for the RPU.

Threshold Changes “analyzed” in EIS:

Additionally, in another example, Appendix CR-2 in the final TER includes a table titled “*Summary Table of needed Threshold Standard updates and amendments.*” This table includes a list of priority 1, 2, or 3 threshold updates. The following proposed updates have been incorporated into the proposed RPU – and the EIS analysis,¹⁹ primarily based upon recommendations of the TER. Again, the relationship between the RPU EIS and the 2011 TER is clear.

**Currently Adopted Threshold Standard
(Resolution 82-11, as amended)**

Maintain carbon monoxide concentrations at or below 9 parts per million averaged over 8 hours provided that each state shall review and certify to TRPA by February 28, 1983, as to what their carbon monoxide standards are as of that date, and this TRPA threshold standard shall be changed effective February 28, 1983, if necessary, to be the applicable state carbon monoxide standard applicable to the respective portions of the region in accordance with Article V (d) of the *Bi-State Compact*.

Proposed Action Needed

Need to update standard to reflect California and Nevada Standard (6 parts per million). *Priority 1.*

Final RPU EIS / RTP EIR/S include this change in:

Attachment 1, Resolution 82-11, p. A1-10

**Currently Adopted Threshold Standard
(Resolution 82-11, as amended)**

Reduce wood smoke emissions by 15% of the 1981 base values through technology, management practices and educational programs. § Amended 03/22/00

Proposed Action Needed

Replace standard with state standards for Particulate Matter. *Priority 1*

Final RPU EIS / RTP EIR/S include this change in:

Attachment 1, Resolution 82-11, p. A1-11

**Currently Adopted Threshold Standard
(Resolution 82-11, as amended)**

Reduce suspended soil particles by 30% of the 1981 base values through technology, management practices and educational programs.

¹⁹ As noted, the EIS does not provide an adequate analysis of these changes. However, we note that they are included in the EIS and according to TRPA, “analyzed” in the EIS.

Proposed Action Needed

Replace standard with state standards for particulate matter. *Priority 2*

Final RPU EIS / RTP EIR/S include this change in:

Attachment 1, Resolution 82-11, p. A1-12

**Currently Adopted Threshold Standard
(Resolution 82-11, as amended)**

Reduce wood smoke emissions by 15% of the 1981 base values through technology, management practices and educational programs. Reduce vehicle miles of travel by 10% of the 1981 base values.

Proposed Action Needed

Replace standard with state standards for particulate matter. *Priority 2*

Final RPU EIS / RTP EIR/S include this change in:

Attachment 1, Resolution 82-11, p. A1-12

**Currently Adopted Threshold Standard
(Resolution 82-11, as amended)**

Reduce vehicle miles of travel in the Basin by 10% of the 1981 base year values (numeric).

Proposed Action Needed

Standard listed for multiple AQ Indicator Reporting Categories. Confirm whether VMT is still a meaningful indicator to measure as it is unclear that meeting VMT standard will result in achieving Lake clarity objectives or visibility objectives. *Priority 3*

Final RPU EIS / RTP EIR/S include this change in:

*Attachment 1, Resolution 82-11, p. A1-12
(Deleted from Sub-Regional Visibility Standard; remains in Atmospheric Deposition)*

EIS ‘analysis’ of threshold changes:

Page 3-230 (Vol. 1) responds to questions raised regarding the level of environmental review of the draft 2011 TER. TRPA explains (excerpt below) that an EA was completed²⁰ for the 2006 TER because *TRPA was “proposing a discretionary action to adopt changes to the thresholds and release additional development commodities. An EA was required to inform decision-making on adoption of the proposed changes and release of commodities.”*

The comment questions why an EA was completed for the 2006 Threshold Evaluation, but not for the 2011 Threshold Evaluation. An EA (dated April 2007) was completed for TRPA’s 2006 Threshold Evaluation because, in addition to an analysis of the attainment status of the threshold standards, TRPA was proposing a discretionary action to adopt changes to the thresholds and release additional

²⁰ Note it was never approved, as discussed elsewhere in our comments.

development commodities. An environmental review document (the EA) was required to inform decision-making on adoption of the proposed changes and release of commodities.

The comment further explains why no EA was performed for the 2011 TER:

The 2011 Threshold Evaluation is purely an evaluation of threshold attainment status. TRPA did not take any discretionary action related to any changes to the thresholds and therefore, no environmental review was required.

As part of the Regional Plan Update, with the exception of Alternative 1 (No Project), all alternatives propose amendments to the threshold standards. The proposed new or amended threshold standards in Alternatives 2, 3, 4, and 5 include three water quality standards (deep water transparency, nearshore algae, and aquatic invasive species), two air quality standards (carbon monoxide and fine particulates), and one for wildlife (goshawk disturbance zones). The proposed amendments are based in part on public input during the Pathway process of the Regional Plan Update and were recommended for inclusion in the Regional Plan Update on September 28, 2011 by the Regional Plan Update Committee of the TRPA Governing Board. The proposed amendments are summarized in Section 2.4.4 of the Draft EIS, and Appendix B of the Draft EIS includes the adopted text of all existing threshold standards with the proposed changes indicated.

However, because TRPA has repeatedly stated the RPU EIS is merely a ‘policy-level’ evaluation, and takes a regional approach to the impacts of the policies, where is the environmental assessment/impact statement related to the actual regional and local impacts of the threshold updates? TRPA can not take a “policy level” review of changes to the TRPA thresholds. The Compact states very clearly in Article II(i):

- (i) “Environmental threshold carrying capacity” means an environmental standard necessary to maintain a significant scenic, recreational, educational, scientific or natural value of the region or to maintain public health and safety within the region. Such standards shall include but not be limited to standards for air quality, water quality, soil conservation, vegetation preservation and noise.

Article V (b):

(b) The agency shall develop, in cooperation with the States of California and Nevada, environmental threshold carrying capacities for the region. The agency should request the President’s Council on Environmental Quality, the U. S. Forest Service and other appropriate agencies to assist in developing such environmental threshold carrying capacities. Within 18 months after the effective date of the amendments to this compact, the agency shall adopt environmental threshold carrying capacities for the region.

(c) Within 1 year after the adoption of the environmental threshold carrying capacities for the region, the agency shall amend the regional plan so that, at a minimum, the plan and all its elements, as implemented through agency ordinances, rules and regulations, achieves and maintains the adopted environmental threshold carrying capacities.

Each element of the plan shall contain implementation provisions and time schedules for such implementation by ordinance. The planning commission and governing body shall continuously review and maintain the regional plan. The regional plan shall consist of a diagram, or diagrams, and text, or texts setting forth the projects and proposals for implementation of the regional plan, a description of the needs and goals of the region and a statement of the policies, standards and elements of the regional plan.

Article V (c). (3 & 4):

The regional plan shall be a single enforceable plan and includes all of the following correlated elements:...

(3) A conservation plan for the preservation, development, utilization, and management of the scenic and other natural resources within the basin, including but not limited to soils, shoreline and submerged lands, scenic corridors along transportation routes, open spaces, recreational and historical facilities.

(4) A recreation plan for the development, utilization, and management of the recreational resources of the region, including but not limited to, wilderness and forested lands, parks and parkways, riding and hiking trails, beaches and playgrounds, marinas, areas for skiing and other recreational facilities.

TRPA's response to comments includes:

Response to O16-119:

The comment states that the EIS must evaluate local and cumulative impacts of the proposed alternatives and raises questions about specific types of recreation projects and their associated impacts. As described in the fourth paragraph on page 1□8, the Regional Plan provides the foundational, policy□level direction for the Tahoe Region upon which all other TRPA programs and regulations are based. As such, the impact analysis in the Regional Plan Update EIS is conducted geographically at a broad, Regional scale with a focus on overall policy□level issues.

The Regional Plan Update EIS does not address impacts at the level of proposed land use development or public works projects, nor does it address impacts of specific programs or projects required to implement the Regional Plan. Such environmental analyses would occur, as appropriate, after the Regional Plan Update process concludes and in response to proposals for implementing programs or specific development or public works projects. Furthermore, Chapter 3 of the Draft EIS, Affected Environment and Environmental Consequences of the Alternatives, contains comprehensive environmental analyses of 14 resources areas, the cumulative impacts of which are discussed in Draft EIS Chapter 4, Cumulative Impacts. The comment raises questions, but offers no specific information or evidence that the analysis presented

In the end, there is no evaluation of the threshold changes in the EIS. Although it may be correct enough to say that some thresholds have been viewed on a Basin-wide level (e.g. mid-lake clarity), the factors which impact those thresholds are not a one-size-fits-all approach throughout the Basin. Individual areas require individual considerations in order for the Basin-wide standard to be attained. In other cases, thresholds are clearly not just a Basin-wide value – for example, air quality. High pollution in South Lake Tahoe will affect public health in South Lake Tahoe, but may not affect public health in Tahoe City, or vice versa. This is an example of a threshold that must be analyzed at both the regional and local scale. In another example, nearshore conditions vary throughout the Basin. This is noted in a clear graphic from TERC (included in our July 2012 comments on the TER). This easily represents the need to consider impacts at the local scale, as well as region-wide (we included quotes from TERC researchers regarding the movement patterns of water in the lake, thus it may enter in one area, but move and affect another area of the Lake). The purported “Policy-level” analysis in the RPU EIS fails to address any of these scientific evaluations that must be completed in order to truly analyze the impacts of the proposed RPU and threshold changes. We also note the 2012 State of the

Lake Report by the Tahoe Environmental Research Center (TERC) reiterates the need to examine a variety of factors in the Tahoe Basin.²¹

²¹ <http://terc.ucdavis.edu/stateofthelake/StateOfTheLake2012.pdf>

4. 2011 THRESHOLD EVALUATION REPORT (TER)

Additional Comments on the 2011 TER:

We reiterate our previous comments on the draft 2011 TER with equal force, and provide additional comments on the 2011 TER in the attached document titled: “**A2: TASC-FOWS Additional Comments on final TER.**” As noted below, our previous comments were generally dismissed. Changes to the Final appear to stray even farther from the peer reviewer suggestions and only reiterate the concerns we raised in previous comments.

Additional comments in the attachment are related to the overall TER, Air Quality, Water Quality, Noise, Soil Conservation, SEZ Restoration, Implementation, Recommendations, Conclusions and References. Although not all chapters are commented on, we reiterate our previous comments and also apply comments to all chapter subjects, where applicable.

Failure to adequately represent and respond to comments on the draft TER:

In Attachment C, Response to Comments on the 2011 Threshold Evaluation, April 2012 Draft, TRPA has selected and ‘summarized’ 30 “issues/concerns raised” associated with our comments on the draft TER. The summary of what we supposedly said does not relay the technical detailed comments we provided in June and July 2012, nor do the summaries correctly state our concerns. Instead, general responses are given, often justifying the TER by stating it was “peer-reviewed” (a search of the Attachment noted this phrase 19 times). In other words, our technical critiques are dismissed by TRPA based on the TER having been peer-reviewed by experts in the field. As noted below, many of the peer reviewers’ technical comments were also dismissed. It is worth noting that many of our technical comments on the draft TER were quite similar to comments made by the peer reviewers and dismissed by TRPA.

TRPA’s responses generally do not correctly relay the content of our questions. Below we include some examples, but for purposes of time, will not respond and reiterate the actual comments we made for each issue. We instead refer back to our June and July comments on the TER and RPU.

Further, we note that in our June and July comments, we provide specific examples to help explain our concerns, and/or provide examples of our critiques. Statements, questions, and opinions are based on a review of actual evidence, which is included and/or referenced in our comments. Alternatively, TRPA’s responses to our comments generally “talk around” our concerns, and often simply restate what TRPA has already stated, but without providing supporting examples. This “because we said so” response does not meet the requirements for substantial evidence upon which findings must be made.

Issue/Concern Raised number 1 states:

“1. Comments state the timing of 2011 Draft Report relative to the Regional Plan Update (RPU) was not appropriate. Comments assert the 2011 Draft Report was not released to the public well in advance and cannot and should not serve to inform the RPU/Regional Transportation Plan (RTP).”

This is not an adequate summary of the concerns we raised. Rather, we expressed concern that the timeline prevented the public, and TRPA, from having the ability to perform an objective, scientific review of the thresholds and potential updates. Because the TER documents were released along with the RPU documents, it would be impossible for any reasonable person to simply analyze the thresholds without considering the policies that might result from threshold findings or recommended changes. For example, if one were simply considering adoption of the CA ozone standard by TRPA, so that it applies Basin-wide, an unbiased review would show that public health would be better protected on the NV side of the Basin, and actually, the *entire* basin, because pollution does not recognize mapped state lines. In this instance, we would hope that an interested member of the public would support the protection of human health and thus adoption of the more protective standard.

However, if one is considering this same situation, but is at the same time told that providing better health protection might result in a policy change that would reduce the amount of new development allowed in some areas, and this person expects a possible economic benefit from more development, then how can this person objectively consider the threshold standard without thinking about the resulting policy changes?

This is why our groups have advocated – for years²² – that TRPA analyze the thresholds first, and separate from, the Regional Plan Update. Otherwise, the public, and TRPA Board, are provided with a disservice, because the ability to simply consider environmental factors and science first, has been taken away by combining the documents together.

We repeat portions of our original questions:

On April 26, 2012, TRPA released three draft documents, totaling over 3,000 pages: the Draft 2011 TER, the Draft RPU DEIS, and the Draft RTP DEIR/S. As noted in previous correspondence with TRPA, TASC and others have repeatedly expressed concerns regarding the combination of the threshold evaluation report with the Plan updates. Unfortunately, our review of the draft documents essentially confirms the concerns raised - including the manipulation of threshold findings and proposed updates (or lack thereof) to support desired Policy changes, rather than the objective, scientific review of the status of the thresholds and the utilization of the most recent and best available science to update the thresholds, as needed, to protect the environmental values identified by the Compact.

Further, the previous method that allowed for a more objective review of the science first, untangled by what the policies might be, is gone. Now, what should be objective scientific changes are instead ‘evaluated’ in the same report (RPU DEIS) that examines the proposed policy changes that would accompany the threshold changes. Even someone intent on focusing solely on the science first will have a difficult time not connecting threshold amendments to the policies that would result from them.

²² Attachments to our June and July comment letters alone include years of documentation showing this recommendation.

TRPA also refers to the 5-year schedule that previous TERs have been released. We do not contest this schedule. However, this does not respond to our question. The 2011 TER did not have to be released in combination with the other RPU documents. Also, although the response suggests it was in TRPA's plan to produce the 2011 Threshold Evaluation Report along with the RPU alternatives, we note that until the last year or so, TRPA has not specifically planned a 2012 RPU adoption. Rather, TRPA originally intended a 2007 adoption. Over time, TRPA continued to work and advocate for a new RP in the near future. However, it was delayed for a variety of reasons. Had it been updated in 2009 or 2010, how would the thresholds have been treated?

In fact, TRPA's response reiterates our concerns:

As the timeline to prepare the next Threshold Evaluation approached while still in the midst of the RPU planning process, TRPA produced the 2011 Threshold Evaluation and again its findings were used to reevaluate whether the planning alternatives in the RPU EIS reflected the strategies needed to address the report's findings. Planning proposals and EIS alternatives were again further refined to target the highest priority threshold areas needing improved strategies to accelerate threshold gains. [Emphasis added].

Finally, we note the new "spin" TRPA places on their failure to amend the RP at five year intervals for the previous twenty years, although called for by the previous threshold reports. In this response, TRPA changes course, treating the previous 5-year evaluations as if they were simply documenting conditions to be considered 20, 15, 10, and then 5 years *later*, rather than at the time they were proposed for change. This concept – that the 5 year threshold reports were not intended to provide information and support necessary updates to thresholds and the Regional Plan every five years, but were rather to simply document needs for a new Regional Plan over 20 years into the future, makes little sense.

TRPA used all of this information and more to evaluate and reevaluate whether the planning alternatives in the EIS reflected the necessary strategies to address those areas where the series of Threshold Evaluation Reports found that accelerated progress or improvements toward threshold attainment was needed. Indeed, the alternatives were refined several times over many years, and each Threshold Evaluation Report served as a further foundation and basis in advance for each round of revisions and refinements to the Regional Plan EIS alternatives.

We also remind TRPA of its own Code requirements (Chapter 16):

16.9. REPORTS

TRPA shall prepare periodic reports on the attainment and maintenance of thresholds and standards as follows:

16.9.1. Periodic Progress Reports

No later than five years from the effective date of the Regional Plan, and every five years thereafter, and more frequently if necessary to ensure adequate monitoring of progress toward attainment and maintenance of thresholds and standards, TRPA shall issue a progress report. The report shall include, at a minimum:

A. A report on the amount and rate of actual progress toward threshold and standard attainment contributed by each compliance measure listed pursuant to Section 16.6, and toward the interim targets established pursuant to Section 16.5, using the applicable measurements standards for each compliance measure;

- B.** A report on the current cumulative impacts on each threshold of projects approved by TRPA from the effective date of the Regional Plan and from the date of the previous periodic report, including but not limited to the information maintained by TRPA pursuant to subsection 16.8.2;
- C.** A report on the status of each of the additional factors identified pursuant to subsection 16.4.5;
- D.** A report on the extent to which the region, or applicable sub-region, is making progress toward achieving each threshold and standard, the current status of any applicable indicators identified pursuant to subsection 16.4.1, the relationship of that status to meeting or failing to meet applicable target dates and interim targets established pursuant to Section 16.5; and
- E.** Recommendations, as necessary, based on the information provided in subparagraphs A through E, inclusive, for implementation of any supplemental compliance measures identified pursuant to Section 16.7 or otherwise, or modification or elimination of compliance measures listed pursuant to Section 16.6, to ensure that progress toward attainment and maintenance of all thresholds and standards is consistent with the target dates established pursuant to subsection 16.5.1.

Although excerpted above, Chapter 16 in its entirety provides detailed requirements related to threshold requirements for reporting, data, compliance measures, etc.

- 3. Comments claim that the 2011 Draft Report requires environmental review in the form of an Environmental Assessment and an environmental analysis is required to justify the analysis approach used in the 2011 Draft Report.

This appears to be in response to our concerns regarding the lack of a biased environmental analysis (EA or EIS) of the thresholds and any needed threshold updates. Our comments did not suggest an environmental review was needed “to justify the analysis approach used in the 2011 Draft Report” but rather, that an objective threshold analysis was needed, pure and simple. However, we note the new reporting method skews information and aggregates indicators, sprinkled with more publicly acceptable terms (e.g. “better than target, slightly worse than target, vs. attainment or non-attainment), to present a ‘nicer’ picture about threshold standard conditions and ‘trends,’ which then indirectly supports the proposed increases in development in the new RPU. Rather than repeat the examples and evidence we provided with these concerns, we refer back to our June and July comments on this issue.

However, in part of the response, TRPA states:

“The 2011 Draft Report’s information and analysis do not independently implicate proposed actions or projects under the Compact that would require environmental review under CEQA, NEPA, or TRPA requirements...Prior Threshold Evaluations have been produced concurrently with Compact Article VII environmental documentation because responsive Regional Plan amendments (e.g., release of new allocations, other code amendments) were being proposed and processed concurrently with the Threshold Evaluations. The environmental document was not therefore reviewing the Threshold Evaluation or any aspect of it, but rather was prepared to support the specific proposed actions to amend the Regional Plan. Similarly today, no independent environmental review of the 2011 Draft Report is required.”

First, we do not agree with the first statement. As noted in our comments on the RPU, including the relationship between the TER and RPU, we note many examples where the 2011 TER “findings” and “conclusions” were supportive of proposed actions in the RPU (which generally involved more development). In fact, our 6/28/12 comments included the following example:

“Threshold Report Timing of release with the RPU, threshold years evaluated in Report, and Biased Statements

First, we reiterate our disagreement with the release of the draft Threshold Evaluation Report being combined with the update of the new Regional Plan, as the thresholds should have been analyzed separately and objectively, before any proposed Regional Plan update, not with the bias of desired policy changes as has been done (one only need to look at the “Recommendations for Additional Actions” in several areas of the TER to see the obvious bias towards TRPA’s approach of increased densification¹³). In fact, this biased approach is compounded by TRPA’s failure to perform adequate scientific analysis of the causes of air pollution. TRPA has instead assumed private automobiles to be the primary cause of ozone in the Basin, and then told those reading what is required to be a scientific, objective report, that the way to fix this includes incentivizing development in the walkable town-centers promoted by the GB RPU Committee’s preferred Alternative 3.¹⁴

¹³ i.e. p. 3-26 of the 2011 TER, Air Quality, includes the following “Continued failure to meet the ozone standard may indicate the need to further reduce the dependency on the private automobile, through land use policy that incentivizes more bicycle-friendly and walkable town centers, and encourage the use of alternative modes of transportation such as public transportation.”

¹⁴ “Alternative 3 is the alternative that most closely reflects preliminary recommendations of the TRPA Governing Board’s Regional Plan Update Committee.” RPU DEIS, Chapter 2, p. 2-33.

Further, TRPA’s response explains that previous reports included associated environmental analyses because they resulted in amendments to the RP, including those which released additional allocations. First, we note the 2006 EA was never certified – a result of TRPA choosing not to respond to the extensive technical comments provided by the conservation community on the inadequacy of the EA²³ – and second, the proposed RPU includes far more changes than just the release of additional allocations. Yet there is no objective environmental analysis of the thresholds, the threshold report findings and recommendations, etc. As noted in our comments on the RPU DEIS, that document provides no such analysis either.

5. Comments claim TRPA failed to make an “attainment” determination as contemplated by the Compact.

This is not correct. Our comments acknowledged the “crosswalk” in the appendix of the draft TER, however, raised concerns over the change from a simple, easy to understand “attainment vs. non-attainment” status to the fuzzier, more complex but perhaps more pleasing to the eye phrases like “slightly worse than target, slightly better than...etc.”.

6. Comments assert that best scientific information was not used and comprehensive cause and effect analysis should have been completed and reported.

Actually, this does reflect one of the many concerns we raised. TRPA’s response begins with: *“In every instance, the best data available and accessible at the time of the analysis was used. In some instances, retrieval of all available data was infeasible or cost prohibitive...”*

²³ See 6/13/2007 Letter from TRPA: Re: Continued Support for USACE Funding for the Tahoe Regional Planning Agency Regional Plan Update Environmental Impact Statement (attached to our 6/28/12 comments).

We note that the Compact requires TRPA to achieve and maintain thresholds. In order to determine threshold status, they must be monitored. Further, in order to approve new development, TRPA must find it will not harm thresholds, let alone, it will help achieve and maintain them. **The only way to determine if thresholds are being achieved and maintained is to monitor them.** The only way to make sure future development does not affect threshold achievement and maintenance is to monitor the thresholds and tie development to threshold conditions, which we have repeatedly requested in RP comments, verbal and written. Instead, TRPA has repeatedly approved more development, more allocations, etc., while neglecting adequate monitoring. TRPA claims it can not adequately monitor because it costs too much. However, this does not negate TRPA's responsibility to achieve and maintain the thresholds. If funding is lacking, why has TRPA not examined alternative means to raise funds? Further, why has TRPA not required monitoring first, before repeatedly approving more and more development?

Regarding the cause and effect analysis, we also raised this concern as well. This is because TRPA is proposing actions based on assumptions about what causes environmental conditions in the Tahoe Basin. Although some assumptions may prove true with adequate analysis, because Tahoe-specific parameters have not been considered in most cases, there is simply no evidence to support *all* of the assumptions. We raised concerns about this in the threshold report because it does more than document available information; the TER also includes recommended *actions*. Those recommended actions assume cause and effect. Unfortunately, the RPU EIS takes many of the recommended actions and bases future proposals on the assumption those cause and effect statements – from the TER - are correct. Thus, between the TER and RPU EIS, there is no analysis of actual cause and effect. In fact, this was noted by peer reviewers (example from final 2011 TER, Appendix E, p. E-13, comment by Daniel Canfield):

Another major concern is the apparent limitations placed by the preparers of this Threshold Evaluation, on themselves, as to what data would be considered for analysis. There is a wealth of important information in the scientific literature and agency reports that could prove most useful in trying to solve the Lake Tahoe puzzle. For example, Dr. Goldman's publications of 1965 and 1988 (and the references cited) are particularly helpful as is the UC-Davis Tahoe: State of the Lake Report 2011 (see Chapter 4, Water Quality).

TRPA responds to this comment as follows:

Comment noted, but no change in methodology was made. The primary purpose of this report is to evaluate the status and trends of indicators relative to established standards or targets. Solving the puzzle of why these conditions occur is generally left to focused research and beyond reporting requirements followed to produce this report. Additional narrative and references were added to relevant section of the report to further call out factors known to impact various indicators. [Emphasis added].

This confirms concerns we raised as well – that TRPA has failed to analyze cause/effect relationships that affect the thresholds, yet the RPU assumes certain relationships and bases conclusions on those assumptions. In the responses to our comments on the TER where we questioned the claimed cause and effect information in the TER (and lack of information to support the assumptions), we are told (Appendix C):

The 2011 Draft Report includes a generalized characterization of known factors that affect various indicators based on published research and information. Disclosure of cause and effect information can be found in each indicator summary under the “*Human and Environmental Drivers*” subsection.

In response to our comments on the RPU DEIS concerning the lack of analysis of cause and effect and comments that TRPA needs to analyze this in order to achieve and maintain thresholds, we are given vague responses regarding how the EIS “did” analyze the impacts of proposed new development using the best available models (e.g. California’s), etc. (such responses are noted throughout Volume 1). This also does not address our question.

Insufficient Data and predictions:

As our comments noted numerous times, the TER often suggests a ‘status’ for threshold standards or indicators, that is not supported by the data, or is only based on a few data points and thus should not be extrapolated on or used for ‘forecasts’ that assume trends. This problem is further exacerbated by the RPU EIS and RTP EIR/S documents’ reliance on the ‘findings’ of the TER in ways which aim to justify more development.²⁴

However, TRPA responds to our comments on the inadequacy of the TER with generalized responses, often discounting our technical comments with the repeated use of “peer reviewed report” – seemingly to “justify” how the TER report handles data and outcomes. Our comments regarding the obvious links between the RPU EIS/RTP EIR/S documents, where the “favorable” findings and/or forecasts²⁵ support TRPA’s proposals, are essentially dismissed.

Interestingly, many of the peer reviewers raised similar concerns. In fact, we included excerpts from many of them in our June and July 2012 letters. According to Appendix E of the final TER, which includes the “response to peer review table,” TRPA often acknowledged these inadequacies in the report, but in many cases, did not make changes to the TER or methodology. Instead, a ‘reason’ is provided and/or TRPA states the report was modified in some way (usually to provide general caveats or disclaimers about the lack of adequate data). For example, TRPA’s response to comments by Dr. Axler acknowledge his technical recommendation, but also dismiss it:

As pointed out by Axler, indicators and levels of attainment can be complicated by the bio-physical processes at play. Things cannot be multiplied, divided, added or subtracted at will without an understanding of the underlying mechanisms. This is why the accumulation of a number of indicators into an "uber-indicator" with a single value may not be scientifically correct. While it may meet the temporary needs of decision makers, it can lead to disappointment in the long run. These caveats are recognized and noted in the public draft of the 2011 Threshold

²⁴ Although TRPA has discounted our June comments on this in the Final EIS response to comments, TRPA has not addressed the examples provided in our comments to support the concerns we raised. See comments regarding TRPA’s lack of responses to many comments.

²⁵ For example, the air quality chapter uses “trend analysis” to project future attainment status; the RPU/RTP documents then rely on this finding and anticipated improvements in one source – motor vehicles – to claim air quality standards will be achieved and thus the proposals which increase people and traffic will be “ok.”

Evaluation. Additionally, data from all monitored streams is presented in the public draft to address this... [Emphasis added]

That said, our comments indicate the need for this analysis. This is important because in order to reduce pollution from sources to achieve and maintain thresholds, we must understand what the sources are and their relative contribution, and how they interact with the environment. In the case of some of our comments, we expressed concern that Tahoe-Basin specific sources had not been adequately considered:

- TRPA used CARB's Emission Inventory (EI) as the basis for assuming sources of air pollution;
- TASC documented the difference between TRPA's own Tahoe-specific emission estimates in TRPA's staff summary compared to CARB's EI, which is based on default county data regarding residential population (thus not considering the overwhelming contribution from visitors' boats on Tahoe);
- TRPA's data reflect much higher emissions from watercraft than CARB's EI – not surprising because CARB's EI does not consider visitor impacts, or non-CA boats;
- Thus, when TASC compared the estimated emissions from watercraft to the estimated emissions from vehicles, the relative contribution from watercraft was much higher than reflected by CARB's EI.
- Therefore, if TRPA fails to reduce boat emissions, and bases the new Plan on the assumption that only on-road vehicles are the cause, then many resources may be placed in reducing on-road vehicle emissions while watercraft emissions continue to degrade air quality!
- This is an example of why looking at sources and cause and effect is important.

TRPA's response to our threshold comments includes the following:

Due to the timing of report preparation, in some cases (mostly for air quality), the most current information was not available for inclusion because it had not yet been posted by appropriate air quality authorities (e.g., CARB or U.S. EPA) or it simply did not exist. The 2011 Final Report includes updated air quality data that was not previously available when the 2011 Draft Report was being prepared.

The 2011 Draft Report includes a generalized characterization of known factors that affect various indicators based on published research and information. Disclosure of cause and effect information can be found in each indicator summary under the "*Human and Environmental Drivers*" subsection.

The point expressed in our comments was not that TRPA had failed to include the most recently available information before such information was available. We are aware data is not always posted immediately. Rather, our comments included the following:

- 1) TRPA carefully avoided disclosing to readers that monitoring had been decreased in recent years, thus resulting in a perception that monitoring was ongoing. We provided numerous examples of such careful omissions in the draft TER. A reader unfamiliar with Tahoe's monitoring network, Basin nuances, and/or other local factors, would be expected to read the draft TER and assume monitoring was continuing.
- 2) TRPA has typically reported on 5-year intervals in each threshold evaluation. Each TER summarized data from the previous five years, and although the TER was adopted in the year following this 5-year period of analysis, reports consistently reported data from only the 5 year

period. However, the draft 2011 TER included inconsistent time periods; in some cases, 2011 data were included. In others, 2010 or 2009 was noted as the end period (often without disclosing that this was due to a lack of monitors). As noted, with examples, in our comments, it appeared that in some cases, including 2011 data resulted in a more favorable outcome that supported the proposed RPU. In any event, we commented that TRPA needed to pick a time period for review and use that time period consistently. This is different from TRPA's "interpretation" that we supposedly asked for data that weren't available yet to be included.²⁶

We refer to our comments above regarding the importance of cause and effect. We are well aware that TRPA provided a general summary of typical sources of certain pollutants in the threshold report. However, these summaries are not based on Tahoe-specific analyses, nor do they suffice as adequate "cause and effect" information for the RPU EIS (which as noted below, is also a requirement of the existing Code Chapter 16). Further, on the 'effect' end of this discussion is the question of the effect of pollution in the Basin that may be different from the same pollution elsewhere. In other words, due to elevation and inversions, tighter CO standards have been adopted by the states for the Lake Tahoe Basin because it was recognized that CO concentrations in the Basin would impact human health at lower concentrations than in other areas for several reasons. Further, CO emissions in the Basin will often take longer to be diluted than other areas due to the Basin's inversions which trap pollution at the surface – where we breathe. Using the "one size fits all" approach that TRPA is suggesting does not adequately analyze Tahoe-Basin factors.

7. Comments assert the 2011 Draft Report uses inappropriate trend analysis (e.g., simple linear regressions), presents statistics creatively in order to skew the status and trends of environmental conditions, and discounts short term trends.

Our June and July comments provided specific examples of the concerns we raised, showing how statistics were used to support conclusions which then resulted in favorably supporting the proposed RPU. We will not repeat those comments here. However, we note that TRPA's response does not actually address the concerns we raised; rather, it appears to simply reassert generalizations.

In some instances it is appropriate to use a simple linear regression as a time series analysis approach to describe indicator trends. This method is commonly used for that purpose, widely accepted, easily understood, and affordable to evaluate. Statistics used in the 2011 Draft Report are also commonly used by the scientific community to numerically and graphically characterize the trend or trajectory of an indicator.

While some of TRPA's statements may be true – such as "*Statistics used in the 2011 Draft Report are also commonly used by the scientific community to numerically and graphically characterize the trend or trajectory of an indicator...*" this does not actually address our comments. We did not say the statistical methods themselves are not commonly used, nor that they weren't appropriate for any situations. Rather, we carefully explained concerns about how they were inappropriately used in the TER.

²⁶ We note that where we provided data in our comments or attachments to our comments, we included the most recent data available during the public comment period for ease of reference and to support other comments (e.g. differences among pollution concentrations in different areas of the Basin), and to have it available for the RPU analysis. This does not mean we weren't aware that the TER was written months sooner, and thus some of the information was not yet available.

We also provided examples to show why we were concerned that statistics were being used inappropriately. For example, trends in ozone from 2006-2009/10 were essentially ‘discounted’ because they did not match the longer term trend in ozone going back to the 1980’s. However, ozone trends in the 1980’s have no impact on ozone trends in recent years; thus it was inappropriate to tie these together in any way (other than simply representing what ozone levels have done over the historical time period). Worse yet, there is no statistical basis for discounting recent trends simply because they do not “match” trends from the 1980’s or 1990’s. This is like selecting which data you want to use to support your conclusion and ignoring the rest.

Further, the TER often relies on these trend lines to ‘forecast’ future trends, which are then used by the RPU to justify proposed development. For example (as detailed in our previous comments):

The TER discounted the less favorable trends in ozone (meaning the years it was not improving) because they did not match the trends from the 1980/1990’s. In other words, conditions in 2006-2010 are essentially tossed aside. Instead, TRPA applies the now irrelevant trends from before 2006 to the future ‘forecast’ and claims this means ozone will continue to decrease the way it did 15-25 years ago. This has no basis in any actual fact. However, this “forecast” is then used in the RPU to justify increases in development and VMT. In other words, because ozone will “magically improve” at the same rate as it did up until 2005 (this assumption is not supported by any analysis), and we can just skip 2006-2011, beginning in 2013, it will magically improve at the same rate again, so we can go ahead and add thousands more people and cars to the Basin. This simply makes no sense. In fact, comments by Dr. Alan Gertler in the 2012 DRI Tahoe Summit report²⁷ reiterate that air quality is getting worse:

Many people don’t realize Lake Tahoe’s air quality affects its water clarity, and the air quality is getting worse. Alan Gertler, a Desert Research Institute (DRI) scientist for 33 years, studies air quality around the globe. According to Gertler, the Tahoe Basin is suffering from elevated ozone levels. “The increased ozone has both human and environmental consequences. It doesn’t violate the federal standard, but it does violate the California standard and is one of the few areas in California where ozone is getting worse.” [Emphasis added].

Yet the RPU, draft or final, provides no discussion of this, and responses to our comments simply dismiss this worsening trend. Additionally, although a long term trend may be useful as part of an analysis of historical and current ozone conditions in the Basin, it is not the ‘trend line’ that causes human health impacts. Rather, it is the concentration(s) of ozone at any given time, whether 1 hour or 8 hour, that causes human health impacts. Thus, trend lines should not be used to replace the actual representations of ozone concentrations. Further, although some peak numbers are discussed in the 2011 TER, the data are not provided beyond what readers can see in the graphical representations. We expressed this same comment on the 2006 TER.

Further, if one examines the historical peak concentrations, there is a good deal of variability over time. For some periods, peak concentrations appear to decrease for a few

²⁷ ²⁷ <http://www.dri.edu/2012-tahoe-summit>

years, then increase for the following few years. This variation is important, not only to document whether air was healthy at any given time, but also to examine the reasons ozone was high or low. One can not compare an annual or 5-year ozone *trend line* to the August VMT in the summer of 2010 vs. VMT in the summer of 2012 in an attempt to evaluate the “source” of ozone or cause/effect relationships with one source of ozone precursors. There are temporal, topographical, meteorological, and other considerations that must be used to analyze why ozone concentrations were at a given level.

In summary, TRPA’s response does not address our original comments.

Failure to incorporate significant comments by peer reviewers:

As outlined in “**Attachment A2: TASC-FOWS. TRPA Response to Peer Reviewers,**” TRPA often chose to ignore or make no changes to the TER when confronted with significant comments by peer reviewers regarding the methods, statistics, data, etc., used in the TER report. This is important for many reasons, however we note that TRPA often responds to critiques of the TER with the statement that the document was “peer-reviewed.” The implication is clear – because it was peer reviewed, it must be scientifically adequate, and therefore any comments to the contrary must simply be wrong. Therefore, the fact that TRPA did not address significant comments related to the technical adequacy of the report, yet TRPA relies on the report having been ‘peer-reviewed’ as the justification for its “technical adequacy,” shows a confusing trend we find often in this process – a path of circular thinking, illogical conclusions, hand-waving, and verbose responses that fail to address the actual matter at hand.

Comparison to 2001 TER:

As noted in our previous comments, there is a significant shift in how TRPA views the thresholds when previous TERs are compared to the 2011 TER. We included copies of introductory statements and other examples which showed a skewing of the importance of the thresholds. We reiterate those comments with equal force.

Also, the breadth of information in the 2001 TER, as the lead-in TER for the RP update at that time, was far more substantial and thorough than the reduced information in the 2011 TER. As noted by peer reviewers, the 2011 TER includes very limited information regarding the relationship among different thresholds. The 2001 TER included descriptions of the thresholds, their purpose, a discussion of the most recent scientific information available, and other details which helped explain to the public the purpose and importance of the thresholds, and what they were intended to protect. The 2011 TER has omitted a great deal of this information, and barely refers to the most recently available scientific information. In fact, in responses to the peer reviewers, TRPA often notes the TER was not intended to evaluate all of this ‘other’ available information, and at best, TRPA added a few references to key information but failed to discuss the information or how it related to the thresholds. The 2011 TER also shows little interest in identifying the cause and effect relationships of threshold standards and indicators, even though this information is key to assessing what RP actions are needed to achieve and maintain the thresholds. In the 2001 TER, there was an obvious interest in seeking better,

more Tahoe-specific information to support the Regional Plan update and other needed amendments.

5. PURPOSE OF REGIONAL PLAN (RP) & RP UPDATE

Purpose of Regional Plan – TRPA Compact:

The Compact established TRPA and provided the following directives:

Article I:

(b) In order to enhance the efficiency and governmental effectiveness of the region, it is imperative that there be established a Tahoe Regional Planning Agency with the powers conferred by this compact including the power to establish environmental threshold carrying capacities and to adopt and enforce a regional plan and implementing ordinances which will achieve and maintain such capacities while providing opportunities for orderly growth and development consistent with such capacities.

Article V: Planning

(c) Within 1 year after the adoption of the environmental threshold carrying capacities for the region, the agency shall amend the regional plan so that, at a minimum, the plan and all its elements, as implemented through agency ordinances, rules and regulations, achieves and maintains the adopted environmental threshold carrying capacities. Each element of the plan shall contain implementation provisions and time schedules for such implementation by ordinance. The planning commission and governing body shall continuously review and maintain the regional plan. The regional plan shall consist of a diagram, or diagrams, and text, or texts setting forth the projects and proposals for implementation of the regional plan, a description of the needs and goals of the region and a statement of the policies, standards and elements of the regional plan.

The regional plan shall be a single enforceable plan and includes all of the following correlated elements:

(1) A land-use plan for the integrated arrangement and general location and extent of, and the criteria and standards for, the uses of land, water, air, space and other natural resources within the region, including but not limited to an indication or allocation of maximum population densities and permitted uses.

(2) A transportation plan for the integrated development of a regional system of transportation, including but not limited to parkways, highways, transportation facilities, transit routes, waterways, navigation facilities, public transportation facilities, bicycle facilities, and appurtenant terminals and facilities for the movement of people and goods within the region. The goal of transportation planning shall be:

- (A) To reduce dependency on the automobile by making more effective use of existing transportation modes and of public transit to move people and goods within the region;
- and
- (B) To reduce to the extent of feasible air pollution which is caused by motor vehicles.

Where increases in capacity are required, the agency shall give preference to providing such capacity through public transportation and public programs and projects related to transportation. The agency shall review and consider all existing transportation plans in preparing its regional transportation plan pursuant to this paragraph.

The plan shall give consideration to:

- (A) Completion of the Loop Road in the States of Nevada and California;
- (B) Utilization of a light rail mass transit system in South Shore area; and
- (C) Utilization of a transit terminal in the Kingsbury Grade area.

Until the regional plan is revised, or a new transportation plan is adopted in accordance with this paragraph, the agency has no effective transportation plan.

(3) A conservation plan for the preservation , development, utilization, and management of the scenic and other natural resources within the basin, including but not limited to soils, shoreline and submerged lands, scenic corridors along transportation routes, open spaces, recreational and historical facilities.

(4) A recreation plan for the development, utilization, and management of the recreational resources of the region, including but not limited to, wilderness and forested lands, parks and parkways, riding and hiking trails, beaches and playgrounds, marinas, areas for skiing and other recreational facilities.

The Compact states the purpose of the Regional Plan is:

“...to adopt and enforce a regional plan and implementing ordinances which will achieve and maintain such capacities while providing opportunities for orderly growth and development consistent with such capacities.”

The Compact requires the Regional Plan be continuously reviewed and updated so that it achieves and maintains the adopted environmental threshold carrying capacities:

“...the agency shall amend the regional plan so that, at a minimum, the plan and all its elements, as implemented through agency ordinances, rules and regulations, achieves and maintains the adopted environmental threshold carrying capacities. Each element of the plan shall contain implementation provisions and time schedules for such implementation by ordinance. The planning commission and governing body shall continuously review and maintain the regional plan.”

Further, the Code of Ordinances as of March 2012 states:

1.4.4 Goals And Policies Plan: The Goals and Policies are the core of the Regional Plan. The Goals and Policies plan provide statements of goals and policies to guide decision-making affecting the Region's resources and remaining resource capacities. The Goals and Policies are intended to provide for the attainment and maintenance of the environmental thresholds while providing opportunities for orderly growth and development consistent with the thresholds.

1.4.5 Code Of Ordinances: The Code is designed, among other things, to implement the Goals and Policies in a manner attaining and maintaining the environmental thresholds. The Code compiles all the ordinances of TRPA into one document except for certain procedural ordinances such as the ordinances adopting plan amendments. The Code addresses many subjects, including, but not limited to, required permits for development, findings required for approval of projects, environmental impact statements, plan area statements, land use, density and coverage, development standards, allocations of development, the Individual Parcel Evaluation System, shorezone, grading and construction practices, resource management, water quality, air quality and transportation.

The Code also includes the following requirements regarding the 208 WQMP (as noted, we will provide comments on the proposed 208 Plan separately).

1.5. 208 PLAN

The portions of the Code inconsistent with the existing Lake Tahoe Basin Water Quality Management Plan (“208 Plan”) shall not be implemented until the necessary amendments

to the 208 Plan are certified by the States of California and Nevada and the Environmental Protection Agency (EPA).

RPU Purpose according to TRPA – 2012:

The proposed Regional Plan Update has strayed from the Compact's direction, and instead the final RPU treats the purpose of the Regional Plan, and RP Update (RPU), as if the Compact merely requires the RP *not to impair the ability to achieve the thresholds* – rather than the requirement that the RP itself is intended to achieve and maintain the thresholds. Examples include:²⁸

The Regional Plan Update would not impair the Region's ability to meet ambient air quality standards or environmental threshold carrying capacities for air quality. (Vol. 1, p. 3-193). [Emphasis added].

Because the revisions would result in no physical effect on the environment, they would not generate new environmental impacts or increase the severity of any adverse impacts associated with Alternative 3. (Vol. 1, p. 2-2). [Emphasis added].

Because the Final Draft Plan retains the restrictions on increased height within the High Density Tourist District proposed in Alternative 3 and places additional restrictions with regard to the applicability of the increased height allowance, it would result in reduced potential for adverse scenic impacts as compared to the Draft Plan. [Emphasis added].

When considered in combination with other elements of the Final Draft Plan, these changes would not generate new environmental impacts or increase the severity of any adverse impacts associated with Alternative 3. [Emphasis added].

...As a result, the Final Draft Plan would result in reduced potential for adverse impacts as compared to the Draft Plan. (Vol. 1, section 2). [Emphasis added].

“...the purpose of the Regional Plan Update is, in accordance with the Tahoe Regional Planning Compact (Compact), to make adjustments to the Goals, Policies, and implementation measures of the Regional Plan that are reflective of current conditions and that will move the Lake Tahoe Region toward attainment and maintenance of environmental threshold standards.” (Vol. 1, response to comment O16-1). [Emphasis added].

As described in the fourth paragraph on page 1-8 of the Draft EIS, the Regional Plan provides the foundational, policy-level direction for the Tahoe Region upon which all other TRPA programs and regulations are based. As such, the impact analysis in the Regional Plan Update EIS is conducted geographically at a broad, regional scale with a focus on overall policy-level issues. The Regional Plan Update EIS does not address impacts at the level of proposed land use development or public works projects, nor does it address impacts of specific programs or projects required to implement the Regional Plan. (Vol. 1, p. 3-442) [Emphasis added].

²⁸ We have underlined text for emphasis.

The EIS for the Regional Plan should perform a comprehensive environmental analysis of the proposed Plan, with emphasis on how the alternative will achieve and maintain the thresholds. Instead, the EIS fails to adequately analyze the impacts of the alternatives, fails to include an adequate range of alternatives in the first place, and fails to consider the impacts of the alternatives on the thresholds at both the local and regional scale. Instead, the RPU documents define the “purpose of [the] EIS” as “to identify and assess the anticipated environmental effects of implementing each of the Regional Plan Update alternatives, with a focus on significant and potentially significant environmental impacts.”

Perhaps at first glance, this does not appear very different. However, this approach strays from the original intent of evaluating how a RP will achieve and maintain thresholds to instead evaluating how it may, at a policy level, cause significant environmental impacts. Thus, the purpose of the Regional Plan has changed from one of achieving and maintaining environmental thresholds to one that focuses on creating more dense urban areas and relying on transfer programs that will generally transfer more paper rights than actual restored land, and one which tries to avoid significant impacts rather than foster environmental benefits.

RPU Priorities– 2012:

However, in 2012, TRPA proclaims the priorities for the RPU are:

Priorities for the Regional Plan Update:

1. Accelerating water quality restoration and other ecological benefits by supporting environmental redevelopment opportunities and Environmental Improvement Program (EIP) investments.
2. Transitioning to more permitting by local governments to create one-stop-shopping for homeowner improvements in order to return TRPA to the more regional role the Compact originally intended.
3. Creating walkable communities and increasing alternative transportation options.²⁹

The first priority refers to environmental redevelopment and investments. As we note below, one of the most notable “bases” of the new planning approach in the RPU includes the concept that development will be transferred from more sensitive lands to less sensitive lands (in the “Centers”). However, as we detail later in these comments, the transfer program is more likely to result in the purchase of coverage from land banks - resulting in no on-the-ground restoration. Much of the land coverage in the land banks came from areas that would never have been developed in the first place. The new RPU will incentivize the purchase of this coverage by providing developers with very profitable commodities, resulting in more development, more people, more cars, and more coverage.

The second priority flies in the face of the 1980 Compact. Not only does it place more planning authority back in the hands of the local governments – a problem the 1980

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http://www.trpa.org/documents/rp_update/Facts&Presentations/Sept_2012_FactSheets/RPU_FactSheet_Package_9-6-2012.pdf

Compact sought to fix – but it also suggests that local permitting is what the Compact originally intended. This argument simply makes no sense, as the Compact permits delegation to others only for minor permitting issues.

In addition the statement implies the delegation is for the benefit of the homeowners, but then permits such delegation for up to 100,000 sq. ft. of residential in the “Regional Centers,” up to 50,000 sq. ft. in the “Town Centers,” and up to 25,000 sq. ft. in areas outside of these ‘centers’ – all larger sizes than most buildings in the Tahoe Basin. Non-residential limits are 80,000 sq. ft., 40,000 sq. ft., and 12,500 sq. ft., respectively. Further, proposed changes to the Code will increase the allowed densities for multi-family units:

4. Category D

In Category D, the maximum residential density is one unit per project area, provided that residential units are allowed by the plan area statement or community plan, except for mixed-use project proposing to subdivide multi-family units, which is subject to Category E below.

5. Category E

In Category E, the maximum density for a multi-family dwelling, multi-person dwelling, or other tourist accommodation use shall be the maximum density for the given residential or tourist accommodation use, as determined by Table 31.3.2-1, multiplied by the ratio of the floor area of that use to the total floor area in the project area (see Examples 1 and 2), subject to the exceptions below.

Third, we support the idea of more walking and less driving. However, TRPA’s proposed approach will significantly increase the local populations, visitor populations, buildings, coverage, height (scenic impacts), VMT, air pollution, water pollution, etc. The model TRPA has based this approach on comes from areas that are significantly more populated than Lake Tahoe, and do not have the topographic or environmental constraints recognized at Lake Tahoe. Although our previous comments identified this, TRPA’s response in the final appears to simply assert that we are wrong, TRPA is right, and then provides no evidence supporting the conclusion being made that “smart growth/densification” approaches that may work in, for example, Southern California, will work to reduce VMT in the Tahoe Basin.

RPV Goals & Policies: TRPA’s Mission- Current vs. Proposed

The current (1987) Mission in Goals and Policies states:

THE TAHOE REGIONAL PLANNING AGENCY LEADS THE COOPERATIVE EFFORT TO PRESERVE, RESTORE, AND ENHANCE THE UNIQUE NATURAL AND HUMAN ENVIRONMENT OF THE LAKE TAHOE REGION.

The proposed (2012) Mission in Goals and Policies states:

THE TAHOE REGIONAL PLANNING AGENCY LEADS THE COOPERATIVE EFFORT TO PRESERVE, RESTORE, AND ENHANCE THE UNIQUE NATURAL AND HUMAN ENVIRONMENT OF THE LAKE TAHOE REGION, WHILE IMPROVING LOCAL COMMUNITIES, AND PEOPLE’S INTERACTIONS WITH OUR IRREPLACEABLE ENVIRONMENT.

This represents a clear shift from focusing on environmental protection first, and recognizing this will improve the economy, to now focusing more heavily on economics and community development and less on the environment. We have never suggested the agencies ignore the local communities; however, we have reiterated that TRPA was established to focus on the environment first, and work with the states and local governments – while protecting the environment. Thus, the Compact created an agency that would override the local governments. TRPA would watch over the environment, and the local governments, and the economy. Now, TRPA has shifted to emphasis on the local economy,³⁰ leaving no one to watch out for the environment.

³⁰ As we discuss elsewhere, evidence does not support the claim that TRPA's approach will even help most of the local communities; rather, it appears to support large ski corporations and developers at the expense of the local communities, and inevitably pushes out the small businesses and middle and lower income community members who can not afford the new 'model.'

6. REGIONAL PLAN EIS:

Inadequate Range of Alternatives in EIS:

Our 10/23 and 11/15, 2012 comment letters include information regarding over ten years of participation by TASC members in the RPU and Threshold process. This documents our consistent messages related to the Threshold and RP updates, including the submission of a full RP alternative in October 2010 for analysis in the RPU EIS. However, the RPU EIS fails to analyze this conservation alternative, or any conservation alternative that places thresholds first and does not propose significantly more growth in the Basin than that allowed by the 1987 Regional Plan.

Technical Inadequacy of the RPU EIS and RTP EIR/S³¹

Comments on Draft EIS Apply to Final:

As discussed previously and noted in the Attachment “**A5: TASC-FOWS Examples.Responses to our comments on EIS,**” our comments regarding the technical adequacy of the draft EIS were generally not addressed, and the technical problems identified persist in the Final EIS. Therefore, we reassert our comments from 6/28/2012 on the draft EIS with equal force as comments on the final EIS.

With regards to the responses TRPA has provided in the Final to “explain” why the EIS is technically adequate, we have the following comments below. In general, the responses have not addressed our concerns, often dismiss comments by claiming they are not on the adequacy of the EIS itself and thus need not be responded to (although we note TRPA’s own comments that none of the documents in the final RPU package are stand-alone documents), or in some instances, provide additional information that is claimed to support their conclusions. However, as discussed below, the new information does not support TRPA’s conclusions in the EIS.

We also reiterate the failure of the RPU, as it is tied to the flawed Lake Tahoe Clarity Crediting Program,³² to address and prioritize the most hydrologically connected sources of pollution first: stormwater discharges that are dumped directly into Lake Tahoe, all around the Lake. As noted in our June comments, many videos are available through the “Tahoe Pipe Club” demonstrating polluted water entering Lake Tahoe.³³ We included a list with most of the videos available at that time and the links to view them online.

One of these examples includes film taken on July 23rd 2012, when a moderate thunderstorm generated urban storm water from the streets of South Lake Tahoe.³⁴ According to the video, the storm water from the pipe being filmed was over 1000 NTU

³¹ All comments reflect equally on comparable parts of the RPU EIS and RTP EIR/S although only one chapter or page may be mentioned.

³² Which we commented on extensively as part of the TMDL process.

³³ <http://www.youtube.com/user/Tahoepipeclub?feature=watch>

³⁴ http://youtu.be/PxfebQDA3_8

while Lake Tahoe is just 0.3 NTU (before the stormwater is dumped into Tahoe's shoreline). This affects not only mid-lake clarity, but nearshore conditions as well. Yet the EIS fails to address this source, relying on the model-based TMDL components that fail to address the hydrologic connectivity of the stormwater pipes.

Failure to analyze alternatives:

First, as noted above, the EIS failed to include an adequate range of alternatives, including an alternative based on the Conservation Alternative we submitted in October 2010. All action alternatives propose significant increases in development and population well beyond that allowed by the 1987 Regional Plan (Alternative 1).

Second, as also noted in our previous comments, the EIS claims the 1987 Regional Plan was inadequate to protect the environmental thresholds and therefore significant changes in the land use approach are necessary. However, we questioned how much of the failure to achieve thresholds was due to TRPA's failure to properly implement the 1987 Plan. These questions were not addressed in the response to comments. Instead, TRPA has continued to assert the 1987 Land Use Planning approach is no longer applicable and must be significantly changed. The EIS fails to analyze the impacts of Alternative 1- when implemented and enforced correctly (of note is that we are supposed to assume that any alternative selected will be implemented and enforced correctly).

However, because the EIS fails to adequately analyze the impacts of the proposed alternatives, and failed to adequately implement the 1987 Plan (as documented in our June comments), there is no evidence to suggest the proposed Plan will achieve the thresholds any better or faster than the 1987 Plan. However, there is ample evidence to suggest the increased development in the proposed alternative will likely *harm* the thresholds.

Revisions in "Final" EIS:

Only ten additional pages are added in the final EIS (Chapter 4, Volume 1). Otherwise, TRPA has stated no additional analyses was needed – in most cases, because the revised Alternative 3 in the final proposes “less additional development,” or is otherwise somehow more conservative than, the draft Alternative 3. Apparently, this is then justified by the impacts from the draft Alternative 3 having been declared “mitigated” (or in some cases like greenhouse gas emissions, significant and unavoidable). Thus, TRPA's logic appears to be if the draft Alternative 3 was declared “mitigated to less than significant” by the draft EIS, and the final Alternative 3 proposes less development than the draft Alternative 3, the final Alternative 3 (proposed) must also be ‘mitigated.’ However, this fails to consider the adequacy of the EIS to analyze the impacts in the first place, or the changes that have been made since the close of the draft comment period that are not ‘revised versions’ of items proposed in the draft (e.g. Drive up windows). As noted in our substantial comments on the draft EIS and EIS/R documents submitted on 6/28/2012, there are numerous inadequacies with the EIS analysis. These have not been resolved by any additional analyses in the final, therefore we reiterate our comments on the draft environmental documents with equal force.

Failure to include adequate mitigation measures:

As noted in our comments on the draft, merely promising to “come up with” a plan (e.g. for construction BMPs, noise reduction, etc.) in a year does not sufficiently represent “mitigation.” There is no discussion or evaluation of the potential efficacy of plans that haven’t even been developed yet. Further, sufficient analytical information is not provided to support claimed mitigation. In the examples for air quality, TRPA promises to develop a BMP plan within one year that aims to result in *less* additional pollution than could occur without mitigation. This does not mitigate the impacts of the increased construction (which are also not in themselves adequately analyzed), it merely promises to reduce them from what they *could be* (although again, there is not sufficient evidence to support this claim either).³⁵ In the case of the noise-related mitigations, again TRPA promises to “come up with” plans in one year on how TRPA will reduce noise from different sources, however no information is provided on what this will entail, and what the potential efficacy of such mitigation could be. In fact, the noise thresholds have been exceeded for years and TRPA has not yet determined a way to mitigate noise to achieve the thresholds. Further, the alternatives will all increase “net VMT” in the Basin – however TRPA claims this will be mitigated by some yet-to-be determined method, although TRPA has not been able to implement actions to reduce VMT to below the standard for over twenty years (as TRPA acknowledges, and stated by peer reviewers and included in our comments, VMT was in attainment as of 2010, but evidence suggests this is primarily due to economic and global-scale factors for which TRPA has no control over).

Further, although it appears some of these mitigations were “codified” and thus no longer technically referred to as “mitigation measures” in the final package, nothing has changed.³⁶ As per the EIS, these measures – proposed in the Code or otherwise – are claimed to be the mitigation for the impacts of the alternatives. Yet they are deferred “plans” that are not supported by analysis or data. Thus, contrary to NEPA, CEQA and TRPA Compact requirements, the EIS still fails to show how the impacts of the alternatives (and proposed alternative in the final) will be mitigated.

Promising to somehow adapt in the future, as TRPA does through assertions that adaptive management based on four year review cycles will mitigate, still does not negate the requirement that TRPA provide mitigation measures that are already reasonably complete. Judge Karlton stated:

“The Compact requires both that TRPA mitigate the project’s effects and that TRPA provide an EIS discussing the measures TRPA will use to do so. In light of these obligations, TRPA must implement adaptive management by providing in the EIS a proposal for mitigation that is already reasonably complete but that will be subject to later adaptation. Principles of adaptive management support leaving open the possibility, recognized in the NEPA caselaw, of a future change in mitigation strategy, but adaptive

³⁵ Strangely, we found a reference in the 12/5 staff summary that claimed the construction in Alt. 2 would create more air quality impacts, although the EIS claims construction impacts can be mitigated regardless of the extent or location of construction projects; see our comments on the staff summary for details.

³⁶ Because the final EIS does not provide a revised list of the mitigation measures as compared to the draft EIS, we attempted to list the mitigations in the draft and locate where they were in the final package; this is included in our attachment “**A3: TASC-FOWS Comparison of Mitigation Msrs Draft to Final.**”

management does not provide a justification for postponing altogether the discussion of mitigation measures. The court therefore rejects TRPA's argument that the EIS complies with the Compact because TRPA will "go slow" to ensure that mitigation measures are developed and implemented before harm occurs. Even assuming that this approach will avoid harm, it deprives the public of the opportunity to meaningfully comment on mitigation measures prior to the project's approval.²³

TRPA asserts the agency can adopt these "mitigation measures" when details are unknown (Final RPU, Volume 1, p. 3-66 and -67):

To meet these requirements, TRPA may either adopt specific mitigation measures, when project details are known, or commit to the development and implementation of mitigation programs when the definition of detailed actions requires additional consideration or the details of physical projects are not yet known. When pursuing the programmatic mitigation approach, the necessary performance criteria that help make deferral of mitigation details permissible are already established in the adopted TRPA threshold carrying capacity standards, where applicable, and the Code-required findings. In other words, as noted in the Code sections cited above, the performance standards for the programmatic mitigation measures included in the Regional Plan Update EIS and RTP/SCS EIR/EIS are either: (a) already mandated by the Compact and Code findings for attainment of the threshold standards where they apply; (b) consistent with other elements of the Regional Plan Goals, Policies, and programs; or (c) reflective of compliance with the most stringent, applicable federal, state, or local air and water quality standards. Recognizing that the programmatic mitigation measures in the Regional Plan Update EIS and RTP/SCS EIR/EIS commit TRPA and TMPO to develop and implement mitigation programs and that the Compact and Code findings impose performance criteria, this is a proper and effective approach to addressing significant and potentially significant environmental effects within TRPA's regulatory framework.

...

Similar to the explanation for TRPA requirements above, the performance standards for the RTP/SCS EIR/EIS programmatic mitigation measures are the TRPA threshold carrying capacity standards; applicable Regional Plan Goals, Policies, and programs; or environmental standards of federal, state, or local agencies (some of which require separate permits), as referenced in the mitigation measures (e.g., California air pollution control district emission standards noted in Mitigation Measure 3.4-2 for jurisdictions within that state). The Tahoe Region is unique because the legally mandated, threshold carrying capacity standards establish an underlying set of environmental performance criteria that projects may not exceed. For programmatic mitigations in environmental issue areas with TRPA threshold standards (i.e., construction-related air pollutant emissions, construction-related noise and vibration, region-wide noise program, exterior noise policy, and improved roadway operations), these standards provide performance criteria for mitigation measures that do not exist elsewhere in California or Nevada. Recognizing that the programmatic mitigation measures in the RTP/SCS EIR/EIS describe that TRPA and TMPO commit to the development and implementation of mitigation programs and that performance standards are embedded in the threshold standards, Regional Plan, and other agency regulations, the EIR/EIS provides a proper and effective approach to addressing significant and potentially significant environmental effects within CEQA's framework for environmental review.

There are many problems with this assertion. First, per CEQA, deferred selection of mitigation measures may be allowed when there is reason to believe that there are available measures that will work and the feasibility and effectiveness of those measures have been discussed in the EIR. However, this is not the case as no evidence is provided that TRPA has the means or mechanisms to carry through the mitigations (and only promises to develop mitigation plans are included). Second, a "generalized goal" to comply with the law is not a meaningful performance measure. Further, TRPA has set the "performance criteria" as the thresholds themselves, instead of a value that will prevent

thresholds from being harmed in the first place. For example, years ago in the Pathway 2007 process there were numerous discussions regarding the development of “triggers” – which were values that if reached, would result in actions being taken to prevent the thresholds themselves from being violated. For example, there could be a trigger value for air quality measurements that are below the standards (less than), but would trigger actions to prevent things from getting worse – so that they would not violate the standards themselves. Setting the threshold standards as the performance standards allows harm before actions are taken to prevent it.

Also, the EIS has failed to address impacts in the first place, and provides no evidence to support assertions that the proposed plan will not result in increased environmental impacts. For example, the plan will increase the number of residents and visitors in the Basin, many of which will have motorized recreational equipment (e.g. boats, snowmobiles, ATVs, etc.), however the Plan includes no limits or regulations to prevent an increase in these uses. Instead, the EIS (and TRPA’s response to comments on the draft EIS) simply reasserts TRPA’s claim that there will be no such increases in these uses. This defies logic, plus is not supported by any evidence or proposed regulations to prevent increased activities that generate pollution or impair thresholds.

Additional comments:

Although we commented on the hazards section in the draft EIS, recommending TRPA include all possible natural hazards, TRPA responded as follows:

The comment states that the EIS does not disclose or analyze earthquake and fault hazards in the Tahoe Region. Draft EIS Section 3.7, Geology, Soils, Land Capability, and Coverage, discloses existing conditions in the Lake Tahoe Region related to geologic conditions, topography, seismic setting, faults and fault rapture, ground failure/liquefaction, subsidence, and slope stability (among other soil, coverage, and geologic conditions) (see Section 3.7.2, pages 3.7-13 to 3.7-16). Table 3.7-7 on page 3.7-15 of the Draft EIS lists the faults found within the Lake Tahoe Region that have been sources of magnitude >6 earthquakes during the Quaternary period (past 1.6 million years). None of the faults or fault zones listed in Table 3.7-7 are located in an Alquist- Priolo Earthquake Fault Zone (see page 3.7-14 of the Draft EIS). Impact 3.7-3 of the Draft EIS (pages 3.7-48 to 3.7-51) analyzes the potential impacts of the Regional Plan Update Alternatives in relation to seismic hazards.

Section 3.7-14 of the EIS includes only those faults published on the Alquist-Priolo map.

None of the Tahoe Region counties include Earthquake Fault Zones under the Alquist-Priolo Earthquake Fault Zoning Act of California; the closest mapped fault zone (within two miles of the Region) occurs in Alpine County to the south (CGS 2010).

But the impacts of such an earthquake will be the same, whether the fault is included on the map or not. UNR researchers have already mapped another fault that is capable of a magnitude 7.3 earthquake in the Basin and a resultant tsunami of up to 30 feet (see article³⁷ - summary included below from southtahoenet.now).

³⁷ <http://southtahoenow.com/story/12/05/2012/tsunami-and-earthquakes-overdue-lake-tahoe>

A tsunami-producing fault in Lake Tahoe is overdue for another earthquake, scientists said here yesterday (Dec. 4) at the annual meeting of the American Geophysical Union. The West Tahoe Fault is capable of producing a magnitude-7.3 earthquake and tsunamis up to 30 feet (10 meters) high in the clear blue lake, where million-dollar homes line the shore, researchers said.

Earthquakes strike every 3,000 to 4,000 years on the fault, and the most recent shaker was 4,500 years ago, indicating the fault is overdue for another earthquake, said Jillian Maloney, a graduate student at the Scripps Institution of Oceanography in San Diego.

The West Tahoe fault defines the west shore of the lake, coming on shore at Baldwin Beach, passing through the southern third of Fallen Leaf Lake, and then descending into Christmas Valley near Echo Summit.

Pervious Pavement exemption and long-term maintenance:

In the response to comments (Volume 1), TRPA addresses a question about the inadequate analysis of pervious pavement

The comment states that the Draft EIS does not analyze certain issues concerning permeable pavement. As noted in the comment, Alternative 3 would allow a 25 percent credit for pervious coverage on high capability lands (LCDs 4–7), subject to design and maintenance requirements to minimize and mitigate impacts. Pervious pavement allows for movement of water through the load-bearing surface into an underlying storage layer that can infiltrate or attenuate stormwater runoff. Although permeable pavement typically infiltrates 100 percent of precipitation that falls directly on its surface (Brattebo and Booth 2004) the Draft Plan only offers a 25 percent coverage exemption as a conservative approach to compensate for any lack of maintenance or removal of vegetation.

Wouldn't a lack of maintenance eventually lead to no infiltration? Where did TRPA analyze the impacts and determine 25% was appropriate? What about years into the future?

Response to comments on the Draft EIS and EIR/S:

The Final RPU package, Volume 1, includes a response to public comments on the draft EIS. Although the voluminous number of pages are impressive at first glance, TRPA's response to comments on the Draft EIS – which totals over 670 pages in Volume 1 – is incomplete in numerous ways, and fails to *actually respond* to many public comments. Numerous examples are included in the attached table titled “**A.5 Example Table-Response to our comments on EIS.**” In summary:

- TRPA does not respond to detailed comments on the Threshold Evaluation Report (see section regarding inadequacies of Attachment C).
 - o Although TRPA states it is not required to respond to comments on the draft TER, TRPA has created Attachment C, where our comments (the only ones received on the draft TER) are ‘summarized’ by TRPA, often incorrectly, and then responded to. However, these responses are essentially nothing more than reasserting that TRPA is correct, the report was peer reviewed, and that's the end of the story. Our detailed comments, which refer to and include extensive detailed scientific information from a

variety of reputable sources, are not addressed, but rather lumped together and responded to with generalities and repeated assertions that TRPA is correct.

- The “response to comments” does not truly respond to most comments.
 - o TRPA’s responses to comments often do not address the question asked, talked “around” any actual answers (in other words, provide a lot of words but never really answer the question), simply refer to Master Responses which do not answer the detailed comments, or through selective “lumping” of comments, ignore or brush over many of the detailed questions and comments provided by multiple commenters.
- The response to comments often claims comments are “not relevant to the adequacy of the DEIS” and thus, TRPA need not respond to those questions (readers are often referred to “Master Response 1”).
- The response to comments does not respond to comments provided on the draft Code, Goals and Policies, and other associated RPU documents (other than the actual EIS). Although TRPA suggests that the Agency has addressed such comments in proceedings since the 6/28 deadline, official responses have not been provided, changes to proposed Code and G&P have been significant, recommendations by the public (or at least the conservation community), have rarely been discussed let alone considered, and the relationship between the Code, G&P, Thresholds/Resolution 82-11, etc., has been barely addressed.

Working Group for Code Language:

The Final RPU Volume 1 states the following:

“Many comments noted grammatical and typographical errors, inconsistent terms, or other technical errors in the Draft Regional Plan and Code. The Final Draft Plan has been revised to correct these items and improve the clarity of language. All technical corrections were reviewed by a technical working group appointed by the TRPA Governing Board, which included representatives from California, Nevada, and local governments and environmental and development interests. The technical working group reviewed each correction to ensure that no substantive changes were inadvertently made to the content of the Final Draft Plan.” (p. 2-16).

TASC and FOWS were not represented on this Technical Working Group.

7. FLAWED RPU PROCESS

As demonstrated throughout our comments, the RPU process has regularly appeared to be a hasty, conglomeratized mixture of documentations attempting to provide environmental justification of what is already viewed by the agency as a foregone conclusion. The significant number of post DEIS changes, the moving-target that the RPU package has been, and the release of even more information just one week, and then two days,³⁸ before the package is up for approval – including environmental documentation dated almost a month *after* the final Plan it purports to “evaluate” was released³⁹ - are glaring examples of the TRPA’s substantially flawed process.

The new Code adopted in November 2011 and stated to be operational in March 2012, was touted as being much easier to use than the previous code it replaced, but the serial changes, additions, deletions and shifts to other sections, combined with an ongoing batch of ever-changing proposed amendments, is more confusing than ever.

The underlying problem with the Code and its moving targets in the Plan is that it is intended to be adopted in its new form (new Code, plus a significant number of new changes to capture the moving target that is the Regional Plan). Previous planning efforts in the basin and in most local governments act to work on and adopt a new plan, then sit down to craft the ordinances to implement the new Plan after all of its public hearings and final adoption.

Yet in the process presented by the TRPA, the RPU process - the Code, the Goals & Policies, the Threshold Evaluation Report, the thresholds themselves, the unusual final “package” involving multiple staff summaries, changes that should be in the final EIS but are instead in final Code or G&P language, the Master Responses, the Bi-State Agreement and planned revisions to the Bi-State Agreement, the multiple, name-changing Exhibits, the environmental checklist for a last-minute companion plan, and parallel changes by other agencies that have a direct effect on assumptions in the EIS,⁴⁰ have all been in flux almost every week for the past year. Although some weeks have passed with no new changes, the past year has been a difficult slog through the vicissitudes of Tahoe planning, with the public left to scramble to find relevant documents as they were referred to. The public was challenged to keep up with the staff as new information appeared with no warning. Finally, attempting to evaluate changes made among the mixture of documents that represent the “final EIS” has been a complex process, as the public must review numerous documents to obtain information that should be easily located in one area. The color coding we used in our initial attempts to show where different items were included is represented in “**Attachment 4: TASC-FOWS Color-coding re Final RPU Organization,**” showing how complex the review was.

³⁸ Additionally, although the 12/5 staff summary indicated a new revised version of the WQMP was included, it was not. Eventually it was provided to the public on 12/10 – just two days before the final hearing.

³⁹ The Initial Environmental Checklist for the WQMP is dated 12/4/12; the proposed Plan itself is dated 11/15/12.

⁴⁰ E.g. the Land bank programs.

Time Period and Master Response 2:

Many people expressed concern regarding having just 60 days to review, digest, and comment on thousands of pages associated with the Draft EIS, EIS/R, and TER.⁴¹ However, the Board voted not to provide this additional time, noting concerns about adopting the RPU on the schedule preferred by Nevada. Although only 60 days was required per the Compact, this decision and the discussion that ensued by the Board indicated a clear disinterest in the outcome of the environmental analysis, and a desire to rush to approve the Plan regardless of the FEIS.

TRPA refers readers to Master Response 2 where comments expressed concern about the time period. Yet the Response reiterates the lack of consideration or understanding of the EIS (years of public outreach on the RPU concepts – or asking questions about what the public wants - do not equate to years reviewing the environmental impact analysis, as implied in the Response).

As context for the Governing Board decision, TRPA has devoted nearly 10 years to the Regional Plan update process and input has been received from thousands of people. As the process extended beyond the initial schedule, many stakeholders raised concerns that further extending the timeframe to update the Plan could create significant environmental and economic impacts and could compromise the future of TRPA as a planning agency. New science associated with the TMDL had revealed that high pollutant loads are generated from older developments without adequate BMPs and that environmentally-beneficial redevelopment and associated improvements in the quality of urban runoff could be facilitated with adoption of a new Regional Plan. Concerns culminated with passage by the State of Nevada of SB 271, which called for Nevada's withdrawal from TRPA if the Regional Plan was not updated in a timely manner, among other issues.

Worse yet, the public's interest is dismissed by the Response, which suggests that interested members of the public can simply drop everything in their lives for 60 days presuming they are just given adequate advance notice of when the 60 days will occur.⁴² This is disrespectful of the public's interest and time. Finally, adding insult to injury, the responses provide no recognition of the effort taken by members of the public to review as much as possible in the time provided, instead suggesting that because the public was able to provide substantive comments, the 63 days was sufficient.

While many comments received related to the plans, extensive and detailed comments were received on the Draft EISs suggesting that there was sufficient time available for a comprehensive review of the draft environmental documents during the 63-day review period.

Of note are pictures taken of the hard copy versions of the Draft package of documents (4/25/2012):

⁴¹ Although TRPA provided another month to comment on the TER, these comments are not treated as official comments on the EIS. Thus, we did our best to review the TER during the same comment period because it is directly tied to the RPU.

⁴² "Moreover, TRPA gave full and adequate notice months in advance regarding the expected timing of the 60-day public comment period, so that reviewers were able to plan accordingly." Master Response 2.



Pictures taken on 11/15/2012 of what are presumably the final RPU documents:





Due to the ongoing changes, and failure of the EIS to analyze these changes, we requested the EIS be recirculated in November, in writing and verbally (minutes from 11/15/12 Board meeting are included below). We also requested this be included as an agenda item on the December Agenda.⁴⁴

⁴³ This photo contains additional handouts available at the 11/15/2012 GB meeting, as well as copies of the 10/24, 11/7, and 11/14 staff summaries, which include information directly pertaining to and part of the RPU package of documents.

⁴⁴ Request for recirculation from FOWS: 11/13/2012; Request for Recirculation from TASC: 11/15/2012; request for consideration on December Agenda from TASC & FOWS: 11/25/12.

Jennifer Quashnick, Tahoe Area Sierra Club. Again, I would like to thank everyone involved for the enormous amount of work that has gone into this entire process. That said, we have also put in a lot of work into reviewing the documents and following the process for the last ten years. On that note, we have letters that we are passing out that reiterate our key messages that we have been saying for the last ten years, as well as the key messages from the 2010 alternative that we submitted to TRPA. I will not go through the details, but basically we support environmental protection as required by the Compact. We also support appropriate redevelopment and tying development to measured data on the environmental standards. Second, some concerns yesterday were expressed regarding the public lying in wait, so we also clarified in our letter the work that we have been doing since 2002 related to the Regional Plan Update and the Threshold Evaluation Report. In the attachments we have documented the verbal comments and the written comments we submitted. If you have any questions, please get in touch with us, but I wanted to clarify that, as well. Finally, this has been mentioned by other people and I mentioned it yesterday, too. This process has been extremely difficult to follow. Yes, we have had years to discuss the concepts in the Regional Plan, however, the EIS just came out in April and we had 63 days to review it. Since then, we have had additional changes that can have significant impacts on the environment that have been coming up at each of the meetings. For example, we came in yesterday and were provided with another Staff Summary that the public had not seen until yesterday, and yet it was discussed yesterday. So, it has been a very difficult process to follow, and as I asked yesterday, we again request that the EIS be recirculated with the current alternatives as they have been amended since the June 28 close of the comment period. We also provided a letter documenting that as well and I will be providing electronic copies to TRPA of both.

We have received no response from TRPA to these requests. It appears the following statement on page 13 of the Dec. 2012 staff summary indirectly references our request as follows (“...others urged delaying adoption and conduction additional environmental review...”) but certainly does not summarize what our request was and why it was made.

Approximately 24 commenters (20%) testified in opposition to some or all of the Final Draft Documents. Many of these commenters supported a more regulatory focus for the Plan update with stricter policies, reduced redevelopment incentives, increased enforcement and/or expanded environmental monitoring. Several commenters expressed confusion about certain Plan provisions, while others urged delaying adoption and conducting additional environmental review.

Post DEIS changes:

This ‘policy over environment’ approach was only further propelled by the actions TRPA has taken since the end of the comment period for the draft EIS documents. Policy-based decisions have been made over the past several months, including but not limited to the changes resulting from the Bi-State Agreement and decisions made by the RPU Committee in August meetings, however the Final EIS does not analyze the impacts of these changes. Instead, the public is provided with a “staff summary” which compares changed policies to the original Alternative 3, often stating that because less development is proposed under the new final Alt. 3, there are no environmental impacts. However, this assumes the impacts from Alt. 3 were properly mitigated in the first place – yet as our extensive comments reflect, the EIS does no such thing. Further, changes should be compared not only to one of the five alternatives in the draft EIS, but also to the other alternatives, including the No Action Alternative 1.

Added after comment period on draft and not analyzed in Final:

After the comment period for the Draft RPU/RTP environmental documents and draft 2011 ended on 6/28/2012, several additional changes were made to the proposed Regional Plan that were not analyzed in the Final EIS. In fact, changes were made as recently as those found in the 12/5/2012 GB packet (p. 13).⁴⁵ This is explained by TRPA as follows, where it is concluded that the final EIS remains adequate, although it has clearly not analyzed these recent changes.

Document Revisions: On November 14 and 15, 2012, the Regional Plan Update Committee, Advisory Planning Commission and Governing Board considered recommendations to modify various Plan provisions. Proposed modifications were identified in the Staff Summary and Staff Summary Addendum for the November 14, 2012 joint meeting. Following considerable discussion, several modifications to the October 24, 2012 Final Draft Regional Plan and Code were endorsed.

Endorsed modifications are identified in Exhibit I of this Staff Summary. Endorsed modifications are also reflected in the Final Drafts of the Regional Plan and Code, dated December 12, 2012. Updated copies of the Regional Plan and Code are enclosed in digital format and are available at www.TRPA.org.

Modifications that were endorsed by the Governing Board involve the correction, expansion and/or clarification of certain requirements and the identification of additional topics for consideration at a later date. TRPA assessed the potential environmental impacts of these modifications in Exhibit K. As demonstrated in Exhibit K, the changes do not generate new environmental impacts or increase the severity of any adverse impacts associated with the October 24, 2012 Final Draft Documents. As such, the Final EIS remains adequate.

However, because they were not in the draft EIS, and are not analyzed in the final EIS, the public has not been afforded the opportunity to provide comments on these proposals, let alone their environmental impacts. Although the public may now provide verbal or written comment on these changes, because they were added after the draft EIS, there is no provision or expectation that TRPA will make any changes to the EIS as a result of any comments provided. This is yet another example of the failure of TRPA to provide adequate public opportunities for comment and to follow any meaningful process. We provide several examples below.

Drive-Up Windows:

When the draft EIS was released for public comment, there were no changes proposed to the drive-up window prohibition. However, new drive-up windows were banned in the Basin because of their negative impacts to TRPA's air quality thresholds and federal and state CO standards. Thus, if changes to this regulation are proposed, the environmental impacts must be analyzed. However, the EIS not only fails to analyze a change that would allow two new drive-up windows, but the public was also not afforded the

⁴⁵ Additional comments related to the 12/5 staff summary are included in attachment "A6: TASC-FOWS Comments on Dec 5 Staff summary & findings."

opportunity to comment on the analysis of this proposed Code change. Instead, it was added to the Final well after the public comment period.

TRPA's 10/24/2012 staff summary (p. 2-11) states:

The Draft Plan would retain the existing prohibition on new drive-up windows. The Final Draft Plan has been revised to include a pilot program that would allow up to two new drive-up windows, limited to pharmacies, within the City of South Lake Tahoe (Final Draft Code Section 65.1.8.B). The pilot program is intended to improve public safety by allowing elderly and disabled patients to receive medications without having to walk through parking lots in inclement weather. [Emphasis added]

Attachment 5, provided with the Final draft Regional Plan Attachments, includes:

3. Evaluate policies and regulations related to drive-up windows and identify possible amendments to Regional Plan policies and/or the Code of Ordinances (Addressed in part by drive-up pharmacy Pilot Project)

The Code of Ordinances, Final Draft, Tracked Changes, includes the following Code change (p. 65-7):

B. Drive-Up Windows

New drive-up windows are prohibited, except that a pilot program allowing up to two drive-up windows associated with a pharmacy shall be permitted in the City of South Lake Tahoe provided an air quality monitoring plan is submitted to assess the impacts of the drive-up windows.

As stated above, a review of the draft EIS Air Quality analysis, and the final EIS changes, reveals no environmental impact analysis or discussion of this new Code change. At best, the Final EIS explains:

As described in the Draft EIS analysis (pages 3.4-36 through 3.4-38), vehicle congestion at intersections in the Basin would not result in a violation of ambient air quality standards or threshold standards for CO. This analysis includes intersections that would accommodate up to 3,000 vehicles per hour during the peak hour. ... The addition of a drive-up pharmacy window could result in the addition of approximately 30 trips during the peak hour at the affected locations, which is substantially (orders of magnitude) below the levels of congestion experienced at other intersections in the Basin that also do not result in excessive concentrations of CO and would not violate air quality standards.

This paragraph is certainly no substitute for a true environmental analysis. Further, the public was not afforded the opportunity to review how many trips may be generated by such a use, where this estimate came from, etc. Also, as are comments repeatedly note, without monitoring, how can TRPA conclude whether impacts will occur? When the draft EIS was released, there was just one CO monitor in the Basin – at South Stateline, NV. However, the final documents state that NDEP obtained approval from the EPA to remove that monitor – thus leaving no CO monitors in the Lake Tahoe Air Basin. Even with one monitor, impacts at South Stateline could not be said to reflect impacts at the South Tahoe Y, for example, because CO is a “hot spot” pollutant. With no monitors, there is even less logic to TRPA's ‘conclusion.’

Rather, it appears this was a political decision made during Bi-State Agreement negotiations, which were released to the public on 7/25/2012 – notably after comments on the draft EIS documents were due. Although we have also repeatedly expressed our concern with these last minute changes (e.g. see our August 2012 comments to TRPA), and the lack of environmental analysis of these changes, TRPA has stated additional analysis is not required. We also repeatedly requested alternatives be considered that would meet the same stated purpose (alternatives include a delivery program – which we have heard other pharmacies in SLT have enacted – and a drive up and park program as exists at the current Raley’s at the SLT Y store). Both alternatives meet the City’s stated purpose for the drive-up windows: *“to improve public safety by allowing elderly and disabled patients to receive medications without having to walk through parking lots in inclement weather.”*

- However, first, because this change was not included, nor analyzed, in the draft EIS, we did not have the opportunity to comment on the change or to recommend the analysis of alternatives in the final EIS.
- In comments we have made on this proposal *after* the 6/28/2012 due date (since again, it wasn’t presented to the public until after 6/28/2012), TRPA has never responded to our comments, concerns, or recommended alternatives, nor explained why these other options could not also be analyzed.

Finally, TRPA has not provided evidence of any significant demand for these drive-up window services in the Basin. Thus, TRPA both failed to analyze the impacts of this significant change to the Code and failed to provide the public with the opportunity to comment on it in the draft EIS.

Changes to Land Banks

As noted in our comments related to soil conservation and coverage, the proposed RPU will completely change how soils are treated. The RPU and the TER have collectively changed the ‘interpretation’ of the soils thresholds in a way that reduces soil conservation – contrary to the requirements of the Compact (Article II and V, resp.):

(i) “Environmental threshold carrying capacity” means an environmental standard necessary to maintain a significant scenic, recreational, educational, scientific or natural value of the region or to maintain public health and safety within the region. Such standards shall include but not be limited to standards for air quality, water quality, soil conservation, vegetation preservation and noise.

...

(3) A conservation plan for the preservation, development, utilization, and management of the scenic and other natural resources within the basin, including but not limited to soils, shoreline and submerged lands, scenic corridors along transportation routes, open spaces, recreational and historical facilities. [Emphasis added].

The “new” way TRPA views soil appears to be as a mere platform for development, rather than as an integral part of the Basin’s ecosystem. Although TRPA recognizes that coverage on soils creates negative impacts to soils, water quality, air quality, and vegetation, the proposed approach in the RPU does not provide improved protection for soils nor do actions ensure the soil conservation thresholds will be achieved. Quite to the

contrary, the RPU and TER have been carefully maneuvered to magically result in the ability to *increase* coverage in the Basin. This is done in part by allowing “potential coverage” to be transferred from lands it would never have been built on to lands closer to the lake (or “Centers”) where it will be built. This results in a net increase in coverage above and beyond what is currently allowed, yet the EIS has failed to analyze this impact. Further, this places more coverage closer to the Lake where there are fewer opportunities to infiltrate the sediments and nutrients from the water before it eventually reaches Lake Tahoe. TRPA has not demonstrated that the proposed areawide treatment facilities can or will infiltrate the sediments and nutrients from the urban runoff.

Although we have provided extensive comments on the changes to soil conservation throughout these comments and previous comments, we include this discussion because amidst these changes, additional factors have come up which have a direct effect on the soil-related regulations in the proposed RPU, but which have not been analyzed. These include the recent changes to the land banks, including those noted below (introductions to two CTC documents, dated March 15, 2012 and June 20, 2012, are included below).

June 20, 2012 Annual Land Bank Authorization Staff Recommendation

California Tahoe Conservancy

Agenda Item 9

June 20, 2012

**ANNUAL AUTHORIZATION OF LAND BANK ACTIVITIES
AND ALLOCATIONS OF COVERAGE AND OTHER MARKETABLE RIGHTS**

Summary: Staff recommends: (1) approval of allocations of land coverage rights for mitigation projects, public service projects, openmarket transactions, and other marketable rights in 2012; (2) adoption of the Negative Declaration and Addendum and approval of the assignment of restoration credit to Caltrans’ Tahoe City Sand House Project to meet Tahoe Regional Planning Agency permitting requirements; and (3) adoption of a Land Bank Transaction Fee Schedule.

....

California Tahoe Conservancy

Agenda Item 11a

March 15, 2012

ADOPTION OF ASSET LANDS PROGRAM GUIDELINES

Summary: Staff recommends the adoption of Program Guidelines for the sale of asset lands to support Conservancy programs, to recommend up to four properties for potential sale, and to authorize up to \$75,000 towards pre-sale activities.

We also refer to the attached emails from Ann Nichols to various entities (excerpt below; full emails attached),⁴⁶ questioning the land bank programs.

⁴⁶ CTC banked info emails 11.14.2012.doc

FEIS Master Response 3, Basin Wide Coverage-

DEIS/FEIS grossly overestimated total potential coverage in the basin by including potential (non-existent) coverage on parcels owned by State Parks, Forest Service and the California Tahoe Conservancy. Public monies were used to purchase the CTC and Forest Service parcels with the Public's general understanding the parcels would be retired in order to protect the environment; not that the entitlements and coverage would be stripped off and resold or counted as potential future development. As an example is the CTC has received Board approval to sell off "asset lands" (400 parcels proposed) to the Public with development rights and coverage. The CTC is trading 998 acres and 6m sf of potential cvr at Dollar Hill to Ca. State Parks. The DEIS/FEIS conclusion was the basin is currently under-covered by approx. 3,500 acres or 158m sf. This inappropriate baseline using potential coverage from Public Lands was included to justify future excess development in the RPU. Although the CTC and FS has refused to reveal its inventory of potential cvr, we believe it is in the many millions. Soft coverage in SEZ's should just be retired. The definition of soft coverage is too vague; there are no parameters.

The information reveals that the land banks hold millions of square feet of "potential coverage" – which was never built in the first place. So, where the RPU allows a developer to purchase coverage, whether for excess coverage mitigation and/or to increase the coverage in Centers to the proposed 70%, a developer can simply purchase this coverage from the land banks. What this means is that no coverage is being removed and restored anywhere in the Basin, because potential coverage is coverage that was never built. In many cases, according to the new spin on coverage, potential coverage is now including coverage that would simply never have been constructed, period. We again refer to TRPA's own reference to "coverage in Desolation Wilderness" as an example.

Thus, TRPA's premise that the new RPU will increase the transfer of coverage (or "development") from sensitive lands, and restore those lands, and place this coverage in the Centers, is not support by the facts of the programs in place. Instead, the most likely scenario is that developers will purchase vast amounts of coverage from the land banks and use those, along with the extra commodities (or "incentives") provided by TRPA, to increase development in centers – thus creating a net negative impact on soils and water quality.

This is only exacerbated by the proposals to increase opportunities for transferring purported "soft coverage." Although TRPA's Response to comments on this matter includes a lengthy discussion of how soft coverage can create just as many impacts, if not more (erosion), than hard coverage, the response entirely avoids one of the biggest key issues. All hard coverage creates an impact, period. But, not all claimed soft coverage creates an impact. As we saw with measurements at the Homewood Mountain Resort (we refer back to our June comments), lands purported to be soft coverage can still retain high levels of infiltration and support the growth of vegetation. Thus, it is not supported by science to simply label all compacted soils as "soft coverage" that can be transferred and used as hard coverage. Although TRPA uses recent LiDAR data to further estimate soft coverage in the Basin, the LiDAR data merely provides a visual observation of the ground coverage or lack thereof. It does not measure the infiltration value, nor provide detailed enough images or other information to assess the health of the soils, and whether soils can or are supporting the growth of vegetation. In other words, this data must be

‘ground-truthed’ to confirm that the soft coverage seen in the images truly behaves as soft coverage (that it does not adequately infiltrate water or grow vegetation). Further, where compacted soils do have a lower infiltration rate, what would it take to improve them? Would it simply involve mixing in some wood chips or other type of natural mixture to improve infiltration? This has not been examined in the EIS, and instead, TRPA assumes all compact coverage is soft coverage and gives no consideration to what efforts could be taken to improve the soil – instead, the soft coverage is ‘written off’ as a problem and then used to justify more hard coverage closer to the lake. Additional comments on this are included in our comments on the TER.

Further, changes have been made to the land banks in 2012, one of which came out just one week before the deadline for public comments on the draft EIS (June 20, 2012 document from CTC) which may have a significant impact on the claimed benefits of the ‘transfer programs’ in the proposed RPU. These changes to the land banks and the associated impacts to coverage must be analyzed in the EIS.

December 2012 Changes:

The December APC/GB packet was posted for public review on 12/5/2012. The packet includes an extensive amount of information, including new information and changes related to the RPU package items – thus providing the public less than seven days to review this new information, compare it to the RPU documents, prepare comments as appropriate, and attend the 12/12/12 hearing. The revolving, moving-target process of the RPU continues to change up until the very last minute. It is impossible for the public to have ample time to review and assess these changes.⁴⁷

Complex Approval Process:

The RPU process has already been a complex, moving-target of changes and proposals, releasing more changes in the staff summary just seven days before approval. Further, the approval process that is scheduled for the actual hearing, by the APC, the TRPA GB, the TMPO Board, and the CRTPA, adds to the confusing batch of information. The actions as noted in the staff summary (p. 14) include:

⁴⁷ We have done our best to review this material and comment; see Attachment A6.

Approval Actions: In order to approve the coordinated updates to “Regional Plan Documents”, a series of actions must be completed in sequence. Exhibit A lists the recommended motions for each action.

A set of findings/considerations must also be made for each action. The approving ordinances/resolutions and related findings/considerations are provided in separate Exhibits to this Staff Summary, as follows:

- Action 1: Issuance of 2011 Threshold Evaluation (Exhibit B);
- Action 2: Certification of Regional Plan Update Final Environmental Impact Statement (Exhibit C);
- Action 3: Amendment of Environmental Threshold Carrying Capacities (Exhibit D);
- Action 4: Adoption of Regional Plan Update and Code of Ordinances (Exhibit E);
- Action 5: Certification of the Mobility 2035: Regional Transportation Plan and Sustainable Communities Strategy Final Environmental Impact Statement (Exhibit F);
- Action 6: Adoption of Mobility 2035: Regional Transportation Plan and Sustainable Communities Strategy (Exhibit G); and
- Action 7: Submit 208 Plan to California and Nevada Agencies for Approval and Certification (Exhibit H).

Finally, the public is provided with even more documentation to review and digest in less than one week. The new information provided in the December staff summary totals *over 640 pages*.

Exhibits:

- A. Motions for Recommended Actions
- B. Action 1 - Issuance of 2011 Threshold Evaluation
- C. Action 2 - Certification of Regional Plan Update Final Environmental Impact Statement
- D. Action 3 - Amendment of Environmental Threshold Carrying Capacities
- E. Action 4 - Adoption of Regional Plan Update and Code of Ordinances
- F. Action 5 - Certification of the Mobility 2035: Regional Transportation Plan and Sustainable Communities Strategy Final Environmental Impact Statement
- G. Action 6 - Adoption of Mobility 2035: Regional Transportation Plan and Sustainable Communities Strategy
- H. Action 7 - Submit 208 Plan to California and Nevada Agencies for Approval and Certification
- I. November 15, 2012 Governing Board Action Sheet
- J. Additional public comments and responses regarding the Final Draft Regional Plan Documents
- K. Review of November 15, 2012 Governing Board endorsements

Enclosures (digital):

- A. 2011 Final Draft Threshold Evaluation;
- B. Regional Plan Update Final Environmental Impact Statement (FEIS);
- C. Regional Plan: Goals and Policies
- D. Code of Ordinances;
- E. Mobility 2035: Lake Tahoe Regional Transportation Plan and Sustainable Communities Strategy Final Environmental Impact Report/Statement (FEIR/FEIS);
- F. Mobility 2035: Lake Tahoe Regional Transportation Plan and Sustainable Communities Strategy; and
- G. Section 208 Water Quality Management Plan

Documents Incorporated by Reference:

- A. October 24, 2012 TRPA Staff Summary
- B. November 14, 2012 TRPA Staff Summary
- C. November 14, 2012 TRPA Staff Summary Addendum

8. FAILURE TO ADDRESS CUMULATIVE AND REASONABLY FORSEEABLE PROJECTS AND PLANS

Inadequate consideration of Reasonably Foreseeable Impacts

The RPU EIS fails to analyze the cumulative impacts of reasonably foreseeable effects from approved and proposed projects. NEPA and CEQA require an EIS to analyze all reasonably foreseeable impacts and impacts that may be cumulatively considerable. We remind TRPA that these laws have been used as guidance for TRPA's EIS process as well.

NEPA requirements include:⁴⁸

Sec. 1508.7 Cumulative impact.

"Cumulative impact" is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

...

Sec. 1508.8 Effects.

"Effects" include:

- (a) Direct effects, which are caused by the action and occur at the same time and place.
 - (b) Indirect effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.
- Effects and impacts as used in these regulations are synonymous. Effects includes ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative. Effects may also include those resulting from actions which may have both beneficial and detrimental effects, even if on balance the agency believes that the effect will be beneficial.

Sec. 1508.9 Environmental assessment.

"Environmental assessment":

- (a) Means a concise public document for which a Federal agency is responsible that serves to:
 - 1. Briefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact.
 - 2. Aid an agency's compliance with the Act when no environmental impact statement is necessary.
 - 3. Facilitate preparation of a statement when one is necessary.
- (b) Shall include brief discussions of the need for the proposal, of alternatives as required by section 102(2)(E), of the environmental impacts of the proposed action and alternatives, and a listing of agencies and persons consulted.

Sec. 1508.10 Environmental document.

"Environmental document" includes the documents specified in Sec. 1508.9 (environmental assessment), Sec. 1508.11 (environmental impact statement), Sec. 1508.13 (finding of no significant impact), and Sec. 1508.22 (notice of intent).

Sec. 1508.11 Environmental impact statement.

"Environmental impact statement" means a detailed written statement as required by section 102(2)(C) of the Act.

⁴⁸ <http://ceq.hss.doe.gov/nepa/regs/ceq/1508.htm#1508.7>

...

Sec. 1508.27 Significantly.

"Significantly" as used in NEPA requires considerations of both context and intensity:

(a) Context. This means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short- and long-term effects are relevant.

(b) Intensity. This refers to the severity of impact. Responsible officials must bear in mind that more than one agency may make decisions about partial aspects of a major action. The following should be considered in evaluating intensity:

1. Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial.
2. The degree to which the proposed action affects public health or safety.
3. Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.
4. The degree to which the effects on the quality of the human environment are likely to be highly controversial.
5. The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.
6. The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.
7. Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.
8. The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.
9. The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.
10. Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.

[43 FR 56003, Nov. 29, 1978; 44 FR 874, Jan. 3, 1979]

In summary, NEPA requires an environmental impact analysis to identify all reasonably foreseeable impacts, analyze their significance, and address alternatives to the proposed action. 40 C.F.R. §§ 1508.8, 1508.9, 1508.27.

CEQA Guidelines require a mandatory finding of significance for a project with "possible environmental effects which are individually limited but cumulatively considerable." "Cumulatively considerable" means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects." (14 Cal. Code Regs. §15065(c)); *Communities for a Better Environment v. California Resources Agency* (2002) 103 Cal. App. 4th 98, 114; *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal. App.3d 692, 720-721.)

Excerpts from CEQA law⁴⁹ include:

⁴⁹ http://www.ceres.ca.gov/ceqa/guidelines/15350-15387_web.pdf

15355. Cumulative Impacts

"Cumulative impacts" refers to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.

(a) The individual effects may be changes resulting from a single project or a number of separate projects.

(b) The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

Note: Authority cited: Section 21083, Public Resources Code; Reference: Section 21083(b), Public Resources Code; *Whitman v. Board of Supervisors*, 88 Cal. App. 3d 397, *San Franciscans for Reasonable Growth v. City and County of San Francisco* (1984) 151 Cal. App. 3d 61, Formerly Section 15023.5.

15364. Feasible

"Feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.

There are many projects that are anticipated, if not already undergoing public review processes, in and around the Basin, which will have impacts on the environment of the Lake Tahoe Basin.

One of the primary impacts from projects within and around the Basin is the cumulative increase in VMT in the Basin. Projects that will encourage more travel, bring more people to the Basin or near the Basin's boundaries (e.g. Northstar, Squaw Valley), will result in more VMT in the Basin. Regardless of where people stay, they will likely visit the Basin, and driving around the Lake remains a popular activity for tourists. Thus, when projects are proposed that will increase VMT, this means they will also increase water pollution, air pollution, and noise in the Basin. Yet the EIS fails to analyze several very large, notable project proposals that have been reasonably foreseeable since well before the draft EIS was released for public review.

Our June 2012 comments included many questions asking for the analysis of the cumulative impacts of the proposed Plan. Excerpts are included below, with emphasis added on specific questions:

The end result of all of these proposed changes are more buildings, more height, more density, more people, more cars, and more pollution. **The EIS must evaluate the local and cumulative (Basin-wide) impacts of these changes.** This can not be substituted by multiple environmental reviews associated with individual Area Plans, or any Community Plan or PAS updates that would occur under the alternatives.

...

How will the adoption of Area Plans be different? How does TRPA explain the reference that implies the CSLT's May 2011 General Plan will be the Area Plan for that area, even though it was adopted well before the Regional Plan environmental documents, let alone the threshold evaluation, were released for public review? **When will the cumulative, region-wide environmental analysis be done for the proposed Area Plans?** How will these Area Plans differ from community plans? How will the public be involved? Will communities be allowed to decide their own future, or will Counties and Ski Areas make that decision for them, as was done when the Homewood Mountain Resort project was approved in 2012 by Placer County and TRPA.

...

The RPU DEIS fails to analyze the cumulative impacts of construction-related PM10 and PM2.5 emissions

...

However, the DEIS then completely ignores any estimate of construction emissions, which although not 'permanent' in nature, can be significant (consider projects such as the Homewood Mountain Resort which estimates nine years of construction;⁵⁰ the emissions are likely to be very significant – we refer readers to the estimates for the HMR project). Additionally, the cumulative impact of multiple construction projects can be substantial.

...

Also, the development and redevelopment proposed under the alternatives could be substantial. What are the potential cumulative impacts of diesel exposure from the implementation of numerous construction projects at one time? How many haul trucks could result from one project, as well as combined projects, per hour or day, on our confined roadways?

...

The EIS must look at all these coverage changes cumulative, which it fails to do.

...

We suspect, the answer will be: that will be done at the project-scale, etc. However, TRPA's Regional land use policies will increase the number of people in the Basin in numerous locations, so once again, when will the cumulative impacts be addressed? For example, adding more density at South Stateline is expected to increase the number of people traveling along highway 50 from Sacramento to Stateline. Thus, noise impacts would be experienced by all areas along highway 50 from Echo Summit to Stateline. However, if only analyzed at the project level, how will the cumulative impacts on noise in Meyers, for example, be evaluated? If there are projects adding units at South Stateline, off Ski Run Blvd., near Al Tahoe Blvd., and at the Tahoe "Y" – where will the cumulative impacts for all of those projects be analyzed?

...

Cumulative Impacts

Even though projected cumulative development (reasonably foreseen development projects and currently unknown projects) as described is substantial, the cumulative assessment concludes that projects *"may not be approved if they degrade the scenic quality of the Region. Therefore, through compliance with existing regulations, new development and redevelopment in the Region over the life of the Regional Plan Update, including cumulative developmentwould not contribute to or result in a cumulative impact related to scenic quality."*

The assessment begs the question of impacts by relying on compliance with regulatory framework to avoid impacts. Assessment of cumulative impacts in the Draft EIS provides a cursory and general identification of potential scenic quality impacts:

"Regional Plan Update Alternative 3...could result in potentially significant contributions to cumulative scenic quality impacts (Impact 3.9-1). To mitigate for....impacts resulting from three - or four-story buildings in the 12 Town Centers....and from three-six-story buildings in the Regional center, Mitigation Measure 3.9-1a requires compliance with specific findings and performance standards for additional building height. To mitigate for potentially significant scenic impacts resulting from buildings up to 197 feet in the High Density Tourist District....Mitigation Measure 3.9-1b requires achievement of performance standards for any proposed development in the High Density Tourist District.Mitigation Measure 3.0-1c requires amendment of the Code to require that the maximum height of the ground floor segment not exceed 28 feet for stepped buildings on slopes."

The assessment adds nothing new to the impact assessment in the Draft EIS, and for mitigation measures again relies upon the existing regulatory framework to mitigate impacts.

⁵⁰ http://www.trpa.org/documents/CEP/Homewood/FEIS_CHAPTERS/12_HMR_Air_Quality_FEIR_EIS.pdf

TRPA did not respond to our comments. Further, at the time the draft EIS was presented for public consumption, foreseeable projects were not included in Chapter 4's list of Cumulative Projects. TRPA states: "Section 4.3 contains a discussion of the cumulative effects anticipated from implementation of the Regional Plan Update alternatives, together with related plans, programs, and projects described below." But the list does not include known projects that will impact the basin (e.g. the expansion of Squaw Valley and other resorts).

However, the areas that staff thought were ripe for significant changes to the Recreation zoning in the basin were painted blue and were to allow greatly increased development of recreation areas, including the Van Sickle Bi-State Park, all California State Parks (with the exception of D.L. Bliss and Emerald Bay), Edgewood, Heavenly, land above the NW shore of Tahoe, large holdings by the California Tahoe Conservancy, and the Nevada State Park from Spooner to Marlette and along the Hwy 28 south of Incline Village, as indicated on the TRPA's Draft Regional Land Use Map of December 22, 2011. There may also be other projects in the early planning stages that will have significant impacts on Lake Tahoe that are not represented in the list for potential cumulative impacts and have not been included in increased VMT calculations.

As noted below, proposals in the draft Alt. 3 clearly set the stage for some of these projects, without disclosing the intentions. The EIS must analyze the cumulative and reasonably foreseeable impacts within the Lake Tahoe Basin, which most notably will generate increased VMT in the Basin, including those that are associated with large projects outside of the Basin's boundaries. Examples include but are not limited to potential increases to Squaw Valley, Northstar, Alpine Meadows, Mt. Rose Ski Resort, Kirkwood, and Echo Summit Adventure Center.

Cumulative Impacts to the Basin

Cumulative impacts include VMT, noise, air pollution, water pollution, scenic impacts, and other environmental resource impacts in the Basin, and especially in the already congested north shore. These should have been analyzed in the draft EIS, as the maps presented in December included blue sections of zoning (Recreation) at which point Alternative 3 proposed zoning changes to allow additional development in Recreation Resort -zoned areas. Although the Bi-State Agreement limited this to two areas, the WQMP has opened the door for swift approval of a third recreation resort area (discussed further below). Since early consultation on new projects is held behind closed doors, in this critical document, it is important that the cumulative impacts on the basin of each likely project be examined.

The combined and cumulative impacts of the VMT (long term), construction traffic, air quality, water quality, scenic, noise and other impacts from these projects will be significant upon the Basin. Such projects must be evaluated for reasonably foreseeable impacts to the Tahoe Basin. As a result, the EIS for the RPU and the RTP both fail to analyze the immediate impacts of these proposals on VMT, air quality, water quality, noise, and other affected thresholds in the Basin.

Items on the To-Do List (Attachment 5 in RPU EIS):

Attachment 5, aka the “To Do List,” was introduced after the public comment period for the draft EIS had ended. Further, it was not analyzed in the EIS. Items on the To Do List represent significant changes to the RP, and have been changed as recently as the 12/5/2012 GB packet. These items are also reasonably foreseeable actions and must be analyzed in the EIS.

Although we will not call out each list item in these comments, we apply all related comments to the entire Attachment 5. We also include additional comments below.

The Proposed Code states:

3.3.2. Findings for Initial Environmental Checklist

Based on the information submitted in the IEC, and other information known to TRPA, TRPA shall make one of the following findings and take the identified action:

A. The proposed project could not have a significant effect on the environment and a finding of no significant effect shall be prepared in accordance with [Rules of Procedure Section 6.6](#);

B. The proposed project could have a significant effect on the environment but, due to the listed mitigation measures that have been added to the project, the project could have no significant effect on the environment and a mitigated finding of no significant effect shall be prepared in accordance with [Rules of Procedure Section 6.7](#); or

C. The proposed project may have a significant effect on the environment and an environmental impact statement shall be prepared in accordance with this chapter and the [Rules of Procedure, Article 6](#).

P 3-2

Yet Attachment 5, the “To Do List,” proposes the following:

4. Reorganize the Rules of Procedure and incorporate it into the Code of Ordinances.
p. A5-2

We attempted to find what this would entail, but the most recent reference we could find was buried in the RPUC meeting minutes.⁵¹ At that time, this task was noted as number 16. However, no additional information about what these changes would entail was provided, then or now. We note the following statement in the staff summary for the meeting:

REGIONAL PLAN UPDATE COMMITTEE March 1, 2012 Staff Summary (p. 4 of 11)

The working group agreed that the amendments to the "Rules of Procedures" are not time sensitive should be processed separately from the Regional Plan update. The changes are generally organizational in nature, although modifications to compliance provisions are also included. The bundle is nearly 100 pages in length and was determined to contain too much information to include in the RPU package given its length and lesser priority. Instead, the topic is recommended for inclusion in Attachment 1 of the Regional Plan – Preliminary List of Priority Projects.

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http://www.trpa.org/documents/rp_update/Committee/February_2012/7_Attachment%201%20Preliminary%20List%20of%20Priority%20Projects%20w%20cover%20sheet.pdf

It appears that there may be over a 100 pages of changes that would be proposed under this “priority item” that is proposed for adoption in the RPU. Yet the public has not seen these changes. Through adoption as Attachment 5 in the EIS, this is a reasonably foreseeable action that must be discussed and adequately disclosed to the public.

Additional Comments on the Proposed Goals & Policies and Code of Ordinances

As noted previously, we incorporate all comments submitted by Ellie Waller and Ann Nichols on the RPU package. This includes questions and concerns related to specific proposed changes to Code and G&P as highlighted by their comments. Many changes to the Code and G&P are proposed which are confusing, undefined, or do not appear to aid in achievement and maintenance of the thresholds.

Basis for ‘reduced coverage in the most sensitive areas’ is not supported by the facts

The RPU relies heavily on the idea of additional ‘incentives’ promoting the removal of reduction in sensitive areas. However, given the Land Bank system and how it currently operates, and the proposed Code language, the facts simply do not support that this program will work. Rather, developers can easily purchase additional coverage that would not otherwise have been created and use this to increase coverage in the Centers. See our comments on:

- The Land Bank system and changes;
- Soil conservation and coverage;
- Economic Model; and
- All related topics herein.

Basis for reduced VMT and Traffic Congestion is not supported by the facts

VMT Assumptions:

In response to comments regarding the inappropriateness of applying Compact Growth studies from areas such as Southern California to the Lake Tahoe Basin, TRPA provides Master Response 11. In this response, TRPA includes “additional studies” that are purported to support the claimed per capita VMT reductions in the Tahoe Basin, although again, the studies are based on areas and factors not comparable to Tahoe.

For example, Master Response 11 states:

According to *Growing Cooler* (ULI 2007, p. 88), which is a research-based examination of GHG- and VMT reduction approaches in a variety of communities, ten major studies have examined the effects of regional location of land uses on travel. The studies yielded the same general conclusion: infill locations (i.e., community centers) generate substantially lower VMT per capita than rural or suburban settings. In studies that were evaluated, the VMT reduction was shown to vary from 13 to 72 percent, depending on the relative mix of land uses, densities and transportation facilities. Figure 4-21 on page 77 of *Growing Cooler* presents a plot based on several scenario planning studies showing that higher density scenarios are associated with less VMT.

We looked up this study using the reference provided by TRPA for ULI 2007. Although the Figure number appears to be a typo or the page numbers to not match, we still found the information referred to in the response. Of interest is the clear reference to “reallocated” growth. The study has plotted “scenarios” but the scenarios examined VMT growth based on whether the growth occurred in a sprawl pattern versus infill. The important issue here is that the growth was *already going to happen*. This is not the case in Lake Tahoe. The 1987 Plan assumed a cap on growth (we note the Compact requires TRPA to evaluate carrying capacities and maximum population densities). Thus, the question in the Basin is not whether to put 5,000 or 10,000 more people in Tahoe Paradise versus Stateline or Tahoma versus Tahoe City, but whether we should be increasing growth at all, and how many people the Basin can handle and yet achieve and maintain the environmental thresholds. Thus, as with the references we commented on in our comments on the draft EIS and EIR/S documents, this reference does not support TRPA’s assertion that the studies in it ‘support’ VMT reductions from infill, and TRPA has provided no evidence to demonstrate the assertion that this approach will benefit the thresholds.

Figure 3-21 VMT versus Density for 62 Planning Scenarios Relative to the Trend

Source: Bartholomew 2005.

While much VMT reduction may be accounted for by higher densities, the scatter around the regression line in Figure 3.21 suggests that other factors also are at work. Figure 3-22 plots the percent difference in VMT for each planning scenario relative to trend against the percent population growth during the planning period for the metropolitan region as a whole (from base year to target year). Again, a correlation is apparent. The greater the increment of population growth that can be redirected in a planning scenario, the greater the difference in VMT. The growth increment is a function of both planning horizon (the further out, the more growth can be reallocated) and growth rate (the higher the growth rate, the more growth can be reallocated).⁵²

In the next part of the Master Response 11, the following reference is provided. When one examines the study that is referenced, it becomes clear that yet again, this study takes place in very populated areas and is not comparable to the Lake Tahoe Basin. Thus, whether the studies are peer reviewed is, frankly, irrelevant, to whether the studies can demonstrate the benefits will occur in Tahoe. Further, the authors provide many disclaimers regarding other factors that must be considered.

Chapter 1 of *Driving and the Built Environment: The Effects of Compact Development on Motorized Travel, Energy Use, and CO2 Emissions* □□ *Special Report 298* (Transportation Research Board 2009) is also relevant to this discussion. The Transportation Research Board is a national research organization and all of its studies are peer reviewed for accuracy. The special report reached the following key conclusions:

□ **Finding 1:** *Developing more compactly, that is, at higher residential and employment densities, is likely to reduce VMT.*

□ **Finding 2:** *The literature suggests that doubling residential density across a metropolitan area might lower household VMT by about 5 to 12 percent, and perhaps by as much as 25 percent, if coupled with higher employment concentrations, significant public transit improvements, mixed uses, and other supportive demand management measures.*

⁵² http://docs.nrdc.org/cities/files/cit_07092401a.pdf (p. 82).

Regarding Finding 2, we have included text below.⁵³ Of specific interest is the reference to Atlanta and Boston – clearly not comparable in population (current or future per the 1987 Plan and obvious physical limitations). Further, the studies consider Atlanta a “low-density metropolitan area.” This alone should raise red flags about the appropriateness of comparing this study to the Tahoe Basin. The population of Atlanta City, GA, is 432,427,⁵⁴ and the population of the area’s Metropolitan Planning Organization (Atlanta Regional Commission) is 5,077,500.⁵⁵ By comparison, the population of the Lake Tahoe Basin is 54,473 (RPU DEIS, p. 3.12-9); this is also the same population represented by the Tahoe Metropolitan Planning Organization. Thus, the Basin’s population is roughly 12.6% of Atlanta City’s population, and 1.1% of the population represented by the Atlanta MPO. The use of this reference to claim it will work the same way in the Tahoe Basin is not supported.

***Finding 2:** The literature suggests that doubling residential density across a metropolitan area might lower household VMT by about 5 to 12 percent, and perhaps by as much as 25 percent, if coupled with higher employment concentrations, significant public transit improvements, mixed uses, and other supportive demand management measures.*

Studies aimed at isolating the effect of residential density while controlling for sociodemographic and other land use variables consistently find that doubling density is associated with about 5 percent less VMT on average; one rigorous California study finds that VMT is lower by 12 percent. The same body of literature, mainly U.S.-based studies, reports that VMT is lower by an average of 3 to 20 percent when other land use factors that often accompany density, such as mixed uses, good design, and improved accessibility, are accounted for, and suggests further that in some cases these reductions are additive. These studies include changes in density for a range of geographic areas, from census block groups, to census tracts, to neighborhoods.

A higher VMT reduction that the committee uses as an upper bound in its own scenario analyses comes from a single but carefully done statistical analysis of metropolitan development patterns, transit service, and travel behavior. The authors of this analysis interpret its findings by using the following thought experiment. If households in Atlanta, one of the least dense metropolitan areas, were located in an area with the residential population density, concentrated employment, extensive public transit system, and other land use characteristics of the Boston metropolitan area, VMT per household could be lowered by as much as 25 percent. Of course, the urban structure of Atlanta could not literally be converted to that of Boston because of vast differences in topography and historical development patterns. Combining density increases with transit investment, mixed uses, higher parking fees, and other measures, however, could provide the synergies necessary to yield significant reductions in VMT, even in low-density metropolitan areas like Atlanta.

Most of the above studies are subject to a number of shortcomings. For example, many fail to distinguish among different types of density changes (e.g., decreasing lot size versus increasing multifamily housing) or the location of these changes in a region. Relatively few (but including the California study mentioned) attempt to account for self-selection—the tendency of people to locate in areas consistent with their housing and travel preferences. Without doing so, one could not assume, for example, that the typical Atlanta resident who moved to an area with the characteristics of Boston would travel like the typical Boston resident, although both attitudes and behavior are likely to be influenced by the built environment over time. Finally, most studies are cross-sectional, that is, they find an association between higher density and lower VMT at a single point in time but cannot be used to infer cause and effect.

⁵³ http://www.nap.edu/openbook.php?record_id=12747&page=3 (various chapters accessed 11/27/2012)s

⁵⁴ <http://quickfacts.census.gov/qfd/states/13/1304000.html> accessed 11/27/2012

⁵⁵ <http://www.gampo.org/mpos.htm> accessed 11/27/12

The next example in the Master Response states the following, however the link to the reference does not work. We would ask whether the other locations analyzed are located in areas that have snow, and as a result, riding bikes is not always an option for residents (or a desirable one), or for visitors.

As another example, the *Center for Clean Air Policy Transportation Emission Guidebook* (http://www.ccap.org/safe/guidebook/guide_complete.html) attributes a one percent to five percent area-wide reduction in VMT due to the increased use of bicycles, when bicycle routes, trails, and other facilities are improved.

Additional responses refer to the estimated average trip length in TAZ's containing town centers as 6.3 miles versus 9.6 miles.

Some comments asserted that these studies are not valid for the Lake Tahoe Region. Actual traffic data from Lake Tahoe supports the premise that proximity of land uses reduces vehicle trip lengths. Trip lengths in traffic analysis zones (TAZs) were obtained through household travel surveys and used in travel modeling for all alternatives. Some TAZs contain existing town centers, and others represent the more outlying areas with dispersed land uses. The average trip length in TAZs containing town centers is 6.3 miles versus an average trip length of 9.6 miles in outlying TAZs. This indicates a substantial, VMT-reduction benefit of more concentrated land use areas in the Region. Even in town centers that have lower intensity development, such as the Meyers area, locating more development in this town center versus in an outlying area would still have a beneficial impact on VMT, because it would encourage shorter trips and greater use of existing facilities for non-auto travel (e.g., bicycle trails, pedestrian facilities, transit), even if the magnitude of VMT savings is not as great as in more urban town center areas.

Without suggesting whether this is likely or not, we do note the studies referred to are comparing distances of 40-50 miles (see report referenced by TRPA: ULI 2007). Further, the studies are assessing residential populations, not areas which are visited by millions of people each year as the Tahoe Basin is. If there are more residents, and more development drawing more visitors (and more people living within driving distances of the Basin, as the surrounding areas are continuing to grow), then there will be a net increase in VMT. Logic and historical patterns reflect this.

Cumulative Traffic Impacts: Not just from Tahoe

As noted in our comments on cumulative and reasonably foreseeable impacts, the EIS fails to analyze all projects and activities that will have a notable affect on VMT and related parameters in the Tahoe Basin.

Inadequate analysis of Relationship between VMT, Parking, and Population

The RPU package also fails to adequately analyze the maximum population densities in the Basin as well as specific Centers that will result from the proposed Plan. Without this information, it is not possible to estimate the impacts of each alternative to local and regional VMT.⁵⁶ There is also no assessment of parking demand or management in each

⁵⁶ As noted in our comments, VMT impacts more than air quality. Increased VMT also affects water quality through impacts to runoff, sanding operations, the grinding action of tires on particles which make them smaller and more likely to be transported to the lake (and to have a greater impact on clarity),

Center, and how this will affect VMT and traffic patterns. Further, there are no estimates of the population levels required to support public transit in the Basin, or how many residents or visitors will utilize public transit from each center. Further, what are the impacts of seasonal visitation on public transit?

Smart Growth, Density, per-capita VMT, and overall VMT:

Several public comments, including ours, asked whether the areas identified for coverage transfers have enough density or adequate configurations to achieve the purported VMT benefits associated with “densification.”⁵⁷ We also questioned the relevance of the studies referenced in the RTP EIR/S as they were based on locations with completely different populations, configurations, and anticipated future growth when compared to the Tahoe Basin.

In response, TRPA refers readers to Master Response 11, Effectiveness of Community Centers and Transportation Improvements in Reducing VMT, and Master Response 5, Effects of Concentrated Development on Water Quality. Both Master Responses fail to address the detailed comments and questions raised by the public on these topics.

Some comments also questioned whether the positive model results were related to the analysis of just one or two areas in the Basin, i.e. South Stateline. In response, TRPA states:

Due to the policy-level environmental analysis, VMT effects associated with individual Town Centers were not analyzed. Please refer to Master Response 11, Effectiveness of Community Centers and Transportation Improvements in Reducing VMT.

This ‘non-response’ basically begs the question of how the Final EIS can conclude any benefits in VMT. TRPA claims VMT benefits associated with transferring development from outlying areas to the more urban “Town Centers” but if the EIS has not analyzed the VMT impacts of Town Centers, upon what evidence can this conclusion be based?

Economic Model:

TRPA has based the proposed RP on one economic model – that which favors significant development, higher density, and more accommodations for development by large corporations and developers, including large ski corporations. However, there is not adequate evidence to demonstrate this economic model can or will result in the environmental, or economic, results the RPU promises (e.g a boost to the local economy, Tahoe residents, etc.). As noted in our previous comments, TRPA has apparently taken one approach, had one “analysis” performed by one consulting firm, and ‘run with it.’⁵⁸

pavement requirements associated with traffic patterns, and more VMT increases traffic noise. Air quality, nearshore water quality, and noise are all impacts that can be local in nature, thus a Basinwide analysis fails to address these impacts.

⁵⁷ Additionally, TRPA has added a new unit of measurement – per capita VMT – which is not the same as overall VMT per TRPA’s thresholds.

⁵⁸ As discussed in our previous comments, we refer to the BAE analysis, and reiterate comments made by Anthony Kalfus on the draft EIS.

However, there is ample evidence to indicate that the proposed model has resulted in further detriments to communities and increased damage to the environment when applied in other locations.

For example, in the book *“Downhill Slide: Why the Corporate Ski Industry is Bad for Skiing, Ski Towns, and the Environment,”* Hal Clifford carefully and factually documents the same economic “model” that is being promoted by the RPU, including the history of this new ‘development trend’ and how it has devastated other unique mountain communities and their environments. We referred to this book several times in our 6/28/2012 comments to reference the factual account of what this approach has done elsewhere.

But what is being proposed in the RPU – including the very quiet and careful framework that is laid in the WQMP to swiftly approve zoning changes to permit more “resort recreation areas” in the next four years and beyond (discussed below), is contrary to TRPA’s claimed approach of confining development to more urban areas to improve “walkability.” A summary of the book’s contents reads:

“In this impassioned expose, lifelong skier Hal Clifford reveals how publicly traded corporations gained control of America’s most popular winter sport during the 1990’s and how they are gutting ski towns, the natural environment, and skiing itself in a largely futile search for short-term profits.

Chronicling the collision between Wall Street’s demand for unceasing revenue growth and the fragile natural and social environments for small mountain communities, Clifford shows how the modern ski industry promotes its product as environmentally friendly – even invoking the words and images of such environmental icons as Ansel Adams and John Muir – while at the same time creating urban-style problems for mountain villages. He also uncovers the ways in which resorts, much like theme parks, are carefully engineered to separate visitors from their money.

Clifford suggests an alternative to this bleak picture in the return-to-the-roots movement that is now beginning to find its voice in American ski towns from Mammoth Lakes, California, to Stowe, Vermont. He relates the stories of creative business people who are shifting control of the ski business back to the communities that host it.

Hard-hitting and carefully researched, *Downhill Slide* is indispensable reading for anyone who lives in, visits, or cares about what is happening to America’s Alpine communities.”

9. TRPA'S "RESPONSE" TO COMMENTS ON THE DEIS:

TRPA's failure to respond to comments is not only clear when one examines Volume 1 vs. Volume 2 in the final RPU documents, but also when other facts are considered.

Changes to the final EIS total less than 10 pages. The original EIS document extended beyond thousands of pages. This is not surprising as it appears the Final RPU package, including the Final EIS, gives very little serious consideration to information provided in public comments, or to the environmental impacts of the numerous last-minute changes to the Code and G&P that have been made since 6/28.

Further, an evaluation of TRPA's conclusions regarding the adequacy of the DEIS in the Master Responses to Comments basically states that TRPA determined the draft EIS was adequate. Yet little to no explanation is provided other than what appears to be finding new ways to simply assert the DEIS' original analysis was adequate. Below we include excerpts from the Master Responses in Volume 1:⁵⁹

MR #1, p. 3-13

Comments on things other than EIS:

Because the policy comments do not address environmental impacts or the adequacy of the Draft EIS, they are not directly responded to in the Final EIS.

MR #2, p. 3-25

Comments on length of review period for EIS:

The comments on the length of the public review period, in and of themselves, do not raise environmental impact issues or concerns regarding the adequacy, accuracy, or completeness of the analysis in the environmental documents.

MR #3, p. 3-16

Programmatic Coverage Assessment:

TRPA carefully reviewed the Draft EIS analysis and determined it to be adequate as presented.

MR #4, p. 3-25

Consistency and Coordination between the TMDL, 208 Plan, and Regional Plan Requirements:

Notwithstanding, the Draft EIS analysis was carefully reviewed in light of the comments and is determined to be adequate as presented.

MR #5 p. 3- 29

Effects of Concentrated Development on Water Quality

In response to comments, the Draft EIS analysis was carefully reviewed and is determined to be adequate as presented

MR #6 p. 3-33

Effects of Revised Height and Density Allowances on Development Potential

In response to comments, the Draft EIS analysis was carefully reviewed and is determined to be adequate as presented.

⁵⁹ Selected sentences related to the adequacy of the EIS were copied from the full Master Responses.

MR #7 p. 3-34

Effects of Increased Allowable Height on Scenic Resources

In response to comments, the Draft EIS analysis was carefully reviewed and is determined to be adequate as presented.

MR #8 p. 3-38

Feasibility of the Proposed Transferable Development Incentive Program

The Regional Plan Update Draft EIS assumptions were carefully reviewed and determined to be appropriate and realistic as presented.

MR #9 p. 3-42

Consideration of Banked Commodities

In response to comments, TRPA reviewed its assumptions regarding accounting of existing, available, and banked commodities and development rights, and where new, more accurate information has become available, updated those assumptions... The revised estimates indicate a lower level of total potential development than was analyzed in the Draft EIS. Thus, the Draft EIS represents a conservative approach that likely overestimates the potential environmental impacts from development under the Regional Plan Update alternatives.

MR #10 p. 3-47

Development on Recreation-Designated Lands

In response to comments, the Draft EIS analysis was carefully reviewed and—although the Final Draft Plan includes important revisions in response to comments concerning the proposed policy—is determined to be adequate as presented.

MR #11 p. 3-57

Effectiveness of Community Centers and Transportation Improvements in Reducing VMT

In response to comments, the Draft EIS analysis was carefully reviewed and is determined to be adequate as presented.

MR #12 p. 3-62

Relationship between Phased Allocations and Level of Service Significance Criteria

In response to comments, the Regional Plan Update Draft EIS analysis was carefully reviewed and is determined to be adequate as presented.

MR #13 p. 3-64

Programmatic Mitigation Measures and Proper Deferral of Mitigation Details

Based on this guidance, the Regional Plan Update Draft EIS and RTP/SCS Draft EIR/EIS include feasible mitigation that does not constitute improper deferral, also discussed further below.

Circular Responses to Comments:

Our comment, labeled O16-244, states:

Significance Criteria

Significance criteria are identified in the Draft EIS to determine significant adverse effects on scenic resources. These criteria do not include or reference the scenic thresholds, which precisely address requirements that must be met for any project in the Tahoe region. While the new criteria used in the assessment may be suitable for programs or projects in other areas outside of the region, they are not acceptable criteria within the Tahoe region, for which scenic significance criteria are already

established by the scenic thresholds. The criteria listed in the Draft EIS are more general than those in the scenic thresholds, and, as such, are not appropriate for an environmental assessment that purports to evaluate “*likely type, location and scale of development*” of alternatives. These significance criteria highlight the central question at issue: what effect will the Draft RP have on scenic thresholds? Given the level of analysis in the Draft EIS, it is not possible to determine whether or not the effect will be significant, or even if development under the Draft RP could be approved without exceeding scenic quality thresholds. The significance criteria do not address effects on scenic policies of other governmental entities within the Tahoe region, including the US Forest Service, which has a separate set of criteria for scenic management, and state and local governments.

TRPA’s response is listed below.

O16-224

The comment states that the significance criteria used in the Draft EIS (see page 3.9-16) do not include a reference to the scenic thresholds and those that are used are not acceptable criteria within the Tahoe region for determination of significance. For resources that have adopted threshold standards, such as Scenic Resources (Draft EIS Section 3.9), the significance criteria utilized throughout the Draft EIS relate directly to determining the impacts of Regional Plan Update alternatives on the threshold standards. As discussed through the Chapter 3 impact analyses, any impact that would negatively affect threshold attainment and maintenance would be considered significant based on the defined significance criteria. The Scenic Resources significance criteria on Draft EIS page 3.9-16 clearly state that the Regional Plan Update alternatives would result in an adverse effect on scenic resources if it is found to substantially affect the existing views or specific views and views of specific landscape features in TRPA’s scenic resource inventory. The views in the scenic resource inventory are the adopted scenic quality thresholds. Furthermore, these criteria consider the Regional Plan to have a significant adverse effect if it allows development that is incompatible with the scenic values of the region, which directly relates to the community design and scenic threshold travel route ratings thresholds. [Emphasis added].

Other environmental regulations applicable to the resource areas are described throughout Chapter 3 of the Draft EIS. However, the EIS has been prepared in accordance with Article VII of the Tahoe Regional Planning Compact, Chapter 3 of the Code, and Article VI of the TRPA Rules of Procedure. As such, the significance criteria are defined by TRPA to determine compliance with TRPA regulations.

This is one example of a response in the final EIS which appears to ‘talk around’ the question, and/or provide confusing information. The EIS does not provide clear information regarding the significance criteria selected for the analysis. However, the performance standards are noted as the thresholds themselves, and in this example, it appeared that the scenic thresholds were also the significance criteria by which impacts are evaluated, although this remains confusing, and TRPA’s response does not clarify. Rather, it appears to state that the significance criteria used are the threshold standards, but that TRPA has defined the significant criteria, but that they are something other than the thresholds). Additional examples of TRPA’s response to our comments that fail to adequately respond are included in Attachment 5. Due to time constraints, we did not address every individual response to comments in this attachment, but reiterate our comments where they have not been adequately addressed.

RPV EIS findings of significance:

Of the 56 impacts evaluated in the draft EIS (as listed in Summary Table S-2: Summary of Resource Topics/Impacts and Mitigation Measures), all but two impacts were found to

be less than significant (LTS), Beneficial (B),⁶⁰ and/or No Impact (NI). The remaining two include Impact 3.5-1: Increase in GHG emissions, where TRPA notes a finding of “significant and unavoidable” (SU), and Impact 3.14-3: Health Hazards from Vector-borne Diseases, where Alternative 2 would prohibit the continued use of fogging and spraying of pesticides to reduce mosquitoes, thus resulting in a “Significant and Unavoidable” determination for Alternative 2 in this category. In other words, the draft EIS found 96.4% of all impacts to be less than significant or beneficial. This is extremely unrealistic and as noted elsewhere, appears to suggest the document was created to justify what is the foregone conclusion (that the proposed Plan will be adopted).

Further, of the 18 mitigation measures identified in the draft EIS table, at least eight were measures “to be developed within 12 months.” Several other “mitigations” included proposing less development than could be proposed, which is not mitigation. For example, the draft Alternative 3 proposed all Recreation-zoned lands to allow more development (e.g. large resort hotels, ski amenities, etc.). The proposed “mitigation” for this was to limit the number of areas that would be changed. However, the environmental impacts of the change of *any* recreation areas to allow more development were never analyzed. This concept of “ask for more than you want then presumably ‘compromise’ for less” appears to have dictated a great part of the entire RPU process. The end result is a significant increase in development to be approved, changes in zoning that have not been analyzed, regulatory provisions that open the door for even more changes in the future – also without adequate environmental review, and a lack of an adequate range of alternatives in the first place. Each alternative (other than Alt. 1) proposes more development, more people, more VMT, etc., but the apparent “range” is simply in how much “more” will be developed.

Changes to Air Quality Mitigation Fee in Alternative 3

The draft EIS included a measure that would result in reduced overall air quality mitigation fees in Alternative 4. Public comments noted the inadequate evaluation of this impact on air quality, and questioned the deferred ‘mitigation’ associated with it. Yet after the public comment period closed, non-scientific decisions made by the TRPA RPU Committee on 8/14/2012 essentially ‘moved’ this proposed change into the proposed Alternative 3. No analysis of the impacts has been completed. In the Staff Summary and Final EIS (Volume 1), TRPA references a “rough” estimate of the loss in fees, but discounts this by the unsupported claim that the ‘benefits’ of alternative 3 somehow outweigh the loss of these mitigation funds.⁶¹

“The Final Draft Plan extends the time that businesses may be closed from “90 consecutive days in the prior 24 months” to “90 consecutive days in prior 60 months”. The minor loss in air quality mitigation fee revenue is projected to be more than offset by plan amendments that increase the amount of air quality improvement that can be achieved with available fees, including not requiring that coverage be purchased for bicycle and pedestrian trails and allowing mitigation fees to be spent on regional priorities. Further, the more comprehensive reforms to reduce air pollution

⁶⁰ We disagree with the use of this vague term that is not associated with any criteria. It rather appears to be based on opinion of TRPA.

⁶¹ TRPA included additional information on this proposal in the 12/5 staff summary; additional comments are included in attachment 6 and discussed more below.

that are described in this Staff Summary far outweigh any air quality impact from the possible minor reduction in mitigation fee revenue.” (p. 36)

Final EIS, p. 2-14:

□ The fees currently collected from businesses that re□open under the current basis are *very* small (less than \$20,000 over eight years, as compared to over \$3.5 million total air quality mitigation fees collected over the same period, or 0.6 percent). Extending the prior use basis from 2 to 5 years could reduce this proportion of the air quality mitigation fee budget, but even with the very conservative and unlikely assumption of *total* loss, this amount of revenue reduction over a multi□year period, particularly when coupled with the aforementioned features of Alternative 3, would not hinder TRPA’s ability to implement air quality mitigation projects in the Region. A small potential loss of revenue would be more than recovered by the proposed coverage exemption for non□motorized trails. As one example, CTC estimates that the coverage exemption alone will save approximately \$800,000 in costs for one 0.6□mile section of the South Tahoe Greenway Shared Use Trail project (S. Irelan pers. comm., October, 9 2012). These cost savings would be available to construct additional phases of the project or to plan or construct other similar projects, which would result in additional air quality improvements.

Because of these factors, the proposed Code provision to extend the air quality mitigation fee basis from 2 years to 5 years in the Final Draft Plan would not result in any changes to impact conclusions in the Draft EIS for Alternative 3, and no mitigation would be required.

In the previous page, the Final EIS notes that TRPA has done ‘research’ since the draft EIS and determined the estimated costs noted in the section above. How was this research done? What other factors may have affected this? What are the programs that may experience cuts due to reduced mitigation fees, and how does that compare to the increased impacts if a business opens where the previous business generated far fewer trips? The final EIS still fails to adequately assess the impacts of this change, and has failed to provide the public the opportunity to review and comment on TRPA’s “evidence” that the impacts will be less than significant.

-- Resort Recreation Designation

In the draft EIS, we were presented with an Alternative 3 that changed the allowed uses in recreation-zoned areas. This change would have essentially allowed more development (e.g. large buildings with condos, resort hotels, etc.) in areas zoned recreation. This was an unbelievable shift in planning for the Basin, and the claims of the draft EIS that these impacts could be “mitigated” were not supported by anything more than statements that very loose criteria would be adopted. Again, the public was presented with an outrageous proposal that allowed significant new development, but then told our concerns have been resolved because the final proposal is “negotiated down” to just *two* parcels⁶² (for now – and another one in the next four years, per the WQMP). Yet the impacts of this change in zoning were never analyzed in the first place.

Further, as is done throughout the 10/24 staff summary, rather than addressing public comments regarding the inadequacy of the EIS to analyze the impacts of this change, TRPA instead explains the new Plan is ‘better’ because the revised Alternative 3

⁶² Edgewood and Vail parcels, as noted in the Final EIS. The original proposal would have changed allowed uses for dozens of areas around the Basin.

significantly *reduces* the additional development proposed in the draft Alternative 3. Further, TRPA reminds us the Bi-State Committee agreed to this ‘compromise’. Yet, these references and ‘compromises’ are no substitute for an environmental analysis. This appears more of a business strategy – aim higher than desired, and then ‘settle’ for what was really desired all along. Of note is the WQMP, as proposed, would allow a third Resort Recreation Area in the next four years (apparently this is another ‘compromise’ to prevent even more re-zoning, at least for the next four years), and then as of 1/1/2017, apparently it’s free game for more Recreation Resort proposals.

Essential dismissal of threshold-first policies and recommendations by Board members:

In October, Board members Mara Bresnick and Bryon Sher submitted comments on the RP for consideration by the Board.⁶³ These comments made recommendations that echoed many of the ideas the conservation communities have advocated for over the past ten years. The proposed changes included, but are not limited to, the following:

- Revise proposed goals to express support for reducing pollution
- Require more monitoring and tie development approval to this monitoring;
- Require projects monitor to ensure the environmental gains promised are actually being achieved;
- Ensure that BMPs must be installed and implemented on any project unless and until there is a functional areawide treatment system;
- Require adequate performance or security bonds so that if a project is not completed, funds are available to implement BMPs on the site;
- Criteria for determining conformance of Area Plans needs to be included;
- Criteria for ensuring Area Plans provide environmental net gains, and what will be considered a “net gain,” are needed; and
- Where projects are built up to 70% coverage, the remaining 30% of land should be used for infiltration.

This was discussed at the October Board meeting, and staff and Board members decided due to these and other requests, the RPU Committee would be re-convened at the November hearings to consider additional changes.

Although some information regarding the proposals, and responses from staff, was available in the GB packet on 11/7, the public was provided with new information at the 11/14 Board hearing – related to topics that would be discussed *that day*. This was a clear failure to provide the public adequate time to review and assess the board meeting materials, and yet another example of why TASC and FOWS both requested a re-circulation of the EIS.

Unfortunately, most of the pro-threshold recommendations were dismissed by the RPUC, and eventually, a majority of the full Board. Reasons given vary, but for the most part suggested a lack of understanding among many members of the Board and others regarding TRPA’s responsibilities under the Compact.⁶⁴

⁶³ Comments are included in the November 14th Board Packet (provided on 11/14).

⁶⁴ Examples can be found in the minutes included in the December Board packet (for the November hearings).

- Revise proposed goals to express support for reducing pollution
 - o Examples provided for this recommendation include changing terms such as a project “will not impair” threshold attainment, or will “encourage” an activity that may reduce pollution, to terms that promote better protection (e.g. “reduce” the pollution). Most members of the RPUC were concerned with how this could negatively affect developers and felt that it could hinder economic growth in the region. Very few comments were raised addressing the original concern – protecting public health. Other RPUC members complained that they had been through every single word of the Code and did not want to revisit the proposed changes. This is of interest because it also indicates a “decision” was made regarding the proposed alternative before the EIS was completed or provided for public review (the RPUC met in 2011 and early 2012).
- Require more monitoring and tie development approval to this monitoring;
 - o In response to this, several Board members expressed concern about committing to implementing adequate monitoring, and other expressed concern about the costs to developers, delayed RPU approval, etc. There was little discussion that the Compact requires thresholds be achieved and maintained – and development must be consistent with this. Tying approvals for development to measured threshold conditions is necessary to meet the Compact’s requirements. Instead, this was dismissed due to concerns about the cost and the potential “delay” in RPU adoption. We also note that we clarified our interest in seeing monitoring on the ground first, before more significant development is allowed. TRPA’s Executive Director presented an outline of future monitoring plans and activities at the 11/15 meeting, however, this again did not address our concerns that monitoring be implemented before development, and that approvals of development be based upon measured results.
 - o We also reminded TRPA that we requested alternative methods for collecting monitoring funds be considered in the RPU alternatives and yet no other programs were considered.
- Require projects monitor to ensure the environmental gains promised are actually being achieved;
 - o Most Board members did not support this requirement, proclaiming costs and other economic concerns.
- Ensure that BMPs must be installed and implemented on any project unless and until there is a functional areawide treatment system;
 - o Although it took two days and extensive discussion, some changes were made to reflect this recommendation. However, the proposed Code language still fails to identify how the functionality of an areawide treatment system will be assessed and ‘confirmed’ before projects can rely on it for meeting stormwater runoff requirements.
- Require adequate performance or security bonds so that if a project is not completed, funds are available to implement BMPs on the site;
 - o This recommendation would provide security where projects are initiated but not completed, as there would be funds available to remediate the

parcel, or contain it so it does not generate stormwater runoff. There are ample examples of properties that remained uncompleted for years, creating environmental impacts in the meantime. Some were raised during the GB hearing. However, most board members dismissed this idea over economic concerns about developer cost.

- Criteria for determining conformance of Area Plans needs to be included;
 - o TRPA has not proposed language beyond vague requirements regarding how it will assess whether an Area Plan is in conformance with the Regional Plan. This suggestion was aimed at providing more detailed criteria, but was not approved by the majority of the Board.
- Criteria for ensuring Area Plans provide environmental net gains, and what will be considered a “net gain,” are needed; and
 - o This is another recommendation which reflects TRPA’s role – threshold achievement and maintenance first. Although for years the term “net environmental gain” has been tossed around and used by TRPA, especially as part of the CEP program, what it meant then, and what it means now, remains undefined. A “net” change in anything can be one unit. For example, a net increase in pay could literally be one cent and it would still technically be a “net” increase. Therefore, we agree there must be clear information to assess whether a project provides adequate ‘net gain’ for the environment. We would expect this would be desired by project applicants as well, so that the conditions they must meet are clear from the start. This was also dismissed by most of the Board.
- Where projects are built up to 70% coverage, the remaining 30% of land should be used for infiltration.
 - o The proposed plan allows up to 70% coverage in Town Centers. This recommendation aimed to ensure the remaining 30% be used for infiltration. A majority of the Board did not agree.

The 11/14 staff summary provided to the public the morning of the 11/14 meeting includes staff’s interpretations of these recommendations, along with lengthy lists of “considerations” and other information related to the recommendations. There is a general tenure in the staff’s comments that indicates an underlying opposition to many of the recommendations. For example, just as TRPA often responded to our comments with revised assertions to ‘trust TRPA’, the same is done in the staff summary. Ms. Bresnick clearly explained why she recommended criteria for Area Plan conformance and environmental net gain to be considered. In TRPA’s staff summary, it notes that (p. 9 of 13):

- Policies LU-4.9 and LU-4.10 list specific requirements for any Area Plan that contains a Town Center or the Regional Center (LU-4.9), or the High Density Tourist District (LU-4.10). Threshold gain is a question of fact that can be applied only in the context of the specific decision being considered. Threshold gain for an Area Plan may differ from threshold gain for a specific project or for different types of projects. Any proposed Area Plan must demonstrate how it is in conformance with all requirements listed in these policies. [Emphasis added].

The request included identifying the criteria for how conformance would be demonstrated. Stating that the Area Plan must demonstrate conformance does not address the question of what criteria will be used to demonstrate conformance..

...The Governing Board would review the proposed Area Plan along with all pertinent information including the environmental documentation, findings, and staff and APC recommendations to determine whether the proposed Area Plan meets the requirements listed in policies LU-4.9 and LU-4.10. [Emphasis added].

This also does not address the question. LU-4.9 and LU-4.10 read as follows:

	<p><u>8. Identify facilities and implementation measures to enhance pedestrian, bicycling and transit opportunities along with other opportunities to reduce automobile dependency.</u></p>
	<p><u>LU-4.9 IN ORDER TO BE FOUND IN CONFORMANCE WITH THE REGIONAL PLAN, ALL AREA PLANS THAT INCLUDE TOWN CENTERS OR THE REGIONAL CENTER SHALL INCLUDE POLICIES, ORDINANCES AND OTHER IMPLEMENTATION MEASURES TO:</u></p> <ol style="list-style-type: none"><u>1. Address all requirements of Policy LU-4.8.</u><u>2. Include building and site design standards that reflect the unique character of each area, respond to local design issues and consider ridgeline and viewshed protection.</u><u>3. Promote walking, bicycling, transit use and shared parking in town centers and the Regional Center, which at a minimum shall include continuous sidewalks or other pedestrian paths and bicycle facilities along both sides of all highways within town centers and the Regional Center, and to other major activity centers.</u><u>4. Use standards within town centers and the Regional Center addressing the form of development and requiring that projects promote pedestrian activity and transit use.</u><u>5. Ensure adequate capacity for redevelopment and transfers of development rights into town centers and the Regional Center.</u><u>6. Identify an integrated community strategy for coverage reduction and enhanced stormwater management.</u><u>7. Demonstrate that all development activity within town centers and the Regional Center will provide threshold gain, including but not limited to measurable improvements in water quality.</u> <p><u>LU-4.10 IN ORDER TO BE FOUND IN CONFORMANCE WITH THE REGIONAL PLAN, AREA PLANS THAT INCLUDE THE HIGH DENSITY TOURIST DISTRICT SHALL INCLUDE POLICIES, ORDINANCES AND OTHER IMPLEMENTATION MEASURES TO:</u></p> <ol style="list-style-type: none"><u>1. Address all requirements of Policies LU-4.8 and LU-4.9.</u><u>2. Include building and site design standards that substantially enhance the appearance of existing buildings in the High Density Tourist District.</u><u>3. Provide pedestrian, bicycle and transit facilities connecting the High Density Tourist District with other regional attractions.</u><u>4. Demonstrate that all development activity within the High Density Tourist District will provide threshold gain, including but not limited to measurable improvements in water quality. If necessary to achieve threshold gain, off-site improvements may be additionally required.</u>

These are rather vague requirements, and also contain very passive language that merely ‘suggests’ but does not require (e.g. consider, reflect, promote). Also, as noted below, TRPA has not defined how it will be “demonstrated” that activity will provide threshold gain, nor what ‘threshold gain’ will be defined as, or what “unit” of ‘net’ gain is required.

Examination of the Code reveals similar problems:

Approval of Area Plan by TRPA

For Area Plans initiated and approved by a lead agency other than TRPA, the Area Plan shall be submitted to and reviewed by the TRPA Governing Board at a public hearing. Public comment shall be limited to consideration of issues raised by the public before the Advisory Planning Commission and issues raised by the Governing Board. The TRPA Governing Board shall make a finding that the Area Plan, including all zoning and development Codes that are part of the Area Plan, is consistent with and furthers the goals and policies of the Regional Plan. This finding shall be referred to as a finding of conformance and shall be subject to the same voting requirements as approval of a Regional Plan amendment.

Findings of Conformance with the Regional Plan

In making the general finding of conformance, the TRPA Governing Board shall make the general findings applicable to all amendments to the Regional Plan and Code set forth in Sections 4.5 and 4.6, and also the following specific review standards:

A. General Review Standards for All Area Plans

The submitted Area Plan shall:

1. Identify all zoning designations, allowed land uses, and development standards throughout the plan area;
2. Be consistent with all applicable Regional Plan Policies, including but not limited to the regional growth management system, development allocations and coverage requirements;
3. Demonstrate how the Area Plan is consistent with the Conceptual Regional Land Use Map, including any amendments to the Conceptual Regional Land Use Map that are proposed to be part of the Area Plan in order to more effectively implement the Regional Plan Policies and provide Threshold gain;
4. Recognize and support planned, new, or enhanced Environmental Improvement Projects. Area Plans may also recommend enhancements to planned, new, or enhanced Environmental Improvement Projects as part of an integrated plan to comply with Regional Plan Policies and provide Threshold gain;
5. Promote environmentally beneficial redevelopment and revitalization within Centers;
6. Preserve the character of established residential areas outside of Centers, while seeking opportunities for environmental improvements within residential areas;

within residential areas:

7. Protect and direct development away from Stream Environment Zones and other sensitive areas, while seeking opportunities for environmental improvements within sensitive areas. Development may be allowed in Disturbed Stream Environment zones within Centers only

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CHAPTER 13: AREA PLANS

13.6 Conformity Review Procedures for Area Plans

13.6.5 Findings of Conformance with the Regional Plan

if allowed development reduces coverage and enhances natural systems within the Stream Environment Zone; and

8. Identify facilities and implementation measures to enhance pedestrian, bicycling and transit opportunities along with other opportunities to reduce automobile dependency.

B. TRPA Utilization of Load Reduction Plans

TRPA shall utilize the load reduction plans for all registered catchments or TRPA default standards when there are no registered catchments, in the conformance review of Area Plans.

C. Additional Review Standards for Area Plans with Town Centers or Regional Centers

In addition to the requirements of subparagraphs A and B above, submitted Area Plans that contain Town Centers or the Regional Centers shall include policies, ordinances, and other implementation measures to:

1. Include building and site design standards that reflect the unique character of each area, respond to local design issues, and consider ridge line and watershed protection;
2. Promote walking, bicycling, transit use, and shared parking in Town Centers and the Regional Centers, which at a minimum shall include continuous sidewalks or other pedestrian paths and bicycle facilities along both sides of all highways within Town eCenters and the Regional eCenters, and to other major activity centers;
3. Use standards within Town Centers or the Regional Centers addressing the form of development and requiring that projects promote pedestrian activity and transit use;
4. Ensure adequate capacity for redevelopment and transfers of development rights into Town Centers and the Regional Centers;
5. Identify an integrated community strategy for coverage reduction and enhanced stormwater management; and
6. Demonstrate that all development activity within Town Centers and the Regional Centers will provide for or not interfere with Threshold gain, including but not limited to measurable improvements in water quality.

The Code also fails to define how things will be ‘determined’ and what criteria will be used for assessing ‘environmental or threshold gain.’

- Threshold gain is generally intended to mean improving environmental conditions in a manner that would accelerate the attainment of one or more Threshold Standards that are not in attainment, and/or improve the likelihood that one or more Threshold Standards that are already in attainment will be maintained into the future. [Emphasis added].

This also does not respond to the question. Ms. Bresnick asked for criteria that would define what is considered threshold gain. If a project reduces stormwater runoff by 1%, is that enough “gain?” Or will 10% be required? How will this be determined? These questions have been asked by members of the public among multiple stakeholder groups, including conservation groups and those representing development interests, since the CEP was introduced in 2007, and the questions still have not been completely answered. Simply reasserting there will be a “net gain” does not address the question of *how* this will be determined and demonstrated.

Additional Comments:

VMT and Roadway Infrastructure:

Our comments raised concerns that even without adding any more development to the Basin, VMT will eventually rise. As detailed in our comments, numerous factors unrelated to local development have resulted in reduced VMT in the Basin. As noted, peer review comments on the draft TER also suggest TRPA consider the VMT reduction ‘temporary’ and to therefore leave ‘room’ in the environmental impacts to accommodate the impacts when VMT eventually increases. Unfortunately, TRPA fails to respond to our question, instead creating a response tangent to the issue at hand:

The comment states that the infrastructure that existed in 1981 is still in place, and that this infrastructure had sufficient capacity to enable VMT to increase by 30 percent from 1981 to 1999. This comment is noted, along with a clarifying statement that growth in VMT, absent any major capacity enhancing infrastructure improvements, is typically caused by new land use development and not simply available roadway capacity. As noted in Response to Comment O16–173, the available capacity of the roadway system during off-peak hours, does not by itself, generate new VMT. Also see discussion above on proper use of baseline year.

Comments were not related to off-peak hours, but rather VMT levels in general, which are based on an average annual daily vehicle miles traveled modeled for a non-weekend day in August. As clearly explained in the comments, although VMT has decreased in recent years, the roadway infrastructure, buildings, homes, etc., still exist. Although in other locations, new land development may be the primary driver of increased VMT, in Tahoe’s tourism-based economy, where millions of visitors live just a few hours’ drive away, VMT will be affected by numerous other factors (e.g. nationwide economy, gas prices, etc.) unrelated to development in the Basin.

Location of Development and VMT:

Several comments asked about the environmental impacts of transferring development rights from properties that would never have been developed in the first place to the proposed town centers. The final EIS claims that incentives will result in the transfer of such rights from ‘undevelopable’ parcels in outlying areas to urban centers, and that this

will provide a net reduction in VMT. We note the incentives, however, add to the transferred development so that what would have been one unit becomes, for example, becomes three, thus causing a net increase in units (people and VMT). The issue is if the original parcel would never have been developed for other reasons, and therefore, VMT would never have been generated, then how can there not be a net increase in VMT associated with the use of the development right plus additional units from the “recharge” of the proposed Plan? Comments also ask how the transportation model takes this net increase into account.

However, TRPA appears to misunderstand these questions. For example, responses include the following statements:

In response to the second point, the travel model does not assume that residential units would be constructed on parcels that are not developable. In the model, residential units are only distributed to parcels with a developable IPES score. Alternative 3 assumes that, because of transfer incentives, a relatively high proportion of development rights associated with undevelopable parcels would be available for transfer to Town Centers. The reduced VMT associated with Alternative 3 (compared to Alternatives 1, 2, 4, and 5) results from a higher number of residential units being placed in Town Centers, rather than in outlying areas. No Regional Plan Update alternative assumes that development would be allowed on parcels in stream environment zones (SEZ) or otherwise undevelopable areas.

This response makes no sense. If the travel model assumes these outlying parcels will never be developed, then how can there be a net reduction in the VMT that would never have been generated from a new home in a rural, outlying area in the first place? If anything, such a transfer of one unit might be neutral, or depending on circumstances, could result in less per capita VMT from that particular unit, but there’s no evidence to support the claim of any ‘benefits.’

Second, the statement “results from a higher number of residential units being placed in Town Centers, rather than in outlying areas...” is misleading. As TRPA states earlier in the response, the units would never have been built on these undevelopable parcels in the first place, so it is incorrect to state that homes are being built in Town Centers “rather than” in outlying areas.

In another response, TRPA answers a question about development rights with references to development allocations, which are different. The question states:

How many of the existing “development rights” are associated with parcels that would not be built on regardless?¹⁵³ Whether they are too steep, too wet, etc., such that a person would not want to build on them, regardless of whether it would be allowed. This would affect the analysis of future VMT. (Vol. 2, p. 3-365).

TRPA’s response states:

The comment questions how many of the existing development rights are associated with parcels that would not be built on regardless, due to them being inappropriate for development. The EIS takes a “worst case scenario” approach of assuming all development rights that receive allocations would be developed. Also, the model does not assume in any Alternative that residential units will

be constructed on parcels that are not developable. Please see Response to Comment A15-18. (Vol. 1, p. 3-293)

However, as TRPA has made the point that there will be ‘less per capita’ VMT if units are built in town centers instead of outlying areas, where did TRPA place the ‘maximum development rights that receive allocations’ when modeling the impacts? In the model, were these allocations built in outlying areas – where development could never be built regardless, or were they assumed built in Town Centers? The response does not address the actual question.

Failure to Use Best Available Science

Failure to consider scientific recommendations related to seasonal impacts of activities on thresholds

Comments note the seasonal differences in impacts from human activities on environmental thresholds. For example, our comments noted findings by TERC that reflect significant differences in seasonal lake clarity, including deep water and nearshore conditions. This would suggest pollutants should be evaluated on a seasonal basis as well, since one unit of a pollutant (e.g. gram, mL, etc.) may have a greater negative impact during one season versus another. Impacts to deep lake clarity may also be different, but less apparent when the mid-lake secchi depth is reported. We also provided examples with regards to air quality. For example, CO emissions have a greater impact in the winter months due to thermal inversions that trap pollutants at the surface. Our comments noted that although VMT is based on a non-weekend day in August, TRPA should also consider seasonal impacts of additional development. For example, what will the impacts be from increased winter-time VMT associated with the proposed ski resort expansions in the RPU (and including the TRPA-approved Homewood Mountain Resort)?

Unfortunately, the responses again avoid directly answering many of our questions, and neglect to address the evidence our comments provided regarding seasonal impacts. Responses instead seem to simply ‘explain’ why TRPA relies on VMT from a non-weekend day in August, which does not address the concerns we raised. (Volume 1, p. 3-294).

Where TRPA proposes a specific change in the Regional Plan, would that change not be subject to environmental analysis in the RPU EIS?

The RTP/SCS Draft EIR/EIS examines environmental impacts of the waterborne transit project in a programmatic manner regarding effects that can be discussed without undue speculation. Many environmental impacts cannot be discerned until further planning and conceptual design are developed. These issues will be addressed in the project-level environmental review.

Inadequate pollutant source evaluation:

As noted in our comments, available evidence suggests the impacts of watercraft emissions and aircraft emissions on air quality in the LTAB could be significant.

However, the draft and final EIS documents discount TRPA's own estimates of watercraft emissions.

The comment questions the baseline assessment of watercraft emissions. The 2011 Threshold Evaluation Report serves as the baseline for TRPA threshold standards, including for air quality impacts. The contribution of emissions from recreational watercraft is included in the air quality monitoring data used to determine attainment of TRPA thresholds in the 2011 Threshold Evaluation. Thus, emissions from recreational watercraft are included in the baseline.

Further, we noted the numerous environmental impacts of the Lake Tahoe Airport and the need to address the impacts to thresholds, especially given the City of South Lake Tahoe's 2011 General Plan proposes increased airport use (we note the source of this information in our June comments). Instead, the response to comments asserts no increases in aircraft usage, and further, states TRPA is not required to consider the emissions from aircraft using the SLT Airport.

"...There is no adopted guidance by TRPA or any other applicable agency that requires aircraft-related GHG or other air pollutant emissions in an environmental analysis of a Plan such as the Regional Plan Update. ..." (Vol. 1, p. 3-297).

So far as we know, NO_x, ROG_s, particulate matter, and other harmful emissions from an aircraft engine impact people's health just as emissions from the tailpipe of a car, thus is assertion makes no sense. The Compact requires TRPA to protect human health, including from air pollution. The Compact does not exempt aircraft emissions or watercraft emissions from this requirement.

Loopholes – No End in Sight

There are many significant proposals among the Code, G&P, Attachments, EIS documents, TER, proposed 208 WQMP, and RTP documents that collectively create numerous loopholes in the regulation of development in the Basin. Worse yet, most of these loopholes were not available, or even traceable, by the public until well after the public comment period on the draft EIS and TER documents. Although some were raised in subsequent public meetings, others have not been discussed in public forums and are essentially buried in the documents. Examples include, but are not limited to, the following.

Coverage and the Land Banks:

As discussed previously, the proposed transfer program and changes in coverage regulations, along with proposed "To Do" list items, will inevitably result in an almost unlimited supply of coverage available for purchase by developers. Through acquisitions by the CA and NV land banks, millions of square feet of coverage are available for purchase – thus removing the incentive to truly transfer and restore coverage on sensitive parcels (one of TRPA's main "reasons" for the coverage transfer programs). Thus, a significant amount of the proposed development, including the additional coverage in

“Centers”⁶⁵ compared to existing coverage, can simply be “purchased” from the land banks. The result of this situation would be a failure to provide any on-the-ground benefits compared to existing conditions. Although the land banks were originally established to purchase sensitive lands to protect them from development, many of the lands purchased would never have been developed in the first place for a variety of reasons. This is discussed elsewhere, but further reiterates this loophole that allows a net increase in coverage in the Basin, and in sensitive areas, contrary to the threshold requirements.

Further, although somewhat restricted to the same HRA’s by the 10/24/2012 RPU language, there are exceptions that do allow coverage to be transferred across HRAs. These exceptions further accommodate increases in development, as they make it far easier to buy the cheapest coverage, rather than implement on the ground restoration and improvement. Taken with the “new” soils and coverage information that magically results in “more coverage” available for development in the Basin (discussed elsewhere in our comments), these changes create a significant increase in coverage in the Basin, which evidence indicates will result in significant increases in environmental impacts across numerous threshold areas.

The following sections, with one exception, were proposed for deletion in the 4/25/2012 draft Code, but have been included in the 10/24/2012. However, the sentence underlined below was not marked in any way to show that it was different from the 4/25 language: see the last sentence under section E below:

30.4.3.E. Hydrologically Related Area Transfer Limitation

For all land coverage transfers, the receiving parcel and the sending parcel shall be in the same hydrologically related area. The hydrologically related area boundaries are depicted upon the TRPA Plan Area Overlays and are incorporated herein. Transfer across said boundaries is prohibited. See, however, subparagraph 30.5.3.B for requirements regarding off-site restoration credits that may used in different hydrologically related areas. [Emphasis added]

F. Inadequate Supply of Land Coverage

If TRPA, after conducting a review of the cost of land coverage available at the land bank, finds there is an inadequate supply of hard land coverage for commercial or tourist accommodation uses at a reasonable cost within a given hydrologically related area, TRPA may authorize an increase in the supply of land coverage for transfer in the order of priority set forth below. In determining “reasonable cost,” TRPA shall consider: whether there is no market for the coverage due to its cost, limited supply or simple absence of transactions; and other pertinent factors. Prior to authorizing an increase in supply of land coverage, TRPA also shall consider the effect of the increase on the inventory in the land bank and the value of investments made by the bank in hard or soft land coverage. If TRPA authorizes an increase in the supply of land coverage, it shall do so in the following order of priority:

1. Existing soft coverage as described in the definition of “land coverage.”
2. Unused base coverage, referred to in the Goals and Policies as “potential coverage.”
3. Through redefinition of the boundaries of the hydrologically related area to increase the supply of coverage.

Referenced above:

⁶⁵ Which as noted by TRPA’s attached Regional Plan Maps, EIS Exhibit E, varies from ### to ### % among the different areas that would become “Centers”.

30.5.3. Restoration Credit Requirements

The following requirements apply to restoration:

A. The restoration requirements of subparagraphs 30.4.3.B.5 and 30.5.1.B.5, may be accomplished onsite and/or offsite by the applicant or another agency approved by TRPA. Such restoration requirements shall be in lieu of any land coverage transfer requirement or water quality mitigation fee pursuant to Chapter 60: *Water Quality*.

B. Only land that has been disturbed or consists of hard or soft land coverage shall be eligible for restoration credit. Restoration shall result in the area functioning in a natural state and shall include provisions for permanent protection from further disturbance. Lands disturbed by the project and then restored shall not be eligible for credit. Provisions for permanent protection from further disturbance shall include, but are not limited to, recordation by the owner of deed restrictions or other covenants running with the land on a form approved by TRPA, against parcels in private ownership, permanently assuring that the restoration requirements of subparagraphs 30.4.3.B.5 or 30.5.1.B.5 are satisfied, as applicable. On public lands, TRPA shall obtain appropriate assurance from the public agency that the requirements of subparagraph 30.4.3.B.5 or 30.5.1.B.5, as applicable, are met. ~~See subparagraph 1.1.1.A regarding prohibitions on transfers of land coverage to different hydrological related areas.~~

B. Excess Land Coverage Mitigation Program Options

In the event land coverage reduction is required, the applicant may choose any of the following options, or combinations thereof, to comply with the requirements of this section.

1. Reduce Land Coverage Onsite

Coverage may be reduced onsite as part of the project approval. Land subject to reductions shall be restored pursuant to subsection 30.5.3.

2. Reduce Land Coverage Offsite

Coverage may be reduced offsite as part of the project approval. ~~The land upon which the coverage is reduced shall be in the same hydrologically related area as the project.~~ Coverage may be reduced in a different hydrologically related area provided the restoration occurs on more sensitive land than the project area. Land subject to reductions shall be restored pursuant to subsection 30.5.3.

3. Land Coverage Mitigation Fee

A land coverage mitigation fee may be paid to TRPA in lieu of reducing land coverage pursuant to subparagraphs 1 or 2 above. The fee may be used outside of the hydrological related area from which it is collected

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CHAPTER 30: LAND COVERAGE

30.6 Excess Land Coverage Mitigation Program

30.6.1 Implementation of Program

to achieve more strategic environmental benefits. The fee shall be forwarded by TRPA to a land bank to provide land coverage reduction. The nonrefundable fee shall be calculated pursuant to subparagraph 30.6.1.C.

The proposed changes to the Excess Land Coverage Mitigation Program also increase the situations where coverage mitigation can occur in different HRAs. This is not adequately analyzed in the EIS, nor are there any criteria which determine whether “more strategic environmental benefits” will be achieved (or what criteria demonstrate “more strategic

environmental benefits”). Thus, this is yet another Code change that results in transfers across HRAs, which combined with the land banks and other transfer programs, essentially opens more loopholes for more development. Worse yet, ongoing research continues to reflect the need to examine localized conditions (e.g. near shore conditions), however the RP, in proposing a more *Regional policy-level approach* to planning, proposes even less consideration of localized impacts at a time when science indicates they must be considered even more.

Changes to the proposed Goals and Policies also result in more ways to transfer across HRAs.

LU-2.11 THE ALLOWED COVERAGE IN POLICY 4 LU-2.10 MAY BE INCREASED BY TRANSFER OF LAND COVERAGE **WITHIN HYDROLOGICALLY RELATED AREAS** UP TO THE LIMITS AS SET FORTH IN **A, B, C, D, AND E** OF THIS POLICY:

SPECIAL PROVISIONS FOR ADDITIONAL COVERAGE, SUCH AS EXCEPTIONALLY LONG DRIVEWAYS, **PERVIOUS COVERAGE**, **PUBLIC TRAILS** AND **HANDICAPPED ACCESS FOR THE DISABLED**, MAY ALSO BE ALLOWED. ORDINANCES SHALL SPECIFICALLY LIMIT AND DEFINE THESE PROGRAMS.

LU-2.44 LAND COVERAGE MAY BE TRANSFERRED THROUGH PROGRAMS THAT ARE FURTHER DESCRIBED IN **THE GOAL #3 OF THE (DEVELOPMENT AND IMPLEMENTATION PRIORITIES) SUBELEMENT**.

The intent of the land coverage transfer programs is to allow greater flexibility in the placement of land coverage ~~within hydrologically related areas~~. Such programs include the use of land banks, lot consolidation, land coverage restoration programs, and transfer programs based on the calculation of land coverage on non-contiguous parcels ~~located in hydrologically related areas~~. The coverage transfer programs allow for coverage over base coverage to be permitted and still be consistent with the soils threshold and Goal ~~#3~~ LU-2 of this Subelement.

A. Single Family Residential: The maximum land coverage allowed (Base + Transfer) on a parcel through a transfer program shall be as set forth below:

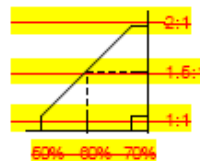
<u>Parcel Size (Square Feet)</u>	<u>Land Coverage</u>
0 - 4,000	Base Land Coverage as Set Forth in Policy <u>LU-2.10</u>
4,001 - 9,000	1,800 sq. ft.
<u>Parcel Size (Square Feet)</u>	<u>Land Coverage</u>
9,001 - 14,000	20 percent
14,001 - 16,000	2,900 sq. ft.
16,001 - 20,000	3,000 sq. ft.
20,001 - 25,000	3,100 sq. ft.
25,001 - 30,000	3,200 sq. ft.
30,001 - 40,000	3,300 sq. ft.
40,001 - 50,000	3,400 sq. ft.
50,001 - 70,000	3,500 sq. ft.
70,001 - 90,000	3,600 sq. ft.
90,001 - 120,000	3,700 sq. ft.
120,001 - 150,000	3,800 sq. ft.
150,001 - 200,000	3,900 sq. ft.
200,001 - 400,000	4,000 sq. ft.

For lots in planned unit developments, the maximum coverage allowed (Base + Transfer) shall be up to 100 percent of the proposed building envelope but shall not exceed 2,500 square feet. Lots in subdivisions with TRPA-approved transfer programs may be permitted the coverage specified by that approval.

B. Facilities in Centers: Except as provided in Subsections A, F, I, J and K of this Policy, the maximum coverage (Base + Transfer) allowed on a parcel through a transfer program shall be 70 percent of the land in capability districts 4 - 7

provided such parcel is within a Center of a Conforming Area Plan. Coverage transfers to increase coverage from the base coverage up to the maximum coverage allowed shall be at a ratio of 1:1 for coverage transfers from sensitive lands. For transfer of coverage from non-sensitive lands, coverage shall be transferred at a gradually increasing ratio from 1:1 to 2:1, as further specified in the Code of Ordinances.

B.C. Commercial and Mixed Use Facilities in a Community Plan: The maximum coverage (Base + Transfer) allowed (~~Base + Transfer~~) on an existing undeveloped parcel through a transfer program, shall be 70 percent of the land in capability districts 4 - 7, provided the parcel is within an approved community plan. For existing developed parcels, the maximum land coverage allowed is 50 percent. ~~Coverage transfers to increase coverage from the base coverage up to 50 percent shall be at a gradually increasing ratio from 1:1 to 2:1, as further specified in the Code of Ordinances, with the transfer ratio for all the coverage over 50 percent determined as indicated on the following graph:~~



DG. Tourist Accommodation Facilities, Multi-Residential Facilities of 5 Units or More, Public Service Facilities, and Recreational Facilities in a Community Plan: The maximum coverage (Base + Transfer) allowed on a parcel through a transfer program shall be 50 percent of the land in capability districts 4 - 7, provided such parcel is within an approved community plan. ~~The coverage transfer ratio to increase coverage from the base coverage to 50 percent shall be at a ratio of 1:1.~~

ED. Other Multi-Residential Facilities: The maximum coverage (Base + Transfer) allowed on a parcel through a transfer of coverage programs shall be the amounts set forth in Subsection Policy A, above.

FE. Linear Public Facilities and Public Health and Safety Facilities: Such public facilities defined by ordinance and whose nature requires special consideration, are limited to transferring the minimum coverage needed to achieve their public purpose.

GE. Public Service Facilities Outside a Community Plan or Center: The maximum coverage (Base + Transfer) allowed on a parcel through a transfer program shall be 50 percent land coverage provided TRPA determines there is a demonstrated need and requirement to locate such a facility outside a ~~Community Plan~~ Plan or Center area and there is no feasible alternative which would reduce land coverage.

- HG.** Other Facilities Outside of Community Plans and Centers, and Facilities Within Community Plans Before the Community Plan is Approved, and Facilities within Centers before Conforming Area Plans are approved: Other than the exceptions in Subsections A, ED, FE, and GF, the maximum land coverage allowed shall be the base land coverage as set forth in Policy LU-2.10.
- I.** Notwithstanding Subsection A above, when existing development is relocated to Centers and the prior site is restored and retired, non-conforming coverage may be maintained with the relocation as long as the new site is developed in accordance with all other TRPA Policies and Ordinances.
- J.** Conforming Area Plans may include a comprehensive coverage management system as an alternative to the parcel level coverage requirements outlined in Subsection A-H above. In order to be found in conformance with the Regional Plan, the comprehensive coverage management system shall reduce coverage overall, reduce coverage in land capability districts 1 and 2 compared to the parcel level limitations in the Regional Plan and Code of Ordinances and not increase allowed coverage within 300 feet of Lake Tahoe (excluding those areas landward of Highways 28 and 89 in Kings Beach and Tahoe City Town Centers within that zone).
- K.** Additional land coverage limitations shall be implemented within 300 feet of Lake Tahoe, as further described in the Code of Ordinances.
- LU-32.12.** REHABILITATION, RECONSTRUCTION, AND UPGRADING OF THE EXISTING INVENTORY OF STRUCTURES, OR OTHER FORMS OF COVERAGE IN THE TAHOE REGION, ARE HIGH PRIORITIES OF THE REGIONAL PLAN. TO ENCOURAGE REHABILITATION AND UPGRADING OF STRUCTURES, THE FOLLOWING POLICIES SHALL APPLY:
- A. Repair or reconstruction of buildings damaged or destroyed by fire or other calamity subject to ~~Goal #2, Policy 8~~ Policy LU-2.3 of this subelement is exempt from this policy.
- B. Reconstruction, rehabilitation, modification, relocation, or major repair of structures or coverage other than as specified in Subsection A above may be allowed, provided such use is allowed under ~~the this Land Use Subelement, Goal #2, Policies 8, 9 and 10.~~ For parcels with existing coverage in excess of the Bailey Coefficients, a land coverage mitigation program shall be set by ordinance, which shall provide for the reduction of coverage in an amount proportional to the cost of the repair, reconstruction, relocation, rehabilitation, or modification, and to the extent of excess coverage. To accomplish these reductions, property owners shall have at least the following options:
- reducing coverage on-site;
 - reducing coverage off-site ~~in a hydrologically-related area;~~
 - paying a rehabilitation fee in lieu of on-site or off-site coverage reduction in an amount established by Agency ordinance to help fund a land bank program established to accomplish coverage reductions;
 - lot consolidation with a contiguous parcel or lot line adjustment to reduce the percentage of excess coverage on the resulting parcels; or
 - any combination of the foregoing options.

Another loophole is buried within the proposed G&P changes. In policy LU-2.12 (image above), a small change is made which could have huge impacts. Policy B.iii would be modified to allow a payment of a rehabilitation fee in lieu of “on-site or” off site coverage reduction. This is a significant change that has not been examined in the EIS and has been quietly inserted in the G&P. Allowing the payment of a fee in lieu of on-site coverage reduction will most likely result in more fees and less coverage reduction – it is easier and often less expensive than on-site coverage removal and restoration. As noted above, fees paid into the land bank programs may be used to purchase land where coverage would never be placed, thus again contributing to an overall net increase in coverage. This is also another example of the complex, back and forth puzzle that the

entire final RPU package has become, considering the places and references the public must review to find these changes. Finally, we note the Priority List of Projects (Attachment 5) includes yet another change in HRA regulations that would eliminate all cross-HRA restrictions altogether:

1. **Complete a detailed review of coverage transfers across hydrologic zones. This review will include presentations from the California Tahoe Conservancy and the Nevada Land Bank / Nevada Division of State Lands.

Conversion of Units: TAUs, CFA, Residential Units

415 / 671 100% 50.10

Be subject to TAC allocations.

50.9.50.10. ELECTION OF CONVERSION OF USE

50.9.1.50.10.1. General Conversion Standards

Existing residential units may be converted to tourist accommodation units or commercial floor area, and existing tourist accommodation units may be converted to residential units or commercial floor area, subject to the following standards:

- A. The proposed conversion shall be evaluated for adverse impacts using the Initial Environmental Checklist (IEC) and the addenda developed by TRPA for conversions and shall not be permitted if adverse impacts cannot be mitigated;
- B. Residential and tourist accommodation units shall be converted on a ratio of one unit for one unit;
- C. Residential and tourist accommodation units shall be converted to commercial floor area at a ratio of one square foot of existing floor area to one square foot of commercial floor area, using the subsection 50.6.2 criteria for measurement of floor area; and
- D. A maximum of 200 residential units and 200 tourist accommodation units may be converted within a calendar year for the region.

50.9.2.50.10.2. Conversions to Multi-family Units

A pilot program is created under this subsection that allows for the conversion of no more than 200 TAUs to ERUs for multi-unit projects, subject to the following conditions:

- A. Each TAU can be used for a maximum of 1,250 sq. ft. of residential floor area;

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CHAPTER 50: ALLOCATION OF DEVELOPMENT
50.11 Other Permits
50.10.3 Transfer From Sensitive Lands

- B. The conversion must happen on the same parcel; and
- A.C. TRPA shall monitor the impacts to thresholds of pilot program.

50.9.3.50.10.3. Transfer From Sensitive Lands

Page II-3 states:

Residential: Each undeveloped legal parcel existing on August 17, 1986 ~~at the time of the adoption of this plan (estimated at approximately 16,000);~~ unless otherwise restricted, has a development right of one residential unit, except where additional development rights are acquired pursuant to ~~Goal #2, of the development and~~ Implementation Element.

This is then followed by a Table that outlines the existing development as of 1986 and other parameters, including the total development rights remaining. This table then includes a footnote which states: **Note: All statistics are estimates and are not regulatory.* How can the EIS evaluate the impacts of proposed additional⁶⁶ future development on the thresholds if future development is uncertain? How can the Code regulate development within the parameters of the EIS if the numbers are uncertain? This is yet another example of the failure of the EIS to analyze impacts.

Page II-4 includes G&P language which states: “Tourist Accommodation: There is a limited need for additional tourist accommodation units. Based on demonstrated need, projects may be permitted additional units as specified within a Community Plan or a Conforming Area Plan...”

- Where is the demonstrated need for any additional TAUs beyond those authorized by the 1987 Plan (of which 174 are remaining)? The proposed Alternative would increase this by another 200 TAUs (added by Plan; also of note are the proposals for 400 more in Alt. 4 and 600 more in Alt. 5), plus 200 more units can be converted from residential units to TAUs, resulting in a potential for 574 more TAUs. What defines “need” and who makes this determination?
- This was not addressed in the EIS, although the EIS is based upon the addition of more TAUs for purported “environmentally beneficial redevelopment.”

The next paragraph raises similar questions:

Commercial: The amount of additional commercial development is based on the estimated needs of the Region. Commercial development may be permitted as specified in Plan Area Statements, Community Plans, other Specific Plans or Master Plans, or a Conforming Area Plan.

- What defines the “estimated needs of the Region”? Where are the criteria? Will TRPA make this determination?
- This was also not addressed in the EIS, although the EIS is based upon the addition of more CFA (as one of the commodities for mixed-use areas) for purported “environmentally beneficial redevelopment.”

Recreation G&Ps state:

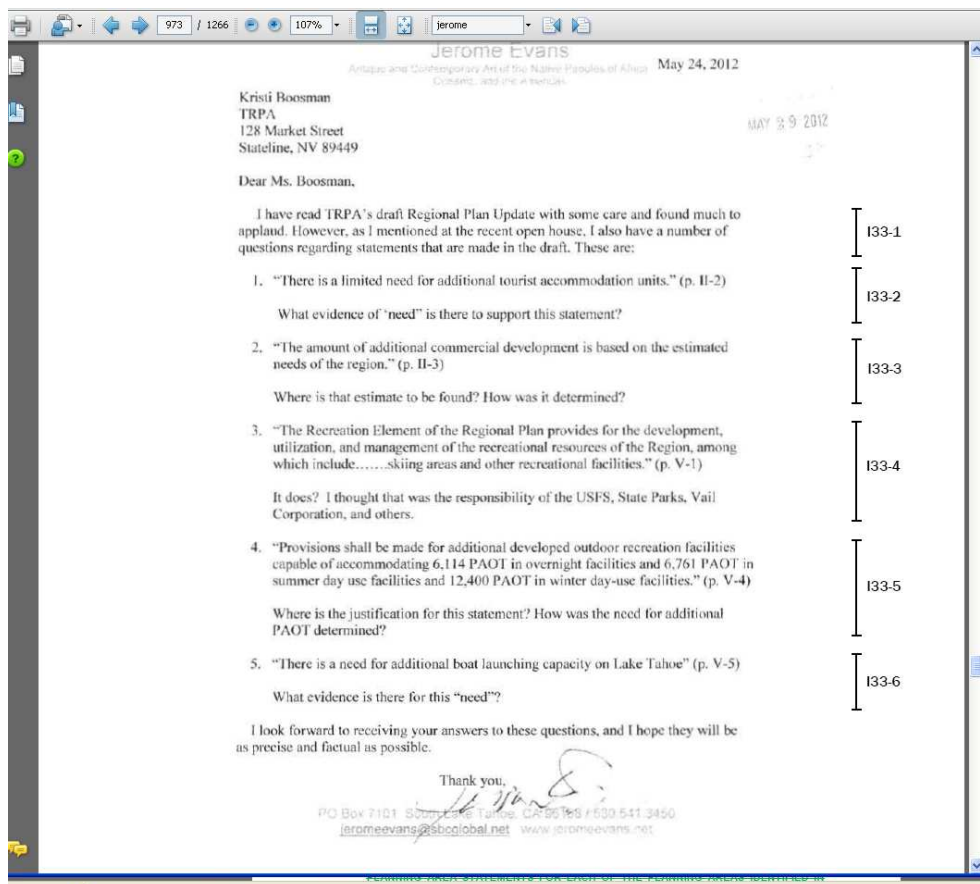
Recreation: Additional recreation uses may be permitted only as specified within Plan Area Statements, Community Plans, or other Specific Plans or Master Plans, or a Conforming Area Plan. The total capacity of additional outdoor recreational facilities for the Region shall not exceed 6,114 persons at one time (PAOTs) for overnight facilities, 6,761 PAOTs for summer day use facilities, and 12,400 PAOTs for winter day use facilities. (See Recreation Element for more detail.)

⁶⁶ Additional development when compared to the amount remaining per the 1987 Plan.

As PAOTs do not limit recreational capacity (for example, we note a net increase in skier visits at Heavenly over the past 10 years without an associated increase in PAOTs⁶⁷), when will recreation capacity be examined? Where will factors related to the different types of recreation be evaluated? For example, adding more ski lifts may increase recreational opportunities for downhill skiers and snowboarders, but it will not improve recreation for snow-shoers or X-Country skiers. In a summertime example, adding a “zipline” at the top of Heavenly will not improve recreational opportunities for hikers and campers. The point here is there is much discussion about improving recreational opportunities in the Basin, however, most of the proposed changes and exemptions only improve opportunities for one group of recreationalists in the winter (skiers/boarders), and one group in the summer (bicyclists), at the expense of other groups. This conflict has never been analyzed and TRPA proposes no solid actions to improve recreational opportunities for low-impact recreation.

Increased Allocations for TAUs, CFA, Residential Units, Recreation, etc.:

With regards to the Plan’s proposal to increase TAUs, CFA, residential units, recreation, etc., we echo the questions raised by Mr. Jerome Evans during the draft EIS public comment period related to the need for these increases.



⁶⁷ <http://www.rgj.com/article/20121209/SPORTS04/312090047/Q-Tim-Cohee-What-s-working-Tahoe-s-resorts?odyssey=mod|newswell|text|Sports|p>

Unfortunately, TRPA sidestepped as response to these questions by answering with the following statement for each numbered comment:

“The comment pertains to the Plan itself and not to the environmental document. Please refer to Master Response 1, Comments Pertaining to the Draft Plans, Code of Ordinances, or Threshold Evaluation.” (Vol. 1, p. 3-413).

However, we disagree. We believe these questions play a direct role in the approaches that were supposed to be analyzed for their environmental impacts in the EIS. In fact, we note in the 12/5 Staff Summary that TRPA states if the transfer of development programs do not work, we will fall on the existing land use pattern. However, we note TRPA proposes to “recharge” allocations to substantially increase development potential, but the EIS claims this is “mitigated” by the transfer programs that purport to take coverage from sensitive lands and place it in more urbanized ‘centers.’

Environmental Review Requirements:

The following G&P language is proposed for deletion (p. II-9 of the proposed RP Goals and Policies, dated 10/24/2012). There is no replacement or substitute language which requires the level of environmental review noted in the text, including requirements related to Area Plans. We have raised questions and concerns regarding the extent of environmental review that will occur under the Area Plans, including where the cumulative and regional impacts to the thresholds will be examined, but TRPA has not provided a direct, clear response. Thus, with the deletion of this language and the vague nature of the review required for Area Plans, the public is left to question whether environmental impacts will be adequately examined, and who will make sure they are.

~~9- Before a community plan may be approved, TRPA must certify an environmental impact statement (EIS) for the community plan, except as noted in (10) below. (In California, where the CP is to be adopted as a general plan amendment or a specific plan, a joint EIS/EIR may be utilized.) The EIS may be useful for meeting subsequent environmental documentation requirements for more specific projects consistent with the community plan.~~
~~10- Simpler and more streamlined procedures for CPs with insignificant impacts may be provided for in the implementing ordinances. These procedures may allow preparation of appropriate environmental analysis and documentation other than an EIS. §~~

Proposed Policy for “To Do List”:

Page VII-32 of the G&P includes amendments that would add: ME-3.5 and ME-3.6 (see below). ME-3.5 requires implementation of the delayed mitigation plans in the RPU EIS. However, in most cases, the planned mitigation is the development of a Plan to mitigate the impact. Thus, “implementation” means TRPA will develop various Plans/proposals by 12/31/2013, but this does not require implementation of anything that will result in on-the-ground mitigation by 12/31/2013. Further, TRPA will vote to certify the EIS package, which includes the mitigation measures in Attachment 4, on 12/12/12. Although we disagree with the deferral of the mitigation, let alone the inadequate analysis in the EIS, we note that the proposed Goal to allow “or their equivalent” would itself violate the EIS certification, which is based upon the specified mitigation measures in Attachment 4.

Also, there is no explanation or description of what “or their equivalent” means, nor are there any criteria regarding how TRPA will assess whether something is “equal” to the mitigation measures. We already have questioned how the public will be involved in the development of these future mitigation measures (or plans). This proposed Goal adds more confusion to the public process. How is the public supposed to evaluate whether the environmental impact statement mitigation measures mitigate the impacts if the measures remain open for change after EIS certification?

ME-3.5. BY DECEMBER 31, 2013, TRPA SHALL IMPLEMENT MITIGATION MEASURES IDENTIFIED IN ATTACHMENT 4 FROM THE ENVIRONMENTAL IMPACT STATEMENT FOR THE 2012 REGIONAL PLAN UPDATE, OR THEIR EQUIVALENT, THAT HAVE NOT OTHERWISE BEEN INCORPORATED INTO THE REGIONAL PLAN OR CODE OF ORDINANCES.

G&P ME-3.6 identifies an annual “Preliminary List of Work Priorities”. In the final EIS, this is Attachment 5, aka the “To Do List.” As we have noted numerous times, the EIS must analyze the impacts of all reasonably foreseeable projects and plans. The projects on this list clearly represent reasonably foreseeable projects – after all, that is the point of the list, according to TRPA. Although the language suggests this is merely a work prioritization exercise for TRPA, the To Do List includes proposed projects and tasks that will affect achievement and maintenance of the environmental thresholds. Further, the To Do List for 2013 includes many studies and evaluations that should be included and analyzed in the EIS. Doing this after the fact represents yet another example of how the RPU process has been and continues to be a moving target. How can the public follow such a complex and ever-changing process? At what point does the public get to weigh in on these matters? Clearly it is not possible to do so before EIS certification, as the projects are not detailed and TRPA has stated the List is merely a prioritization of possible tasks. However, will we see these tasks move forward in 2013, RPU amendments suggested, and be told we can not comment on the proposals because they were already included in the RPU EIS?

ME-3.6. ON AN ANNUAL BASIS TRPA WILL PREPARE A PRELIMINARY LIST OF WORK PRIORITIES. THIS LIST WILL BE DERIVED FROM THE MOST RECENT ANNUAL THRESHOLD REPORT, REGIONAL PLAN AND CODE OF ORDINANCES AMENDMENTS SUGGESTED BY STAFF AND STAKEHOLDERS, THE MOST RECENT ANNUAL ENVIRONMENTAL IMPROVEMENT PROGRAM REPORT, THE ANNUAL REPORTS ON MEMORANDA OF UNDERSTANDING, PRIORITIES IDENTIFIED BY THE ADVISORY PLANNING COMMISSION, AND SIMILAR INFORMATION. THE GOVERNING BOARD SHALL REVIEW THE PRELIMINARY LIST OF WORK PRIORITIES AND ARRANGE THE PROJECTS IN ORDER OF PRIORITY. THE EXECUTIVE DIRECTOR SHALL SUBMIT AN ANNUAL BUDGET AND WORK PLAN THAT INDICATES HOW THE WORK PRIORITIES WILL BE COMPLETED IN ORDER OF PRIORITY TO THE DEGREE POSSIBLE WITH THE RESOURCES AVAILABLE TO THE AGENCY. THE LIST OF PROJECTS AND ORDER OF PRIORITY SHALL BE INCLUDED IN THE REGIONAL PLAN AS ATTACHMENT 5 AND SHALL BE UPDATED AND REPLACED ANNUALLY. FOR THE PERIOD PRIOR TO ADOPTION OF THE NEXT ANNUAL WORK PROGRAM AND BUDGET BUT AFTER INITIAL ADOPTION OF THE REGIONAL PLAN INCLUDING THIS POLICY, THE LIST OF PROJECTS IN ATTACHMENT 5 WILL BE CONSIDERED THE PRELIMINARY LIST OF PRIORITY PROJECTS FOR THE GOVERNING BOARD TO ARRANGE IN ORDER OF PRIORITY AND FOR SUBSEQUENT PREPARATION OF THE ANNUAL AGENCY WORK PROGRAM AND BUDGET.

The Introduction to the proposed G&P includes an extensive re-write. Although we agree the level of environmental improvement has not been as desired since the adoption of the 1987 Plan, and that legacy development continues to create notable run-off and other pollution, we do reiterate our questions regarding the impact of TRPA's failure to fully implement the 1987 Plan. As the summary states, beginning in the 1990's – and noted in the first 5-year Threshold Evaluation Report in 1991 – it was clear that the 1987 Plan, as implemented at that time, was not resulting in needed threshold improvements. Thus, the 1991 TER made numerous recommendations for change. As noted in our June and July 2012 comments, most of these recommendations were not acted upon. Five years later, in 1996, the TER again reiterated the problems, and made recommendations. Many of the recommendations were similar to those in 1991. Yet, many of them were not implemented by TRPA. In 2001, the TER again reviewed the threshold conditions, made recommendations, and very few were implemented. In 2006, the scenario repeats itself, only this time, many changes were delayed for consideration in the “upcoming” Regional Plan Update. What this all equates to is that beginning in the 1990's, the TERs and other studies made it clear that more action was needed – as the Introduction now states. However, the Introduction fails to note that although the Compact required periodic review and updates to the Plan, and the Code specifically stated this would be done as a result of threshold evaluation reports (at that time, Chapter 32), TRPA failed to make these updates. Instead, over 20 years has passed since the first TER identified changes that were needed yet very few necessary updates have been made. How much more threshold improvement might we have seen had the Plan been updated as required? The proposed RP states it will perform this review every four years, and update the Plan and thresholds as needed to reflect science and other actions necessary for threshold achievement. This is not a new concept TRPA has developed. As part of the 1987 Plan, the Threshold Evaluation Reports were supposed to inform RP amendments, just as TRPA claims the future TERs will inform RP amendments. But because TRPA continues to fail to tie development approvals to measured threshold conditions, this appears to just be more of the same. There is little incentive to improve threshold achievement and maintenance if development is going to be approved regardless of the status of the thresholds. Claiming “progress towards achievement” is easily a mere paper exercise, much like the RPU EIS has done to ‘conclude’ multiple benefits (see our comments on the EIS for details and examples).

[Starting in the 1990's, *Threshold Evaluations* and other studies made it clear that the strategy of regulation and land acquisition alone would not be enough to successfully achieve and maintain environmental thresholds. The environmental impact of “legacy development” that was constructed prior to the initial Regional Plan continued to adversely impact the Region. In response, federal, state and local government dramatically increased funding for stormwater management infrastructure, wetland restorations and other environmentally beneficial projects through the Environmental Improvement Program \(EIP\). Trends towards threshold attainment improved measurably, but thresholds for water quality and other resources were still not being attained.](#)

[In the 2000's, extensive studies for the Lake Tahoe Total Maximum Daily Load \(TMDL\) provided more detailed information related to water quality. TMDL reports adopted by California and Nevada included the following summary of Lake Tahoe's major water pollution sources:](#)

The ongoing decline in Lake Tahoe's deep water transparency and clarity is a result of light scatter from fine sediment particles (primarily particles less than 16 micrometers in diameter) and light absorption by phytoplankton. The addition of nitrogen and phosphorus to Lake Tahoe contributes to phytoplankton growth. Fine sediment particles are the most dominant pollutant contributing to the impairment of the lake's deep water transparency and clarity, accounting for roughly two thirds of the lake's impairment.

A pollutant source analysis conducted by the California State Water Resources Control Board and Nevada Division of Environmental Protection identified urban uplands runoff, atmospheric deposition, forested upland runoff, and stream channel erosion as the primary sources of fine sediment particle, nitrogen, and phosphorus loads discharging to Lake Tahoe. The largest source of fine sediment particles to Lake Tahoe is urban stormwater runoff, comprising 72 percent of the total fine sediment particle load. The urban uplands also provide the largest opportunity to reduce fine sediment particle and phosphorus contributions to the lake.

While the TMDL focuses on impairment of Lake Tahoe's deep water transparency and clarity, the primary pollutants that it addresses (fine sediment, nitrogen and phosphorous) also may affect nearshore water quality. Given the exceptional scenic quality and significant recreational and ecological values provided by Lake Tahoe's nearshore, the protection of nearshore water quality is equally important.

To better address these water quality issues, one of the primary goals of the 2012 Regional Plan Update is to accelerate private investment in environmentally-beneficial redevelopment activities to complement the ongoing investment in public projects targeted at threshold gain. Amendments related to other scientific reports and to legislation in California and Nevada are also addressed in the 2012 Regional Plan.

(p. I-4)

In summary, the Introduction to the G&P reflects another example of TRPA's assertion that the 1987 Plan was insufficient and therefore the proposed RP and new pro-development approach are "needed," when TRPA has failed to address the agency's lack of implementation of their own requirements beginning in 1991. Although we submitted extensive comments on this and provided numerous examples of recommendations from 1991 to the present that TRPA has failed to address, the response to our comments does not answer these questions.

The Introduction also includes amendments related to the description of other Plans. The following statement is added related to other plans. It is not made clear in the description that the TRPA Compact requirements – as implemented by the Regional Plan's Code - supersede all other plans, including state regulations (e.g. SB 375).

Other [Regional Scale](#) Plans and Reference Documents

This category includes: (1) plans for which the Agency has adopted or assumed responsibility, such as the Federal 208 Water Quality [Management](#) Plan, the Federal Air Quality Plan, and the ~~California~~ Regional Transportation Plan; and (2) reference documents that support the Regional Plan and are listed by ordinance.

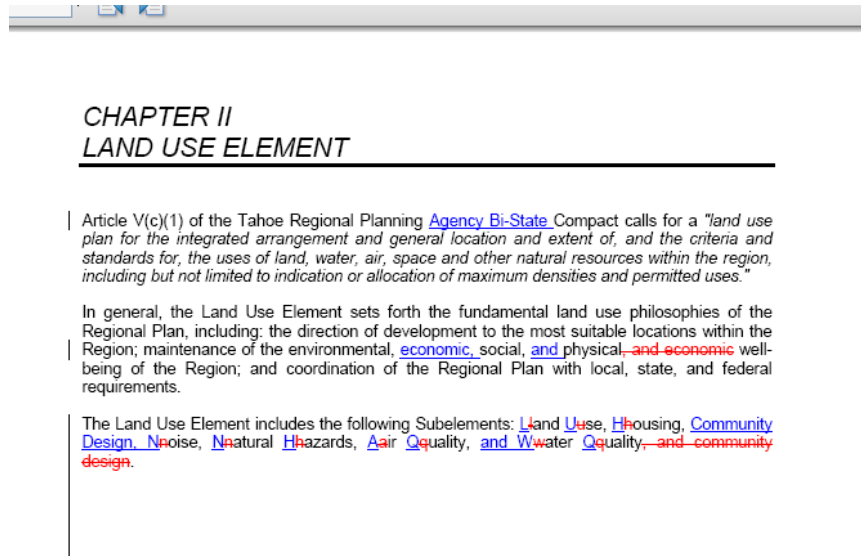
[Plans for Specific Geographic Areas within the Region](#)

After adoption of the 1987 Regional Plan, over 170 different plans were adopted for certain geographic areas. These include Plan Area Statements, Community Plans, State and Federal Government Master Plans and other detailed Specific or Master Plans (for ski areas, marinas, the airport, etc). With adoption of the 2012 Regional Plan, local, state, federal and tribal governments

are encouraged to adopt Area Plans to supersede the older plans for specific geographic areas. Before taking effect, Area Plans must be found in conformance with the Regional Plan. State and Federal Government Master Plans and some of the other detailed Master Plans may remain in place and continue to be implemented or may be replaced with new Area Plans.

G&P – Land Use:

The proposed changes to the RP package also represent a shift in agency intent, as also noted in the proposed changes to the Mission of the Agency. As shown below, the Land Use element begins with several changes that may appear minor, but represent significant shifts in thinking. For example, a proposed change in wording moves “economic” in the sentence below, placing it before the physical well-being of the Region.



The Land Use chapter (II-2) includes the following change:

The thresholds, however, do not define the maximum ~~buildout~~ populations, densities, permitted uses, or other land use criteria for the manmade environment; this is the function of the Regional Plan.

This must be amended (to retain populations) based upon the Board’s direction at the 11/15/2012 hearing to ensure all references to the Compact or requirements in the Compact use the same wording. In this case, the Compact very clearly states populations – not once does “buildout” turn up in a search of the Compact.

The Compact Article II(i) defines ETCCs as:

(i) “Environmental threshold carrying capacity” means an environmental standard necessary to maintain a significant scenic, recreational, educational, scientific or natural value of the region or to maintain public health and safety within the region. Such standards shall include but not be limited to standards for air quality, water quality, soil conservation, vegetation preservation and noise.

Article V(c):

The regional plan shall be a single enforceable plan and includes all of the following correlated elements:

(1) A land-use plan for the integrated arrangement and general location and extent of, and the criteria and standards for, the uses of land, water, air, space and other natural resources within the region, including but not limited to an indication or allocation of maximum population densities and permitted uses. [Emphasis added].

According to the Merriam-Webster's Dictionary,⁶⁸ *capacity* is defined as:

2a : the potential or suitability for holding, storing, or accommodating <a large seating *capacity*>

b : the maximum amount or number that can be contained or accommodated <a jug with a one-gallon *capacity*> <the auditorium was filled to *capacity*>

Thus, the threshold environmental carrying capacities are clearly intended to represent the maximum amount (of development and people) in the Basin that can be contained or accommodated within the boundaries of the environment. This does not mean the same as buildout, which is commonly used to discuss when all development permitted in a Plan has been constructed – implying what's in the Plan is more important than what limits may be needed to ensure environmental capacities are not exceeded.

Lake Tahoe is a unique natural resource in a spectacular natural setting. It is truly one of the natural treasures of the United States. The long-term economic and natural health of the Region depends on the maintenance of this unusual quality. While previous land use planning efforts have concentrated on regulating the quantity of permitted development, this plan emphasizes an improvement in the quality of development in the Region and in the quality of the natural environment.

POLICIES

LU-1.1. THE PRIMARY FUNCTION OF THE REGION SHALL BE AS A MOUNTAIN RECREATION AREA WITH OUTSTANDING SCENIC AND NATURAL VALUES.

The economic health of the Region depends on a viable tourist and recreation-oriented environment. It is ~~not~~ the intent of this Regional Plan, among other things, to encourage ~~other economic development that enhances these values, such as industry or non-service commercial facilities, at the expense of outdoor recreation in the Tahoe Region.~~

LU-1.2. ~~THE REGIONAL PLAN GIVES A HIGH PRIORITY TO CORRECTING PAST DEFICIENCIES IN LAND USE. THE PLAN SHALL ENCOURAGE A REDIRECTION STRATEGY FOR SUBSTANTIALLY AND ADVERSELY ALTERED AREAS, WHEREVER FEASIBLE.~~ REDEVELOPING EXISTING TOWN CENTERS IS A HIGH PRIORITY.

Many of the Region's environmental problems can be traced to past and existing development which often occurred without recognition of the sensitivity of the area's natural resources.

~~A redirection strategy provides for~~ To correct this, environmentally beneficial redevelopment programs as well as for and rehabilitation of identified Centers is a priority. ~~developed areas in need of improvement.~~

LU-1.3. THE PLAN SHALL SEEK TO MAINTAIN A BALANCE BETWEEN ECONOMIC/SOCIAL HEALTH AND THE ENVIRONMENT.

⁶⁸ <http://www.merriam-webster.com/dictionary/capacity>

The changes shown above (p. II-2) further reflect an intent to prioritize economy and more development. The original wording, which explained the Plan's intent was not to promote more growth at the expense of the environment, has been changed to focus on a development outcome: redevelopment in town centers.

LU-2.1. THE TOTAL POPULATION PERMITTED IN THE REGION AT ONE TIME SHALL BE A FUNCTION OF THE CONSTRAINTS OF THE REGIONAL PLAN AND THE ENVIRONMENTAL THRESHOLD CARRYING CAPACITIES.

Population growth in the Region will be guided by the limitations on land use set forth in the Plan. This Plan identifies land use, densities, traffic volumes, urban boundaries, and other factors that indirectly determine the population at any given time. All of these factors have been set to ensure compliance with the environmental thresholds.

---Additional Comments on Code:

30.4.3.B

a. . Soft coverage may be transferred to commercial parcels within the South Y Industrial Tract Community Plan ~~and within~~ the Upper Truckee River Hydrologic Transfer Area for service, light industrial, and wholesale/storage uses in accordance with subsection 30.4.3 and provided that the findings in subparagraph 30.4.3.F below are made.

The proposed language (included above) changes "within" to "and" ---which appears to allow soft coverage to be transferred to *any* commercial parcel in the Upper Truckee River HRA. This appears to be a significant change from the existing Code that was not analyzed in the EIS, nor provided to the public until 10/24. If this is TRPA's proposal, the EIS must analyze the impacts. If not, the Code must not be changed.

50.9.2.50.10.2. Conversions to Multi-family Units

A pilot program is created under this subsection that allows for the conversion of no more than 200 TAUs to ERUs for multi-unit projects, subject to the following conditions:

A. Each TAU can be used for a maximum of 1,250 sq. ft. of residential floor area;

B. The conversion must happen on the same parcel; and

C. TRPA shall monitor the impacts to thresholds of pilot program.

The EIS fails to address this proposed Code addition. The EIS must analyze the environmental impacts of changing tourist-based uses (that according to TRPA and Bi-State Committee members,⁶⁹ are often being used at low capacity) to residential uses (e.g. condos). Also, the EIS must examine the cumulative impacts of this pilot program on coverage and VMT. Further, this does not specify how TRPA will monitor the impacts to the thresholds. For example, what mechanisms will be in place to ensure there are not negative impacts? What criteria will be used to assess environmental improvement from this "pilot program?" If the pilot program fails, then what?

⁶⁹ E.g. Lew Feldman, 11/15/2012 GB Meeting.

Chapter 90 reflects a “termed not defined” proposal. We request any such language be amended to state that definitions must conform to Webster’s Dictionary or for scientific terms, based upon commonly-accepted scientific dictionaries.

90.1.13. Term Not Defined

In the event there is a term used in this Code that is not defined in this chapter, the Executive Director shall have the authority to provide a definition ~~through the Interpretation procedure~~ (Section ---) based upon the definitions used in accepted sources.

10. AREA PLANS, DELEGATION, AND APPEALS PROCESS V. COMPACT

Change to Area Plan processes, Delegation to locals and Appeals process

We have raised numerous concerns regarding the delegation of permitting authority to local governments, the appeals process (which was presented after 6/28), and the change to Area Plans. As noted in the previous section, the Code and Goals & Policies language related to Area Plans and conformance remain unclear.

Local governments and economic incentives:

To reiterate comments we have made previously, local jurisdictions are motivated by economics. The more growth in the jurisdiction, the more tax dollars, and so on. This is why there was a need for the TRPA in the first place - the local jurisdictions were not taking care of the environment as their primary motivation for planning is economic (e.g. population growth). Thus, placing planning authority back onto the locals as proposed in the RPU leaves no one in charge of prioritizing protection of the environment. Further, as TRPA has also shifted from environmental protection first to economy first (a clear example being the proposed G&P Language which *literally* moves the word “economy” before environment), this leaves no regulatory entity with the primary purpose of watching out for Tahoe’s fragile environment. Therefore, we again state our opposition to this proposal in the RPU.

We reiterate our disagreement with the policies that would limit public comment (e.g. the proposed limitation of GB discussion to items raised by members of the public at APC meetings). We also oppose the proposed appeals process that would limit the ability of the public to appeal a decision – through process, cost, and timelines. Further, we believe the proposed Appeals process is contrary to the Compacts’ requirements as follows:

The proposed changes include the following, as summarized on p. 9 of the October Staff Summary:

- Project Appeals: When project review authority is delegated to Lead Agencies, all project approvals would be subject to appeal to the TRPA Governing Board (Code Section 13.9). The appeal process includes the following key provisions:
 - o Basis for Appeal: Appeals are limited to disputes over conformance with the Regional Plan, including the applicable Area Plan, applicable code provisions and the Compact;
 - o Exhaustion: Appellants must exhaust administrative remedies with the Lead Agency before filing an appeal to TRPA;
 - o Timelines: The total appeal process would last approximately 120 days, including 15 days for appellants to file, 60 days for a staff recommendation and approximately 45 days for up to two Governing Board hearings; and
 - o Fee limitations: The total appeal fee may not exceed \$2,000 (\$1,000 to TRPA and \$1,000 to the Lead Agency).

This is reflected in Chapter 13 of the proposed Code as follows:

13.6.4. Approval of Area Plan by TRPA

For Area Plans initiated and approved by a lead agency other than TRPA, the Area Plan shall be submitted to and reviewed by the TRPA Governing Board at a public hearing. Public comment

shall be limited to consideration of issues raised by the public before the Advisory Planning Commission and issues raised by the Governing Board. The TRPA Governing Board shall make a finding that the Area Plan, including all zoning and development Codes that are part of the Area Plan, is consistent with and furthers the goals and policies of the Regional Plan. This finding shall be referred to as a finding of conformance and shall be subject to the same voting requirements as approval of a Regional Plan amendment..

...

13.6.6. Conformity Review for Amendments to Area Plans

Following approval of an Area Plan, any subsequent amendment to a plan or ordinance contained within the approved Area Plan shall be reviewed by the Advisory Planning Commission and Governing Board for conformity with the requirements of the Regional Plan. Public comment before the Governing Board shall be limited to consideration of issues raised before the Advisory Planning Commission and issues raised by the Governing Board. The Governing Board shall make the same findings as required for the conformity finding of the initial Area Plan, as provided in subsection 13.6.5; however, the scope of the APC and Governing Board's review shall be limited to determining the conformity of the specific amendment only. If the Governing Board finds that the amendment to the Area Plan does not conform to the Regional Plan, including after any changes made in response to TRPA comments, the amendment shall not become part of the approved Area Plan.

...

13.9. APPEALS

13.9.1. Purpose

The intent of the appeal process is to provide a mechanism for projects delegated to lead agencies to be brought before the TRPA Governing Board consistent with requirements of the Compact, eliminate frivolous appeals, deter appellants —laying in wait□ by encouraging early and consistent engagement, increase procedural certainty and timeliness irrespective of outcomes, and to minimize project-by-project negotiation before the Governing Board.

13.9.2. Appeal Allowed

Final decisions on projects delegated to a lead agency may be appealed to the TRPA. An appeal may only be filed by an —aggrieved person□ as defined in Article VI(j)(3) of the Compact. Decisions by the lead agency under independent local, state, or federal law are not the subject of this appeal process.

13.9.3. Basis of Appeal

The basis for an appeal under this section shall be limited to whether the decision by a lead agency is in accordance with an approved Area Plan and its implementing ordinances consistent with the Regional Plan and Compact.

13.9.4. Exhaustion Required

Appellants who are subject to the exhaustion provision in Compact Article VI (j) (3) shall exhaust all administrative remedies provided by the lead agency prior to appealing a decision to TRPA.

13.9.5. Deadline

An appellant shall file an appeal application to TRPA within 15 calendar days of the final lead agency decision.

13.9.6. Content of Appeal

An application for appeal shall contain the following:

- A.** A clearly written statement explaining the grounds for appeal;
- B.** Documentation to support the appeal claim.;
- C.** Additional documentation may be provided by the applicant or lead agency to augment the record.

13.9.7. Fee

The appellant shall pay a fee of \$1,000 to TRPA for each appeal. A lead agency's fee for its internal appeals of delegated decisions shall not exceed the TRPA fee for appeals.

13.9.8. Stay of Lead Agency Decision

Once an appeal application is received by TRPA, the project approved by the lead agency shall be stayed pending the final outcome of the appeal.

13.9.9. Review of Appeal

A. Staff Recommendation and Hearing

Within 60 days after receipt of an appeal, TRPA staff shall make a recommendation to the Governing Board on the merits of the appeal, including whether the appeal is frivolous as defined in subsections 13.9.2 through 13.9.4. The Governing Board shall consider the recommendation concerning whether the appeal is frivolous in determining whether to proceed to consider the merits of an appeal and if it hears the merits it shall consider the recommendation concerning the merits. A hearing on the appeal shall be scheduled for the first Governing Board meeting after issuance of the staff recommendation.

B. Governing Board Action

1. The voting structure for the Governing Board for appeal decisions shall be the same as project votes before the Governing Board as defined in the Compact.
2. The Governing Board may take action the first time the appeal is presented to the Board or, after hearing the appeal, continue the action to the next Governing Board meeting.
3. If no action is taken by the Governing Board at the initial meeting at which the appeal is presented, the Governing Board shall take action at the next Governing Board meeting.

C. Standard of Review

Appeal review and action by the Governing Board shall be limited to whether the decision by a lead agency is in accordance with an approved Area Plan and its implementing ordinances consistent with the Regional Plan and Compact.

The Compact, Article VI (j) includes the following:

(j) Legal actions arising out of or alleging a violation of the provisions of this compact, of the regional plan or of an ordinance or regulation of the agency or of a permit or a condition of a permit issued by the agency are governed by the following provisions:

(1) This subdivision applies to:

- (A) Actions arising out of activities directly undertaken by the agency.
- (B) Actions arising out of the issuance to a person of a lease, permit, license or other entitlement for use by the agency.
- (C) Actions arising out of any other act or failure to act by any person or public agency.

Such legal actions may be filed and the provisions of this subdivision apply equally in the appropriate courts of California and Nevada and of the United States.

(2) Venue lies:

- (A) If a civil or criminal action challenges an activity by the agency or any person which is undertaken or to be undertaken upon a parcel of real property, in the State or Federal judicial district where the real property is situated.
- (B) If an action challenges an activity which does not involve a specific parcel of land (such as an action challenging an ordinance of the agency), in any State or Federal court having jurisdiction within the region.

(3) Any aggrieved person may file an action in an appropriate court of the States of California or Nevada or of the United States alleging noncompliance with the provisions of this compact or with an ordinance or regulation of the agency. In the case of governmental agencies, "aggrieved person" means the Tahoe Regional Planning Agency or any State, Federal or local agency. In the case of any person other than a governmental agency who challenges an action of the Tahoe Regional Planning Agency, "aggrieved person" means any person who has appeared, either in

person, through an authorized representative, or in writing, before the agency at an appropriate administrative hearing to register objection to the action which is being challenged, or who had good cause for not making such an appearance. [Emphasis added].

(4) A legal action arising out of the adoption or amendment of the regional plan or of any ordinance or regulation of the agency, or out of the granting or denial of any permit, shall be commenced within 60 days after final action by the agency. All other legal actions shall be commenced within 65 days after discovery of the cause of action.

(5) In any legal action filed pursuant to this subdivision which challenges an adjudicatory act or decision of the agency to approve or disapprove a project, the scope of judicial inquiry shall extend only to whether there was prejudicial abuse of discretion. Prejudicial abuse of discretion is established if the agency has not proceeded in a manner required by law or if the act or decision of the agency was not supported by substantial evidence in light of the whole record. In making such a determination the court shall not exercise its independent judgment on evidence but shall only determine whether the act or decision was supported by substantial evidence in light of the whole record. In any legal action filed pursuant to the subdivision which challenges a legislative act or decision of the agency (such as the adoption of the regional plan and the enactment of implementing ordinances), the scope of the judicial inquiry shall extend only to the questions of whether the act or decision has been arbitrary, capricious or lacking substantial evidentiary support or whether the agency has failed to proceed in a manner required by law.

According to the Compact, an aggrieved person (other than the agencies listed) means any person “who has appeared...before the agency at an appropriate administrative hearing.” However, the proposed Code 13.6.4 states that: “Public comment shall be limited to consideration of issues raised by the public before the Advisory Planning Commission and issues raised by the Governing Board.” This appears to be in conflict with the Compact’s requirements, which does not require the public to first comment at the APC, but rather, “an appropriate administrative hearing.” Further, the Compact does not prohibit the public from raising ‘new’ issues at the Governing Board hearing.

Thus, if the public does not attend APC, and/or does not raise a specific issue, the public cannot raise the issue at the Board hearing, thus limiting the ability of the public to raise concerns to the Board. Further, this appears to limit what eventually would be defined as an “aggrieved person” if an action were challenged, contrary to the Compact, which states (for non-governmental agencies): an “aggrieved person” means any person who has appeared, either in person, through an authorized representative, or in writing, before the agency at an appropriate administrative hearing to register objection to the action which is being challenged, or who had good cause for not making such an appearance.

The proposed Code is not only complex, confusing, and seemingly places additional burden on the public at the same time as limiting the public’s ability to comment to the Board on an item the Board will vote on, but also appears to be in conflict with the Compact’s requirements.

The Compact currently provides for 60 days for the public to take legal action after a decision by the Board. However, the proposed Code appears to change this section of the Code from the earlier Compact direction, first requiring the public to appeal a decision by a local government, which contains other timelines for non-Compact challenges (e.g. CEQA), but at the same time providing for just 15 calendar days to appeal to TRPA, and making matters worse, restricting what can be appealed. Further, the new added burden

of “documentation to support the appeal claim” (13.9.6.B) appears to require the public to outline all of their arguments and issues associated with the appeal (which is not currently a requirement of the Compact), within a 15 day time frame.

Further, the public can only challenge “*whether the decision by the lead agency is in accordance with the Area Plan and its implementing ordinances consistent with the Regional Plan and Compact.*” There does not appear to be a provision for challenging an inadequate environmental review document. There does not appear to be a provision for appealing a planning process that is contrary to rights provided to the public by the TRPA Compact.

Finally, the Compact appears to place the decision of whether there is adequate evidence to support an appeal to the Courts in the hands of the staff. Although this may still apply on appeals of TRPA decisions, the proposed appeals process for appealing decisions made under Area Plans to TRPA appears to suggest the first review of whether there is adequate evidence for the appeal will lie in the hands of TRPA staff, with no provisions, criteria, etc., for how TRPA staff, or Board members, etc., would determine whether an appellant has provided ‘substantial evidence’ to appeal a local decision to the TRPA Board. Again, the new Area Plan and Appeal Process proposed for Alternative 3 appear to be contrary to the requirements of the TRPA Compact.

It is also unclear how violations of the Regional Plan – and Area Plans which are adopted as part of the RP – will be addressed. The Compact calls for the following penalties:

(l) Any person who violates any provision of this compact or of any ordinance or regulation of the agency or any condition of approval imposed by the agency is subject to a civil penalty not to exceed \$5,000. Any such person is subject to an additional civil penalty not to exceed \$5,000 per day, for each day on which such a violation persists. In imposing the penalties authorized by this subdivision, the court shall consider the nature of the violation and shall impose a greater penalty if it was willful or resulted from gross negligence than if it resulted from inadvertence or simple negligence. [Article VI (l)]

Additional delegation of authority:

Another question that continues to surface is whether a local agency with an approved Area Plan may then delegate authority over approval of certain activities to another entity. Although TRPA has assured us this is not the case, the 10/24 staff summary, which as noted elsewhere, has been included as part of the final RPU package by TRPA, and proposed G&Ps, specifically state otherwise:

Area Plans would outline land use allowances and development standards. Area Plans may also establish protective standards that replace region-wide standards, including tailored area-wide coverage and Best Management Practices (“BMP”) programs for water quality. Local, State and Federal Agencies are authorized to be “Lead Agencies” guiding the development of Area Plans. All Area Plan provisions are required to conform to the Regional Goal and Policy Plan, Thresholds and the Compact. Once Area Plans are adopted and become part of the Regional Plan, approval of additional development activities could be delegated to other governments, with appeal provisions to TRPA for contested projects. (p. 7, 10/24/2012 Staff summary) [Emphasis added]

We see this in the G&P (p. VII-2):

IAP-1.3.THE AGENCY SHALL COORDINATE WITH LOCAL, STATE AND FEDERAL AGENCIES TO DEVELOP AREA PLANS AND CODES THAT CONFORM WITH THE REGIONAL PLAN. AREA PLANS MAY DELEGATE REVIEW AND APPROVAL AUTHORITY FOR ADDITIONAL DEVELOPMENT ACTIVITIES TO LOCAL, STATE AND FEDERAL AGENCIES, SUBJECT TO PROVISIONS OF POLICY LU-4.12 AND THE CODE OF ORDINANCES.

Members of the public asked TRPA staff about this, and were not given direct answers but instead referred to Chapter 13 of the Code.⁷⁰

11/1: Ms. Ellie Waller in email to TRPA asked:

“...Was any new code drafted to support this recommendation by staff to allow State and Federal agencies to approve permits on Public Lands in the Conservation District thru an Area Plan Process?...”

11/1: Mr. Arlo Stockham, emailed response including:

“...The request for increased permitting delegation on public lands was not endorsed and is not included on Exhibit B of the staff summary or the final draft plan/code. As described in the staff summary, amendments in the final draft plan reduce and do not increase delegation opportunities. Limits on delegation are detailed in code section 13.7.3 (Activities requiring TRPA approval)...”

11/1: Ms. Ellie Waller responded to Mr. Stockham:

“...The reason I asked the question is I've been reading Exh B information and it was not clear if the recommendation was part of the Goals and Policies change. Please explain the new Policy language:...”⁷¹

11/1: Mr. Arlo Stockham responded to Ms. Waller's message:

The plan and code sections that we have cited speak for themselves. It is not proper for us to further interpret the plan and code language. Please refer to chapter 13.

First, we disagree. If TRPA feels it is not “proper” for TRPA to interpret (or explain) TRPA’s proposed Code and G&P language, then how can the public assess the impacts? This makes no sense. TRPA should be able to explain clearly the meaning of the proposed Code and G&P language the agency is proposing for adoption.

Second, when we examined Chapter 13 of the Code, as stated by Mr. Stockham, we found more vague language, but nothing that specifically prohibited the delegation of authority by Area Plans to other entities.

13.7.1. Memorandum of Understanding (MOU) Required

After TRPA finds that an Area Plan is in conformance with the Regional Plan, TRPA and the lead agency shall enter into a Memorandum of Understanding (MOU) that clearly specifies the extent to which the activities within the Area Plan are **delegated** or exempt from TRPA review and approval, and describes all procedures and responsibilities to ensure effective implementation of the Area Plan. Concurrent review of the Area Plan and the MOU is encouraged. [Emphasis Added].

13.7.3.B. The limits on delegation in Table 13.7.3-1 may be increased or decreased by the TRPA Governing Board. The levels of **delegation may be increased or decreased based on the lead**

⁷⁰ See attached emailed correspondence for full messages.

⁷¹ Ms. Waller included the proposed G&P language for IAP-1.3, included previously in these comments.

agency's ongoing monitoring, reporting, and performance review, whether the lead agency's actions on projects are consistent with the Area Plan, and whether the Area Plan's terms and conditions are met. [Emphasis Added].

These two sections alone appear to allow, or set the state for future changes that would allow, another agency to increase delegation in an Area Plan to other entities through the MOU, yet 13.7.3.B says "by the TRPA Governing Board" not other entities. This is confusing, even moreso when compared to the G&P language that appears to be a potential platform for allowing this change in the future.

Evaluation of all environmental impacts:

According to the TRPA Compact, TRPA is required to assess the environmental impacts of the proposed alternatives in the RPU EIS/RTP EIS/R documents. The Compact Article II (h) defines a "project" as:

(h) "Project" means an activity undertaken by any person, including any public agency, if the activity may substantially affect the land, water, air, space or any other natural resources of the region.

Compact Article VII requires the following:

- (a) The Tahoe Regional Planning Agency when acting upon matters that have a significant effect on the environment shall:
 - (1) Utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decision making which may have an impact on man's environment;
 - (2) Prepare and consider a detailed environmental impact statement before deciding to approve or carry out any project. The detailed environmental impact statement shall include the following:
 - (A) The significant environmental impacts of the proposed project;
 - (B) Any significant adverse environmental effects which cannot be avoided should the project be implemented;
 - (C) Alternatives to the proposed project;
 - (D) Mitigation measures which must be implemented to assure meeting standards of the region;
 - (E) The relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity;
 - (F) Any significant irreversible and irretrievable commitments or resources which would be involved in the proposed project should it be implemented; and
 - (G) The growth-inducing impact of the proposed project; . [Emphasis added]
 - (3) Study, develop and describe appropriate alternatives to recommended courses of action for any project which involves unresolved conflicts concerning alternative uses of available resources;
 - (4) Make available to States, counties, municipalities, institutions and individuals, advice and information useful in restoring, maintaining and enhancing the quality of the region's environment; and
 - (5) Initiate and utilize ecological information in the planning and development of resource-oriented projects.
- ...
- (d) In addition to the written findings specified by agency ordinance to implement the regional plan, the agency shall make either of the following written findings before approving a project for which an environmental impact statement was prepared:
 - (1) Changes or alterations have been required in or incorporated into such project which avoid or reduce the significant adverse environmental effects to a less significant level; or

(2) Specific considerations, such as economic, social or technical, make infeasible the mitigation measures or project alternatives discussed in the environmental impact statement on the project.

A separate written finding shall be made for each significant effect identified in the environmental impact statement on the project. All written findings must be supported by substantial evidence in the record.

Article V(c) requires that the Regional Plan be a “single enforceable plan” – which we question whether some unnumbered amount of individual Area Plans would constitute a “single enforceable plan” – and to allocate maximum population densities.

The regional plan shall be a single enforceable plan and includes all of the following correlated elements:

(1) A land-use plan for the integrated arrangement and general location and extent of, and the criteria and standards for, the uses of land, water, air, space and other natural resources within the region, including but not limited to an indication or allocation of maximum population densities and permitted uses. [Emphasis added]

Further, although the EIS provides an estimate of future residents in the Basin under each alternative, there is no analysis of the maximum population density in the Basin – including visitors. This was the original point of determining the environmental threshold carrying capacities. We note the requirement in the Compact does not specify only residential population densities. Thus, the land use plan required by the compact must address maximum visitor and residential populations in the proposed alternatives. These maximum densities must support achieving and maintenance of the thresholds, otherwise the alternative(s) would not meet the compact’s requirements.

11. THE 208 WATER QUALITY MANAGEMENT PLAN (WQMP)

Inadequate public review opportunity:

TRPA did not release a draft version of the proposed updates to the 208 WQMP for public review along with the draft Code, Goals & Policies, EIS, EIR/S, TER, and related documents in April 2012. The public was not notified that the 208 WQMP was to be revised, nor provided any opportunity to see proposed changes until 11/15/2012, when the “draft Final” copy was released. However, not only is the 208 WQMP directly tied to the RPU, but the proposed WQMP includes language tied to RPU amendments that would result in significantly more increases in development. In fact, the 208 WQMP language appears to set the stage for an additional area to be re-zoned to “Resort Recreation” – contrary to the agreements made by the Bi-State Committee (7/25/2012). In essence, as expected, it appears the Bi-State Agreement, as well as the RPU itself, that are proposed for adoption on 12/12/12 do nothing more than meet an apparently ongoing political obligation for increased development and reduced oversight.

Plan does not include federal designation and protection for Lake Tahoe:

Strangely, the 208 WQMP, which is the “framework”⁷² for managing Lake Tahoe’s watershed fails to include Lake Tahoe’s federal designation as an Outstanding National Resource Water (ONRW), which provides for special protection of the Lake, and prevents degradation of its waters. Is this yet another reflection of a new Plan that is more about development and less about environmental protection?

Further, because the proposed WQMP is based upon the RPU EIS (see excerpts below), which is technically inadequate, the RPU and WQMP will violate the ONRW anti-degradation policy as well as the TRPA compact, which incorporates federal and state water quality standards.

WQMP and RPU Relationship:

As noted above, the WQMP is viewed as one of the plans necessary to fully “implement” the TRPA Regional Plan. The Dec. 2012 staff summary for the RPU package states:

⁷² Introduction to 208 WQMP: “The Lake Tahoe Water Quality Management Plan (also known as the 208 Plan or WQMP) is a framework that sets forth the components of the water quality management system in the Lake Tahoe Region, the desired water quality outcomes for the Tahoe Basin, and the mechanisms adopted by all the relevant entities to achieve and maintain those outcomes. The WQMP is organized to reflect the water quality management plan elements required by the U.S. Environmental Protection Agency’s (U.S. EPA) regulations at 40 C.F.R. Section 130.6, which implements Sections 208 and 303(e) of the Clean Water Act, as well as the unique situation in the Lake Tahoe Region.”

The amended Lake Tahoe Water Quality Management Plan ("208 Plan") is the final step needed to implement certain Regional Plan amendments. Section 208 of the Clean Water Act establishes the planning mechanism administered by the two states and the conformed 208 Plan does not contain any independent water quality provisions that were not already included in and analyzed under the Regional Plan update or previously approved under other authorities. The States of California and Nevada have jointly developed and endorsed the form, content, and implementing provisions of the Final Draft 208 Plan distributed on November 15, 2012 and are recommending that the TRPA Board submit the updated 208 Plan to the water agency in each state for approval and subsequent certification by the US Environmental Protection Agency.

Therefore, since the WQMP is part of the RPU, why was it not released for public review in April, along with the proposed Code and G&P language at that time (noting the Code also "implements" the Regional Plan)? Further, as the staff summary states, the WQMP "does not contain any independent water quality provisions that were not already included in and analyzed under the Regional Plan update or previously approved under other authorities."

Yet the WQMP proposes a third area for Resort Recreation be approved within the next four years, and also sets a four year "sunset" for all Bi-State Agreement provisions (see more below). Neither of these changes were analyzed under the RPU. We also note this reiterates that the RPU EIS (and RTP EIR/S) are relied upon for the environmental impact analysis of the proposed WQMP. Thus, the WQMP should be subject to the same process as the RPU EIS. Further, where the RPU EIS fails to adequately analyze or support proposals in the RP, this technical inadequacy extends to the WQMP as well, where applicable.

The December 2012 GB packet⁷³ states the WQMP "implements the Regional Plan" in the findings for Chapter 4:

⁷³ http://www.trpa.org/documents/packets/gb_packets/2012_gb_packets/December_2012_gb_packet.pdf (p. 279)

TRPA CODE CHAPTER 4 – REQUIRED FINDINGS:

TRPA Code Section 4.4 – Findings to Amend the Regional Plan, Including Goals and Policies, and Code of Ordinances:

1. Finding: The Lake Tahoe Water Quality Management Plan is consistent with and will not adversely affect implementation of the Regional Plan, including all applicable Goals and Policies, Plan Area Statements and maps, the Code and other TRPA plans and programs.

Rationale: The Lake Tahoe Water Quality Management Plan implements the Regional Plan by incorporating it by reference. It is therefore, by definition, consistent with and will not adversely affect Regional Plan implementation, including all applicable Goals and Policies, Plan Area Statements and maps, the Code and other TRPA plans and programs.
2. Finding: The Lake Tahoe Water Quality Management Plan will not cause the environmental threshold carrying capacities to be exceeded.

Rationale: As indicated in the Initial Environmental Checklist (IEC), the Lake Tahoe Water Quality Management Plan has no significant adverse effect on any environmental criteria. The Lake Tahoe Water Quality Management Plan will not cause the environmental threshold carrying capacities to be exceeded.

The packet also includes an “Initial Environmental Checklist” for the WQMP update, which begins with the following statement, incorporating the RPU EIS.

Brief Description of Project:

The Lake Tahoe Water Quality Management Plan (also known as the 208 Plan or WQMP) is a framework that refers to, and describes, the components of the water quality management system in the Lake Tahoe Region. In the 1970s, the states of California and Nevada, with approval of the U.S. Environmental Protection Agency, delegated responsibility to TRPA as a bi-state regional planning and regulatory agency to administer water quality management and improvement for the Lake Tahoe Region. Since that delegation more than 30 years ago, water quality administration has grown in complexity and programs have been added to make the system more comprehensive. Water quality is administered, managed, and implemented today in the Tahoe Region by a multitude of agencies at different levels of government under a wide array of statutory and regulatory authorities. All of these components are incorporated into the Water Quality Management Plan by reference. Each of the individual components has been approved and may be amended in accordance with the required processes associated with that component. As such, this initial environmental checklist incorporates the associated environmental documents that accompany any individual components referenced. Primarily, these include the Lake Tahoe Regional Plan Update Draft Environmental Impact Statement, California SCH# 2007092027; Nevada SCH# E2008-124, and the Lake Tahoe TMDL Substitute Environmental Document, California SCH# 2010072064.

At the 11/15/2012 GB hearing, TRPA introduced the WQMP with the following statements (copied from the minutes in the December 2012 board packet):

VIII. PUBLIC HEARINGS

C. The 208 Water Quality Final Management Plan Update

Ms. Marchetta said that each Board member just received a hard copy of the complete 208 Plan Update. It is accompanied by a letter from the two states delivering the Update; the letter is signed by the Secretary of Resources of California, John Laird, and the Director of the Department of Natural Resources in Nevada, Leo Drozdoff. The 208 Plan Update is an implementing document that needs action by the two states to make the Regional Plan Update fully effective. Section 208 is the authority under the Federal Clean Water Act that requires an area to plan measures to achieve water quality goals. TRPA has been the delegated 208 Planning Authority in Tahoe generally since the 1970s, but the 208 Plan needs to be approved by the two states. 208 is a mechanism to bring together disparate water quality elements from multiple plans, sources and legal authorities - point source, non-point source and more, to address water quality implementation. The 208 Plan approvals is the responsibility of the two states, not TRPA, and the two states must certify that the plan is consistent with Section 208 of the Clean Water Act. Both states, through NDEP and Lahontan, as well as US EPA Region 9, have worked with staff on the updated plan, have reviewed and endorsed the form and content of the updated document, and are recommending that the TRPA Board advance the updated 208 Plan to the two states for final approval and certification by the US Environmental Protection Agency. An update to the current 208 Plan is the final step in implementing the Regional Plan Update changes, because our Code requires conformance of the 208 Plan for those changes that may be inconsistent with the current 208 Plan. The 208 Plan itself holds no independent water quality provisions and is merely a compendium of other water quality authorities.

We have been consulting with the two states and the US EPA since early spring on how to conform the 208 Plan to both the updates to the Regional Plan and the newly adopted TMDL of each state. The two states have agreed that a more stream-lined approach was needed away from today's plan that restates the details of many different water quality elements now to a form that instead incorporates by reference the entirety of disparate water quality plans and implementing documents. With this transition to incorporation by reference, it is going to be a far more efficient way to keep the 208 Plan fully up-to-date and technically current.

The states have agreed on a more stream-lined compendium document approach and also agreed that they needed a transition from the existing document to this revised approach. They wanted to capitalize on the trust built through the Bi-State Consultation and the open process of policy making in developing the Regional Plan Update, so they agreed that a transition period was needed as a bridge to build confidence in that growing relationship of trust. The bridge they built is set out in Chapter 10 of the updated Plan delivered today. It is a narrower set of topics that will remain specifically referenced in the 208 Plan for four more years. Those topics will sunset using a process agreed to by the two states.

Of specific interest is the statement: *"An update to the current 208 Plan is the final state in implementing the Regional Plan Update changes, because our Code requires conformance of the 208 Plan for those changes that may be inconsistent with the current 208 Plan."*

Thus, it is clear the WQMP is based upon the RPU, which is said to be analyzed in the RPU EIS, which is technically deficient and has also been the subject of an ever-changing, difficult public process.

Further, of note is the failure of TRPA to address what the "transition period" meant. No where did TRPA explain in the presentation of the WQMP that there was a four year sunset on the Bi-State Agreement approvals, nor that the plan would allow for a third

Recreation Resort Area to be adopted within that four year period. The public was not made aware of this until reading the document, which we reiterate was not provided until 11/15/2012 and never preceded by a draft for public review.

The states have agreed on a more stream-lined compendium document approach and also agreed that they needed a transition from the existing document to this revised approach. They wanted to capitalize on the trust built through the Bi-State Consultation and the open process of policy making in developing the Regional Plan Update, so they agreed that a transition period was needed as a bridge to build confidence in that growing relationship of trust. The bridge they built is set out in Chapter 10 of the updated Plan delivered today. It is a narrower set of topics that will remain specifically referenced in the 208 Plan for four more years. Those topics will sunset using a process agreed to by the two states.

Three major impacts of the proposed 208 WQMP language which have not been properly disclosed or analyzed:

As detailed below, there are three very significant impacts of the proposed WQMP language that have essentially been ‘snuck under the radar’ at the last minute, yet the implications are overwhelming.

- 1) More Resort Recreation area(s);
- 2) Change in legal requirements for burden of proof;
- 3) “Automatic” updates without environmental analysis and unclear changes to legal processes

1) More Resort Recreation area(s)

Resort Recreation areas are created specifically for existing corporations (Edgewood Companies and Vail Corporation) to permit very large projects, consisting of hotels, condos, commercial, and single family homes on undeveloped or developed land. The 208 WQMP adds a third area in an unspecified location, although scoping has already started in Placer County on an expansion of the Vail Corp.’s Northstar Project from Martis Valley that is shown on the land use map to extend over the ridge into the Tahoe Basin on both private and U.S. Forest Service lands.

The proposed language specifically allows for a third area to be re-zoned to Resort Recreation in the next four years – without environmental analysis.⁷⁴ As noted throughout our current and previous comments, the final EIS fails to analyze the environmental impacts associated with the proposed changes in zoning for the two areas specified in the current proposed Code (Edgewood Companies and Vail/Heavenly parcels). However, the RPU would proclaim these areas to have the “new land use designation” for Resort Recreation, and thus proposed Area Plans that would include these new zoning designations would easily be determined to be “in conformance” with the new RP...thus skirting any evaluation of the impacts of this proposed zoning by TRPA, local jurisdictions, or other entities. This failure of

⁷⁴ The draft EIS (4/25/2012) claimed the wholesale change in zoning of Recreation lands to allow “resorts” was analyzed and mitigated to less than significant in Alternative 3, however as noted in our extensive comments, the environmental analysis in the EIS is inadequate.

process is only exacerbated by the ‘set-up’ in the proposed 208 WQMP to facilitate the establishment of a third Recreation Resort area in the next four years.

Specifically, Section 10.2 includes the following language:

10.2 SPECIFIC TERMS AND PROCESS

A. The WQMP incorporates by reference not only the Regional Plan and Code of Ordinances, as amended by the 2012 Regional Plan Update process, but also the July 26, 2012 Bi-State Recommendations.

B. The WQMP shall not be amended before January 1, 2017 to alter the terms of the Bi-State Recommendations incorporated herein, with the understanding that the terms of the Bi-State Recommendations: (1) allow adoption and updating of Area Plans by local governments as appropriate, and (2) shall not be used to support or deny applications for “Resort Recreation” designation.

C. Prior to January 1, 2017 and absent a WQMP amendment, the “Resort Recreation” land use designation shall in addition to including the Heavenly and Edgewood parcels, allow for no more than one additional area of a comparable size to be added to that designation. If the subdivision amendment procedures of the WQMP do not sunset after January 1, 2017 pursuant to Section G below, at that time the States will caucus in a manner similar to Section G to further address the “Resort Recreation” designation.

This language opens the door for easy approval of a third resort recreation area before 2017, and unlimited areas after 2017. This in itself defies the environmental analysis requirements. **However, this also speaks to a failure of the EIS to disclose the impacts of the proposed Regional Plan and 208 WQMP update.** That this language was provided at the last GB meeting before the upcoming approval, with no discussion in advance regarding this change, flies in the face of the Compact’s requirement to disclose significant impacts of the proposed Plan to the public.

2) Change in legal requirements for burden of proof

The proposed language results in a change in legal requirements that is extremely significant yet quietly made: the burden of proof is placed upon the appellant of a decision, not on the agency. This major change in legal requirements was proposed at the last hour, and done so very quietly. Yet again, this is a major example of the failure of the EIS to disclose changes related to the proposed document updates.

2. Does a person object to amending the WQMP to be consistent with the Regional Plan change?
a. If no, then the WQMP is automatically amended;
b. If yes, then the objecting person has the burden of providing substantial evidence to the States that the Regional Plan change may reasonably be expected to lead to the degradation of water quality. The States must determine unanimously whether the objecting person has met the burden of proof. The States may consider evidence from any person, including themselves, that they collectively or individually deem appropriate.

3. Do the States, within 60 days of the objection to the WQMP amendment, unanimously determine that the objecting person met the burden?
a. If no, then the WQMP is automatically amended;

- b. If yes, then the WQMP is not amended and the decision is remanded to TRPA for further action;
- c. If the States do not agree and cannot resolve the disagreement within 60 days of the objection to the WQMP amendment, absent agreement between the States to extend for a reasonable period the time in which to attempt to reach agreement, the WQMP is not amended and the proposed WQMP amendment is remanded to TRPA for further action. At this point, either State may give notice that it intends to pursue revocation of the designation of TRPA as its WQMP planning agency for the Lake Tahoe Basin.

3) “Automatic” updates without environmental analysis and unclear changes to legal processes

Further, the proposed language would result in “automatic updates” to the WQMP after 1/1/2017 when TRPA makes a change to the Regional Plan. Due to the previous section, if a member of the public objects to this change, they now have the burden of proof.

- 4. After January 1, 2017, except for amendments concerning subdivisions, relevant amendments made to TRPA’s Regional Plan and/or Code are automatically made to the WQMP.

This appears to leave decisions related to Lake Tahoe’s protection in the hands of the EPA and the states, not the Regional Planning Agency the Compact created.

Additionally, the Introduction chapter of the WQMP includes the following information:

In light of the changes in the approach to managing water quality, the unique arrangement for planning, and the new requirements, the Lake Tahoe WQMP is updated to better serve as a living and relevant framework within which the distinct, but interrelated programs and efforts at the various government levels work in a coordinated and complementary fashion as the major components of the Region’s water quality management system. Each of the major individual components has been approved and may be amended in accordance with the required processes associated with that component. For example, the Lake Tahoe Total Maximum Daily Load (TMDL) is subject to approval by both States and the U.S. EPA; the Tahoe Regional Plan is subject to approval by the TRPA Governing Board; and local government Codes that may act to implement a portion of their respective load reduction plans are subject to approval by local government elected officials. To ensure timely implementation and, where necessary, timely revision of these components and to improve the functionality and relevance of the WQMP, in lieu of re-adoption of individual components, this WQMP incorporates by reference those documents listed in Table 2. The following components and their subsequent duly adopted and approved revisions and amendments are integral parts of this WQMP. As an example, periodic updates and improvements of the TRPA Best Management Practices Handbook to reflect latest thinking and approaches are automatically incorporated as part of this WQMP and subject to implementation. Should future changes be made to the underlying water quality regulatory authorities or key policy concepts or approaches that may affect the overall implementation of the Lake Tahoe Region water quality management system, the WQMP will be reviewed and updated as appropriate, in accordance with Chapter 10 of this document and other applicable regulations. [Emphasis added]

Table 2 (as referenced above) includes:

TABLE 2 – WQMP COMPONENTS AND SUBSEQUENT AMENDMENTS INCORPORATED BY REFERENCE

AGENCY	DOCUMENT
TRPA	Regional Plan
	Code of Ordinances
	Regional Plan EIS
	BMP Handbook
Lahontan Regional Water Quality Control Board	Water Quality Control Plan for the Lahontan Region (Lahontan Basin Plan)
	Lake Tahoe TMDL for the California portion of the Region
	Lake Tahoe TMDL Substitute Environmental Document
	Other TMDLs for California 303d listed waters in the Region
Nevada Division of Environmental Protection	Lake Tahoe TMDL for the Nevada portion of the Region
	Other TMDLs for Nevada 303d listed waters in the Region
The Counties, City of South Lake Tahoe, and State Departments of Transportation	Load Reduction Plans
	Conforming Area Plans
U.S. Forest Service	U.S. Forest Service Forest Plan for the Lake Tahoe Region
	Conforming Area Plans
	U.S. Forest Service Soil and Water Conservation Handbook in California
	U.S. Forest Service BMP Manual in Nevada

It is unclear what, exactly, this means, and no explanation is provided. For example:

- Does this mean that if any of the documents in the Table 2 are changed, the WQMP automatically incorporates those changes, without any environmental or legal review?
- Does this essentially give the two states the authority to make changes to TRPA's RPU?
- What does this mean for the public with regards to commenting on changes, or appealing changes made by the other entities which the WQMP may not automatically update?
- Would the public have to appeal to the two states, TRPA, and the entity that changes one of these referenced documents?

This process remains extremely unclear, but it appears that it will further limit the public's ability to follow changes being proposed, let alone to express concerns with them, or appeal them.

The legal significance of the statement (above) in the introduction chapter to the WQMP, combined with the text in Section 10, appear to completely change the public process, and the environmental review requirements, yet there is no discussion

of what these changes mean – anywhere. Instead, the public has been presented with the final draft WQMP just weeks before it will likely be endorsed⁷⁵ by TRPA. There has been no opportunity for a public hearing since the public had the chance to read the WQMP, and it appears the only chance to raise questions will be on the same long, exhausting day where the APC and GB will be considering the update package, and previous discussion has made it clear that most minds are already made up (a review of minutes from all 2012 GB meetings, for example, reveals an ongoing preference for Alt. 3 and an overwhelming interest in passing it on 12/12/12). Thus, it is clear any new concerns raised on 12/12 will not likely be given an objective reception and discussion.

Below we include Section 10 of the proposed 208 WQMP:

⁷⁵ According to the December packet, TRPA will consider the 208 WQMP update and vote upon a Resolution to endorse the 208 Plan, before it is sent to the EPA and states for review.

10 UPDATING AND AMENDING THE WATER QUALITY MANAGEMENT PLAN

10.1 INTRODUCTION

This section details the relationship between this WQMP and the TRPA's Regional Plan. For more than 20 years, the WQMP has included multiple provisions of the Regional Plan. In order to make effective amendments to those provisions of the Regional Plan that also appeared in the WQMP, the WQMP would have to be amended as well, a process requiring approval of both NDEP and the SWRCB and the U.S. EPA. This WQMP significantly streamlines this process. As more fully set forth below, until January 1, 2017, the WQMP limits the circumstances under which the WQMP must be amended to occasions when Regional Plan changes relate to six specific topics listed below. On January 1, 2017, the above limitation automatically sunsets for five of those six topics, excluding subdivisions. For subdivisions, the States will caucus after January 1, 2017 to determine whether the referenced subdivisions sections will sunset based on progress toward attaining improved water quality in Lake Tahoe, and any other factors the States deem relevant.

With several exceptions noted below, the terms of the July 26, 2012 Bi-State Recommendations are herein incorporated by reference to this WQMP and will not be changed for four years. On January 1, 2017, this provision expires.

Amendment of the WQMP before January 1, 2017 is automatic upon amendment of the Regional Plan for five topics as noted below, unless the person objecting to amendment proves based on substantial evidence to the States that the amendment to the Regional Plan is reasonably expected to lead to the degradation of water quality. There is no special amendment provision for subdivisions.

Any reference to the "States" herein means one representative each from Nevada and California as designated by that State.

10.2 SPECIFIC TERMS AND PROCESS

- A. The WQMP incorporates by reference not only the Regional Plan and Code of Ordinances, as amended by the 2012 Regional Plan Update process, but also the July 26, 2012 Bi-State Recommendations.
- B. The WQMP shall not be amended before January 1, 2017 to alter the terms of the Bi-State Recommendations incorporated herein, with the understanding that the terms of the Bi-State Recommendations: (1) allow adoption and updating of Area Plans by local governments as appropriate, and (2) shall not be used to support or deny applications for "Resort Recreation" designation.
- C. Prior to January 1, 2017 and absent a WQMP amendment, the "Resort Recreation" land use designation shall in addition to including the Heavenly and Edgewood parcels, allow for no more than one additional area of a comparable size to be added to that designation. If the subdivision amendment procedures of the WQMP

do not sunset after January 1, 2017 pursuant to Section G below, at that time the States will caucus in a manner similar to Section G to further address the "Resort Recreation" designation.

- D. Except for amendments concerning subdivisions, which are addressed in Section F below, prior to January 1, 2017 the WQMP need only be amended if an amendment to the Regional Plan involves one of the Regional Plan or Code of Ordinance sections or chapters listed below:
1. BMPs (Goals and Policies WQ 3-11, 3-12; Code Chapter 60.4);
 2. Land Use Planning and Control (Goals and Policies LU 1 - 4.4 (excluding LU 2.2 (Subdivision) and any reference to or definition of Resort Recreation); Code Chapters 20 - 22 (excluding any reference to or definition of Resort Recreation));
 3. Coverage Transfer Limits (Goals and Policies LU 2-11; Code Sections 30.4.2 - 30.4.4);
 4. Evaluation Intervals and Targets: Assessment of Effectiveness and Adequacy (Goals and Policies DP 2.1; Code Section 16.5.2);
 5. Development Limits (Goals and Policies, DP 1-4; Code Chapter 50 (excluding those provisions of Section 50.5.1.C.1 regarding the distribution of the up to 130 residential annual allocation among jurisdictions and Section 50.6.4.E regarding the distribution of commercial floor area among jurisdictions.))
- E. To determine whether amendment of the WQMP is necessary prior to January 1, 2017, the following process will be followed:
1. Does the Regional Plan amendment involve one of the six topics (the five listed above and the subdivision provisions listed below)?
 - a. If no, then no WQMP amendment is necessary;
 - b. If yes, then a WQMP amendment is necessary;
 - c. If the change relates to the subdivisions provisions, skip to Section F below, otherwise continue.
 2. Does a person object to amending the WQMP to be consistent with the Regional Plan change?
 - a. If no, then the WQMP is automatically amended;
 - b. If yes, then the objecting person has the burden of providing substantial evidence to the States that the Regional Plan change may reasonably be expected to lead to the degradation of water quality. The States must determine unanimously whether the objecting person has met the burden of proof. The States may

consider evidence from any person, including themselves, that they collectively or individually deem appropriate.

3. Do the States, within 60 days of the objection to the WQMP amendment, unanimously determine that the objecting person met the burden?
 - a. If no, then the WQMP is automatically amended;
 - b. If yes, then the WQMP is not amended and the decision is remanded to TRPA for further action;
 - c. If the States do not agree and cannot resolve the disagreement within 60 days of the objection to the WQMP amendment, absent agreement between the States to extend for a reasonable period the time in which to attempt to reach agreement, the WQMP is not amended and the proposed WQMP amendment is remanded to TRPA for further action. At this point, either State may give notice that it intends to pursue revocation of the designation of TRPA as its WQMP planning agency for the Lake Tahoe Basin.
 4. After January 1, 2017, except for amendments concerning subdivisions, relevant amendments made to TRPA's Regional Plan and/or Code are automatically made to the WQMP.
- F. Until January 1, 2017, any amendments made by TRPA to subdivision policy as set forth in Regional Plan Goals and Policies LU 2.2 (as amended by the RPU, and excluding Attachment 2-A (list of TRPA approved subdivisions)) and Code Chapter 39 (as amended by the RPU), other than allowing the subdivision of one area in addition to Heavenly and Edgewood parcels after it is added to the Resort Recreation designation, will require amendment of the WQMP. If no person objects to amending the WQMP to be consistent with the amendment to the Regional Plan and/or Code regarding subdivisions, then the WQMP is automatically amended. If a person does object to amendment of the WQMP, then such amendment shall only be made through the past WQMP amendment process, not those set forth above.
- G. After January 1, 2017, the States will caucus to determine whether changes made to TRPA's Regional Plan and/or Code concerning the subdivision provisions set forth above are automatically made to the WQMP. The States shall base their determination to sunset the subdivision amendment procedures of the WQMP on whether progress is being made toward attaining improved water quality and any other factors the States deem relevant. The States shall conduct their caucus process as follows:
1. Does a State object to the sunset of the subdivision amendment procedures of the WQMP?
 - a. If no, then the subdivision amendment procedures of the WQMP automatically sunset;

Finally, we are provided with the Initial Environmental Checklist for the WQMP in the 12/5/12 Board packet. Of note is the date on the IEC: 12/4. This suggests that the concepts and proposals in the 11/15 WQMP were determined first, then the checklist performed to justify proposed changes. Strangely, although as noted above the WQMP does prescribe several changes, the IEC states that there are no impacts to any of the checklist items. Further, the WQMP implements the RP, which has numerous impacts, and thus, this checklist appears to conflict with the outcomes of the RPU.

Changes to Final WQMP:

The public was provided yet another set of amendments to review on 12/10, including revisions to the proposed WQMP. Additional comments are noted below:

Page 5:

Should future changes be made to the underlying water quality regulatory authorities or key policy concepts or approaches that may affect the overall implementation of the Lake Tahoe Region water quality management system, the WQMP will be reviewed and updated as needed, appropriate, in accordance with Chapter 10 of this document and other applicable regulations, the WQMP will "automatically" update to include relevant plan or policy changes. Such automatic updates will not require WQMP recertification by the States of California or Nevada unless additional review and consideration is triggered by the conditions outlined in Chapter 10.

We refer again to our questions and concerns regarding this new “automatic update” concept.

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10.1 INTRODUCTION

This section details the relationship between this WQMP and the TRPA's Regional Plan and provides a clear bi-state framework for more streamlined and timely implementation of the CWA requirements concerning the 208 water quality management plan in the Lake Tahoe Region. It does not in any way modify or supersede those CWA requirements. For more than 20 years, the WQMP has included multiple provisions of the Regional Plan. In order to make effective amendments to those

As the WQMP proposes additional resort recreation development in the next four years, and additional development results in additional stormwater runoff and pollution entering Lake Tahoe, this suggests a conflict with the CWA ONRW non-degradation standards.

12. COMMENTS RELATED TO THE 12/5/2012 STAFF SUMMARY AND MATERIALS

The attached comments in “**A.7: TASC-FOWS Comments on 12/5/12 Staff Summary and Findings**” address information provided in the 12/5/12 staff summary for the 12/12/12 TRPA Board hearing. Due to the late nature of the public receiving over 640 additional pages, and associated time constraints, comments may touch on subjects already included or discussed above or in other attachments.

However, as our detailed comments note, the evidence available does not support TRPA’s conclusion that the environmental findings in the staff summary can be made. Further, the inclusion of yet more last minute information adds further complexity to a process that has continued to be a moving-target for the past year.

Response to Additional Comments in Staff Summary:

ADDITIONAL PUBLIC COMMENTS AND RESPONSES REGARDING THE FINAL DRAFT REGIONAL PLAN DOCUMENTS

This exhibit summarizes and responds to substantive late comments that were submitted on the Final Draft Regional Plan documents. TRPA is not required to respond to comments submitted after the close of the public comment period on the Draft EIS, and many of the late comments reiterate comments that were submitted earlier and are responded to in more detail in the Final EIS and previous staff reports. For the benefit of the Governing Board and the public, TRPA staff has elected to provide written responses to address any remaining concerns. As described in the attached Staff Report, 120 comments have been received since the release of the Final Draft Regional Plan documents on October 24, 2012. This exhibit does not provide a systematic or detailed response to every comment received, nor does it address any of the 80 percent of the comments that were supportive of the Final Draft Regional Plan. This exhibit provides a summary and brief response to each substantive comment that expresses concern or that otherwise takes issue with the Final Draft Regional Plan documents. All written comments received since the release of the Final Draft Regional Plan documents are available on TRPA’s website at: <http://www.trpa.org/default.aspx?tabindex=0&tabid=422>

The extent of comments received on the changes proposed since the draft public comment period ended is reflective of the ever-changing process. Further, many concepts proposed since 6/28 were not mentioned in the draft, nor have they been analyzed in the final documents.

In conclusion, we appreciate the opportunity to provide additional comments on the RPU package of materials, however, the process, the documents, the purported environmental analysis, the proposed changes to Resolution 82-11, the Code, the G&P, the WQMP, and all associated documents and plans are not supported by substantial evidence in the record, and findings that the proposed changes will achieve and maintain the thresholds can not be supported by evidence. Instead, thousands of pages have been carefully used to support a desired pro-development Regional Plan that will further degrade Lake Tahoe’s fragile environment and harm the Basin’s local communities as well.

ATTACHMENTS

- A.1 TASC-FOWS. TRPA Response to Peer Reviewers
- A.2 TASC-FOWS Additional Comments on Final TER
- A.3 TASC-FOWS Comparison of Mitigation Measures Draft v Final
- A.4 TASC-FOWS Color-coding re Final RPU Organization
- A.5 TASC-FOWS Examples.Responses to our comments on the EIS
- A.6 TASC-FOWS Comments on Dec 5 Staff Summary & Findings

Additional Attachments and References:

Attached:

1. Emails re: Delegation of Authority to Agencies.EW.AS 11.1.2012
2. 9/16/2012 Karlton Shorezone Decision
3. 11/14/2012 Ann Nichols NTPA comments to TRPA
4. Emails Allocations AN JH 11.13.12
5. Schueler, T. 1994. The importance of imperviousness. Watershed Protection Techniques 1(3): 100-111.
6. CTC 6/20/2012 Agenda Item 9
7. CTC 3/15/2012 Agenda Item 11a
8. Report to Tahoe Regional Planning Agency on revision of Tables 1, 2, 4, 5 and Appendix in *Land-Capability Classification of the Lake Tahoe Basin, California-Nevada, A Guide for Planning* (Bailey, 1974) USDA, Natural Resources Conservation Service1 Davis, California, Aug. 31, 2007
9. Emails AN.JH Res Rec 208 etc 11.19.2012
10. Squaw Valley Expansion PPT 7.24.2012
11. Urban v. Non Urban Map 6.25.2012
12. TASC Letters to CA (12/6) and NV (12/8) Governors
13. Emails re final TER and 208 changes 12.10

Referenced (some of these were submitted with our previous letters and/or available online):

1. Comments on Draft EIS by CA Attorney General Kamala Harris 6/27/2012; *(on file with TRPA)*
2. Comments on Draft EIS by CA Attorney General Kamala Harris 2/14/2012; *(on file with TRPA)*
3. 2006 Threshold Evaluation *(on file with TRPA)*
4. 2001 Threshold Evaluation *(on file with TRPA)*
5. 2012 Tahoe Summit Report by DRI: <http://www.dri.edu/2012-tahoe-summit>
6. 7/23/2002 GB packet *(on file with TRPA)*
7. Article: “Scientists: Tsunami and earthquakes overdue in Lake Tahoe” Access at: <http://southtahoenow.com/story/12/05/2012/tsunami-and-earthquakes-overdue-lake-tahoe>
8. 11/25/2012 TASC & FOWS request for Recirculation as Agenda Item *(on file with TRPA)*
9. TERC: State of the Lake Report, 2012, access at: <http://terc.ucdavis.edu/stateofthelake/StateOfTheLake2012.pdf>
10. Proposals/comments submitted by Mara Bresnick & Byron Sher, Oct. 2012 *(on file with TRPA)*
11. TASC request Recirculation 11.15.2012 *(on file with TRPA)*

12. TASC 11.15.2012 Attachment: History of involvement in RPU process (*on file with TRPA*)
13. TASC proposed language for BMP gaps 11.14.2012 (*on file with TRPA*)
14. Letter to USACE re EIS for thresholds 6-16-2007 (*on file with TRPA*)
15. Letter from TRPA to USACE re Threshold Approval process (*on file with TRPA*)
16. Article: Feds declare tougher water pollution rules on Florida:
<http://www.abcactionnews.com/dpp/news/feds-impose-tough-water-pollution-rules-on-florida-environmental-groups-declare-victory>; AND
<http://www.seattlepi.com/news/science/article/Feds-impose-tough-water-pollution-rules-on-Florida-4081990.php#ixzz2DkwkFWFQ>
17. Notice of Preparation of draft EIR for proposed Northstar Mountain Master Plan 11/6/2012:
<http://www.placer.ca.gov/Departments/CommunityDevelopment/EnvCoordSvcs/EIR/NorthstarMMP.aspx>



TRPA Governing Board
128 Market St.
Stateline, NV 89449

November 16, 2013

Subject: Comments on City of South Lake Tahoe proposed Tourist Core Area Plan

Dear Chair Aldean and Members of the TRPA Governing Board:

The Friends of the West Shore (FOWS) and the Tahoe Area Sierra Club (TASC) appreciate the opportunity to provide additional comments on the proposed City of South Lake Tahoe (City) Tourist Core Area Plan (TCAP), and all related documents. As our collection of previous comments on the TCAP show, we have been extremely diligent providing comments, technical references, and recommendations to all involved government agencies.¹ We herein incorporate and reiterate all previous comment letters and attachments, including those submitted to TRPA on CD for the 11/13/13 APC hearing.

The information available from the RPU/RTP EIR/S and EIS, and the TCAP's environmental documentation is inadequate. Impacts to water quality, nearshore quality, air quality, and public health and safety have not been addressed, therefore TRPA's threshold-related findings can not be made. In order to achieve and maintain TRPA's thresholds, and to protect public health and property, **we request the GB not approve the TCAP at this time, and direct TRPA staff to take actions requested in the attached letter to the APC** (dated 11/12/13).^{2,3} Further, the evidence in the record does not support making TRPA's required findings. For example:

- **Science** says we must reduce impervious coverage to improve water quality. The TCAP increases coverage.
- **Science** shows the filters used in engineered stormwater treatment facilities that are a likely outcome of the TCAP's increases in coverage, do not remove the fine sediments which impact Lake Clarity to the extent needed to achieve water quality standards.
- **Science** reveals multiple threats from natural hazards in the Basin, including flooding, earthquakes, and tsunamis (the latter will have an even greater affect in areas closest to the Lake, where the TCAP places more people and structures).
- **Science** shows that ozone – a significant public health hazard - is increasing in the Basin. The TCAP does not show how California's air quality standards for public health will be attained.

Our collection of comments and attachments include multiple scientific references which reflect this information. Please feel free to contact Jennifer Quashnick at jqtahoe@sbcglobal.net or Laurel Ames at laurel@watershednetwork.org if you have any questions.

Sincerely,

Laurel Ames,
Conservation Co-Chair,
Tahoe Area Sierra Club

Susan Gearhart,
President,
Friends of the West Shore

Jennifer Quashnick
Conservation Consultant

¹ We have submitted comments to TRPA and City staff, the RPIC, TRPA APC, TRPA GB, SLT City Council, and SLT Planning Commission. Most comments and attachments have been included in GB packets.

² Our 11/12/13 comments to the APC are included in the GB packet in "Attachment C: 11/13/2013 APC Public Comments Letters" (beginning on p. 7).

³ Although the MOU has been delayed for up to six months according to City staff, as stated in many previous comments to TRPA and the City of SLT, we do not believe the Compact allows for the Delegation of Authority associated with the TCAP.



Tahoe Regional Planning Agency
2011 Threshold Evaluation
Shane Romsos
Tahoe Regional Planning Agency
PO Box 5310
Stateline, NV 89449
email: sromsos@trpa.org

July 25, 2012

Re: Comments on the Draft 2011 Environmental Threshold Report

Dear Mr. Romsos, Governing Board members, and TRPA staff:

The Tahoe Area Sierra Club ("TASC") appreciates the opportunity to provide comments on the Draft 2011 Threshold Evaluation Report ("TER"). As part of a larger group effort among TASC, the Friends of the West Shore (FOWS), and the League to Save Lake Tahoe (League), on June 28, 2012, TASC previously submitted comments on the Draft 2011 TER, the Draft Regional Plan Update (RPU) Environmental Impact Report EIS (DEIS), and the Draft Tahoe Regional Transportation Plan (RTP) and Sustainable Communities Strategy (SCS) Program EIR/EIS (DEIR/S). Those comments are incorporated by reference and supplemented by these additional comments. Further, because the 2011 TER and draft RPU/RTP environmental documents are so inextricably linked, and as confirmed by TRPA staff, the RPU DEIS puts forth the proposed threshold amendments that the TER and associated EA would historically address, our comments frequently refer to the RPU/RTP documents as well. These comments are provided under the additional time provided for TER comments (7/25/2012) although we note our disagreement with a process that has placed the RPU in front of the threshold evaluation and update.

As noted in our previous comments with FOWS and the League, the timeframes and process by which the TER and RPU/RTP documents have been released for public comment is of great concern. We reiterate concerns below:

Also of concern are the timeframe, deadlines, and counter-intuitive organization by which this 2011 TER, Regional Plan Update and associated documents have been produced and presented for public comment. The order and simultaneous evolution of these documents are procedurally erroneous and ostensibly inappropriate. The comment period for the 2011 Draft Threshold Report extends beyond the 60-day comment period for the RPU DEIS and RTP DEIS/DEIR. Because TRPA Compact Article V(c) mandates the creation of environmental thresholds to protect the Basin's unique environment, the Regional Plan must *achieve and maintain* the thresholds. It is not possible to evaluate the environmental impacts of the proposed Regional Plan Alternatives, let alone analyze the RPU DEIS for inadequacies, without a comprehensive examination of the 2011 TER. Due to the conflicting timeframe by which these two reports were released, it is therefore imperative that the results of a final threshold report be incorporated into the RPU FEIS. The

TASC Additional Comments on Draft 2011 Threshold Evaluation Report

blatant contradictory way in which TRPA conducted this process directly undermines its fulfillment of its core mission, i.e. to restore and protect Lake Tahoe's environment by ensuring the thresholds are achieved and maintained.

Further, as included in our June 28 comment letter, because the TER must serve as the *foundation* for the RPU/RTP updates, TASC again requests that these additional comments on the TER be thoroughly addressed in the Final TER and RPU/RTP documents.

Our review has identified numerous areas of concern with the analyses and presentation of information in the 2011 TER, the RPU DEIS, and the RTP DEIR/DEIS. The following comments focus on all three environmental documents since they are inextricably linked, although the TRPA and TMPO have selected two different comment periods (the EIS and EIS/EIR comment period ends June 28th, and the TER comment period, July 25th). However, we reserve the right to provide further comments on the 2011 TER after the June 28th deadline, and because the RPU DEIS and RTP DEIR/DEIS analyses are directly linked to the 2011 TER in numerous ways¹ (as demonstrated in these comments), we feel any comments provided on the 2011 TER between June 29th and July 25th should be given equal consideration (and response) as these comments.

Given the limited time to review and comment on the overwhelming number of pages in the 2011 TER, RPU DEIS and RTP DEIR/DEIS, the TASC, the FOWS, and the League did their best to provide the most complete set of comments possible.² However, as TRPA has provided an 'extended' comment period for the 2011 TER, and because even with our best efforts, it was simply impossible for any person or group to thoroughly review every document provided for release in the 60 days provided, we therefore provide these additional comments specifically on the Draft 2011 Threshold Evaluation Report.

Overall, the environmental analyses of the thresholds in the 2011 TER, as well as the a impact analyses in the RPU DEIS and RTP DEIR/DEIS which often 'rely' on the TER "results" are wholly inadequate, and very misleading when the facts are given detailed consideration. In the given time frame, TASC and others attempted to review and assimilate the information provided with all of the documents, and to identify concerns and raise questions as comprehensively as possible. However, our previous comments, as well as the comments in this letter, include many examples of problems that are repeated throughout the documents, but due to time constraints, do not include every instance or occurrence.

TASC comments begin below and are arranged as follows:

- I Process and Timeline with RPU/RTP Updates
- II General Comments regarding the Draft 2011 TER and Methodology

¹ For example, the RPU DEIS Air Quality Chapter (p. 3.4-30) relies on "positive trends" in the 2011 Threshold Report as part of the environmental impact analysis: "TRPA's existing wood stove retrofit program, applicable county and state regulations, and other programs to improve air quality have resulted in a baseline condition with a positive trend toward attainment of PM and visibility threshold indicators and AAQS (TRPA 2012a)."

² *LTSLT, FOWS, TASC Joint Comments to the Regional Plan Update Draft Environmental Impact Statement*. Submitted 6/28/2012 with attachments.

TASC Additional Comments on Draft 2011 Threshold Evaluation Report

- III Comments related to Specific Threshold Categories
 - 1. Air Quality
 - 2. Water Quality (including Additional Comments added to 7/25/12 letter)
 - 3. Soil Conservation
 - 4. Stream Environment Zones
 - 5. Noise
 - 6. Scenic
 - 7. Biological Resources
- IV Comments on TER Chapters 12 and 13 and Proposed Future Updates

In conclusion, the TASC believes that the draft 2011 Threshold Evaluation Report is technically inadequate, contains misleading information, utterly fails to consider the full suite of research and information available regarding the environmental thresholds, uses inappropriate methods and statistics to create falsely positive results, and as a whole, serves to diminish the importance of the environmental thresholds. Further, the failures of the TER are not repaired or improved by any analysis in the draft RPU DEIS; in fact, they are often exacerbated (discussed in these comments as well as our 6/28/2012 comments on all three draft documents). Thus, instead of providing a sound, scientific assessment of the TRPA thresholds and a basis for proposing threshold and Regional Plan Updates needed to meet the mandates of the TRPA Compact, the draft 2011 Threshold Report appears to serve one purpose: manipulating information to support the proposed action alternatives in the RPU/RTP EIS/R documents.

As a result, the 2011 TER cannot properly inform the Governing Board on the status of the TRPA thresholds, the currently available science and information that affect the thresholds and values they aim to protect, or provide the information necessary to assess the impacts and benefits of proposed Regional Plan Updates. The significant problems and failures of the TER must first be addressed, and an adequate assessment done, in order for TRPA and the public to have the information necessary to make informed decisions and most important, ensure the thresholds are achieved and maintained.

Thank you for the opportunity to provide further comment on the draft 2011 Threshold Evaluation Report.

Sincerely,



Laurel Ames,
Conservation Co-Chair
Tahoe Area Sierra Club

I. Process and Timeline with RPU/RTP Updates

On April 26, 2012, TRPA released three draft documents, totaling over 3,000 pages: the Draft 2011 TER, the Draft RPU DEIS, and the Draft RTP DEIR/S. As noted in previous correspondence with TRPA,³ TASC and others have repeatedly expressed concerns regarding the combination of the threshold evaluation report with the Plan updates. Unfortunately, our review of the draft documents essentially confirms the concerns raised - including the manipulation of threshold findings and proposed updates (or lack thereof) to support desired Policy changes, rather than the objective, scientific review of the status of the thresholds and the utilization of the most recent and best available science to update the thresholds, as needed, to protect the environmental values identified by the Compact.⁴

Complex Process and Inappropriate Comment Periods: *

Further confusing an already overwhelming and complex process, TRPA has attempted to divide the comment periods for the TER and the RPU/RTP draft documents. Even more backwards is that the comment periods essentially placed review of the RPU/RTP draft documents *first*, rather than the draft TER, by extending the time for the TER comments beyond the deadline for the RPU/RTP comments.

TERs: 1991, 1996, 2001, 2006:

Previously, threshold evaluations would generate recommended changes. Those changes were evaluated in an Environmental Assessment (EA). The EA was released for public review, and later, would be approved by the Board along with the TER document. Any Regional Plan amendments associated with the changes would then undergo TRPA's process for Plan amendments, and relevant environmental findings would have to be made, and so on. In other words, although at times faulty,⁵ the process at least allowed for the basic scientific information to be documented first (TER), the proposed changes stemming from this scientific review evaluated next (EA), then based on this evaluation, amendments to the thresholds were considered. Only after this would amendments to the Regional Plan be evaluated. Thus:

1. TER and EA, along with proposed changes documented in Compliance Form revisions, were released for public comment period;
2. Comments were received by TRPA and incorporated into TER and EA;
3. EA and Compliance Forms went to Board for approval.

³ See attachments to 6/28/2012 letter, documenting repeated communications on this subject between the TRPA, TASC, League, and others going back several years.

⁴ i.e. "Environmental threshold carrying capacity" means an environmental standard necessary to maintain a significant scenic, recreational, educational, scientific or natural value of the region or to maintain public health and safety within the region. Such standards shall include but not be limited to standards for air quality, water quality, soil conservation, vegetation preservation and noise." Compact Article II(i)

⁵ For example, the EA for the 2006 TER was never certified by TRPA as the response to extensive flaws identified by the environmental community in our May 2007 comments (attached).

4. If this resulted in the need for Regional Plan amendments, this process was then undertaken after the Threshold Evaluation Process was complete, or at least mostly underway.

TER: 2011:

However, in 2012, the process has been completely changed and has resulted in a cross-cross of information and variable comment periods. First, the draft TER was released for review, but contains no compliance forms, and no EA. When we asked TRPA about the Compliance forms, we were told that they were essentially replaced by the graphs and tables in the TER⁶. Unfortunately, this does not allow for easy comparison to previous threshold reports, and adds even more complexity to what had been a simple, line out/color change method to show changes in previous reports. It also provided an easy to understanding means for the Board to approve changes in the Compliance forms. Second, there is no EA to analyze changes proposed by the TER.⁷ Instead, we are referred to the RPU DEIS as the supposed means for evaluating such changes. Not only does the RPU DEIS fall far short of an adequate environmental analysis of threshold changes (see our 6/28/2012 comments), but it also comes under a different process and time period. Further, the previous method that allowed for a more objective review of the science first, untangled by what the policies might be, is gone. Now, what should be objective scientific changes are instead ‘evaluated’ in the same report (RPU DEIS) that examines the proposed policy changes that would accompany the threshold changes. Even someone intent on focusing solely on the science first will have a difficult time not connecting threshold amendments to the policies that would result from them.

Thus, we now have:

1. TER released for roughly 90 day public comment period;
2. At same time, RPU DEIS, containing the proposed amendments from the TER and the resulting policy changes, released for 60 day comment period;
3. Comments on TER: due from public by July 25th deadline, however process for TRPA responding to comments is unclear. Will TRPA address all threshold comments? By what date? How does this relate to the RPU EIS timeline?

⁶ *Emailed Response from Shane Romsos, 7/23/2012:* “As you may have recognized, all of the indicator summary sheets contained within each chapter effectively replaces “compliance forms”. Each indicator summary sheet contains the same and more information than used to be captured in the compliance form (e.g., description of the indicator, maps, trend graphics). This approach is different, however, we feel much more effective and informative than the line-through/highlight approach that was previously used for compliance forms. As you may or may not be aware, there is no directive in the Regional Plan that requires “compliance forms”.

⁷ *Emailed response from Shane Romsos, 7/23/2012:* “We’re looking for Governing Board “acceptance” of the report, probably in September after we have a chance to go through comments. I think it is important to remember that this is a report, not an Environmental Documents. No EA is included as part of this Threshold Evaluation because there is no proposed actions from the report, just recommendations. Threshold evaluation recommendations that are proposed for action are included in the RPU and evaluated in the RPU EIS. In the past, EAs were prepared in conjunction with Threshold Evaluations because some action was proposed. For example, in 2006, threshold amendments were proposed and an EA was prepared to evaluate that action.”

TASC Additional Comments on Draft 2011 Threshold Evaluation Report

4. Comments on proposed changes resulting from TER: due 30 days *before* comments on the report itself.
5. Response to Comments on proposed changes – in other words, those submitted by 6/28/2012 – are supposed to be addressed by TRPA in the Final RPU EIS, scheduled for release in late October.
6. Response to Comments on the TER – comments submitted by the 7/25/2012 deadline – process for TRPA's response remains unclear; apparently staff may read by September and ask for (informal?) Board approval?
7. The Regional Plan amendments that supposedly result from the TER findings are already proposed upfront, must essentially be reviewed first, and will be adopted at the same time as proposed threshold amendments.

In essence, this process asks the public to skip the actual TER report that documents the status of thresholds, which sets the stage for considering threshold amendments, and go straight to the proposed amendments AND how those will be translated into policy changes. Such a process ignores the importance of valid, thorough scientific review (which should be performed in the 'body' of the TER) and suggests the public and the Board make decisions before looking at the information behind what they are making decisions about.

Thresholds should come first and foremost:

This complex back and forth process creates a situation that promotes the review of the proposed Regional Plan changes first, and the thresholds second. It would be expected that the public will likely focus on the RPU/RTP documents first, and/or with more emphasis than the TER report, given the very limited timeframe for doing so. Yet according to Resolution 82-11 6(c), the thresholds are supposed to serve as the basis for the Regional Plan.

6. That the Governing Body hereby adopts the following as a statement of intent, which will guide the development of the regional plan and actions subsequent to the adoption of that plan:...

(c) It is the intent of the Governing Body that the Environmental Threshold Carrying Capacities will provide the basis for the adoption and enforcement of a regional plan and implementing ordinances which will achieve and maintain such capacities while at the same time providing opportunities for orderly growth and development consistent with such capacities. It is further the intent of the Governing Body that the regional plan will provide for carrying out all of the policies expressed in Article I of the compact.

This further reiterates what TASC and others have been requesting from TRPA for years – that the thresholds be evaluated first, and through a process separated from the RPU/RTP updates, so that the thresholds can be evaluated thoroughly and objectively. That TRPA would expect the public to focus on the policy changes, before reviewing the basis for those proposed policy changes, reflects a backwards logic that is certainly in conflict with the Compact and Resolution 82-11. This situation also underscores the problems with setting policy first, before looking at the science that the policies are supposed to reflect and the environmental standards the policies are required to meet.

Failure to Analyze Alternatives for Threshold Updates*

The current process has resulted in the exclusion of several proposed threshold amendments that have been discussed in Pathway 2007 processes. The public was told a future EIS would analyze the different update options, and in fact many were identified through the 2010 “Fact Sheet” meetings with the Governing Board. Instead, political decisions to exclude certain thresholds from any consideration have resulted in a complete failure of the RPU DEIS (or TER) to objectively evaluate the impacts of adopting different forms of threshold updates. For example, what would the air quality benefits be if TRPA adopted the CA PM and Ozone standards, thus providing equivalent protection to the NV side of the Basin? (In fact, what would the human health benefits be?) Only after a full evaluation of the alternatives, and how they would impact or benefit the values the Compact mandates TRPA to protect, can the public, and decision-makers, have the information needed to make informed decisions.

II. General Comments on 2011 Draft Threshold Evaluation Report

2011 Threshold Evaluation Report: Change from Attainment Status to “Trend”

TRPA has evaluated the attainment status of the environmental thresholds at five year intervals, including 1991, 1996, 2001, 2006, and now, 2011. However, in the first four reviews, TRPA has reported on the attainment status of the thresholds, in correlation with the Compact’s mandate to attain the thresholds standards. Therefore, the sudden change in how TRPA is evaluating thresholds in the 2011 Threshold Evaluation Report (2011 TER) - essentially moving away from the use of attainment and non-attainment - is unfounded - and in direct conflict with the Compact’s original mandates.

Additionally, the ‘new’ language involving trends, assessments related to ‘targets,’ and so on, is even more confusing. We also note the switch to this type of ‘narrative/descriptive’ approach is rather quite deceptive and misleading. Where the first four 5-year Threshold reports discussed whether standards were in attainment or not, the new ‘method’ confuses the reader and buries the actual information in layers of evasive rhetoric. Specific examples are provided below.

These changes, which allow TRPA to portray the overall conditions of the thresholds as ‘better’ or ‘improving,’ appear to set the stage for the RPU’s disregard for the status of the thresholds and move full speed ahead with the Regional Plan Update alternatives, where all action alternatives propose more development, more people, more coverage, more cars, and more environmental impacts.

2011 Threshold Evaluation Report Diminishes the Importance of Threshold Attainment

Change in how TRPA views Environmental Thresholds:

TASC Additional Comments on Draft 2011 Threshold Evaluation Report

The 1991 Threshold Evaluation Report begins with excerpts from Roughing It by Mark Twain (1871), discussing the beauty of the Lake Tahoe Basin,⁸ followed by the introduction, which begins with:

The Tahoe Region is a special place. To those who have visited Lake Tahoe and its surroundings, from earliest pre-history to the present, the Region is an exceptional, inspiring place of spiritual proportion.

The Tahoe Region was once a place of inestimable beauty. The American author Samuel Clemens (“Mark Twain”) wrote of its beauty over a century ago. Photographer Ansel Adams captured it in his photographs.

Yet, like other natural places in California and the Great Basin, its beauty has been severely compromised. As at Yosemite, Pyramid Lake, the lakes and marshes of the Pacific flyway, San Francisco Bay and the California Delta, the progress of modern life has diminished the unique values that make the Tahoe Region so extraordinary.

With ever-increasing pressure upon the Region as a recreational resource and an urban center, preservation of the values of the Tahoe Region is vitally important and—at the same time—immensely difficult. The Region acts as a haven from the urbanized and urbanizing areas surrounding it, and for others who travel from afar to appreciate it. Ironically, the millions who enjoy the area simultaneously endanger it with their very presence.

Clearly, the 1991 Report has placed heavy emphasis on the beauty of Tahoe and the protection of those values. Ten years later, the 2001 Threshold Evaluation Report (TER) again includes excerpts from Mark Twain, introduction begins with the immediate discussion of the importance of attaining and maintaining thresholds to protect the unique values of the Basin. The 2006 TER begins with the same information, discussing the extraordinary mountain beauty of the National Treasure that Lake Tahoe has been classified as. Both the 2001 and 2006 TERs discuss the relationship of the Regional Plan to the thresholds, and the 2006 TER further describes TRPA’s responsibilities to ensure thresholds are attained first and foremost. The 2006 TER also reiterates that the environmental threshold carrying capacities are just that – capacities that determine how much growth the Basin can handle. Although these capacities have never been scientifically determined despite over 20 years of requests from the public,⁹ TRPA has at least relied on the attainment status of the standards to examine the state of the thresholds and recommend further actions.

That is, until 2011, when the draft TER has completely changed focus. After an extensive history lesson, the report finally arrives at the introduction to the thresholds and their purpose. Unlike the previous reports, where TRPA correctly explains that their primary role is to achieve and maintain thresholds, and that any development must be consistent with threshold attainment, in the 2011 TER, TRPA instead refers to the thresholds as “objectives” (see excerpt below). This same sentence next implies the thresholds are to

⁸ See Attachment A for 2001 and 2006 TER text comparisons to the 2011 TER introduction.

⁹ Examples include “Conservation Community Comments on the Environmental Analysis for the TRPA Threshold Update. Submitted by Tahoe Area Sierra Club, League to Save Lake Tahoe, and Sierra Forest Legacy. May 18, 2007.”

serve as the ‘mitigation’ for urban development, placing development *above* threshold attainment. This ‘new approach’ does not meet the Compact’s mandates to achieve and maintain the thresholds; further, the change in pattern of how TRPA evaluates its threshold requirements is extremely suspect, especially given that the proposed increases in development will negatively affect thresholds and indeed, urbanize the very Region that, as the 1991 TER states, serves as a haven from urbanization.

“The revised *Bi-State Compact* directed the agency to adopt environmental quality standards known as Environmental Threshold Carrying Capacities (or Threshold Standards) to better focus environmental quality objectives, and to mitigate the impacts resulting from urban development through regional land use planning.”

Later in this same section, the 2011 TER states that “TRPA is uniquely positioned to evaluate environmental and economic trade-offs as few agencies or governing bodies can.” The Compact does not direct TRPA to *trade* negative impacts to the environment to gain purported economic benefits. Rather, the Compact recognizes that protecting the environment will aid the Basin’s economy – because the local economy is primarily tourist-based. Although gaming was initially an important draw for visitors to the Basin, it is well established that the primary draw will continue to be Tahoe’s outdoor environment, and even more so into the future as so many other places are further developed.

“Recreation opportunities in the Region are abundant due to the diverse terrain and topography. Activities are generally associated with the Lake’s open water (e.g., swimming, boating, personal watercraft use, and fishing), the shoreline (e.g., sunbathing, camping, bicycling, and sightseeing), and the mountains surrounding the Lake (e.g., hiking, mountain biking, backpacking, snowboarding, and skiing). Recreational activities in the Region are generally seasonal and participants vary. Tourism is a key component of the Region’s economy and a high-quality recreation experience coupled with outstanding recreation opportunities is important to maintaining tourism.”
(RPU DEIS Chapter 3.11, Recreation)

TRPA needs to treat threshold attainment as the priority it is, and protect the unique values of the Basin that make Tahoe the special place it has been and will hopefully remain. At base, restoring and maintaining the environment of the Tahoe Basin is the Compact’s foundational purpose and TRPA’s primary charge.

Change in how TRPA evaluates status of threshold attainment

As required by the Compact, TRPA must work towards achievement and maintenance of the environmental thresholds. In the last four 5-year Threshold Evaluation Reports (TERs), TRPA has analyzed the threshold indicators to determine the status of the threshold standards. For example, TRPA analyzed carbon monoxide measurements (indicators) to determine if the air quality standards for CO (standards) were being met. As a result, the results could be summed in a table with two columns: threshold standard on one side, status of attainment on the other.

However, TRPA has taken a completely different and unprecedented approach to evaluating the thresholds in the 2011 TER, changing this simple system (attainment or non-attainment) into a complex and verbose discussion based on new terms and

categories TRPA has created out of whole cloth, and essentially abusing statistics to try to make environmental conditions sound better than they are. For example, on page 2-4 of Chapter 2, Methodology, TRPA explains a new process for determining the “degree of divergence from the standard, interim target, or numerical management target...” This is instead of the “less informative pass/fail status determination used in previous Threshold Evaluations.” This would lead a new reader to believe that previous reports were comprised of one page that only listed pass or fail, when instead, previous reports summarized attainment status but discussed the detailed review of the indicators and other relevant information in each chapter of the TER reports. Thus, the previous reports were no less informative than the 2011 TER. Instead, the 2011 TER fails to provide as much information as the previous TERs and its the evaluations are less informative in many cases.

For example, in the Air Quality evaluation for ozone, TRPA discusses the peak measurements in recent years, but otherwise provides no tables listing historical ozone measurements throughout the Tahoe Basin, past and present. Instead, peak measurements from one site are illustrated in a colorful graph. Yet, to examine the ‘trends’ of threshold attainment, one must consider all available data, including historical measurements and measurements from multiple sites throughout the Basin. As shown in the attached Table of Lake Tahoe Air Basin Data we have assembled, there is a significant amount of information available for air quality throughout the entire Basin.

Additionally, although TRPA acknowledges the Agency must utilize the “best available research and monitoring findings” to fulfill its mandates,¹⁰ TRPA has failed to include the best and most recent information across a wide variety of threshold categories. For example, although NDEP has carbon monoxide data available for 2011 and through the most recent month for 2012, TRPA does not include this information in the Threshold Evaluation. We acknowledge that the draft was started in early 2011 if not sooner, but it was released for public review almost five months into 2012, and is treated as the supporting documentation leading to the proposed Regional Plan Update DEIS, also just released in late April, 2012.

Further, the threshold evaluation chapters conveniently fail to discuss post-2009 or -2010 monitoring reductions, instead implying that monitoring ‘is ongoing.’ However, TRPA began to reduce its continuous threshold monitoring in many areas over the past several years, and through TRPA’s own reductions, and/or budget reductions by other agencies, there is far less monitoring of certain threshold standards than just a few years ago. For example, the water quality chapter refers to LTIMP monitoring in the Tributary Water Quality section beginning on page 4-24.

“The Lake Tahoe Interagency Monitoring Program (LTIMP) routinely monitored ten streams through 2010 to track water quality conditions, and continuously monitored for inflow. Together, these ten streams deliver about 50 percent of the total tributary inflow to Lake Tahoe (Lahontan and NDEP

¹⁰ 2011 TER Introduction section states: “The Agency’s charge is to use its unique decision-making structure and authority in concert with best available research and monitoring findings to continually improve the *Regional Plan* in order to fulfill mandates outlined in the *Bi-State Compact* to achieve environmental and socioeconomic goals for the Region.”

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2010). Five of the routinely monitored streams are in Nevada: Third, Incline, Glenbrook, Logan House, and Edgewood creeks; and five of the streams are in California: Trout, General, Blackwood and Ward creeks, and the Upper Truckee River. Of these ten monitored streams, approximately 90 percent of the cumulative total inflow is from the five California streams, and approximately 10 percent is from the five Nevada streams.”

Unless someone is more familiar with the program and the recent cuts made to monitoring¹¹, this summary paints the picture of a continuous program, making no mention of any reductions in monitoring. Not only is this important in terms of threshold attainment status, but the RPU DEIS has also failed to mention the cuts, misleadingly implying monitoring will continue at the same levels (as if assuring readers impacts from the new RP will be monitored). This approach appears to take the same approach the air quality section has taken: if a violation occurs but there is no monitoring to capture it, then the air quality must be healthy.

Because TRPA has used ‘positive trends’ in threshold attainment to justify approval of more development in the Basin, it would appear that it benefits the agency to monitor *less*.¹² In fact, we suspect another motivation for the ‘change’ from threshold attainment versus non-attainment approach to a ‘trend determination’ and ‘easy to understand’ graphics is because the Agency does not like to report the actual number of threshold standards that are, in fact, still out of attainment.

For example, in Appendix D: “2011 Threshold Evaluation – Threshold Attainment Status Crosswalk,” a comparison of the 2011 status based on the methods used in the past four evaluations to the proposed new terminology is provided. The 2011 “Indicator Reporting Category Status Summary” shows a far ‘better’ picture than evaluation based on traditional methods per the Compact:

- If one examines the ‘traditional’¹³ eight air quality thresholds standards, the report indicates that five are in attainment (although the atmospheric deposition standard should be designated unknown, since implementation of a policy does not translate to threshold attainment as TRPA contends in the report - see comments below), two are non-attainment and one is unknown. In other words, *four are in attainment, two are non-attainment and two are unknown*. But according to the new terminology, they are all essentially labeled ‘better than target’ on some level. This new way of evaluating thresholds is not only in conflict with the Compact’s mandate to attain thresholds, but is also misleading to the public.
 - We also note that Table 3.4-1 in the RPU DEIS summarized threshold attainment status, but only includes the new terminology for 2011. Since most readers will not likely delve into the thousands of pages associated

¹¹ See discussion in water quality comments for a review of the 2011 and 2012 LTIMP monitoring reductions provided by the USGS.

¹² For example, as discussed below, TRPA has selected ozone data from just one air quality monitor (in SLT), claiming this one station represents air quality for the entire Basin. Yet a review of historical ozone data indicates significant differences in ambient air quality in different parts of the Basin.

¹³ We acknowledge that odor has not numeric threshold standard.

with the environmental documents and threshold reports, including the appendices, most readers will likely just see this table, which creates the perception things are better than they are.

- Of the four scenic threshold standards (p. 3, Appendix D), all four are not in attainment. Yet the new approach indicates they are all ‘at or somewhat better than target’ or ‘implemented’ (which again, is not an appropriate indicator).

The RPU utilizes this new terminology to skew the presentation of results in sections most people may read. For example, the Executive Summary of the 2011 TER (page 5) shows a colorful, eye-catching pie chart that indicates a more positive situation than exists, covering the true evaluation of the 36 threshold standards and indicators by referring to the evaluation of over a hundred standards and discounting the unknown indicators in these ‘summaries’¹⁴, while again using this ‘implemented’ concept to indicate positive attainment status. This is wholly inappropriate and discussed in more detail below.

With regards to the *“One hundred and fifty one standards ...addressed in [the TER] report...”*, it would appear that a break in pattern from previous threshold evaluation reports, which analyzed the 36 TRPA Threshold standards and indicators, has been coupled with the creative use of statistics to obscure the results that really count – the status of the 36 threshold standards. For example, in previous evaluations, TRPA has always evaluated the carbon monoxide standard as one threshold standard. That the states may have their own standards, and that the measurements are viewed by hourly and 8-hour averages (meaning there were two indicators evaluated to address attainment status), has always been discussed and assessed. However, if one of the standards was violated, the status for the AQ carbon monoxide threshold standard was non-attainment. Instead, TRPA has now claimed there to be multiple ‘standards’ evaluated for carbon monoxide, counting the 1-hour, 8-hour, and the associated Traffic Volume standard as three individual indicators. These multiple “standards” have apparently been counted among the “one hundred and fifty one” standards that were addressed, when in actuality, the carbon monoxide threshold standard has always been reported as just one. No explanation has been provided for this change in reporting style and attention has not been specifically given to the critical 36 indicators in the summaries.

Another example includes the ozone threshold standard, where four indicators have now been used to assess the one standard. Again, TRPA has claimed the four standards in their overall number of one-hundred and fifty, obfuscating statistics to almost ‘hide’ what really matters. If TRPA wants to change the thresholds and how they are evaluated, this requires an environmental analysis of the impacts and a full public process, not a ‘fly by night’ threshold report released in concert with thousands of pages of environmental

¹⁴ In TRPA GB Minutes from April 25, 2012 meeting: “Mr. Sher said he noticed in designating what percentage had been achieved; for example in Fisheries it has 100 percent attainment and ignores the unknowns and others it appears staff calculated the percentage of attainment....Mr. Romsos said we did not use the unknowns as part of the calculation for percent of attainment in the slide presentation....Mr. Sher asked if that was true on all of them...Mr. Romsos said yes.”

documentation for the RPU and RTP that take advantage of the thresholds being erroneously painted as better than they are.

Further, even the peer reviewers noted the attempts to overwhelm readers with extra descriptions and pretty graphics in what appears to be an attempt to distract from the truth about and importance of the thresholds. For example, Richard Axler, PhD., states:

“Definitions of what constitutes a change as in Table 2-2 are useful only to the extent that you can accurately assess the values of the indicators and their uncertainty. It may be better to simply report an Indicator Trend Category as Improving, Declining, Essentially No Change, and Insufficient Data to Evaluate. The detail in some of the indicator descriptions seems unwarranted given the uncertainties in the values of some of these indicators.”

Several articles have been published since the release of the draft 2011 TER,^{15,16} all referring to the positive trends in threshold attainment, misleading those who will not have the opportunity to read the detailed documents and passing on the false perceptions TRPA’s changes are aimed at creating – *all is well, things are better, we can stop focusing on the environment so much; time to focus on more development*. Yet legally, if one examines the actual status of the 36 indicators that have been used in the previous threshold evaluations (as noted in 2011 TER, Appendix D), only nine are in attainment, 18 are not being attained, and the remaining nine are unknown.¹⁷

“Implemented” is not a valid ‘status’ for threshold attainment:

The 2011 TER has again broken from established processes for evaluating the threshold standards with the use of a new term – “implemented” - for the ‘status’ of several threshold standards. TRPA tries to explain this in Chapter 2 with the following:

According to TRPA Resolution 82-11, Policy Statements were identified to provide specific direction to agency staff in developing the *Regional Plan*. Policy Statements are not Numerical Standards or Management Standards but are instead, principles or rules intended to guide decisions needed to achieve a desired outcome or value. To evaluate Policy Statements, the following questions were addressed:

- *Has TRPA adopted policies or regulations, or implemented other programmatic efforts to satisfy the Policy Statement adopted in Resolution 82-11?*
- *Is there evidence to suggest these actions are effective at achieving the intent of The Policy Statement?*

A qualitative evaluation and narrative description of Policy Statement implementation was included for each Policy Statement relative to the associated Indicator Reporting Category.

We first note that the use of ‘implemented’ as a status has never been used in the previous four 5-year threshold evaluations. This change in pattern is questionable, especially when the results appear to diminish the true status of the thresholds. The Compact explicitly requires that the thresholds be achieved and maintained, not merely that measures of questionable effectiveness to do so have been “implemented.”

¹⁵ <http://carsonnow.org/story/04/26/2012/trpa-lake-tahoe-environmental-report-nets-promising-results>

¹⁶ <http://southtahoenow.com/story/05/11/2012/may-message-south-lake-tahoe-mayor-claire-fortier>

¹⁷ As noted in our comments, “implementation” is not equivalent to the status of threshold standards, therefore we have counted the ‘implemented’ columns in Appendix D as unknown.

Second, a review of Resolution 82-11 notes only five policy statements that are not associated with numerical or management standards: odor (AQ), Lahontan Cutthroat Trout (Fisheries), Built Environment (Scenic), and the two Recreation threshold standards, although only one of these has never been evaluated for attainment status in previous reports (odor). However, TRPA has also assigned a status of “implemented” to standards which do have numerical and management standards, including atmospheric deposition (AQ), instream flows (Fisheries), and Habitats of Special Significance (Wildlife). These are numerical standards and as such, must be evaluated for attainment status, or marked as unknown.

Inconsistent time period

Previous threshold evaluation reports have typically analyzed the five year period ending the year prior to report release (e.g. 2001 TER evaluated 1996-2000; 2006 TER evaluated 2001-2005, etc.). However, the 2011 TER inexplicably evaluates different time periods. As noted below, it appears in some cases, 2010 data (or references to 2010 lack of monitoring) were excluded because they would not reflect positively on the environmental thresholds statuses, and in other cases, 2011 data were included (i.e. secchi depth for water clarity, watercraft shoreline test for noise), causing results to appear more positive (e.g. secchi depth). Our detailed comments below provide examples.

What time period does the 2011 TER evaluate? If 2006-2010, why are some data excluded from within this time period, and some included from outside of this time period? If TRPA has decided to use different time periods for different threshold evaluations within this report, why? Also, why would TRPA suddenly abandon the practices it has used for previous evaluations? The timing with the RPU DEIS – and the beneficial messages associated with the selective use of years in the TER (detailed below) – would suggest a bias towards choosing data that supports more positive conclusions, of benefit to proposed alternatives in the RPU DEIS.

Response to Peer Reviewers*

Although TRPA staff explained that the draft TER was already revised to address comments by peer reviewers, we see many instances where this does not appear to be the case. However, TRPA has repeatedly emphasized the TER underwent peer review, and used this to imply credibility of the TER analysis. Therefore, we request TRPA provide the public with the spreadsheet (referred to by staff during the April 2012 GB hearing) that shows how (and whether) TRPA responded to peer review comments. Further, where TRPA did not make a change to address a comment, why not? *It appears many significant comments related to the very foundation of the TER's conclusions – including the types of statistical methods used and trend lines – were not addressed.* Examples are noted throughout our 6/28/2012 and present comments.

Threshold Report Timing of release with the RPU, threshold years evaluated in Report, and Biased Statements

First, we reiterate our disagreement with the release of the draft Threshold Evaluation Report being combined with the update of the new Regional Plan, as the thresholds should have been analyzed separately and objectively, before any proposed Regional Plan update, not with the bias of desired policy changes as has been done (one only need to look at the “Recommendations for Additional Actions” in several areas of the TER to see the obvious bias towards TRPA’s approach of increased densification¹⁸). In fact, this biased approach is compounded by TRPA’s failure to perform adequate scientific analysis of the causes of air pollution. TRPA has instead assumed private automobiles to be the primary cause of ozone in the Basin, and then told those reading what is required to be a scientific, objective report, that the way to fix this includes incentivizing development in the walkable town-centers promoted by the GB RPU Committee’s preferred Alternative 3.¹⁹

Second, we note discrepancies with the timeline of the TER that would seem to favor a more positive ‘outcome’ and thereby support more development in the RPU DEIS. The typical Threshold Evaluation Reports (TERs) review the status of threshold standards and indicators for just five years. Thus, in 2011, one would expect a review of data from 2006-2010. In 2006, one expects data from 2001-2005, and so on. In some cases, the TER has reviewed data through 2010, basing conclusions on that time period, consistent with the time periods of past threshold evaluations. But in other cases, the threshold evaluation report includes data from 2011. TRPA must be consistent in how the thresholds are evaluated. An objective Threshold Evaluation Report would examine 2006 – 2010.

Then, separately, the RPU DEIS existing conditions must analyze the most recently available data (2011 in most cases and portions of 2012, where available²⁰), and assess the cause and effect of pollution levels and evaluate the impacts of each alternative on the standards.

However, seemingly to support claims that the environment can handle more development in the Basin, TRPA has mixed and matched data in the two documents. For example, the annual secchi disc measurement ‘graph’ includes data for 2011, which is used to show a ‘better trend’ than the years before it (in fact, 2010, what should have been the final year reviewed in the threshold report, was noted as the second worst on record²¹). This seems to further skew the ‘positive’ trend line TRPA has placed on the

¹⁸ i.e. p. 3-26 of the 2011 TER, Air Quality, includes the following “Continued failure to meet the ozone standard may indicate the need to further reduce the dependency on the private automobile, through land use policy that incentivizes more bicycle-friendly and walkable town centers, and encourage the use of alternative modes of transportation such as public transportation.”

¹⁹ “Alternative 3 is the alternative that most closely reflects preliminary recommendations of the TRPA Governing Board’s Regional Plan Update Committee.” RPU DEIS, Chapter 2, p. 2-33.

²⁰ NDEP has provided CO data from the Stateline, NV site through April 2012. CARB publishes PM10 data on their website through the day accessed. Although some data may be preliminary, there is still value in accessing this information.

²¹ RPU DEIS, Chapter 3.8, p. 3.8-9.

recent trend in clarity²² (contrary to advice from peer reviewers and graphs presented by TERC, as noted previously). Repeatedly the peer reviewers have suggested this type of review be left to the scientists collecting the information (e.g. TERC), not TRPA staff (see TER Appendix E; further discussion later in our comments).

Instead, the RPU DEIS relies on the more ‘impressive’ trend in the threshold report (which includes 2011) in the DEIS chapter for water quality, emphasizing the improvement in 2011 and using the very statistics that were criticized by the peer reviewers to support a more positive ‘message.’²³

But TRPA does the same thing again, for example, with air quality. In this case, the threshold report evaluates the time period ending in 2010. This benefits TRPA’s analysis, since a consideration of 2011 would indicate no full-season²⁴ ozone monitoring was occurring in the Lake Tahoe Air Basin during the year and therefore the status of the ozone standard was “unknown.” Rather, the analysis of ozone only looks at data through 2009, referring to this time period as the “most recently reported indicator values.” Not only does this intentionally skirt the issue that TRPA failed to monitor for ozone in 2011, and that no entity was monitoring ozone in the South Lake Tahoe area during 2010 (ironically considered the site representative of the “Study Area” for the new Regional Plan; see comments later in this letter), but it also conveniently supports the conclusion TRPA has drawn from the (inappropriate) regression line that ozone is continuing to ‘improve’ in the Basin. Instead, a comparison of the historical peak measurements between SLT and the Echo Summit site²⁵ would reveal that the peak ozone levels do not appear to have changed much in the last several years, and as of June 23, 2012, peak 8-hour averages at the Echo Summit site measured between May 17 and June 23, 2012, have already been *higher* than peak values in 2009, 2010, and 2011,²⁶ thus reiterating the increasing trend in peak ozone values the Region has been experiencing for the last several years. Instead, because there has not been full season monitoring in the Basin since 2010, and in the SLT area since 2009, it appears TRPA has drawn the conclusion that air quality ‘must’ be better because there have been no monitors to record exceedances. Instead, the threshold report must be changed to reflect the status as “unknown.”

²² 2011 TER Chapter 4, Water Quality, states: “This amount of change between years is not extraordinary for the winter average Secchi depth. Relative to the interim target, the status of winter lake transparency is “somewhat better than the target,” because the 2011 value is about 8 percent better than the interim target” (p. 4-19)”

²³ “Statistical analysis supports the observation that the decline in Lake Tahoe’s transparency has slowed (TRPA 2012a:p. 4-15 to 4-16).” RPU DEIS, Chapter 3.8, p. 3.8-9.

²⁴ State and federal standards often refer to the ozone season, as typical peak readings occur in the warmer months. However, many exceedances in the Basin have occurred outside of the CA window (July – Sept.), plus TRPA’s ozone standard applies year-round.

²⁵ Although found to be outside of the LTAB in 2006, the site has been monitoring near the edge of the Basin’s airshed since 1999 and a review of historical information between the Echo Summit Site and SLT sites can provide valuable insights.

²⁶ According to the preliminary data from CARB’s website, accessed 6/24/2012, there have been five 8-hour periods that have exceeded the California 8-hour standard since 5/17/2012 when seasonal monitoring began.

TRPA's Role in Threshold Attainment

In several areas of the 2011 TER, TRPA explains to the reader how it does not have the authority to enforce certain regulations (e.g. single event noise for motor vehicles), and essentially tries to justify why standards are not being attained, and/or how TRPA can do nothing about it, and/or how TRPA instead recommends other agencies need to help (e.g. highway patrol enforcing on-road motor vehicle violations). Although it is true that other agencies have certain responsibilities and police authority, it appears that TRPA fails to see the conflict in the approach the TER has taken:

- As noted in the TER and more importantly the RPU DEIS, TRPA proposes to increase the sources in the Basin (i.e. more people, cars, equipment, off-road recreational equipment, etc.) which negatively impact all threshold standards in some way, without any assessment of the impacts, yet apparently, without taking any responsibility for them either.
 - Instead, we believe if TRPA cannot enforce the standards it has now, then TRPA needs to figure out what options are available to meet the standards, implement those actions, then ensure they have worked (through adequate, continuous monitoring), before TRPA adds more sources of environmental harm to the Basin through the Regional Plan that it does have authority to implement.

Conclusions are based on inadequate and/or inappropriate statistical analyses

As noted by several peer reviewers, the statistical approach taken in the Threshold Report is flawed. First, we note in previous threshold reports, TRPA reported the status as attainment, non-attainment, or unknown. The discussion may have then included references to whether trends were improving or declining, but the overall summaries (typically read by most people and presented by TRPA and others) included this very basic information, essential to determining whether TRPA was meeting its core duty to achieve and maintain each of the threshold standards.. The text discussions would also, where appropriate, discuss the availability of data. In fact, until 2006,²⁷ the reports often included the most relevant data.

However, in the 2011 TER, TRPA has developed a new, complex system of terms and graphics, claiming this is an attempt to describe the status (although with different terms than the Compact-mandated attainment or non-attainment), trend (based in inappropriate analyses), and confidence level (which is often low due to insufficient data). However, the message sent by TRPA with regards to the big picture includes nothing with regards to the 50% of the standards that are out of attainment (or that some may be but because they have not been monitored for the past few years, we do not know the current status, as in the case of ozone or PM2.5). Rather, the general perception is that ‘most standards

²⁷ We note the critique regarding the lack of data in the report made by the Tahoe Area Sierra Club, League to Save Lake Tahoe, and the Sierra Forest Legacy in the comments submitted on the 2006 Threshold Evaluation Report: Conservation Community Comments on the Environmental Analysis for the TRPA Threshold Update. Submitted by Tahoe Area Sierra Club, League to Save Lake Tahoe, and Sierra Forest Legacy. May 18, 2007.

are doing better” – one only need to look at the nice pie chart presented on page 5 of the Executive Summary to see how ‘well’ things are going. Or, one can glimpse Chapter 12 of the TER²⁸ and read the following:

“Overall, status and trend monitoring data indicate that not all standards are being achieved. However, available trend data indicate that environmental conditions in the Basin are mostly stable or improving.”

“Air Quality

Available status and trend monitoring data for air quality indicate that the Region is currently meeting the majority of applicable standards. Evidence suggests that state and federal tail-pipe emission standards and newer automobile designs have likely played a significant role in moving the Region toward attainment of air pollutant-related Threshold Standards, and that TRPA-sponsored projects, controls, and programs have contributed to the attainment of traffic volume-related standards. Transport of air pollutants from outside of the Region (e.g., wildfire smoke, ozone) will likely continue to affect air quality and the Region’s ability to meet all air pollutant-related standards. Additional Regionally-scaled air pollution control measures may be needed to keep the Region in compliance with adopted standards.”

But the claims being stated with this new approach are not supported by the facts, and it appears that TRPA has instead used statistics inappropriately in order to be able to claim things are improving (and therefore allow more development). Most readers will not look into the thousands of pages of details, may not be statistics experts, nor be familiar with how thresholds have been evaluated in the past.

In his comments on Chapter 2, Methodology, Dr. Axler notes the problems with the statistics used, and suggests that those analyses be done by the scientists who will be objective, and essentially will know what is technically appropriate for analyzing the data sets they provide:

“This chapter does a good job of presenting TRPA’s approach to determining status and trends for their prescribed set of indicators...However, there are still some important methodology questions that need to be addressed. The major one relates to the lack of adequate statistical analysis and the potential use of incorrect techniques based on the characteristics of the data set (i.e. how much data, missing data, levels of detection, confidence limits, normality or non-normality assumptions, etc.). These analyses are not trivial to carry out and are usually the result of extensive discussions between the scientists who designed the monitoring and research programs and statisticians who have had prior experience evaluating these kinds of long-term environmental data sets. A linear regression analysis has assumptions built into it, such as normally distributed data – which is not the case for many environmental variables. There are other non-parametric models and tests for trends that are well vetted by the U.S. Geological Survey (USGS) for use in streams in particular, but also for lakes. It does not appear to me that the scientists from TRPA’s Partners had much to do with the statistical methodology used for the Report or the presentation of their own data; and I think they are the folks that should be doing the analysis, and then working with TRPA and Extension Educators to best communicate results in words and graphics.”

In fact, Dr. Axler’s comments raise another important question – who decided on the statistical methodology that was used? The scientists who provided TRPA with the data? TRPA staff? TRPA Consultants? How objective was this technical review? How involved were the “Chapter Contributors” noted for each chapter in the actual analysis

²⁸ Page 12-2 and 12-4.

and preparation of the chapter? Based on a review of the chapters, peer reviewer comments, and our own technical experience, we suspect that the contributors from the scientific institutions may, at most, have simply provided data to TRPA staff or consultants, who then took the data and ‘evaluated’ it without coordination with the technical people who should be doing the statistical evaluations. Did these contributors help write the chapters? The executive summary?

Other similar comments in peer review are excerpted below: *

In this document, simple linear regression was used to estimate indicator trends from available data unless otherwise specified in the Data Evaluation and Interpretation narrative. When evaluating trends with data collected over multiple years, it is possible because of the N to obtain a statistically significant relationship, but it is not meaningful.

...For this reason, extrapolating outside the range of data used to establish a regression has proven over time to often lead to erroneous predictions. Many scientists do this, but the confidence in the prediction should be classified as very, very, very low or to put it bluntly useless.

We find an ‘explanation’ in the TER Chapter 12,

The TRPA monitoring program implements the reporting requirements outlined in the *Regional Plan* and Resolution 82-11. However, the effectiveness of the monitoring program to produce quality Threshold Evaluations (and other reporting products) sufficient to guide future policy direction has been hampered by several specific factors, including:

Interpretation of TRPA (1987) Chapter 32:

• **“Threshold Indicators”** - One of the primary purposes of Threshold Evaluations is to provide a meaningful characterization of the status of indicators relative to adopted Threshold Standards. The presentation of attainment status of Threshold Standards in past Threshold Evaluations has been inconsistent and confusing to many readers...

According to TRPA? The proposed methodology is far more confusing than a straightforward evaluation of whether each threshold standard is in “attainment, non-attainment, or unknown.”

...Furthermore, the approach used to determine Threshold Standard status appears to be in conflict with direction provided in TRPA (1987) Chapter 32 (Chapter 16 in the updated Code) which specifies a monitoring program that will "...identify sufficient indicators for each threshold [standard] and [local, state and federal] standard so that, evaluated separately or in combination, the indicators will accurately measure, on a continuing basis, the status of attainment or maintenance of that threshold [standard] or [local, state or federal] standard, taking into account the impacts of both development in the Region and implementation of compliance measures. In monitoring and reporting on the status of indicators, as called for in this chapter, TRPA shall use the appropriate measurement standards [i.e., units of measure] for those indicators. TRPA shall use consistent measurement standards [i.e., units of measure] over time, so that reports will provide easily comparable data throughout the evaluation period."...

TRPA’s failure to adequately monitor since 1987 is not an excuse to say the Code has been interpreted incorrectly. In fact, the Code says the indicators should accurately measure, on a continuing basis, the status of attainment or maintenance of that standard.”

The ‘results’ generated by the use of ‘regression lines’ and other statistical methods TRPA has employed do not ‘measure’ the attainment status of a given standard. The monitors employed to measure ambient air quality, the equipment used to measure water quality concentrations, the secchi disc used to measure clarity, and so on, are all examples of existing indicators which measure the status of the standard. The proposed concept of an “Overall Status and Trend for an Indicator Reporting Category” moves further away from the actual measured data, and instead, confuses the actual status. For example, as noted in the comments on the status of ozone, the last measured values for the 8-hour average ozone in California showed the standard was not being attained. The last measured values for hourly data showed in the year 2009, the TRPA hourly standard was not exceeded in South Lake Tahoe or Incline Village. Finally, TRPA has thrown in the ‘estimated’ emissions for NO_x (which we note are not measurements, nor are they based on Basin-wide, Tahoe-specific data), which are not a measured value, and stated, based on this estimate, that NO_x emissions are meeting the ‘target’. However, the “Overall Status and Trend of the Ozone Indicator Reporting Category” is labeled “At or Somewhat Better than Target.” This not only fails to report the measured status of ozone standards, but also twists the true findings in a way which ‘reports’ misinformation to the public. This is compounded by the reduction of the monitoring network in general, as noted later in these comments. Thus, we ask, how is it not more confusing for the public to hear ozone is not being attained, yet the Overall Status for Ozone is ‘meeting the Target’?

“Past Threshold Evaluations have represented the status of Threshold Standards with 36 “threshold indicators.” In many instances these “threshold indicators” do not meet the Chapter 32 *Code of Ordinances* definition of an indicator⁸ but instead are an aggregation of the status of multiple indicators. In other cases, “threshold indicators” do adhere to the *Code of Ordinances* definition. As a consequence of aggregation, in past evaluation reports, if any indicator within a group of multiple indicators related to a “threshold indicator” at any time over the five year period failed to meet the indicator target or benchmark (i.e. Threshold Standard), the entire “threshold indicator” would be reported as “non-attainment.” This approach was applied inconsistently but generally skewed the conclusions to an overly conservative determination of attainment status, and failed to reveal the actual attainment status of individual Threshold Standards. The current Threshold Evaluation corrects this past flaw by reporting an indicator’s current status relative to the actual adopted standard as it appears in Resolution 82-11 as originally intended. “

This does not make any sense. Non-attainment has patently been reported for a five-year period based on one or two exceedances, however this was not hidden in the previous reports. The public was informed of the conditions over the previous five-year period. Additionally, TRPA has always had the option of reporting the annual status of thresholds. Instead, TRPA has appeared to scramble every five years to collect whatever data can be found. Although we are pleased to see what appears to be a renewed interest in more monitoring, at the same time, these changes are significant (e.g. ozone is reported as at or better than target with the facts do not support this), and must undergo a full comprehensive evaluation of the impacts of making these changes. For example, the more favorable the status of the threshold standards appear, the more likely projects will be approved that will contribute to further degradation. After all, if a standard is viewed as ‘better than target,’ how can the Board, or staff, find a project will further contribute to threshold non-attainment when the threshold has been reported as ‘better than target?’ We believe there are significant environmental and legal implications of the proposed

methodology for reporting on the thresholds, and yet no analysis has been performed. The problem is further confounded by the RPU DEIS' reliance on the 'reported status' of the thresholds, where this often appears to make it easier to approve more development.²⁹

With regards to TRPA's disparagement of what it views as an "overly conservative determination of attainment status," that is exactly the approach that the agency should be taking, given the number of thresholds that are out of attainment and given TRPA's core mission to restore and maintain the Tahoe Basin's environment through achieving and maintaining the thresholds. What negative consequences have resulted to the environmental thresholds from reporting their five-year status via a "conservative" approach? Is TRPA more concerned about negative publicity every five years than about meeting the environmental thresholds? Why not report annually?

Instead, it would appear that a less conservative reporting method (and perhaps more intermingled and confusing, as the 2011 methodology is) would make it easier to add more pollution to the Basin. After all, findings must be made to approve projects and plans that the thresholds will not be harmed and that any amendments must help attain and maintain the thresholds, so if TRPA's new reporting method portrays a more positive threshold status than exists, it would make the environmental findings easier, and more pollution will result. This expectation is basically confirmed by the RPU DEIS' reliance on the more positive 'threshold status' as the means to suggest more development and more people will not harm thresholds.

Further, TRPA claims that "*In many instances these "threshold indicators" do not meet the Chapter 32 Code of Ordinances definition of an indicator⁸ but instead are an aggregation of the status of multiple indicators...*" The footnote refers to the following definition:

⁸ TRPA (1987) 32.2.C Indicator: Any measurable physical phenomena within the Tahoe Region whose status, according to the best available scientific information, has a direct relationship to the status of attainment or maintenance of one or more threshold [standard] or [local, state or federal air and water quality] standard. (Example: traffic volume.)

We have not been presented with any scientific assessment of which indicators do not meet the Code definition, nor the information used to make this assessment. This must be provided to the public through a full environmental review process. Further, the new method aggregates indicators even more than in the past. For example, the combination of PM10, PM2.5, visibility and VMT indicators in the 2011 TER, which used to be reported as four individual indicators, are now *aggregated* into just one overall indicator reporting category for Visibility. (Chapter 3, p. 3-35). We question how this responds to

²⁹ E.g. TRPA says ozone is 'at or better than target' and that NOx emissions are better than target, and assumes the improved 'trend' is due primarily to cleaner tailpipe emissions. Thus, the RPU relies on future tailpipe regulations to claim that ozone will continue to improve, therefore an overall net increase in VMT will not cause a problem. Our comments below note the error of these assumptions, but this example is provided to explain how the changed threshold reporting methods are expected to accommodate more development that will harm thresholds, simply due to the use of new, yet confusing terms.

TRPA's critique of past practices that TRPA complains 'aggregated' the status of multiple indicators?

"Consequently, this approach is recommended and will be the method used in all future Threshold Evaluations to improve the consistency and effectiveness of communicating Threshold Standard attainment status determinations."

Who recommends this approach? Why? Does the public not get to participate in the decisions regarding changes to how the environmental thresholds are assessed? What impact will this change have on the environmental threshold standards themselves (not the individual, semi-aggregated or excessively aggregated "indicators" we see in the 2011 Report)? How will this impact TRPA's approval process for development? What would be the impacts to reporting threshold attainment status if TRPA continued to use the consistent³⁰ methods used in the previous four evaluations, and simply increased monitoring of the thresholds, as required by the Compact? Further, with an appropriate database in order, it would not be difficult to provide the public with annual reports of threshold status.

TRPA further confuses the evaluation with regards to interim targets and trend lines, explaining that past evaluations have done this incorrectly, and the 2011 TER therefore 'repairs' the problem.

"In this Threshold Evaluation, available trend data is relied upon as an objective basis on which to estimate both interim targets and target attainment dates. This approach, although fairly simplistic, provided a replicable method to fulfill the interim target and target attainment date reporting requirements." (p. 12-22).

However, there is a saying regarding the ability to make statistics say what one wants. In this case, TRPA has 'fit' trend lines to the data, taking no account of the variations in site locations, annual conditions, annual climate, and so on.³¹ As presented below, TRPA has developed 'interim targets' from trend lines based on the long term peak measurements for threshold standards such as CO, ozone, and particulate matter, yet the ambient concentrations for these pollutants are affected by numerous factors, creating sometimes significant year to year variation. Also, TRPA evaluates the long term trends, yet notes the most recent years (2005-2009/2010) have a different trend (of worsened air quality, or less improvement than in previous years), and instead of looking at the most current 'trends' to question what the causes are, the report discounts them altogether by claiming the last five years apparently don't count, and instead develops conclusions from a regression on the long term trends – which as TRPA acknowledged, no longer represent current conditions. Further, according to the RPU DEIS, TRPA has generally referred to changes in tailpipe emissions as the cause of improvements we've seen, and by extension, future expected improvements with advanced technology would also result in

³⁰ We also question why TRPA implies the methods in the first four evaluations were 'inconsistent' and that this new change will therefore be more consistent, with the 2011 methods are completely inconsistent with how the past four reports were developed?

³¹ In addition to selecting regression methods that do not appear appropriate (e.g. Thiel Regression).

improvements, even though the data show other sources and factors are at play (discussed below).

We also note that humans and the environment do not respond in linear fashions to pollution (see comments below regarding Dr. Axler's comments). It does not matter if air quality was healthy 'last year' or 'yesterday' – if it's unhealthy today, it's having an impact on people. Human health does not respond to what trend lines say *should* happen.

Peer Review Response:

Because TRPA has repeatedly emphasized this is the 'first peer reviewed threshold report'³² and noted the peer reviewer comments were 'generally positive',³³ TRPA should reveal the true role of the chapters' contributors and whether the peer reviewers were involved in the final report released to the public.

Additionally, it is unclear whether TRPA addressed the comments by the peer reviewers prior to releasing the draft made available to the public. TRPA provided the detailed peer reviewer comments in Appendix E, although most people are likely to read, at most, TRPA's 'summary' of the peer reviewer comments found in the first 27 pages of the Appendix. As noted below, this 'summary' leaves some very important comments out. Regardless, a comparison of the peer reviewer's comments reveals that the peer reviewers were reading different drafts than what the public now sees.³⁵

This is confirmed in the Introduction to the TER, which states "*Peer review comments are addressed in this Report and the complete Peer Review Report is included in Appendix E...*" although how they were addressed is difficult, if not impossible, to discern. Further, at the April 24, 2012 GB meeting, staff responded to repeated questions by a Board member regarding the peer reviewers' comments, stating "...we have assembled a spread sheet to systematically go through and address each comment. We have already incorporated their comments in this draft and there are some big ticket

³² 2011 TER Introduction: "The 2011 Threshold Evaluation is the fifth evaluation report completed by TRPA and the first to undergo an independent scientific peer review. The purpose of the peer review was to ensure the status and trend determinations presented in this document were scientifically supportable and to identify areas where TRPA can improve the quality of information presented to the TRPA Governing Board and the public. Peer review comments are addressed in this Report and the complete Peer Review Report is included in Appendix E."

³³ 2011 TER Executive Summary opens with: "The 2011 Report is a noteworthy milestone. It marks the first time that the entirety of the Report, from the science, data, and the analyses to the conclusions and recommendations, has been independently peer-reviewed and validated. Seven scientists of widely varied disciplines from nationwide institutions unconnected to TRPA or the Tahoe Basin agree that this year's report "was seen as a major improvement as compared to earlier planning documents" and "is technically sound and provides a credible basis to support ongoing TRPA policy-making."

³⁴ Staff report from Mr. Shane Romsos, 4/24/2012 GB meeting (as found in minutes from meeting): "Each of the Peer Reviewers without exception reported positive commendations about the Draft Threshold report. The draft report is technically sound panel did not find any "fatal flaws" and provides a credible basis to support your ongoing policy..." (p. 4);

http://www.trpa.org/documents/packets/gb_packets/2012_gb_packets/May_2012_gb_packet.pdf

³⁵ For example, page 4 of Dr. Axler's comments on the threshold report include numerous references to tables and text in Chapter 1 of the report which clearly do not correspond with the April draft provided to the public.

items that will require dialing in some trend analyzes that we foresee as more of an element of our monitoring program and improving that.” In other words, the April draft made available for public review has addressed the comments the peer reviewers made. Yet a review of detailed peer review comments compared to the document released to the public indicates that many comments were not addressed.

Examples include, but are not limited to, the following:

Dr. Axler, p. 10

4-16. Needs TERC review. A vertical extinction coefficient is not a “Sensor”. It’s a measure of the rate of attenuation of light (usually photosynthetically available radiation [PAR]) with depth measured using an electronic sensor that is lowered down the water column.

TRPA April Report:

A recent analysis of annual average Secchi depth readings (includes water conditions down to a depth of ~20 m in recent years) and the vertical extinction coefficient (a more sophisticated electronic sensor for measuring light down ~ 100 m), ...” (p. 4-22)

Dr. Axler, p. 6

Definitions of what constitutes a change as in Table 2-2 are useful only to the extent that you can accurately assess the values of the indicators and their uncertainty. It may be better to simply report an Indicator Trend Category as Improving, Declining, Essentially No Change, and Insufficient Data to Evaluate. Where a rate of change can be calculated, it should be reported along with the confidence intervals. The detail in some of the indicator descriptions seems unwarranted given the uncertainties in the values of some of these indicators.

TRPA April TER:

Table 2-2. *Indicator trend categories and associated definitions used to classify trends relative to standards in the reporting icon.* (see table).

Dr. Axler, p. 7

If some parameters were measured prior to 1985, and I know there were, they should perhaps be included in an Appendix and used in the discussion of results as needed. It’s alright to use such data even if not determined at all the other stations now in use. I always want to see the entire data set.

TRPA April TER:

Data set not provided; only graphs with trend lines.

Dr. Axler, p. 7

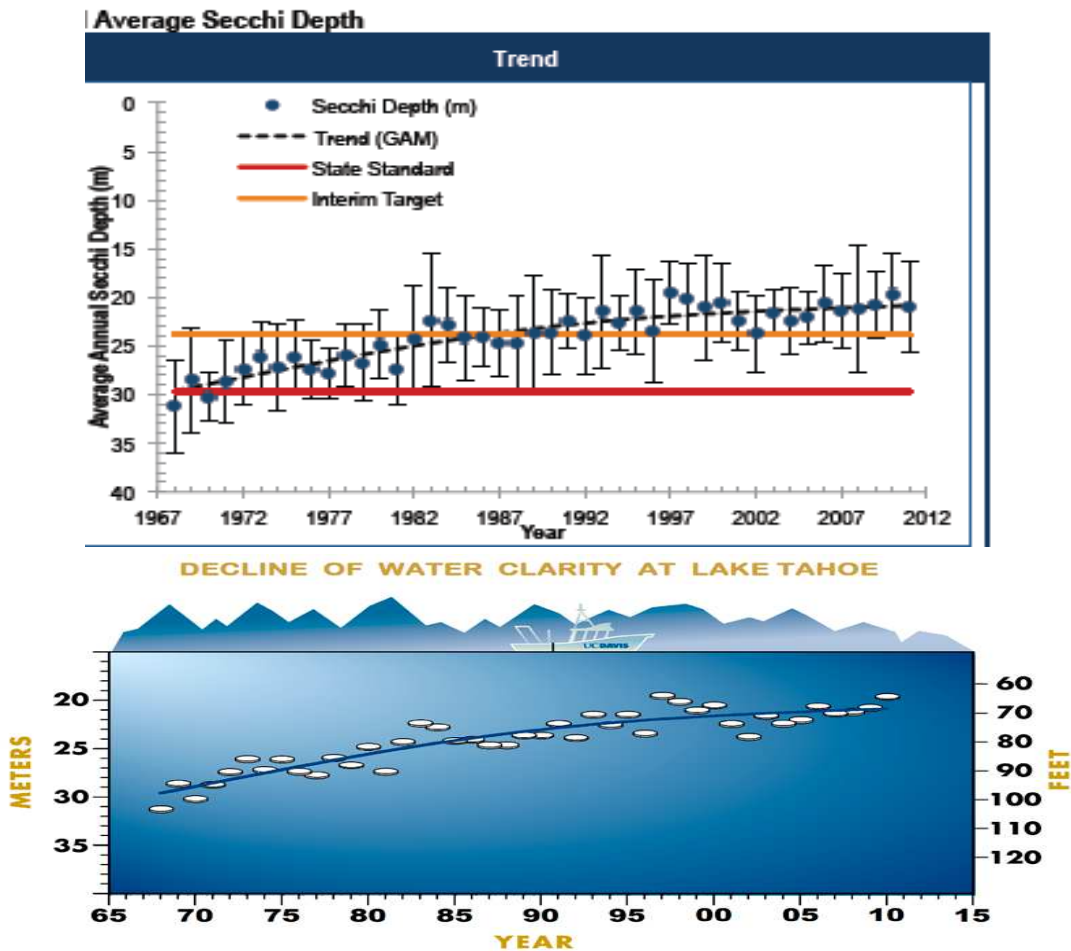
...the presentation and analysis of the long-term water quality data from the lake and its tributaries do not appear to mirror the data and analyses presented by TERC-UC-Davis via its 2011 (WY 2010) State of the lake report³⁶ or its many other publications found on its website;

TRPA April TER:

A review of the graphics presenting the long term trends in the TERC report and the TRPA Chapter 4 (2011 TER) report do not appear to match (see below). The trend lines are different – TRPA’s is more curved, and indicates an improvement in later years not reflected in the TERC data.

³⁶ http://terc.ucdavis.edu/stateofthelake/StateOfTheLake2010_Chapter11.pdf

See p. 11.1 for Long Term Clarity Trend.



In the above comparison³⁷ of the TRPA 2011 TER and TERC State of the Lake 2011 graphs, we recognize the scale of each graph is not fully comparable, although we have sized the images in our best attempt to match the scales of the X and Y axis. However, the differences in the trend line, especially the more ‘beneficial’ trend noted in TRPA’s graph (likely in part due to the inclusion of the ‘better clarity’ in 2011, although the TER should technically only evaluate data through 2010), are apparent.

Further, although apparently TRPA has generated a spreadsheet to track how staff responded to the peer reviewer comments, this has not been provided to the public. Instead, the public is assured the report has responded to the comments from peer review although a comparison of the details does not support this claim.

On that note, because TRPA has dramatically emphasized the scientific ‘validity’ of the

³⁷ * This replaces the same comparison in our 6/28/2012 comments, which inadvertently posted the annual clarity from TERC and winter clarity from the TER. Both graphics here represent annual clarity.

2011 TER, we believe the public has a right to see just how much of the report was completed by scientists versus TRPA staff and consultants, as well as a list of how TRPA ‘incorporated’ the comments by the peer reviewers (as noted above).

Also, the TER has relied on “trend analyses” to claim current trends as well as project future trends. Yet the types of trend analyses performed are not technically appropriate, as noted by peer review comments. Additionally, as in the case of several air quality standards, the methods used (e.g. Thiel Regression³⁸) are typically used to soften the impact of ‘outliers’ – data points that may be dramatically different than those before and after them in time (in terms of air quality measurements).³⁹ However, air quality standards have been based on specific time periods - 1 hour, 8 hours, 24 hours, or annually – because the *impacts* of air pollution can occur in those time frames. What a statistician might discount as an outlier in a chart simply because the rest of the week had much lower concentrations might be a day that five people rushed to the emergency room because the pollution levels were so high their health was negatively affected. Comments on the impacts of this new ‘trend line’ approach are discussed below for individual threshold standards.

Improper trending used to forecast purported improvements

TRPA’s use of the new approach involving trend lines appears to assume environmental conditions will remain linear over time. However, environmental processes are typically never linear, and are affected by numerous parameters at any given time. For example, air quality associated with motor vehicles improved during the years that fewer people were driving due to high gas prices. However, gas prices drop and more people begin to drive again, and air emissions go up. Had one simply looked at the estimated emission rates of motor vehicles by year over time (as TRPA has done in the RPU/RTP ‘analyses’), this situation would have been overlooked. Further, the Basin may experience one winter that is exceptionally cold, resulting in increased wood smoke emissions from residential fuel combustion compared to the previous, warmer year. But, what if there were also stronger inversions during the colder winter, trapping those emissions at the surface? Also, what if that winter, because it was colder and ski conditions were better, the visitation rate to the Basin increased, thereby increasing the visitors and 2nd homeowners using wood fireplaces and stoves? The combination of these three factors – more residential heating due to cold temperatures, more visitors using wood heaters due to ski conditions, and stronger inversions trapping the increased wood smoke emissions - results in significantly higher PM concentrations in the colder winter than the previous winter.

This hypothetical example is intended to reiterate the need to evaluate all of the environmental factors, which contribute to air quality concentrations and other environmental thresholds. Without this basic information, TRPA has no evidence upon

³⁸ See 2011 Threshold Report, Chapter 3, Air Quality, p. 3-15 for an example.

³⁹ See the 1-hour and 8-hour ozone graphics in the 2011 TER. If one separates out the most recent 5-6 years of data, peak readings follow no trend. This should be used to evaluate the causes of the inter-annual variation, as a ‘trend line’ is not only inappropriate, but not useful for evaluating the causes of ozone exceedances (and therefore taking measures to reduce emissions from the sources).

which to support any conclusions about the current and future status of the threshold standards.

The problem with the use of these linear regressions was also identified by the Threshold Peer reviewers:

“Also, we have no reason to expect progress to be linear over time and I would argue that this creates false expectations. Most ecological processes that I know of are distinctly non-linear. And the installation of stormwater BMPs and the repair of SEZs, for example, can require several years for construction impacts to wash away and revegetation to occur. Sediment discharge may be worse after a project than before if heavy rainstorms occur before the project area is fully remediated.” (Dr. Axler).

In response to questions on these critiques by Board members at the April 2012 GB meeting, TRPA Executive Director Joanne Marchetta told the Board:

“...the report identifies interim targets for most of our Threshold standards in all categories. Because we had used a linear regression approach to estimating the interim targets and the form and normality of our data has changed so much with time and different levels of resources; that the linear regression model effectively gave us interim attainment targets that we could not rely on. The interim targets were criticized because staff used a linear regression approach to estimating them; the suggestion from the Peer Review group was to develop a more sophisticated statistical methodology to make those estimates on interim attainment targets.”

Although whether TRPA made changes or addresses the peer reviewers' critiques is unclear (see previous comments), this explanation does not point out that it is simply not appropriate to use linear regression for certain thresholds. Further, some thresholds are not long-term thresholds. For example, air quality thresholds for human health are to be attained now, not in ten years. Whereas we understand some thresholds, e.g. water quality mid-lake clarity and old growth, will take some time to achieve and thus interim targets may be appropriate.

Discount of more recent, less favorable 'trends' is improper

As discussed below in more detail, the TER has made several references implying the last five years of data show a different (often less favorable) trend than the prior years, and instead of heading caution and working to assess the causes, TRPA has chosen to discount these trends, using statistical tests to try to suggest the trends should not be given as much consideration because they have changed. However, changing trends in thresholds like air quality should indicate that more attention needs to be paid to prevent future violations. This point is reiterated in the Executive Summary of the Peer Review comments in the TER report:

“The records of environmental observations often constitute the key evidence regarding local compliance with established ambient standards. Moreover, the trends in the ambient data record often provide the most important evidence about the expected continued compliance status for these parameters; observed unfavorable trends can be the “canary in the mine” early warning information about the need for additional information on known (and perhaps unknown) air emission and water effluent sources impacting the lake basin area.” (p. 16).

Failure to Consider all Available Information

Throughout our comments on the 2011 TER and the RPU/RTP environmental documents, we note numerous examples regarding information that is available for use that was not considered by TRPA. The same situation applies to available data that was not considered in the examination of the thresholds. This unexplained ‘limitation’ on what TRPA considered in the documents was also noted by peer reviewer Dr. Axler:

“Another major concern are the apparent limitations placed by the preparers of this Threshold Evaluation, on themselves, as to what data would be considered for analysis. There is a wealth of important information in the scientific literature and agency reports that could prove most useful in trying to solve the Lake Tahoe puzzle. For example, Dr. Goldman’s publications of 1965 and 1988 (and the references cited) are particularly helpful as is the UC-Davis Tahoe: State of the Lake Report 2011 (see Chapter 4, Water Quality).”

We reiterate the need for TRPA to perform a thorough, scientific review of the thresholds separate from the RPU update, and one which uses the best available science and the appropriate terminology to assess threshold attainment.

Although Chapter 12 of the TER claims amendments to the Regional Plan have been made to address science, as the long record of examples include in these comments show, this has not been the case. The Regional Plan, which is supposed to achieve and maintain the thresholds, has fallen far short of a being amended as needed to protect the environmental values identified by the TRPA Compact.

“Between 1987 and 2010, TRPA considered and adopted several amendments to the *Regional Plan* to incorporate best available science and make necessary adjustments to accommodate environmentally beneficial projects and programs. Starting in the 1990s, Threshold Evaluations and other studies made it clear that regulation alone would not achieve and maintain adopted Thresholds Standards; the environmental impact of legacy land uses and urban development that was built prior to the *Regional Plan* continued to adversely impact the Region. To remedy this, TRPA amended the *Code of Ordinances* to include the Environmental Improvement Program (EIP; see Chapter 31 *Code of Ordinances*). The EIP, initiated in 1997, leveraged and secured federal, state, local, and private funding for the implementation of erosion control and storm water treatment infrastructure, wetland restoration, and other environmentally-beneficial programs and projects.” (p. 12-2).

Additionally, the 2011 TER (and the 2006 TER) fail to include historical data (other than the few, often difficult points to see in the graphics), let alone the data from all sites around the Lake Tahoe Basin. As our comments discuss, it is impossible to adequately plan for threshold attainment if one does not consider the historical trends. We note the same lack of information in the RPU DEIS; thus even the combination of both documents fails to include an adequate assessment of the best available information.

Further, although EIP projects have resulted in some environmental improvements, some projects have raised controversy when selecting to improve one threshold over another – a situation only further exacerbated by the adoption of the EIP “Linked Projects/Linked Industrial Projects” section in the Code language that took effect in March 2012. Although no analysis of the impacts of this language was performed, in essence, it opens

the door to ‘link’ more projects to EIP projects – while the new Regional Plan proposes to allow more exemptions for EIP projects (i.e. tree removal exemptions, as noted in the 6/28/2012 comments on the RPU/RTP/TER document submitted by TASC and others).

Additionally, the 2011 draft TER and the draft RPU/RTP documents fail to analyze the impacts of the proposed (and current⁴⁰) Regional Plan on all thresholds. Yet Resolution 82-11 requires TRPA to analyze the status of the thresholds, consistency with currently available scientific evidence and technical information, amendments needed to address scientific evidence and technical information, and to ensure that the Plan and all of its elements achieve and maintain the ETCCs (including ETCCs amended, or that should have been amended, to address current science).

Resolution 82-11 excerpts include:

12. In adopting this resolution, the TRPA Governing Body expressly recognizes that there is a distinction between adoption of Environmental Threshold Carrying Capacities and the subsequent planning process resulting in an amended regional plan so that, at a minimum, the plan and all of its elements achieves and maintains the adopted Environmental Threshold Carrying Capacities.

15. The Governing Body recognizes that, in establishing Environmental Threshold Carrying Capacities for the Lake Tahoe Region, it is establishing the basis for a long-term program which will protect and enhance the significant environmental values of the region, which program will be reviewed from time to time to ensure its consistency with the currently available scientific evidence and technical and other information...

4. The Environmental Threshold Carrying Capacities shall be reviewed by staff and the Governing Body at the time of adoption of the regional plan to assure that said plan and the Environmental Threshold Carrying Capacities are consistent, and shall be reviewed at least every five years thereafter by the most appropriate means. After such review, the pertinent environmental threshold standards shall be amended where the scientific evidence and technical information indicate:

- (a) two or more threshold standards are mutually exclusive; or
- (b) substantial evidence to provide a basis for a threshold standard does not exist; or
- (c) a threshold standard cannot be achieved; or
- (d) a threshold standard is not sufficient to maintain a significant value of the Region or additional threshold standards are required to maintain a significant value.

The Agency shall maintain a monitoring program to determine progress towards attainment of threshold standards and to provide the basis for such review and amendment of the threshold standards pursuant to the foregoing criteria.

As noted in throughout our previous (6/28/2012) and current comments, the status of the thresholds has not been adequately assessed,⁴¹ thresholds have not been amended for consistency with currently available scientific evidence and technical information,⁴² amendments to the Plan needed to address scientific evidence and technical information have been inadequate,⁴³ and to ensure that the Plan and all of its elements achieve and

⁴⁰ Alternative 1.

⁴¹ Examples include the inappropriate use of statistics, trend lines, the shift from reporting attainment vs. non-attainment to the aggregated indicator categories in the draft 2011 TER, and others as noted herein.

⁴² E.g. atmospheric deposition; see discussion under the specific section for details.

⁴³ For example, the Regional Plan has failed to address findings with regards to water quality research for over 15 years, thus persisting in a Code that does not account for current scientific evidence.

maintain the ETCCs (including ETCCs amended, or that should have been amended, to address current science). The failure to address this latter requirement is clearly represented by the lack of attainment of many thresholds that, unlike mid-lake clarity, do not require years or decades to fully achieve regardless of actions implemented (soil conservation, SEZs, air quality, noise, etc.).

It appears thresholds are also continuing to be prioritized. Although the draft TER reports numerous non-attainment issues with several standards, the TER does not propose threshold amendments and Regional Plan Amendments⁴⁴ to improve attainment. Instead, suggested improvements are put off to some ‘future date’ and/or blatantly ignored in the proposed Regional Plan Update:

“In addition, many parts of the existing Regional Plan are still current or have been recently amended and therefore do not need to be reconsidered for substantive changes in this Regional Plan Update. All alternatives include minor formatting and organizational changes that would clarify and update outdated text in the Regional Plan but would have no environmental effect. Specific formatting and organizational changes can be found in the draft Alternative 3 Goals and Policies document in Appendix A. Those portions of the Regional Plan that are not proposed for substantive changes because **they are not a priority or because they are sufficient in their current form** are the Noise and Natural Hazards Subelements of the Land Use Element; the Open Space, Scenic, Stream Environment Zone, Cultural, and Energy Subelements of the Conservation Element; the Recreation Element; and some of the Implementation Element. Because TRPA is not proposing to modify these elements of the Regional Plan, they will not be part of the amendment package for Governing Board approval. As such, these Goals and Policies are not included as aspects of the Regional Plan Update alternatives evaluated in this EIS.” (Draft RPU DEIS, April 2012, Chapter 2, p. 2-12).

However, standards for noise, scenic, and SEZ threshold areas are reported as non-attainment. Therefore, it appears TRPA has prioritized certain threshold standards over other thresholds standards.

Last, TASC questions TRPA actions that consider the Regional Plan “sufficient” in areas that are failing to achieve and maintain thresholds in clear violation of the Compact’s direction to achieve and maintain all threshold standards.

Need for Threshold Monitoring: *

As noted in our detailed comments, the TER frequently fails to address recent reductions in monitoring of several thresholds (e.g. air quality, water quality [LTIMP]). The failure to even disclose this is curious, but further, an objective scientific review would necessitate an increase in monitoring (let alone re-establishing sites that have been discontinued over the past several years). The TER should, therefore, include recommendations to increase monitoring.

Also, in many cases, current research suggests a likely need for more monitoring to truly assess the status of thresholds, as well as the cause/effect relationships and effectiveness of current and future programs. Resolution 82-11 requires TRPA maintain a monitoring

⁴⁴ Which we expect would be included in the Regional Plan Update, at a minimum.

program for the thresholds – it is not a luxury to implement when funding allows, but rather a requirement TRPA must meet. If additional funding mechanisms are needed to support threshold monitoring, then such mechanisms should be included in amendments to the Regional Plan. (Instead, there appears to be no proposals to increase fees or locate other mechanisms for increased threshold monitoring in the proposed alternatives; instead, proposals would actually decrease some mitigation fees collected)!

In fact, taking a look at what water quality researchers recommend regarding monitoring reiterates the importance of, and the need for, more monitoring. For example, excerpts from the 2011 State of the Lake Report⁴⁵ include the following statements:

The recent changes in lake clarity highlight the complexity of natural systems, and the extent to which monitoring is needed to understand and best protect our natural resources. (p. 6.1)

It is important to understand the possible causes and to see what they tell us about past actions and future investments. Long-term monitoring data, such as that summarized in the State of the Lake Report, provides part of the information needed, but not all. Some of the critical knowledge gaps are in the monitoring of urban stormwater flows, where an independent and comprehensive monitoring program needs to be established to evaluate the status and trends of this important source of fine sediment and nutrients. (p. 6.2).

Long-term monitoring data is essential to be able to both track progress toward improved clarity and to understand the changing conditions. (p. 6.14).

TRPA Responsibility: *

The following comment is repeated throughout the TER: “*TRPA’s near-term implementation role should focus on program areas that it has the existing authority to lead...*” This is then followed by a list of actions TRPA can take. However, this fails to address the impacts TRPA land use decisions have on thresholds, regardless of TRPA’s authority. For example, as noted in our comments on noise, although TRPA does not have the authority to enforce on-road motor vehicle noise, TRPA does have the authority to make decisions affecting the number of motor vehicles that will be on Tahoe’s roadways and therefore, can not simply dismiss all responsibility. This is, in fact, noted in our 6/28/2012 comments on the TER and RPU/RTP draft documents, as TRPA proposes to substantially increase the number of residents and visitors in the Basin, the amount of development, coverage, vehicles, etc., all of which will negatively impact thresholds that TRPA may not have direct enforcement authority over (e.g. certain single event noise sources), but where TRPA decisions certainly can have positive or negative impacts on the thresholds overall. Further, as noted by peer review comments, TRPA can initiate cooperative action with the local jurisdictions who have such authority to improve enforcement.

Linkages between thresholds: *

The TER fails to adequately inform the public about the relationships among different thresholds. Although previous threshold reports may have repeated information in places,

⁴⁵ <http://terc.ucdavis.edu/stateofthelake/StateOfTheLake2011.pdf>

the 2011 draft TER has apparently moved in the opposite direction, treating each threshold standard and indicator as if completely disconnected from the others. There has long been debate regarding the nature of TRPA's planning process to often prioritize one threshold over another, although this is not provided for in the Compact or Resolution 82-11. However, as the TER, and the associated RPU/RTP documents show, some thresholds are provided far more protection than others. For example, TRPA has claimed additional height and mass are needed (and the increased population this will bring) to attain certain standards related to water quality,⁴⁶ however the additional population this will bring will negatively impact air quality (vehicle emissions, stationary sources, heating appliances, etc.), noise (more people, more cars, more recreational vessels, means more noise), and so on. However, these tradeoffs are not discussed in the Threshold report, nor are they given adequate evaluation in the associated RPU/RTP documents.

Peer review comments also noted the inadequacy of the TER to address these relationships:

"I was also disappointed that the Report did not do a good job of presenting information in a landscape perspective highlighting how certain key indicators cut across major areas (i.e. Chapters) – such as how the Air Quality NO_x data is linked to lake N-loading; how N and P source loading is from fundamentally different processes (N from the atmosphere and P from watersheds), and how the land-water interface meets in the littoral zone with consequences to periphyton and phytoplankton, food webs, fisheries, recreation, and both scenic and property value. I think that it is important for the 3 Report's audiences to understand that the cost of a particular management action in one policy area may have important positive effects in other areas; and conversely that there may be difficult trade-offs between well intended policies."

"The report would benefit from some recognition or discussion of how the various indicators, standards, and recommendations are related or interact with each other. The spectacular qualities of the Lake Tahoe Region are all interrelated and function as a dynamic biophysical and socio--economic system. Perhaps some additional thought should be given to expressing how the recommendations for air quality, water quality, soil conservation, vegetation preservation, fisheries, wildlife, scenic resources, noise, and recreation will function as an integrated system."

III Comments related to Specific Threshold Categories

Air Quality

Historically, a review of adoption of the most protective standards has been promised as part of the RPU. Yet, the 2011 Threshold Evaluation Report includes no such recommendation – an obvious outcome of a political decision made sometime since TRPA promised such an evaluation in 2010, since there has never been a scientific assessment of this change.

⁴⁶ Through interconnected means involving the transfers of development from sensitive areas and provision of incentives to supposedly foster these transfers.

TASC Additional Comments on Draft 2011 Threshold Evaluation Report

TRPA Regional Plan Update FactSheet FollowUp #3

7/21/2010

Amended 8/18/2010 per GB direction at 7/28/2010 meeting

Alternative 1	Alt. 2	Alt. 3	Alt. 4
No change.	AQ.IMP-27: "Emissions Standards & Practices – <u>adopt and implement air quality standards, whichever are strictest, in the respective portions of the region for which the standards are applicable.</u> Region Wide Program – TRPA will adopt the most stringent AQ standards, control strategies, and implementation plans Region-wide."	No change. AQ.IMP-30: "Emissions Standards & Practices – <u>adopt and implement different air quality standards and implementation practices between the two states.</u> "	AQ.IMP-2730: "Region Wide Program – TRPA will adopt the most stringent AQ standards, control strategies, and implementation plans Region-wide."

Governing Board Direction: The board suggested that the current language in Implementation Measures AQ.IMP-27 does not reflect staff's intent. The Board unanimously directed staff to amend the language to change "adopt or implement" to "recognize." The proposed language is amended as follows:

Alternative 1	Alt. 2	Alt. 3	Alt. 4
No change.	AQ.IMP-27: "Emissions Standards & Practices – <u>adopt and implement Recognize air quality standards, whichever are strictest, in the respective portions of the region for which the standards are applicable.</u> Region Wide Program – TRPA will adopt the most stringent AQ standards, control strategies, and implementation plans Region-wide."	No change. AQ.IMP-30: "Emissions Standards & Practices – <u>adopt and implement different air quality standards and implementation practices</u> "	AQ.IMP-2730: "Region Wide Program – TRPA will adopt the most stringent AQ standards, control strategies, and implementation plans Region-wide."

As TRPA has historically included recommendations to improve the protection of values mandated by the Compact, which include human health, visibility, forest health, and water quality (all resource areas affected by air quality), the 2011 TER must ignore the influence of policy decisions and political pressure and serve as the objective scientific report it is implied to be. Such an analysis would certainly recommend the adoption of uniform, protective AQ standards by TRPA. The Basin is, after all, one air basin.

Carbon Monoxide: AQ-1:

The 2011 Threshold evaluation refers to CARB's 2006 LTADS report to support the relative importance of anthropogenic sources of CO in the Basin: "*The primary anthropogenic sources of CO are on-road motor vehicles (30%), residential wood burning (28%), motorized watercraft (16%), and off-highway vehicles (8%) (CARB 2006).*" (p. 3-9). However, an analysis of more recent information (2008) suggests that motorized watercraft, off-road vehicles (i.e. snowmobiles), and aircraft may be responsible for more CO emissions than motor vehicles (Attachment A: AQ Data

Summary Tahoe Basin)⁴⁷. However, the Threshold Evaluation makes little mention of these other sources, only focusing on improved technology in motor vehicle emissions and improved ‘forest biomass prescribed burning or pile burning’ to justify the implication that CO will only continue to improve. (p. 3-9). This is not only technically unsound, but it is misleading to the public.

Further, in the next paragraph, TRPA summarizes the status of the CO standards, stating they are “*considerably better than the established Threshold Standards. The Trend is moderately or rapidly improving, and confidence in the determination of status and trend is moderate to high.*” However, if one evaluates the details behind these conclusions, many flaws are revealed, suggesting an inadequate technical review and/or an attempt to paint a nicer picture than exists.

CO Threshold Standard: Status

First, we refer to our comments on the overall change in pattern from ‘attainment/non-attainment’ to the new terms created and discussed in Chapter 2.

Next, the conclusion that CO standards are ‘better than target’ (aka in attainment) are based on very little data, and fail to discount recent measurements which show peak measurements exceeding the 8-hour 6ppm standard. We recognize the threshold report typically covers a five year period, in this case, 2006-2010, however because it has been used as the ‘basis’ for the proposed Regional Plan updates, the most recent data must be assessed in the RPU EIS, at a minimum (although as noted above, we see TRPA has selectively used different years for different thresholds among the TER and RPU/RTP documents). Therefore, we reserve further comments on the 2011 and 2012 data for our comments on the RPU analysis below.

That said, in consideration of CO standards up to the end of 2010, the only conclusion that can be drawn based on the data available is that the CO standards were not exceeded at the South Stateline, NV air quality site from 2006-2010. This site is not representative of conditions in other parts of the Basin. In fact, in the TRPA 2006 Threshold Evaluation, TRPA notes the importance of maintaining several monitors throughout the Basin to evaluate threshold status:

“Because carbon monoxide is considered a “Hotspot” pollutant, meaning its effects are very localized, it is important to monitor this pollutant at various locations in the Basin. For this reason, it is recommended that data from all CO monitoring stations within the Basin be used to report on the indicator. Currently, this indicator is only measured at one location and these data are not adequate to provide the necessary information to either evaluate or make recommendations for improvements.” (p. 2-19).

CO Threshold Standard: Trend

⁴⁷ Note the estimated on-road motor vehicle emissions were taken from TRPA’s assessment, of which the accuracy is uncertain due to the reliance on CA-only models, default model information (e.g. fleet mix), and other factors which may underestimate local vehicle-caused emissions. However, this is still valuable for identifying the importance of performing an appropriate analysis specific to the Tahoe Basin.

As noted above, the use of the Thiel regression method is inappropriate for analyzing the air quality standards and indicators. Further, it appears TRPA is selectively deciding which years to count for no apparent reason other than that those years do not reflect the rapid improvement claimed. For example, with regards to the 8-hour CO measurements, there were three measurements in 2002 and 2003 that violated the 6 ppm standard. These measurements were based on quality assured data (meaning there had not been any instrument malfunctions or other similar type of reason the high readings were noted – rather, the ambient CO concentrations were that high). Yet the regression line that begins in 2000 (p. 3-14) appears to selectively discount the first few years of data and smooth out the exceedances. In fact, it also appears the higher readings may help create a false ‘trend line’ that TRPA has referred to as “rapid improvement.”

Additionally, TRPA has discounted the ‘less rapid’ trend experienced between 2006-2010 simply based on statistics games.

“The trend over the most recent 5 years (2006-2010) is not consistent with the long-term trend and instead indicates no change in the highest 1-hour average CO concentrations.” (p. 3-12).

Instead, TRPA should be examining the status of the threshold standards, the actual trends (which include variations from year to year), and the conditions at various locations throughout the Basin. Further, TRPA should be asking why CO trends were not improving as ‘rapidly’ during the same years that VMT has significantly dropped – clearly, the linear relationship between vehicle emissions and CO levels that TRPA hopes for isn’t supported by the facts.

5-Year Trend - The confidence in the trend for first high over the most recent 5 years (2006-2010) is low with a confidence level of 41%, S value of 0 and a P value of 0.59. Low confidence is likely the result of few data points (n=5) and inter-annual variation in 1-hour concentrations.

The reference to ‘few data points’ is confusing, to say the least. How can there only be five data points (n=5) for these years when measurements are taken hourly? Rather, there should be 365 days x 24 hours = 8,760 data points per year. Further, this is no different than the hourly measurements taken in years before 2006, which also recorded hourly CO, and therefore would result in 8,760 data points per year as well. It appears as if TRPA is comparing one annual number for CO (although this does not correspond with any standard or indicator) for the last five, less desirable years, to the conclusions based on the 8,760 data points collected at each site in the years prior, in an attempt to discount the changes since 2006.

Finally, this is a threshold evaluation report, not an emissions inventory forecast. TRPA treats the CO concentrations as if they are supposed to ‘fit’ into a linear trend and if they do not, statistics are used to explain it away. Instead, TRPA must report on the attainment status of the threshold standards, period. This can then provide the basis to assess sources (e.g. cars vs. boats), impacts from weather and climate (e.g. more inversions in a given year?), impacts from other factors (e.g.

higher gas prices resulting in less driving), and so on. Once TRPA evaluates this information, TRPA can then assess what control measures and other strategies are needed to achieve and maintain thresholds. Otherwise, if TRPA assumes CO concentrations in the Basin will simply follow a ‘trend’ assumed from motor vehicle engine technology, therefore taking no actions to reduce other important sources (e.g. motorized watercraft), then efforts are placed into the wrong approaches and the air quality (and humans) will suffer.

We also add that if one includes the most recent CO data from the Stateline site (included in the attached Table of Tahoe Basin Air Quality Data), the measurements are again higher. Although there have been notable improvements in CO concentrations since the early 80’s, a quick look at the peak readings between 2000 and May 2012 shows that there can be significant variation from one year to the next.

Actual Status and Trend as supported by the data:

CO was in attainment at the Stateline, NV site as of 2010. Although the Basin experienced significant improvements in CO levels at this location when compared to the 1980’s, peak concentrations have not continued on this trend, but rather appear to have fluctuated over the past six years.

As of 2010, the end of the reporting period for this evaluation, the only CO monitoring was at the South Stateline, NV site.

CO Threshold Standard: Confidence

The threshold report claims the confidence in the CO status for the Basin is “high” because the data were collected using federal reference methods. However, the only conclusion TRPA can draw, based on the data available, is that the confidence in the data collected *at the South Stateline monitoring site* is high. This is completely different from statistical confidence of CO levels “in the Lake Tahoe Air Basin.” TRPA’s conclusion appears to mislead readers by sleight of hand.

Although the report briefly acknowledges that this is based on one monitoring location only, the limitations of the data are written-off through the assumption that traffic volumes alone determine CO concentrations: “...*This site represents the greatest volume of vehicle traffic in the Region, and consequently, the measurements are thought to represent the highest CO emissions.*” (p. 3-12). This assumption – or rather, someone’s “thought” – does nothing to assess the other sources of CO in the Basin, and the impacts of local and Basin-wide weather patterns that may influence ambient air quality. Some number of tons of CO emitted at South Stateline without inversion conditions may be acceptable, while that same number of tons of CO emitted in Tahoe City during a heavy inversion period may create poor air quality conditions. In other words, there is no linear relationship between CO emissions specifically from on-road motor vehicles and ambient CO concentrations.

CO Threshold Standard: Targets, Attainment Date(s), Future Recommendations, etc.

The section concludes with no recommendations for additional actions, stating the “Current CO status and trends suggest actions to reduce CO concentrations and decrease traffic volumes are effective at reducing 8-hour concentrations.” Again, the only conclusion TRPA can support is that *CO concentrations did not violate the standards at the Stateline, NV monitoring site between 2004 and 2010*. How much of this air quality benefit is associated with the increased VMT due to economic conditions (which as discussed below, needs to be accounted for because the economy will turn back around and resident and visitor populations – and VMT - are expected to increase again, even without further development). How much is truly from the “Programs and Actions Implemented to Improve Conditions” noted in the report? How have meteorological conditions affected CO levels? Have there been significant changes in the fleet mix in the Tahoe Basin (including visitors and residents)?

A similar situation occurs with AQ-5, Traffic Volume. TRPA concludes that the threshold is in attainment, therefore actions have been effective. However, how much of this is associated with the bad economy? High gas prices? Also, TRPA states “*the question that needs to be answered is whether this indicator continues to provide a good proxy measure of CO concentrations.*” (p. 3-18). This is confusing, because the measure was not intended to substitute (or serve as a proxy) for actual CO measurements, but rather serve as another standard to help protect air quality in what was known as one of the Region’s biggest CO hot spots. The question(s) should instead be whether the indicator should be modified to address other times of year and other locations in the Basin.

Finally, with regards to the “TRPA 9ppm” 8-hour CO standard, we note that in every prior TER, the TRPA standard has been documented as 6ppm. We understand, according to staff⁴⁸, that although Resolution 82-11 called for the reduced standard in 1983, the final ‘Board approval’ may not have been completed:

“Appendix A of Resolution 82-11 established the Carbon Monoxide 8-hour standard at 9 ppm. with the caveat that each state;

“shall review and certify to TRPA by February 28, 1983 as to what their carbon monoxide standards are as of that date, and this TRPA threshold standard shall be changed effective February 28, 1983, if necessary, to be the applicable state carbon monoxide standard applicable to the respective portions of the region in accordance with Article V(d) of the Compact.”

However, TRPA has referred to the TRPA standard of 6ppm in the last four threshold reports (1991, 1996, 2001, and 2006). We recommend TRPA explain to readers why the 2011 report includes a different TRPA standard, acknowledge the potential error made almost 30 years ago, and clarify that TRPA intends to remedy this inadvertent legal error immediately, regardless of the Regional Plan Update alternatives (since

⁴⁸ Pers. Comm. Keith Norberg, 5/2/2012.

TRPA was supposed to amend thresholds, as necessary, based on the five-year reviews, thus, it would appear this amendment need not rely on the adoption of a new Regional Plan).

Ozone: AQ-2

The RPU DEIS should evaluate a threshold update which adopts the most protective standards so that the entire Basin is protected equally. The update also needs to evaluate the impacts of ozone in pine trees and the Basin's overall forests.

The 2011 Threshold evaluation refers to CARB's 2006 LTADS report to support the relative importance of anthropogenic sources of ozone precursors in the Basin: "*The primary sources of the precursor gases in the Lake Tahoe air basin include on-road motor vehicles, residential fuel combustion, motorized watercraft, off-road equipment, solvent and fuel evaporation, and off-road recreational vehicles (CARB 2006). Ozone can also be transported into the Lake Tahoe air basin from outside sources, although these sources do not substantially contribute to overall O₃ concentrations (CARB 2004).*" Although these are sources of ozone precursors, TRPA should also note the importance of additional sources that may be unique to the LTAB, including emissions from prescribed fire (pile and understory burning) and wildfires, as well as aircraft.⁴⁹

Although exceedances did occur (for both 1-hour and 8-hour standards) during the period reviewed (2005-2009), the document then states in the next paragraph that "Overall, the Basin can be characterized as "at or somewhat better than the standard," with "little or no change" in trend, and moderate confidence in the status and trend determination (Figure 3-2)." First, it is inappropriate to suggest the "Basin" can be characterized by the measurements from a site three years ago, or that the last two and a half years can be ignored, and that the Basin is at or somewhat better than the target when the "target" (aka air quality standard for ozone) was not being met in the last full season measured in South Lake Tahoe. See additional comments below.

Further, this 'summary' has taken what has typically been two indicators for ozone: 1-hour and 8-hour measurements, and blurred the attainment status by adding a 3rd indicator (related to the federal designation requirements for 8-hour ozone), and an estimate of NO_x emissions that does not represent ambient ozone concentrations. However, it appears that because, with this new 'structure,' three of the four 'reporting indicators' are not considered below target, this has been used with some level of 'majority rules' to suggest the 'overall status' is at or somewhat better than target. Based on the methods TRPA has used in the past, and as noted in the 'crosswalk' in the TER Appendix D, the status for the ozone standards would have been simply non-attainment (and the rest would be discussed in the text). Again, it appears that the 'summary' has been carefully worded to suggest a better picture than the facts support.

⁴⁹ See 2006 Lake Tahoe Airport Report, League to Save Lake Tahoe, November 2006.

O₃ Threshold Standard: Status

First, we refer to our comments on the overall change in pattern from ‘attainment/non-attainment’ to the new terms created and discussed in Chapter 2.

Next, the conclusion that ozone standards are ‘at or somewhat better than the standard’ (implying attainment) are based on measurements from roughly three years ago from the South Lake Tahoe location, where ozone has historically and most consistently been monitored (we note 2010 measurements in Incline Village did not exceed the standard, however, there are notable differences between these two locations and thus it can not be stated or assumed that Incline Village measurements represent the “overall Tahoe Basin”).

In essence, the only statement TRPA can support is that as of 2009, the California 8-hour ozone standard was not being attained, however the status as of 2011 is unknown.

Additionally, it appears that careful wording was used to avoid admitting that ozone has not been monitored in recent years. For example, on page 3-22, the Status explains that the evaluation is based on “2005-2009 (the most recently reported indicator values).” However, this is misleading. In truth, TRPA is responsible for monitoring the thresholds, first and foremost. However, this has typically involved coordination with other agencies (e.g. CARB, NDEP, Washoe County AQMD), and TRPA has worked with these other agencies to obtain data when not available online (like CARB’s data). Second, if other agencies have cut monitoring, then TRPA must ensure monitoring continues. Although TRPA has installed an ozone monitor on its building (see comments on site location), this does not represent conditions in ambient South Lake Tahoe. Further, TRPA should be forthcoming in what is supposed to be a technical review document and simply admit there was no monitoring in South Lake Tahoe after 2009.

Similar to our comments regarding time period above, we acknowledge the reporting period for the TER should include 2006-2010, however the RPU documents must include the most recent years, and therefore can not simply refer back to findings in the TER that are years outdated.

O₃ Threshold Standard: Trend

As noted above, the use of the Thiel regression method is inappropriate for analyzing the air quality standards and indicators. Like CO, ozone levels are determined by multiple factors, including climate and weather patterns, as well as annual changes in the environment (e.g. fires), and human activities (e.g. less driving or boating). More appropriate, and certainly more informative, would be to simply plot the measurements as has been done in the past. In examination of the graphs provided for the 8-hour average concentration (p. 3-24), it can be seen that there may have been some slight decrease since the 1980’s. However, what would this look like if TRPA simply plotted from 1995 to 2010? It may appear that concentrations are more stable,

but not really decreasing. How about 2005-2010? This may in fact reveal concentrations are again increasing. But, then we see that TRPA has discounted the changed ‘trend’ over this last five year period because it does not match the long term trend:

“Five-Year Trend – The trend over the most recent 5 years (2005-2009) is not consistent with the long-term trend, and indicates a slight increase of 0.002 ppm/year in the highest 1-hour average O₃ concentration, or +2.5% per year of the standard. Note that short-term trends in air quality are typically not reliable due to the high inter-annual variability of meteorology and small sample size (n=5).”

Because ozone standards are in place to protect human and forest health now, and are not long term thresholds (e.g. lake clarity), it is wholly inappropriate to discount recent changes. *Ozone concentrations do not follow a linear line!* We also see the same statistics games being used to evaluate ozone as CO – the misleading implication that there are just five data points in the past five years when like CO, hourly measurements are taken.

These questions show how easy statistics can be manipulated to show a desired outcome. What is important is what ozone concentrations are doing now, thus only analyzing the long term trends, then discounting the most recent five years because the trends aren’t as ‘nice’ is not appropriate.

Instead, TRPA should be examining the status of the threshold standards, the actual trends (which include variations from year to year), and the conditions at various locations throughout the Basin.⁵⁰ Further, TRPA should be asking why the 8-hour ozone trends were actually getting worse during the same years that VMT has significantly dropped – clearly, the linear relationship between vehicle emissions and ozone levels that TRPA hopes for isn’t supported by the facts.

Although a stated percent reduction in NO_x emissions is included in the 82-11 Thresholds to support attainment of the ozone standards (and a reduction in atmospheric deposition of nitrogen), NO_x emissions have not been evaluated in previous reports and this should be noted. Further, the emission estimates are based on CARB estimates of the California side of the Basin. This neglects Basin-wide emissions, and as noted in our comments regarding the air quality modeling performed for the RPU DEIS, relies on an Emissions Inventory that does not take into account local Basin information. If one uses the more appropriate estimates from the DRI 2008 EI⁵¹ (see comparison later in these comments), NO_x emissions in the Basin may be almost 9 tons/day, well above the estimated 1981 levels. Not only does this suggest the threshold may not be in attainment, contrary to the 2011 TER findings, but it also reiterates the need for improved air quality planning and identification of Tahoe-specific information. Further, TRPA notes a low confidence in their

⁵⁰ Placer County has installed a new monitoring site which measures ozone and PM_{2.5} in Tahoe City (beginning in January 2012). Although data are preliminary and not yet approved for regulatory purposes, ozone measurements through early June were included in the Attachment showing all available Tahoe Basin AQ measurements.

⁵¹ Refer to attached table of existing emissions comparing CARB vs. DRI emissions inventories.

determination, yet concludes “*the Region is in attainment with the adopted TRPA Threshold Standard, and therefore it is not necessary to establish an interim target for this indicator.*”

TRPA treats the ozone concentrations (and other ambient standards, as discussed below), as if they are supposed to ‘fit’ into a linear trend and if they do not, statistics are used to explain it away. Instead, TRPA must report on the conditions of the threshold standards, period. This can then provide the basis to assess sources (e.g. cars vs. boats), impacts from weather and climate (e.g. more inversions in a given year?), impacts from other factors (e.g. higher gas prices resulting in less driving), and so on. Once TRPA evaluates this information, TRPA can then assess what control measures and other strategies are needed to attain and maintain thresholds. Otherwise, if TRPA assumes ozone concentrations in the Basin will simply follow a ‘trend’ assumed from motor vehicle engine technology (as ozone has been heavily tied to VMT discussions in the RPU), therefore taking no actions to reduce other important sources (e.g. motorized watercraft), then efforts are placed into the wrong approaches and the air quality (and people breathing it) will suffer.

Actual Status and Trend as supported by the data:

Ozone was not in attainment the last time it was measured in South Lake Tahoe (2009). The federal standards and TRPA 1-hour standard were met in Incline Village, NV as of 2010. Although improvements in peak concentrations were seen through the 1990’s and early 2000’s, the ozone in the Basin has actually been slowly increasing over the past six years.

As of 2010, the end of the reporting period for this evaluation, the only ozone monitoring in the Basin was in Incline Village, NV.

O₃ Threshold Standard: Confidence

Just as TRPA has done with CO, the threshold report claims the confidence in the ‘condition status’ for ozone is “high” because the data was collected using federal reference methods.⁵² However, the only conclusion TRPA can draw, based on the data available, is that the confidence in the data collected *at the South Stateline monitoring site* through 2009 was high. This is completely different from statistical confidence of ozone levels “in the Lake Tahoe Air Basin,” and the “current” ozone levels (whether assigned as 2010 for the TER, or 2012 for the RPU DEIS). Again, TRPA’s conclusion appears to mislead readers by sleight of hand.

O₃ Threshold Standard: Targets, Attainment Date(s), Future Recommendations, etc.

TRPA’s acknowledges that ozone standards have been violated in recent years, and will continue to be violated into the future, but apparently remains ‘content’ to simply

⁵² We note the overall ‘confidence’ is deemed ‘moderate’ because according to TRPA, “only moderate confidence in long-term trend and 5-year trend outweighs the high confidence in the condition status.” (p. 3-25). However, we again refer to comments regarding the inappropriateness of trends in assessing criteria air pollutants where maximum hourly, 8-hour and 24-hour concentrations are what matter to human health.

‘let things happen’ - as opposed to doing something to protect the Basin’s populations. This ‘let it be’ approach is implied by TRPA’s casual reference to the apparently inevitability predicted by the trend line (see below). The Compact requires TRPA to take measures to protect human health, enforcing the strictest air quality standard, not to idly stand by and just ‘wait.’ Further, based on the Target Attainment Date of 2025, are residents and visitors negatively impacted by high ozone concentrations for the next twelve years simply expected to “just grin and bear it?”

“Interim Target – By 2016, the highest 8-hour average ozone concentration is estimated to be about 0.072 ppm based on a simple linear regression line of best fit, suggesting the indicator will be non-compliant with the CA standard of 0.07 ppm.

Target Attainment Date – If trends in the highest 8-hour average ozone concentration indicator continue at the same rate as represented in this summary, the Region will be in compliance with the CA standard around 2025.” (p. 3-25).

Further, the trend line does nothing to inform TRPA of the causes of ozone in the LTAB. Although the assumed causes are alluded to in the “Programs and Actions Implemented to Improve Conditions” section (shown below),⁵³ there has been no comprehensive analysis of air quality in the LTAB. Therefore, there is nothing to support the assumption that there is any trend in the peak concentrations, nor where ambient levels will be in the next ten to twenty years (or what they have been throughout the Basin for the last several years).

“Programs and Actions Implemented to Improve Conditions – Regional, state and/or federal emission standards for motor vehicles, motorized watercraft, gas appliances and woodstoves. Transportation infrastructure improvements such as more efficient intersections, sidewalks, and bicycle infrastructure development. Public transportation systems. Regional and state restrictions on prescribed burning days. Prohibited development of “drive-up window” commercial uses.” (8-hour Average).

The recommendations for additional actions (excerpt below) add insult to injury by not only putting off any actions to examine the causes of ozone in the Basin, but again showing a bias towards the RPU Alternative 3 concept - in what should be an objective technical review - suggesting that incentivizing “walkable town-centers” will help reduce ozone. As noted in our comments on the RPU DEIS, evidence does not support the assertion that increased densification and urbanization in Lake Tahoe’s “community centers” will reduce driving, and in fact, even the DEIS notes an overall increase in Basin-wide VMT.⁵⁴ Further, until there is an adequate assessment of air quality in the Basin, combined with proper, local-based planning tools, the primary contributors to ozone in the LTAB remain uncertain, and although any reductions in precursor emissions are beneficial, they do not necessarily translate into achievement of the ozone standards.

⁵³ Of note is the ban on drive-up windows was primarily intended to reduce CO hot spots, and should be referenced in the CO section of the TER. Further, this ban should be maintained, since air quality trends, even for CO, indicate significant variation, and reductions have not directly followed the reductions in assumed sources (e.g. VMT).

⁵⁴ The RPU has frequently relied on per capita VMT and emissions, which if measures were effective, would still result in an overall net increase in the Basin compared to the 1987 Plan. See our RPU DEIS comments below.

“Recommendations for Additional Actions – Because the current status of this indicator is “slightly worse than target,” current programs and activities may need to be more effectively implemented or redesigned. Continued failure to meet this Ozone standard may indicate the need to further reduce the dependency on the private automobile, through land use policy that incentivizes more bicycle-friendly and walkable town-centers, and encourage the use of alternative modes of transportation such as public transportation...” (8-hour Average).

We contend that a more appropriate recommendation would instead suggest immediate action be taken to improve monitoring around the Basin, to develop the information and tools necessary to evaluate air quality in the LTAB, at the same time as reducing emissions of precursor gases from known sources (which TRPA has included reference to the latter in the next part of this section):

“...It is recommended that the agency continue to encourage policies and management actions that result in reduction in regional sources of precursor gas emissions (e.g., reduce private automobile use, support state and federal efforts to apply tail pipe emission standards for motorized watercraft, lawn equipment, off-road vehicles, on-road motorcycles)....”

Although supporting federal and state agency actions is important, where is the assessment of the actions *TRPA* can take to reduce emissions from motorized watercraft, lawn equipment, and off-road vehicles? For example, TRPA can impose restrictions on watercraft use on peak days, and/or days when ozone formation is expected to be high. Through Land Use policies and proper enforcement programs, TRPA could enforce limits on lawn equipment or off-road vehicles. What would be the air quality benefits of limiting snowmobile use in the Basin? We defer further comments regarding alternative actions to the RPU DEIS comments noted later.

“It is also recommended to investigate and refine our understanding of the sources and relative contributions of mobile and stationary precursor gases at the regional scale (include both Nevada and California), and develop a cost feasible and implementable strategy that leads to the reduction of major sources of precursor gases.” (8-hour Average).

Of note is the suggestion that more investigation into sources is needed. However, this recommendation has been made in previous threshold reports (see below).

1991 TER:

“Ozone concentrations at Lake Tahoe Boulevard have exceeded the threshold standard every year since 1982. No trend is apparent. TRPA suspects long range transport of ozone is occurring...TRPA should support additional study and research regarding the causes and effects of elevated ozone levels.”

1996 TER:

“TRPA should support additional research into both the mechanisms that contribute to ozone concentrations in the Tahoe Region, and the environmental effects of ozone within the region, particularly on vegetation. Further analysis should also be conducted to determine how much of the local ozone concentrations is generated in the Tahoe Region, and how much is generated elsewhere and transported into the Tahoe Region.”

TASC Additional Comments on Draft 2011 Threshold Evaluation Report

2001 TER:⁵⁵

Status of 1996 Recommendation (p. 2-65): *“In July 2000 the Lake Tahoe Air Quality Research Scoping Document discussed airborne transport and proposed research into several constituents, including ozone. This will be addressed in the research and monitoring network being coordinated with local, state and federal agencies (see 2001 Recommendation A).”**

* 2001 Recommendation A was rephrased and move to Appendix B in the final 2001 TER:

AQ-Title: Develop and implement an integrated air quality research and monitoring network for 2004 Threshold Update. Responsible Entity: CARB, TRPA, LRWQCB, USFS, USEPA. Completion Date: December 2004. Recommendation: Develop and implement the monitoring and research program coordinated with the TMDL research.

Products: Products include a quality-assured database of observed concentrations of P, PM, and N, and the other gaseous PM and gaseous species of interest, estimates of the mass and forms of nitrogen and phosphorous deposition to the lake surface, estimates of the local vs. regional contributions of N, a completed quality-assured data set which can provide improved estimates of total N deposition to the Lake and the ability to model the effects on concentrations and deposition that would result from hypothetical changes in emissions either in-Basin or upwind.

2006 TER:⁵⁶

“There was one recommendation listed in the 2001 Threshold Evaluation for the ozone threshold (see Table 2-9). As of 2006, TRPA had installed 1 additional ozone monitoring station. However, due to resource constraints, this station is currently inoperative. For this reason, the overall effectiveness of the ozone measures is being categorized as ineffective.”⁵⁷

...the primary need for this indicator is to establish and maintain permanent monitoring sites within the Basin. To this end, TRPA plans to work with the Basin partners over the next few years to develop permanent and stable monitoring stations along with a centralized reporting system for the data. This will enable TRPA to provide efficient and accurate assessments of the conditions and develop appropriate mitigation measures for any challenges that arise.”

2011 TER: (repeated for emphasis):

“It is also recommended to investigate and refine our understanding of the sources and relative contributions of mobile and stationary precursor gases at the regional scale (include both Nevada and California)...” (8-hour Average).

“It is recommended to continue monitoring ozone concentration trends due to the short-term duration of attainment status. Use monitoring data to inform remedial actions beyond those currently being implemented.” (*included in section on 1-hour Average, although need for monitoring data applicable to all ozone standards*).

We also note the number of ozone monitors in the Basin: 2009: 2; 2010: 1; 2011: 0.

⁵⁵ <http://www.trpa.org/default.aspx?tabindex=1&tabid=174> (However, a hard copy was used to access Appendix B recommendations as these were not found online).

⁵⁶ <http://www.trpa.org/default.aspx?tabindex=1&tabid=174>

⁵⁷ The 2006 TER assumed on-road motor vehicles were the largest source of ozone precursor emissions, and that reductions in vehicle use were key to achieving the ozone standard. However, as in all years, there had been no assessment of concentrations and sources to determine relative contributions, and although VMT has dropped by over 7% since 2006, ozone concentrations in the Basin have not followed suite, yet again reiterating the need for a comprehensive air quality analysis.

Further, although the proposed update to threshold standards is discussed in the RPU DEIS, typically threshold evaluation reports have assessed the need for updates. This report includes no mention of updates to the ozone standards, or rather, TRPA's failure to update standards to protect the entire Basin (instead relying on state standards, which we also note have not been analyzed for appropriateness in the Lake Tahoe Basin). However, the most protective ozone standards should be adopted by TRPA and applied to the entire Basin,⁵⁸ since there are no magical fans that blow emissions back into their respective states along the state line.

Additionally, TRPA must retain the year-round consideration in the ozone attainment status. Although the designation window for ozone associated with the California state standards runs from July to September,⁵⁹ an examination of the dates of the peak measurements in the Lake Tahoe Basin indicates many exceedances in other months. Because ozone impacts to humans will not be any less in May than August, for example, it is necessary to monitor year-round. It is unclear what TRPA proposes for determining designation status. However it appears that if TRPA simply relies on the state standards, this will also mean the designation rules of the state would apply.

Particulate Matter (PM10 and 2.5): AQ-3

These standards are aimed at protecting human health, therefore it is inappropriate to lump them under 'visibility.' Further, there has been no analysis of the relationship among PM levels, visibility, wood smoke, suspended sediment, VMT, and ozone in order to make changes which lump these together or delete portions of them.

With regards to PM and ozone standards aimed to protect human health, the Governing Board made a decision to exclude the consideration of the most protective standards in TRPA's "preferred Alternative" at that time (July 2010). Two years later, the proposal (noted in Alternative 4 in the image of the July 2010 document below) is not found in *any* of the RPU DEIS alternatives. Thus, without any environmental assessment, the Board's decision has now resulted in the exclusion from review the adoption of the most protective standards for the entire Basin, including the Nevada portion. This also results in no evaluation of what air quality planning strategies are appropriate for the Basin (e.g. are per day emission limits on construction appropriate in the Basin, and if so, what should they be to protect human health).

The RPU DEIS must analyze an alternative which adopts the most protective human health standards for the entire Lake Tahoe Basin. Air masses do not recognize state lines.

Although the AQ-3 indicator for PM used in the previous TERs has apparently disappeared from the 2011 TER (having been aggregated into the "overall indicator" for

⁵⁸ Which is not included in the RPU Committee's preferred alternative 3 in the RPU DEIS.

⁵⁹ Therefore, when CA reviews ozone attainment status, a year with 'full coverage' of monitoring, for designation purposes, need only cover these months.

visibility), we will, for the sake of consistency with past threshold evaluations, comment on PM standards separate from visibility (AQ-4). First, the PM standards evaluated in the report include a mix of California and federal PM mass requirements that were developed to protect human health. It is inappropriate to aggregate these under Visibility.

Second, although the original thresholds were created with protection of visibility in mind, and the wood stove and suspended particulate reduction standards created to assist in visibility and clarity improvements, the original environmental documents noted that the individual states monitored for particulates at that time, and the PM_{2.5} was a specific pollutant degrading air quality in the Basin (1983 EIS for the Adoption of the Regional Plan). Further, in the decades since 1983, research has determined that particulate pollution has a greater impact on human health than realized decades ago. This is easily shown by the federal and California adoptions of additional, and more stringent, health-based standards for PM₁₀ and PM_{2.5}. Therefore, although TRPA may place responsibility for PM₁₀ and PM_{2.5} health-standards on the states, making it clear that TRPA has not adopted ETCCs for these pollutants directly, residents and visitors in the Tahoe Basin should not be subject to harmful particulate pollution because TRPA has failed to provide for the attainment and maintenance of the strictest air quality standards, as mandated by the Compact.⁶⁰

“Article V(d)

The regional plan shall provide for attaining and maintaining Federal, State, or local air and water quality standards, whichever are strictest, in the respective portions of the region for which the standards are applicable.

The agency may, however, adopt air or water quality standards or control measures more stringent than the applicable State implementation plan or the applicable Federal, State, or local standards for the region, if it finds that such additional standards or control measures are necessary to achieve the purposes of this compact.”

As TRPA is mandated by the Compact to protect human health, instead of displacing the PM indicators in visibility, perhaps TRPA should be adopting them to protect human health in the Basin?

Similar statistical liberties have been taken with regards to reporting the status of PM standards as those discussed for CO and ozone, including:

- Aggregation of multiple indicators into one overall category (Visibility) which does not adequately report on status of individual indicators⁶¹;
- Continued dismissal of more recent trends that suggest declines in air quality;⁶²

⁶⁰ In other words, TRPA has not itself adopted human-health based standards for the Basin, however the Compact requires TRPA to attain such standards, whether they are TRPA standards or not.

⁶¹ Visibility is noted as “At or Somewhat Better than Target” although the 24 hour standard for PM₁₀ in California was not in attainment.

⁶² Examples include pages 3-37, 3-42, and 3-45.

- Continued assumption of ‘sources,’ without analysis, and failure to include most recent information and research;
- Selective wording that misleads the reader; and
- Dismissal of any responsibility to ensure human health is protected in the Basin.

Due to time constraints, we will not repeat the same comments as included in CO and Ozone, but note the same patterns and statistical manipulations noted in our previous comments are used in the PM10 and PM2.5 analyses as well. Some are discussed further below.

Additional PM comments:

The TER states that for PM10, annual average, “PM10 data were not collected between 2007 and 2010, and thus the current status and trend of the indicator are unknown.” This statement is not true, and is misleading, if not confusing to the reader. PM10 data *were* collected, however, the data did not meet the requirements of California for officially determining the annual average.⁶³ Therefore, it could be said that the current status, as calculated by California, is unknown.

If one simply removes TRPA’s “Trend line,” the results would indicate a slight reduction in the annual average PM10 concentration in South Lake Tahoe until around 2005, at which point the 2006 value had increased. A review of the 24-hour average, also without the trend line, would reveal that although peak concentrations had decreased in South Lake Tahoe from the mid- to late-90’s, measurements have instead been slowly increasing, although are scattered from year to year, as expected. The same evaluation of the Stateline, NV data would indicate increasing PM10 24-hour values until around 1994, then a reduction over the next few years until the monitor was removed. Instead, the ‘trend lines’ TRPA has created ignore all of this valuable information, and ignore the negative trends the Basin has experienced since 2005 by essentially smoothing it over through use of the improvements that occurred over ten years ago, rather than what is happening now. TRPA should be most concerned that air quality has been getting worse over the past six years, not better, as TRPA’s assumed primary sources: on-road motor vehicles and wood heaters, would suggest improved air quality.

First, we examine on-road motor vehicles. As discussed elsewhere in our comments, VMT has decreased in the past six years (according to TRPA), and vehicles have become ‘cleaner’ due to various state and federal regulations. Thus, it seems reasonable to conclude that emissions from on-road motor vehicles have decreased in the past six years.

⁶³ CARB’s database notes an * for the annual averages during the 2007-2010 time frame. This is explained in the footnotes: “* means there was insufficient data available to determine the value.” CARB also notes: “A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.”

Second, we examine residential wood heating. It is unlikely that a significant number of residents or visitors have removed cleaner-burning wood stoves; although some may have done so to open up an (illegal) fireplace, we might assume this to be so rare as to not have much impact on overall PM trends. New construction prohibits open fireplaces and wood heaters that do not meet EPA requirements, and natural gas heating remains a popular option.⁶⁴ Although TRPA's wood heater retrofit program has not been enforced since its adoption in 1993, we can assume at worst, no retrofits have been made, but more likely, some retrofits have been made. As a result, it seems a reasonable hypothesis to suggest that residential wood heater emissions have likely decreased in the past six years as well.

Therefore, if the two sources blamed for a good portion of the PM in the Basin's air suggest it should be getting better, yet it's getting worse, then why would TRPA continue to implement the same actions and assume they will work? TRPA should instead be examining the causes of local PM. TRPA does not paved and unpaved road dust in the source list for PM10 (p. 3-38). How important are resuspended particles from the roadways? Should more focus be given to street sweeping technology than tailpipe technology? How important are unpaved roads in the Basin? Fugitive dust? Also, how many tons of PM are emitted into the air from "short term" construction? Is it likely more needs to be done to address construction dust?

Instead, TRPA has recommended additional actions, which focus on residential wood stoves, transportation improvements, and a reference to more frequent street sweeping (as a possible 'need' in the future).

Actual Status and Trend as supported by the data:

PM10 was not in attainment in South Lake Tahoe as of 2010. Although improvements in peak concentrations were seen through the 1990's and early 2000's, the peak 24-hour average PM10 in the Basin has actually been slowly increasing over the past six years.

PM2.5 has not been monitored for human health standards since 2004, thus the current status is unknown. However, based on a review of aerosol extinction data⁶⁵ from the Bliss S.P. and South Lake Tahoe⁶⁶ Visibility monitoring sites, estimated PM2.5 mass has generally been increasing since 2006.

As of 2010, the end of the reporting period for this evaluation, the only PM10 mass monitoring (for human health standards) was performed by CARB in South Lake Tahoe. There are no PM2.5 measurements for comparison to human health standards, however, the Bliss S. P. visibility site remains in operation (by EPA).

⁶⁴ "Visibility improvements are attributed to successful emission-reduction efforts including: Phase-out of open-burning wood fireplaces and less-efficient wood heaters; Popularity of natural gas stoves;..." (p. 65). http://www.enviroincentives.com/Pathway2007_Eval_Report.pdf

⁶⁵ There are different reference methods to monitor PM2.5 for human health standards versus visibility.

⁶⁶ Discontinued by TRPA in 2004.

Finally, the proposal to adopt separate state standards for PM10 and PM2.5 does not conform to TRPA's mandate to protect human health in the Basin. Further, until recently, TRPA intended to adopt and apply the most strict (therefore, most protective), air quality standards, thus providing an equal level of protection for all of the Basin's residents and visitors, regardless of state lines.⁶⁷ However, a political decision was made to neglect this (discussed in comments on the RPU DEIS below) and as we now see, the TRPA Governing Board RPU committee supports this less protective option. TRPA has, during past RPU meetings, suggested it 'does not matter' because their programs will apply Basin-wide, providing equal protection regardless of the standards. However, we note TRPA is proposing to give more planning authority to the local and state jurisdictions, therefore it is reasonable to expect that eventually, states will again be overseeing air quality planning and per their own requirements, evaluate and approve projects and plans based on their respective state standards. Under RPU DEIS Alternative 3, if the proposed PM standards are adopted, this means that NV could be allowed to emit more pollution into the Lake Tahoe Air Basin than California. Second, TRPA has failed to analyze the impacts of applying the strictest standards Basin-wide versus by state, again apparently speculating that planning processes will be the same, although this is not supported by any evidence that has been provided. Third, since TRPA is the Tahoe *Regional Planning Agency*, TRPA should be assessing the local impacts of pollution, and whether state standards (even California's more strict standards) and/or federal standards are appropriate in the Basin. For example, there are separate standards for CO for the Lake Tahoe Basin because research indicated that the higher elevation caused CO to have greater impacts than at sea level. Do local conditions (e.g. elevation, inversions, etc.), cause pollutants to result in more harm to humans and the environment in the Basin than if those pollutants are emitted somewhere else?

Visibility: AQ-4 and Wood Smoke (AQ-6):

See comments above regarding the aggregation of multiple indicators into the overall visibility category. We also reiterate comments provided by Gary Hunt (Appendix E):

2] The visibility threshold standard or indicator reporting category is comprised of nine (9) individual indicators (See Figure 3-3). The report characterizes the current status as "considerably better than target" with an associated trend that shows "moderate improvement". Confidence in both visibility status and trend is reported as "moderate". This reviewer does not agree with this assessment. Data are not available for three (3) indicators and confidence as a result could not be reported. Confidence in two (2) other indicator categories is characterized as low. Yet a moderate confidence determination has been reported. This assessment represents an example of what was described by this reviewer as a fundamental problem with the methodology employed by TRPA for indicator status and trend determinations. More specifically if insufficient data are available for any indicator category then that category is not considered in the final determination (See Methodology Chapter 2).

Although it appears TRPA made changes to the status, trend, and confidence level (now shown as "At or Somewhat Better than Target," "Little or No Change"...and

⁶⁷ See "Table 6-3. Recommended Air Quality Standards for Human Health" in Pathway 2007 Draft Report: http://www.enviroincentives.com/Pathway2007_Eval_Report.pdf

“Low” Confidence), this is not reflected in the RPU DEIS evaluation, which simply states:

“TRPA’s existing wood stove retrofit program, applicable county and state regulations, and other programs to improve air quality have resulted in a baseline condition with a positive trend toward attainment of PM and visibility threshold indicators and AAQS (TRPA 2012a).” (p. 3.4-30).

TRPA reiterates this “positive trend” repeatedly in the RPU DEIS assessment (examples provided in our comments on the RPU DEIS analysis).

First, we note the current status of the sub-regional visibility is unknown, since TRPA removed the monitoring in 2004, and failed to operate the site that was installed to replace it in 2005. Second, the status of the Regional Visibility is listed as “At or Somewhat Better than Target” with trends of “Little or No Change.” Although the graph provided on page 3-47 shows negative trends in the visibility standards in the last few years evaluated on the graph, the Report does not discuss these trends, instead almost dismissing the change, stating *“the uptick in the regional ‘worst visibility day’ trend was attributed to smoke generated as a result of greater than 2.3 million acres of wildfire recorded in 2007 and 2008 throughout California...”*

Next, what is the statistical definition of an “uptick”? Second, the referenced report for Chen et al. (2011) explains:

“Between 1991 and 2009, all 50th and 90th percentile *bext* at BLIS1 are in compliance with the TRPA regional standard, except the 90th percentile *bext* in 2008 (35.9 Mm-1). Extremely high *bext* are often caused by special events such as large wildfires, which were certainly recorded for summer 2007 and 2008 (see Table 2). The impact of fires near the monitoring site is obvious but the impact of those farther away would be difficult to evaluate. There were also episode days occurring in spring and winter without any evidences of wildfires. These episodes might reflect the influence of prescribed burning and/or residential wood combustion (RWC).”

Did TRPA examine the spring and winter episodes for non-natural causes? Also, how much smoke is generated by prescribed fire (especially pile burning, since unlike understory ecological burning, there may be other methods of removal which will not create smoke emissions) versus wildfires?

Measurements for wood smoke and suspended sediment:

According to Appendix CR-2 (and also reflected in the RPU DEIS Appendix B), TRPA is proposing to delete the wood stove emissions and suspended particulate standards. The original thresholds were created with protection of visibility in mind, and the associated wood stove and suspended particulate reduction standards created to assist in visibility and clarity improvements. These reductions still aid in reducing air pollution. Further, we have learned through science that particulates in the air (and the phosphorus that is attached to them) also have a significant effect on mid-lake clarity (see comments below regarding atmospheric deposition). However, TRPA proposes to delete these threshold standards without any analysis of the impacts. How much do these sources contribute to visibility degradation? Lake clarity loss? Ambient particulate concentrations? What will be the impacts of deleting them,

including the changes that may be observed at the project review level (where the lack of specific thresholds may relax the analysis required in project review documents)?

These questions may sound familiar to TRPA. We asked them in 2007,⁶⁸ when TRPA proposed to delete these standards as part of the 2006 Threshold Update and Environmental Assessment - also without adequate analysis. Therefore, instead of retyping those detailed comments, we instead refer TRPA to those comments (attached).

Also, TRPA has contended there is no way to measure these sources, however we note the Chen et al. 2011 report TRPA has referenced includes reference to what other sources have said for years: “*Potassium (K) is a useful marker for biomass burning and is routinely measured by the IMPROVE network.*” The 1983 EIS for the Adoption of the TRPA Regional Plan includes an estimate for wood smoke emissions; “There are approximately 8,988 pounds of wood smoke produced in the Basin each summer day and approximately 18,363 pounds on an average winter day. The threshold is therefore 7,640 and 15,609 pounds on an average summer and winter day, respectively. The sources in the summer include wood stoves (1,719 lbs.), fireplaces (5,075 lbs), campground barbeque pits (654 lbs.), and forest management (1,540 lbs.) while the sources in the winter include wood stoves (4,643 lbs.), fireplaces (13,670 lbs.), and forest management (49 lbs.).” (p. 195).

Using current technology, estimates of wood smoke could be generated. Has TRPA tried? This appears to be yet another situation where TRPA has failed to consider the most recently available science, instead opting for the ‘easy’ out by simply writing it off.

If wood smoke emissions have been reduced by over 15%, yet we now exceed the PM10 standards in the Basin (and may be experiencing degraded visibility, but this remains unknown at the subregional level because monitoring has not occurred since 2004), then does this not suggest other sources are having an impact? How much might ozone, which is also increasing in the Basin, be affecting visibility? It is time TRPA stop putting off analyzing what the environment is really doing in the Basin, rather than continuing to make recommendations to eventually do so (but never following through, as shown in the examples in previous comments on ozone). What are the impacts of removing this standard on PM levels? Human Health? Visibility?

If the wood smoke emissions have not been met, then clearly TRPA needs to address this as well.

Similar questions apply to the suspended sediment standard, also proposed for deletion. For example, what information is currently available regarding suspended

⁶⁸ Conservation Community Comments on the Environmental Analysis for the TRPA Threshold Update. Submitted by Tahoe Area Sierra Club, League to Save Lake Tahoe, and Sierra Forest Legacy. May 18, 2007.

particulate emissions in the Basin?⁶⁹ We suspect that using current research and technology, combined with historical traffic information, TRPA can at least estimate the numerical values associated with the 30% reduction in suspended sediment. Once this is done, again, the relationship to other air standards, and to water standards, should be examined. Is the standard appropriate and if not, then what is? What are the impacts of deleting this standard?

Air Quality: Visibility:

Evidence does not support the proposed deletions:

The impacts of removing wood smoke and suspended sediment standards have not been evaluated. We have discussed this in more detail in other sections of our comments.

Visibility baseline:

The threshold updates fail to include one of the most basic proposals recommended by the AQ Technical Working group during the earlier Pathway 2007 process – to adopt the new baseline for the Regional and Subregional visibility standards so that it reflects the cleaner visibility observed during the 2001-2003 period. In other words, the original standards were based on the 1991-1993 period as baseline, but visibility had improved substantially by the 2001-2003 period, therefore the AQ TWG (as well as TRPA⁷⁰) proposed the adoption of the new baseline to prevent backsliding. The TRPA 2006 Threshold Evaluation Report states:

The following proposed Vision Statement and Threshold Goal Statements reflect the recommended basis for changing the existing threshold standards.

Air Quality Vision: Air quality in the Lake Tahoe Basin is healthful for residents, visitors, ecosystems, and supports excellent visibility. In addition to the vision statement, two separate desired conditions were developed. They include:

Threshold Goal Statement 1. Visibility: Visibility in the Lake Tahoe Basin is at 2001 – 2003 levels or better.

Visibility has definitely improved over the past 20 years in the Tahoe Air Basin. Some of the regional and sub-regional targets, established 20 years ago, have been met and exceeded. Because of this success, it is necessary to establish new standards that will protect the visibility improvements achieved to date and prevent backsliding to less desirable conditions. This improvement reflects the achievements obtained by our past efforts and ensures this progress is maintained.

The Governing Board voted to approve the “Resolution Issuing the 2006 Threshold Evaluation Report and Adopting the Amended Compliance Forms (Targets,

⁶⁹ e.g. Measurement and Modeling of Fugitive Dust Emissions from Paved Road Travel in the Lake Tahoe Basin. Kuhns et al. 2007.

⁷⁰ http://www.enviroincentives.com/Pathway2007_Eval_Report.pdf

Indicators, Compliance Measures, Attainment Schedules and Related Items) Pursuant to Chapter 32 of the Code of Ordinances” (September 2007).⁷¹

What happened to this new baseline? In the 2011 TER, the standards do not reflect this change. If through some confusing loophole this was not adopted (much like the CO standard of 6 ppm), then why would TRPA not correct it in the 2011 Report? This would allow air quality to decline in the Basin compared to more recent levels. How does that provide equal or superior protection of the Thresholds?

The threshold report includes a recommendation for future action regarding the replacement of TRPA’s Regional Visibility standard with the new federal Clean Air Visibility Rule in the future.⁷² Although not proposed at this time, or in the RPU Alternatives, we note the federal rules require improvements in Class I Areas (e.g. Desolation Wilderness), which are not the same as “natural areas,” as implied by the recommendation, to show progress towards attainment of ‘background levels’ by 2065. The Basin’s visibility has already substantially improved, therefore it appears this could allow backsliding.

The TER also refers to a recent publication by “Chen et al. 2011.” We examined this publication and note it includes several other recommendations as well, including modifications to address impacts from wildfires and a suggestion that “*Potassium (K) is a useful marker for biomass burning and is routinely measured by the IMPROVE network.*” However, these recommendations are not found anywhere in the threshold report. Instead, what appears to be a reference to potentially deleting the thresholds (although unclear), is found in the Recommendations chapter of the 2011 TER.

The environmental assessment that should accompany the threshold evaluation report (separate from the RPU DEIS) should analyze alternative visibility standards, which maintain the 2001-2003 levels desired by the public and approved by the Board in 2007, consider seasonal visibility alternatives (as also recommended by TRPA in previous TERs, and by Chen et al. 2011), and examine ways to protect visibility while recognizing the impacts of wildfires (also recommended by Chen et al. 2011).

Finally, we note the recommendation in Chapter 13 of the 2011 TER that suggests changing the visibility standards at some point after the RPU update, yet some point before the next threshold evaluation.

⁷¹ http://www.trpa.org/documents/agendas/gb_agendas/2007_agendas/Updated%20minutes/GB_minutesupdate_9_26_07.pdf

⁷² “**Visibility** – The current regional visibility standards (50 percent and 90 percent values) were established in the 1980s when visibility was poorer than today. The federal Clean Air Visibility Rule (1999 and finalized in 2005) requires that natural areas (such as the Lake Tahoe Basin) demonstrate reasonable progress toward natural visibility conditions by 2065. This means that using baseline conditions established for the Lake Tahoe Basin between 2000 and 2004, the Region will need to continually demonstrate improvement in visibility over time rather than demonstrate compliance with a static standard value as is reflected in the current Threshold Standard. It is recommended that the agency amend the regional visibility Threshold Standard to improve consistency with the federal Clean Air Visibility Rule.” (Chapter 13, p. 13-11).

TASC Additional Comments on Draft 2011 Threshold Evaluation Report

The following threshold amendments should be addressed after the adoption of the 2012 *Regional Plan* Update, but prior to the next Threshold Evaluation.

Visibility – The current regional visibility standards (50 percent and 90 percent values) were established in the 1980s when visibility was poorer than today. The federal Clean Air Visibility Rule (1999 and finalized in 2005) requires that natural areas (such as the Lake Tahoe Basin) demonstrate reasonable progress toward natural visibility conditions by 2065. This means that using baseline conditions established for the Lake Tahoe Basin between 2000 and 2004, the Region will need to continually demonstrate improvement in visibility over time rather than demonstrate compliance with a static standard value as is reflected in the current Threshold Standard. It is recommended that the agency amend the regional visibility Threshold Standard to improve consistency with the federal Clean Air Visibility Rule.

What review process will be used? How will amendments to the RP be addressed? Or does TRPA plan to avoid a public review process? Also, how would this compare to existing standards? To the recommended baseline change to 2001-2003 that should have been adopted as part of the 2006 Threshold Evaluation report? Will this rule, which has a target date of 2065, provide equal or superior protection to TRPA's current rules, which require visibility meet targets now? The foregoing proves the TRPA has failed to evaluate the impacts of the RPU alternatives on the TRPA's visibility standards (see comments on RPU DEIS).

Traffic Volume and VMT (AQ-5 and AQ-7):

For traffic volume, we refer to our comments on the CO "Category" and, where related (e.g. trends in traffic overall), to comments on the VMT threshold below.

The 2011 TER finds that the VMT standard has been in attainment since 2007, and is currently estimated to be 1,987,794 VMT per day.⁷³ The TER report includes a technical explanation of how the VMT estimates were derived. However, as noted in our comments on the RPU DEIS and RTP DEIR/DEIS, different values are used for the 2010 VMT (apparently due to different models). How can TRPA assess compliance with the VMT standard using different methodology? Let alone when two different values are used for the 'baseline' conditions?

The report then suggests VMT is tied to other factors (e.g. gas prices, unemployment rates, secondary home ownership) but frequently emphasizes how transit and pedestrian improvements "can" help. The report also states "The status and trend in estimated VMT suggest that sagging economic conditions and existing transportation programs and projects may have resulted in effectively reducing VMT."

Conversely, Chapter 12 in the TER appears to assign the 'credit' for VMT reduction to TRPA:

⁷³ **Status** – The most recent vehicle miles traveled estimate (2010) was 1,987,794 VMT per day or about 2.6% better than the standard, resulting in an "at or somewhat better than target" status determination. The Tahoe Region has been in compliance with this standard since 2007. (p. 3-54).

Modify policies to reduce dependency on the private automobile by creating accessible, frequent, and safe alternative modes of transit, such as policies to promote bicycle- and pedestrian-friendly town centers. Well-connected bicycle trail infrastructure and the provision of pedestrian facilities (i.e., sidewalks) have been demonstrated to reduce vehicle miles traveled with concomitant reduction in air pollutant emissions (Alta Planning and Design and LSC Transportation Consultants 2009). Although actions through the *Regional Plan* have been implemented and correlate well in time with reductions in traffic volume and vehicle miles traveled, more can be done to aid the maintenance or attainment of air quality standards and other related traffic volume Threshold Standards.

This appears to be another ‘spin’ on PR. First, TRPA quotes a report suggesting pedestrian-facilities and bike paths have been shown to reduce VMT (although to what level, and how applicable this is in Tahoe, is unknown). This, as written, can be true. Second, TRPA then suggests that actions taken through the [existing] Regional Plan are “timed well” with reductions in VMT. This, as written, is true - TRPA was implementing the Regional Plan during the time when VMT happen to decrease. However, that is not the same thing as showing TRPA’s actions *are responsible for* that decline in VMT. However, the wording would suggest just that.

As noted in our comments on the RPU DEIS below, there are numerous factors that have contributed to the reduction in VMT since around 2006, and most of them are not related to actions by TRPA (or are related to TRPA actions that have resulted in a temporary reduction in units and visitors, e.g. the removal of TAUs for the Convention Center, which to this day remains the infamous “Hole in the Ground,” generating no VMT). Therefore, it is expected that VMT will again increase and this should be acknowledged in the report, and additional actions taken to ensure VMT levels do not again exceed the standard.

The TER report also acknowledges that:

“The original supposition that there is a relationship between VMT and air and water pollutant loads needs to be further evaluated. For example, the question of what level of VMT needs to be maintained in order to avoid excessive loading of nitrate to Lake Tahoe, should be addressed by research. Alternatively, consider revising the VMT Threshold Standard to better measure the use of alternative modes of transportation.”

First, we agree the impacts of VMT need to be better examined. This is yet another recommendation that has been carried forward through multiple threshold evaluations, yet has still not been addressed:

1996 TER:

TRPA should evaluate the VMT standard and its effectiveness as a threshold for air quality. Other measurements should be evaluated to determine if there is a better standard than the reduction of VMT. Included in these evaluations should be VMT's significance in visibility and NOx problems, and what portion of pollutants in these areas is attributable to VMT.

2001 TER (*Status of 1996 Recommendations*):

The VMT threshold has not been fully evaluated as an air quality threshold. Discussions regarding its appropriateness have been ongoing, but no official evaluation has taken place to develop a more suitable threshold. It is recommended that the threshold be fully evaluated and a recommendation be made regarding any proposed amendments by 2004.

In the 2006 TER, although the relationship to air quality and water quality was less emphasized by TRPA, the report still recommended further evaluation of the VMT threshold and possible improvements – not deletion.

“TRPA recognizes the importance of this indicator for use in transportation planning and the potential for usefulness in the air quality program if properly collected and analyzed. For this reason, TRPA will be developing a new program that incorporates VMT with emissions from each class of vehicle or mode of travel and evaluating a program to measure emissions per person per mile. By combining VMT with mode-specific emission factors, TRPA will gain the necessary information to recommend improvements based on emission reduction potentials.

Recommendations for the Vehicle Miles Traveled program for the next 5 years include:

1. Rewrite this indicator to include language in which VMT is measured and reported by the class of vehicle and mode of travel and recorded by actual traffic and vehicle class counts.
2. Establish emission factors and parameters for each class of vehicle or mode of travel.
3. Evaluate the possibility of adding an emissions per person per mile of travel indicator.”

We see the same recommendation again included in the 2011 TER, although now the implication appears to be the VMT standard is no longer useful (even though its relationship to other environmental parameters remains unexamined):

“**Recommendations for Additional Actions** - Standard listed for multiple AQ Indicator Reporting Categories. Confirm whether VMT is still a meaningful indicator to measure as it is unclear that meeting VMT standard will result in achieving Lake clarity objectives or visibility objectives.” (p. 3-54).

Yet the RPU DEIS (see detailed comments below) proposes to delete the reference to the VMT reduction in the sub-regional visibility category, leaving the only threshold VMT is tied to as the Atmospheric Deposition (AQ-8) threshold standard.

VMT was originally developed to address impacts from nitrogen in tailpipe emissions and roadway dust re-entrainment.⁷⁴ For that reason, it is included in both the sub-regional visibility standard (due to re-entrained roadway dust) and the atmospheric deposition standard (for nitrogen). Water quality information that is no longer ‘new’ (see discussion below) has indicated the impacts of phosphorus and particulate deposition on the land and lake as well, suggesting VMT may play a greater role in water quality. Therefore, when VMT should be examined for its actual impacts to other environmental thresholds, TRPA is instead proposed to delete it from the sub-regional visibility standard. However there has been no examination of the impacts of this change. Do the PM health-based standards accurately reflect impacts of VMT? Is this equal or better protection?

This question is made even more complex by the recommendation to adopt different PM standards for the different states – even though the Basin is one airshed. Although our comments on the RPU DEIS below address this further, another question with

⁷⁴ “The two thresholds most closely related to transportation were established as surrogates for transportation’s causal effect on some other aspect of the environment...For VMT, it was for a reduction in nitrogenous tailpipe emissions and roadway dust re-entrainment.” UC Davis and TRPA, 2000. The Lake Tahoe Air Quality Research Scoping Document: Determining the Link between Water Quality, Air Quality, and Transportation.”

regards to the tie to visibility and water quality is what different impacts could result on one side of the Basin versus the other, and what impacts to water quality could result? If more pollutants are deposited on the NV-side of the Basin because the PM standards are less protective, how might this affect water clarity? Regional and sub-regional visibility?

In 2000, TRPA worked with researchers from UC Davis to develop a scoping research plan that outlined what was needed in the Basin to adequately evaluate air quality and the relationship between air and water quality and transportation (see title and executive summary below). However, TRPA essentially failed to ‘follow-up’ on this document. Although some additional sites were temporarily installed, other sites were removed (e.g. the SOLA site in 2004), and the CARB LTADS study that was supposed to examine⁷⁵ what is outlined in this document, instead focuses solely on atmospheric deposition, and included only temporary monitoring in the Basin. Either way, this relationship remains unexamined, and thus there is no evidence to support any proposed changes to the air or water quality standards associated with VMT until an adequate study is done. Further, we again question exactly how many more five-year periods will pass before TRPA finally follows through on its own recommendations?

**THE LAKE TAHOE AIR QUALITY RESEARCH SCOPING DOCUMENT:
DETERMINING THE LINK BETWEEN WATER QUALITY, AIR QUALITY AND
TRANSPORTATION
A COOPERATIVE RESEARCH PROPOSAL BY THE TAHOE REGIONAL PLANNING AGENCY
AND THE
UNIVERSITY OF CALIFORNIA, DAVIS
JULY, 2000**

Executive Summary:

The federally chartered Bi-state Compact mandates that Tahoe Regional Planning Agency (TRPA) protect Lake Tahoe’s environment, especially the lake’s famed water clarity, by adopting planning standards and setting environmental carrying capacity thresholds. The current standards and thresholds as adopted in the 1987 Regional Plan, have reduced environmental degradation in the Lake Tahoe Basin, but have not fully halted the progressive loss of lake clarity. If current lake water quality trends are not reversed in the near future permanent degradation of water quality will result. TRPA is required to adopt a new 20-year Regional Plan in 2007. This report outlines research needed to provide a sound scientific basis for developing new policies for inclusion in the 2007 plan to reverse the unacceptable loss of lake clarity.

Data collected in recent years suggest that deposition of bio-available airborne nitrogen, phosphorous, and insoluble fine particles contribute much of the clarity degradation, with the remainder being due to pollutants transported to the lake via surface and ground water. The proposed research is needed to progress from the present qualitative understanding of the effects of air pollutants on Lake Tahoe to a quantitative assessment of the contributions of individual sources and calculations of the potential benefits of various regulatory alternatives. Air pollutant sources that need to be studied include fires, road dust, vehicle exhaust, and residential heating emissions originating in the Basin, and the whole spectrum of emissions from upwind population centers. Effective and cost efficient control programs cannot be developed until this quantitative assessment is completed.

⁷⁵ Previous communication with researchers involved in drafting the request for funds that eventually funded the CARB LTADS study.

TASC Additional Comments on Draft 2011 Threshold Evaluation Report

This Scoping Document, prepared in consultation with experts in water quality, air quality, and transportation analysis, proposes a plan to quantify the linkages between traffic, air pollutants and lake water clarity. The plan builds on the foundation of past research with a focused program of water and air quality measurement leading to development of predictive tools suitable to evaluate potential strategies to reverse the air deposition effects on lake clarity.

Loss of lake clarity is driven by complex interactions of human activity with natural processes in air, water, and soil. This problem cannot be addressed piecemeal; research on this problem needs to address the effects of both local and distant pollution sources, and to integrate atmospheric and aquatic processes. Completion of all elements in the recommended study is necessary to provide a sound scientific basis to select cost-effective measures to protect lake clarity. Without this integrated research, there exists a significant risk of both ineffective controls and unnecessary negative social and fiscal impacts through misdirected policies. With the 2007 planning cycle in mind, a scientific structure for new Basin threshold recommendations will be in place by 2003 as a preliminary result of the proposed work. The recommended program of research is designed to be fully completed in five years.

It's time TRPA puts the thresholds first, as the Compact mandates. Any changes to the thresholds must be based on a comprehensive and thorough environmental review and public process, separate from any changes to the Regional Plan (so that desired Policies do not influence the changes to thresholds, must be based on science, not politics).

Atmospheric Deposition – AQ-8

No changes are proposed, although there are years of data available to support standards for other pollutants which affect lake clarity, including phosphorus and particulate matter. This is the third threshold evaluation that has delayed the adoption of improved standards for deposition, even as information and measurement techniques have been available for monitoring. Detailed comments are provided below.

The introduction to the Nitrate deposition threshold on page 3-55 barely informs the reader of any of the significance surrounding atmospheric deposition. A brief reference to phosphorus is made, but otherwise the report provides the reader with essentially no background information.⁷⁶ We refer to the Pathway 2007 Report,⁷⁷ which discusses the impacts of these other pollutants and assures the reader that once the TMDL models are completed, new atmospheric deposition standards will be evaluated. The models have been completed for years, and yet TRPA has again disregarded an update to the thresholds.

Regarding Air Quality and Lake Tahoe Clarity Particulate Matter and Nutrients

Basin air quality affects Lake Tahoe water clarity. Nitrogen, phosphorous and particulate matter carried in the air deposit on the lake surface and contributes to decreases in water clarity.

Nitrogen

⁷⁶ As noted elsewhere in our comments below, the peer reviewers also expressed frustration with the lack of information provided regarding the relationships among different thresholds.

⁷⁷ (p. 72-73); http://www.enviroincentives.com/Pathway2007_Eval_Report.pdf

TASC Additional Comments on Draft 2011 Threshold Evaluation Report

There are several forms of nitrogen (N) that can impact lake clarity, including nitrogen dioxide, ammonia, nitric acid and particulate nitrate. Some tend to be more water-soluble than others, but all have the potential to affect water clarity. While there are methods to measure each of the nitrogen compounds, some are difficult and costly. Without yet knowing which compounds are most important in reducing lake clarity, NO_x (nitrogen oxides), a relatively simple and cost effective measurement method, is a sufficient indicator to represent all nitrogen compounds.

Phosphorus

Phosphorus is an element commonly found in soils. From an atmospheric deposition perspective, the most likely origin of airborne phosphorous (P) is suspended dust from roads, disturbed land and construction sites. Some evidence exists that transport of dust from vast Asian dust storms may contribute to phosphorous deposition at the lake, however P from non-local sources is generally confined to the finer size classes (i.e. less than 2.5 microns), which is less likely to deposit to the Lake. Airborne P can be measured via particulate sampling techniques and subsequent laboratory analyses. Because PM₁₀ measurements include PM_{2.5}, and because PM₁₀-size particles tend to deposit more readily than its smaller counterparts, it is recommended that the PM₁₀-containing phosphorous be used as the representative component.

Particulates

Recent data have shown that particles in the lake have a significant, and possibly primary, impact on lake clarity loss. The main issue is determining the appropriate size range to measure. From a water quality perspective, particles up to about 20 microns in diameter are important. Measuring particles in the 20 micron size range for water deposition purposes is challenging, not so much from the ability to measure, but whether the measurements represent actual deposition to the lake. Because the 20 micron-size particles are heavier, they settle to the ground rapidly. Thus monitors at existing sites may not capture representative conditions for the lake because most large particles could not reach the lake before depositing to the ground. Therefore, it is recommended that the routinely measured PM₁₀ fraction be the representative component for particulate matter. Additional short-term studies are suggested to evaluate the relevance of PM₁₀ and whether there is a need to evaluate other PM size classes in terms of water clarity. Because of the long-term nature of atmospheric deposition, annual average conditions of these pollutants are likely the most appropriate indicator. However, data suggests that deposition may have a greater impact during certain periods of time supporting possible use of indicators based on seasonal conditions. No air quality standards for lake clarity are proposed at this time. Water clarity models are currently in development. Information from these models is expected in 2006 – 2007. These models are anticipated to define the amount of water pollution reduction necessary to realize water clarity goals. Completion of the models will help determine to what extent reductions of pollutants from the air can assist water clarity improvement efforts. While no air quality standards for lake clarity are proposed at this time, a reduction in nitrogen, phosphorous and particulate matter from current levels would be conducive to lake clarity.

The current atmospheric deposition standard only focuses on DIN (dissolved inorganic nitrogen), believed to be the main cause of the loss of lake clarity around 1980 when the existing threshold was developed. As with several other air quality standards and indicators, there was no direct measurement available at the time but planners recognized the benefits of having such standards/indicators all the same. Further, as shown below, the 1983 RP EIS stated that TRPA would continue to research deposition to the Lake “*TRPA is also conducting a study to better understand the source of nitrate and how much is depositing directly into Lake Tahoe. (TRPA 1982a)*” and amend the thresholds as new information became

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available.⁷⁸ The document also lists other pollutants that affect clarity. Thus, this was never intended to be the static threshold standard and indicator it is.

The nitrate deposited in Lake Tahoe from the atmosphere originates from local sources, upwind sources, and natural sources. The TRPA estimates that the local sources contribute 20 to 30 tonnes/year. Lawson (1982) evaluated wet deposition of nitrate in the Basin and California. This analysis concluded that nitrate deposition in California is locally produced because there are no major sources upwind and that the Tahoe Basin is impacted by man-made sources of nitrate during periods of wet deposition. The most effective way to reduce nitrate deposition is to reduce dependency on the use of the automobile, reduce transport from upwind sources, and to reduce NO emissions from automobiles, hot water heating units, and space heating units.* The TRPA is also conducting a study to better understand the source of nitrate in the Basin and how much is deposited directly in Lake Tahoe (TRPA 1982a).

A wide variety of other chemicals in the atmosphere are deposited to Lake Tahoe that affect water quality. The estimated deposition rates are listed below:

<u>Chemical</u>	<u>Tonnes/Year</u>
Phosphorus	0.9
Silicon	92.0
Sulfur	160.0
Chlorine	27.0
Potassium	27.0
Calcium	48.0
Titanium	0.5
Manganese	0.3
Iron	44.0
Copper	0.1
Zinc	0.2
Lead	0.3
Particulate Matter	2,200.0

These estimates are preliminary and should only be considered approximate.

The sources of these chemicals include wind blown dust, dust suspended into the atmosphere from automobile tires, and emissions from stationary sources and automobiles. These chemicals enter the atmosphere from local sources, upwind sources and natural sources. Deposition varies geographically with the majority of the local material being deposited near the urbanized areas.

The deposition of these chemicals can be reduced by reducing emissions.

The document further reiterates that focus on the one form of nitrogen does not mean the importance of other forms of nitrogen or other nutrients should be ignored:

⁷⁸ Due to the limited period of time provided to review over 3,000 pages, we have elected to include an image of the 1983 EIS, rather than retype the information. The scanned images of the hard copy that was available include notes from a past reviewer.

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By focusing on the single form of nitrogen, DIN, the Study Report and EIS do not ignore the importance of other forms of nitrogen or other nutrients, like phosphorus and iron. The analysis simply assumes that these other nutrients affect Tahoe's water quality in much the same way as DIN and could be abated in much the same way. However, it is important to point out that DIN is highly mobile in the environment and, therefore, particularly difficult to control. The Study Report identified a strong correlation between the accumulation, or storage, of DIN in Lake Tahoe and the increases in algal productivity (see Threshold Study Report, p. 4-52).

To attain the water quality thresholds, a 20% reduction in atmospheric loading is required (see the Water Quality Subelement). The actual deposition rate to Lake Tahoe is probably 40 tonnes/year with local sources contributing approximately 63% of the load. The 63% contribution from local sources corresponds to a 25 tonne load to the Lake. The remaining 15 tonnes is from upwind and natural sources. The lower deposition rate from the range presented in the Threshold Study Report is being used because there is less precipitation over the Lake surface and because it appears that ammonia is deposited to a water surface at a lower rate than to the monitoring instruments used to measure deposition. The 25 tonne estimate for local sources is based on analyses completed since the adoption of environmental thresholds. It should be noted, however, that it is difficult, if not impossible, to fully analyze deposition to the Lake and the contribution of inorganic nitrogen from local, upwind, and natural sources. These estimates will also be refined at a later date as additional information becomes available to TRPA.

Using the above assumptions, a 32% decrease in NO_x emissions from sources in the Basin will be required to attain the 20% reduction from atmospheric sources. Currently, there are approximately 13,478 pounds of NO_x produced during an average summer day in the Basin. The major sources include automobiles (11,216 lbs.), off-road motor vehicles (720 lbs.), aircraft (226 lbs.), construction equipment (511 lbs.), residential heating (749 lbs.), and commercial fuel use (64 lbs.). The total emissions are expected to decrease to 9,821 pounds per summer day as newer automobiles replace older ones. This alone accounts for about a 27% reduction in the Basin emissions of NO_x. The baseline strategies are expected to reduce the NO_x emissions to approximately 8,453 pounds per summer day, or by 37%. This decrease is expected to occur due to a 10% reduction in vehicle miles of travel Basin-wide, an I/M program (15% reduction in emissions from local automobiles and 3% from nonresident automobiles from urban areas), and a 50% reduction from hot water heaters, space heaters and boilers that use natural gas and fuel oil.

Yet, the 2011 TER simply focuses on the one standard and indicator for DIN, adopted over 25 years ago, and repeatedly documented to require updates (as noted in the Pathway 2007 Report).

Atmospheric Deposition – N, P and PM:

Because apparently nothing has changed in TRPA's planning since 2006, we simply reiterate comments included in the Conservation Community Comments on the 2006 Threshold Evaluation Report and Environmental Assessment (2007)⁷⁹ regarding this threshold, but emphasize that another six years have now passed and no changes are proposed. Also, our previous comments were focused on the EA for the threshold report at that time. Now, there is no Environmental Assessment of the threshold update, and

⁷⁹ Conservation Community Comments on the Environmental Analysis for the TRPA Threshold Update. Submitted by Tahoe Area Sierra Club, League to Save Lake Tahoe, and Sierra Forest Legacy. May 18, 2007.

instead changes are proposed in the RPU DEIS, which fails to analyze the environmental impacts of the changes (as noted in detail throughout these comments). Thus, comments referring to the EA in the 2007 comment letter below are applicable to the 2011 Threshold Evaluation Report, the RPU DEIS and the RTP DEIR/DEIS, as appropriate.

“We are also surprised to see the many advances in the Air Quality program in terms of science and monitoring apparently being ignored. For example, scientists recognized over 13 years ago that phosphorous (P) deposited from the air to the lake and reduced clarity. About 8 years ago, the same was known about particulates (PM). In the 2001 threshold evaluation process, TRPA delayed amending the atmospheric threshold until the P7 process. Beginning in 2002, scientists and eventually the newly-formed AQ TWG began to examine various indicators that are already available to measure airborne P and PM. Yet roughly 5 years after the TWG began reviewing information and 13 years after researchers published their information, TRPA has barely mentioned this information let alone fails to analyze any indicators when there are feasible indicators available. For example, in the absence of standards, indicators themselves will still provide an added level of protection until the TMDL results allow researchers to develop appropriate standards. Better yet, the TWG also discussed another alternative that would include “placeholder” standards which required some identified level of reduction but recognized the standards would eventually be modified. The TWG did not have to decide whether to consider one or the other because it was expected that both would be analyzed as alternatives in the future environmental review process (at that time, a full EIS was expected). But here we are, reviewing the environmental assessment and NO alternatives have been analyzed; any consideration has been delayed once again. In the meantime, these pollutants continue to enter the Lake and impact clarity...”

“Data collected in recent years suggest that deposition of bio-available airborne nitrogen (N), phosphorous (P), and insoluble fine particles (PM) contributes too much of the water clarity degradation of Lake Tahoe, with the remainder due to pollutants transported to the lake via surface and groundwater. The most recent nutrient load budget was presented to TRPA’s Governing Board on August 23, 2006 by the Lahontan RWQCB and states that atmospheric loading contributes roughly 9% of all fine particulates (particulates less than 30 microns in diameter; note that the definition of “fine particles” is different for air quality versus water quality), 51% of all nitrogen and 16% of all phosphorous to Lake Tahoe (2006 Lake Tahoe Sediment and Nutrient TMDL Pollutant Source and Lake Clarity Evaluation).

Naturally, in order to protect Tahoe’s famed clarity, TRPA needs to reduce the inputs of those pollutants which are causing the loss of clarity. This includes airborne inputs of N, P and PM. The AQ TWG discussed this new information and suggested that indicators (and “placeholders” for standards) be developed for analysis and potential inclusion in the update process even though more accurate standards could not be developed until once the TMDL model was completed and information available. The intent was to: 1) set standards so that measures to reduce these inputs can be taken immediately and are not delayed several more years, 2) to make it easier to adapt once the TMDL process was complete and 3) to provide TRPA with the means to address these pollutants at the project review level/regulatory level in the meantime so new projects do not further contribute these pollutants to the Lake. Without an atmospheric deposition standard for P, TRPA will not take immediate and aggressive measures to reduce P deposition and TRPA has no solid basis to require project applicants to analyze their projects’ contributions to airborne P and to include mitigation measures to reduce the impacts. TRPA also has no basis to develop new regulations and compliance measures to reduce P in the air. Therefore, years may pass by while these pollutants enter the atmosphere and eventually the Lake unchecked. In addition, removal of the existing (or any) nitrogen-based standard will also remove any protections from N inputs in the time period between approval of this EA and development of a new standard after the TMDL process provides the necessary reduction levels; a time period which will likely be years. Researchers have indicated that Tahoe’s clarity can be restored, but only if we act immediately and aggressively. If we continue to delay measures to reduce inputs, we may lose the chance to reverse the loss of clarity and restore it to desired levels. Further, because TRPA is apparently relying on the TMDL process to provide information that it will not (e.g. develop an air

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quality emissions inventory for the Basin, measurement protocols for measuring deposition, and information regarding individual sources), once the process is complete and TRPA faces the realization that these linkages to air quality require additional investigation, this will likely add more years to the development of atmospheric deposition standards and indicators. Clearly it would be better to adopt something for N, P and PM in the interim period so that TRPA and others can begin to reduce inputs of these pollutants, even if the necessary reductions are not quite known yet. Further, researchers were aware over 10 years ago that phosphorous inputs came from the atmosphere (see Jassby et. al. 1994) and over 8 years ago, that PM inputs came from the atmosphere (see Jassby et. all 1999). The 2001 threshold evaluation discusses these findings however the development of additional deposition standards during that review process was delayed once again until the P7 update (the 1996 evaluation could have addressed the new information regarding P deposition, but this was delayed as well). This has already resulted in the loss of over 5-10 years worth of opportunities to reduce N, P and PM inputs to the Lake. Now, TRPA is suggesting that these protections be delayed even longer. In the meantime, inputs continue to enter the Lake and impact clarity.

Yet:

- The EA fails to analyze the impacts (on air and water quality) of removing a standard for nitrogen deposition.
- The EA also fails to analyze possible alternatives to the existing nitrogen standard/indicator (e.g. using the data provided by the IMPROVE filters, CARB/other monitors, other N species, other available instrumentation to measure various N species, etc.).
- The EA fails to show that removing the nitrogen deposition indicator is “equal or better than” the existing nitrogen standard.
- The EA fails to analyze the impacts and benefits of including a new indicator for phosphorous and PM deposition;
- The EA fails to analyze the impacts and benefits of potential “placeholder” or interim standards to be added now then modified once the results of the TMDL process are available and examined in terms of air quality planning;
- The EA fails to analyze how delaying the development of any atmospheric deposition standards/indicators will impact Lake clarity given the timeline researchers have laid out for implementing immediate and aggressive measures to reduce the Lake’s loss of clarity before it is too late.

Information suggests that the loss of clarity can only be reversed with immediate and aggressive actions. Delaying actions in addition to removing the few existing protections is in conflict with researchers’ warnings and TRPA’s goal to protect Lake Tahoe. Therefore, deleting the existing atmospheric deposition indicator and failing to develop additional indicators for P and PM deposition may result in a potentially significant impact to Lake clarity, and therefore an EIS must be completed.”

TRPA also presents a ‘new’ type of analysis in the 2011 Report, inappropriate defining a new ‘indicator’ as follows (p. 3-57):

Indicator – Attainment of the management standards was evaluated using the following two criteria:

- Has the TRPA (and/or other agencies) adopted sufficient policies, ordinances, and programs in support of the management standards?
- Is there empirical evidence that demonstrates a reduction in nitrogen deposition into Lake Tahoe?

We refer to previous comments regarding “implemented” as an inappropriate designation for a threshold ‘status.’

The outdated nature of TRPA’s view is further reflected by the “Status” section, which discusses previous TRPA policies adopted to reduce atmospheric sources of air pollutants, including waterborne transit. However, an assessment of waterborne transit emissions on an emissions per person per mile [EPPM] (compared to those in a passenger

vehicle) have never been performed, and available information⁸⁰ suggests waterborne transit may increase EPPM emissions, as well as emit them directly into and over the Lake.

Adding final insult to injury, the last section in the 2011 Report Table for nitrogen deposition (p. 3-58) indicates that actions implemented thus far have not significantly reduced DIN load deposition to the Lake, that additional research is needed, yet TRPA disregards this information, instead making vague references to future policy decisions. Where is the environmental analysis that has been called for since 1983?

“Available monitoring information suggests that actions that have been implemented thus far have not statistically reduced the amount of DIN load deposited into Lake Tahoe from atmospheric sources. According to Alan Gertler (2011 personal communication, Desert Research Institute), there are several outstanding questions regarding nitrate deposition and its dynamics in the Lake Tahoe Region. Gertler emphasizes that no one has estimated the total amount falling on the Lake Tahoe Basin landscape; the estimates of nitrate deposition only consider what falls directly onto the Lake at one monitoring location. The total nitrate load to the Lake is the sum of the amount falling directly onto the Lake plus some fraction of the amount falling onto the watershed. Research is needed to better estimate the total nitrate load to the entire Basin, and what fraction contributes to Lake degradation. Notwithstanding these information gaps, recommended policy and management action include additional consideration for implementing measures to reduce atmospheric sources of nitrates.”

We also reiterate the comments from Dr. Gertler included in the report. There are significant information gaps that were not addressed by the TMDL, and therefore further research is needed.

Peer review comments also identify these needs (Appendix E):*

“As noted previously, I would like to have seen clear links to the atmospheric deposition data collected by TRG/TERC since the mid-late 1970s and to the nitrogen (and phosphorus) budgets for the lake. The public and legislators need to know that there are extremely important linkages between the Tahoe Basin Watershed and Airshed – with some things more readily controllable than others.

I didn’t see mention of dry deposition and wet deposition measurements or computations. They are important data. I also didn’t see a tabulation of NH₄-N versus NO₃/2 N deposition, both wet and dry) or how this has changed over time. There are many western NADP network sites in addition to those operated by TERC and perhaps other agencies or DRI.”

Nearshore Clarity:

Nutrient deposition also likely affects nearshore clarity, for which TRPA considers a priority for threshold updates (2011 TER Chapter 13, p. 13-10):

“It is recommended that TRPA adopt an interim non-degradation management standard to set in motion the necessary directives to implement policy and management actions to control factors

⁸⁰ The RPU DEIS has, in fact, estimated increased waterborne emissions associated with each alternative, although the validity of the assumptions and number of passengers using waterborne instead of driving remains unknown.

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known to contribute to the distribution and abundance of periphyton algae (e.g., nutrient enrichment). It is, however, recommended that this standard be translated into a Numerical Standard at a later date such that the status of nearshore periphyton algae can be objectively evaluated.”

Atmospheric deposition of nutrients also contributes to near-shore clarity degradation, as noted in the 2011 TER Chapter 13, but this has not been addressed in the atmospheric deposition standard, nor are updates to the air quality standards suggested, even though it is well documented that N, P, and PM deposit from the air:

“Research in support of the Tahoe TMDL and water transparency concluded that while fine sediments constitute the primary cause of clarity decline, nutrient loading to Lake Tahoe should not be overlooked because of its effect on both the nearshore and deep-water environments of Lake Tahoe. While research and additional analysis is ongoing to identify the exact sources of nutrients and their respective runoff concentrations, it is well established that phosphorus loading to surface water is primarily coming from upland sources, as opposed to nitrogen load which is primarily deposited in the Lake from atmospheric sources (Lahontan and NDEP 2011)...”

We also reiterate comments regarding the inappropriate application of trend lines to a pollutant that is so clearly affected by environmental parameters that vary year to year (as is obvious with regards to precipitation in the table on page 3-56).

*Actual Status and Trend as supported by the data:
Unknown.*

Water Quality:

One of the overarching thresholds, that is, the one with some of the most attention and certainly the greatest focus of restoration resources, is Lake Tahoe. The clear, pristine waters have become clouded with nutrients and particles. The clarity has continued to decline (see State of the Lake Report by TERC 2011). The nearshore clarity has substantially declined, and continues to do so in light of any changing trends that may or may not have occurred in the mid-lake. Summer clarity is worse than winter clarity. Yet Lake Tahoe is a designated Outstanding National Resource Water (ONRW). This affords the lake special protection under the federal Clean Water Act and prohibits any degradation of the lake’s water quality.

First, we note the comments provided by Dr. Richard Axler in the peer review. It is unclear what ‘changes’ TRPA made in response to these comments, however it appears TRPA has failed to take most of them into account.

Problems remain in numerous areas, including the following listed below. Also, examples of all of the following critiques have been demonstrated in detail in the previous comments regarding the air quality indicators):

Statistical Rigor (as we have also identified above in the comments on the air quality section).

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My major concern with the Draft Thresholds Report was in regard to its lack of statistical rigor in the status and trends analyses, and not doing a better job of linking the large effects of annual weather differences to lake and stream water quality and the natural variability of the data in the context of available measurement methods.

Inadequate consideration of current information and environmental conditions:

I was also disappointed that the Report did not do a good job of presenting information in a landscape perspective highlighting how certain key indicators cut across major areas (i.e. Chapters) – such as how the Air Quality NO_x data is linked to lake N-loading; how N and P source loading is from fundamentally different processes (N from the atmosphere and P from watersheds), and how the land-water interface meets in the littoral zone with consequences to periphyton and phytoplankton, food webs, fisheries, recreation, and both scenic and property value.

I think that it is important for the Report's audiences to understand that the cost of a particular management action in one policy area may have important positive effects in other areas; and conversely that there may be difficult trade-offs between well intended policies.

Lack of objective, scientific review and focus on the environmental thresholds:

My strongest recommendation is to maintain the core program of Lake Tahoe pelagic and nearshore data collection and tributary monitoring that has been led by the Tahoe Research Group, now TERC, at the University of California- Davis (UCD) since the 1960's. I also believe it is crucial for TERC at UC-Davis, in collaboration with the other Tahoe Science Consortium member institutions, to be the organization that directs and conducts these programs, and takes the lead role in interpreting the aquatic data, presenting it to target audiences, recommending program improvements, prioritizing Tahoe Basin focused applied research, and reviewing the science of the assessment process for TRPA's evaluations of management actions (e.g. structural BMPs, SEZ restoration, planning and zoning ordinances, etc). This academically and research focused group has the scientific (ecological, physical/chemical/geological, social, and behavioral), engineering, and socioeconomic expertise, stature, and reputation for objectivity that I believe is needed to overcome the economic and political realities of today and maintain the Lake Tahoe restoration mission. My understanding is that TERC now has strong ties to UNR and DRI and it could be that scientists from these institutions are more appropriate to lead some analyses. P3

Winter Clarity: WQ-2

TRPA notes the winter Secchi clarity still appears to be heading in a positive direction, but that summer clarity is declining (p. 4-22).

“This reduction in the rate of decline in annual Lake Transparency over the last decade is a direct result of the improvement in the winter average Secchi depth (see evaluation above) and is the basis for assigning a trend of moderate decline. The summer average Secchi depth (not a threshold Standard) shows a consistent, linear decline since 1967, albeit with considerable inter-annual variability (TERC 2011a).”

As noted previously, TRPA is supposed to review and amend thresholds, as needed, based on new information. Given the resource value in this case is the clarity of Lake Tahoe (which the public has never said mattered more in one season than another, so far as we know), and the ONRW designation does not just apply during the winter months, this should suggest the need to consider addressing the decline in summer

mid-lake clarity. However, Recommended Actions (p. 4-23) include no such recommendation. Much like TRPA's approach with air quality, it appears TRPA has assumed the perpetuation of past actions will somehow magically 'fix' what is getting worse.

Reductions in water quality monitoring contrary to TRPA's implications of ongoing monitoring

As noted in comments above, the 2011 Threshold Evaluation Report (2011 TER) routinely fails to mention the reductions or outright elimination of monitoring sites for both air and water quality threshold standards. Instead, the document implies to the reader that the monitoring used to assess the status of certain standards (e.g. Suspended Sediment Concentration) is ongoing. For example, the water quality chapter includes the following statements:

The Lake Tahoe Interagency Monitoring Program (LTIMP) routinely monitored ten streams through 2010 to track water quality conditions, and continuously monitored for inflow. Together, these ten streams deliver about 50 percent of the total tributary inflow to Lake Tahoe (Lahontan and NDEP 2010). (Page 4-24).

Currently a total of 20-35 individual suspended sediment samples are collected each water year from each of the ten regularly monitored streams. (Pages 4-28 and 4-30).

The ten primary stations allow for the evaluation of the cumulative conditions within the watershed and represent approximately 50 percent of the yearly tributary inflow into Lake Tahoe (Lahontan and NDEP 2010). U.S. Geological Survey gauging stations are located at each of the monitoring stations, where inflow (discharge) measurements are collected and continuous inflow is calculated. Other water quality-related constituents monitored include water and air temperature, pH, specific conductance, and dissolved oxygen. (Page 4-30).

TRPA's near-term implementation role should focus on program areas that it has the existing authority to lead: 1) accelerating implementation of its water quality BMP retrofit regulations including implementation of area-wide stormwater treatment strategies, 2) pursuing innovative redevelopment strategies that aim to accelerate water quality improvements, 3) reducing atmospheric sources of pollutants known to impact aquatic habitats, (4) SEZ restoration and enhancement through the EIP (prioritized to tributary sources with the greatest pollutant load contribution), and 5) continued support for long-term stream monitoring. (Page 4-31).

However, according to information provided by the U.S.G.S., several cuts to the LTIMP monitoring program have been made in recent years.⁸¹ In the 2010 Water Year (which runs from October 1, 2009 – September 30, 2010), there were ten "primary" (high priority) sites near the Lake that were monitored monthly and during runoff events for both flow and water quality chemistry. There were seven "secondary" sites (also monitored monthly, but second priority for sampling during runoff events) located on streams above the primary sites (in other words, secondary sites are more apt to represent stream conditions *before* affected by disturbance in the watershed, providing important tools, including the ability to compare upstream and downstream conditions, to help assess the impacts of human disturbance and

⁸¹ Water year 2010, 2011, and 2012 LTIMP site lists were obtained from U.S.G.S. Hydrologist, Nancy Alvarez, on June 11, 2012.

collective⁸² control measures and projects). As of May 2012, there are just seven “primary” sites and zero “secondary” sites collecting flow and chemistry data.⁸³ The general reduction in monitoring, including the complete loss of any ‘background’ stream chemistry that was previously collected at the secondary sites is certainly a significant reduction in the program, creating huge gaps in our understanding of current water quality conditions, and the impacts created by human disturbance.

Although TRPA might try to justify the misleading information in the TER by stating the threshold report only covers 2006-2010 (although either way, the perception that full monitoring remains ongoing is very misleading to the public), we note the inclusion of 2011 Secchi disc data in the Threshold Report (which as noted previously, creates a more favorable “trend analysis” by TRPA in the TER). This raises yet another question: why did TRPA fail to include the more recent data for the Suspended Sediment Concentration evaluation? It appears that TRPA does not want to shed light on the significant reductions in the LTIMP program beginning in 2010.

The RPU DEIS makes the same implication, in fact quoting the TRPA threshold report (which notably is dated 2012), again creating the perception that the LTIMP monitoring has continued as described in previous years. Any reader unfamiliar with the cuts, reading through this section, would be expected to assume the monitoring remains underway:

“...Of these 10 monitored streams, approximately 90 percent of the cumulative total inflow is from the five California streams and approximately 10 percent is from the five Nevada streams (TRPA 2012a:p. 4-18).” (RPU DEIS, page 3.8-12).

Further, we again see TRPA and other agencies responsible for water quality reducing on-the-ground monitoring data in favor of modeling (or simply reducing monitoring and then creatively downplaying it as we are seeing in the 2011 TER). However, of note is that one of the biggest justifications stated in response to concerns⁸⁴ over relying so heavily on the TMDL model⁸⁵ to evaluate water quality loading and make associated planning decisions (often using forecast ‘estimates’ than confirmed load reductions) was that monitoring data would be used to regularly ‘calibrate’ the model. In fact, LRWQCB repeatedly emphasizes calibration with LTIMP data when responding to peer reviewer comments:⁸⁶

There are no known watershed models that can directly predict the number of fine particles (0.5-16 µm diameter) in runoff from an area as large as the Lake Tahoe basin with the level of confidence needed for the Lake Clarity Model. Because appropriate values for mechanistic parameters are not available - especially from mountainous regions with complex terrain - it was decided to calibrate with empirical monitoring data. A significant monitoring effort was

⁸² LTIMP data are not appropriate for assessing project-specific impacts, as they are intended to provide continuous, watershed-scale information. Therefore, we refer to the collective impacts of what may be happening in a watershed. Project-specific information should be gathered specific to the project.

⁸³ There are two remaining secondary sites noted as ‘gauge only.’

⁸⁴ Concerns were expressed repeatedly by Conservation Groups (verbal and written), peer reviewer comments, etc.

⁸⁵ Total Maximum Daily Load (TMDL) “package” adopted by Lahontan Regional Water Quality Control Board (LRWQCB) and NDEP.

⁸⁶ http://www.swrcb.ca.gov/lahontan/water_issues/programs/tmdl/lake_tahoe/docs/appndx_b.pdf

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undertaken as part of this TMDL to collect fine particle data for both streamflow and urban runoff. This monitoring effort for fine particles was vital for the modeling approach taken. The LTIMP stream data is very extensive and comprehensive. Given the complexity of mountainous landscape and the fact that the Lake Tahoe basin consists of 63 independent watersheds it was decided that calibration to the high-quality LTIMP dataset was the best approach.

WL-25: The goal of the model was to obtain a good match at the mouth for the nutrient species. Because of the shape of the watershed and nature of its tributaries, most of the stream times of concentration were faster than the rates at which these transformations would likely occur. If the Lake Tahoe Interagency Monitoring Program data were not available from the stream mouth regions (i.e. near point of discharge to the lake), the uptake/immobilization of nitrogen and phosphorus would have required further consideration. (Page B-65).

In response to the following question raised during peer review, LRWQCB again responded with the importance of calibrating the model with LTIMP data:

Comment: "...A lingering question is whether reliable predictions for changes in land use or control measures can be drawn from modeling, or whether they would be better drawn from direct use of data from monitored watersheds..."

Response: WL-28: The Lake Tahoe Watershed Model was selected for source analysis phase of the TMDL because the model had to apply to the entire drainage area of the Lake Tahoe basin, with its mountainous terrain, strong east to west rain shadow, geological differences, etc. For this large-scale approach, certain averaging assumptions were required. It was important to calibrate to the high-quality Lake Tahoe Interagency Monitoring Program data set that best reflects actual conditions. (Page B-67).

However, in addition to reducing the LTIMP program, the RPU offers no analysis of an alternative that would provide for additional monitoring.

Additional Comments on Water Quality TER – 7/25/2012*

Water Quality

Introductory pages:

The *Bi-State Compact* requires the *Regional Plan* to provide for the attainment and maintenance of federal, state, or local water quality standards. Resolution 82-11 sets out Numerical Standards, Management Standards, and Policy Statements for water quality. Some of these Threshold Standards are referenced to state standards. In other cases, target reference conditions related to specific periods are noted, and can be found in the Study Report for the Establishment of Environmental Threshold Carrying Capacities (TRPA 1982b). The value statements TRPA used in setting the Threshold Standards and management targets for water quality were:

- ☐ Attain levels of water quality in the lakes and streams within the Basin suitable to maintain the identified beneficial uses of Lake Tahoe
- ☐ Restrict algal productivity (rate of growth) to levels that do not impair beneficial uses or deteriorate existing water quality conditions in the Lake Tahoe Basin
- ☐ Prevent degradation of the water quality of Lake Tahoe and its tributaries to preserve the Lake for future generations
- ☐ Restore all watersheds in the Basin to reflect natural hydrologic conditions and functions such that runoff is treated by natural process rather than engineered solutions

What recommendations are included in the TER to support the use of natural solutions rather than engineered solutions? Does the TMDL program provide ‘credits’ for natural treatments over engineered solutions?

These pages also include a brief reference to the TER’s failure to include evaluations of water quality standards for the littoral zone, surface and stormwater runoff, groundwater, and other lakes. This is addressed later in our comments below.

Nearshore clarity (littoral zone):

For the nearshore (littoral zone), an effort is currently underway to synthesize existing monitoring data and research findings (Alan Heyvaert, Lead Scientist, Desert Research Institute, personal communication). This research was initiated because contemporary monitoring and research indicates conditions in the Lake Tahoe’s nearshore are in decline; specifically, the decline in native fish abundance, and increase in the distribution and abundance of nearshore periphyton (attached) algae and aquatic invasive species (Ngai et al 2011, TERC 2011a). The results of this synthesis effort will be reported when the project is completed (approximately November 2012). Consequently, evaluations of these specific indicators are not included in this chapter, but will be reported in future TRPA reports. (p. 4-2).

Is TRPA contributing to this synthesis in some way? Where is TRPA’s responsibility here?

Further, although TRPA eludes to weather and other factors affecting the delivery of pollutants to Lake Tahoe (see below), there remains no in depth analysis of these relationships.

Drivers influencing the delivery of fine sediment and nutrients include urban development (including the transportation network and vehicle density), anthropogenic and natural disturbance in the undeveloped portions of the watershed, and local and regional climate (especially wind and precipitation). (p. 4-20 and 4-23).

Peer review comments ask for the same information (excerpts below):

“There is also an important need to have some index of the weather in most of the water quality, and perhaps also some of the air quality, and even socioeconomic indicators. For more than 30 years it has been clear to the TRG (now TERC) that annual secchi, and in particular winter secchi, increased (more transparent) in low precipitation Water Years. Weather has direct control of the water budget in the basin such as stream flows, but also is important to lake productivity in terms of how early summer stratification breaks down, how long the lake remains isothermal, how strong and frequent wind storms are, how early or late does spring arrive, and how dry and how hot is summer? I think TRPA has also spent too much attention comparing one year to other. There’s ample data presumably to do a good job of addressing the influence of the weather – which would then need to be summarized for the 5 year evaluation period and used when discussing changes between evaluation periods and in discussing the individual “bumps and grinds” of the data – particularly the secchi and 14C-PPr data.”

“Chapter 4. Water Quality (and all of its appendices)

I have two major criticisms of this section – the first is that the presentation and analysis of the long-term water quality data from the lake and its tributaries do not appear to mirror the data and analyses presented by TERC-UC-Davis via its 2011 (WY 2010) State of the lake report or its many other publications found on its website; the second is indirectly related to the first and

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involves the inadequate statistical analysis of the long-term data sets. There are also many omitted, but important data sets: such as nitrate/nitrite-N (+ammonium-N) accumulation in the lake over time; atmospheric deposition of TN and DIN over time; depth (and perhaps duration) of winter mixing over time; chlorophyll-a in surface water and per square meter (integrated water column) over time; fine suspended sediment over time; temperature, etc. These trends, or lack of trend, are important ancillary data for determining cause and effect. They also provide important linkages for telling the complex “story” to the general public and to decision makers about the changing water quality in the lake and the most plausible hypotheses that have been tested using all available data. Lake Tahoe’s phytoplankton PPr and secchi transparency data stories do a good job of integrating a bunch of different fluxes (e.g. nutrient inputs from land and atmosphere driven by weather and landscape cover, use, and current management actions). These same factors also affect the nearshore (littoral zone) although it is much more difficult to effectively characterize this especially variable zone than it is the pelagic offshore water. The TRG and TERC have addressed synoptic variation in these water quality parameters via season long comparisons between the Index, Mid-lake North, and Mid-lake South stations. Similarly the spatial differences in atmospheric deposition of nutrients and precipitation were assessed in the 1980’s and perhaps also more recently. Periphyton have been monitored using state of the art methods since the late 1970s and should also be a part of the story because of the ability of this indicator to identify more localized conditions (site-specificity).”

Therefore, this again begs the question of how appropriate actions can be taken to achieve and maintain thresholds. Should different strategies and management standards be considered for the west shore versus the east shore, due to dramatic differences in precipitation and soil types/topography? Should these differences be addressed before development rights are transferred? Perhaps there will be less threshold impact from an activity on one side of the lake compared to the other, thus a transfer program would need to consider these differences.

Generally, the analyses and information presented in this chapter do not investigate the mechanisms or processes driving the observed status and trends, or alternative hypotheses to explain the observations. That is, this document does not definitively investigate the causes and effects resulting in the observed status and trends. There are two reasons for this: 1) the analytical approach, regression analysis, employed throughout this Threshold Evaluation is not necessarily the appropriate tool to explore cause and effect. Although regression analysis can be used to indicate the trajectory of change between two variables (i.e., trend), regression analysis is most commonly used to test for correlations among variables, and inform us about the strength of those correlations; 2) investigation and presentation of the mechanisms and processes driving observed status and trends is beyond the charge given to the five-year Threshold Evaluation and are discussed in other reports. Other efforts have extensively explored mechanisms driving Lake Tahoe conditions (LRWQCB and NDEP 2008a, 2008b, 2008c). The purpose of Threshold Evaluations is to document and describe the status and trends of relevant indicators relative to established standards, and then assess the condition of the environment and resources in the Tahoe Region. Investigations of the underlying mechanisms and processes driving observed status and trends are more appropriate as part of focused synthesis evaluations, to determine if new or modified Threshold Standards and indicators are warranted. (p. 4-2).

Not considering the cause and effect is contrary to the requirement that TRPA evaluate the status of Thresholds every 5 years and **amend the RP as needed to ensure the threshold standards are achieved and maintained.** In fact, Chapter 12 of the TER notes: “*According to Resolution 82-11, Threshold Standards are to be reviewed at least every five years by the most appropriate means. After such review, the pertinent Threshold Standards are to be amended where the scientific evidence and technical information provide sufficient evidence to amend the standard.*” This requires an analysis

of the causes of threshold non-attainment. Is TRPA proposing to now develop two reports every 5 years – one which evaluates the status of thresholds, another which evaluates the cause/effect related to threshold status, and then proposed amendments to thresholds and/or the Regional Plan that are warranted by such information?

“Much of the urban development has occurred along the edge of Lake Tahoe, meaning that in many cases, there is little or no buffer between the highest source of pollution and the Lake. Activities associated with development and development itself, primarily inside the Basin, is now thought to be responsible for many of the primary and secondary drivers of water quality.” (p. 4-3).

Would this not dictate a Regional Plan that would discourage additional development in those areas where there is little or no buffer to the Lake? What actions need to be taken to improve threshold attainment?

The 2011 TER has taken a more complex approach to evaluation of the seven water quality threshold standards and indicators. Therefore, the summary provided in the 2006 TER is included below for ease of reference.

3.2.1 MEASUREMENT AND MONITORING OF INDICATORS AND STANDARDS FOR POLLUTANT LOADING EFFECTS THRESHOLDS

WQ-1 Littoral Lake Tahoe

Indicator

The compliance indicator for this threshold is turbidity. Since 1991 this turbidity indicator has been measured offshore at the 25 meter contour at the following locations in littoral Lake Tahoe: 1) mouth of Upper Truckee River and Trout Creek; 2) El Dorado Beach; 3) mouth of Edgewood Creek; 4) Nevada Beach; 5) mouth of Incline Creek; 6) Burnt Cedar Beach; 7) mouth of Ward Creek; and 8) Tahoe State Recreation Area. A site was added at the mouth of Blackwood Creek in 1999.

Standard

Decrease sediment load as required to attain turbidity values not to exceed 3 nephelometric turbidity units (NTU) in littoral Lake Tahoe. In addition, turbidity shall not exceed 1 NTU in shallow waters of Lake Tahoe not directly influenced by stream discharges.

WQ-2 Pelagic Lake Tahoe, deep water clarity

Indicator

Winter average Secchi depth measured at the Lake Tahoe Index Station, in meters is the compliance indicator for this threshold.

Standard

TRPA: Average Secchi depth, December – March, shall not be less than 33.4 meters.

WQ-3 Pelagic Lake Tahoe, phytoplankton primary productivity

Indicator

Phytoplankton primary productivity (PP_r) is the compliance indicator for this threshold, annual average, measured at the Lake Tahoe Index Station (gC/m²/yr).

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Standard

TRPA: Annual mean PPr shall not exceed 52 gmC/m2/.

3.2.2 MEASUREMENT AND MONITORING OF INDICATORS AND STANDARDS FOR POLLUTANT LOADING SOURCE THRESHOLDS

WQ-4 Tributaries

Indicators

Compliance indicators have been interpreted to include annual average concentrations per California total nutrient constituent and Nevada soluble Lake Tahoe nutrient standards for nitrogen, phosphorus, and iron, and 60 mg/l at 90th percentile for suspended sediment (Tables 3-2 and 3-3 in the Water Quality Appendix).

Standards

TRPA threshold numeric standard: Attain applicable state standards for concentrations of dissolved inorganic Nitrogen (DIN), dissolved phosphorous (DP), and dissolved iron. Attain a 90th percentile value for suspended sediment concentration of 60 mg/L. Interpreted state standards: California: total nitrogen (0.15-0.22 mg/l), total phosphorus (0.010-0.030 mg/l), and total iron (0.015-0.03 mg/l), (annual average.); Nevada: Lake Tahoe standards for soluble phosphorus not to exceed 0.007 mg/l (annual average.); soluble inorganic nitrogen not to exceed 0.025 mg/l (annual average.).

WQ-5 Stormwater runoff, surface water

Indicators

Compliance indicators include DIN, DP and iron, grease and oil and suspended sediment for TRPA surface water discharge standards (Table 3-2 in the Water Quality Appendix).

Standards

Achieve 90th percentile concentration value for DIN of 0.5 mg/L, for DP of 0.1 mg/L, and for dissolved iron of 0.5 mg/L in surface runoff directly discharged to a surface water body in the Basin. Achieve 90th percentile concentration value for suspended sediment of 250 mg/L.

WQ-6 Stormwater runoff, land infiltration to protect groundwater

Indicators

The compliance indicators are total nitrogen, phosphorus, and iron; along with turbidity, grease and oil. TRPA discharge standards for infiltration to protect groundwater, take into consideration the filtering effect of the soil profile (Table 3-2 in the Water Quality Appendix).

Standards

Surface runoff infiltration into the groundwater shall comply with the uniform Regional Runoff Quality Guidelines as set forth in Table 4-12 of the Draft Environmental Threshold Carrying Capacity Study report, May, 1982. Which reads: Waters infiltrated into soils should not contain excessive concentrations of nutrients which may not be effectively filtered out by soil vegetation. Maximum concentrations for constituents are: Total nitrogen (N) 5 mg/L, Total phosphate 1 mg/L, Iron 4 mg/L, Turbidity 200 NTU, Grease and oil 40 mg/L. Where there is a direct and immediate hydraulic connection between ground and surface waters, discharges to groundwater shall meet the guidelines for surface discharges, and the Uniform Regional Runoff Quality Guidelines shall be amended accordingly.

3.2.3 MEASUREMENT AND MONITORING OF INDICATORS AND STANDARDS FOR NON-LAKE TAHOE CLARITY OR ENVIRONMENTAL HEALTH THRESHOLD

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WQ-7 Other lakes

Indicators

Compliance indicators include water quality parameters and standards established by California and Nevada. Since the water quality of other lakes of the Region affect the general water quality of the Lake Tahoe Basin, rather than Lake Tahoe's clarity directly, standards for 'Other Lakes' have been established mainly for Fallen Leaf Lake (Table 3-2 in the Water Quality Appendix).

Standards

Attain existing water quality standards.

WQ-1 Littoral Lake Tahoe:

The compliance indicator for this threshold is turbidity. The threshold standard is:

“Decrease sediment load as required to attain turbidity values not to exceed 3 nephelometric turbidity units (NTU) in littoral Lake Tahoe. In addition, turbidity shall not exceed 1 NTU in shallow waters of Lake Tahoe not directly influenced by stream discharges.”

Although previous TERs have reported the turbidity standard under WQ-1, Littoral Lake Tahoe, we found the reference to the non-tributary standard for turbidity on p. 4-43 – in the text discussion for tributary suspended sediment load.

Adopted Standard – 1) Tributaries: reduce total yearly nutrient and suspended sediment load to achieve loading thresholds for littoral and pelagic Lake Tahoe; 2) Littoral and Pelagic Lake Tahoe: decrease sediment load as required to attain turbidity values not to exceed three NTU (Nephelometric Turbidity Units). In addition, turbidity shall not exceed one NTU in shallow waters of the Lake not directly influenced by stream discharges (load reduction needed to attain standard, not provided).

Type of Standard: Management (for Tributaries); one Numerical Standard (related to sediment for Littoral Zone) (p. 4-43).

Although it has long been suggested that this standard may require adjustment, since the 3 NTU standard has been met (see questions below) yet clarity conditions have been poor, the standard still warrants individual consideration. In fact, the 2006 TER recommended this:

For the purposes of this evaluation there are no recommendations, since the threshold is nominally in attainment. There is a Pathway proposal to develop a more appropriate indicator and or standard after 2008 to more effectively represent the desired conditions for nearshore transparency (e.g. 1 NTU equates to 4 ft. transparency which is not considered to be publicly acceptable), and perhaps algal productivity goals.” (2006 TER, p. 3-11).

The TER should include a separate discussion of this standard and provide the analysis recommended in the last threshold evaluation.

In addition, has there been sufficient monitoring to determine whether the threshold is being met? The Taylor 2004 work was done by boat – is there enough data from that study to confirm that very close to shore e.g. at shallow water along the south shore, that the turbidity threshold is being met?

Phytoplankton Primary Productivity (PPr):

Status – The phytoplankton PPr indicator is used to determine compliance with TRPA’s Pelagic Lake Tahoe phytoplankton productivity standard of 52 gC/m²/yr. The Threshold Standard is based on measurements collected over four years (1968- 1971) (Lahontan and NDEP 2010).

Phytoplankton primary productivity has remained well above the standard since it was established in 1982. In 2010, phytoplankton PPr was 194 gC/m²/yr. The status of Lake Tahoe’s phytoplankton primary productivity is considerably worse than the standard because the 2010 value is 3.7 times (373 percent) the TRPA’s Threshold Standard.

Interim Target – Based on the available trend information since 2000, this indicator is predicted to continue to increase (worsen). In 2016, the indicator is projected to be approximately 221 gC/m²/yr.

TRPA is basing its Interim Target on what will likely happen if TRPA “does nothing.” Shouldn’t TRPA be looking at what can be done to reduce the loading of nutrients to the Lake and then developing an Interim Target that TRPA wants to attain based on implementing those actions? In fact, is that not the idea behind creating Interim Targets – to set a goal that the agency wants to achieve based on actions it will take?

Chapter 2 in the 2011 TER defines Interim Target:

Interim Target – is an intermediate numeric objective related to a standard that is expected to take several years to achieve (e.g., old growth forest standards). Interim targets express Regional progress toward an adopted standard. TRPA defines an interim target as a goal that it anticipates achieving at a major evaluation interval specified for the standard.

Human and Environmental Drivers – Increasing nutrients (nitrogen and phosphorus) inputs are considered a main cause of increasing PPr in temperate lakes (Conley et al. 2009). It is suspected that activities associated with urbanization and watershed disturbance influence Lake Tahoe’s PPr through the generation and subsequent runoff or atmospheric deposition of nutrients. The nutrient source analysis conducted for the Lake Tahoe TMDL indicates that both urban and non-urban sources of nitrogen and phosphorus are important contributors of nutrients to Lake Tahoe (Lahontan and NDEP 2010). Meteorological conditions (e.g., wet vs. dry years) also affect PPr, presumably due to changes in tributary loads of nutrients and differences in the magnitude of physical processes within the Lake. However, the trend analysis suggests these effects have not substantially influenced the overall trend.

Does this last sentence mean that *meteorological conditions* have not substantially influenced the overall trend? Has TRPA compared the actual trend to inputs, and examined sources of those inputs, in order to assess where beneficial actions can be taken?

Removing the new, more obscure terms, the basic status of this standard is non-attainment, and the trend has continued to significantly decline (PPr has increased) for decades. However, TRPA has continued to dismiss this trend, suggesting it is not likely attainable. However, research continues to show that nutrients and algal growth play an important role in both mid-lake and nearshore clarity. What actions has TRPA taken to reverse this trend? What if P-containing fertilizers were banned in the Basin? What if N-containing fertilizers were more controlled? What benefits could be realized from less

coverage and significantly more areas for natural treatment? Until TRPA has taken actions to significantly address nutrient inputs, it can not be concluded that the standard is unattainable. If such actions were analyzed and objective research determined the standard itself can never be met, then TRPA must consider alternative standards which address littoral lake clarity, not just dismiss the concept altogether.

Strangely, the TER mentions the change in more recent trends (which are favorable), but includes no evaluation of why PPr may have declined.⁸⁷ Could this be due to weather-related parameters? Water temperature? Anthropogenic activities?

It should be noted however, that phytoplankton PPr declined in 2009 and 2010 from a monitoring record high recorded in 2008. (p. 4-16).

Has PPr been compared to other parameters to assess why these changes? Would lake temperature, ambient air temperature, precipitation amounts, snow amounts, day/night temperature, etc., affect this? Further, we note the Air Quality chapter has discounted over five years of less favorable air quality trends because they did not ‘match’ the previous trend line, essentially ignoring any notable discussion of why air quality is declining, yet the TER has taken the opposite approach in the water quality section, seemingly because these more recent results are favorable.

The most recent value is from 2010. Early studies by UC Davis show that the sampling location is representative of the Lake’s deepwater condition (Goldman 1974). (p. 4-16).

What do more recent studies say? Should TRPA consider multiple sampling locations throughout the Lake? The 2011 State of the Lake Report notes the differences seen among the shoreline of the lake. Would additional sites be needed to address clarity throughout the entire Lake?

Target Attainment Date and Trend:

Target Attainment Date – Based on available trend information it is not possible to accurately estimate a target attainment date. Given the current status and 40-year trend associated with this indicator, it may not be possible to achieve this Threshold Standard within the next 50 years if the trend continues on its same trajectory. (p. 4-16).

Once again, we reiterate the Threshold Evaluation is not just a review of the status of thresholds, but also a means by which TRPA is supposed to determine what additional actions may be needed to help attain a threshold standard. Instead, it appears TRPA intends to do nothing.⁸⁸

⁸⁷ It should be noted however, that phytoplankton PPr declined in 2009 and 2010 from a monitoring record high recorded in 2008. (p. 4-16).

⁸⁸ Another example is found on p. 4-19 regarding mid-lake clarity: “Based on the trajectory of the GAM trend, the interim target to be achieved by the next five-year Threshold Evaluation is 25 m (82 ft).”

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Recommendations for Additional Actions – TRPA, in collaboration with federal, state, and local agencies, should pursue the strategies and actions identified in the Lake Tahoe TMDL with a goal of reducing tributary loading of sediment and nutrients, and achieving the interim target for Lake Tahoe transparency by 2026. TRPA's near-term implementation role should focus on program areas that it has the existing authority to lead: (1) accelerating implementation of its water quality BMP retrofit regulations including implementation of area-wide stormwater treatment strategies, (2) pursuing innovative redevelopment strategies that aim to accelerate water quality improvements, (3) reducing atmospheric sources of pollutants known to impact aquatic habitats, and (4) considering the phasing out of phosphorus-containing fertilizers in the Region. Additionally and indirectly related to phytoplankton productivity is the need to consider adopting a Threshold Standard for nearshore periphyton (attached) algae. TERC (2011a) reported that periphyton algae have increased in abundance and distribution in recent years. (p. 4-17).

These recommendations appear to selectively endorse the strategies in the RPU proposed alternatives. What about recommendations to remove coverage and provide for more natural treatment? Where is the evidence that supports these proposed actions will help achieve thresholds?

The TER (past and present) also fails to analyze the actions needed to change the ongoing decline (ongoing non-attainment) of the PPr standard (and benefit the nearshore, where a new standard is proposed). First, an analysis of what we currently know regarding impacts to PPr and sources of pollutants is lacking. Second, an analysis of what needs to be done to reverse this trend is lacking. Finally, although we again see a recommendation to reduce fertilizer use (see excerpt above, recommendation 4) – which although not quantified, would be expected to provide a reduction in the nutrients which contribute to the growth of algae – little is done to carry it forward. Yet this recommendation has been included in TERs going back to the first one in 1991, representing another example of TRPA's failure to take appropriate actions to help threshold achievement.

1991 TER:

“review and improve controls on fertilizer use in the Basin...and amend the Regional Plan to extend limits on additional residential growth through the upcoming five year period.”

To attain and maintain the threshold standards for Lake Tahoe, TRPA should: strengthen its program of application of Best Management Practices (BMPs); update, expand, and implement the Capital Improvements Program for erosion and runoff control and the Stream Environment Zone Restoration Program; review and improve controls on fertilizer use in the Region; and amend the Regional Plan to extend limits on additional residential growth through the upcoming five-year period.

2001 TER:

“Fertilizer use and management programs moved from project driven reporting to region-wide regulatory program requiring reductions in fertilizer use, and elimination on low capability land (SEZs) (2002).”

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It appears TRPA had taken at least some steps to reduce fertilizer use in some locations, but clearly it has not been enough.

2006 TER:

“Urbanization of the watershed of Lake Tahoe has led to five new direct sources of nutrients and sediment: (1) fertilizers being used largely to support non-native vegetation and not taken up by vegetation;...”

“All recommended TRPA Regional Plan amendments were completed by December 2002. However, the Fertilizer Management Program has not been fully implemented for large users (maintenance of one acre or more cumulative turf area, plant nurseries in particular). The delay in implementing this recommendation is due to lack of TRPA resources and poor response of large users in submitting their management plans and reporting on fertilizer use and monitoring. Further near shore turbidity studies (Phase III) were completed in March of 2004 (under the TMDL research), but no collection of continuous turbidity data from Lake intakes for trend analysis has occurred due to questions regarding the utility of these data for monitoring littoral water quality in general.”

2011 TER: repeated for emphasis:

“(4) considering the phasing out of phosphorus-containing fertilizers in the Region.”

Clearly fertilizer use has remained an ongoing and important problem to meeting water quality standards for decades. Although some minor improvements were made over ten years ago, the TER reports continue to document problems associated with fertilizer use. Yet the same approach is taken that has not worked in the past: “let’s consider phasing out p-containing fertilizers.” Again, we see TRPA recommending an action to benefit a threshold, using lax language such as “consider,” and have to wonder how many more years we’ll remain in this same dilemma.

In a glimpse at the RPU DEIS (to see what Recommended Actions TRPA may be suggesting), we see that TRPA has concluded all alternatives will result in either beneficial or less than significant effects from the impacts of fertilizer use. Only Alternative 2 might prohibit the use of fertilizers, however we are unclear to what extent, because it includes a reference to “with limited exceptions.” Looking into this, we find this later explained as “*Alternative 2 proposes to prohibit all chemical fertilizers that introduce additional nitrogen and phosphorus to the Tahoe Region, with limited exceptions, such as when soil analyses support fertilizer use.*” However, what remains unclear is what defines when a soil analysis supports fertilizer use? How will this analysis be done? Who will perform it? How will the public be involved? Will it consider location of the area with regards to near shore clarity issues? Will it consider alternatives that do not use any fertilizer that introduces additional N and P to the Basin? We attempted to examine the potential Code changes for these answers, but the RPU DEIS only provides the Code changes associated with Alternative 3, thus it was not possible to adequately compare the impacts of each alternative on this threshold.

We see that Alternatives 3 and 4 would simply ‘encourage’ reductions in the sale and use of P-containing fertilizers, while Alternatives 1 and 5 would continue existing policies (which essentially do the same – encourage the phase out at some future time). Instead, we wonder what the current conditions might be if TRPA had followed up on its own threshold recommendations years ago, and further restricted the use of fertilizer? We also see no approaches that ban or regulate residential lawns.

*What other alternative options could reduce or eliminate fertilizer use in the Basin that TRPA has failed to analyze and what benefits would this create for affected water quality thresholds? Given affected thresholds are out of attainment, how can TRPA not require amendments to the RP (existing or new) to help achieve and maintain thresholds?

WQ-2, Pelagic Lake Tahoe – Deep Water Clarity and Phytoplankton Primary Productivity (PPr):

The standards for Pelagic Lake Tahoe have historically included TRPA’s standard for average winter mid-lake clarity, and California’s standard for annual average mid-lake clarity. First, although the annual average is evaluated per California’s standard, what happened to previous recommendations that TRPA adopt the annual average standard (and retain the winter average) for consistency? Also, because summer trends are quite different than winter trends, yet the aesthetic value of the lake’s clarity is applicable every day of the year, TRPA thresholds should include standards which address summer clarity (and associated regulations aimed to improve summer clarity as well).

The TER states:

Winter average Secchi disk depth measurements (1968 - 2011). Each value is the mean of 5-13 individual measurements taken at the Lake Tahoe index station from December through March. The line of best fit was determined statistically using a general additive model (GAM). The standard deviations for each annual estimate and the average standard deviations are also shown. The 2011 measurement of 25.9 m (84.9 ft) is somewhat better than TRPA’s interim target of 24 m (78.7 ft). The long-term trend had shown a historically declining condition, but the trend has exhibited moderate improvement, particularly over the last decade (2002 – 2011). Data are from the UC Davis – Tahoe Environmental Research Center (TERC 2011a). (p. 4-18).

The TER states the data are from TERC, however, who placed the data into the “line of best fit?” How was this method selected? Do researchers at TERC classify the clarity trends with these methods? If TRPA has selected a different method, why?

Why was 2011 included? What would the trend look like if 2011 were no included? The Interim Target identified in the 2006 TER was 24 m (78.7 ft.). Had TRPA used the same methods as done in the four previous 5-year evaluations, and analyzed the five year period from 2006-2010, the end result would be based on the 2010 data. As a result, the interim target would not have been met, and the results certainly less favorable. This appears to be another data set that was manipulated to reflect ‘improved’ conditions – a benefit to TRPA’s proposed Alternative in the proposed RPU DEIS.

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The TER should simply report the data, trends, etc., objectively and separately from any policy-related pressure. Note the peer reviewers even suggested the reviews be performed by the researchers, not the agencies.

“My strongest recommendation is to maintain the core program of Lake Tahoe pelagic and nearshore data collection and tributary monitoring that has been led by the Tahoe Research Group, now TERC, at the University of California- Davis (UCD) since the 1960’s. I also believe it is crucial for TERC at UC-Davis, in collaboration with the other Tahoe Science Consortium member institutions, to be the organization that directs and conducts these programs, and takes the lead role in interpreting the aquatic data, presenting it to target audiences, recommending program improvements, prioritizing Tahoe Basin focused applied research, and reviewing the science of the assessment process for TRPA’s evaluations of management actions (e.g. structural BMPs, SEZ restoration, planning and zoning ordinances, etc). This academically and research focused group has the scientific (ecological, physical/chemical/geological, social, and behavioral), engineering, and socioeconomic expertise, stature, and reputation for objectivity that I believe is needed to overcome the economic and political realities of today and maintain the Lake Tahoe restoration mission. My understanding is that TERC now has strong ties to UNR and DRI and it could be that scientists from these institutions are more appropriate to lead some analyses.” (Dr. Axler, p. 3).

“4-16. Needs TERC review. A vertical extinction coefficient is not a “Sensor”. It’s a measure of the rate of attenuation of light (usually photosynthetically available radiation [PAR]) with depth measured using an electronic sensor that is lowered down the water column.”

Recommended Actions include: “4) *stream zone restoration and enhancement through the EIP, (prioritized to tributary sources with the greatest pollutant load contribution). Actions should include removal and restoration of impervious land cover from these areas to the extent practical.*” (p. 4-20).

Should? Isn’t the removal and restoration of stream zones a threshold? And what is meant by “to the extent practical?” An objective scientific evaluation would be expected to simply recommend actions without the associated legal terminology that tends to make regulations more ‘flexible.’

Status – Lake Tahoe is considered an “impaired” water body under the Federal Clean Water Act (Section 303d). Lake Tahoe has not met the California transparency standard of 29.7m since this standard was first adopted in the early 1970s. In 2011, the Secchi depth was 21m (68.9ft), an increase of 1.4 m (4.5ft) from the previous year. However, the reader is cautioned from placing too much importance to this year-over-year change. This amount of change between years is not extraordinary for the annual average Secchi depth. The status of Lake transparency is somewhat worse than the interim target because the 2011 value is only 12 percent less than the interim target of 23.8m (78 ft.).

This reduction in the rate of decline in annual Lake Transparency over the last decade is a direct result of the improvement in the winter average Secchi depth (see evaluation above) and is the basis for assigning a trend of moderate decline. The summer average Secchi depth (not a Threshold Standard) shows a consistent, linear decline since 1967, albeit with considerable inter-annual variability (TERC 2011a).

The summer average may not be a threshold standard, but it does clearly affect the CA state standard for annual water clarity. Also, TRPA is charged with protecting the unique, scenic values of Lake Tahoe year round, not just in the winter months. Thus, TRPA can not simply dismiss the ever-declining trend in summer clarity. Additionally, most visitors

to Lake Tahoe come during the summer months.⁸⁹ Therefore, given that clarity represents several beneficial uses, including aesthetic, TRPA should perhaps consider the adoption of a threshold standard for average mid-lake summer clarity as well. At a minimum, TRPA must examine why summer clarity is declining because of the impacts it has on the annual average clarity standard.

There is a moderate level of confidence that the trend of improvement in annual average lake transparency observed since about 2000 will continue into the future. Continued monitoring is required to see how this apparent improvement progresses into the future.

What role does TRPA intend to play in affecting the trend? This appears yet another suggestion of TRPA idly standing by, taking no additional actions to improve threshold attainment.

Overall Confidence – The overall confidence in this indicator is “moderate” because there is high confidence in the condition status, and moderate confidence in the long-term trend.

The most current information showing a slowing in the rate of decline in average annual transparency is encouraging, although this is driven by the trend in winter transparency.

How much of the trend can be explained by the Lake’s water temperature? Precipitation levels (including annually, seasonally, monthly, etc.)? The lake’s water level? Other factors?

There is an extensive amount of information gathered by TERC and presented each year in the State of the Lake reports published on their website. This information includes a review of multiple other environmental and anthropogenic factors which may affect, or do affect, clarity. If agencies are to adequately plan for achieving the clarity threshold (and protecting the scenic value of the Lake year round, which would suggest a summer clarity average standard be considered), then there first needs to be an examination of the causes of clarity loss, what other parameters impair clarity, and what actions can therefore be taken to best improve clarity? Although we know reducing sediment and nutrients is expected to provide some improvement, a review of the 2011 State of the Lake Report would suggest seasonal inputs affect clarity differently. Should this not dictate seasonal controls be evaluated?

Nutrient Limitation – Multiple WQ standards and indicators:

As noted in the 2011 State of the Lake Report,⁹⁰ nutrient limitation is not consistent throughout the year:

“Bioassays determine the nutrient requirements of phytoplankton. In these experiments, nutrients are added to lake water samples and algal biomass is measured. These tests document both seasonal and long-term changes in nutrient limitation. Phytoplankton response to nutrient addition for the period 2002-2010 is summarized in the panels below. Between January and April, algal growth was limited purely by phosphorus (P). From May to September, Nitrogen (N) added by itself was more stimulatory, but the lake was co-limited, as shown by the greater response to adding both nutrients.

⁸⁹ Peer review comments in Appendix E note: “It is also very important to report the summer Secchi changes as most users of the lake see the clarity during the summer.”

⁹⁰ <http://terc.ucdavis.edu/stateofthelake/StateOfTheLake2011.pdf>

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Phosphorus was more stimulatory from October to December, but co-limitation was again the dominant condition. These results highlight the role of nutrients in controlling algal growth. They also underscore the synergistic effect when both are available.”

What might these results mean for TRPA’s thresholds? Given the opposite trends in winter versus summer clarity, why are alternative threshold standards for summer clarity not examined? And as such, seasonal regulations based on the impacts of sources? Much like with air quality, it appears some sources of pollutants may have a greater impact during certain times of the year, and thus the one-size-fits-all approach simply does not suffice.

WQ-4 Tributaries:

These indicators are found on page 4-24 of the 2011 TER, which begins with the following information.

The Tahoe Basin contains 63 streams that flow into Lake Tahoe. These streams drain a total land area of approximately 800 km². Approximately 83 km², or 10.5 percent of the land area, is “developed,” and much of the development is concentrated near the Lakeshore. The status and trends of six indicators were evaluated for the tributary Water Quality Indicator Reporting Category. Data for the indicators were derived from 10 monitoring sites located at the mouth of 10 different streams. Evaluated indicators included concentrations of suspended sediment, total phosphorus and total nitrogen, and combined tributary loads of sediment, phosphorus, and nitrogen. Overall, the status of these three indicators ranged from “considerably worse than target” to “considerably better than target,” and the trend varied between “little or no change” (total nitrogen concentration) and “rapid improvement” (nitrate and nitrite load) (Figure 4-3). Confidence in the determinations of status and trend are all “moderate” resulting primarily from “high” confidence in the status determination, and “low” confidence in the trend determinations. Overall, the status for the tributary Water Quality Indicator Reporting Category was “somewhat worse than the target,” with an overall trend of “moderate improvement” (Figure 4-3).

If concentrations of TSS and P have increased, but the total loads have not changed, wouldn’t this suggest possible precipitation impacts? In other words, the lack of increased loading could be due to less runoff, but the concentrations in the volume are getting worse.

This is also akin to double-counting. Three things are considered: TSS, P, and N. TSS and P concentrations have been increasing, so how can the overall ‘status’ show little or no change? This appears to be yet another example of the TER aggregating indicators to perpetuate a more favorable outcome than the data would dictate.

Increased complexity with new ‘scoring’ system:

As is done throughout the entire report for the thresholds, the 2011 TER changes the way tributary water quality is evaluated. The old, simple approach which examined whether the 90th percentile standard was met has instead been replaced with a more complex “system” involving the aggregation of samples and the assignment of “scores.”

For example, the 2006 TER⁹¹ states:

“...Most if not all ten tributaries had appeared to be in attainment for suspended sediment concentration based on monthlies through 2005 water year, except for exceedance of the concentration standard in May and June of 2005 for Blackwood, Ward, and Incline Creeks representing more than 10% of the monthlies for 2005. Thus the SSC concentration 90%tile standard was not met.” (p. 3-13).

First, this ‘new method’ appears contrary to the TER’s previous claims that methods were changed because the past practice was ‘too complex’ and often ‘aggregated’ results. Therefore, it would seem that adding a more complex method and aggregating multiple indicators under the new method would contradict the entire (stated) purpose of the new method. Further, the status of each stream is said to be evaluated based on its 2010 value relative to the standard. Why not simply evaluate the stream data versus the standard, period, as has been done in past evaluations? Finally, who selected the three periods for trend determination, and based on what criteria? Why would this indicator be evaluated for these three periods (see below), yet other indicators evaluated over all years since the threshold adoption (e.g. clarity), and yet other indicators evaluated over all years *except* the most recent years because they reflect less favorably (e.g. air quality)?

Status – In the table below, scores of suspended sediment concentration status, trend, and confidence were assigned for each of the ten regularly monitored streams in the Lake Tahoe Basin. Assigned scores for individual streams for California and Nevada, and overall, were based on: 1) percent to target calculations, 2) standard exceedance rates (see also Appendix WQ-1), 3) visual inspection of graphed data, and 4) the aggregation methods described in the Methodology Chapter of this report. The status for each stream was determined by evaluation of its 2010 value relative to the standard. The trend determination was based on a comparison of the exceedance rate among three periods, 1980-1989, 1990-1999, and 2000-2010. More details on confidence scoring are provided in the confidence section below. Five of the ten monitored streams in water year 2010 exceeded the standard for suspended sediment concentration (see table below and figure above in this indicator summary). The percentage of samples for each stream that exceeded the standard ranged from 11 to 25 percent. Two of the streams were in Nevada (Third and Incline creeks), and three of the streams were in California (General, Blackwood, and Ward Creeks). Ninety percent of all inflow delivered to Lake Tahoe from the ten monitored streams comes from the five California streams; thus, the total contribution of SS from California streams was substantially larger than from the Nevada streams. Due to the relatively larger influence of California streams, the status of tributary SS concentration was determined to be “somewhat worse than the target,” even though the overall average would indicate that the Region was “at or somewhat better than the target.” (p. 4-28).

With regards to the indicators evaluated with data from the LTIMP program, the TER recommends “continued support for long-term stream monitoring.” This would seem to imply that monitoring under the LTIMP program has continued at the same rate, however as noted in our comments on the LTIMP program reductions, data collection has been significantly reduced since 2010. It is notable that this is not mentioned in the 2011 Draft TER, let alone the draft RPU/RTP environmental documents – all of which rely on the stream data to support purported improvements.

⁹¹ <http://www.tiims.org/Data-Repository/Documents/Lake-Tahoe-Basin/Science-and-Reporting/Data-Synthesis,-Reporting,-and-Management/Reporting/TRPA/2006/2006-TRPA-Threshold-Evaluation---Chapter-3-Water-Q.aspx>

Further, the TER should not only truthfully divulge the cuts in monitoring to the LTIMP program that provides the basis for examination of this threshold standard, but it should also recommend the cuts be reversed, and that additional monitoring be added. Why is no such recommendation included?

The TER includes the following statement in the Trends discussion (p. 4-29):

“It is hypothesized that the higher SS concentrations measured in these streams are driven by local meteorology and runoff characteristics. This is further supported by comparing inflow in combination with estimates of SS loads for Blackwood and Ward creeks (streams with similar flow characteristics). Overall, localized conditions and events are thought to have a strong influence on SS concentrations in the four streams falling into the third category, obscuring any definitive long-term trends.”

That local conditions have such a great influence on the concentrations is of great importance. The purpose of the threshold evaluation is not just to examine the status of the thresholds, but also to provide an assessment that will direct Regional Plan activities (including amendments needed to support threshold achievement). Therefore, understanding the sources of pollution is key to proper planning. Instead, it appears once again the TER discounts this point, treating this information as if the only purpose it would serve is to help create another trend line.

As noted in the same discussion, higher SS concentrations may be driven more by local meteorology and runoff conditions. Although TRPA can not control the weather, are there actions that could be taken to, in essence, accommodate meteorological conditions that may increase concentrations? The same question would apply to runoff. Can more land be provided to support infiltration during flooding events to decrease the volume of runoff and allow SS to settle out? Can other land use options be taken?

Once again, it would appear the TER simply (and selectively) reports information related to thresholds (although this is obscured further by the new methods, aggregation, and graphics), but fails to analyze what is affecting the threshold standards and how the Regional Plan must be adjusted and implemented in order to improve threshold achievement and maintenance. As seen by the review of the RPU DEIS, in many cases it appears the sources impacted the thresholds are *assumed*, rather than analyzed, resulting in TRPA taking actions (or inaction) that may fail to improve threshold standards, and may in fact harm them.

The TER includes a brief discussion of whether TRPA actions have been effective, stating:

Effectiveness of Programs and Actions – Insufficient data exists to quantitatively evaluate the effectiveness of any individual program or action implemented to improve the quality of Lake Tahoe Basin tributary waters. High inter-annual variability in concentrations of suspended sediment, which is thought to be primarily driven by variability in annual precipitation, complicates the determination of overall effectiveness of the *Regional Plan* and actions taken by Regional partners. Based on visual inspection of the overall long-term trend, it appears that compliance measures adopted in the *Regional Plan* and actions taken by Regional partners have at

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least maintained water quality, because tributary suspended sediment concentrations show no signs of increase.

Although it may be difficult to quantitatively estimate the impacts of individual/small actions, monitoring upstream of development and redevelopment areas and comparing those results to the downstream monitoring results would be one way to help evaluate the impacts of projects on a broader scale. This is yet another reason the cuts to the LTIMP program, which include chemistry data from sites upstream of development,⁹² should be disclosed in the TER and every effort taken to add these collections back into the program, let alone add more.

WQ-5 Stormwater runoff, surface water, WQ-6 Stormwater runoff, land infiltration to protect groundwater, and WQ-7, Other Lakes

These standards and indicators are essentially dismissed in the TER due to a lack of available information.

“Unfortunately, current and consistently collected data (i.e., consistent data collected between 2006 and 2010) were insufficient to analyze status and trends for Lake Tahoe’s littoral zone, surface and stormwater runoff, groundwater, and other lakes. Previous Threshold Evaluations (TRPA 2001, TRPA 2007) and reports (Lico 2004, NDEP 2004, 2nd Nature 2006, NDEP 2009, Lahontan and NDEP 2010, TERC 2011a) provide an evaluation and summary of available data related to these water quality topics.” (p. 4-1).

Why is the information from these reports, which date beyond the last threshold evaluation, not at least included in a discussion in the 2011 TER? The TER should make every attempt to include all relevant information. Even qualitative observations are more useful than no information. Further, we note the previous threshold reports would include more comprehensive discussions of all thresholds and indicators, thus providing readers with information about thresholds, even when adequate data were not available to assess the status (for the past twenty years, the status in such situations was clearly referred to as “unknown”).

Also, the TER should address why inadequate information is not available, what measures need to be taken to obtain adequate information, and what actions are recommended to help achieve and maintain thresholds. If the problem is a lack of funding, then what other mechanisms can TRPA employ to obtain funding? If the problem is technical, then are there adjustments to the standards or indicators that would be needed to protect water quality? Whether the benefits can be quantified or not, what actions are recommended to improve these standards? Are the standards protective enough? Of specific note is the fact that standards for stormwater runoff – one of the standards provided with the most attention in all of TRPA’s activities, let alone the proposed RPU alternatives – is not even evaluated in the TER. How can this be ignored?>

Nutrients in the Deep Water and the Nearshore of the Lake, and in Basin streams.

⁹² Details are discussed in our 6/28/2012 comments submitted on the draft 2011 TER, RPU DEIS and RTP DEIR/S documents.

Today's key sources of nutrients to the lake and streams are two: Fertilizers and Vehicle Emissions (Lake Tahoe Total Maximum Daily Load Technical Report. June 2010.)⁹³

The Primary Productivity Threshold for Lake Tahoe has been exceeded by 373% (Chapter 4, p. 4-16). Primary productivity (PPr) is the measure of algae concentrations in the deep waters. The exponential increase is caused by increased human use. Fertilizer use in the basin has increased along with the acres of lawns, turf, gardens, golf courses and sports fields. Due to the porous nature of Tahoe soils, and the dry climate, lawns, etc are generally overwatered. Fertilizer is used by plants as the fertilizer passes by the roots, and the amount that is unused is quickly mobilized through the soil and into the groundwater system, from which it is delivered to the lake in the nearshore, and eventually spreads throughout the water column. *See our comments related to fertilizer use, and the historical lack of agency action to follow-through on previous threshold recommendations, for additional discussion on fertilizers.*

Although the PPr standard was developed with the mid-lake in mind, the nearshore conditions have been degrading at substantial levels, and interest in determining the causes and solutions has been widespread for years. Unfortunately, no regulatory changes have yet been taken to begin aiding in any reversal of these declining conditions (see our comments regarding the nearshore 'threshold standard' that is being proposed).

Thankfully, TERC has been evaluating the shoreline concentrations of algae. The most recent reports including the following findings:⁹⁴

⁹³ http://www.swrcb.ca.gov/lahtontan/water_issues/programs/tmdl/lake_tahoe/docs/techrpt.pdf

⁹⁴ <http://terc.ucdavis.edu/stateofthelake/StateOfTheLake2011.pdf> (p. 10.8, 10.9)

BIOLOGY

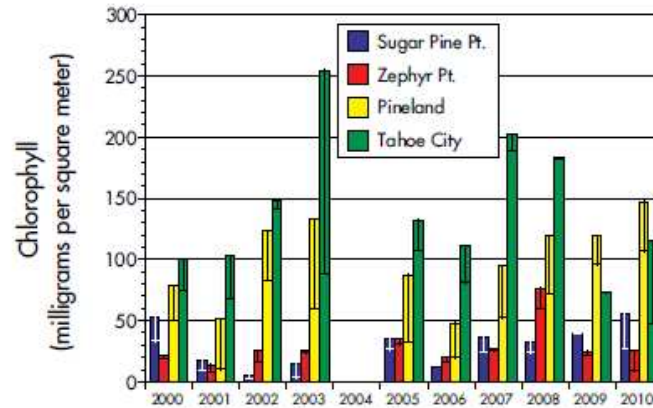
Shoreline algae populations

Yearly since 2000

Periphyton, or attached algae, makes rocks around the shoreline of Lake Tahoe green and slimy, or sometimes like a very plush white carpet. Periphyton is measured eight times each year, and this graph shows the maximum biomass measured at four sites. In 2010, concentrations were near

or above average. The two sites with the most periphyton (Pineland and Tahoe City) are closest to urban areas. Tahoe City was higher than the previous year but down from high values in 2007 and 2008 and remained lower than Pineland. Peak annual biomass at the less urbanized Zephyr Point site

remained down to the usual level, from the high value experienced in 2008. To date, no statistically significant long-term trend in maximum periphyton biomass has been detected at any of these individual locations. However, the higher biomass at the more urban sites has been dramatic year after year.



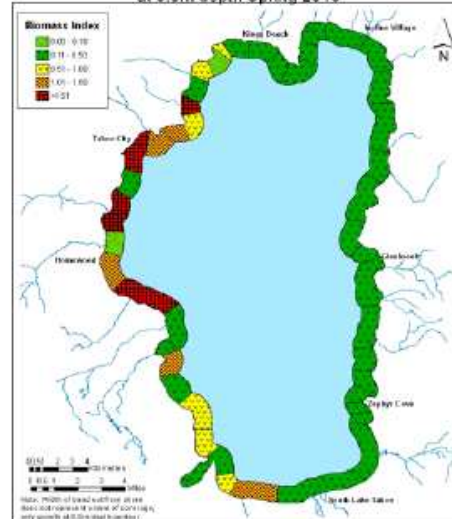
BIOLOGY

Shoreline algae distribution

In 2010

Periphyton biomass was surveyed around the lake during the spring of 2010, when it was at its annual maximum. Nearly 45 locations were surveyed by snorkel in 1.5 feet of water. A Periphyton Biomass Index (PBI) was developed as an indicator to reflect what the casual observer would visually detect looking into the lake from the shoreline. The PBI is defined as the percent of the local bottom area covered by periphyton multiplied by the average length of the algal filaments (cm). Zones of elevated PBI are clearly seen. (The width of the colored band does not represent the actual dimension of the onshore-offshore distribution.) Compared with 2008, there were higher concentrations of periphyton particularly in the north-east.

Distribution of Periphyton Biomass at 0.5m depth Spring 2010



Unfortunately, even as more and more information has pointed to the need to consider local impacts, local watersheds, and how impacts can have an effect across jurisdictional boundaries, the TER includes very little discussion of this information, and proposed changes actually exacerbate conditions by taking a more regional and/or “trade-off” approach (i.e. the changes in soil conservation and coverage).

Our understanding of nitrogen input to the Lake from vehicles is much greater than it was over 20 or 30 years ago. However, even then we knew the importance of vehicle emissions on the Basin’s air and water quality, and pursued a reduction in this impact through the development of a threshold standard for Vehicles Miles Traveled (VMT). This standard was included in the overall Air Quality Threshold Category although impacts to water quality were noted. The threshold required VMT be reduced by 10% of the 1981 value. See our comments regarding atmospheric deposition (AQ-8) for more detailed discussion).

Vehicles emit nitrogen into the air through tailpipe emissions. This airborne nitrogen will undergo several chemical reactions in the atmosphere, and eventually much of it deposits to the Lake and surrounding land (where it can now be captured in the land-based runoff contributions to the Lake). Once in the lake, the nitrogen mixes with the phosphorus, and adds to the nutrient soup that now supports existing or potential invasive plant and animal species in the nearshore, including milfoil, curly-leaf pondweed, Quagga and Zebra mussels, and warm water fish such as large and small mouth bass and bluegill. In some areas of the lake, the new nutrient soup has alarmed the local chamber of commerce and the locally elected politicians.

Impacts of other threshold-related changes on water quality*

What impacts may occur to all water quality threshold standards from the proposed changes to the soil conservation threshold (and resultant coverage policies) that will increase runoff volumes, decrease infiltration, and result in other changes that can all impact water quality in the lake, tributaries, intervening zones, groundwater, surface runoff, and so on (see soil conservation comments below)?*

2011 Proposed Threshold Updates, Water Quality (RPU DEIS, Appendix B):

Although we comment on the updates throughout our letter, here we provide general comments and questions with regards to the proposed threshold updates in the RPU DEIS:

Nearshore (Littoral) Water Quality:

TASC has for years encouraged the creation of a threshold amendment for nearshore attached algae, and supports the proposal to adopt one in the current documents,⁹⁵ although we have several concerns with the process and what is actually proposed. From RPU DEIS Appendix B, proposed standard:

Nearshore Attached Algae

MANAGEMENT STANDARD

Support actions to reduce the extent and distribution of excessive periphyton (attached) algae in the nearshore (littoral zone) of Lake Tahoe.

Although TRPA has included a proposed threshold standard for nearshore in the RPU DEIS, it does not go far enough to protect the nearshore. What does the science say needs to be done to reduce nearshore algae? What “new” actions have been introduced that will reduce nearshore algae? Where is the comprehensive review of the information behind this proposed standard? Why are there no numerical standards proposed? What is meant by excessive? (We have kept the different colors in Appendix B in tracked changes form in the copied text above, although why they are different does not appear to be explained).

Is a standard focused solely on nearshore attached algae a relevant threshold for sand or mud textured nearshore in the south shore and other shallow shorezones? Does the proposed threshold expect to have attached algae? To the sand? The agency should examine another littoral standard not involving attached algae.

TASC also suggests that the agency re-consider turbidity as a nearshore threshold – and determine if there has been sufficient monitoring to determine what % of the time the littoral sediment loading (turbidity) standard is exceeded along shallow lake shores with sand or mud bottoms.

The Littoral standard has not been fully evaluated in terms of alternate nearshore types, nor have the draft TER or DEIS addressed the multitude of invasives, from various algae types, to benthic invertebrates, to milfoil and curlyleaf pondweed, to the non-native mussels and clams and warm-water fish. The TER and DEIS fail to evaluate the alternate stressors on the nearshore or even if the current turbidity standard has been adequately monitored.

Further, by introducing a new standard after the RP update, and with so little associated analysis and information, it is impossible for the Regional Plan to include adequate measures to attain the new nearshore standard. Like much of this process, the post-update adoption of a key environmental threshold is completely backwards.

Mid-lake clarity:

The RPU DEIS should consider threshold updates which address the cause of clarity loss based on the most recent findings (e.g. 5 microns or less).

⁹⁵ 2011 TER states: Additionally and indirectly related to phytoplankton productivity is the need to consider adopting a Threshold Standard for nearshore periphyton (attached) algae. TERC (2011a) reported that periphyton algae have increased in abundance and distribution in recent years.

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The RPU DEIS should consider updates that would address the seasonal differences in mid-lake clarity. Note the following research updates from the 2011 State of the Lake Report by TERC:

Of the last three years, 2008 had the greatest winter Secchi depths, with two measurements in February exceeding 97 feet, the California water quality standard. These high clarity events are the result of circulation patterns called “upwellings”, when westerly winds cause clear bottom water to rise up to the surface. In early spring of 2008 there were two additional upwelling events. By contrast, 2010 had no upwelling events that affected the annual average measurement. A second factor in the lower (less clear) winter clarity in 2010 was the absence of deep mixing (see Page 8.9). In 2010, the lake only mixed to a depth of 550 feet, slightly less than the 700 feet that occurred in 2009 and considerably less than the complete 1,645 foot mixing that occurred in 2008. The deeper the mixing, the greater is the dilution of the upper waters, leading to improved winter clarity. The two low Secchi depth measurements in February-March 2010 are likely a consequence of the lack of deep mixing.

Summer clarity in Lake Tahoe in 2008 and 2010 were the lowest values ever recorded (50.4 feet and 51.9 feet respectively). Unlike the winter clarity pattern, where there is a longterm trend of declining and then improving clarity, the summer trend is dominated by a consistent longterm decline (dashed line) but with a noticeable 10-15 year cyclic pattern. This is clearly visible in 1968-1983, 1984-1997 and 2000-2010. For about the last decade there has been a nearcontinuous decline in summer clarity. The reasons behind this periodicity are being investigated, however, there is some evidence pointing towards a possible cause of the most recent decline.

As our research has shown, increasing concentrations of fine particles is one of the principal factors affecting Lake Tahoe’s clarity. While light scattering by fine inorganic particles introduced by urban stormwater is a major concern, the production of algal cells, and especially diatoms that both scatter and absorb light, is also important. The presence of excess nutrients is a factor that will influence their abundance.

It is reasonable to ask why there is this recent increase in small diatoms. In a recent paper, (Winder, M., Reuter, J. E. and Schladow, S. G. 2009. “*Lake warming favors small-sized planktonic diatom species*”. Proc. Royal Society B. 276, 427-435.), it was argued that climate change was warming and stabilizing the upper waters in Lake Tahoe (see Page 8.8). The greater the density difference between shallow and deep water, the greater is the resistance to mixing. This physical phenomenon in turn imparts a competitive advantage to the smallest algal species, such as the diatom *Cyclotella*, that sink slowly and therefore can stay suspended in the light for a long period of time. The increase in the annual average numbers of *Cyclotella* from 1982 to 2010 in the upper 100 m of Lake Tahoe are plotted below. While high values occur in several years through the record, there is a clear upward trend from about 2000, coinciding with the start of the most recent period of decline in summer clarity.

The most startling revelation in the data is the spatial variation in nearshore clarity as we move around the shoreline. The eastern side of the lake, particularly from Stateline Point in the north to the eastern end of South Lake Tahoe, consistently shows the lowest Secchi depth values (lowest transparency). Looking, for example, at the plots for May and June, the region from just south of Glenbrook to Stateline has nearshore Secchi depths in the range of 45 feet to 53 feet (14 to 16 m) compared to values of 60 feet to 63 feet (18 to 19 m) around Rubicon in California.

The causes of these spatial differences are currently being studied, but it appears to be closely linked to the patterns of water movements around the lake. **What happens in the waters of Lake Tahoe is a direct reflection of activities in both states. If a concrete example of why Lake Tahoe needs to be managed jointly by the two states is needed, then this is one.**

Recreation:

The 2011 TER continues the lack of adequate analysis of recreation capacity that has been a failure in previous threshold evaluations. Given that the primary reason for

tourism to the Basin, and reason for development of the TRPA Compact, goes back to the Basin's outdoor environment, it remains surprising that recreation - especially non-motorized recreation that relies on the natural values provided by the environment – has been given relatively little consideration. What measures are needed to protect the non-motorized recreation opportunities in the Basin? What is the carrying capacity for recreation? What level of recreation begins to negatively impact other thresholds, and what limits and other regulations are necessary to protect all thresholds (including recreation)? What are the direct and indirect impacts of increasing one type of recreation – ski resorts – on other types of recreation (hiking, sight-seeing, etc.)? For example, how would the proposed “villages” in the recreation-zoned areas of the Heavenly Ski Resort impact soils? Water Quality? Air Quality? Noise?

How many hikers on a trail are too many? How can user conflicts (e.g. hikers versus bikers) be addressed and minimized? What options are available to protect the quiet, serene experience of non-motorized uses such as snow shoeing and X-C skiing from the intrusive noise of motorized recreation (e.g. snowmobiles)?

Peer review comments also exhibited a surprise at the sparse nature of the recreation chapter (excerpts included below):

Chapter 11. Recreation

I was surprised at how sparse this chapter was. I would think that it would be helpful to present more socioeconomic metrics in this section to potentially associate with the ecological indicators. Ultimately, we would all benefit as citizens if there were really reliable and comprehensive indicators of the value of our natural resources (essentially eco-services in EPA parlance).

...

“The major criticism of the chapter on recreation is that it is so brief that it is difficult to make an assessment of the write---up associated with each indicator or to evaluate whether it is clear and complete. Likewise, it is difficult to judge whether the analytical methods are appropriately applied in the determination of an indicator's status, trend, and confidence. The chapter begins by saying that the Lake Tahoe area, “offers an abundance of recreational opportunities that are highly valued by visitors and residents. These recreational resources are one of the major drivers of the regional economy, and contribute to the quality of life in the Basin (TRPA p. 11---1)” and then presents just slightly over five pages of descriptive narrative. It is surprising that the chapter totally abandons the format displayed in the other chapters that includes a graphical portrayal and narrative in table format for each indicator. Such a display of the indicators and their assessment data would make it much easier to assess how well each was in attainment of the threshold targets...In conclusion, the information presented in this chapter was neither compelling nor adequate to support the finding that the thresholds are currently in attainment.”

...

“Overall Chapter 11 Comments: This chapter is very sparse in detail – especially when compared to the other resource chapters I reviewed. More detail could be presented to demonstrate: (1) existing types/acres of recreational opportunities/facilities available; (2) trends in these opportunities and facilities; and (3) geographic location. For example, in the last paragraph on page 11-2, the text notes that 93 recreational facilities have been constructed or rehabilitated under EIP's recreation program. More detail would give the reader a better understanding of the types, extent and location of these projects. Also, trail/access connectivity is not addressed here, but is discussed later in Chapter 13. I suggesting adding more discussion of connectivity and networks to this chapter.”

Soil Conservation/Coverage:

Ominously, the TRPA has determined to present a fatally flawed re-interpretation of the 1974 study, which is contained in the Threshold Evaluation Report (Chapter 5 and the EIS Appendix H.)

The single most critical environmental impact issue in this enormous array of documents and thousands of pages of text, maps, graphs, tables, and figures is the Soil Conservation Threshold.

The TASC comments cite Hydrologist Matthew Hagemann, the 1974 Land Capability Classification of the Lake Tahoe Basin, California-Nevada, Robert G. Bailey, USDA 1974 and 1971 map and text enclosed in the study, the Seattle Stormwater Manual Vol 3, the Maryland Stormwater Manual, the 2003 monograph by the Maryland Watershed Center titled Impacts of Impervious Cover on Aquatic Systems, the Tahoe Pipe Club YouTube films and other documents related to the importance of filtration of stormwater by soils through various techniques, from protecting soil in the first place, removing impervious cover, infiltrating stormwater into the soils, retention of stormwater, and value of restoring soil, among other treatments.

- A. The TER Chapter 5 begins with an introductory paragraph that in the first sentence demonstrates the inadequacy of the evaluation and the disconnect between the text and some ecosystem facts. Soil conservation in the Tahoe basin is not needed for prevention of the Tahoe soils from acidification or salinization. This is blatantly misinformed, as no such soils exist in the basin, so a set of techniques to protect them from such dangers, is ridiculous. And the paragraph ends with the suggestion that one of the functions of soil is to provide “a platform for urban development.” As a Wikipedia definition, perhaps, but the TASC seriously doubts that one can equate an ecosystem value (soil) with a development support system. It ranks right up there with saying a tree is a tool of urban development.

The “platform” sentence captures the true intent of the evaluation along with the appendix for this threshold evaluation, all of which is focused on the re-interpretation of the threshold standard to support more impervious cover and more development in the basin at the least cost. The method and importance of least cost of development is further described in EIS Appendix H which is a treatise devoted to a market view of soil, or soil conservation as an ecosystem value to be overridden by market and commodity-trading systems. Soil as a fungible commodity might be appropriate for farming, but it is not acceptable as a tool to get around ecosystem protection for one of the nations’ great treasures, and for protection of ONRW waters - a designation that prevents additional pollutant discharges to such waters. The Compact is quite clear, that “increasing urbanization is threatening the ecological values of the region and the public opportunities for use of the land”. (Compact, Art I (5)). The proposal, buried in the bowels of an EIS appendix and based on an alleged threshold evaluation, is in blatant opposition to the Compact’s declaration of policy.

The TER evaluation includes the quote from Robert Bailey, author of the Land Capability study, the study which recommended specific caps on impervious cover, up to a maximum of 30% of a site or parcel. Bailey described impervious cover as “the most critical element in the land disturbance that has created the basic environmental problems facing the Lake Tahoe basin – water quality degradation, flooding, and soil erosion.” The rest of the quote, which is not quoted in this evaluation is “It [impervious cover] is also considered the most accurately, measurable and constant expression of development impact.”

But then the evaluation goes right off the rails, by attempting to make a case that the Bailey report shouldn’t apply the coverage standards to individual parcels or sites and that: “best available science and technology have been used over time to estimate the quantity of impervious cover within the Lake Tahoe Basin.” (page 5-4, Chapter 5, Threshold Evaluation) And then the TER makes the giant leap to two tables (5-3 and 5-4, pgs 5-8 to 5-9) that evaluate total land coverage in the basin and find that there is a large amount of coverage that can be used in areas that are already overcovered.

By ignoring the impacts of coverage on adjacent creeks and streams, and by ignoring the increase in volume and velocity of stormwater runoff to the lake that are hallmarks of increased impervious cover, the threshold evaluation has made a case for counting the undeveloped public Forest Service lands and the associated potential coverage and using that unused coverage in the current existing areas where impervious cover is well beyond its allowed caps. (IKONOS 2002).

Once the agency takes that step, the need for the Soil Conservation Threshold is lost and the market can decide where impervious cover should be placed. In exchange for healthy soil, the recommendation in the RPU DEIS Hydrology and Water, Chapter 6 is to build large, expensive and experimental stormwater treatment systems at great cost to the public taxpayer. If an ounce of prevention is worth a pound of cure, covering soils is the wildly expensive choice.

The Threshold Evaluation provides no science that proves that Forest Service’ 148,000 acres of land that lies uphill of the urban impervious coverage is either available or usable to naturally treat the runoff from the downhill urban areas. *So far as we know, water still runs down the mountain, not up.* The Forest Service lands cannot rationally be used to cover-up for additional development that exceeds the existing impervious coverage caps, in order to meet developer needs expand impervious cover in areas that already contribute to the loss of clarity in the deep waters and the loss of clarity in the nearshore.

The Regional Planning process has not been performed in the correct order, and, as a result, the proposed changes to coverage policy have created a situation in which numerous exceptions are being made to the established impervious coverage threshold, creating an environment in which the existing standard could never be attained. The

illogical way in which TRPA is conducting this process directly undermines its fulfillment of its core mission, to restore and protect Tahoe's environment by ensuring the thresholds are achieved and maintained. Prior to proposing Regional Plan alternatives, the TRPA should have evaluated the thresholds and determined if updates were needed to the threshold standards, including the indicator for impervious coverage, then used those updated standards to propose a plan to attain those thresholds and then put forth an EIS that evaluated whether the proposed policies attained the thresholds.

As it stands today, the impervious coverage indicator detailed in Resolution 82-11⁹⁶ is the indicator that must be attained. This indicator has not been proposed for change, therefore the Regional Plan must conform to this indicator and the EIS must evaluate the coverage policies based on this indicator. Unfortunately, the Regional Plan makes numerous exceptions to the indicator which cannot be adequately mitigated in a manner that would ensure compliance with Resolution 82-11.

Further, as noted previously, what impacts do the proposed changes to the soil conservation thresholds have on other threshold standards (e.g. water quality)? This is not assessed in the TER or the RPU/RTP documents.

Comments submitted by the CA Attorney General also document the inappropriate interpretation of the soils threshold.⁹⁷

As indicated in the DEIS, when TRPA adopted environmental threshold carrying capacities that the Tahoe Regional Planning Compact required, they included a soil conservation threshold standard which requires that "impervious cover . . . comply with the Land-Capability Classification of the Lake Tahoe Basin, California-Nevada, A Guide for Planning, Bailey, 1974." ("Bailey") (See TRPA Resolution 82-11.) The DEIS assumes that Bailey's coverage limits are intended to be applied on a Basin-wide level, as opposed to smaller units within the Basin. It June 27, 2012 Page 3 therefore concludes that since certain proposed coverage changes will not exceed Bailey on a Region-wide basis, the changes will not have significant soil or water quality impacts. The DEIS does not, however, provide support for that assumption. To the contrary, it both conflicts with the only Federal District Court ruling that reviewed this question, and with the environmental impact statement that supported the adoption of Bailey as a threshold standard.

The DEIS is also inconsistent with TRPA's Environmental Impact Statement for the Adoption of Threshold Environmental Carrying Capacities, May 1982 (hereinafter "Threshold EIS"). That document's review of how Bailey applies to new developments, subdivisions and watersheds confirms that it was not premised on a Basin-wide calculation, but rather was intended to be applied at the development, subdivision and watershed levels. It thus states that "[t]he threshold recommended for impervious coverage would insure **new development** be in compliance with the Bailey Land Classification System and provide for protection of the soil resource." (Threshold EIS, p. 88; emphasis added.) The term "new development" indicates that the Bailey threshold is to be applied to each proposed development project, rather than Basinwide. Moreover, the Threshold EIS goes on to state: "[i]n many areas the threshold for coverage has been exceeded on a **watershed or subdivision basis**. Mitigation or retrofit is necessary to minimize those impacts

⁹⁶ http://www.trpa.org/RPUEISReferences/General%20Refs/3.4_TRPA%201982_Resolution%2082-11.pdf

⁹⁷ Comments on the Regional Plan Update Draft Environmental Impact Statement. Submitted June 27, 2012. By Daniel L. Siegel, Supervising Deputy Attorney General, for Kamala D. Harris, Attorney General.

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created by large areas of impervious coverage.” (*Id.*, emphasis added.) This further shows that the threshold was intended to be applied to areas no larger than a subdivision. The fact that the Bailey threshold applies to local areas rather than Basin-wide is also reinforced by the Threshold EIS’s finding that “[c]overage overrides and variances have permitted more impervious coverage **in many areas** than can be mitigated naturally by the remaining areas not covered.” (*Id.*, emphasis added.)

The EIS and 2011 Threshold Report misinterprets the manner in which the impervious threshold indicator should be evaluated

Coverage in the EIS and the 2011 Threshold Evaluation are analyzed on a region wide basis rather than a parcel level basis as was indicated by the Bailey Report. The EIS and Threshold Report examine coverage within each land capability district rather than on a parcel basis. Judge Neilsen’s 1985 opinion (766 F.2d 1308, *State of California v. Tahoe Regional Planning Agency* (1985), paragraphs 48 and 49, <http://law.justia.com/cases/federal/appellate-courts/F2/766/1308/302803/>), is clear that coverage must be evaluated on parcel basis rather than a watershed or region wide basis. The Soils Chapter 3.7 does not acknowledge the necessity to evaluate on a parcel basis, yet the Hydrology Chapter 3.8 supports Judge Neilsen’s opinion stating that the Bailey land capability system is “considered necessary in the Region to protect water quality and preserve environmental balance at the individual parcel scale.”

The EIS provides no information regarding the number of parcels in the basin that are over covered or how many additional parcels will be over covered in the proposed Regional Plan. The FEIS must provide such an analysis at the parcel basis. It would also be helpful to provide an analysis on the Plan Area Statement (PAS) basis, subwatershed basis, and HRA basis as was performed in the 2006 Threshold Report. This analysis is lacking in the 2011 Threshold Report. Once such an analysis is provided, then the true impacts of the proposed Regional Plan changes can be ascertained. Until such a time, the EIS cannot adequately determine the impacts of the proposed policies on the threshold indicator and the current evaluation of impacts in the EIS is invalid as it only evaluates region wide impacts rather than parcel or small scale impacts. Again, conducting an environmental analysis on the proposed alternatives for the Regional update prior to completing and integrating a finalized threshold evaluation is illogical and weakens the ability for the TRPA to ensure the thresholds are achieved.

Furthermore, the 2011 Threshold Evolution Report did not have an Environment Assessment. TRPA staff explained this was because the RPU DEIS served as the environmental analysis that would otherwise have been included in an EA. As repeatedly noted throughout our comments, the RPU DEIS fails to adequately analyze the environmental impacts of numerous proposals, and fails to provide an objective, thorough, scientific analysis of threshold updates.

Page 3.7-2 - Table 3.7.1 – 2011 Status of the Soil Conservation Threshold Standards

Table 3.7.1 is based on the threshold evaluation report that examines the amount of coverage within each land capability district on a regional wide basis rather than on a parcel basis. Bailey needs to be assessed on a parcel basis (766 F.2d 1308, *State of*

California v. Tahoe Regional Planning Agency (1985)), not an aggregated regional or watershed basis. The opinion states on Page 6 of 7 that “.....TRPA points out that the impervious cover threshold was adopted as a management standard and argues that it does not consist solely of the numerical percentages in the Bailey Report. TRPA further points out that it has determined that the threshold is to be applied on a ‘watershed association’ basis, rather than ‘parcel-by-parcel.’ TRPA is indignant that the district court did not defer to its interpretation of this threshold. We find TRPA’s protests unpersuasive.” Therefore the EIS analysis is ineffective at determining how many parcels (or for that matter, Plan Area Statements, subwatersheds, or HRAs) are over-covered. Location of coverage within the watershed is an essential component to analysis, not just the amount of coverage (USEPA Caddis) (http://epa.gov/caddis/ssr_urb_urb4.html).

The threshold evaluation reports up to 2006 did not examine coverage on a region wide basis, but the 2006 threshold changed without reason to the way that this threshold standard was reported and moved to reporting on a number of different scales including a region wide basis. However, the 2011 report takes a drastic turn and deviates further by only evaluating impervious coverage on Basin wide basis and not any other scales. The 2001 report is located at http://www.trpa.org/documents/docdwnlds/Historic/2001_THRESH_EVAL_7-2002.pdf (page 357 of 857). The 2006 Threshold Evaluation is located at <http://www.trpa.org/default.aspx?tabindex=1&tabid=174>

The Regional Plan polices must ensure attainment of the impervious coverage threshold. However, if the EIS analyzes the threshold at a scale not intended by Resolution 82-11 then the EIS cannot evaluate the impacts that occur to the threshold. The EIS has failed by only evaluating impacts at the Basin-wide scale. The proposed polices may have extremely significant impacts that were not identified by not analyzing impacts at the scale intended by Bailey.

** Because the RPU DEIS has so clearly used changes proposed in the draft 2011 TER to soil conservation, we repeat many comments on all documents below.*

SOIL CONSERVATION THRESHOLD, 2012 THRESHOLD REVIEW, 2012 REGIONAL PLAN AND EIS AND APPENDIXES AND TECHNICAL APPENDIXES, REGIONAL TRANSPORTATION PLAN AND EIS, AND THE CODE OF ORDINANCES.

The 2012 Regional Plan must “achieve and maintain the environmental threshold carrying capacities” Art V(c). Thus, the contents of Chapter 5, Soil Conservation, is an integral part of the EIS Chapters 3.7 and 3.8, appendix H, the Regional Plan Alternatives, especially LU 4.5-10, and the Code of Ordinances, as well as the RTP and its EIS in terms of impervious cover and stormwater runoff. Thus, all of these pieces must be reviewed and analyzed in the context of the Regional Plan EIS.

Soil Conservation, or conserving soil, is a simple concept for Lake Tahoe. The lake, after thousands of years of being replenished by rain and snowmelt filtered through natural

soils and native vegetation, was fabled for its crystal clarity. Congress took note of that crystal clarity in choosing to create a Bi-State Compact to protect the lake.

But man's intrusion soon resulted in impacting that clarity. Fortunately, it was recognized that the adverse impacts of rain and snowmelt running off asphalt, concrete, roads, parking lots, roofs and even turf, and thence into the streams and lake was a bigger problem than had been understood. The USFS brought in a geomorphologist, Robert G. Bailey, who applied new science about impervious cover to the Lake Tahoe basin. The USFS, with TRPA as a partner, produced Bailey's study, entitled Land-Capability Classification of the Lake Tahoe Basin California-Nevada, 1974, accompanied by a map (Land Capabilities, 1971) that described the basin's land classifications and relative responses in order to regulate impervious cover in the basin. The new regulations limited the amount of pavement and roofs and other hard coverage for new development, and was generally followed for the next 40 years.

Significantly, the 2012 Plan uses its 2011 Threshold Evaluation Chapter 5, the Technical Appendix to the EIP, and Section 3.7 EIS, to introduce a new version of applying coverage limits and turns serious impervious cover science on its head. Instead of applying the Bailey limits of the coverage standards to each parcel, the Plan here proposes to apply it to Tahoe as one watershed, rather than its 64 watersheds and 52 intervening areas. Under the RP, the entire basin is to become a single watershed, and all of the land in the basin becomes land in that one watershed, thus all the land in the basin can be used to determine the total amount of impervious cover. Under this new concept, the agency has determined that all of the non-urbanized areas that lie above or adjacent to the existing urban areas (and 75% of the land in the basin, as merely part of the land over which coverage could be applied at the Bailey standards, or used to allow unlimited impervious cover in the urban areas that surround the lake. (See RPEIS Geology and Soils Chapter 3.7, Threshold Evaluation Soils Chapter 5, Regional Plan Conservation Chapter 3.7, Regional Plan Land Use 2.1, Natural Hazards limit on floodplain designation, Hydrology and Water Quality pg 32-36, and EIS Appendix H), and is referred to in various other sections of the EIS including Implementation and Alternatives).

The process is not credible, and it throws into question the capacity of the agency to protect the lake from Tahoe's urban pollutants, including fine sediments, phosphorus, and nitrogen. Instead of rallying to stop additional cover and to reduce existing cover,⁹⁸ the

⁹⁸ *Peer review comments disagree with changes allowing more Impervious Surfaces (IS), instead suggesting strongly a policy which reduces them:* "p. 5-6. I disagree with the way the TOTALS are presented in Table 5-2. Their analysis in essence has set a somewhat arbitrary allowance for IS within classes and then allowed ISD to increase to this maximum. Since the lake and tributaries are, and have been, stated to be Impaired in sense of the Clean Water Act, it seems imprudent and flawed to have an IS policy that continues to allow further conversion to IS as a "Target." Rather, a reasonable policy would be not increase IS within a class unless a very strong case can be made for a variance. This would also require a public hearing in my view. No net increase in Impervious Surface is a policy gaining traction in regions with water resources that are still in good shape, but threatened. Duluth, MN has such development ordinance. Various Low Impact Design features on development sites can then be promoted along with proper training for architects, landscapers, and contractors."

Regional Plan and Regional Transportation Plan provide for more coverage by increasing the size of the pie. This results in more parking lots, more dense building, more roofs, sidewalks, walkways, paved bike trails, more new road pavement, and more commercial facilities.⁹⁹ There are even suggestions of adding 500 sq ft decks to every house, more parking for recreational activities, and more coverage in very fragile Class 1A lands, known for their quite steep, rocky landscape, from which runoff is highly flashy and overwhelms neighborhood detention basins. (Example, Lincoln Creek, Douglas County, NV)

One example is in Kings Beach, where the existing urbanization is about 117 acres and is about 28% covered. (IKONOS Excel Spreadsheet (found in TRPA Archives, 2002). But the TRPA RP (Chapter 13.5.3) proposes to re-zone Kings Beach to “Town Center” at 70% impervious cover, with the expanded pool of land that offsets the total impervious cover. Thus Kings Beach could add an additional 43% pavement, roofs, etc equal to 50 more acres of hard cover, or more than 2,178,000 sq ft. For a small town, the impacts, immediately adjacent to the lake, would be horrendous. Algae blooms and milfoil die-offs as a result of the astounding amount of nutrients in the stormwater runoff from the adjacent paved surfaces and roofs would result. A future summer at the Lake at the Kings Beach State Park would be a nightmare.

A second serious issue is the use of the new 2007 soil survey, to replace the old soil survey from 2001. While that agency asserts that the two surveys are similar and offers an explanation of the differences, they fail to explain the difference in the most basic element – the intent of the survey. The 1971 soil survey was used as the basis for a geomorphic classification of the land. The survey was used, not just for the soil type, and slope, but for other aspects of the soil, including vegetation, aspect, and potential for flooding. As the Bailey report states “nature has balanced physical variations in the local environment with differing vegetation covers, resulting in stable slopes. Such ecological balances are often extremely delicate. Failure to recognize the nature of the balance, and consequently the limits of vegetative disturbance permissible before such balances are upset, has led to land development in places where only ecologic damage can be expected.” Further, the report states, “The [soil] classification is an interpretive grouping of kinds of land made primarily for the purposes of erosion control and maintaining ecological balances.”(Bailey, emphasis added). (See pages 14 -17 of Bailey for further discussion of the morphologic patterns of the geomorphic settings used in the study).

In contrast, the 2007 soil survey was “based only on soil type, erodability, and slope”. (TRPA, Threshold Review, Chapter 5 p 5-5.) The end result of the change in intent, plus changes in methodology, has resulted in more acres of fragile soils reclassified to a less fragile state, and thus available for more development.

⁹⁹ *Resulting in more runoff and pollution, as noted in peer review comments:* “5-8. I disagree with the statement under OVERALL that states that interim targets are not needed for land classes where IS was below the target for the reasons described above. The science of how IS relates to water quality in flashy streams like those at Tahoe and in my own North Shore of Lake Superior is very young and guidelines are general at best. IS leads to excess flow, high peak flows, lower base flows, increased channel and bank erosion, increased sediment and nutrient discharge. A no net increase in runoff guideline or ordinance at least in many areas of the basin seems warranted.”

Another result of the 2007 survey was that lands in floodplains, determined in the Bailey study to be Stream Environment Zones (SEZ), were not mapped as SEZ by the new study for two reasons – the soils were not classically SEZ, and some had dried too much to retain evidence of water. Since streams and rivers do flood, and globally floods appear to be increasing significantly, Tahoe floods are quite likely to be larger as well. Flooding is an overlooked hazard (see SEZ comments) by the agency that development in flood plains can worsen. Floods that float cars and damage houses cause additional water quality damages.

HISTORY

The lake was already beginning to exhibit signs of degradation in the 60s- - algae on rocks and pier pilings that had never been there before, algae blooms, and plumes of dirty water rushing into the lake from streams running from newly developed areas. Forty summers ago, the lake was about 43 feet clearer, and the nutrient concentrations that feed algae were 373% less. The lake's clarity fluctuates with the weather – temperature, wind, volume of rain and snowmelt, and over the last ten years it has fluctuated up to almost four feet between years.

Note that the trend is still steadily down, and the clarity of today is a far cry from the clarity of forty-four years ago – winter clarity of 110', summer clarity of 94.1' compared to 2011, when winter clarity was 84.9' and summer clarity was 51.4'

History of the Thresholds and Regulations that Protect Tahoe

The Tahoe Regional Planning Agency (TRPA) is mandated in its Regional Plan (Article V(b) Tahoe Regional Planning Compact, 1980) (Compact) to develop and adopt environmental threshold carrying capacities (ETCCs or thresholds) to maintain a significant “set of the basin's natural value[s], which it defines as “a scenic, recreational, educational, scientific or natural value of the region..” (Article II(ii))(Compact) defines and lists five standards that must be adopted and names them as “air quality, water quality, soil conservation, vegetation preservation and noise.”(Compact, Article II (ii))

The Threshold Standards are foundational standards for the agency and distinguish the revised Compact from the first TRPA Compact by directing, through the threshold standards concept, a significantly better job of protecting the Tahoe basin from the litany of environmental problems described in the declarations in Article I .

While the revised Bi-State Compact required the adoption of the Threshold Standards (thresholds), it gave the agency, with the help of the federal government, 18 months to develop the threshold standards. Those standards included the five mandated threshold standards, plus four others – scenic, recreation, wildlife and fisheries, all of which were adopted by the TRPA. The Compact also mandated the TRPA to adopt a revised plan “that, at a minimum, the plan and all its elements, as implemented through agency ordinances, rules and regulations, achieves and maintains the adopted environmental threshold carrying capacities.” Article V(c)

Thus, the Compact was quite clear that the ETCCs were to be both achieved, and maintained, and it specifically says that the threshold standards must be met by the plan and all its elements. The Compact stated that “it is imperative that there be established a Tahoe Regional Planning Agency with the powers conferred by this compact including the power to establish environmental threshold carrying capacities and to adopt and enforce a regional plan and implementing ordinances which will achieve and maintain such capacities while providing opportunities for orderly growth and development consistent with such capacities” (emphasis added, Compact, Art II(b)).

The Soil Conservation threshold was adopted in two pieces – first, attainment of a limit on Impervious Coverage (hard coverage such as asphalt and concrete and roofs) on the basin’s natural resource of soil, and second, the protection and restoration of stream environment zones (SEZ) both as defined by Robert G. Bailey. (Land Capability Classification of the Lake Tahoe Basin, California-Nevada, 1974) (Bailey).

In order to attain the standard for conservation of soil, the agency identified levels of soil cover as restricted by the Bailey report, but the agency added damaging exceptions and overrides for several uses. All public roads were exempted, based on the old plan, and, in counting coverage, were not counted. Thus a significant amount of impervious coverage tracking was erased from the records of the time, and other exceptions inhibited the future protection and conservation of the soil.

The revised Compact also requires that the “governing body shall continuously review and maintain the regional plan”(Art.V(c). The TRPA determined, at the time of the adoption of the ETCCs, to produce and publish a review of the ETCCs every five years in order to comply with that direction.

The agency’s history of evaluating and planning future improvements to Soil Conservation, or conservation of soil, is addressed in each of the following Threshold Reviews, in terms of the agency’s intent to achieve the threshold standard.

The 1991 Review of the Soil Conservation Threshold stated that:

- “Natural watersheds are very effective at removing nutrients from incoming precipitation. Removal rates up to 100 percent have been observed in natural areas. Overland runoff is rare in natural areas.”
- “If rain or snowmelt exceed a soil’s infiltration rate, water will flow overland. Vegetation removal, soil compaction, and soil removal decrease infiltration capacity.”
- “Urbanization of the watershed increases runoff and yields of sediments and dissolved nutrients. In developed areas, man-made drainage ways [gutters and drain pipes] increase drainage density and short-circuit natural treatment systems. The control measures of the Regional Plan [limits on impervious cover and BMPs] are designed to counteract these impacts”
- “Increased sediment production affects fish spawning, turbidity of receiving waters, channel stability, aesthetics, fish habitat, and nutrient

loading to Lake Tahoe.”. pp. 22-25, (1991 EVALUATION, Environmental Threshold Carrying Capacities and The Regional Plan Package, TRPA, Nov 20, 1991)

The 1991 Evaluation also listed 4 recommendations for improvement under section I. Measures in Place for Soil Conservation(no page numbers):

- Expand BMP monitoring
- Require retrofit of BMPs on existing uses
- Expand monitoring and implement revegetation
- Limit land coverage to the limits of the Bailey Report.

The 2001 Review (TRPA July 2002) of the Soil Conservation Threshold stated:

Since the late 1970’s agencies have used the Bailey system “to analyze applications that add new land coverage to existing developed lots”.....these programs were developed as erosion control techniques to mitigate the deleterious effects to water quality that result from excessive land coverage.” (Chapter 4 Soil Conservation, p 4-1).

The 2001 Review recommended eight measures to advance the path to achievement of the threshold standard. It also asserted responsibility for restoring 625 acres of SEZ by October 2006.

And the 2001 Review was forthright in honestly disclosing that the attainment status for all three evaluations, 1991, 1996 and 2001, was non-attainment.

By the 2006 Threshold Review, the TRPA was beginning to change its approach to the threshold standards. From the former detailed review and efforts to describe the status of each indicator, the report began to narrow its scope, reduce the level of evaluation, and produce a more general review. This resulted, for Soil Conservation, in a report that began to explore the potential for changing the Bailey coverage standards, reduce future work products, monitor less, and generalize the evaluations. For example, and in comparison to the previous reviews, the 2006 Review reports the status of the eight 2001 recommendations to improve the Impervious Cover regulations as two completed, five incomplete, and one “ongoing”. The “ongoing” recommendation was to “amend excess coverage mitigation program to increase the retirement of hard coverage.” The review says that “the removal of existing coverage allows soil resources to be restored.” The effort to amend the excess coverage mitigation program is today, ten years later, still “ongoing.”

Also, a primary 2006 Recommendation is to change the threshold standards and instead focus on a new desired condition in which “The effects of impervious cover and disturbance are fully mitigated on a stormwater zone basis.”

This contrasts with the past, when impervious cover limits and removal were the mitigation for polluted stormwater runoff to the streams and the lake. The comparison is

from using the natural systems to using engineered systems, and abandoning the ecosystem values of soil.

Peer review comments also get right to the heart of the matter, asking the following question (Appendix E):*

“Question – Does the Plan target a net reduction in Impervious Surface? There is presumably too much already considering the continuing WQ issues.”

Stormwater Treatment replaces limits on Impervious Cover

In terms of energy, money and effort, the agency then spent its time working to upend the Bailey system and install a mitigation for significantly more impervious cover in exchange for engineering and technology to solve an ecosystem problem. Reports, including the Lake Tahoe EIP 2010-2020: An Economic Analysis Private Source Stormwater BMP Expenditures on Redevelopment Projects (which showed it would take large redevelopment projects at the rate of 1.4 per year to meet the treatment solutions’ funding needs) (March 2010, Tetra Tech and USACE) were prepared for the Regional Planning purposes that furthered the desire to build the agency’s way out of its failure to reverse the decline of the lake’s clarity.

This decision and its following actions mark the watershed moment when the TRPA collapsed its ecosystem protection efforts for soil and launched its concept of engineering solutions to problems it had allowed to increase.

Regional Plan

Today, the 2012 Regional Plan, the Regional Plan EIS, the Regional Transportation Plan and EIS, the 2011 Threshold Evaluation Review can be seen in this new frame – from its Compact-mandated mission to protect and restore the basin, to a mission to endorse significant expansion and attempt to mitigate the problems that that level of urbanization that might support building its way out of failure. The Regional Plan Land Use section is replete with these plans, as they emerge in LU2.1, a section which completely removes previous land use plan language to reduce impervious cover and LU 4.5, LU4.8-10. (See TRPA’s track changes copy of the new Regional Plan to see what was deleted).

The Regional Plan has upended the Compact’s fears of urbanization of the lake, claiming that more urbanization will be the panacea for Tahoe. RP LU2.1 is the essential piece of the plan for increased urbanization as desired by the TRPA. In the meantime, an economist has analyzed the plan and announced that it is the reverse of an operable transfer and removal incentive program that relies on monetary incentives to be effective. (Anthony Kalbfus, Economist, submitted with NTPA comments).

In the case of Soil Conservation, instead of limiting impervious coverage and requiring on-site stormwater treatment for new commercial, industrial and large housing and tourist projects, the plan will require existing property owners to join stormwater treatment programs on an area-wide basis to benefit those same new developments. (TRPA, July, 2008)

**TECHNICAL MEMORANDUM 4PUMP AND
TREAT FEASIBILITY STUDY**

The TASC has recommended that the TRPA review the Seattle and Maryland Stormwater Manuals and ordinances¹⁰⁰ in order to re-think the more effective and less costly to the taxpayer on-site treatments that retain up to 90% of annual precipitation and through the use of infiltration galleries and swales, infiltrate the runoff into the ground as it once was known to do naturally. Seattle is a large city and has taken on Stormwater as a serious issue due to its role in high runoff into Puget Sound. Seattle and Maryland have also embraced the 2003 Impacts study, cite earlier.

TASC urges the TRPA to respect the Soil Conservation Threshold for impervious cover standards, even though they are now known, due to new science, to be greater than limits that would significantly decrease degradation of the nearshore of the Lake as caused by the nutrient input of the streams, rivers and intervening areas that discharge to the lake, plus the large number of drainage pipes that empty directly into the Lake. (PipeClub videos, 2010-2012)

Transfer of Soft Coverage*

The TER Chapter 5 does not discuss the impacts of calling hard and impervious surfaces (hard coverage) the same as soil surfaces that infiltrate water but are compacted (soft coverage). For example, compacted “soft coverage” from old legacy dirt roads in the Homewood Mountain Resort area was shown to infiltrate about the same amount of water as the post-treatment soil, proving that soft coverage and hard coverage are certainly not the same when it comes to infiltration.¹⁰¹ Yet the TRPA RPU is determined to permit transfer of soft coverage as a commodity in place of hard coverage. The transfer ratio is one square foot of soft coverage to a new building site, to qualify as one square foot of hard coverage. But the TER, and the RPU DEIS, fail to present an analysis of how soft coverage can be equated with hard coverage in this transfer process. Further, there is no such discussion in the TER report of how this relates to the soil conservation thresholds, let alone other impacted thresholds.

In fact, the concept is a terribly flawed concept. Hard coverage does not provide even one percentage of the services that soil provides, as hard coverage provides no soil protection and thus no soil services. There is no action of hard coverage that provides for

¹⁰⁰ *Impacts of Impervious Cover on Aquatic Systems*. March 2003 Prepared by: Center for Watershed Protection. 8391 Main Street, Ellicott City, MD 21043; and *Stormwater Flow Control & Water Quality Treatment Technical Requirements Manual. Volume 3*. November 2009. Director’s Rules for Seattle Municipal Code Chapters 22.800 - 22.808 Directors’ Rules: 2009-005 SPU 17-2009. DPD City of Seattle, Seattle Public Utilities Department of Planning & Development.

¹⁰¹ See: 4/21/2011 Comments on the Homewood Mountain Resort Ski Area Master Plan, Community Enhancement Program Project, Draft Environmental Impact Report/Environmental Impact Statement. Submitted by M. Lozeau on behalf of Friends of the West Shore

healthy vegetation. There is no action of hard coverage that provides for earthworms. There is no action of hard coverage that provides for the critically important infiltration of rain, melting snow, and stormwater runoff. Here, the plan accepts one square foot of soft coverage for one square foot of hard coverage as an equivalent benefit to the land, carrying the same qualities that undisturbed soil provides as a component of a complex ecosystem.

The perversity of the idea of soft coverage is an equal commodity to hard coverage is exposed when the extensive impacts of hard coverage are examined.

Soil Conservation outside of Lake Tahoe basin.

The Center for Watershed Protection, which produced the 255-study monograph titled Impacts of Impervious Cover on Aquatic Systems (Impacts) and determined that impervious cover began to show adverse impacts at 10% cover, has become the critical study that other areas and other states have inculcated into their plans, codes, and design manuals to clean up their stormwater discharges to streams, lakes, bays, estuaries and the ocean.

The Seattle Stormwater Manual, Volume 3, requires removal of impervious cover and infiltration, two key concepts in the State of Maryland and Kings County, Washington, as well as the California Bay Area. (Maryland Stormwater Manual, Volumes I and II 2000 plus amendments,¹⁰² the Washington State Kings County Stormwater Manual,¹⁰³ and the California Bay Area Stormwater Managers Association Manual.¹⁰⁴)

For example, pervious pavement is not just blindly accepted in Seattle as it is in the TRPA Regional Plan. In Seattle, it requires five pages of a checklist to assure it is designed, installed, maintained and repaired in a manner that assures ongoing operation will produce the same results as stated in its approval for each project. The RP policy is severely critiqued by the EIS (Section 3.8-44) as "However, performance of pervious pavements can markedly decline if the voids in the surface layer clog over time, and continued effectiveness may require frequent maintenance to preserve the infiltration rate through the surface layer. Based on the potential need for frequent maintenance, pervious pavement should be sited to infiltrate high quality runoff with low sediment loads as specified in the BMP Handbook. The currently proposed implementation measure does not specify siting requirements for pervious coverage, and therefore the proposed exemption could allow for siting of pervious pavement in areas with poor quality stormwater runoff that could cause the pervious coverage to rapidly clog and potentially require frequent maintenance to restore infiltration capacity. As such, the effectiveness could be diminished over the long term, and therefore the pervious coverage could

¹⁰²

http://www.mde.state.md.us/programs/Water/StormwaterManagementProgram/MarylandStormwaterDesignManual/Pages/programs/waterprograms/sedimentandstormwater/stormwater_design/index.aspx

¹⁰³ <http://your.kingcounty.gov/dnrp/library/water-and-land/stormwater/stormwater-pollution-prevention-manual/SPPM-Jan09.pdf>

¹⁰⁴ http://www.swrcb.ca.gov/water_issues/programs/stormwater/training.shtml

become ineffective at allowing runoff to pass through the surface and could increase stormwater runoff, creating a **potentially significant** impact.”

The contrast between the two different approaches between the stormwater manual and the Regional Plan represents an insight into the low level of commitment by the TRPA to assuring that stormwater treatments functions effectively and is a plus mark for the EIS in disclosing the potentially significant impact.

The TASC urges the TRPA to assure that the agency and its Regional Plan act as a guardian of the Tahoe basin, and require all new projects to contain, retain and treat 90% of stormwater on-site. Such facilities must be built before or during the construction of the project, unless a fully operational, effectively functioning alternative treatment system, with the proven capacity for the new projects, is in place.

Impacts of Impervious Cover on the Lake and Streams of Lake Tahoe

Since the first Bailey report, on the 1971 Land Capability map, Impervious Cover was cited as “the single most critical element in land disturbance related to the more basic environmental problems facing the Tahoe basin, namely: water quality degradation, flooding, and soil erosion. It was considered to be the most accurately measureable and constant expression of development impact.” (Bailey, 1971 map text, second paragraph) In perfect affirmation, the 2003 Maryland Watershed Center report (Impacts), noted that its study was focused on impacts of impervious cover on aquatic life in streams, but it also notes that the impacts on lakes (as downstream receiving waters) are similar to streams. “In most lakes, however, even a small amount of watershed development will result in an upward shift in trophic status.” (Impacts, pg 16.)

And this statement gets to the crux of the Soil Conservation issue and the TRPA’s problem, which is not how much impervious coverage is acceptable in terms of percent of cover, but what is the trophic status as a result of impervious cover. And the answer is in the UC Davis Tahoe Research Group’s continuous monitoring of the lake since 1968, which shows a 373% increase in the trophic status of Lake Tahoe. (EIS, 3.8-10) and which is in violation of the Water Quality, Pelagic Lake Tahoe Threshold, which is for an improvement in trophic status, back to the baseline status of 52gmC/m squared/year.

The EIS has failed to disclose or analyze the trophic status of the lake in reference to the Impervious Cover threshold.

Tributary Water Quality Standards in Relation to Impervious Cover

The EIS discloses that none of the monitored tributaries meet the standards, and only one is showing improvement. Most aren’t even on a path to meet the preliminary target, and half are not monitored at all. There is no report on the relationship of the tributary standards to the stream quality and then to the quality of the nearshore of the lake. The EIS does not disclose that there is no connection even analyzed between the impervious cover, the stream conditions and the aquatic impacts in the nearshore.

As noted elsewhere, the TER also fails to analyze these relationships. The agency should be concerned with protecting stream quality, stream habitat, fisheries, and other benefits of clear-running streams, in addition to the beneficial impacts that would have on the nearshore of the lake.

This is a failure of enormous importance to the underpinnings of the Regional Plan, which is that their solution to Tahoe's ecosystem problems is to build their way out through market economies, transfers of coverage, and increased populations.

Transferring Impervious Cover instead of Removing and Restoring Land.

The Regional Plan's transfer of coverage provisions make it even more difficult to meet the Impervious Cover part of the Soil Conservation Threshold as the concept does not reduce coverage, and instead creates more disturbance and more coverage. Construction's adverse impacts on water quality are realized as cover is both removed and installed. It is not an equal trade.

The EIS fails to analyze the differences in the impacts of the trades.

Second, it's not a simple matter of moving cover from sensitive lands to more resilient lands, and calling it a benefit. The issue is If the sending parcel is sensitive and has poor connectivity to streams and the lake while the receiving parcel has little connectivity, then the delivery of runoff pollutants to nearby water is assured, and the impact is substantially greater than if the cover in the sensitive area had been removed and retired.

For example, transferring from Class 3 lands in an area with no discharge to water, to a Class 6 or 7 land is a densely covered community or town center that has little effective stormwater treatment functioning - - and the new coverage discharges even more pollutants to the receiving waters, or to a conveyance to receiving waters.

To state again, transfers incentivize increased cover in the more dense urban areas and increase volume and velocity of stormwater runoff. While many think that consolidating Impervious Cover is some kind of efficiency tool, in reality it increases costs by requiring ever-more technological and engineering solutions to the runoff created.

The EIS has been silent on the unintended consequences of the program. The EIS is inadequate in its failure to disclose the connectivity issue, the potential for increase in pollutant discharge from the program, and the costs of treating stormwater runoff in densely covered areas.

TRPA's proposed Regional Plan with its extensive construction alternatives could obligate the agency to supply the funds to design, build, and maintain in perpetuity an advanced system to treat the stormwater from the dense cover envisioned in the Plan,

before new cover is created. Otherwise much of this fanciful planning is dependent on magic money, magically appearing.

The EIS's Appendix H Transfers. This appendix offers even more cover to be installed, in its proposed is Policy (2.11.A) that permits the transfer of more cover – and that is non-conforming use coverage. This policy would permit a transfer program to transfer Impervious Cover that is not allowed in the Bailey standard. An example is if an area has 95% cover, it exceeds Bailey standards by 40%, and all of that is non-conforming. Under the previous plan, non-conforming cover was to be reduced to the allowed level. But in this example and under this policy, the owner would be able to transfer all the 95% to a new site. The EIS has failed to analyze the impacts of the excessive runoff from such a policy. Nor is there any criteria suggested to prevent the excess coverage transfer to resilient sites with no connectivity to the lake or streams.

Additional comments included below were submitted by Matt Hagemann, P.G., C.Hg., QSD, QSP regarding all three documents and were originally included in our 6/28/2012 comments.

The Tahoe Regional Planning Agency (TRPA) has proposed a re-interpretation of the Bailey Land Capability Classification Study, 1974 (Bailey Study). The Bailey Study identified impervious coverage, as not the only source of water quality problems causing Lake Tahoe's initial loss of clarity but "to be the most critical element in the land disturbance that has created the basic environmental problems facing the Lake Tahoe Basin - - water quality degradation, flooding and soil erosion." It is also considered the most accurately measurable and constant expression of development impact." (Land-Capability Classification of the Lake Tahoe Basin, California-Nevada, Robert G. Bailey, USDA, 1974. pg 25).

The 2012 Regional Plan EIS proposes to radically revise use of the Bailey Classification methodology though consideration of development within the physical context of the entire Lake Tahoe watershed. In my opinion, this is an inappropriate watershed scale that will allow for virtually unlimited development while still ostensibly meeting Bailey Land Capability criteria established by TRPA in the 1970s.¹⁰⁵

The policy and practice of the TRPA, since February 1972, is to use the Bailey system on a parcel or site scale in order to reduce adverse impacts on the waters of the Tahoe basin from new development by limiting impervious coverage of specific lands. The EIS acknowledges the historical application of the Bailey system in stating "The land capability map developed by Bailey (1974) was conducted at a large scale and focused on areas where development was likely, rather than on remote public lands" (p. 3.7-12). The focus at a large scale (where features are considered in detail) and on areas to be developed was likely made by Bailey because development on public lands would not occur at an appreciable scale and be removed from consideration. Instead, by focusing on a large scale (or a subwatershed scale), Bailey split the Tahoe Basin into units of appropriate scale where development would occur and where changes in coverage could predict the degradation of water quality.

¹⁰⁵ <http://www.trpa.org/default.aspx?tabid=187>

The EIS, instead proposes to consider the entire 201,000 acres of existing coverage (essentially the entire Lake Tahoe watershed) as mapped in 2007 by the USDA Natural Resource Conservation Service (NRCS) in evaluating coverage (EIS, p. 3.7-12). The EIS proposes to use the 148,000 acres of generally undisturbed Forest Service land, most of which lies above the 53,000 acres of the covered urban land to determine that the total coverage in the basin is only 3.6%, (EIS Table 3.7-5 and 6) and therefore well below the Bailey standards. A finding that the basin is well below the Bailey standards would allow the agency to permit thousands of additional acres of coverage.

Little discussion is provided in the EIS of this rationale. Discussion is limited to a paragraph on page 3.7-12 where the EIS states that the 2007 NRCS Tahoe-wide land coverage map was used to determine “maximum allowable coverage of 19,984 acres or approximately 10 percent of the Region’s land area.” This is nearly twice that of the Bailey map, which allowed for maximum coverage of 10,941 acres, or approximately 5.4 percent of the Region’s land area (p. 3.7-10). The development of 19,984 acres in the Lake Tahoe Basin is beyond the scale of any scenario that has been envisioned and would allow for virtually any conceivable project to gain approval.

The EIS provides no sound technical basis for the shift in an analytical methodology that nearly doubles the amount of coverage and has been used for nearly four decades. In my opinion, utilizing the entire Lake Tahoe watershed is an inappropriate use of scale. By considering the entire Tahoe watershed, impacts from urbanization and construction of impervious cover are easily diluted by public lands, which are largely unchanging. At this scale, the plausible development scenario and concomitant loss of pervious cover will result an exceedence of the Bailey standards.

The importance of impervious coverage has recently been identified in a research monograph that states “more than 225 research studies have documented the adverse impacts of urbanization on one or more of these key indicators” which are listed as four broad categories of change, “changes in hydrologic, physical, water quality, or biological indicators”. (Impacts of Impervious Cover on Aquatic Systems, Center for Watershed Protection, March 2003, pg 1). (Impacts). While the Impacts study reports on the impacts on streams, it also notes that the impacts on lakes (as downstream receiving waters) are similar. “In most lakes, however, even a small amount of watershed development will result in an upward shift in trophic status.” (Impacts, pg 16.) The study suggests that deep lakes may exhibit exceptions, but, as has been found at Lake Tahoe, one of the deepest lakes in the country, the primary productivity measurements (measure of nutrients) have been continuously taken by UC Davis Tahoe Research Group since 1968 and have exhibited a 373% increase. (p4-16, Water Quality Threshold Evaluation, TRPA). An increase in trophic status is a significant indicator of the impacts of impervious cover, as studied by the Watershed Protection Center (Impacts.)

The new science available through the 2003 Impacts report established that Impervious Cover is shown to begin to cause adverse impact on streams at the 10% cover level and “Impacted up to 25% cover (Figure 1, p 2, Impacts 2003 and 3rd bullet, pg. 3). The significance of the new cover impacts is well below the maximum cap of 30% required by Bailey, and significantly below the maximum caps of 50% and 70% permitted in the TRPA’s 1987 Regional Plan. . In the meantime, as the greater coverages were permitted, the Lake’s clarity decreased by a range of 33.5 to 38 feet, from the 104.2 ft threshold standard. Primary Productivity increased by 373%, (TRPA Reg. Plan EIS, 2012, Chapter 3.8, pg 3.8-10) visibly showing the extent of the impacts of impervious coverage in the nearshore.

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In the meantime, the Lake standard for clarity has been exceed by 33.5 feet of the water quality standard. The Primary Productivity standard has increased by 373%, (EIS, 3.8-10) visibly showing the extent of the impacts of impervious coverage in the nearshore.

In TRPA's own words, "Land coverage has been an essential element of the Tahoe Regional Planning Agency's environmental plan to protect Lake Tahoe."¹⁰⁶ The EIR should be revised to carefully reconsider the rationale that would allow for nearly doubling coverage and in radically revising a program that has been used by TRPA for decades.

Matt Hagemann, P.G., C.Hg., QSD, QSP

In summary, the Soil Conservation Threshold was designed not just for healthy soil and healthy vegetation, but also to protect the lake's famed crystal clear waters. But political forces never understood the science that dirt was good for the lake, as long as it stayed on the land. Instead, they carved out overrides and ignored public uses, and the impervious coverage then led to a loss of lake clarity and purity. The TRPA has attempted to implement the soil conservation threshold over time, but never, until this administration of the agency, has there been such a wholesale effort to re-define, re-interpret and otherwise render it meaningless.

At the same time, new science has become much more widespread, the knowledge of the role of impervious cover on aquatic systems has been measured, and local and state governments have used that science to re-design stormwater systems, moving to infiltrate more and, at the same time, collect and discharge less.

The seminal 2003 monograph of 225 science studies on the Impacts of Impervious Cover on Aquatic Systems (footnote above) has been the impetus for the State of Washington, the State of Maryland, and the San Francisco Bay Area, among many, to protect their waters from the impacts of urban development.

But Tahoe, sitting on the shores of one of the few National Outstanding Resource Waters in the entire country, has not been shown the same respect. The agency charged with Tahoe's protection has produced a document that will assure that its fate as an aging beauty is sealed.

¹⁰⁶ <http://www.trpa.org/default.aspx?tabid=187>

STEAM ENVIRONMENT ZONE (SEZ)

Stream Environment Zones are the second part of the Soil Conservation Threshold. The threshold requires, through preservation and restoration of a percentage of SEZs, a 5 percent total increase in the area of naturally functioning SEZ lands.

Code of Ordinances 90.2 provides a definition of SEZs that is tortured at best and hard to track down:

“Stream Environment Zone

Generally an area that owes its biological and physical characteristics to the presence of surface or ground water. The precise definition is an area determined to be an SEZ by application of the criteria set forth in TRPA's Water Quality Management Plan for the Lake Tahoe Region, Volume III, SEZ Protection and Restoration Program, dated November 1988. The criteria for identifying SEZs in Section 53.9 shall be used for purposes of implementing IPES.”

The accurate definition provided by the Bailey Land Capability map, (1971) from which the term SEZ devolved to describe Class 1B lands, is different:

“1.b. Poor Natural Drainage – These lands are naturally wet and poorly drained. Interchange between surface water and ground water systems occurs here. These areas – represented by streams, marshes, flood plains, meadows, and beaches - - are critical in management and protection of water resources. In principle, land use policy for these areas should reflect the roles of floodwater and sediment storage, wildlife habitat, and fish spawning grounds.” (Cite)

Note that the Bailey definition includes the important values of flood plains and floodwater, which is conspicuously missing from the proposed Code definition in 53.9. This deliberate change is also an indication that the agency is still not accounting for climate change in its review of soils, and does not acknowledge the now well-known increase in major floods around the world as documented on TV and in scientific journals.

RELEVANCE

Interestingly, the Relevance section of Chapter 5 does note that “encroachment on these areas [SEZ] reduces their potential to filter sediment and nutrients, and also reduces the amount of surface runoff they can effectively treat.” It also recognizes “flood flow capacity” of SEZ.

The Relevance section also notes that SEZs affect all the other thresholds in beneficial ways.

The significant problem for the TRPA is that only 546 acres of SEZ have been restored in the 29-30 years, since the goal was adopted, or a less than a 50% success rate. The Threshold Standard was intended to achieve full restoration within the 20-year lifetime of the 1987 Regional Plan. Each prior Threshold review concluded with commitments to restore more SEZ. This Review Chapter concludes with a recommendation to add vegetation restoration as a SEZ restoration in order to make their job easier, not to do a better job of protecting the lake and seven of the eight other thresholds.

The suggestion is a good one, but is more oriented toward maintaining healthy vegetation than achieving restoration of naturally effective functioning SEZ. The suggestion should be made for the Vegetation Preservation Threshold.

TREND AND CONFIDENCE

The Trend part of the Soil Conservation Threshold Review notes that the average SEZ restoration rate has been 17.6 acres per year, which is termed “moderate improvement”!

Achievement of less than 50% of a total is simply, by mathematics or by plain English, not a moderate improvement. Looked at as a cold analytical calculation, less than 50% is not even a passing grade, and, in plain English, is pathetic.

Fortunately, the Chapter does note that while the agency has a high confidence in the number of acres counted, “the effectiveness of these projects for achieving the restoration objective of restoring ‘natural hydrologic function’ is ‘unknown’ [TRPA emphasis] because effectiveness monitoring efforts have not been sufficiently implemented. In fact, no monitoring for effectiveness has been implemented and the document should note that as the relevant fact, instead of implying that there is some deficiency in the non-existent sufficiency of the failure to implement monitoring of yet another threshold standard.

The lack of monitoring then results in the Overall Confidence statement that “there is low confidence in our understanding of the effectiveness of SEZ restoration efforts.” And that is almost true. – in fact, the agency cannot have any confidence in an issue for which there is no effectiveness data..

NEW SOIL SURVEY

Chapter 5 of the Threshold Review focuses as well on the wetness of the SEZ lands. There is a significant error in that approach, in that over the past forty years, precipitation has been less than in the years leading up to 1971, as reported in the annual DWR’s California Water Project Bulletins. Thus it is an error to make decisions based on recent history for precipitation, when century-long cycles can change significantly. For example, the east side of the Sierra suffered through a 150-year long drought from the early 1200s to about 1350. And in the years including the 30s.to 60s, water was plentiful. For TRPA to act as if the Tahoe basin would not be in a wet cycle again is certainly folly. One has only to watch the extreme gyrations in weather that have brought massive

floods to places around the world, to realize that Tahoe floodplains may very well flood again.

FAILURE TO SUBTRACT NEW PERRMANENT DISTURBANCE TO SEZ SINCE 1980

Table 5.5 shows the restoration projects completed since 1980, based on the initial setting of 1100 acres as the amount to be restored from the records reported in earlier documents. The Threshold Standards did not assume that permanent disturbance would be also added at the same time.

The amount of acres officially exempted or ignored from permanently covered additional SEZ – including roads, road-widening, public works facilities, ski areas, driveways, beach development, and marina expansions, parking lot expansions, and corporation yard expansions is not counted against the restoration. But that makes the restoration target pale in the face of ever-encroaching new SEZ developments. The agency is likely reluctant to develop that adverse information, but in terms of the basin's water quality and the importance of the SEZ in filtering, retaining, and spreading out stormwater runoff, these encroachments do reduce the value of the restoration that has been done.

The threshold standard was and is to restore a percent of disturbed, developed and subdivided “to attain a 5 percent total increase in the area of naturally functioning SEZ lands.” TRPA Resolution 82-11, Soil Conservation.

The addition of new disturbance in whatever form alters the initial size of the pie and adds to those lands that were identified for the 1982 Resolution. That number of disturbed, developed and subdivided lands appears to be 22,000 acres. That is the size of the pie, from which the 5% number must be attained. Further development, coverage, including roads, road widening, ski area facility expansion, parking lot expansion, corporate yard expansion, public works projects and facilities, airport expansions, and all other encroachments on SEZ must be added to the 22,000 acres before the total reported in Chapter 5 is subtracted from the 5%.

Here we have an exacerbation of the problem of the TRPA's efforts to reduce the amount of countable acres of SEZ in the basin, by removing floodplains from the count of SEZ acres. Reduced acres equals reduced amount to restore. That action would help the level of achievement of the threshold appear to be closer to attainment, and would also reduce the amount of land with restrictions on building, thereby meeting the agency's goal of expanding the opportunities for more development.

OVERALL COMMENTS and REFERENCES TO MODERN EFFORTS TO RESTORE RIPARIAN AREAS

The SEZ threshold report describes stream environment zones and their role in the Tahoe ecosystem quite well especially as relates to their ability to filter stormwater pollutants.

The TRPA, obligated as it is to protect and restore SEZ, should be committed to finding more acres of SEZ to restore, rather than produce reports such as Chapter 5 that attempt to explain away acres of SEZ that otherwise should be restored in the urban areas and to count public land restoration toward their total restored, in order to reduce the total left to the TRPA under the threshold standard.

There are many acres of former SEZ that have been filled, drained, intruded into, and paved that could be restored as is done in many other communities, including Napa, Los Angeles, Berkeley, El Cerrito, Susanville, and even Markleeville. The “Y” at the south shore of the Tahoe Basin was once almost an island - - there are many opportunities between the headwaters of the drainage that meanders through that area and the eventual discharge to the lake to widen, remove pavement, open up culverts, and other work to daylight these areas that is substantially less expensive than the major stream and marsh restorations and which have the potential to greatly expand infiltration of stormwater runoff. Many of the 52 intervening areas that drain into the lake would provide opportunities, plus areas equally disturbed that empty into streams and rivers that empty into the lake. As the State Water Resources Control Board notes in its film “Slow the Flow”, it is less expensive to treat water at the source.

The State Resources Water Quality Control Board has adopted a Slow the Flow program in its Stormwater Runoff Program and helps communities to daylight and restore stormwater drainages.

Chapter 5, to accurately review the Soil Conservation Threshold for SEZs, must analyze both the change in definition and interpretation of the SEZ threshold in terms of a new focus on a more inclusive version focused on restoration.

Comments on Noise – 2011 Threshold Evaluation Report, RPU DEIS and RTP DEIR/S:

Noise is often defined simply as unwanted sound. Quiet, the absence of noise, is a significantly important value that is unfortunately difficult to quantify. However, most of us rely on quiet for our own physical and mental health.¹⁰⁷ Consider visitors to the Basin who go hiking, camping, kayaking, etc., in order to get away from the noise and congestion of more populated areas to enjoy the “peace and quiet” Tahoe has to offer. Consider residents who struggle to afford to live in the Basin amid high-priced living expenses so they can enjoy Tahoe’s unique beauty and “peace and quiet.” In fact, the following information recently printed in the Sacramento Bee provides a good summary of these issues:

“Reports by the World Health Organization in 1995 and 1999 found that “community noise” – including sounds from traffic, airplanes, construction, rock concerts, and motorboats – can affect work productivity, hamper sleep, cause spikes in blood pressure and even harm the ability of schoolchildren to learn. Some of us are more sensitive than others to the psychological and physical

¹⁰⁷ <http://www.euro.who.int/en/what-we-do/health-topics/environment-and-health/noise>

effects of noise, the report notes, including the elderly and people with anxiety disorders.” Further, many residents of the Sacramento area responded to the Bee’s earlier request for comments about noise by stating their frustration over the loss of “quieter, more peaceful areas to enjoy”...(www.sacbee.com).

According to public input, **Tahoe is expected to provide a quieter, more peaceful area to enjoy.** Although noise planning has often been given less attention (and planning resources) than, for example, water quality or air quality planning, noise levels are important to all who live in or visit Lake Tahoe. People have expressed their concerns with noise in the Basin for years. When TRPA and the other Pathway 2007 agencies sought out public input at workshops in 2005, the public clearly expressed a desire that the Basin be quieter than other areas, and that the noise levels in the Basin be reduced (compared to existing levels) so that this desire could be met.

“Public opinion, derived through Pathway 2007 outreach efforts reflect:

- Desires that noise levels in general be reduced and that there is an expectation that noise levels in the Lake Tahoe region be quieter than in outside areas.
- Specific to noise from watercraft, the public in general expressed the desire that there be a reduction from existing noise levels. Varying suggestions from non-boaters was received on how noise levels could be reduced. Comments were also recorded suggesting no new watercraft restrictions be adopted if no other environmental issues are present (reflecting a need to solicit additional public input on this issue).
- Specific to noise from on-highway vehicles, the public expressed a uniformly strong desire to reduce traffic noise.
- There was a general desire to reduce noise from off-highway and over-snow vehicles, however some comments were received opposing prohibitions on off-highway vehicles.
- A general desire to minimize noise from aircraft using the Lake Tahoe Airport. Also a general desire to regulate noise coming from other noise sources such as from snowmaking operations, outdoor concerts, and from construction activities.
- There were numerous public comments supporting noise enforcement standards within the Lake Tahoe region.”¹⁰⁸

Unfortunately, the noise program has been poorly funded and often considered an “add on” of sorts. Noise requirements have been poorly enforced, if at all. As a result, the Tahoe Basin has continued to be subjected to ever-increasing noise levels. With the RPU DEIS, TRPA proposes to make matters worse, adding more people, traffic, and other noise-generating sources, yet at the same time, taking no responsibility for these impacts, as we discuss further in these comments. However, to summarize:¹⁰⁹

Single Event:

¹⁰⁸ http://www.enviroincentives.com/Pathway2007_Eval_Report.pdf

¹⁰⁹ This is a very basic summary; our detailed comments address the full suite of factors involved.

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- Aircraft Noise: TRPA does not appear willing to enforce aircraft requirements;
- Watercraft Noise: TRPA says it can not enforce noise requirements because it lacks police power;
- On-Road¹¹⁰ Vehicles: TRPA says it can not enforce noise requirements because it lacks police power;
- Off-Road¹¹¹ Vehicles: TRPA says it can not enforce noise requirements because it lacks police power;

Community Level (CNEL):

- All CNEL TRPA says the standards are too confusing.

Construction: TRPA says it does not count because it is exempt during daytime hours.

Historically, a relatively low noise level was an attribute of the Lake Tahoe Basin that was enjoyed by both visitors and residents. However, even going back over 20 years, the trend of increasing noise was recognized. The “*Report for the Establishment of Environmental Threshold Carrying Capacities*” (TRPA, 1982) indicated that background noise in the Region was rising as a result of increased levels of human activity. In fact, Congress recognized the importance of noise when creating TRPA’s 1980 Compact, which required the development of noise thresholds as well. Article II (i) specifically calls for noise thresholds to be developed:

“(i) “Environmental threshold carrying capacity” means an environmental standard necessary to maintain a significant scenic, recreational, educational, scientific or natural value of the region or to maintain public health and safety within the region. Such standards shall include but not be limited to standards for air quality, water quality, soil conservation, vegetation preservation and noise.”

In the earlier stages of the Pathway 2007 Regional Plan Update process, TRPA initiated public workshops and surveys to obtain feedback from the public regarding noise concerns in the Basin. These were eventually incorporated into the update documents (Pathway 2007 Draft Report, link above), and the public was provided with the following draft vision statements:

¹¹⁰ All on-road motor vehicles, including motorcycles.

¹¹¹ OHVs, snowmobiles, off-road motorcycles, etc.

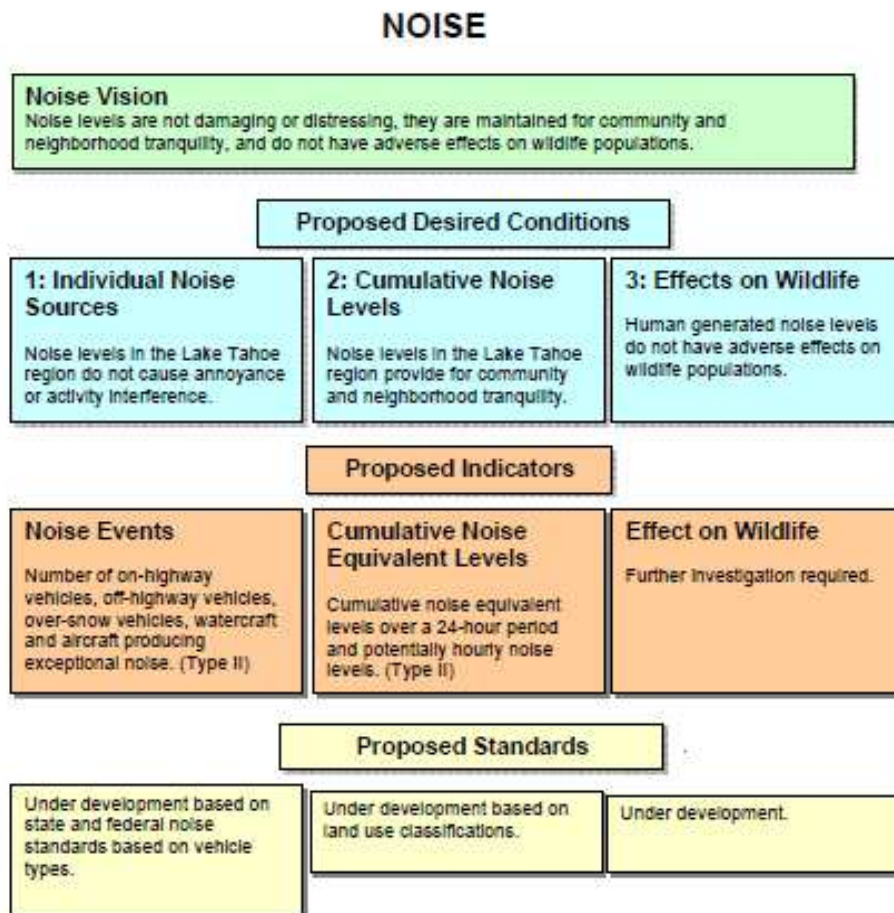


Figure 7-1. Noise Diagram

The proposed Desired Conditions 1 and 2 from the Pathway 2007 process are modifications of the original value statements:

DC 1 [& 2]: Single event [and cumulative] noise levels are controlled to preserve the serenity of the community and neighborhood and provide abundant quiet recreation areas.

The proposed DC 3 relates to the protection of wildlife from noise:

DC 3: Noise levels are controlled to protect wildlife.

In summary, the public has made their desires very clear: Tahoe is to be quieter than other areas. Thus, it is surprising to see no proposed changes to the Noise threshold standards that would seek to improve conditions. Rather, as discussed below, TRPA appears to be complacent, ignoring aircraft noise, writing off single event noise, and focusing on how ‘difficult’ it is to attain the CNEL standards. When will TRPA start to follow the Compact’s intent, and the public’s interest?

Specific Comments on 2011 Noise Threshold Evaluation:

TRPA begins the 2011 Noise TER chapter with the following:

“Noise, by definition, is “unwanted sound,” and is therefore a subjective reaction to acoustical energy or sound levels. Due to the rural nature of the communities and the pristine natural areas in the Lake Tahoe Basin, sound levels that would go unnoticed in a highly urban or industrial environment outside the Tahoe Basin are likely to be considered noise, and have the potential to negatively impact community ambiance, recreational experience, and wildlife behavior.”

We agree, however add that noise has been shown to affect human health as well, and this should be noted in the Report. We further refer to our comments on the 2006 TER and 2007 EA:

Noise is often defined simply as unwanted sound. Quiet, the absence of noise, is a significantly important value that is unfortunately difficult to quantify. However, most of us rely on quiet for our own physical and mental health. It has always been recognized that Tahoe’s unique and beautiful environment should be protected from noise. At least, the noise level in the Basin is expected to be quieter than in outside areas. Congress recognized this necessity in TRPA’s Compact by specifically requiring the development of noise standards.

Single Event Noise Standards:

In line with the pattern TRPA has taken in other threshold categories, TRPA diminishes the importance of the single event noise standards by the portrayal of 14 indicators under the Single Event Noise “Indicator Reporting Category.” (p. 10-5). In previous threshold evaluations, single event noise was divided into two indicators: aircraft, and other single events (which included Watercraft, On-Road motor vehicles, Off-road motor vehicles, motorcycles and snowmobiles – 5 source categories). Thus, more attention was paid to these sources.

However, using statistics and aggregation of indicators (although TRPA explains historic aggregation as one of the reasons it has changed its methodology), TRPA diminishes the importance of each source, including aircraft. We refer to detailed comments on statistical manipulations in the air quality comments as further examples of the impacts of the ‘new’ review methodology.

Aircraft Noise: N-1:

Noise is not cumulative, over time, like air pollution. It does not ‘build up’ in the atmosphere and then require time to dissipate. In the case of aircraft noise, noise

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exceedances would be expected to significantly decrease by mere enforcement of the standards.

The 2011 Threshold Evaluation Report includes the following:

Overall average number of aircraft generated single noise event exceedances/day (exceedance rate) reported by City of South Lake Tahoe Airport (2008 to 2010), and at Barton Beach measured by TRPA (2009 to 2011). Overall exceedance rate ranged from 0.037/day (1 exceedance every 26.7 days) in 2008 to 0.171 (1 exceedance every 5.8 days) in 2010. Source: City of South Lake Tahoe Airport, TRPA noise monitoring data.

First, upon what basis was it decided the number of exceedances/day was a more appropriate 'rate' to evaluate than number of exceedances/number of flights/day? Although we do not have the daily number of flights and exceedances, a glimpse at the annual data reveals that as there are fewer flights as of 2010, the number of exceedances has increased:

Airport Noise - Annual Values, 2008-2010										
Year	Traffic (Total Flights)	Total Exceedances	Total Community Events	Total A/C Events	A/C Inaudible/ Unidentified	A/C Exempt/ Military/ Medical	A/C within 1 dBA Reporting Limit	A/C in Noise testing regime	A/C Notified	Noise Complaints
2007 ^a	28,035									
2008	22,333	1,540	1,417	123	27	41	16	9	66	12
2009	23,540	1,109	691	417	65	199	31	5	86	3
2010	20,249	1,879	1,486	393	66	193	24	1	75	7
a Airport reports to TRPA were provided upon request to TRPA. The 2008 Annual Report provided the total traffic numbers for 2007, but no noise information was provided.										
b No information was included regarding how the CSLT determined the sources of noise events.										

Therefore, if one considered the number of violations per number of flights on an annual basis, 0.55% of the total number of flights in 2008 violated the standard, 1.77% in 2009, and 1.94% of the flights in 2010 violated the standard. Thus, even as the total number of flights have decreased, the number of aircraft violating the standards has increased, suggesting louder aircraft are using the airport more frequently.

Discounting what the CSLT has reported as "Exempt/Military/Medical" would result in the following ratios: 0.37% of 2008 non-exempt flights exceeded the standard, 0.93% in 2009, and 0.99% in 2010.

However, the frequency of exceedances should also be evaluated, and if one examines the quarterly data, 2010 shows:

Airport Noise - Quarterly Values, 2009-2010					
Year	Quarter	Traffic (Total Flights)	Total A/C Exceedance Events	A/C Exempt/ Military/ Medical	Number of Exceedances due to Aircraft (Non-exempt)
2009	1	2,531	52	25	27
	2	3,553	100	42	58
	3	13,140	196	72	124
	4	4,316	69	44	25
2010	1	3,783	65	26	39
	2	3,065	55	25	30
	3	12,017	237	123	114
	4	3,885	36	19	17

Although this is not intended to substitute for an actual analysis, this information was assembled to show the importance of evaluating different parameters. Questions should include when are the exceedances occurring, why, what are the frequencies of exposures to nearby residents and visitors during any given time of year, and so on? Further, it is common to spend time outdoors in the summer months in Tahoe, and to have windows open in lieu of air conditioning. Therefore, what are the exposure levels during these warmer months - when people are more likely to either be outside in their yards and/or have their windows open, likely resulting in louder impacts from aircraft? These are the type of questions that need to be assessed to understand the true impacts of aircraft noise on humans.

Further, how many of the aircraft which violated the standard have manufacturing specs that suggest the aircraft would meet Tahoe's noise standards? How many did not? A review of the available reports indicates relatively few aircraft that exceeded noise standards were undergoing noise testing regimes. Is the CSLT regulating for aircraft noise levels, or simply hoping for the best?

The 2011 TER continues:

Confidence

Status – There is “moderate” confidence in the current status because although TRPA data were collected according to methods prescribed in TRPA's Shorezone Noise Monitoring Program (and reviewed by a noise expert), procedures for the Airport Monitoring Program are different than those used by TRPA. TRPA noise monitoring equipment is regularly calibrated, and sample design and effort is documented (TRPA 2009).

Did the Airport's noise testing measures meet the requirements listed in the noise standards for aircraft? How were they 'different' from the Shorezone data collection? Why is this relevant? Does it make the aircraft noise monitoring data invalid, and if

so, why would TRPA approve a monitoring network for the airport that it does not feel accurately monitors for aircraft noise?

The Interim Target states:

Interim Target – Based on the current trend of this indicator, it is predicted that the exceedance rate will increase. However, by the next evaluation period, the interim target is expected to demonstrate a flattening in trend as a result of TRPA and other partners' efforts to work with the airport to find solutions to mitigate Noise Threshold Standard exceedances.

How many years ago did TRPA adopt the noise threshold standards for aircraft? Clearly well before the 2001 TER was developed, which included the following language in the Compliance Forms adopted by the TRPA Governing Board:

1. STANDARD

TRPA threshold - departures (all aircraft): 80 dBA at 6,500 meters from start to takeoff roll. 77.1 dBA at 6,500 meters from start to takeoff roll between 8 p.m. and 8 a.m. TRPA threshold - arrivals: 84 dBA at 2,000 meters from the runway threshold approach (general aviation and commuter aircraft). 86 dBA at 2,000 meters from the runway threshold approach (transport category aircraft). 77.1 dBA (all aircraft) 2,000 meters from the runway threshold approach between 8 p.m. and 8 a.m.

Note: Within ten years after adoption of the airport master plan, the single - event noise standard for all arrivals shall be 80 dBA

The Airport Master Plan Settlement Agreement was dated 1992. Therefore, in 2002, the standard became 80 dBA for all aircraft between 8 a.m. and 8 p.m. What more is it going to take for TRPA to enforce its noise threshold standards? Further, what will TRPA do differently now that will actually make this happen, as opposed to what TRPA has or has not done since 2002 to enforce the 80 dBA standard? This appears to be yet another area TRPA slides by through putting off enforcement to some future date. Had TRPA been enforcing this standard up until now, what would the trend line look like?

Target Attainment Date – Based on the current trend of this indicator, a target attainment date for Threshold Standard attainment cannot be accurately estimated.

Does this mean TRPA acknowledges it will continue not to enforce its own threshold standard? Is this why the 2012 RPU DEIS Noise analysis lists the old noise standard for aircraft (p. 3.6-4 and -5)?

Programs and Actions Implemented to Improve Conditions – TRPA has adopted aircraft type limitations for the Lake Tahoe Airport based on tested arrival and departure decibel levels. TRPA has also established Noise Threshold Standards for arrival and departures, depending on time of day/night. The City of

South Lake Tahoe has published noise abatement guidelines for all pilots located on the South Lake Tahoe Airport website.

Besides establishing the standards in the first place, what else has TRPA done to “Improve Conditions?” What does the CSLT do, besides maintain a website with noise information? Do pilots get fined? Restricted? Or do they just get letters letting them know they exceeded the standard?

Effectiveness of Programs and Actions – Existing programs do not appear sufficiently effective at achieving adopted Threshold Standards based on the evaluation of available data.

We ask whether Programs and Actions have not been effective because TRPA has not enforced the standard? And the CSLT has not complied with the Settlement Agreement it signed?

What about the Brown-Buntin Associates report which evaluated the aircraft that were expected to meet the 80 dBA standard?¹¹² The BBA report in fact states: “the Lake Tahoe Airport Master Plan requires that within ten years of its adoption the single-event noise standard for all arrivals shall be 80 dBA. This analysis examines the effects of implementation of the 80 dBA arrival noise level standard.” Has TRPA incorporated this into its evaluation of noise in any way? Or looked at 2011 aircraft noise technology?

Recommendation for Additional Actions – Further noise mitigation measures may be necessary to achieve existing zero exceedance aircraft Noise Threshold Standards. For example, further restricting aircraft type, flight frequency and/or the time of day aircraft are allowed to take-off and land may aid in mitigating aircraft noise. Alternatively, an investigation may be necessary to determine if existing Threshold Standards are achievable given today’s aircraft noise-reduction technologies (i.e., the types of aircraft using the airport may not be capable of achieving adopted noise standards). Although there is an established monitoring plan for single noise events for aircraft at the Lake Tahoe Airport, discrepancies of applicable Threshold Standards exist between the City of South Lake Tahoe and TRPA (i.e., 77 dBA Lmax vs. 80 dBA Lmax). In order to obtain higher confidence in status and trend evaluation, monitoring of aircraft needs to be standardized between monitoring parties.

TRPA suggests further restrictions on “*aircraft type, flight frequency, and/or time of day...may aid in mitigating noise.*” How much would simple enforcement of the existing TRPA noise standards ‘mitigate’ noise?

We also note the passive way TRPA has described the following: “*i.e., the types of aircraft using the airport may not be capable of achieving adopted noise standards.*”

¹¹² This report was provided to member of the Noise Technical Working Group, titled: “Brown-Buntin Associates, Inc., TRPA Noise Thresholds Analysis” (7/23/02).

Perhaps the types of aircraft using the Airport should not be using the Airport? How many flights of the same variety (e.g. charter, commuter, etc.) are available that do meet the standard? Has TRPA evaluated this? Why is the monitoring of aircraft not standardized between parties? According to what legal opinion did the noise standards stop applying to the airport?

We acknowledge some exceedances may occur initially, perhaps when an aircraft's manufacturing specs have noted a certain noise level and Tahoe-specific factors cause this aircraft to generate more noise. But, in this case, what if TRPA developed a control measure that requires follow-up to every single event aircraft exceedance that is not due to military (exempt) or emergency aircraft.¹¹³ The noise standard would not be changed, and the indicator would continue to prohibit any exceedances. Aircraft that can not meet the 80 dBA are not allowed to use the Airport (as required in the standard). If this has been knowingly violated, actions, including fines, must be taken. For other situations, TRPA has the information available to develop, through a full public process, guidelines that might allow for the dismissal of fines or other guidance.¹¹⁴ Regardless, the end result would be aircraft meet the noise standards and noise levels in Lake Tahoe are reduced, as intended by the Compact.

However, if an exceedance occurred and there was no follow-up or review, then it would count against attainment status. This is not a 'new' concept. TRPA recommended it in 2001:

“TRPA recommends developing procedures for airport noise and other single events to determine when noise events should be considered or excluded in evaluating noise thresholds.”

However, TRPA has failed to follow-up on this, and includes no consideration of this alternative approach in the 2011 TER, or in the RPU DEIS. Instead, TRPA repeatedly precedes the term 'standard' with 'the no-exceedance' or 'zero exceedance' standard, descriptors which have not been used in previous threshold evaluations. Combined with explanations about how difficult it is to meet these 'zero-exceedance' standards, the TER biases the reader against the zero-exceedance standard, making it difficult for anyone unfamiliar with the past noise evaluations to come to any conclusion other than to agree it's impossible to ever achieve these 'zero-exceedance' standards. This would be expected to result in apathy – *if it can never be achieved, why try so hard to achieve it?* This concept appears to dominate the threshold evaluation in all cases, since TRPA proposes very little action, if any, to actually reduce noise and improve enforcement of the standards.

¹¹³ Although the CSLT may have no authority over military aircraft, nothing prohibits TRPA or the CSLT from addressing noise from military flights in some way. We note the 2001 TER recommended: “TRPA should re-evaluate the threshold and consider adding an exemption for military aircraft, or seek cooperation from the military to reduce flights (August 2002).”

Has TRPA considered proposals that would help *reduce* noise, rather than write it off because ‘it’s simply not possible to never have even one exceedance?’ Surprising to readers who may only be reviewing the 2011 TER would be TRPA’s recommendations to address these issues going back to the first TER (1991):

1991 TER:

1996 TER:¹¹⁵

Implement the noise mitigation measures listed in the South Lake Tahoe Airport Master Plan.

2001 TER:

¹¹⁵ The 1996 Recommendation was found in the “Status of 1996 Recommendations” section in the 2001 TER.

A relatively low noise level is an attribute of the Lake Tahoe Basin that is enjoyed by both visitors and residents. However, the study, *Report for the Establishment of Environmental Threshold Carrying Capacities* (TRPA, 1982) indicated that background noise in the Region was rising as a result of increased levels of human activity. TRPA's noise thresholds are based on achieving the following objectives as they relate to noise:

1. Reduce or eliminate those activities in the Basin that produce damaging or distressing noise levels; and
2. Provide for community and neighborhood tranquility.

N-1 [Aircraft]:

1. TRPA should re-evaluate the threshold and consider adding an exemption for military aircraft, or seek cooperation from the military to reduce flights (August 2002).
2. TRPA will work with the South Lake Tahoe Airport to implement the reduced arrival noise levels (August 2002).
3. TRPA should clarify the threshold to establish when noise measurements apply to threshold attainment (August 2002).

Detailed recommendations found in the 2001 TER, Appendix B, include the following "Products":

"TRPA will develop procedures for evaluating military flights as they apply to threshold attainment."

"TRPA, with the assistance of Brown Buntin Associates, Inc., the South Lake Tahoe Airport, the Noise Working Group and other local and state agencies will develop guidelines for the airport to determine the applicability of certain flights to threshold attainment."

Where is the follow-up to these recommendations? It appears, according to the 2006 TER (see below), that actions were taken, but never resolved. Why not? Did TRPA simply give up after 2006?

2006 TER

Unfortunately, the only recommendations in the 2006 TER were to re-initiate the noise monitoring the City and TRPA were supposed to be doing all along (in fact, the response to the "Status of the 1996 Recommendations in the 2001 TER was quite familiar:

"Although the noise monitoring system was put in place prior to the 1996 Evaluation, the monitoring equipment fell into disrepair. By January 2000,

the program was fully operational. Some work is needed in establishing monitoring and testing procedures.”

The 2006 TER status and recommendations included:

The 10 year phase in of the 80 dBA noise standard is complete and is therefore the 80 dBA standard is in effect. As to developing procedures for allowing noise exceedances in special weather conditions none were promulgated due to the fact that the parties to the settlement agreement found it difficult to agree on this exemption.

The proposed 2006 interim targets for this indicator are as follows:

1. By September 2007, the City of Lake Tahoe shall commit funding for airport noise monitoring equipment.
2. By October 2009, reestablish the noise monitoring equipment at the airport.
3. By 2011, complete the evaluation of the two years of monitoring data.

Threshold Target Dates

The proposed target date for threshold attainment is 2012.

Yet the RPU/RTP draft documents make no such reference to this, and in fact include the expanded use of the Airport in Alternatives 1, 3, 4, and 5 in the RPU DEIS. These transit ‘packages’ include “City of South Lake Tahoe (TVL) Aviation Capital”¹¹⁶ and the RTP Public Draft (p. 4-20) explains:

“Current plans at Lake Tahoe Airport include annual improvements averaging approximately \$1.5 million for runway, apron, and taxiway rehabilitation projects, new and expanded buildings, and an estimated \$800,000 for annual operating costs.”

The CSLT Fiscal Year 2011/2012 Annual Budget¹¹⁷ also includes expanded service:

“...there is renewed interest and opportunity to reestablish commuter air service at the South Lake Tahoe Airport. Innovative funding options will be explored, comparable air service in similar communities will be solicited and local partnerships with the Gaming Alliance and Heavenly Resorts will be leveraged to attract commuter air service to South Lake Tahoe.

Performance Measures: A Plan of Action specifically designed to bring commuter air service to South Lake Tahoe will be submitted to the City Manager in 2012. Results of the evaluation of service provided in comparable communities will be provided to the City Council and Airport Commission in 2012 and a partnership

¹¹⁶ RTP Public Draft, Figure 6-3: “Tier 1 Constrained Scenario Project List: Cost and Implementation Steps” (p. 6-9)

¹¹⁷ <http://ca-southlaketahoe.civicplus.com/DocumentCenter/Home/View/1445>

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with the Gaming Alliance and Heavenly Resorts will be established by summer 2012 to restore commuter air service.”

What does this mean with regards to increased use of the airport, and resultant noise levels? Which is it? Does TRPA intend to abandon any responsibility over noise from the airport? How will this provide equal and superior protection? How will this meet the public’s desire for a quieter environment in the Basin (see Pathway 2007 Reports and documentation, including noise survey data, all of which are TRPA documents).

Other Single Event Noise: N-2:

1991 TER:

2001 TER:

“TRPA, with the input of the Noise Working Group and other consultants, shall develop a more thorough CNEL monitoring program, shall create and implement consistent noise monitoring program for single and community noise events, and shall re-evaluate the thresholds for the traffic corridors. Noise measurements need to be performed more often, perhaps on an annual basis, in order to determine if standards are being met...Product: Appropriate noise thresholds and control programs to be included in the 2007 Regional Plan.”

The 2006 TER notes the following:

[N-2]:

The 2001 interim target for this threshold stated that; “No more than five monitored single-event noise occurrences per year by December 2003”. Because more than five single event noise violations were recorded, the interim threshold target was not achieved.

Threshold Target Dates

The proposed target date for threshold attainment is 2012.

...2006 Status Evaluation Relative to Threshold Attainment Schedules

Threshold Interim Target Status

The 2001 interim target for this threshold stated that an interagency noise enforcement MOU would be adopted by June 30, 2003, a 2004 Noise Work program would be completed by June 30, 2001, and roadway pavement testing would be conducted by March 2003. The TRPA completed the 2004 Noise Work Program. However, the remaining targets were not completed.

Threshold Target Dates

The proposed target date for threshold attainment is 2012.

...[2006] Threshold Recommended Changes

The proposed indicator combines the N-1 Single Event Noise (Aircraft) indicator with the N-2 Single Event Noise (other than aircraft) into a single indicator named N-1 Single Event Noise Sources. This was done primarily to simplify the threshold and limit the number of indicators within the noise threshold. For the most part, very limited changes are proposed for this indicator. These changes fall into three primary categories: (1) change in indicators, (2) adoption of a single set of standards Basin-wide for all single event noises, and (3) improvement of the existing standards.

The public along with the technical working group expressed concern that the major challenge with the current threshold was lack of monitoring and enforcement. To address this, new indicators were developed for each of the single event noise sources. These indicators were specifically designed to monitor the enforcement and monitoring activities of the Basin agencies in order to provide valuable information on where resources should be allocated for the best possible impact. The proposed indicators include:

- Number of exceedances of the noise standard by noise source.
- Number of corrective actions taken by noise source.
- Percentage of planned monitoring completed by noise source.

Additional changes to the Single Event Noise Sources include the recommendation for the adoption of California's single event noise sources noise standards Basinwide. California's noise standards are considered the most progressive, and are necessary to preserve the serenity of the community and neighborhood.

What happened to these recommendations? The 2011 TER makes little to no mention of this, instead consistently reiterating the 'zero exceedance' standard for single event noise sources and including no discussion of any review of the indicators. We reiterate points made in comments on aircraft above for this category related to the alternatives TRPA could and should consider related to the noise standards, that would encourage noise reduction, enforce policies and regulations, result in actual follow-up to exceedances (which would be expected to, over time, to help reduce noise), and other options that would help reduce single event noise. Instead, it appears TRPA has abandoned all attempts at improving the noise threshold attainment, instead complaining again about how the 'zero-exceedance' standard can not be met, but making no suggestions about alternatives that could actually lead to reduced noise.

The 2001 TER included several recommendations as well (inserted below), and although we are encouraged by TRPA's implementation of at least some noise monitoring over the recent years, the 2011 TER continues to recommend the need for more monitoring and/or consistent methods. Further, the 2011 TER only discusses watercraft and aircraft, therefore the public is provided no information regarding the other sources of single event noise, or what TRPA's recommendations will be, and so on. In the meantime, ten years have passed, and noise continues to be a problem.

2001 N-2 [Other Single Event Noise]:

1. TRPA, with the input of the Noise Working Group and other consultants, shall create and implement a consistent noise monitoring program for single and community noise events. (See Recommendation D in Section III of the 2001 Threshold Noise Evaluation) [March 2004].
3. TRPA shall adopt measurement protocols that allow for boat noise enforcement (see Section III for details). (November 2002).
4. TRPA should develop and implement a program to study the effects of noise on wildlife. (December 2002)
5. Utilizing data from the above wildlife study, TRPA shall adopt standards in cooperation with the U.S. Forest Service for wilderness and non-Urban areas (December 2004).

[Interim Target]:

By 12/03, no more than 5 single event noise occurrences per year.

Noise Single Event Standards and TRPA's Role:

Although TRPA had made attempts in the past to improve the Noise Thresholds and increase monitoring, both of which could support actions to reduce noise and attain standards, we also note that with regards to all non-aircraft single event standards, there appears to be no significant changes made to reduce noise from these sources. Although enforcement of the 600 foot No-Wake Zone was finally improved by TRPA, TRPA has apparently instead blamed the conservation community for their inability to conduct an adequate boating program.¹¹⁸ Regardless, for other sources of noise, what did TRPA do to try to attain the 'no more than five' target? It appears TRPA set an interim target, but did nothing to try to ensure it was met, other than hope (and blame the failure on its lack of police authority). In the meantime, TRPA proposes to increase the noise sources in the Basin (people, cars, equipment, off-road recreational equipment, etc.), without any assessment of the impacts, yet apparently without taking any responsibility for them either. If TRPA cannot enforce the standards it has now, then TRPA needs to figure out what options are available to meet the standards, implement those actions, then ensure they have worked (through adequate, continuous monitoring), before TRPA adds more noise sources to the Basin through the Regional Plan it does have authority to implement. This was also suggested by Mr. Hunt in the peer review of the 2011 threshold evaluation (Appendix E):

"The TRPA report also recommends that noise standards be eliminated in instances where TRPA lacks the authority to enforce compliance (page 13-12). The TRPA claims it does not have the *"authority and capacity"* to enforce some standards as they lack the necessary *"police powers or criminal authority to temporarily arrest an individual"*. This reviewer does not agree with this recommendation as the TRPA may have other alternatives to consider in lieu of elimination of standards. TRPA should consider delegating enforcement for selected noise standards to local law enforcement officers and/or health agents provided TRPA numerical standards are recognized by and/or incorporated into the local statutes for each of the affected towns and counties in the Lake Tahoe Region. Violations as confirmed my noise measurements could result in warnings and fines levied against the offender."

In the Recommendation for Additional Actions discussion on p. 10-11, TRPA takes an underhanded 'hit' at the conservation community who filed a lawsuit against TRPA regarding the 2008 Shorezone Amendments, which the courts agreed lacked adequate analysis of impacts. Here, TRPA claims "TRPA could also re-enact a prohibition on boats operating in the lake that have working, aftermarket exhaust bypass systems. However, this rule was invalidated by a Court decision in 2008." But, this is not true. The court ruling did not change the noise **standards** for watercraft. As TRPA itself notes on p. 10-4, *"TRPA adopted Noise Threshold Standards for these noise sources are the same as those adopted by state and local jurisdictions, and represent noise levels from properly maintained and unmodified*

¹¹⁸ We note it was not the Conservation Community who elected to adopt new Shorezone standards based upon a flawed analysis. TRPA's frustration, then, seems to be that the agency 'got caught.'

equipment.” Thus, so long as the Noise standards for watercraft apply, they dictate the prohibition of watercraft that are using these aftermarket systems on the Lake. Further, looking at this from another perspective, if a boat *can* meet the noise standards with modified equipment, then it meets the noise standards, so what reason would TRPA have to prohibit this boat on the Lake (at least, with regards to noise¹¹⁹)? This misrepresentation of facts by TRPA is just another example of TRPA misleading the public.

Cumulative Noise Equivalent Level (CNEL) – N3:

As the Pathway 2007 Draft Report summarized, noise has been an integral part of land use planning in the Basin. Or, at least the Compact required the adoption of noise thresholds. Unfortunately, noise in the Basin has generally increased as more people live here, visit here, and are active here, yet most environmental planning resources have focused on other thresholds. In each five-year threshold evaluation report, we see a common theme. Noise should be decreased, but we haven’t really monitored it. Unfortunately, we have seen the more recent development of a more apathy-based approach: we can’t enforce the standards for some number of reasons, and we can’t afford to have an adequate monitoring plan, so we should re-evaluate the standards (and of course, the recommendation to monitor always gets carried forward as well).

“Based on the present monitoring record, it is unclear whether the broad scope of CNEL non-attainment status is due to standards that cannot feasibly be achieved under any circumstance because they are inconsistent with other allowed standards and activities within the Regional Plan, or whether the absence of fully reliable measurement protocols are leading to invalid or unreliable conclusions about status, trend, and attainment. Given these uncertainties, the adopted Noise Threshold Standards should be thoroughly evaluated, and necessary changes considered to improve noise Threshold Standards within the Regional Plan’s systems.” (2011 TER, p. 10-23).

Yet, as discussed in comments regarding the RPU analysis, TRPA responds to their inability to enforce noise standards by proposing alternatives that will draw more people and noise sources to the Basin. Clearly this will not achieve the desires expressed during the Pathway 2007 process:

“Noise management has been an integral part of the land use planning and environmental improvement process in the Lake Tahoe Basin since the development of the TRPA environmental threshold carrying capacities. Visitors and residents have expressed their concerns about the quality of the overall noise environment (the lack of silence as well as the presence of perceived excessive noise levels) from identifiable noise sources such as on-highway vehicles, off-highway vehicles, over-snow vehicles, watercraft and aircraft. In developed areas

¹¹⁹ We make this statement with regards to noise emissions only, since motorized watercraft do create impacts to other TRPA thresholds (e.g. air and water quality).

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of the Basin, noise from highways may create annoyance or activity disturbance such as speaking or sleeping. Noise from powered recreation equipment may also interfere with the enjoyment of a quiet dependent recreation activity such as hiking or cross-country skiing. Noise by definition, is “unwanted sound,” and is a subjective reaction to acoustical energy or sound levels.”

Just as past evaluations have continued to include recommendations to reduce single event noise, the same can be said for community noise as well.

1991 TER:

2001 TER:

N-3 [Community Noise]:

1. TRPA, with the input of the Noise Working Group and other consultants, shall develop a more thorough CNEL monitoring program. Noise measurements need

to be performed more often, perhaps on an annual basis, in order to determine if standards are being met. (See recommendation D in Section V of the 2001 Threshold Noise Evaluation) [March 2004].

2. TRPA, with the input of the Noise Working Group and other consultants, should re-evaluate the thresholds for the traffic corridors. Any threshold changes should include corrections to the numeric values based upon roadway grades, pavement conditions, etc. (March 2004).

3. To help attain the roadway standards, TRPA recommends that a test be performed to evaluate different pavement types and their potential for noise reduction. (March 2003).

N-3 2006 Attainment Schedule

[Interim Target]:

By June 30, 2003, adopt an interagency noise enforcement MOU. Complete a 2004 Noise Work program by June 30, 2002.

Conduct roadway pavement testing by March, 2003.

Appendix B includes:

“TRPA, with the input of the Noise Working Group and other consultants, shall develop a more thorough CNEL monitoring program, shall create and implement consistent noise monitoring program for single and community noise events, and shall re-evaluate the thresholds for the traffic corridors. Noise measurements need to be performed more often, perhaps on an annual basis, in order to determine if standards are being met...Product: Appropriate noise thresholds and control programs to be included in the 2007 Regional Plan.”

2006 TER

Table 9-5 shows the proposed standards for the cumulative noise levels. The standards are divided into land use classifications and transportation corridors which are defined as the width of the highway plus 300' out from the curbs of the highway. These standards are comparable to other areas with similar land uses and no changes are proposed for either the 24-hour or the transportation noise corridor standards at this time.

The addition of 1-hr standards for these areas is proposed. This standard is being developed to address short duration noise sources that have been shown to impact the desired condition for this indicator. The specific numbers for the proposed 1-hr standards are currently being developed and therefore are not shown. This change in indicator and standard is likely to be incorporated into the Regional Plan after further analysis by TRPA.

Recommended Changes for 2006

The initial change would be to renumber this indicator as N-2. The second recommendation would be to prioritize the current program and focus only on two or three recommendations. The first priority would be to establish a noise monitoring program for community event noises that would include monitoring frequency and the protocols for the actual measurements. The second

recommendation should be to develop a plan to monitor, evaluate and recommend improvements to this threshold. Noise monitoring over the last four years included a one time estimate of the CNEL levels for 9 out of the 180 plan areas. As stated in previous threshold reports, improvements are needed in order to manage the monitoring needs of this threshold. Similar to the single event noise indicator, the third priority should be given to manage the noise associated with traffic which is the primary source of CNEL violations.

2011 TER

In the 2011 TER, as expected, CNEL standards were found to be out of attainment.¹²⁰ Although some measurements were taken in 2011 and included in some of the TER text, very little is known about the type, location, and extent of monitoring that was done. Noise monitoring locations are noted on the small regional maps (1 inch wide by 2 inches tall). Although this might provide readers an idea of the general vicinity, clearly it is not sufficient to assess where monitoring was conducted, and what other nearby activities or uses might affect noise measurements. For example, if one is recording noise for the “Critical Wildlife Habitat” category, were CNEL measurements affected by nearby roadway noise? Distant watercraft noise? Nearby hikers? Although the status is either attainment or non-attainment, information regarding the noise sources during the measurements is necessary to assessing what actions to take in the future.

Which, unfortunately, is yet another round of “we should do more in the future.” Examples include, but are not limited to, the following excerpts from the TER:

Recommendation for Additional Actions – CNEL for the Critical Wildlife Habitat land use category is out of attainment with the adopted Threshold Standard. Enforcement of existing regulations by responsible jurisdictions may aid in reducing CNEL, consistent with adopted Threshold Standards. Enhanced enforcement could include the preparation of a critical wildlife habitat map that could be used as outreach material to educate recreationists or operators of noise-inducing equipment. In addition, an improved monitoring and evaluation plan is needed to guide future CNEL monitoring efforts. It is recommended that this plan be comprised of a peer reviewed standardized methodology, which includes protocol and procedures to be used in noise monitoring efforts Basin-wide.

¹²⁰ “In general, indicators for the Cumulative Noise Events Indicator Reporting Category indicate that the Regional status is somewhat worse than the established target, there was little or no change in trend, and confidence in status and trend was determined to be low to moderate (Figure 10-2).” [aka non-attainment].

Recommendation for Additional Actions – CNEL for both land use categories are out of attainment with the adopted Threshold Standard. Enhanced enforcement of existing regulations by responsible jurisdictions may aid in reducing CNEL consistent with adopted Threshold Standards, such as enforcement of illegal vehicle noise modifications by state and local law enforcement jurisdictions. In addition, an improved monitoring and evaluation plan is needed to guide future CNEL monitoring efforts. It is recommended that this plan be comprised of a peer reviewed standardized methodology, which includes protocol and procedures to be used in noise monitoring efforts Basin-wide.

Recommendation for Additional Actions – CNEL for all land use categories and transportation corridors are out of attainment with the adopted Threshold Standard. Enhanced enforcement of existing regulations by responsible jurisdictions (e.g., enforcement of illegal vehicle noise modifications by state and local law enforcement) may aid in reducing CNEL consistent with adopted Threshold Standards. Encouraging low-noise pavement technology for transportation corridor projects may also aid in reducing CNEL values. In addition, a monitoring and evaluation plan is needed to guide future CNEL monitoring efforts. It is recommended that this plan be comprised of a peer reviewed standardized methodology, which includes protocol and procedures to be used in noise monitoring efforts Basin-wide.

Finally, although this general theme is carried through each CNEL category, we refer specifically to the recommendations related to the SLT Airport Corridor:

“Recommendation for Additional Actions – CNEL for the South Lake Tahoe Airport transportation corridor is out of attainment with the adopted Threshold Standard. Additional aircraft noise mitigation measures may be necessary to reduce CNEL, consistent with adopted Threshold Standards. For example, further restricting aircraft type, flight frequency and/or the time of day aircraft are allowed to take-off and land may aid in mitigating aircraft noise. Although there is an established monitoring plan for single noise events for aircraft at the Lake Tahoe Airport, there is currently no mutually established protocol for evaluating CNEL at the Airport. Therefore, the development of a monitoring and evaluation plan for the Lake Tahoe Airport is needed to guide future CNEL monitoring efforts. Further, the feasibility of meeting currently adopted CNEL (or single event) noise Threshold Standards for the Airport is uncertain and should be evaluated. Based on the evaluation, Threshold Standards should be considered for adjustment consistent with FAA, TRPA, and airport permit requirements. Modified Threshold Standards, if any, should be addressed and incorporated in updates to the Airport Master Plan.” (p. 10-26).

Where is the evaluation conducted by BBA regarding the types of aircraft that could meet the 80 dBA standard? This was performed before the 2006 threshold evaluation.

As noise is a required threshold standard, any proposed changes must be analyzed by TRPA through a full, public review process. Impacts to noise standards, as well as other affected standards (e.g. air quality), would need to be assessed as well. Further, a loosening of the noise standards for aircraft to allow even more noise is contrary to direction in the Compact, contrary to what the public has said it wanted in the Basin, and certainly would not provide equal or superior protection of the environment.

Changes to CNEL standards:

Although no changes are proposed with the 2011 Threshold Evaluation or the RPU DEIS/RTP DEIR/S alternatives, TRPA has carefully set the stage to do so, diminishing the value of the noise standards.

“Overall, the feasibility of meeting currently adopted Single Event and Cumulative Noise Events (CNEL) noise standards (maximum allowable ambient noise levels) should be evaluated and standards adjusted to levels that are protective, but realistically achievable. Furthermore, the method of determining noise threshold attainment should be reconsidered. In previous Threshold Evaluations, as in this one, if one noise exceedance was observed, it was concluded that the Region was in “non-attainment” for that land use category of single event type. Allowances for statistical significance or a certain percent of noise exceedances may be more appropriate given the transitory nature of noise and the feasibility of regulating driver behaviors or the types of vehicles entering the Region.” (TER Chapter 13).

TRPA has also referred to peer review comments regarding how the standards are too complex and resource intensive to apparently support the need to make them more ‘lenient’ (allow more noise) in the future. This is summarized upfront in Appendix E:

- Noise: The noise program is too complex and resource intensive. There are too many indicators, land use categories, and numerical thresholds that need to be monitored to evaluate attainment. Non-attainment should not be based upon a single exceedance of a standard, but rather on a percentage of events that exceed the threshold over a fixed time periods.

However, we note that the peer reviewers suggest this based on TRPA’s “claim” that it is too resource intensive. Mr. Hunt’s comments include the following (pages 3 and 5 of his comments in Appendix E):

“Attainment may not be possible given the current approach and the TRPA claim of limited resources...”

2] There are too many indicator categories for CNEL noise given the current approach and TRPA’s claim regarding lack of resources.

Consolidation/combination of existing land use categories should be considered if this can be justified.” (Mr. Hunt, page 5).

However, TRPA has failed to consider other options to fund noise monitoring. Further, the noise TER appears to set the stage for not considering noise impacts very seriously, as clearly reflected in the inadequate evaluation of noise in the Draft EIR/EIS documents (see comments below).

Finally, we note that CNEL standards are not unique to Tahoe, although the numerical values should be. CNEL standards are applied in other areas as well,^{121,122} thus the technical support behind them is not in question.

Noise Monitoring:

Clearly, noise monitoring has been infrequent and inconsistent. We remind TRPA that the Compact requires TRPA to monitor thresholds for attainment status. If TRPA does not have the resources available to do so, then TRPA must evaluate other approaches to obtain resources. However, the TER and the RPU and RTP documents fail to analyze alternative solutions.

We note that although peer review comments may suggest the current thresholds are too resource-intensive, comments make it very clear this is tied to TRPA’s claim it does not have the resources to monitor, not that it’s not important nor that other avenues for funding shouldn’t be pursued:

“[1] The noise program is too complex and resource intensive at present. There are too many indicators, land use categories and numerical thresholds that need to be monitored to evaluate attainment. Attainment may not be possible given the current approach and the TRPA claim of limited resources. These circumstances likely contributed to the TRPA recommendation to eliminate some standards and “*only retain standards and associated indicators which it has the authority and capacity to affect and measure*” (page 13-12).”

Wildlife: Special Interest Species - Goshawk

The original proposed update included the 500 acre disturbance zone plus a 0.5 mile buffer around the nest sites, much like the USFS has a similar radius for “Limited Operating Periods.” Why has TRPA reduced the size of the radius?

Scenic Quality

¹²¹ For examples, California. http://www.sfu.ca/sonic-studio/handbook/Community_Noise_Equivalent.html;
<http://www.dot.ca.gov/hq/planning/aeronaut/documents/statenoisestnds.pdf>

¹²² http://opr.ca.gov/docs/General_Plan_Guidelines_2003.pdf

Scenic quality has been maintained and, in general, improved since adoption of the 1987 Regional Plan. The Thresholds Evaluation Report, dated May 3, 2012, which monitors scenic improvements along roadways and shorelines, identifies trends as either “moderate improvement”, or “little or no change.” The Draft Plan (and Draft EIR/EIS) make the point that most scenic quality improvements have occurred through development and redevelopment. This is somewhat misleading. Scenic quality values rarely improve when new development, especially private development, occurs on previously undeveloped land.

IV Comments on TER Chapters 12,13 & Proposed Future Updates*

Comments on TER Chapter 12: Implementation and Effectiveness

Between 1987 and 2010, TRPA considered and adopted several amendments to the *Regional Plan* to incorporate best available science and make necessary adjustments to accommodate environmentally beneficial projects and programs.

As noted in our 6/28/2012 comments and herein, recommendations to amend thresholds and the Regional Plan to address current science and conditions have repeatedly been delayed – some for over 15 years. Thus, TRPA has failed to incorporate the best available science and make necessary adjustments for years. This is not the result of a faulty Regional Plan, but rather, faulty implementation.

Starting in the 1990s, Threshold Evaluations and other studies made it clear that regulation alone would not achieve and maintain adopted Thresholds Standards; the environmental impact of legacy land uses and urban development that was built prior to the *Regional Plan* continued to adversely impact the Region. To remedy this, TRPA amended the *Code of Ordinances* to include the Environmental Improvement Program (EIP; see Chapter 31 *Code of Ordinances*). The EIP, initiated in 1997, leveraged and secured federal, state, local, and private funding for the implementation of erosion control and storm water treatment infrastructure, wetland restoration, and other environmentally-beneficial programs and projects.

Although the EIP program has provided for significant environmental improvements for some thresholds, what improvements could have been realized had thresholds and the Plan been amended in a timely manner to address new science and environmental conditions, as was supposed to occur? If the Plan had been implemented correctly? Policies adequately enforced?

Water Quality:

This report concluded that the trend in winter average pelagic Lake Tahoe transparency over the last decade has turned the corner, and the trend now, albeit slowly, appears to be heading toward Threshold Standard attainment. Although the annual average level of Lake Tahoe continues to decline, the *rate* of decline has slowed when compared to the rate of decline prior to the adoption of the *Regional Plan* and the EIP. Tributary water quality indicators indicate stable or improving conditions. The Pelagic Lake Tahoe Primary Phytoplankton Productivity indicator, which responds to nutrient loading to Lake Tahoe, has shown improvement over the last two years amidst a long-term trend of rapid decline relative to the standard. Despite the fact that many of these indicators have yet to achieve prescribed standards, other non-threshold indicators suggest that Lake Tahoe is still maintaining its unique ecological status as an “*ultraoligotrophic*” lake (Figure 12-1)1.

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There are many questions regarding the water quality standards and recent ‘trends.’ See our detailed comments on the water quality section.

The results of TMDL research; the findings of stable to moderate improvement in tributary pollutant concentrations, and little or no change in pollutant loading to Lake Tahoe, indicated that adopted policies and programs have been at least partially effective at holding the line in Lake transparency decline. Monitoring results and research also suggest that more effective stormwater management and land use policies may be needed to move the Region toward achieving adopted Threshold Standards for pelagic Lake Tahoe.

What ‘more effective stormwater management and land use policies’ may be needed? Why would stronger measures not simply be taken since, after all, the water quality thresholds are still not being attained? What benefits could be realized from less coverage and increased infiltration? Designing for the 100-year storm vs. the 20-year storm? Increasing ability to use flood plains, and increasing area of flood plains? How much have meteorological conditions affected clarity trends?

Air Quality:

Air Quality

Available status and trend monitoring data for air quality indicate that the Region is currently meeting the majority of applicable standards. Evidence suggests that state and federal tail-pipe emission standards and newer automobile designs have likely played a significant role in moving the Region toward attainment of air pollutant-related Threshold Standards, and that TRPA-sponsored projects, controls, and programs have contributed to the attainment of traffic volume-related standards. Transport of air pollutants from outside of the Region (e.g., wildfire smoke, ozone) will likely continue to affect air quality and the Region’s ability to meet all air pollutant-related standards. Additional Regionally-scaled air pollution control measures may be needed to keep the Region in compliance with adopted standards.

As noted in our comments on the Air Quality threshold evaluation, air quality has, in some cases, been getting worse over the past five years (e.g. PM, ozone), even as vehicle use has decreased due primarily to economic factors (on this note, although in other areas of the TER and the RPU/RTP draft documents, TRPA has implied this is due to TRPA actions, and provides no future ‘cushion’ to address the eventually ‘return’ of this VMT). Chapter 12 notes:

As Table 12-6 indicates, VMT and DVTE each decreased during the five-year reporting period. This may be due to a declining local population and the economic effects of the “great recession” since improvements to public transportation were relatively limited when compared to projects that occurred in the previous reporting period (e.g., Heavenly Gondola Project).

Further, the TER (and RPU/RTP) continues to assume that most air pollution is caused by tailpipe emissions, even though a cursory review of Tahoe-specific information¹²³ suggests other sources may contribute far more than assumed (e.g. motorized watercraft).

Finally, although some out-of-Basin ozone is likely, current research has suggested most ozone is related to in-Basin sources. However, TRPA has failed to focus on the

¹²³ Included in our 6/28/2012 comments.

increasing trends in ozone, instead dismissing them because the recent trend does not match the historical trend (see comments in AQ section). We also note that although TRPA can not control what happens with regards to out-of-Basin wildfires, TRPA should take measures to reduce exposure to such pollutants when they happen.

Soil Conservation:

Soil Conservation

Raumann and Cablk (2008) demonstrated that the implementation of the *Regional Plan* was effective at reducing the rate of urban development and halted additional urban development on sensitive wetlands in the southern portion of the Lake Tahoe Basin (Figure 12-2).

This statement fails to then note any similar actions in the rest of the basin.

TRPA land-use regulations and land acquisition programs implemented by the U.S. Forest Service, Nevada State Lands, and the California Tahoe Conservancy have likely also contributed to this result. To date, public land acquisition programs have retired development potential from over 8,500 sensitive private parcels. Preliminary analysis of hard impervious cover using 2010 LiDAR and Multispectral data, and a contemporary soil survey indicate that the Region is meeting eight of nine management targets for impervious cover.

The reviewer fails to note what portion of these retired lands represent truly restored, never-developed land versus coverage which can be transferred and used somewhere else.

Actions taken by TRPA to slow the rate of development and prohibit urban development in stream environment zones has also promoted the achievement and maintenance of other Threshold Standards, such as standards for wildlife, water quality, vegetation, recreation, fisheries, air quality, and scenic resources. Consistent with findings of past Threshold Evaluations, the Region is not meeting the management target for wetland and meadow-associated land capability district 1b. This result suggests that some land use policies in the *Regional Plan* could be made more effective in moving the Region toward achieving this management target, and that alternative land use policies should be considered to further incentivize the removal and relocation of coverage from the 1b land capability district. It may also be productive to conduct an assessment that identifies which impervious surfaces within the 1b land capability district can be realistically relocated given property rights issues and associated costs. The results of such an analysis may have implications for adjustments to the adopted impervious surface and riparian vegetation management targets.

This statement is reviewing the standard, a numerical standard, not a management standard, through the lens of politics and economics. Nowhere in the Compact is there an intent to address the threshold standards as anything more than the environmental standards they were intended to represent. Further the political and economic assumptions are not only not appropriate for a threshold standard review, they are merely opinion, and not based on science.

If the TER is to wander far afield from its Compact mandate, it would make more sense to first conduct a study that would identify what impervious surfaces within the 1b land capability district can be realistically relocated before implementing a program that would further 'incentivize' what may not be realistically relocated. Instead, it appears no such analysis has been conducted and instead, the TER, based on opinions, is used to

inform the draft RPU EIS which then proposes approaches that perpetuate the assumption any lands can be relocated.

Noise:

Even though TRPA and others have implemented actions and regulations to control noise, current policies, ordinances, and regulations may need to be adjusted to make them more effective at moving the Region toward attainment of several of the adopted noise Threshold Standards. TRPA noise Threshold Standards are set at levels where even ordinary ambient noise may cause exceedances. There is some question whether existing standards are reasonably feasible or consistent with the overall Regional Plan given current noise-reducing technology, scope of authority to control, and other factors. An in-depth review and evaluation of existing adopted noise Threshold Standards and TRPA policies should be performed and amendments considered, to address feasibility, authority, and other relevant factors.

What improvements in noise can be expected with mere enforcement of existing standards? What type of noise-reducing technology could be employed? Pathway 2007 was examining several improvements to the noise threshold program, including the evaluation of hourly CNEL standards, standards to protect wildlife, and additional land use decisions to further protect recreation based on quiet, non-motorized activities from the impacts of loud motorized recreation (e.g. an earlier idea of land buffers was considered as a means to recognize a simple fence or property line does not prevent noise from crossing into adjacent areas where non-motorized recreation is popular). However, none of these improvements are included in the TER. Making matters worse, the RPU/RTP documents propose land use changes that will only serve to increase noise, while discounting enforcement.

Recreation:

To ensure a fair share distribution of recreation opportunities throughout the Region, TRPA established and implemented a “Persons at One Time” (PAOT) recreation capacity allocation system. PAOTs are an estimate of the number of individuals that a recreation facility or area can support at any given time. PAOTs are used as both a target for desired recreation capacity, and a maximum limit to the recreational use that can be supported in an area. Currently, approximately 27 percent of the available PAOTs have been assigned. The rate of PAOT utilization has slowed slightly recently, with 1,162 PAOTs assigned over the five years since the last Threshold Evaluation (2006 – 2011), as opposed to 1,615 assigned during the previous five-year evaluation period (2001 – 2006). The consistent increase in distribution of PAOT allocations and of projects not requiring PAOT allocations, suggests that the *Regional Plan* has been effective at achieving the Policy Statement to ensure a fair share distribution of recreation opportunities.

To what uses have PAOTs been assigned? How many support loud, environmental intrusive recreation (e.g. ski lifts) versus quiet, low impact recreation (e.g. hiking trails)? How many will be allocated to such uses in the future? In other words, where are the data that support the conclusion that has been made that the distribution of recreation opportunities has been “fair?”

Also, the PAOT system does not recognize the impacts one use can have on adjacent uses. For example, the noise generated by snowmobile use can negatively impact adjacent/nearby snow-shoe and cross country ski recreationists. But snow shoers and

cross-country skiers do not negatively impact the experience of snowmobilers on adjacent lands. This conflict expands into numerous other areas as well, and dealing with it has been put off for decades.

Compliance Measures:

Appendix IE-1 in this Threshold Evaluation lists compliance measures in place and supplemental compliance measures by Threshold Category. To satisfy requirements that compliance measures be listed for each Threshold Standard, implemented actions are generalized and provided in each indicator summary narrative in the “*Programs and Actions Implemented to Improve Conditions*” section. The requirement that TRPA show how much and at what rate a compliance measure will contribute to the attainment of a Threshold Standard is problematic, and needs to be addressed as a component of the *Regional Plan* update, or through subsequent *Regional Plan* amendments. In many instances, this requirement fails to account for frequently complex, natural and anthropogenic factors that contribute to the rate at which the Region will attain a Threshold Standard. To determine a compliance measure’s relative contribution to Threshold Standard attainment would be unfeasible to research and model. This provision of the *Code of Ordinances* should be reconsidered and amended because it is not implementable in its present form. The research and modeling needed to understand how compliance measures related to the state’s Lake Tahoe transparency standard (the Lake Tahoe TMDL) costs more than \$10 million. Consequently, fulfilling this requirement has been, and is currently well beyond TRPA’s or the Region’s funding and staffing capacity to accurately or defensibly characterize the incremental effect of each compliance measure. At best, TRPA can use best available science to characterize the causal factors (natural and anthropogenic) and activities (e.g., compliance measures) that affect achieving Threshold Standards.

Unfortunately, the TER fails to adequately assess the causal factors and activities that affect achieving threshold standards. Such a review has been technically possible for decades. Although some information has changed as science has improved our understanding of the environment, the tools and information to evaluate cause/effect (and quickly adapt to new information) have long been available. Instead, TRPA has consistently delayed this, repeatedly recommending it be done (in each five year evaluation report). Now, an entirely new Regional Plan has been proposed, well before the cause/effect relationships with thresholds have been evaluated. This lack of adequate evaluation in advance is only compounded by the fact that the proposed alternatives in the RPU will substantially *increase* the population of the Basin – which will further impact threshold achievement and maintenance. This process is completely backwards. **TRPA should first evaluate the thresholds, and what impacts the thresholds, how to achieve and maintain the thresholds, and only after careful scientific analysis and review will TRPA and others have the information and tools necessary to assess what amendments to the Regional Plan will help serve TRPA primary role: achievement and maintenance of the environmental threshold carrying capacities.**

In fact, peer review comments confirm the critical need for more rigorous scientific analysis:

“A more comprehensive scientific review of the data sets remains a critical need, although this task appears to be already in progress based on various statements that appear in various appendices, and in TERC (UC-Davis) reports - especially their 2011 State of the Lake report for Water Year 2010.” (Dr. Axler, p. 2, Appendix E)

Chapter 12 continues, explaining that this evaluation is being ‘pursued’ through the construction of conceptual models. Although seeking a format to better organize information may have benefits, this does not negate the problem identified in the previous paragraph. Further, will TRPA again evaluate and propose substantial changes to the new RP based on the conclusions of this information? Given the historical track record of putting off amendments dictated by current science documented throughout the previous threshold evaluations, chances are this won’t happen. Let alone, the damage will already be done. This “*build first, then figure out what we should have done later*” approach simply does not suffice.

Permitting Process:

Chapter 12 states: “*The TRPA permitting process is rigorous and effective at ensuring project plans comply with the Regional Plan and the Threshold Standards that the process was designed to achieve.*” We refer to our 6/28/2012 comments regarding the failure to adequately implement the 1987 Regional Plan. Also, TRPA has often amended the Regional Plan in order to approve a project (such that findings can then be made that the project meets the – amended – Regional Plan).

The TER also implies that the current Plan has assured projects meet permit conditions due to the collection of a security deposit. “*6 A security is a monetary deposit provided by the project proponent and held in trust by TRPA that aids ensuring that permit conditions are applied to a permitted project. When permit conditions are satisfied, the security is returned to the permit holder.*” However, this security has often failed to cover the most basic environmental protections. For example, we refer to what locals now call the infamous “Hole in the Ground” at south Stateline. A half built garage has for years sat, creating runoff and pollution, let alone a scenic impediment, due to the developer’s lack of funds. Because TRPA and other entities did not collect adequate upfront deposits, nothing has been done to at least mitigate the environmental impacts of the Hole.

Interpretation of TRPA Chapter 32 (1987 Plan):

Interpretation of TRPA (1987) Chapter 32:

□ **“Threshold Indicators”** - One of the primary purposes of Threshold Evaluations is to provide a meaningful characterization of the status of indicators relative to adopted Threshold Standards. The presentation of attainment status of Threshold Standards in past Threshold Evaluations has been inconsistent and confusing to many readers.

How the information is presented to the general public can be changed without affecting the technical review and determination of threshold attainment status. However, what TRPA has proposed in the 2011 TER is a complete change in how the information is scientifically evaluated in the first place, not merely how it’s presented to the public in general terms. This new approach, as noted throughout our details comments, results in misleading information, improper and unsupported conclusions, misrepresented results, and carefully-worded ‘status’ conclusions that often serve to favor preferred policies in the proposed RPU.

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Furthermore, the approach used to determine Threshold Standard status appears to be in conflict with direction provided in TRPA (1987) Chapter 32 (Chapter 16 in the updated Code) which specifies a monitoring program that will "...identify sufficient indicators for each threshold [standard] and [local, state and federal] standard so that, evaluated separately or in combination, the indicators will accurately measure, on a continuing basis, the status of attainment or maintenance of that threshold [standard] or [local, state or federal] standard, taking into account the impacts of both development in the Region and implementation of compliance measures. In monitoring and reporting on the status of indicators, as called for in this chapter, TRPA shall use the appropriate measurement standards [i.e., units of measure] for those indicators. TRPA shall use consistent measurement standards [i.e., units of measure] over time, so that reports will provide easily comparable data throughout the evaluation period." Past Threshold Evaluations have represented the status of Threshold Standards with 36 "threshold indicators." In many instances these "threshold indicators" do not meet the Chapter 32 *Code of Ordinances* definition of an indicator⁸ but instead are an aggregation of the status of multiple indicators. In other cases, "threshold indicators" do adhere to the *Code of Ordinances* definition. As a consequence of aggregation, in past evaluation reports, if any indicator within a group of multiple indicators related to a "threshold indicator" at any time over the five year period failed to meet the indicator target or benchmark (i.e. Threshold Standard), the entire "threshold indicator" would be reported as "non-attainment." This approach was applied inconsistently but generally skewed the conclusions to an overly conservative determination of attainment status, and failed to reveal the actual attainment status of individual Threshold Standards. The current Threshold Evaluation corrects this past flaw by reporting an indicator's current status relative to the actual adopted standard as it appears in Resolution 82-11 as originally intended. Consequently, this approach is recommended and will be the method used in all future Threshold Evaluations to improve the consistency and effectiveness of communicating Threshold Standard attainment status determinations.

The new approach further aggregates the standards and indicators, overwhelming the true status of the TRPA, state and federal environmental standards. Although the Threshold Evaluation must include results that can be reviewed and assessed by the general public, this should not be done at the expense of an adequate, scientific review in the first place. The new 'graphs' may show the purported trends in a more easy-to-understand picture, but what matters more is the science behind the threshold review, and how that will be used to achieve and maintain thresholds.

Interim Target, Target Dates, and Trends:

The trends in the 2011 TER are often (supposedly) based on what has been the trend for the past 20 years, but as TRPA has noted here, the idea of interim targets and target dates was to assess attainment based on actions TRPA will implement in the future. Not what has happened in the past 20 years. Thus, this new approach appears to establish "benchmarks" that are based on TRPA making no changes.

Interim Target and Target Dates – A major reporting element of Threshold Evaluations is to provide an interim target and predict when a Threshold Standard will be achieved based on the actions that TRPA implements through the *Regional Plan*. These implemented actions are referred to by TRPA as "compliance measures." "Interim targets" are defined as "...a goal, expressed in terms of the applicable measurement standard [unit of measure], reflecting the status of a threshold or standard which TRPA expects to achieve at a major evaluation interval specified for that threshold [standard] or [local, state, or federal air and water quality] standard." And a "target date" is defined as "a specific calendar date on which TRPA expects to attain a threshold [standard] or [local, state, or federal air and water quality] standard which is not now in attainment." Direction provided in Chapter 32 is clear that the agency must identify both target

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dates and interim targets. Nonetheless there has never been a standardized approach set out until now to establish these benchmarks other than to take into account compliance measures, expected development, and evidence in the record. Past evaluations have identified the completion of research as an “interim target,” which is clearly outside of the defined purpose of “interim targets.” In this Threshold Evaluation, available trend data is relied upon as an objective basis on which to estimate both interim targets and target attainment dates. This approach, although fairly simplistic, provided a replicable method to fulfill the interim target and target attainment date reporting requirements. However, refinements will be needed if these reporting requirements are maintained. Future reporting efforts will need to include estimates of confidence around interim targets and target attainment dates to improve their scientific validity.

As noted throughout our comments, the TER has been based on a new methodology when compared to all previous 5-year TERs. One of the largest changes includes an approach which emphasizes trend lines. Individually, our comments note the inappropriateness of the trend lines used, and/or the statistical analysis used to generate the trend line in the first place. Although it appears the idea behind these trend lines is to simply forecast when thresholds will be attained, there are numerous flaws with this approach, including, but not limited to:

- Inappropriate statistics used to generate trend lines (e.g. Thiel method used for air quality standards);
- Trying to ‘fit’ the data into these trend lines excludes important information, especially where threshold attainment has an immediate effect on one of the values the Compact aims to protect (e.g. human health);
- Although examination of historical data is useful and necessary to for understanding the environment and how factors have affected threshold attainment or non-attainment, it is not always appropriate, nor technically justified, to fit a ‘trend’ line based on data from ten to twenty years ago, especially when more recent ‘trends’ have changed;
- Trend lines alone do not support an examination of whether actions taken by TRPA to improve threshold attainment have helped;
- Trend lines provide no analysis of how weather or other factors may be affecting a threshold standard (e.g. what portion of clarity loss may be related to climate change and the warming nighttime temperatures and overall impact on lake mixing?). As Dr. Axler notes:

“My major concern with the Draft Thresholds Report was in regard to its lack of statistical rigor in the status and trends analyses, and not doing a better job of linking the large effects of annual weather differences to lake and stream water quality and the natural variability of the data in the context of available measurement methods.”

- Trend lines provide no examination of what actions TRPA can take to achieve thresholds, including how TRPA may need to adjust actions to account for impacts from climate change (e.g. additional actions may be necessary to address increased loading from climate change – for example, we expect more flooding events, and therefore additional wetlands and floodplains will be needed to help deal with the additional volume);
- With regards to forecasting threshold attainment based on trend lines:
 - Basing the future trend on current or historical trends would suggest no changes are made by TRPA in the future;

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- The forecast trends also appear to relieve TRPA of any responsibility for threshold attainment – they take an “if we do nothing” approach, the threshold standards will somehow be attained in ten or twenty years (or more), therefore ignoring the responsibility of TRPA to achieve and maintain thresholds now.
- The forecast also ignores the changes we are already seeing due to climate change and other parameters, and the need to adjust our actions to address them. Assuming the environment will behave the same way ten or twenty years from now as it did over the past twenty or more years is simply not supported by the science.
- The trend lines also include no analysis of the causes of threshold non-attainment. Rather, assumptions about current causes are made, and expanded upon into the future, although a full review of available information may suggest these assumptions are wrong (e.g. see air quality comments).

Threshold Standards and Updates:

Threshold Standards - According to Resolution 82-11, Threshold Standards are to be reviewed at least every five years by the most appropriate means. After such review, the pertinent Threshold Standards are to be amended where the scientific evidence and technical information provide sufficient evidence to amend the standard. The possibility of updating Threshold Standards was acknowledged in the 2001 Threshold Evaluation and noted again in the 2006 Threshold Evaluation. Detailed technical review of Threshold Standards and indicators (Pathway Planning 2005), and recently released research (e.g., Taylor et al. 2004, Lahontan and NDEP 2010), also revealed opportunities to improve the suite of standards and indicators used to assess environmental conditions of the Lake Tahoe Region. Over the life the *Regional Plan*, only seven Threshold Standards have been amended or updated over the last 24 years. In order to improve the effectiveness of Threshold Evaluations and their value for informing policy decisions, actions are recommended to amend, clarify, replace, and in some cases, remove Threshold Standards. These recommendations are highlighted in the Conclusions and Recommendations chapter of this report.

We have addressed recommendations in our comments on individual sections in both the 6/28/2012 comments and these comments.

Coverage

Total new land coverage created from 1991 through the end of 2010, equaled 14,798,766 square feet, or 339.7 acres. This figure does not account for reductions of land coverage for environmental restoration projects or excess land coverage mitigation (pursuant to Chapter 20 of the *Code of Ordinances*). As Table 12-11 below, indicates, about 1,348 acres (546 acres within the TRPA urban boundary) of stream environment zone (SEZ) land coverage and disturbance in the Region were restored from 1980 through 2010, more than offsetting the total amount of new land coverage created from 1991 through 2010.

The SEZ threshold in Resolution 82-11 is to achieve a net reduction in SEZ coverage. Also, the last sentence would suggest that SEZ has been restored so that other lands can be further covered. However, the 1987 Plan recognized that existing development was contributing to threshold non-attainment. Thus, the plan proposed measures to reduce existing development and restore SEZs. This has been done, often by funds generated

from tax-payer dollars. However, it appears that this has been used as an excuse to discount the impacts of the increased land coverage permitted since 1991. Neither the Compact nor Resolution 82-11 suggested that reductions in coverage plus restoration was to serve as a tool to permit more development. That concept throws the Findings and Declarations of the Compact on their head.

Chapter 13: Conclusions

The combination of our 6/28/2012 comments, and these comments, provide extensive discussion regarding the “conclusions and recommendations” included in Chapter 13. In some areas, items are discussed individually in the threshold resource area they apply to (e.g. air quality), and in other cases, we refer to recommendations as they appear in other areas (e.g. the RPU DEIS).

However, additional general statements can be made. First, the Chapter begins with the following information:

The purpose of this chapter is to: 1) summarize major conclusions from the five-year (2006-2010) evaluation of threshold standards and indicators, 2) summarize findings from the assessment of policies, ordinances, and programs implemented over the course of the *Regional Plan*, and 3) highlight the more noteworthy recommendations identified in individual Indicator Summaries for TRPA and its partners to consider—as they continue to pursue the maintenance and improvement of the Tahoe Region’s environmental quality, consistent with the *Bi-State Compact* and its broad suite of environmental goals. The recommendations included here are suggestions for policy and management actions intended to sustain or improve indicator trends that are short of attainment compared to existing standards, or address deficiencies identified through the *Regional Plan* review. The recommendations should not be construed as commitments, requirements, or specific directives. However, the recommendations reflect approaches that may be considered by policy makers and stakeholders in the development of specific actions considered appropriate to remedy an identified issue.

As our detailed comments note, the evidence to support many of the conclusions, findings related to the implementation of the Regional Plan, and recommendations for future changes, simply does not exist, or has been manipulated to suggest results that are not accurate.

Also, it is unclear what is meant by “*sustain or improve indicator trends that are short of attainment compared to existing standards...*” This appears to again suggest TRPA’s focus on manipulating trend lines, rather than taking actions to achieve and maintain threshold standards immediately. Although we realize some standards will take time to achieve, such as mid-lake clarity, the TER seems to take the “somewhere in the future” approach to threshold standards that do not require decades to be achieved, and have immediate impacts. Examples include air quality standards for human health, noise standards (which affect human and wildlife health), etc.

Further, what is meant by “*or address deficiencies identified through the Regional Plan review.*” Is this referring to the Regional Plan EIS? If so, as noted in our comments, the RPU DEIS falls far short of performing an adequate, thorough review of the impacts of the proposed alternatives on TRPA’s thresholds. Worse yet, the RPU DEIS has skipped

the essential analysis of Basin-wide and local actions on the achievement and maintenance of TRPA's thresholds, and failed to identify adequate further actions needed to achieve thresholds currently out of attainment, and instead, the preferred alternative proposes to hand significant planning authority over to the local jurisdictions – who will not perform the cumulative, Basin-wide analysis related to TRPA's thresholds. In other words, the City of South Lake Tahoe will not analyze the impacts of a proposed Project in the CSLT on Incline Village. Yet as a review of available information shows, emissions from the south end of the Basin affect the east and north east shores of the Basin (being just one example). Thus, the end result is that there will be no comprehensive analysis of the TRPA thresholds, or the impacts and benefits from the proposed Regional Plan.

The next statement in Chapter 13 is an example of the “spin” that has been applied to both individual threshold results and the overall TER (and then used to reflect more favorable trends in the RPU DEIS): *“Overall, the results from this Threshold Evaluation and applied research, together suggest environmental conditions in the Tahoe Region have largely been sustained or improved over the period of Regional Plan implementation (1987-2010).”* As our detailed comments note, many threshold indicators do not show the positive trends claimed in the TER.

In the Regional Policies and Ordinances and EIP sections, many recommendations are made that have been carried over into the RPU/RTP Draft environmental documents. We refer to our detailed comments submitted 6/28/2012 and those included herein with regards to the many individual recommendations made in these sections.

The chapter also discusses the challenges of monitoring thresholds, including the potentially large budget needs. However, TASC reminds TRPA that the thresholds are the basis for the Regional Plan. Monitoring of the thresholds is a requirement, not a luxury or choice. Monitoring not only reveals the status of threshold attainment, but helps assess the causes of threshold non-attainment, and is necessary for determining how to improve threshold achievement and maintenance. Monitoring also helps evaluate whether assumed fixes are actually working. Instead, as noted in our comments, TRPA has continued to approve more development, even as monitoring networks have been reduced or eliminated, and proposes even more development in the new Plan, without adequate information, or consideration of options for ensuring adequate monitoring is in place before more damage is done.

Additional comments on Chapter 13:

Additionally, Chapter 13 of the TER includes several ‘catch all’ recommendations for the future. Although these are for future consideration, they do affect how the RPU DEIS has treated certain standards.

Eliminate Threshold Standards where TRPA lacks authority to enforce. Through the review of Threshold Standards it was found that several have been adopted for which TRPA has no enforcement or data collection authority. For example, TRPA has no regulatory authority to enforce mitigating measures for an adopted air quality standard that relates to the transport of

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pollutants from outside of the Region. In another example, in order to evaluate compliance with some noise Threshold Standards related to watercraft, TRPA would need additional police powers or criminal authority to “temporarily arrest” an individual in order to administer the appropriate noise test. It is recommended that TRPA eliminate such standards and only retain standards and associated indicators which it has the authority and capacity to affect and measure.

With regards to the out-of-Basin sources of air pollution, it appears this may reference wildfire smoke, since research has found that ozone sources are primarily local. Regardless, the TER and RPU DEIS approaches appear to be to simply eliminate thresholds, rather than focus on what revisions could be considered that would still provide for the protection of human health but also recognize the impacts of external sources. For example, the federal government has a process for “Exceptional Event” findings, where a local district can apply for an ‘exception’ related to document Exceptional Events (e.g. extensive wildfire activity). Further, what local changes could TRPA make to reduce overall exposure to pollutant when the Basin is being affected by these external events? Perhaps there are approaches where during such events (which would be defined in advance), additional controls on local sources may be needed (e.g. no residential burning, limit campfires, etc.). What matters most is protecting human health and the environment, not whether the TRPA can say ‘attained or non-attained’ at the end of the day.

TRPA also proposes to eliminate certain noise thresholds based on its level of authority. However, there are two problems with this approach. First, as we have seen with the aquatic invasive species programs, there are ways to address the different authorities among the agencies, if TRPA desires to do so. Second, TRPA approves land use changes which affect the number of watercraft using Lake Tahoe and therefore, the noise coming from watercraft on Lake Tahoe. Thus, TRPA can not disclaim responsibility for the impacts of the decisions it is making.

V. Concluding Remark:

The exceedingly disappointing draft 2011 Threshold Review is disturbingly disassociated from the Compact and its mandates. A peer-reviewed science document should be reviewed for the quality and accuracy of its science. Chapters 1, 2, and Appendix E review a process that seems to be targeted to a specific and narrow audience that was not focused on the threshold review in terms of its expected scientific and environmental findings, and the history, purpose, and requirements of the TRPA Compact regarding threshold achievement and maintenance and the associated role of the Threshold Evaluation Report. Rather, it appears the audience was directed towards a very narrow view with heavy emphasis on the impacts of the science standards on other issues, including local business culture and local economy, and otherwise not provided with the full context of the TRPA Compact and environmental and legal implications of the threshold evaluation report.

