APPENDIX G: PERFORMANCE MEASURES

The performance measurement framework comprises three types of Performance Measures: (1) *Performance Indicators* to assess the current state of the transportation system; (2) *Performance Metrics* to analyze expected effectiveness of proposed projects at meeting the goals identified in Chapter 1: Regional Goals and Key Concepts; and, (3) Principal *demographic, socioeconomic, and other data* that influence demand and use of Tahoe's transportation system. Performance indicators, metrics, and socio-demographic data are collectively referred to as *Performance Measures*.

Performance measures are routinely assessed for efficacy and refined to ensure that TRPA continues to monitor and analyze the right data to inform successful decision making. Chapter 5: Measuring Success discusses the performance measurement framework and its use to inform policy-makers and guide investment toward programs and projects that will help to meet Regional goals. A summary of all performance measures monitored (including indicators ("I"), metrics ("M"), and other socio-demographic data ("O")) is below.

Table G.1: Goal 1 - Environment

Goal	Measure Type ("I", "M", "O")	Performance Measure	Data Source	Rationale for Inclusion	Frequency
Goal 1: Environment	I	Regional Daily Vehicle Miles Traveled (VMT)	TRPA TransCAD Model Output	Federal requirement for MPO Reporting in RTPs, SB 375, SB 743, Adopted TRPA Threshold Standard	4-yrs with development of RTP
		Greenhouse Gas Emissions per Capita from 2005 Levels		SB 375, SB 743	4-yrs with development of RTP
		Regional Daily Vehicle Miles Traveled (VMT) per Capita, Excluding Through Trips		Regional Plan Performance Measure (2013)	4-yrs with development of RTP
		Lake Clarity	University of California, Davis - Tahoe Environmental Research Center	Tahoe Maximum Daily Load (TMDL) Clarity Challenge	Annually
		Miles of Street Sweeping	Environmental Improvement Program (EIP) Project Tracker	TMDL Reporting Measure	Annually (Starting 2017)
		Miles of Roadway Treated			Annually (Starting 2017)
		U.S. Highway 50 at Park Ave., President's Weekend Traffic Volumes	California Department of Transportation (Caltrans), Nevada Department of Transportation (NDOT)	Adopted TRPA Threshold Standard	Annually
	M	Number of Vehicle Trips Reduced by Project	EIP Tracker - Project Performance Assessment	Determines extent to which projects support GHG/VMT reduction targets	New Project Proposals in EIP Project Tracker
		Project is located within a catchment area	EIP Tracker - Project Performance Assessment	Determines extent to which a project is located within a catchment area; potential water quality impacts	New Project Proposals in EIP Project Tracker
		Project is listed as a Water Quality Improvement Project (WQIP) on the EIP List		Determines whether a project is also listed as a WQIP and further in the planning process	New Project Proposals in EIP Project Tracker
	O	Regional Monthly Average Annual Traffic Volume Percentage Variation	Caltrans, NDOT	Lake Tahoe Transportation Model Calibration Factor	Annually
		Regional Daily Average Annual Traffic Volume Percentage Variation			Annually
		East Shore Parking Counts (Wednesday, Saturday)	TRPA, Bicycle and Pedestrian Monitoring Protocol	Lake Tahoe Transportation Model Input	Annually

Table G.2: Goal 2 - Connectivity

Goal	Measure Type ("I", "M", "O")	Performance Measure	Data Source	Rationale for Inclusion	Frequency
Goal 2: Connectivity	I	Non-Auto Mode Share	TRPA Travel Mode Share Survey	Regional Plan Performance Measure (2013)	Biennially (even years)
		Miles of Bicycle and Pedestrian Facilities Constructed*	EIP Project Tracker	Regional Plan Performance Measure (2013), NDOT Reporting Measure	Annually
		Number of Complete Streets Projects Implemented		NDOT Reporting Measure	Annually
		Percentage of Overnight Lodging and Recreation Areas with Transit, Bicycle, and Pedestrian Access	TRPA Geographic Information Systems (GIS)	Lake Tahoe Transportation Model Input	Annually
		Transit Ridership ("Unlinked Passenger Trips")	Transit Operators (Tahoe Transportation District - BlueGO/Placer County - TART)	Lake Tahoe Transportation Model Calibration Factor, NDOT Reporting Measure	Annually
		Boardings (Passengers) per Revenue Mile		MAP-21/FAST Act (23 CFR 450.306(d))	Annually
		Boardings (Passengers) per Revenue Hour			Annually
		Cost per Passenger		NDOT Reporting Measure	Annually
		Cost per Revenue Mile			Annually
		Cost per Revenue Hour			Annually
		Passenger Revenue			Annually
		Transit Vehicles Available at Maximum Service			Annually
		Transit Vehicles Operating at Maximum Service			Annually
	M	Overnight Population (residential and tourist) within 1/4 mile of a non-auto project	EIP Tracker - Project Performance Assessment	Determines extent to which projects encourage non-auto travel from overnight accommodations	New Project Proposals in EIP Project Tracker
		Provides or enhances a non-auto connection to a town center or recreation area		Determines extent to which projects increase access to town centers and recreation areas	New Project Proposals in EIP Project Tracker
		Project enhances traveler experience (ex. Wayfinding or real-time traveler information)		Determines extent to which projects improve the mobility and accessibility of people and goods	New Project Proposals in EIP Project Tracker

Goal	Measure Type ("I", "M", "O")	Performance Measure	Data Source	Rationale for Inclusion	Frequency
		Project improves connectivity within a mode. Examples include: Increased transit frequency or closing a trail gap.		Determines if projects improve connectivity within a mode	New Project Proposals in EIP Project Tracker
		Project improves connectivity across modes. Examples include: Park-n-Ride lot, bike racks at a transit stop, intermodal facility, trail connection to a transit stop, or interregional facility.		Determines if projects improve connectivity across modes	New Project Proposals in EIP Project Tracker
	O	Annual Bicycle and Pedestrian Highest Activity Locations	TRPA, Bicycle and Pedestrian Monitoring Protocol	Indicative of system usage	Annually
		Average Hourly Count Volumes by Active Transportation Facility Type			Annually
		Average Hourly, Daily, Weekly, and Monthly Count Volumes for Specific Bicycle and Pedestrian Facilities			Annually
		Seasonal Variation in Active Transportation Facility Usage			Annually
		Bicycle and Pedestrian Trail Use (Mid-Week Average Hourly Count Volumes)			Annually
		Bicycle and Pedestrian Trail Use (Mid-Week Hourly Count Volumes)			Annually
		Bicycle Trail Use Counts (Annual)			Annually
		Regional Average Daily Traffic Volumes (AADT)	Caltrans, NDOT		Annually
		Regional Peak Month Average Daily Traffic (PMADT)			Annually

*Reported separately as "Miles of Bicycle Lanes Added", and "Miles of Sidewalks Added", to NDOT annually.

Table G.3: Goal 3 - Safety

Goal	Measure Type ("I", "M", "O")	Performance Measure	Data Source	Rationale for Inclusion	Frequency
Goal 3: Safety	I	Number of Fatalities	NDOT/California Highway Patrol Statewide Integrated Traffic Records System (SWITRS)	MAP-21/FAST Act (23 CFR 450.306(d))	Annually
		Rate of Fatalities (per 100 million VMT)			Annually
		Number of Serious Injuries			Annually

		Rate of Serious Injuries (per 100 million VMT)			Annually
		Number of Non-Motorized Fatalities and Serious Injuries			Annually
	M	Project will address a modal conflict	EIP Tracker - Project Performance Assessment	Qualitative measure to determine whether projects address safety and/or security issues	New Project Proposals in EIP Project Tracker
		Project will address security issues. Examples may include reducing human exposure to, or perception of, risk of hazard or crime.			New Project Proposals in EIP Project Tracker
		Project will address an emergency response need			New Project Proposals in EIP Project Tracker
		Project is located within an identified Safety Improvement Area			New Project Proposals in EIP Project Tracker

Table G.4: Goal 4 - Operations and Congestion Management

Goal	Measure Type ("I", "M", "O")	Performance Measure	Data Source	Rationale for Inclusion	Frequency
Goal 4: Operations and Congestion Management	I	Transit Cost per Revenue Mile	Transit Operators (Tahoe Transportation District - BlueGO/Placer County - TART)	MAP-21/FAST Act (23 CFR 450.306(d))	Annually
		Transit Cost per Revenue Hour			Annually
		Transit Farebox Recovery Rate			Annually
	M	Project is expected to improve vehicular or multi-modal level of service, or improve upon the efficiency of the transportation system	EIP Tracker - Project Performance Assessment	Qualitative measure that determines extent to which project promotes the efficient operation of the transportation system.	New Project Proposals in EIP Project Tracker

Table G.5: Goal 5 - Economic Vitality and Quality of Life

Goal	Measure Type ("I", "M", "O")	Performance Measure	Data Source	Rationale for Inclusion	Frequency
Goal 5: Economic Vitality and Quality of Life	I	Sales Tax Revenue	City of South Lake Tahoe & Placer County Executive Offices	Lake Tahoe Transportation Model Input	Annually
		Average Travel Time to Work	U.S. Census American Community Survey 5-Year Estimates		Annually
		VMT by Traveler Type (Residents, Visitors, Commuters)	TRPA TransCAD Model		4-yrs with development of RTP

Goal	Measure Type ("I", "M", "O")	Performance Measure	Data Source	Rationale for Inclusion	Frequency
		Housing and Transportation (H+T) Affordability Index	Center for Neighborhood Technology	Indicates effectiveness of Land Use and Transportation Policy implementation.	Annually
	M	Project distance to/connectivity with a town center or recreation area	EIP Tracker - Project Performance Assessment	Determines extent to which projects improve access to economic drivers.	New Project Proposals in EIP Project Tracker
		Project improves one or more of the following: walkability/bikeability or liveability within the immediate vicinity		Qualitative measure to determine the extent to which projects improve upon quality of life.	New Project Proposals in EIP Project Tracker
		Project will benefit ambient noise			New Project Proposals in EIP Project Tracker
		Project will address access to a recreational area or is a recreation amenity itself			New Project Proposals in EIP Project Tracker
		Project will benefit scenic quality			New Project Proposals in EIP Project Tracker
		Project will benefit wildlife or fish habitat			New Project Proposals in EIP Project Tracker
		Project will benefit forest health			New Project Proposals in EIP Project Tracker
	O	Permanent Resident Population	U.S. Census American Community Survey 5-Year Estimates (Current, Historical), TRPA TransCAD Model Output (Forecast Years)	Lake Tahoe Transportation Model Input	Annually
		Transit-Dependent and Historically Underserved Populations	U.S. Census American Community Survey 5-Year Estimates	Lake Tahoe Transportation Model Input	Annually
		Lake Tahoe Unemployment Rates	Tahoe Prosperity Center, U.S. Census American Community Survey 5-Year Estimates		Annually
		Transient Occupancy Tax (TOT) Revenues	Placer County Executive Office & City of South Lake Tahoe	Lake Tahoe Transportation Model Calibration Factor	Annually
		Median Home Values	U.S. Census American Community Survey 5-Year Estimates	Lake Tahoe Transportation Model Input	Annually
		Median Household Income			Annually
		Low/Medium/High Income Population Percentage			Annually

Goal	Measure Type ("I", "M", "O")	Performance Measure	Data Source	Rationale for Inclusion	Frequency
		Tahoe Basin Tenure of Housing Units (Occupancy)			Annually
		Persons per Occupied Residential Unit			Annually
		Occupancy Rates (Hotel/Motel, Resort, Casino, Campground)	Nevada Gaming Control Board, State Parks		Annually
		Lake Tahoe Region School Enrollment	Lake Tahoe Unified School District, Truckee Tahoe School District, Washoe and Douglas School Districts		Annually

Table G.6: Goal 6 - System Preservation

Goal	Measure Type ("I", "M", "O")	Performance Measure	Data Source	Rationale for Inclusion	Frequency
Goal 6: System Preservation	I	Percent of Pavement in Good Condition	Caltrans, NDOT, CSLT, and Placer, Washoe, Douglas, and El Dorado Counties	MAP-21/FAST Act (23 CFR 450.306(d))	Annually
		Percent of Bridges in Good Condition			Annually
	M	Project supports preservation or regular maintenance of the existing system. Examples may include pavement maintenance to state of good repair.	EIP Tracker - Project Performance Assessment	Determines whether projects support the preservation of the existing system.	New Project Proposals in EIP Project Tracker
		Project maintains or enhances access for the movement of goods (i.e. freight)		Qualitative measure to ensure continued/enhanced freight mobility within the Region.	New Project Proposals in EIP Project Tracker
	O	Total Residential Units, Employment Locations (Service, Recreation, Gaming, Other)	TRPA Geographic Information Systems (GIS)	Lake Tahoe Transportation Model Input	4-yrs with development of RTP
		Number of Units (Hotel/Motel, Resort, Casino, Campground)			4-yrs with development of RTP