South Lake Tahoe/BlueGO 2010 Short Range Transit Plan

Final

Prepared for the

Tahoe Regional Planning Agency

Prepared by

LSC Transportation Consultants, Inc.

TRANSPORTATION CONSULTANTS, INC.

South Lake Tahoe/BlueGO
2010 Short Range Transit Plan

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TABLE OF CONTENTS

Chapter **Page**

1 Introduction....1
Introduction....1

2 Study Area Characteristics....3
Study Area....3
South Lake Tahoe Background....3
Population....6
Employment....18
Commute Patterns....19
Economic Trends....20
Planned and Potential Developments in the South Lake Tahoe Area....23
Review of Existing Plans and Policies....24

3 Transportation Services....31
BlueGO....31
Financial Characteristics....51
BlueGO Capital Assets....54
Other Regional Transit Providers....57

4 Transit Needs and Demand....61
Transit Demand Summary....61
Unmet Transit Needs....67
Key Person Interview Summary....69

5 Passenger Activity and On-Time Performance Analysis....75
Introduction....75

6 Service Plan....85
Transit Service Overall Strategy....85
Service Plan....86
Discussion of Compatibility of the SRTP with Regional Long Range Plans....103

7 Capital Plan....105
US 50 Transit Priority Corridor....105
Vehicle Purchases....107
Passenger Facilities and Amenities....111
Implement an Automatic Vehicle Location/Fleet Management/Passenger Information System....113
Recent Equipment Purchases and Needs....114
Operations Facility Improvements....114

8 Institutional, Management, and Marketing Plan....117
Institutional Strategies....117

Management Strategies....118
Service Performance Measures....126
Marketing Strategies....129

9 Financial Plan....135
Financial Sources....135
Capital Funding....140
Fare Changes....142
Financial Summary....143

LIST OF TABLES

Table **Page**

1 2000 South Lake Tahoe Region Total Population and Characteristics by Block Group....7
2 Historical Population for City of South Lake Tahoe....12
3 Top 15 Employers in the South Tahoe Area....18
4 South Tahoe Area Employment, 2000....19
5 South Tahoe Area Commute Pattern Data, 2008....20
6 Travel Mode of Work Trips in the South Tahoe Area....21
7 Hotel Room Nights Rented in South Tahoe Area....21
8 Hotel Rooms Rented in South Tahoe Area, 2009....22
9 Room Tax Collections for the South Lake Tahoe Area....22
10 Stateline Gaming Revenues....23
11 BlueGO Operating Data by Year....39
12 BlueGO Ridership January 2009 through April 2010....40
13 Forecast BlueGO 2010/11 Service Characteristics....42
14 BlueGO Seasonal Ridership 2009/2010....49
15 BlueGO Fares....50
16 BlueGO Revenues....52
17 BlueGO Operating Expenditures and Cost Model....53
18 Active BlueGO Vehicle Fleet....55
19 BlueGO Transfer Centers and Bus Shelters Locations....56
20 Amtrak Schedule to and from South Lake Tahoe....58
21 BlueGO Boarding and Alighting by Stop and Transit Zone....76
22 BlueGO Ridership and Performance by Transit Zone....79
23 BlueGO On-Time Performance by Route....82
24 BlueGO Year One Operating Plan....89
25 Triangle Plan Service Schedule....91
26 BlueGO Operating Subsidy Forecast....92
27 BlueGO Annual Operating Budget Balance....93
28 BlueGO 2015 Scenarios Service Improvements....95
29 Ridership Elasticity Impact Analysis....96
30 BlueGO 2015 Service Plan – Base Scenario....98
31 BlueGO 2015 Service Plan – Recovery Scenario....104

32 BlueGO Fleet Replacement 108
33 Fleet Requirements – 2015 Recovery Plan 110
34 Locations of New Passenger Amenities 112
35 BlueGO Maintenance Facility Space Requirements – 2015 Recovery Scenario 116
36 Recommended BlueGO Performance Measures 127
37 BlueGO Funding Sources and Forecast 136

LIST OF FIGURES

Figure **Page**

1 South Lake Tahoe and Surrounding Area 4
2 Population Distribution by Census Block Group 9
3 South Lake Tahoe Census Block Groups 10
4 Population Density by Census Block Group 11
5 Youth Population by Census Block Group 13
6 Elderly Population by Census Block Group 14
7 Mobility Limited Population by Census Block Group 15
8 Below Poverty Level Population by Census Block Group 16
9 Zero Vehicle Households by Census Block Group 17
10 Existing BlueGO Routes 33
11 Cost per Passenger-Trip 43
12 Farebox Return Ratio 45
13 Passenger-Trips per Vehicle Hour 46
14 Subsidy per Passenger-Trip 48
15 Average Daily Boardings and Alightings by Stop: Summer 77
16 BlueGO 2011 Service Plan 90
17 BlueGO 2015 Service Plan – Base Scenario 94
18 BlueGO 2015 Service Plan – Recovery Scenario 100
19 BlueGO OnCall Service Area 119

Chapter 1
Introduction

INTRODUCTION

Public transit strategies play a crucial role in overall transportation planning for the Tahoe Region. The uniquely sensitive environment of the nation's largest alpine lake almost entirely precludes the ability to address mobility issues through expansion of roadways. While bicycle and pedestrian travel has an important role (particularly for shorter trips), harsh winter weather sometimes limits the overall effectiveness of non-motorized travel. As a result, transit services are the key strategy in achieving transportation goals.

This role is currently growing even stronger. Recent water and air quality studies have shown a higher proportion of impacts on Lake Tahoe water quality is associated with transportation than was previously thought. The Tahoe Regional Planning Agency's (TRPA) Regional Plan update process has underscored the importance of transit services in achieving regional thresholds.

At the same time, Tahoe's South Shore is a challenging area in which to provide effective transit services:

- While the urban core area is relatively constrained, public transit serving the South Shore also needs to serve both outlying areas within the South Tahoe Basin, as well as connecting services to other areas. Many residential and commercial areas, moreover, are developed at relatively low density, reducing the effectiveness of transit services.

- The many jurisdictional boundaries (between cities, counties, and states) complicate funding and service strategies. While the establishment of BlueGO has gone a long way to solving jurisdictional issues within the Tahoe Basin, there are still both jurisdictional issues as well as individual concerns over specific services associated with services outside of Tahoe.

- Beyond the individual jurisdictions, the institutional framework for transportation planning and funding has resulted in a plethora of organizations (such as TRPA, Tahoe Transportation District, Tahoe Metropolitan Planning Organization, etc.) all of which have a hand in funding or planning public transit programs.

- Seasonal roadway congestion is serious enough to significantly impact transit-running times, but to date has not been adequately consistent or widespread enough to warrant dedicated transit right-of-way to allow transit to avoid these delays.

- The "seasonality" of the need for transit services complicates the development of effective transit strategies.

- Like the remainder of the nation, the location economy has struggled over the last few years, resulting in a decline in both local and state transit funding resources.

This plan provides a thorough review of existing transit services currently provided in the South Lake Tahoe region. This document reflects an in-depth look at the transit system currently in place, evaluation of the optimal manner in which transit can meet the public's needs within this dynamic area, and a careful definition of where transit resources should be devoted over the Plan period.

Finally, it is worth noting that this study is a key final piece to the preparation of region wide transit plans. Along with the *Tahoe Area Regional Transit Systems Plan* completed in 2005 and the *Tahoe Interregional Intraregional Transit Study* completed in 2006, this Short Range Transit Plan (SRTP) will provide a comprehensive regional transit strategy to help attain mobility and environmental goals. In particular, the reader is encouraged to refer to the *Tahoe Interregional Intraregional Transit Study* for evaluation of public transit services connecting the South Shore with the North Shore and the remainder of the region, by both bus and waterborne transit modes.

Chapter 2
Study Area Characteristics

STUDY AREA

With the Sierra Nevada, Lake Tahoe, and public lands (i.e. US Forest Service lands) acting as physical boundaries, the South Shore areas of Lake Tahoe are constrained and well-defined. The study area, for the purposes of this report, includes areas located within both California and Nevada. In California, the study area contains the City of South Lake Tahoe and portions of unincorporated El Dorado County, including the Meyers and Camp Richardson areas, and beyond towards Emerald Bay. The Nevada portions include the Stateline, Kingsbury, Zephyr Cove-Round Hill, and Glenbrook areas, all located within unincorporated Douglas County. Figure 1 presents a graphic illustration of the general South Lake Tahoe region.

Major roadways through the study area include US Highway (US) 50, which traverses the study area from Echo Summit on the west, through Meyers, South Lake Tahoe, Stateline, Zephyr Cove-Round Hill and Glenbrook, to Spooner Summit on the east. This roadway serves the majority of commercial and lodging activities, and also provides access to outlying larger Nevada cities (Carson City, Reno, Minden/Gardnerville), and via State Route (SR) 28 the north shore of Lake Tahoe. Further, Highway 50 (US 50) serves as the main access point into South Lake Tahoe from California, as it connects with I-80 and I-5 in Sacramento. SR 89 traverses the study area along a north-south alignment from Luther Pass on the south, through Meyers and South Lake Tahoe in Meyers and runs northwest through Camp Richardson and Emerald Bay, providing access to the West Shore of Lake Tahoe. Finally, Nevada SR 207 (Kingsbury Grade) provides access from US 50 at Stateline eastward to Minden and Gardnerville.

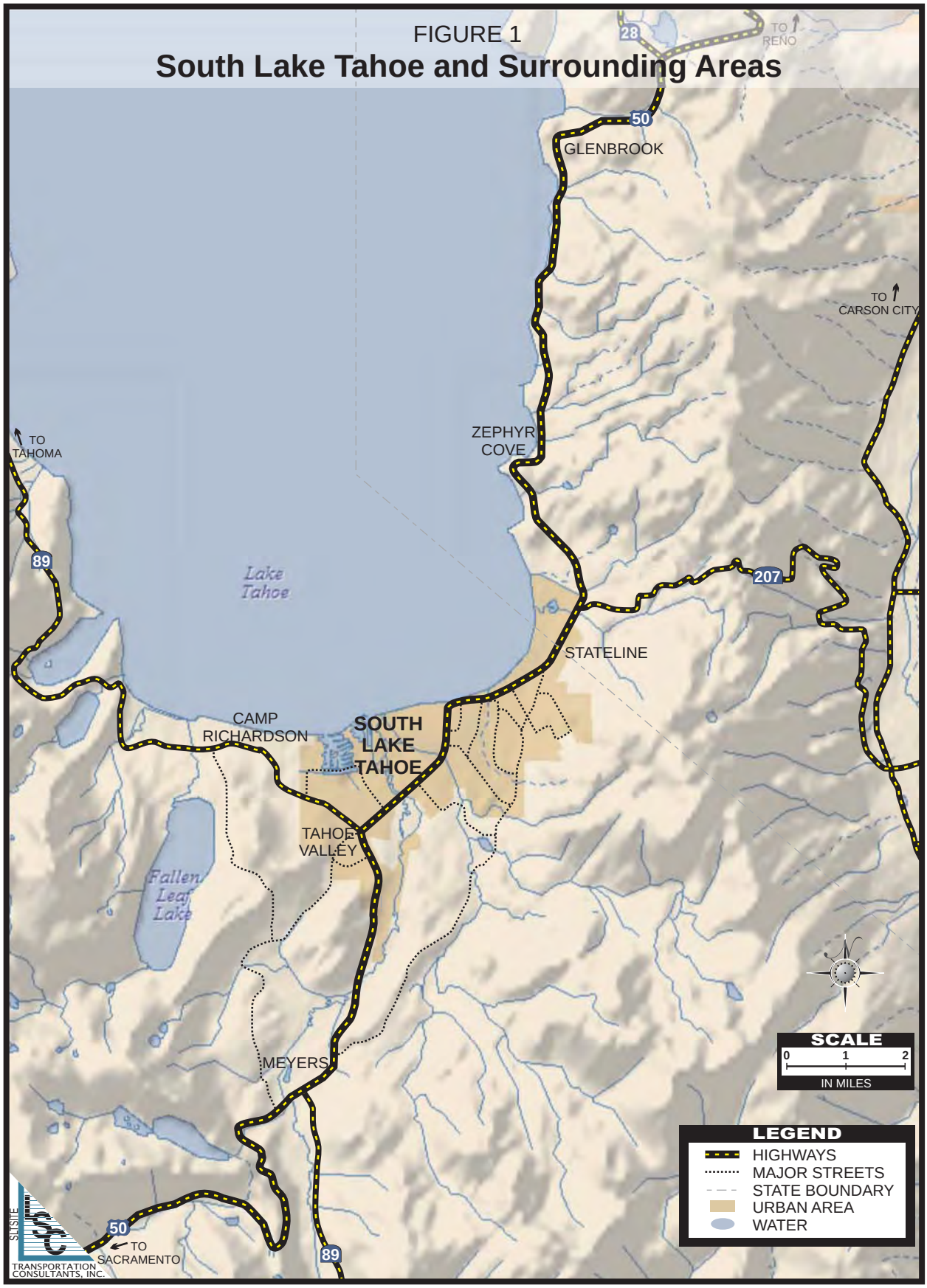
SOUTH LAKE TAHOE BACKGROUND

South Lake Tahoe, and the Lake Tahoe area in general, has been a popular vacation destination since the late 19th and early 20th centuries, with its many winter and summer recreational opportunities. More specifically, South Lake Tahoe offers boating (with a number of marinas), skiing (Heavenly Mountain Resort as well as close proximity to Sierra-At-Tahoe and Kirkwood), casino gaming (six casinos within the area), biking and golf, as well as access for outdoor recreation. With a location 200 miles northeast of San Francisco and 58 miles southwest of Reno, it is easily accessible for many residents of these nearby areas and beyond.

During the mining boom of the 1860's in nearby Virginia City, Lake Tahoe became an active commerce center. With the new activity and improved access to the area, Lake Tahoe became a vacation destination for San Francisco area residents. As the largest alpine lake in the United States with many recreational opportunities, the area maintains its popularity as a year round vacation destination and area for full-time residents, given the employment opportunities associated with the tourist-based industries.

FIGURE 1

South Lake Tahoe and Surrounding Areas



Major Activity Centers

Activity centers that generate particular need for public transit service include the following:

Activity Centers for Seniors, Persons with Disabilities, Low-Income Persons and Youth

- South Lake Tahoe Senior Center
- Tahoe Douglas Senior Center
- Tahoe Senior Plaza
- Elder Options
- Sky Forest Acres
- South Lake Tahoe Women's Center
- Tahoe Youth and Family Services
- National Alliance for Mental Illness
- Boys and Girls Club Lake Tahoe

Medical Facilities

- Barton Memorial Hospital
- El Dorado County Health Services
- Sierra Recovery Center

Government/Recreational

- South Lake Tahoe Administrative Center
- County Courthouse
- El Dorado County Government Center
- Tahoe Regional Planning Agency
- USDA Forest Service
- South Lake Tahoe Library
- Douglas County Government Center
- Heavenly Mountain Resort/Heavenly Village
- Harrah's/Harveys Lake Tahoe Casinos
- MontBleu Resort Casino and Spa
- Ski Run Marina
- Zephyr Cove Marina
- Tahoe Keys Marina
- Lake Tahoe Airport

Educational

- Lake Tahoe Community College
- South Tahoe Middle School
- Tahoe Valley Elementary School
- Bijou Elementary School
- Tahoe Community School
- South Tahoe High School
- Sierra House Elementary School
- Lake Tahoe Educational Foundation
- Mt. Tallac High School

In addition, key commercial centers are found along US 50 at Round Hill, Kingsbury Grade, Stateline, Ski Run, Bijou/Al Tahoe, the South Y area, and Meyers.

POPULATION

Table 1 presents detailed data regarding the population characteristics of the South Tahoe area. The data is provided by US Census block group for the City of South Lake Tahoe, Meyers, unincorporated South Lake Tahoe, Zephyr Cove/East Shore, Stateline/Round Hill and Kingsbury. As shown, the total population for the area in 2000 (the most recent available comprehensive data) was 39,853 persons, with the City of South Lake Tahoe comprising roughly 59 percent of the population (or 23,663 persons), followed by Meyers with 23 percent (or 9,221 persons). Figure 2 illustrates the distribution of population throughout the study area, while Figure 3 indicates the location of the Census block groups. Finally, Figure 4 presents the population density (persons per square mile) by block group. As shown, the City of South Lake Tahoe represents a very small portion of the overall land area (roughly 10.1 square miles of land), however it contains the large majority of the population. According to 2000 Census data, there are roughly 1,637 persons per square mile in the City of South Lake Tahoe; in comparison, the population density of Meyers is only 122 persons per square mile and in Douglas County the density is 171 persons per square mile.

Within the City of South Lake Tahoe, the greatest population concentrations are present in the Rancho Bijou and Bijou Acres neighborhoods (Census Tract 302, Block Group 6) with roughly 1,621 persons, followed by the Tahoe Keys and Tahoe Valley neighborhoods (Census Tract 304.01, Block Group 1), with 1,344 persons. Other neighborhoods with high populations include the Stateline Residential/Heavenly Valley area (1,306 persons), Tahoe Island neighborhood (1,048 persons) and the Bonanza neighborhood (1,185 persons). Within Meyers, the greatest populations are present east of US 50 within Census Tract 305.01, and in Douglas County, the highest population concentrations are found in the Stateline/Round Hill areas (Census Tract 3.02, Block Group 2) with 1,215 persons and Kingsbury (Census Tract 4, Block Group 1) with 1,247 persons. The highest population densities are found in the Ski Run area, the Al Tahoe area, the Sierra Tract, and around the South Y area.

While the most recent comprehensive population information obtained as part of the 2000 US Census is now ten years old, the population trends for the City of South Lake Tahoe show that there has been recent declines. Table 2 includes historical population data for the City, which is the only area to have updated information and can be used as a basis for the general South Tahoe region. As shown, in 1990 the population of the City was 21,586 persons, while in 2000 the population was 23,663 persons. According to the 2008 US Census American Community Survey, the City's population was 22,003 persons, which represents growth of 8.8 percent between 1990 and 2000, followed by a population decline of 7 percent between 2000 and 2008.

High Transit Potential Population

Nationwide, transit system ridership is drawn largely from various groups of persons who make up what is often called the "transit dependent" population. This category includes youths, elderly persons, persons with disabilities, low-income persons, and members of households with no available vehicle. Table 1 presents the potential transit dependent population by block group, based on the 2000 US Census.

TABLE 1: 2000 South Lake Tahoe Region Total Population and Characteristics by Block Group

County	Tract	Block Group	Subarea	Total Population	Youth (ages 5 -16)		Elderly (65+)		Mobility Disability(1)		Low Income		Total #	Zero Vehicle Households		Area (Sq. Mi.)	Total Population Density (persons/sq. in.)
				#	#	% of Total	#	% of Total	#	% of Total	#	% of Total	Households	#	% of Total		
El Dorado	301.01	1	City of South Lake Tahoe	266	16	6.0%	22	8.3%	30	11.3%	61	22.9%	241	18	7.5%	0.20	1335
El Dorado	301.02	1	City of South Lake Tahoe	196	59	30.1%	11	5.6%	52	26.5%	14	7.1%	248	50	20.2%	0.23	850
		2		807	99	12.3%	47	5.8%	49	6.1%	122	15.1%	355	63	17.7%	0.09	9120
		3		1,062	237	22.3%	27	2.5%	209	19.7%	126	11.9%	469	34	7.2%	0.12	8616
		4		1,306	109	8.3%	142	10.9%	133	10.2%	90	6.9%	745	140	18.8%	2.03	642
		5		734	233	31.7%	42	5.7%	55	7.5%	195	26.6%	568	21	3.7%	0.38	1938
El Dorado	302	1	City of South Lake Tahoe	833	87	10.4%	61	7.3%	111	13.3%	40	4.8%	493	9	1.8%	0.96	866
		2		267	46	17.2%	36	13.5%	25	9.4%	11	4.1%	215	4	1.9%	1.35	198
		3		898	101	11.2%	120	13.4%	37	4.1%	112	12.5%	446	29	6.5%	0.78	1150
		4		695	182	26.2%	31	4.5%	38	5.5%	202	29.1%	293	54	18.4%	0.13	5376
		5		758	103	13.6%	12	1.6%	82	10.8%	199	26.3%	393	51	13.0%	0.13	5778
		6		1,621	419	25.8%	133	8.2%	132	8.1%	238	14.7%	669	72	10.8%	0.32	5018
El Dorado	303	1	City of South Lake Tahoe	521	173	33.2%	6	1.2%	61	11.7%	134	25.7%	316	59	18.7%	0.08	6724
		2		439	68	15.5%	53	12.1%	74	16.9%	106	24.1%	300	9	3.0%	0.11	4175
		3		492	87	17.7%	12	2.4%	5	1.0%	62	12.6%	275	15	5.5%	0.08	6358
		4		879	170	19.3%	61	6.9%	18	2.0%	82	9.3%	687	56	8.2%	0.49	1783
		5		800	93	11.6%	112	14.0%	44	5.5%	36	4.5%	471	37	7.9%	0.49	1618
		6		592	116	19.6%	41	6.9%	55	9.3%	76	12.8%	287	9	3.1%	0.08	7117
		7		528	34	6.4%	37	7.0%	12	2.3%	56	10.6%	296	18	6.1%	0.14	3752
		8		843	135	16.0%	56	6.6%	72	8.5%	105	12.5%	464	42	9.1%	0.11	7416
		9		711	92	12.9%	47	6.6%	37	5.2%	54	7.6%	406	45	11.1%	0.10	7214
El Dorado	304.01	1	City of South Lake Tahoe	1,344	186	13.8%	220	16.4%	14	1.0%	42	3.1%	1494	21	1.4%	0.92	1458
		2		1,048	125	11.9%	157	15.0%	95	9.1%	80	7.6%	638	31	4.9%	0.43	2446
		3		443	44	9.9%	113	25.5%	15	3.4%	13	2.9%	215	0	0.0%	0.08	5370
		4		683	109	16.0%	26	3.8%	63	9.2%	41	6.0%	325	31	9.5%	0.23	3020
		5		742	235	31.7%	53	7.1%	52	7.0%	31	4.2%	411	9	2.2%	0.18	4105
El Dorado	304.02	1	City of South Lake Tahoe	814	196	24.1%	87	10.7%	66	8.1%	136	16.7%	528	31	5.9%	0.22	3769
		2		393	61	15.5%	11	2.8%	22	5.6%	63	16.0%	267	0	0.0%	0.11	3425
		3		326	34	10.4%	21	6.4%	29	8.9%	52	16.0%	216	14	6.5%	0.18	1802
		4		1,185	228	19.2%	113	9.5%	81	6.8%	102	8.6%	557	27	4.8%	0.22	5413
		5		738	120	16.3%	83	11.2%	24	3.3%	165	22.4%	393	13	3.3%	2.25	328
		6		699	107	15.3%	64	9.2%	23	3.3%	115	16.5%	341	73	21.4%	1.22	572
Subtotal: City of South Lake Tahoe				*23,663*	*4,104*	17.3%	*2,057*	8.7%	*1,815*	7.7%	*2,961*	12.5%	*14,022*	*1,085*	7.7%	*14.45*	*1,637*
El Dorado	305.01	1	Meyers East of 50	1,034	219	21.2%	139	13.4%	16	1.5%	65	6.3%	663	0	0.0%	1.51	685
		2		1,339	241	18.0%	98	7.3%	37	2.8%	34	2.5%	704	9	1.3%	2.02	664
		3		1,066	160	15.0%	24	2.3%	52	4.9%	15	1.4%	619	15	2.4%	11.81	90
		4		746	155	20.8%	88	11.8%	10	1.3%	19	2.5%	440	9	2.0%	0.62	1199
		5		1,015	148	14.6%	106	10.4%	26	2.6%	48	4.7%	605	15	2.5%	34.33	30
		6		974	219	22.5%	74	7.6%	18	1.8%	71	7.3%	686	7	1.0%	18.67	52
El Dorado	305.02	1	Meyers West of US 50	954	198	20.8%	109	11.4%	11	1.2%	0	0.0%	583	12	2.1%	0.85	1116
		2		1,144	162	14.2%	61	5.3%	65	5.7%	99	8.7%	706	0	0.0%	4.82	237
		3		949	180	19.0%	134	14.1%	19	2.0%	52	5.5%	466	0	0.0%	1.00	946
Subtotal: Meyers				*9,221*	*1,682*	18.2%	*833*	9.0%	*254*	2.8%	*403*	4.4%	*5,472*	*67*	1.2%	*75.64*	*122*
El Dorado	305.03	3	Unincorporated South Tahoe	278	22	7.9%	45	16.2%	15	5.4%	32	11.5%	1,507	0	0.0%	67.97	4
Douglas	3.01	1	Zephyr Cove/ East Shore	545	29	5.3%	134	24.6%	51	9.4%	54	9.9%	634	10	1.6%	15.34	36
		2		669	149	22.3%	174	26.0%	12	1.8%	92	13.8%	413	0	0.0%	4.87	137
		3		695	83	11.9%	99	14.2%	3	0.4%	32	4.6%	640	0	0.0%	2.12	328
Douglas	3.02	1	Stateline/ Round Hill	954	80	8.4%	155	16.2%	14	1.5%	23	2.4%	754	12	1.6%	5.82	164
		2		1,215	166	13.7%	82	6.7%	35	2.9%	146	12.0%	573	33	5.8%	0.67	1803
Douglas	4	1	Kingsbury	1,247	162	13.0%	99	7.9%	54	4.3%	55	4.4%	1,234	23	1.9%	9.07	137
		2		736	119	16.2%	89	12.1%	23	3.1%	41	5.6%	366	0	0.0%	0.76	969
		3		630	88	14.0%	143	22.7%	42	6.7%	31	4.9%	333	7	2.1%	0.37	1691
Subtotal: Douglas County, Nevada				*6,691*	*876*	13.1%	*975*	14.6%	*234*	3.5%	*474*	7.1%	*4,947*	*85*	1.7%	*39.02*	*171*
Proportion of Total by Subarea																	
City of South Lake Tahoe				*59.4%*	*61.4%*		*52.6%*		*78.3%*		*76.5%*			*4.2%*		*7.3%*	
Meyers				*23.1%*	*25.2%*		*21.3%*		*11.0%*		*10.4%*			*0.3%*		*38.4%*	
Other Unincorporated El Dorado County				*0.7%*	*0.3%*		*1.2%*		*0.6%*		*0.8%*			*0.0%*		*34.5%*	
Douglas County				*16.8%*	*13.1%*		*24.9%*		*10.1%*		*12.2%*			*0.3%*		*19.8%*	
Total Study Area				*39,853*	*6,684*	16.8%	*3,910*	9.8%	*2,318*	5.8%	*3,870*	9.7%	*25,948*	*1,237*	*4.8%*	*197*	*202*

Note 1: Mobility Disability includes "Go outside the home" disabilities for persons age 16 - 64.

Source: U.S. Census

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FIGURE 2

Population Distribution by Census Block Group

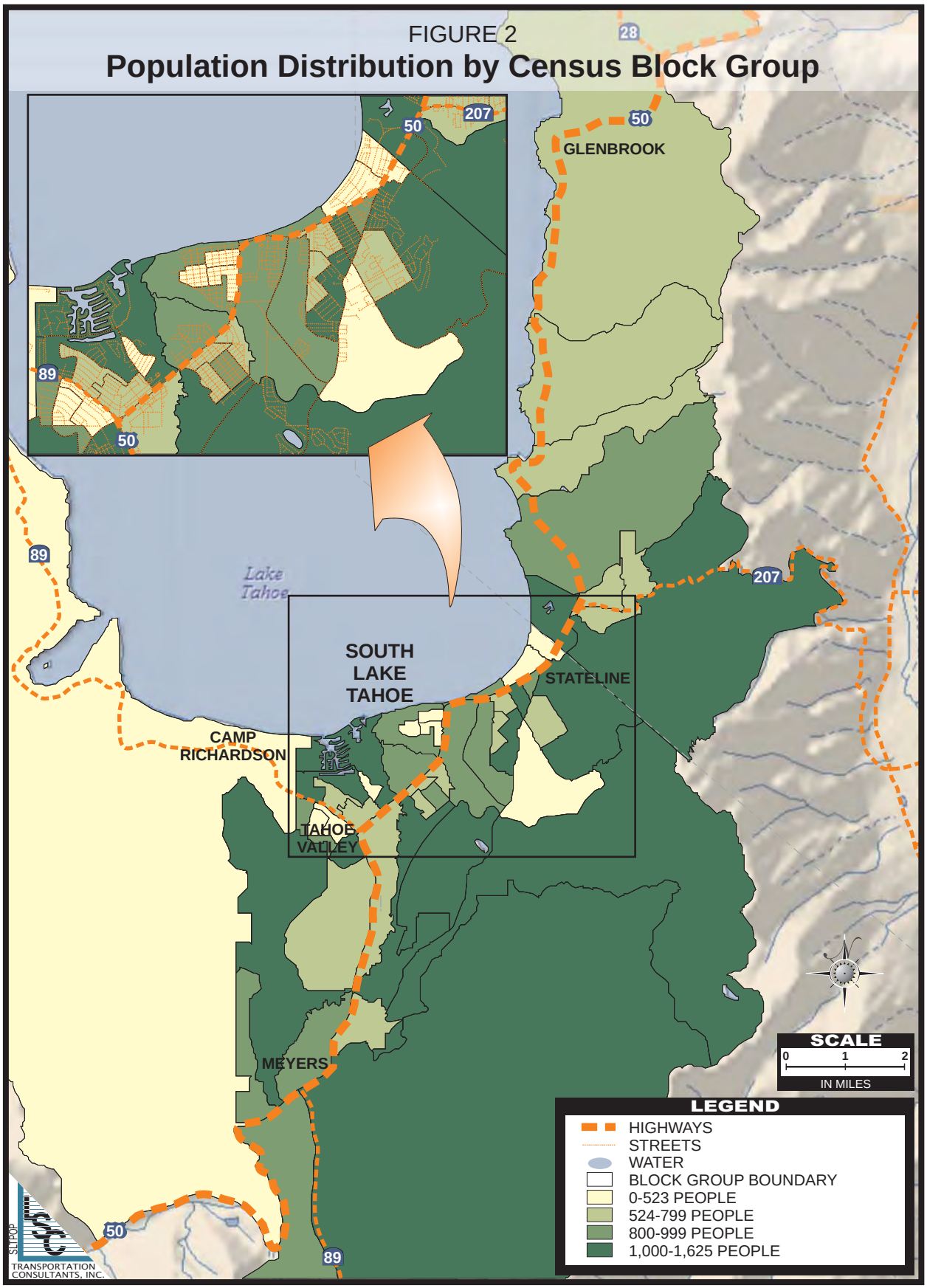


FIGURE 3

South Lake Tahoe Census Block Groups

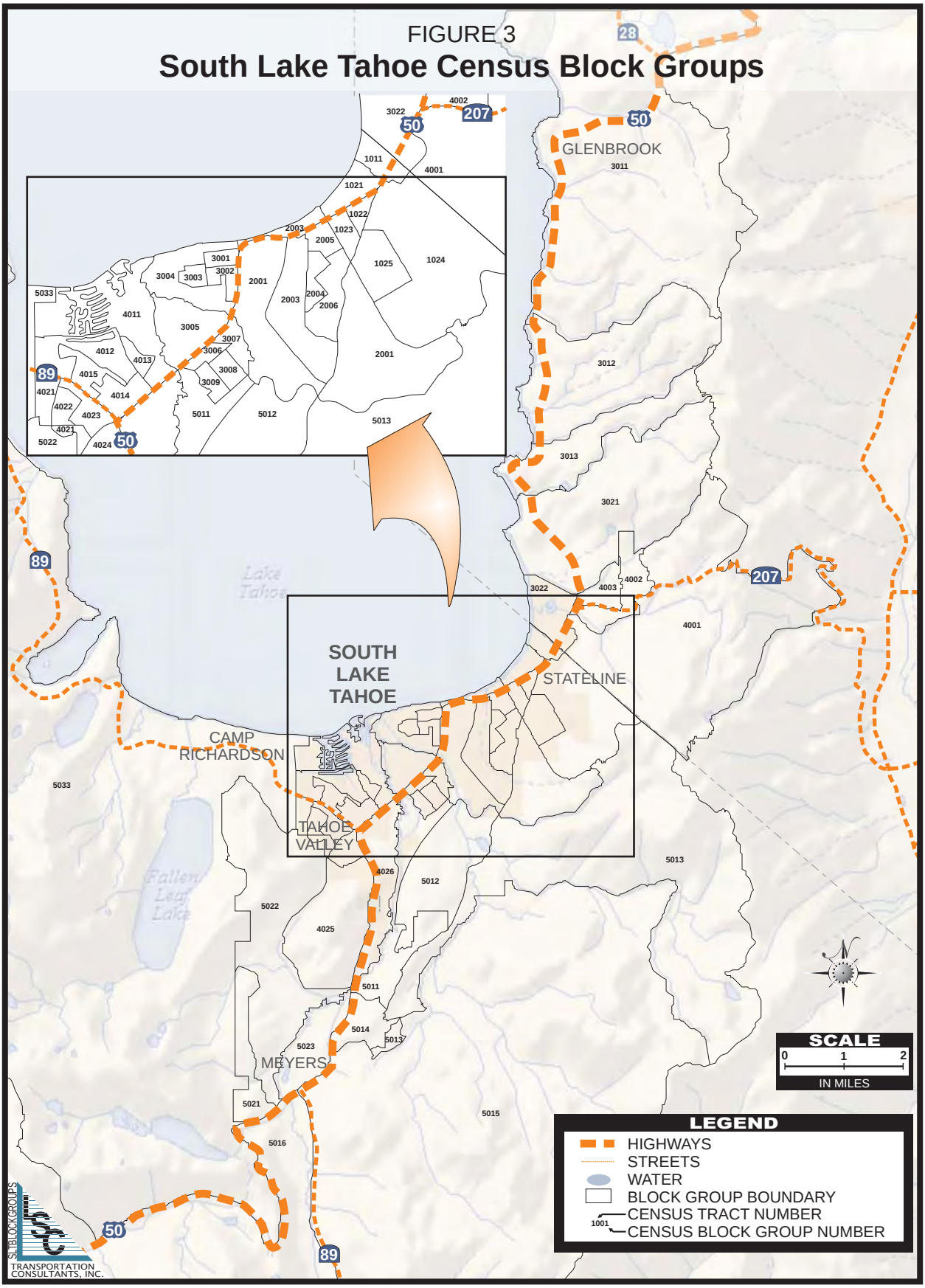


FIGURE 4

Population Density By Census Block Group

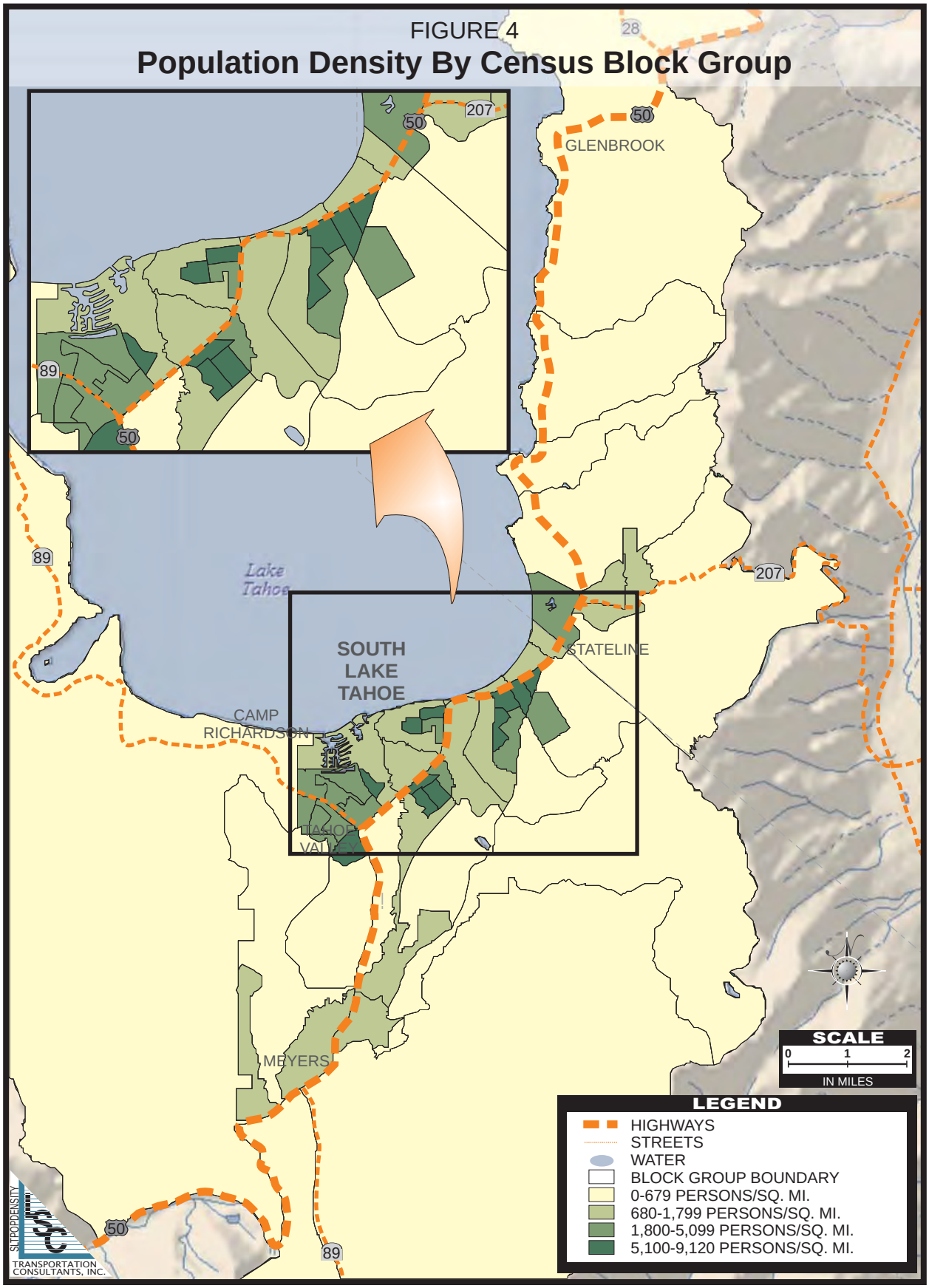


TABLE 2: Historical Population for City of South Lake Tahoe

	1990	2000	2008	% Change 1990-2008	% Change 2000-2008
City of South Lake Tahoe Population	21,586	23,663	22,003	*1.9%*	*-7.0%*

Source: US Census Bureau

There is an estimated 6,684 persons ages 5 to 16 years old residing in the South Tahoe area, comprising 16.8 percent of the total population. The largest number of youth is present in the City of South Lake Tahoe (4,104 youth), followed by Meyers (1,682 youth), Douglas County study area (876 youth) and the unincorporated areas of South Lake Tahoe (22 youth). This information is presented graphically in Figure 5. This data shows that the study area is on par with the countywide youth population data, as 17 percent of the El Dorado County population and 16 percent of the Douglas County population is considered youth.

Approximately 9.8 percent of the area residents are considered seniors (or 3,910 persons), defined for the purposes of this report as 65 years of age and older. Not surprisingly, the City of South Lake Tahoe has the greatest proportion (2,057 persons), followed by Douglas County (975 persons). Countywide, the elderly population comprises 12.4 percent in El Dorado County and 15.2 percent in Douglas County. Figure 6 shows the geographic distribution of the senior population in the study area.

The US Census Bureau defines “mobility limited” as persons having a health condition lasting more than six months that makes it difficult to go outside the home alone. It is estimated that there are 2,318 mobility limited persons in the South Tahoe area, which comprises 5.8 percent of the total population. The majority, 1,815 persons, reside in the City of South Lake Tahoe, while only 254 persons live in Meyers. Another 234 persons live in Douglas County, and 15 persons in the unincorporated areas of South Lake Tahoe. To compare, the average for El Dorado County is 1.9 percent and is 2.3 percent for the whole of Douglas County. Figure 7 shows the geographic distribution of the mobility limited population in the study area.

Low-income persons are another likely market for transit services, as measured by the number of persons living below the poverty level. According to the 2000 US Census, there was an estimated 3,870 persons considered to be low-income, which amounts to approximately 9.7 percent of the total area population. Not surprisingly, due to a larger population concentration, the City of South Lake Tahoe contained the greatest number of low-income persons (2,961 persons). In comparison, the El Dorado County average is 7.1 percent and the Douglas County (as a whole) average is 7.3 percent. Figure 8 is a graphic representation of this demographic group.

The number of households without access to an operable vehicle is another indicator of a potential transit dependent group. In 2000, the US Census identified a total of 1,237 zero-vehicle households, or 4.8 percent of all households, as shown in Table 1 and Figure 9. By far, the greatest number of households was found in the City of South Lake Tahoe, with 1,085

FIGURE 5

Youth Population by Census Block Group

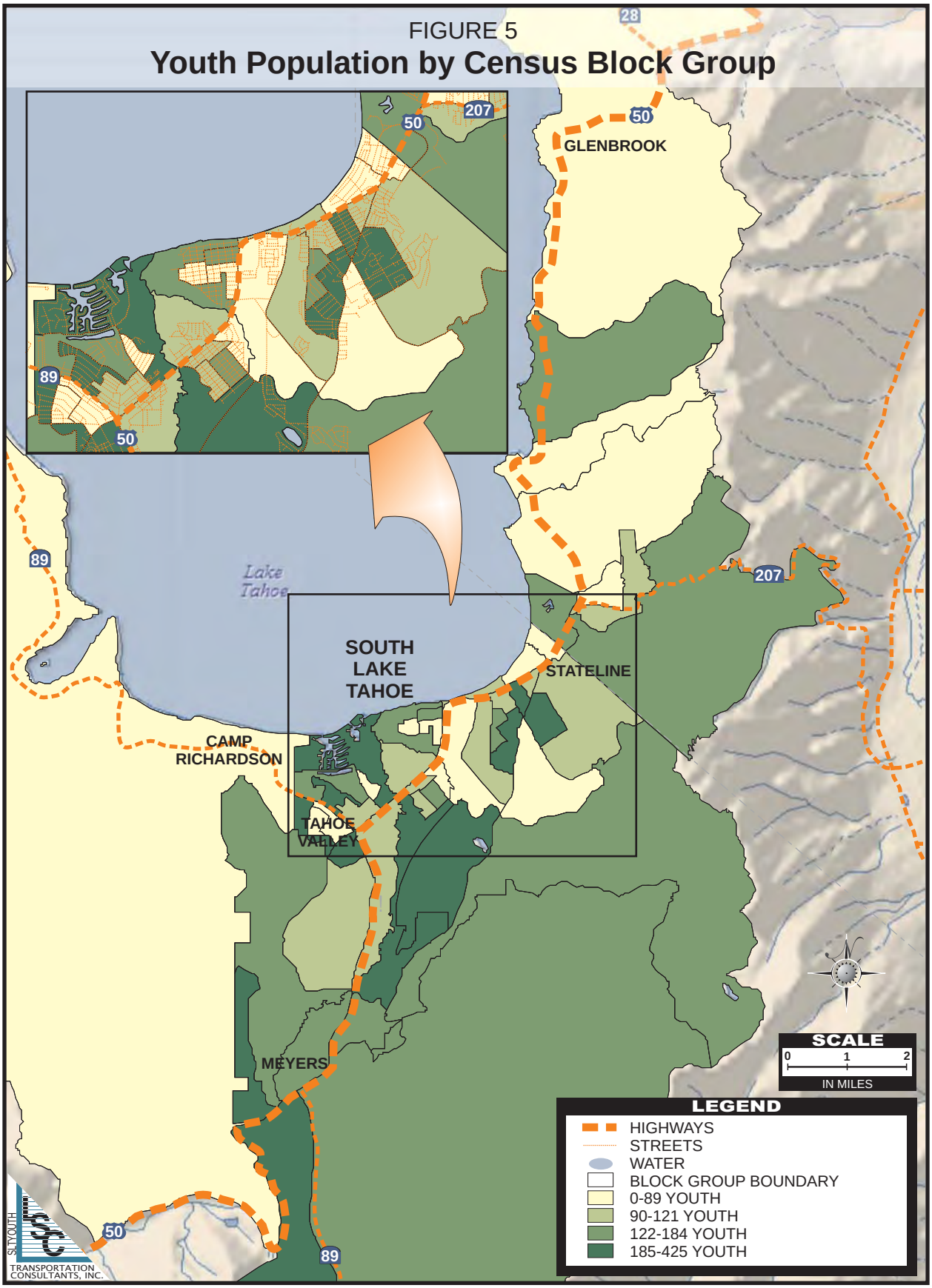


FIGURE 6

Elderly Population by Census Block Group

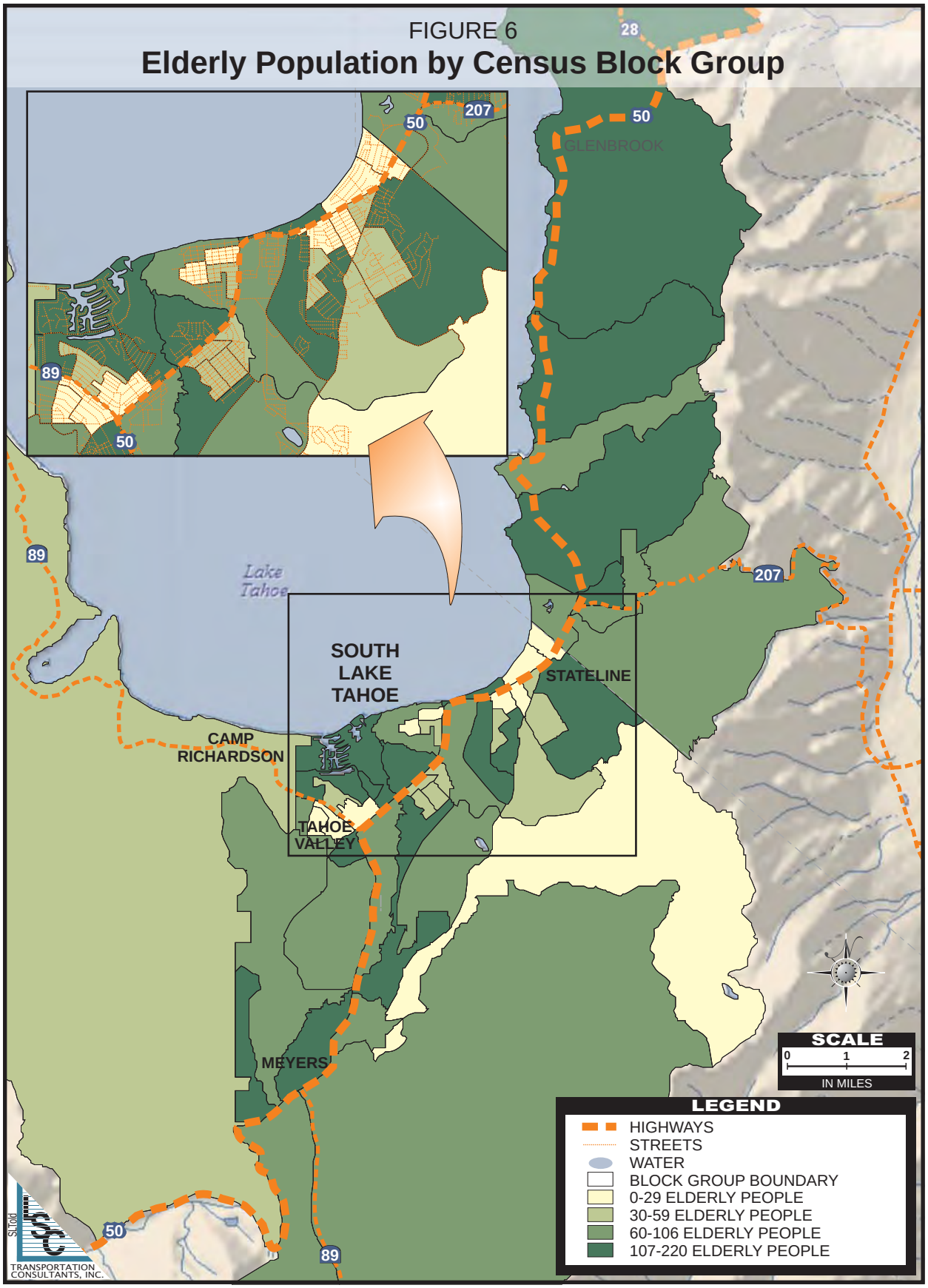


FIGURE 7

Mobility Limited Population by Census Block Group

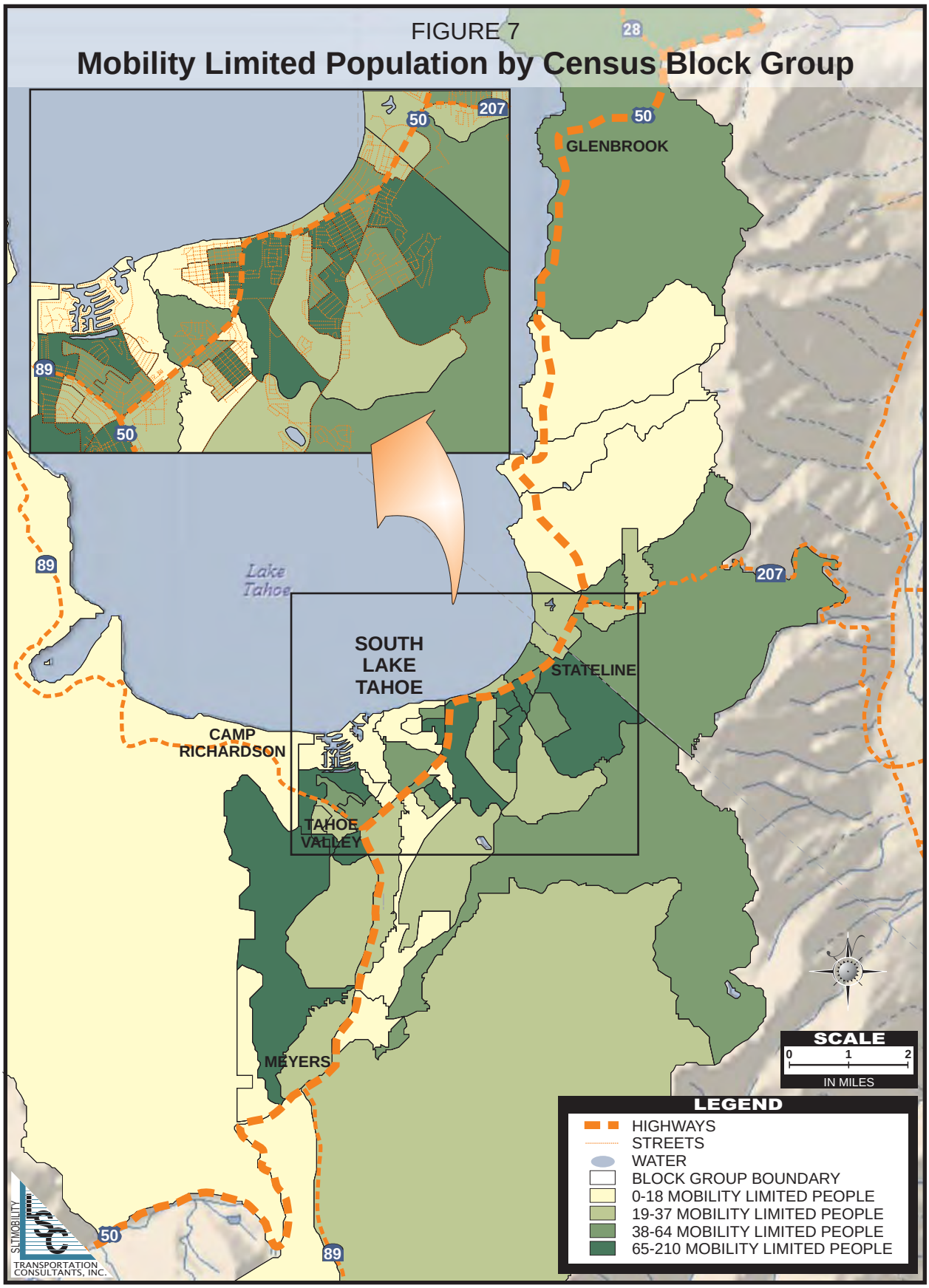


FIGURE 8

Below Poverty Level Population by Census Block Group

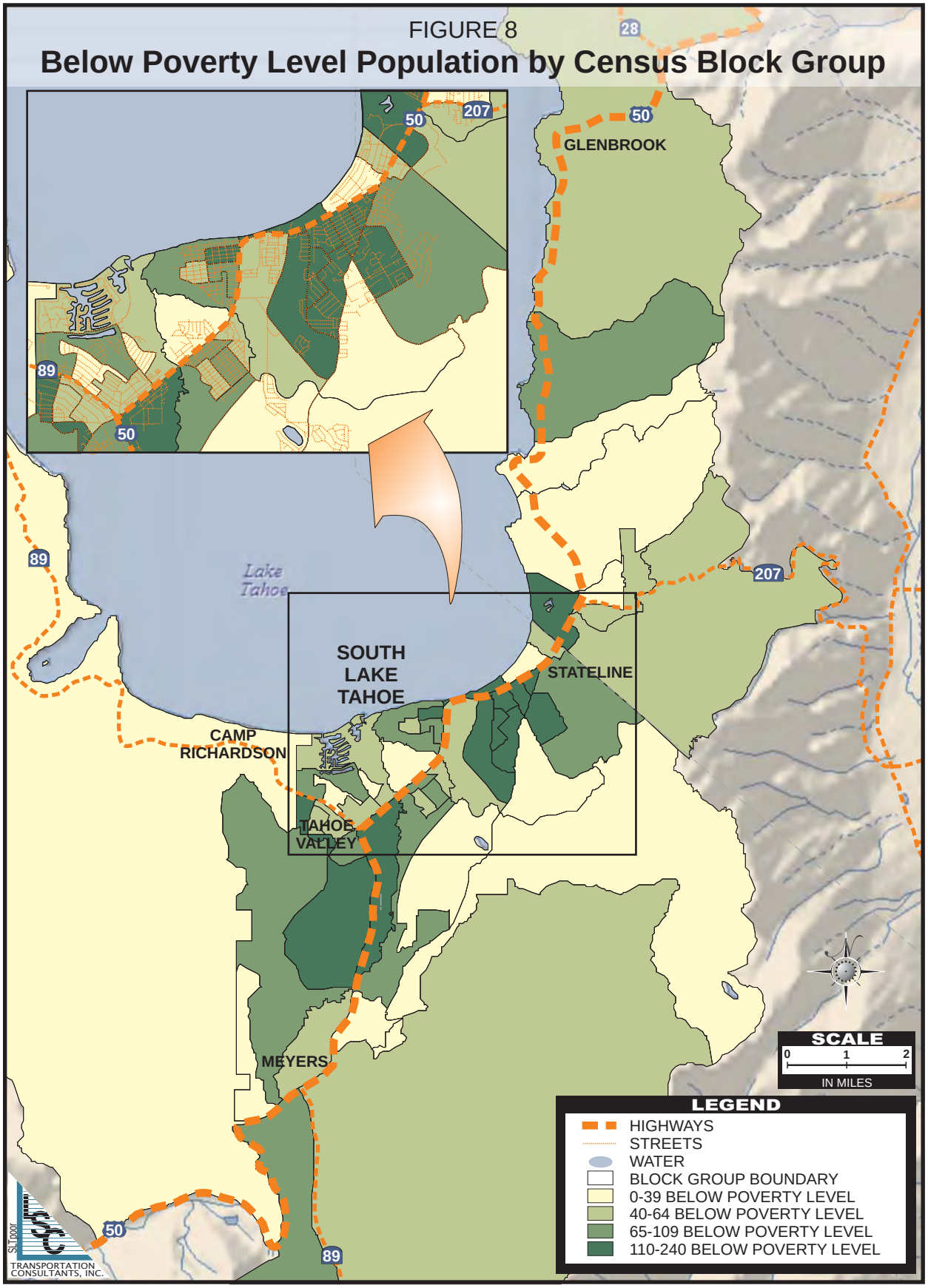
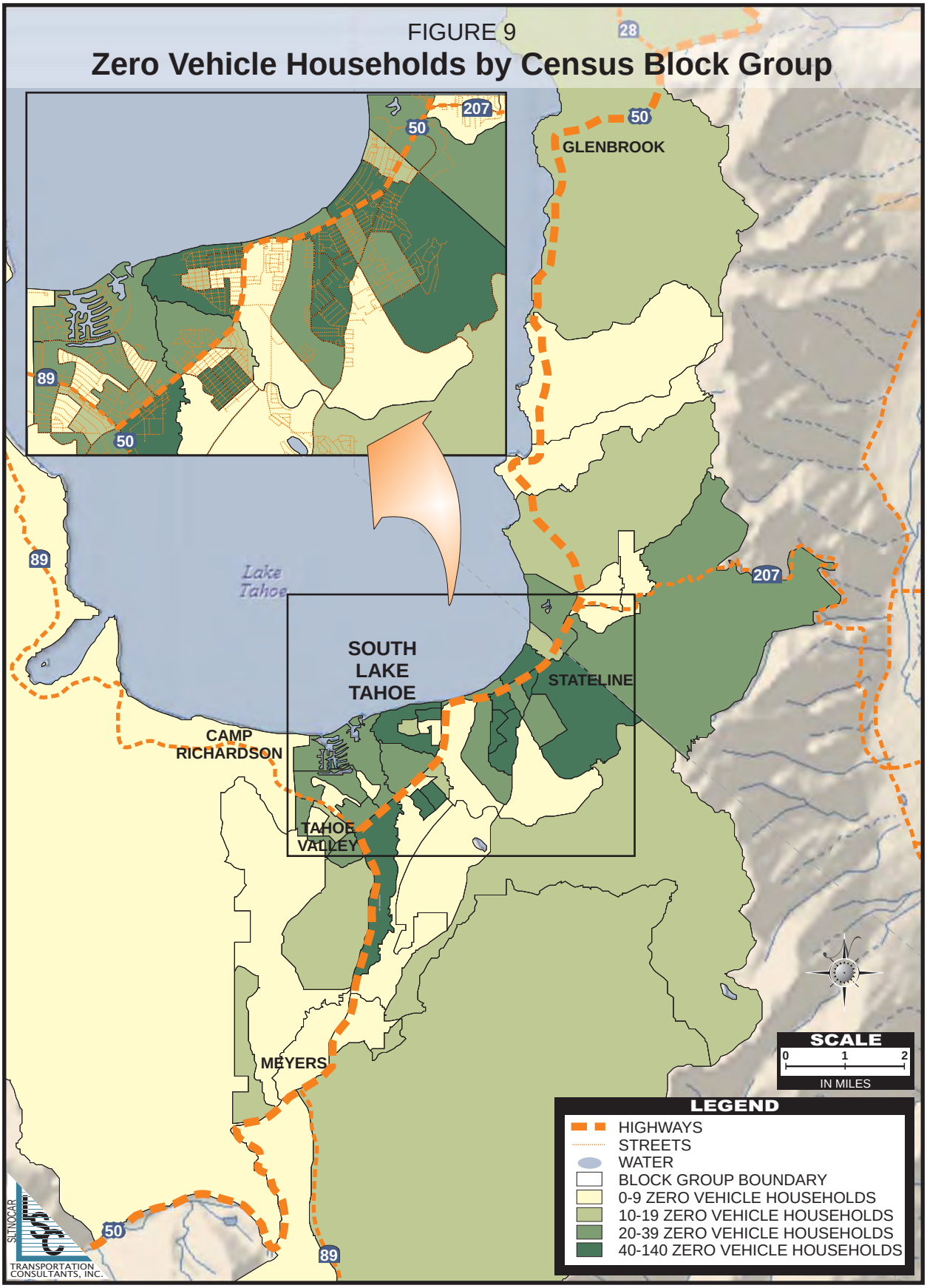


FIGURE 9

Zero Vehicle Households by Census Block Group



households. The zero-vehicle households in Meyers and the Douglas County area represented less than 2 percent of all households, while none were found in the unincorporated South Lake Tahoe area. When compared to the countywide totals, the study area has a great proportion of zero-vehicle households. Census data shows that approximately 2.3 percent of all Douglas County households were zero-vehicle, while 3.7 percent of households in El Dorado County did not have a vehicle.

EMPLOYMENT

The South Tahoe area has a very tourist-oriented employment focus, as shown in Table 3. Major tourism based employers include Harrah's Lake Tahoe, Harveys and the MontBleu Resort Casino and Spa, while Barton Memorial Hospital and the Lake Tahoe Unified School District employ a significant amount people in the health services and education sectors.

TABLE 3: Top 15 Employers in the South Tahoe Area

Employer	Service	Location	# of Employees
Harrah's	Casino/Lodging	Stateline, NV	1,500-1,999
Barton Memorial Hospital	Health Services	South Lake Tahoe	900-999
Harvey's	Casino/Lodging	Stateline, NV	800-899
Montbleu	Casino/Lodging	Stateline, NV	800-899
Tahoe Horizon	Casino/Lodging	Stateline, NV	500-599
Lake Tahoe Unified School Dist.	Education	South Lake Tahoe	400-499
Lakeside Inn and Casino	Casino/Lodging	Stateline, NV	300-399
Marriott Corporation	Lodging	South Lake Tahoe	300-399
United States Forest Service	Government	South Lake Tahoe	200-299
Ridge Resorts / Resorts West	Lodging	Stateline, NV	200-299
Lake Tahoe Community College	Education	South Lake Tahoe	200-299
Raley's	Food/Drug	South Lake Tahoe	200-299
City of South Lake Tahoe	Government	South Lake Tahoe	200-299
El Dorado County	Government	South Lake Tahoe	200-299
Heavenly Mountain Resort	Ski Industry	South Lake Tahoe	200-299

Source: City of South Lake Tahoe (2007) and Greater Reno-Tahoe Regional Data Center (2007)

Employment is directly related to the general economy of an area; with tourism being affected by the recent recession, employment has also been impacted. Table 4 presents employment data from the 2000 US Census. As shown, approximately 7.5 percent of the resident labor force in the City of South Lake Tahoe labor force was not employed. Douglas County had 6.8 percent of its labor force considered unemployed while Meyers saw a 3.9 percent rate.

TABLE 4: South Tahoe Area Employment, 2000

	City of South Lake Tahoe		Meyers		Other Unincorporated El Dorado County		Douglas County	
	Persons	*% of Total*	*Persons*	*% of Total*	*Persons*	*% of Total*	*Persons*	*% of Total*
Persons Aged 16 and Over								
Employed	11,907	92.5%	5,104	96.1%	158	100.0%	3,491	93.2%
Unemployed	964	7.5%	205	3.9%	0	0.0%	254	6.8%
Total in Labor Force	12,871		5,309		158		3,745	
Not In Labor Force	5,468		1,899		98		1,899	

Source: US Census Bureau, LED Origin-Destination Data Base

Historically, unemployment has been somewhat high within the South Lake Tahoe region. Data from the City of South Lake Tahoe shows that between 2000 and 2008, unemployment rates have fluctuated between a low of 5.9 percent and a high of 9.3 percent (in 2008) within city limits. Based on the importance of the seasonal tourism industry, it is not surprising that unemployment rates are unsteady and vary greatly.

COMMUTE PATTERNS

Commute data can provide insight into another potential group of transit riders. The US Census maintains the "Longitudinal Employer Household Dataset" which provides detailed data on the location of employment for a study area's residents, as well as data on the location of residence of a study area's workers. Table 5 presents the commute data for the cumulative study area for 2008; the upper portion shows the cities/areas where South Tahoe's residents work, while the lower portion shows the residence location of persons that commute into the South Tahoe area for work.

As shown in the table, most residents of the study area work within the study area, including the City of South Lake Tahoe (5,160 jobs), Stateline, Nevada (3,468 jobs), Zephyr Cove-Round Hill Village, Nevada (314 jobs) and Meyers, California (247 jobs). Overall, 58.3 percent of study area employed residents also work in the study area. On a county level, the majority of residents commute to El Dorado County (6,096 jobs), which not only includes the City of South Lake Tahoe and Meyers, but also Placerville and the remainder of the County. Douglas County also generates a high proportion of jobs (4,010 jobs), which includes Minden, Gardnerville, and other areas outside of Tahoe (in addition to the locations within the study area).

For those persons working in the South Tahoe area, approximately 6,253 persons live in the City of South Lake Tahoe, followed by 2,565 persons in Meyers, 397 persons in Kingsbury, Nevada, 173 persons in Zephyr Cove-Roundhill Village, Nevada, and 161 persons in Stateline, Nevada. Overall, 52.8 percent of jobs in the South Shore area are held by residents of the study area, while the remaining is held by employees commuting from elsewhere. Roughly 2,901 persons (16 percent) are commuting from locations in Douglas County, including but not limited to Gardnerville and Minden. County-level data indicates that after El Dorado County and Douglas

TABLE 5: South Tahoe Area Commute Pattern Data, 2008

Bold = *Locations within the South Tahoe Study Area*

Location of Employment for Residents of the South Tahoe Area

Communities Where Residents of the South Tahoe Area Work

	# of Jobs	% of Total
City of South Lake Tahoe	**5,160**	**32.7%**
Stateline, NV	**3,468**	**22.0%**
Sacramento, CA	674	4.3%
Placerville, CA	380	2.4%
Zephyr Cove-Roundhill Village, NV	**314**	**2.0%**
Meyers, CA (East of US 50)	**247**	**1.6%**
Reno, NV	111	0.7%
All Other Locations	5,421	34.4%
Total	*15,775*	*100.0%*
Percent of Study Area Residents Working in Study Area		*58.3%*

Counties Where Residents of the South Tahoe Area Work

	# of Jobs	% of Total
El Dorado County, CA	**6,096**	**38.6%**
Douglas County, CA	**4,010**	**25.4%**
Sacramento County, CA	1,047	6.6%
Santa Clara County, CA	566	3.6%
Alameda County, CA	406	2.6%
Placer County, CA	329	2.1%
Contra Costa County, CA	326	2.1%
All Other Locations	2,995	19.0%
Total	*15,775*	*100.0%*

Location of Residence for Workers Within the South Tahoe Area

City of Residence for Persons Working in South Tahoe Area

	# of Workers	% of Total
City of South Lake Tahoe	**6,253**	**34.6%**
Meyers, CA	**2,565**	**14.2%**
Carson City, NV	756	4.2%
Gardnerville Ranchos, NV	755	4.2%
Kingsbury, NV	**397**	**2.2%**
Zephyr Cove-Roundhill Village, NV	**173**	**1.0%**
Stateline, NV	**161**	**0.9%**
All Other Locations	7,038	38.9%
Total	*18,098*	*100.0%*
Percent of Study Area Workers Living in Study Area		*52.8%*

County of Residence for Persons Working in South Tahoe Area

	# of Workers	% of Total
El Dorado County, CA	**9,234**	**51.0%**
Douglas County, NV	**2,901**	**16.0%**
Carson City, NV	756	4.2%
Washoe County, NV	731	4.0%
Sacramento County, CA	405	2.2%
Placer County, CA	349	1.9%
Santa Clara County, CA	315	1.7%
All Other Locations	3,407	18.8%
Total	*18,098*	*100.0%*

Source: US Census Bureau LEHD

County, Carson City, Nevada and Washoe County, Nevada (i.e. Reno, Nevada or areas in the north shore of Lake Tahoe within Nevada) generate a relatively large number of commuters, with 756 persons and 731 persons, respectively. Overall, this data indicates that the number of South Tahoe residents commuting to North Tahoe jobs as well as the number of North Tahoe residents commuting to South Tahoe jobs is relatively limited.

Means of Transportation to Work

Table 6 presents the study area commute travel mode identified in the 2000 Census. For all areas, the majority of workers drive alone (69.5 percent), while 14.8 percent of the employed residents carpooled, 5.9 percent worked at home, 4.5 percent walked, 2.8 percent took public transit, 1.2 percent bicycled, and less than one percent took a taxicab, rode a motorcycle or used other means. Also according to the Census, roughly 73 percent of the study area's population had a commute time of less than 20 minutes.

ECONOMIC TRENDS

This section presents several measures of recent economic trends in the area. Hotel room rental statistics are not only an economic indicator, but also an indicator of potential transit ridership. Table 7 shows the number of hotel room nights rented in South Lake Tahoe between calendar years 2005 and 2009. As shown, hotels in South Lake Tahoe have seen a 25.6 percent decline in

TABLE 6: Travel Mode of Work Trips in the South Tahoe Area

	City of South Lake Tahoe		Meyers		Unincorporated South Tahoe		Douglas County		**Total for All Areas**	
	#	%	#	%	#	%	#	%	#	%
Drove Alone	7,506	*65.0%*	4,005	*80.0%*	106	*67.1%*	2,369	*69.8%*	**13,986**	***69.5%***
Carpool	1,910	*16.5%*	608	*12.2%*	12	*7.6%*	441	*13.0%*	**2,971**	***14.8%***
Public Transit	522	*4.5%*	22	*0.4%*	0	*0.0%*	10	*0.3%*	**554**	***2.8%***
Taxicab	50	*0.4%*	12	*0.2%*	0	*0.0%*	11	*0.3%*	**73**	***0.4%***
Motorcycle	0	*0.0%*	0	*0.0%*	0	*0.0%*	15	*0.4%*	**15**	***0.1%***
Bicycle	237	*2.1%*	7	*0.1%*	0	*0.0%*	5	*0.1%*	**249**	***1.2%***
Walk	688	*6.0%*	32	*0.6%*	22	*13.9%*	168	*4.9%*	**910**	***4.5%***
Other Means	102	*0.9%*	7	*0.1%*	0	*0.0%*	58	*1.7%*	**167**	***0.8%***
Work at Home	540	*4.7%*	311	*6.2%*	18	*11.4%*	318	*9.4%*	**1,187**	***5.9%***
Total	***11,555***	***100.0%***	***5,004***	***100.0%***	***158***	***100.0%***	***3,395***	***100.0%***	**20,112**	***100.0%***

Source: US Census Bureau

TABLE 7: Hotel Room Nights Rented in South Tahoe Area

Calendar Years 2005 through 2009

	2005	2006	2007	2008	2009	% Change from FY 04-05 to FY 08-09	Average Annual Change
City of South Lake Tahoe	638,184	621,120	564,575	542,668	476,427	-25.3%	-7.0%
Stateline Casinos	688,259	658,898	644,109	631,475	559,807	-18.7%	-5.0%
Total	**1,326,443**	**1,280,018**	**1,208,684**	**1,174,143**	**1,036,234**	**-21.9%**	**-6.0%**

Source: City of South Lake Tahoe, Nevada Gaming Commission of Tourism

room rentals during the five-year period, while Stateline has experienced a smaller drop, with a reduction of roughly 18.7 percent. In total, this represents a comprehensive decline in room rentals of 21.9 percent. Seasonal data for the 2008 calendar year, as detailed in Table 8, shows that in both the City of South Lake Tahoe and Stateline, the greatest number of units is rented during the summer (July through September), with a total of 333,555 hotel room-nights rented. Winter is the next busiest season, with a combined total of 270,576 room-nights rented between January and March. The seasonal swings in room-nights rented are substantially greater in South Lake Tahoe than in the Stateline area.

Another measure of lodging activity is room tax collections. A tax is applied to all types of transient lodging activity, including hotels and vacation rentals, in the South Tahoe region. Patterns in these tax receipts can provide indications of visitation and economic trends. Table 9 presents room tax collections for the South Tahoe area for a five year period from Fiscal Year (FY) 2004-05 to FY 2008-09. The most recent financial data shows that in FY 2008-09, South Lake Tahoe collected roughly $8,019,107, which was approximately 28.6 percent less than the TOT collected five years prior in FY 2004-05; in part, this drop can be linked to the end of

TABLE 8: Hotel Rooms Rented in South Tahoe Area, 2009

	Jan - March		April - June		July - Sept		Oct - Dec		Total	
	#	% of Annual	#	% of Annual	#	% of Annual	#	% of Annual	#	% of Annual
City of South Lake Tahoe	127,119	*26.7%*	96,798	*20.3%*	166,051	*34.9%*	86,459	*18.1%*	476,427	
Stateline Casinos	143,457	*25.6%*	136,811	*24.4%*	167,504	*29.9%*	112,035	*20.0%*	559,807	
Total Rooms/Rentals Rented	**270,576**	*26.1%*	**233,609**	*22.5%*	**333,555**	*32.2%*	**198,494**	*19.2%*	**1,036,234**	*100.0%*

Source: City of South Lake Tahoe, Nevada Commission of Tourism

TABLE 9: Room Tax Collections for the South Lake Tahoe Area

Fiscal Year 2004-2005 through 2008-2009

	FY 04-05	FY 05-06	FY 06-07	FY 07-08	FY 08-09	% Change from FY 04-05 to FY 08-09	Average Annual Change
City of South Lake Tahoe [1]	$11,225,445	$11,683,049	$9,838,032	$9,827,855	$8,019,107	-28.6%	-8.1%
Stateline Casinos [2,3]	$255,336	$247,759	$259,548	$249,555	$218,594	-14.4%	-3.8%
Total	**$11,480,781**	**$11,930,808**	**$10,097,580**	**$10,077,410**	**$8,237,701**	-28.2%	-8.0%

Note 1: Dollar amounts include Measure Z (until 2006), TOT and Redevelopment TOT

Note 2: Dollar amounts represent 3/8 of 1 percent , the amount allocated to the state.

Note 3: Amounts include Douglas County and the Carson Valley

Source: City of South Lake Tahoe and the Nevada Commission of Tourism

Measure Z, which had previously provided additional revenue through Fiscal Year 2006-07. Douglas County room tax collections have also seen a decline, although not as sharp, with a 14.4 percent decline between FY 2004-05 and FY 2008-09. It is important to note that the Douglas County data includes the Carson Valley, however the majority of hotel units are located in Stateline.

As room tax revenues are a percentage of lodging costs, it is also important to consider room rates over time. According to statistic reports, the average hotel room price (calculated over the course of each fiscal year from FY 2004-05 through FY 2008-09) has increased in South Lake Tahoe by roughly 12 percent, from an average of $106 to an average of $119 per night. Conversely, average room rates in Stateline, Nevada (Douglas County) have decreased slightly by 1.4 percent during the same period (from $105 to $103 per night). The latter case may be the result of establishments using lower rates to entice customers to stay at their lodging facilities, with the idea that it would lead to more gaming activity and revenue (discussed below).

Casino gaming is a major attraction in the South Tahoe area, and therefore another good economic indicator for the area. Table 10 presents gaming revenues for the last five years (2005 through 2009). As shown, gaming revenues for the Stateline area casinos has declined roughly 32.6 percent between 2005 and 2009, representing an annual average decline of 7.6 percent. This trend is consistent with the recent economic downturn nationally, as well as the data presented earlier regarding the decline in South Tahoe lodging.

PLANNED AND POTENTIAL DEVELOPMENTS IN THE SOUTH LAKE TAHOE AREA

There are currently six key specific projects that have been recently approved or are under consideration in the study area.

Chateau at Heavenly Village

The Chateau at Heavenly Village is a major project within the City of South Lake Tahoe and is a public-private partnership effort between the City of South Lake Tahoe Redevelopment Agency

TABLE 10: Stateline Gaming Revenues

Year	Total Gaming Revenues
2005	$335,446,000
2006	$333,725,000
2007	$326,822,000
2008	$304,439,000
2009	$226,017,000
% Change from 2005 to 2009	-32.6%
Average Annual Change	-7.6%

Source: Nevada State Gaming Control Board

and the Lake Tahoe Development Corporation. The 11.5-acre site is located within a redevelopment area at the Stateline border along US 50, directly across the street from the Heavenly Gondola and shopping area, and directly adjacent to the casino core. Included in the project is a 50,000 square foot convention center/event space, 477 condo-hotel units located within two hotels, a 16,000 square foot spa facility, and 57,000 square feet of retail/restaurant space. In total, it is estimated that this project will cost roughly $420 million to complete.

Development of the site began in spring 2007 and the excavation and foundation work was completed in January 2008. Since that time, construction has come to a standstill due to financing difficulties. At the time of this report, additional financing had not been secured by the developers and thus work has not continued. Should the project secure the financing needed to resume construction on the facility, the project has the potential to generate a substantial need for transit, given the size and uses included. Although the project is located adjacent to major activity centers, such as the casino core and Heavenly Village shopping and ski access, need for access to other locations such as outlying recreational centers.

Beach Club at Lake Tahoe

The Beach Club is a residential/lodging project located on the lake front along Kahle Drive in the Stateline area. It has been approved to consist of 143 market rate and moderate income multifamily housing units, as well as an athletic club, restaurant, and meeting space.

Sierra Colina Village

The Sierra Colina Village project would result in a total of 50 residential units along Lake Village Drive, just east of US 50 between Stateline and Round Hill. The project was recently approved by the TRPA.

Edgewood

The existing Edgewood Golf Course is proposed to be redeveloped to add 205 hotel and multifamily housing units, as well as a health spa, restaurant, bar, and banquet room. The environmental assessment and permitting process is currently under way.

56 Acre Tract (Lakeview Commons)

The City of South Lake Tahoe is currently heading up a planning process to rejuvenate and enhance the Bijou Park/El Dorado Beach area. This is envisioned as including enhanced recreational, beach, library, and senior center facilities. Initial phases of these improvements are currently under way.

The Aspens at South Lake Tahoe

The Aspens at South Lake Tahoe is a 56-unit senior housing development located on Pioneer Trail, near the intersection of Ski Run Boulevard. The project site is located within walking distance to three existing BlueGO routes, Routes 52, 53 and 55, and also along a marked bicycle route. Further, the proposed bicycle and pedestrian greenbelt from the California Tahoe Conservancy is within close proximity to the development.

REVIEW OF EXISTING PLANS AND POLICIES

A key step in any physical planning process, particularly one that considers a longer planning horizon, is the careful consideration of other ongoing planning processes in the area. This section presents a review of these recent and concurrent planning studies and considers how each impacts the potential for future transit services.

City of South Lake Tahoe General Plan

The General Plan for the City of South Lake Tahoe is currently being updated, with an anticipated adoption by summer 2010. Given that the existing policies may change based on new

and assumed future needs, the current transportation/transit-related policies are not discussed in detail. Rather, the following is a list of issues and opportunities that are being evaluated as a basis for developing new policies:

Issues

- *Limited bus services* – Existing routes only focus on major roadway corridors, providing the most frequent service in these areas, thus leaving more residential and outlying neighborhoods with longer spans between service times. Further, the demand-response service's limited capacity and high fare may be limiting ridership, while recent casino funding has declined and resulted in reductions in casino shuttle service levels and ridership.

- *Limited funding available for transit operations* – Given recent budget deficits on both the state and local level, funding for transit is becoming limited. This is heightened by the fact that existing transit programs essentially use all available local funding, such as the Local Transportation Fund (LTF). This presents issues with potential service expansions, as new funding would need to be secured to cover costs.

- *Few incentives for transit use* – Programs such as additional coverage for new developments, reduced parking requirements and increased height allowances can all be used as transit use incentives for transit-oriented projects; currently, there are few of these in place. Further, there is little in place to dissuade the use of private automobile use, such as parking fees or a local vehicle license fee.

Opportunities

- *Expand BlueGO* – By establishing a coordinated transit system and obtaining additional funding, BlueGO can expand services (i.e. routes and number of buses).

- *Increase visitor transit use* – New or expanded services on BlueGO could increase the amount of transit use by visitors, as exhibited by other mountain resort communities, as well as increased ridership on existing services like the Nifty Fifty Trolley and the South Tahoe Express airport service.

- *Change land use patterns to encourage increased transit usage* – Transit ridership could also be increased by developing higher density projects in South Lake Tahoe, as more trip origins and destinations would be within walking distance of a transit stop.

Mobility 2030: Lake Tahoe Regional Transportation Plan (TRPA)

In August 2008, the most recent regional transportation plan for the Lake Tahoe basin was approved and adopted. This long-range plan serves as a guidance document throughout Lake

Tahoe, with policies designed for the next 23 years through 2030. The following are key objectives, goals, and policies related to public transit within the Lake Tahoe area, including South Lake Tahoe:

Primary Objectives

- Design and invest in community mixed-mode facilities, providing walkable and transit-friendly opportunities.

- Establish a safe, secure, efficient, and integrated transportation system that reduces reliance on the private automobile, by investing in alternative modes that serve basic transportation needs of the citizens of the Tahoe Region.

- Organizational structures and processes relevant to transportation and transit operations and governance shall be designed to facilitate the implementation of the Regional Transportation Plan, the goals of the TRPA Compact and the integration of the transportation system with land uses.

Goals and Policies

- Plan for and promote land use changes and development patterns consistent with the Regional Plan, encouraging walkable, mixed-use centers and supporting transportation enhancements and environmental improvements that improve the viability of transit systems.

  – Mixed-use development strategies are encouraged to be required at key locations around existing and planned transit stops in redevelopment areas.

  – Promote redevelopment that encourages walking, bicycling, and easy access to transit stops.

  – Site Planning and design will seek to emphasize transit, walkability and pedestrian-friendly features and respond to a variety of site conditions and context.

  – Redevelopment is encouraged to make use of existing transportation facilities.

- The utilization of Intelligent Transportation Systems (ITS) technology shall be considered and implemented, and technology should be used to increase usage of alternative modes.

  – Develop and maintain real-time information services available on changeable message signs, via the internet and over the telephone for road conditions, transit services, and bicycle routes.

  – Electronic and automated payment systems shall be investigated and implemented for transit systems and parking areas.

- Consider implementation measures consistent with the Tahoe Basin ITS Strategic Plan, including Traveler Information Services.

- Actively encourage the development and implementation of services and programs to expand the operation and use of environmentally conscious public transit in the Lake Tahoe region.

- Public or private mass transit services shall be given preference in mitigating traffic and transportation related impacts for new projects or redevelopment areas.

- Improvements to existing transit systems such as increases in frequency, expansion of service area, or extension of service hours will be encouraged and supported, as appropriate.

- Transit facilities shall be provided that encourage transit usage and pedestrian and bicycle use through their designs.

- Where existing parking lots may facilitate additional transit ridership, Park-and-Ride facilities should be pursued.

- New transit vehicles shall seek to maximize bicycle carrying capacity using best available technology.

- Fare options such as free fares, deeply discounted passes, or other fare alternatives will be investigated and implemented, where appropriate.

- Transit service shall be provided to major summer and winter recreational areas.

- The expansion of private and public transit excursion services shall be encouraged in the region.

- Dedicated transit rights-of-way shall be acquired where feasible.

- Public transit fleets shall utilize alternative fuels to the maximum extent feasible to reduce emissions.

- Public transit services shall be operated efficiently and effectively.

- Strengthen inter- and intra-regional transportation options into the Lake Tahoe Region that reduce dependency on the automobile.

- Transit service shall be expanded to cities, towns, and recreational areas outside of the Tahoe Region, and be coordinated with other transportation modes.

- Implement the recommendations of the Interregional-Intraregional Transit Study, including the South Shore and Incline Vanpool Program, Summer Lake Lapper and South Shore-Sacramento Bus Service.

- Work with organizations that advocate and facilitate public-private partnerships, new sources of funding, and seek coordination among various transit operators and providers for the benefit of improved transportation in the Lake Tahoe Region.

- Improve the mobility of the elderly, handicapped, traditionally under-represented and under-served populations and other transit-dependent groups.

- Provide specialized public transportation services with subsidized fare programs for transit, taxi, demand response and accessible van services.

- Ensure that transit and pedestrian facilities, including transit shelters, vehicles, sidewalks and shared-use paths, as well as all new public developments are consistent with the TMPO Coordinated Human Services Transportation Plan.

- Develop on-going sources of regional revenue to fund the local share of transit, bicycle, and pedestrian and other non-auto transportation improvements, operations and maintenance.

TRPA 20-Year Regional Plan

The TRPA's existing 20-year Regional Plan is a basin wide land use management plan that includes regulatory policies, incentives, and programs with a primary focus on environmental improvement within Lake Tahoe's core urban areas. The TRPA has stated that the regional plan is a "blueprint to restore the lake, improve the environmental health of the basin, and revitalize our community while maintaining our Tahoe character." The following are key items relative to transit services that have been identified for the Regional Plan update, which is currently in process.

- The Climate Change section proposes land use and transportation policies, and specifically the expansion of mass transit. It also suggests developing a green building program, which may include non-auto transit options.

- Another area addressed in the plan is pedestrian transit-oriented and compact development, which includes two land use strategies related to mass transit:

  - Within community plan areas and nodes, concentrate uses and density within walking distance of transit.

  - Increase alternative modes of transportation by improving transit frequency, service and convenience, and implementing complete streets to enhance connectivity and access.

  - The section further suggests achieving transportation connectivity by providing transit stops with pedestrian amenities, such as shelters and benches.

- The goal of the Transportation section is to create a "multi-modal transportation system that promotes viable alternatives for mobility needs, encourages alternative mode use, and decreases dependency on the private automobile." Implementation of this goal includes mass transit and utilizing ITSs.

BlueGO Triennial Performance Audit

As part of the California Public Utilities Code and TDA funding requirements, transit operators that receive funding under Article 4 are subject to a performance audit every three years. In 2008, a Triennial Performance Audit was completed for BlueGO that covered FYs 2003-04, 2004-05, and 2005-06. The following key findings were included in the report:

- Annual vehicle service hours and miles data was not reported in accordance with the TDA definition for both City and County BlueGO services.

- Prior performance audits' recommendations were not fully implemented during the audit period, however BlueGO is currently planning to implement these.

- Operating costs increased over 15 percent in FY 2004-05 as a result of fuel and contractor overhead cost increases.

As a means to address the issues discussed above, several recommendations were developed:

- Due to commingled operating data, it was recommended that more accurate data reporting could be achieved if the two systems were merged into one contract/one system as proposed by BlueGO staff in early 2008.

- The BlueGO Transit Administrator should work with the City, County, and transit contractor to improve reporting in the State Controller reports and reduce inconsistencies found between internal records and State Controller reports.

- The BlueGO Transit Administrator should review fare revenue reports closely to determine the reason for financial inconsistencies previously discovered, and should perform a financial audit of the entire system.

- The TRPA should be tracking the farebox recovery ratio on BlueGO services.

- Management at the transit contractor should be made aware of the TDA employee hours/full-time equivalent definition, and City staff should track the number of hours worked on transit matters by City personnel.

- Stakeholders should implement the Memorandum of Understanding which allows BlueGO to operate one BlueGO OnCall system serving both the City of South Lake Tahoe and El Dorado County.

- BlueGO and TRPA should move forward with plans to conduct a Short Range Transit Plan (SRTP) for BlueGO services.

- The City of South Lake Tahoe and BlueGO should establish a competitive bidding process for procuring transit services.

- The BlueGO Transit Administrator should periodically track maintenance records as part of the contract oversight.

Chapter 3
Transportation Services

BLUEGO

BlueGO is a coordinated public/private transportation system for the South Lake Tahoe and South Shore region of Lake Tahoe that combines the resources of previously offered services under one management. This coordinated system is designed to streamline resources and offer an easy, convenient, personalized transit option to locals and visitors.

BlueGO was previously provided by the South Tahoe Area Transit Authority (STATA). However, in October 2010 the Tahoe Transportation District chose to take over the oversight of the BlueGO program.

BlueGO Program Background

It took roughly ten years to plan and fully implement the BlueGO Coordinated Transit System. In the mid 1990s traffic congestion and the resulting pollution on US 50 became a persistent problem. In addition, transit ridership on the existing South Tahoe Area Ground Express (STAGE) service seemed to be stagnating at roughly 1,700 passenger-trips over a peak day. Less than 10 percent of STAGE ridership was comprised of visitors. In addition to the environmental and traffic congestion concerns, the various casino, lodging, and ski area shuttles operated services independently and often duplicated services. This disjointed and uncoordinated network of public transit was found to be both inefficient as well as a substantial detriment to overall transit service ridership. These factors along with the incentive to earn mitigation credits for future expansions helped decision makers and private businesses to join forces in developing an improved coordinated transit system for South Lake Tahoe.

The resulting "Coordinated Transit System," subsequently named BlueGO, combined the existing transportation resources of five public entities and five private entities. The original BlueGO stakeholders included:

- Tahoe Regional Planning Agency
- Tahoe Transportation District
- City of South Lake Tahoe
- El Dorado County
- Douglas County
- Horizon Casino Resort
- Lakeside Inn and Casino
- Harrah's/Harvey's Lake Tahoe
- Caesars Hotel and Casino
- Heavenly Mountain Resort

Subsequently, MontBleu Resort Casino and Spa and The Ridge Resorts both have joined BlueGO. Capital funding for the project was provided by federal grants from the Environmental Protection Agency (EPA) and the FTA, local project mitigation funds, and other local funds.

Existing Service Plan (As of January 2010)

Reflecting the various needs for public and private transit services in South Lake Tahoe and the South Shore region, BlueGO provides a variety of services including fixed and flex routes, commuter express routes, a summer trolley, winter seasonal services, and OnCall (Dial-A-Ride, or DAR) services. The existing routes are shown in Figure 10. BlueGO has undergone numerous service changes in recent years, most recently to address budget limitations and eliminate unproductive services. Service changes were made May 31, 2009, September 6, 2009, and January 13, 2010, to address rising costs and reduced revenues. The services provided subsequent to January 2010 are included in the description of the existing service plan, presented below.

Additional service changes were made in June and October 2010. Due to the timing of the changes in relation to this report, these service modifications are not considered to be "existing services," but are rather incorporated into the service plan discussion in Chapter 6. One of the primary reasons for this was the lack of data available that would accurately reflect the changes.

Fixed and Flex Routes

BlueGO offers regularly scheduled fixed and flex route bus service in the City of South Lake Tahoe, Meyers, and Western Douglas County all within the Tahoe Basin. Routes designated with an X are Express Routes designed for commuters.

BlueGO Routes in Douglas County

There are two commuter express routes and two rural flex routes serving Douglas County, as follows:

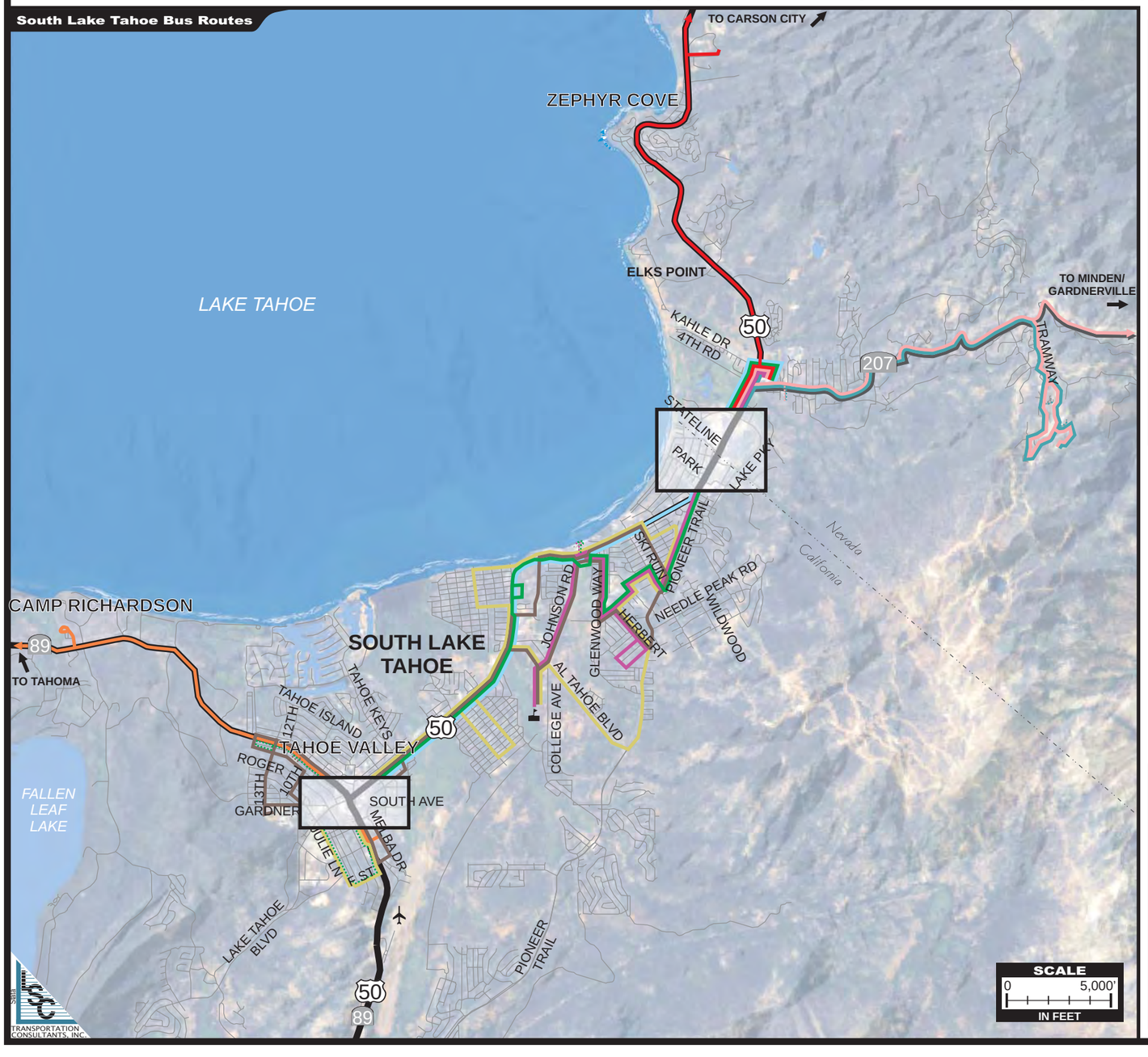
- Route 20X – Stateline Transit Center to Gardnerville and Minden: Five westbound runs depart between 5:45 AM and 8:45 PM, along with one eastbound run at 8:45 AM. In the afternoon, five eastbound runs depart between 3:40 PM and 6:40 PM and one westbound run at 2:45 PM. There is also a 12:15 AM run that operates from the Stateline Transit Center to Lakeside Inn Casino, and which will continue on to Gardnerville on request. Recent changes include elimination of service to Stephanie Way and Johnson Lane due to low ridership, as well as minor rescheduling.

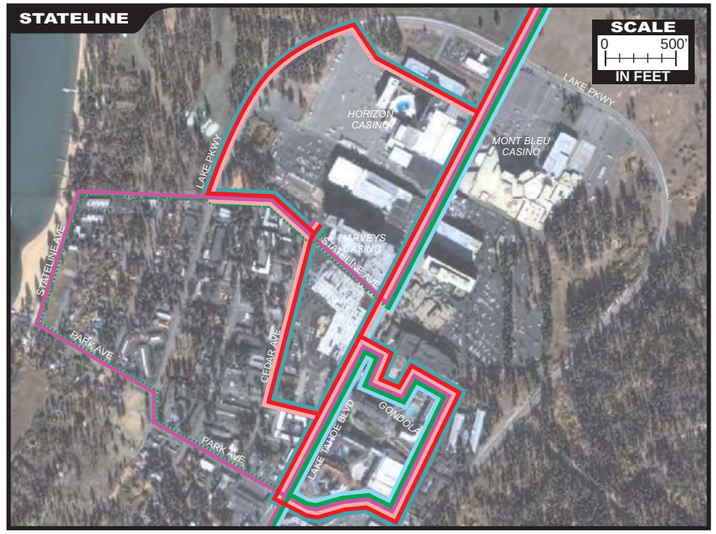
- Route 21X – Stateline Transit Center to Carson City: In the morning, four eastbound runs operate on hourly headways, with runs beginning between 5:30 AM and 8:30 AM, while four westbound runs leave hourly between 6:35 AM and 9:35 AM. Afternoon eastbound runs leave between 3:40 PM and 6:40 PM, and westbound runs leave between 3:30 PM and 6:30 PM. The route connects with the Carson City JAC bus system at Plaza Street and Washington Street in Carson City. George Whittell High School is not served on weekends. This route underwent minor rescheduling as of May 31, 2009.

- Route 22 – Stateline Transit Center to Zephyr Cove/Kingsbury Elementary School via US 50 East: This route operates daily on 45 minute headways starting at 9:40 AM eastbound, with the last run at 2:55 PM, and starting at 9:59 AM westbound, with the last run at 3:14 PM.

FIGURE 10

Existing BlueGO Routes (As of January 2010)





SCALE

- HIGHWAY
- ROADS
- STATE BOUNDARY

TRANSIT ROUTES

- ROUTE 20X
- ROUTE 21X
- ROUTE 23
- ROUTE 24X
- ROUTE 30
- ROUTE 52
- ROUTE 53
- ROUTE 54
- ROUTE 55
- REQUEST SERVICE

N

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Service was added to Zephyr Cove Resort along with minor rescheduling on May 31, 2009. Passengers may request the bus operator to deviate up to three-quarters of a mile on either side of the route, with up to three deviations per trip. Seniors (age 60 and up), persons with disabilities, Medicare card holders, and special needs passengers receive priority. ***(This service was eliminated in June 2010.)***

- Route 23 – Stateline Transit Center to The Ridge Resorts via Upper Kingsbury: This route operates daily on hourly headways between 7:10 AM and 11:10 PM, with an additional 12:10 AM run available on Fridays and Saturdays. As of May 31, 2009, service to the TRPA offices, Galaxy Way and Olympic Court became "on request" to improve the on time performance of this route. Service was extended to the Stateline motels area via Lakeshore Boulevard and Park Avenue. Buses no longer stop in casino parking lots, but rather serve stops along US 50 next to the street entrances of the casinos. Passengers may request the bus operator to deviate up to three-quarters of a mile on either side of the route, with up to three deviations per trip. Seniors (age 60 and up), persons with disabilities, Medicare card holders, and special needs passengers receive priority.

BlueGO Routes in El Dorado County

In El Dorado County, BlueGO operates a rural flex route and a commuter express route.

- Route 40 – Meyers Circulator/South Y Transit Station to Meyers via Lake Tahoe Community College & Lake Tahoe Airport: This route operates daily as a counterclockwise loop from 7:15 AM to 6:32 PM, Monday through Friday only, with hourly headways. Major stops along the route include the Lake Tahoe Airport, South Tahoe High School, Lake Tahoe Community College, and the South Lake Tahoe Recreation Complex. Passengers may request the bus operator to deviate up to three-quarters of a mile on either side of the route, with up to three deviations per trip. Seniors (age 60 and up), persons with disabilities, Medicare card holders, and special needs passengers receive priority. ***(This service was eliminated in June 2010.)***

BlueGO Routes in the City of South Lake Tahoe

The following routes make up the core service for the City of South Lake Tahoe.

- Route 50 – South Y Transit Station to Kingsbury Transit Center via US 50: This route operates along the US 50 corridor between 5:45 AM and 7:43 PM, seven days per week. Service is provided hourly, and includes stops at Harrah's/Harvey's casinos and the MontBleu casino.

- Route 52 – South Y Transit Station to Lake Tahoe Community College via Sierra Tract. Al Tahoe and Bijou areas: This route operates along US 50 from the South Y Transit Station to Lake Tahoe Community College, and then makes a counter-clockwise neighborhood loop before returning to the South Y Transit Station. It provides service within the Sierra Tract, Al Tahoe neighborhood, and Bijou neighborhood. Service is on 2-hour headways with runs leaving between 6:15 AM and 6:15 PM, Monday through Friday. Passengers may request the bus operator to deviate up to three-quarters of a mile on either side of the route, with up to

three deviations per trip. Seniors (age 60 and up), persons with disabilities, Medicare card holders, and special needs passengers receive priority. ***(This service was eliminated in October 2010.)***

- Route 53 – Lake Tahoe Community College to Kingsbury Transit Center via Bijou area: This daily route serves neighborhoods between Al Tahoe Boulevard and Kingsbury Grade on hourly headways between 6:00 AM and 8:00 AM, and between 4:00 PM to 7:00 PM Monday through Friday; service is offered until 6:00 PM on weekends and holidays. The route travels through the Bijou neighborhood, along Ski Run Boulevard and Pioneer Trail, with stops at the Stateline casinos prior to arriving at the Kingsbury Transit Center.

- Route 54 – South Y Transit Station to Kingsbury Transit Center via US Highway 50 Pioneer Trail: This route provides nightly service between the South Y and Kingsbury Transit Center via Julie Lane, Gardner Mountain, the casino corridor, Pioneer Trail, Bijou neighborhood and US 50. The route runs hourly between 7:15 PM and 1:15 AM, seven days a week. ***(This service was eliminated in October 2010.)***

- Route 55 – South Lake Tahoe City Circulator/South Y Transit Station to Kelly Ridge: This circulator flex route serves the area from the South Y Transit Station to Ski Run Boulevard. It includes service to Barton Hospital, Lake Tahoe Community College, the Senior Center and the South Lake Tahoe Recreation Complex, to name a few. The route provides service between 7:15 AM and 8:15 PM on weekdays, and from 10:15 AM to 5:15 PM on weekends and holidays. ***(This service was eliminated in October 2010.)***

BlueGO Nifty 50 Trolley

Route 30, also known as the Nifty Fifty Trolley, is a summer service operated along US 89 from the South Y Transit Station to the PDQ Market in Tahoma where it connects with TART, providing a connection to the North Shore. Service is operated daily from late May to early September on hourly headways, with the first trolley leaving the South Tahoe Y at 9:15 AM and the last departing at 5:15 PM. TART connections are available between 10:10 AM and 6:10 PM.

BlueGO Camp Richardson Circulator

In the summer of 2009, BlueGO operated a Camp Richardson Circulator (Route 60), however it is no longer in operation. The route consisted of two vintage vehicles operating a taxi-like service in the Camp Richardson Resort area. This service was operated from 10:00 AM to 7:00 PM on weekends only from May 23rd to September 7th.

BlueGO Winter Services

BlueGO winter route service is comprised of seven different routes, with buses making stops at most major lodging properties and all Heavenly base facilities: the California Base Lodge, the base of the Gondola at Heavenly Village in California as well as Stagecoach and Boulder Lodges

in Nevada. The buses serve each of the bus stops as frequently as road and weather conditions permit, typically every 15 to 30 minutes. Service is identified by white BlueGO bus stop signs. The routes include:

- Red Route 10: Gondola Base and Stateline Transit Center via US 50 and the Inn By The Lake.

- Orange Route 11: Express service between the Gondola Base, Stateline Transit Center, and Heavenly California Lodge via Pioneer Trail.

- Green Route 12: Casino area to Gondola Base and Stateline Transit Center. This route will operate every 30 minutes with timed connections to Blue Route 15 at the Stateline Transit Center.

- Gold Route 13: Heavenly California Lodge to Ski Run Blvd and US 50.

- Purple Route 14: The Ridge Resorts to Heavenly Boulder Lodge and Heavenly Stagecoach Lodge only.

- Blue Route 15: Gondola Base and Stateline Transit Center through Casino area to Boulder and Stagecoach Lodges. Starting in 2009, this service will be express between Stateline Transit Center and Heavenly Boulder and Stagecoach Lodges on 30 minute headways (using two buses).

- Yellow Route 16: Gondola Base and Stateline Transit Center to Stateline motels area has been **discontinued**.

- Black Route 17X: This service is oriented towards Heavenly employees, though it is open to all passengers traveling from South Y Transit Station to Heavenly California Lodge, Heavenly Boulder Lodge and Heavenly Stagecoach Lodge via employee housing on Pioneer Trail, employee parking on Ski Run Boulevard and Stateline Transit Center. Limited stops are made on US 50, SR 207, and Pioneer Trail.

All shuttles are free, wheelchair accessible and can accommodate bicycles, and are open to all riders. Shuttles generally operate from late November through April, between the hours of 8:00 AM and 6:00 PM.

OnCall Demand Response Service

BlueGO provides demand response service within the city limits of South Lake Tahoe as well as to and from Christmas Valley, the Upper Truckee River neighborhoods, Meyers and other portions of El Dorado County and Douglas County within the Tahoe Basin 24 hours a day, seven days a week. All of these vehicles are wheelchair accessible and equipped with bicycle racks. Reservations can be made from 60 minutes in advance up to 7 days in advance for general fare and special needs users, and 24 hours in advance for paratransit clients.

BlueGO offers ADA paratransit service within three-quarters of a mile of a non-commuter fixed-route ("fixed" and "flex" routes) for an additional fare of $1.00. Passengers must be qualified in order to use BlueGO ADA Paratransit services. As of January 15, 2010, BlueGO limited the maximum hours of DAR service to 30 hours per day on weekdays and 24 hours per day on weekends as a cost-saving measure. However, all eligible ADA requests are being accommodated.

Operating Characteristics

The changes that have occurred on BlueGO over the past several years make analysis of operating and ridership data difficult. Nonetheless, operating and ridership statistics can be evaluated to determine which services over the years have generally been most productive, and which have been least productive, as well as which market segments are growing or declining. Below is an evaluation of ridership over various time spans for the different services provided by BlueGO and other South Shore area providers.

Historic Operating Characteristics

Table 11 shows historic operating characteristics from 2003 through 2009, including ridership, fare revenues, service hours and service miles. As indicated, ridership has declined from 1,219,000 in 2003 to just over 816,000 in 2009. The biggest decline was from 2006 to 2007, where systemwide ridership decreased from 1,049,000 to 833,000. A large share of this loss was from the Casino ridership, which went from a high of 184,634 in 2003 to a low of 46,894 in 2007, with a small recovery to 52,217 in 2008. (This parallels the reduction in service levels over the same period.) Casino ridership was demand response until 2006, when it became a fixed-route service, however it has since been discontinued as a special service.

Systemwide fare revenue increased from $708,131 in 2003 to $859,842 in 2005, decreasing to $567,292 by 2008. In 2009, revenues totaled to $626,595, a 10 percent increase over the course of one year. Hours of service decreased from 83,296 in 2003 to 67,039 in 2007, increasing again to 74,450 in 2008 and more dramatically in 2009 to 94,473. This increase is due to an increase in service, primarily through new routes serving Carson City and Minden/Gardnerville

Recent Ridership Characteristics: January 2009 to April 2010

The most recent data available, between January 2009 and April 2010, is presented in Table 12. This data is helpful in not only providing more current ridership trends, but also in assessing the impacts of recent service reductions implemented in May 2009, September 2009, and January 2010.

The data suggests that fixed-route ridership has been trending downwards for existing routes, with the exception of two – Route 21X and Route 23. This is the result of service changes that focused on reduced operating hours and days, exacerbated by declines in the economy. Further, some routes were eliminated entirely due to poor performance. Looking at ridership data for the four-month period between January and April, both in 2009 and 2010, reveals that most routes have experienced a loss in ridership between the two time periods. As shown, percent changes

TABLE 11: BlueGO Operating Data by Year

BlueGO Ridership

	Fixed Route					Demand Response				
Year	South Lake Tahoe	Kingsbury Express [1]	Douglas County [2]	Trolley	Winter	South Lake Tahoe	El Dorado County	Douglas County	Casino [3]	Total
2003	465,663	N/A	N/A	30,167	487,415	17,977	23,817	9,579	184,634	**1,219,252**
2004	462,455	N/A	N/A	30,167	400,454	17,769	23,170	10,232	175,007	**1,119,254**
2005	460,225	N/A	N/A	21,634	449,630	18,310	29,144	14,761	166,278	**1,159,982**
2006	440,685	N/A	N/A	28,315	446,324	14,896	25,779	18,971	74,140	**1,049,110**
2007	365,456	N/A	N/A	42,003	325,159	11,393	23,308	19,002	46,894	**833,215**
2008	399,222	26,446	N/A	31,927	431,486	0	24,833	18,003	52,217	**984,134**
2009	354,096	22,845	72,368	10,584	324,287	32,352	N/A	N/A	N/A	**816,532**

BlueGO Fares

	Fixed Route					Demand Response				
Year	South Lake Tahoe	Kingsbury Express [1]	Douglas County [2]	Trolley	Winter	South Lake Tahoe	El Dorado County	Douglas County	Casino [3]	Total
2003	$370,499	N/A	N/A	$49,517	--	$43,015	$53,419	$7,047	$184,634	**$708,131**
2004	$505,844	N/A	N/A	$49,517	--	$42,467	$49,856	$10,737	$158,618	**$817,039**
2005	$541,923	N/A	N/A	$24,637	--	$43,760	$66,289	$12,010	$171,223	**$859,842**
2006	$508,723	N/A	N/A	$31,181	--	$35,601	$62,219	$17,004	$110,186	**$764,914**
2007	$500,749	N/A	N/A	$36,228	--	$25,510	$49,733	$18,193	$102,690	**$733,103**
2008	$356,619	$46,995	N/A	$38,442	--	$0	$40,137	$20,567	$64,532	**$567,292**
2009	$433,003	$16,827	$38,994	$12,496	--	$125,275	N/A	N/A	N/A	**$626,595**

BlueGO Service Hours

	Fixed Route					Demand Response				
Year	South Lake Tahoe	Kingsbury Express [1]	Douglas County [2]	Trolley	Winter	South Lake Tahoe	El Dorado County	Douglas County	Casino [3]	Total
2003	20,716	N/A	N/A	4,147	14,053	12,274	7,822	3,962	20,322	**83,296**
2004	19,104	N/A	N/A	4,121	18,052	8,193	7,844	3,999	20,747	**82,060**
2005	17,962	N/A	N/A	2,542	18,000	4,380	7,820	5,199	24,510	**80,413**
2006	17,809	N/A	N/A	2,654	17,976	4,380	7,794	5,623	11,641	**67,877**
2007	17,608	N/A	N/A	3,915	17,594	4,248	7,822	5,391	10,461	**67,039**
2008	20,031	7,534	N/A	2,565	19,297	0	8,695	5,536	10,792	**74,450**
2009	38,958	8,225	16,468	2,129	16,439	12,254	N/A	N/A	N/A	**94,473**

BlueGO Service Miles

	Fixed Route					Demand Response				
Year	South Lake Tahoe	Kingsbury Express [1]	Douglas County [2]	Trolley	Winter	South Lake Tahoe	El Dorado County	Douglas County	Casino [3]	Total
2003	237,035	N/A	N/A	43,248	151,318	223,595	86,720	39,652	235,799	**1,017,367**
2004	212,486	N/A	N/A	46,069	159,782	135,496	87,799	39,999	254,236	**935,867**
2005	203,237	N/A	N/A	32,902	155,000	145,442	64,702	59,540	238,559	**899,382**
2006	220,652	N/A	N/A	37,159	154,000	64,346	130,060	58,097	169,904	**834,218**
2007	214,858	N/A	N/A	24,322	131,293	53,913	128,397	63,285	140,261	**756,329**
2008	243,863	149,373	N/A	39,062	158,263	0	135,255	78,636	128,163	**932,615**
2009	569,921	132,562	294,580	43,666	135,761	178,175	N/A	N/A	N/A	**1,354,665**

Note 1: Kingsbury Express started in 2008, became Route 20x in 2009.
Note 2: Includes Routes 21x, 22, 23x and 24x; service began in late 2008 or 2009
Note 3: Casino service was demand response until late 2006 (except Kingsbury Timeshare). All services are now fixed route.
Note 4: Data not available. Estimated based on prior and subsequent years.

Source: BlueGO, 2010

TABLE 12: BlueGO Ridership January 2009 through April 2010

	2009												2010				% Change Jan-Apr 2009 & 2010
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	
20X	2,311	2,156	2,374	1,845	1,698	1,620	1,847	2,097	1,789	1,655	1,540	1,913	2,145	1,877	1,980	1,750	-11%
21X	1,292	1,178	876	564	641	845	1,191	1,016	1,016	887	790	1,081	1,459	1,201	1,183	925	22%
22	340	355	328	199	364	616	701	558	390	178	126	218	372	133	232	191	-24%
23	5,567	5,513	5,437	2,441	2,684	4392	5675	6377	4745	2930	2681	7,067	6,649	6,727	6,896	3,732	27%
24X	-	-	-	-	-	-	-	-	200	385	338	186	492	365	408	289	N/A
40	700	746	784	809	793	370	678	804	630	784	521	602	850	640	714	635	-7%
41X	63	127	78	23	19	0	0	0	200	-	-	-	-	-	-	-	N/A
50	28,360	24,773	25,180	20,626	20,247	21,099	26,531	25,851	21,654	19,773	17,306	23,821	19,835	14,403	14,864	14,012	-36%
51	501	529	482	436	644	154	173	179	37	-	-	-	-	-	-	-	N/A
52	2,159	2,196	2,297	2,528	2,491	2223	1952	2310	1465	1534	1334	1,295	1,578	1,388	1,559	1,672	-32%
53	2,416	1,967	2,415	1,892	1,874	1550	1945	1867	1761	1915	1976	2,141	2,199	1,546	1,569	1,157	-26%
54	-	-	-	-	-	-	-	-	-	556	451	659	2,064	2,585	3,036	2,421	N/A
55	-	-	-	-	-	1,253	1,712	2,110	2,743	2,792	2,556	2,821	2,716	1,961	2,307	2,085	N/A
30	-	-	-	-	408	2,071	3,473	3,668	784	180	-	-	-	-	-	-	N/A
Winter Services	84,543	90,790	75,280	17,848	-	-	-	-	-	-	4,709	51,117	78,233	68,863	71,621	28,404	-8%
OnCall	2,727	2,451	2,595	2,786	2,965	2,570	2,569	2,590	2,711	2,833	2,431	3,124	2,693	2,266	2,469	2,453	-6%

Source: BlueGO, compiled by LSC Transportation Consultants, 2010

between these two periods include a 36 percent decrease on Route 50, 32 percent decrease on Route 52, a 26 percent decrease on Route 53, a 24 percent decrease on Route 22, and an 11 percent decrease on Route 20X. Conversely, Route 21X experienced a 22 percent increase in ridership while Route 23 saw a 27 percent increase during the same time period.

Additionally, winter service ridership decreased 8 percent in the four-month periods of 2009 and 2010, reflecting the lodging and gaming data provided earlier. Similarly, the BlueGO OnCall service ridership during the January through April 2010 period decreased 6 percent compared to the same period in 2009.

In addition to providing information on ridership trends, comparing January through April data between 2009 and 2010 can help develop ridership forecasts. By determining the impact of the service changes (effective January 2010), future ridership levels can be estimated. The forecasts developed suggest that ridership would increase on six of the twelve existing routes, as well as on nearly all winter services, while BlueGO OnCall would experience a slight drop in ridership. This data is presented in more detail in the Service Plan chapter of the report, which includes strategies to further improve the efficiency and effectiveness of the BlueGO services.

Baseline Forecast Ridership for Fiscal Year 2010/2011

Based on the previous ridership discussion, a forecast of ridership has been developed for the 2010/2011 fiscal year, for services as of July 1, 2010. As shown in Table 13, ridership is expected to total 726,800 passenger-trips systemwide, including 696,500 passenger-trips for the fixed-route services and 30,300 passenger-trips for the OnCall service.

Operating Characteristics: Fiscal Year 2010/2011

Due to the number of service changes that have recently occurred, accurate and consistent operating characteristics are not available. As such, a forecast was developed for the 2010/2011 fiscal year, which will be used as a baseline for existing conditions and is shown in Table 13 and Figures 11 through 14.

Operating Cost per Passenger-Trip

The forecasted total operating cost for the BlueGO system is estimated at $4,170,500. This includes $3.45 million for fixed-route service, including nearly $1.2 million for the fixed-routes serving Nevada, $1.16 million for the California fixed-routes, $137,200 for Route 30 (summer Trolley), and nearly $950,000 for the winter shuttles. Also included in the total figure is $719,600 for the OnCall services.

The forecasted operating cost per passenger-trip was calculated by comparing the anticipated total operating costs (marginal and allocated) to the estimated ridership for 2010/2011 for each route. As shown in Table 13 and Figure 11, Route 40 has the highest cost per passenger-trip, at $30.36 per trip. This is followed by Route 21X ($26.55 per passenger-trip) and Route 22 ($24.42 per passenger-trip). The BlueGO OnCall service is also relatively high, at $23.75 per passenger-trip. The most efficient routes included Route 50, with $1.50 per passenger-trip, and all of the

TABLE 13: Forecast BlueGO 2010/11 Service Characteristics

Route	Serves	Forecast 2010-11 Ridership	Avg. Fare per Psgr	Forecast 2010-11 Fare Revenues[1]	Annual Revenue Vehicle-Hours	Annual Operating Costs: Marginal Operating[2]	Annual Operating Costs: Allocated Fixed[3]	Annual Operating Costs: Total	Psgr-Trips per Vehicle-Hour	Marginal Subsidy per Psgr-Trip[2]	Total Subsidy per Psgr-Trip	Cost per Psgr-Trip	Farebox Ratio
Year-Round Fixed-Route: Nevada													
20X	Stateline-Gardnerville	20,400	$1.53	$31,200	4,380	$184,000	$103,900	$287,900	4.66	$7.49	$12.58	$14.11	11%
21X	Stateline-Carson City	13,900	$2.41	$33,500	5,614	$235,800	$133,200	$369,000	2.48	$14.55	$24.14	$26.55	9%
22	Stateline-Zephyr Cove	3,300	$1.43	$4,700	1,226	$51,500	$29,100	$80,600	2.69	$14.18	$23.00	$24.42	6%
23	Stateline-Kingsbury	70,300	$0.28	$19,700	6,478	$272,100	$153,600	$425,700	10.85	$3.59	$5.78	$6.06	5%
24X	Stateline-Minden	3,200	$1.59	$5,100	525	$22,100	$12,500	$34,600	6.09	$5.31	$9.22	$10.81	15%
Subtotal		111,100		$94,200	18,223	$765,500	$432,200	$1,197,700	6.10	$6.04	$9.93	$10.78	8%
Year-Round Fixed-Route: California													
40	Meyers	7,700	$1.39	$10,700	3,558	$149,400	$84,400	$233,800	2.16	$18.01	$28.97	$30.36	5%
50	Y - Stateline - Kingsbury via 50	175,600	$1.49	$262,100	4,008	$168,300	$95,100	$263,400	43.81	-$0.53	$0.01	$1.50	100%
52	Y - Sierra Tract - LTCC - Ski Run	16,100	$1.20	$19,300	3,402	$142,900	$80,700	$223,600	4.73	$7.68	$12.69	$13.89	9%
53	LTCC - Stateline - Kingsbury	17,700	$1.46	$25,900	2,373	$99,600	$56,300	$155,900	7.46	$4.16	$7.34	$8.81	17%
54	Y - Kingsbury via Pioneer Trail Night	28,100	$1.48	$41,700	1,773	$74,500	$42,000	$116,500	15.85	$1.17	$2.66	$4.15	36%
55	Y Area - LTCC - Ski Run	25,200	$1.36	$34,200	2,555	$107,300	$60,600	$167,900	9.86	$2.90	$5.31	$6.66	20%
Subtotal		270,400		$393,900	17,668	$742,000	$419,100	$1,161,100	15.30	$1.29	$2.84	$4.29	34%
Summer Service: California													
30	Y-Tahoma	10,600	$1.13	$12,000	2,088	$87,700	$49,500	$137,200	5.08	$7.14	$11.81	$12.94	9%
Skier Shuttle Service													
10-Red	Bijou - Stateline	19,400	$0.00	$0	1,265	$53,100	$30,000	$83,100	15.34	$2.74	$4.28	$4.28	
11-Orange	Stateline - California Base	128,100	$0.00	$0	4,345	$182,500	$103,100	$285,600	29.48	$1.42	$2.23	$2.23	
12-Green	Stateline - Kingsbury	20,000	$0.00	$0	1,156	$48,600	$27,400	$76,000	17.30	$2.43	$3.80	$3.80	
13-Gold	Bijou - California Base	19,400	$0.00	$0	1,173	$49,300	$27,800	$77,100	16.54	$2.54	$3.97	$3.97	
14-Purple	Boulder Lodge - Statecoach Lodge	37,600	$0.00	$0	1,507	$63,300	$35,700	$99,000	24.95	$1.68	$2.63	$2.63	
15-Blue	Stateline - Stagecoach Lodge	44,500	$0.00	$0	2,610	$109,600	$61,900	$171,500	17.05	$2.46	$3.85	$3.85	
17-Black	Y-California Base - Statecoach	14,700	$0.00	$0	1,054	$44,300	$25,000	$69,300	13.95	$3.01	$4.71	$4.71	
18-Violet	Ridge - Stagecoach Lodge	19,400	$0.00	$0	1,320	$55,400	$31,300	$86,700	14.70	$2.86	$4.47	$4.47	
Subtotal		302,900		$0	14,429	$606,100	$342,200	$948,300	20.99	$2.00	$3.13	$3.13	
Other/Special Services		1,500	$1.80	$2,700	100	$4,200	$2,400	$6,600	15.00	$1.00	$2.60	$4.40	41%
Subtotal: Fixed Route		*696,500*		*$502,800*	*52,508*	*$2,205,500*	*$1,245,400*	*$3,450,900*	*13.26*	*$2.44*	*$4.23*	*$4.95*	*15%*
OnCall		30,300	$3.74	$113,300	10,950	$459,900	$259,700	$719,600	2.77	$11.44	$20.01	$23.75	16%
TOTAL BlueGO		**726,800**		**$616,100**	**63,458**	**$2,665,400**	**$1,505,100**	**$4,170,500**	**11.45**	**$2.82**	**$4.89**	**$5.74**	**15%**

Note 1: Excludes direct payments from organizations.
Note 2: Excluding any fixed costs

Source: BlueGO, 2010

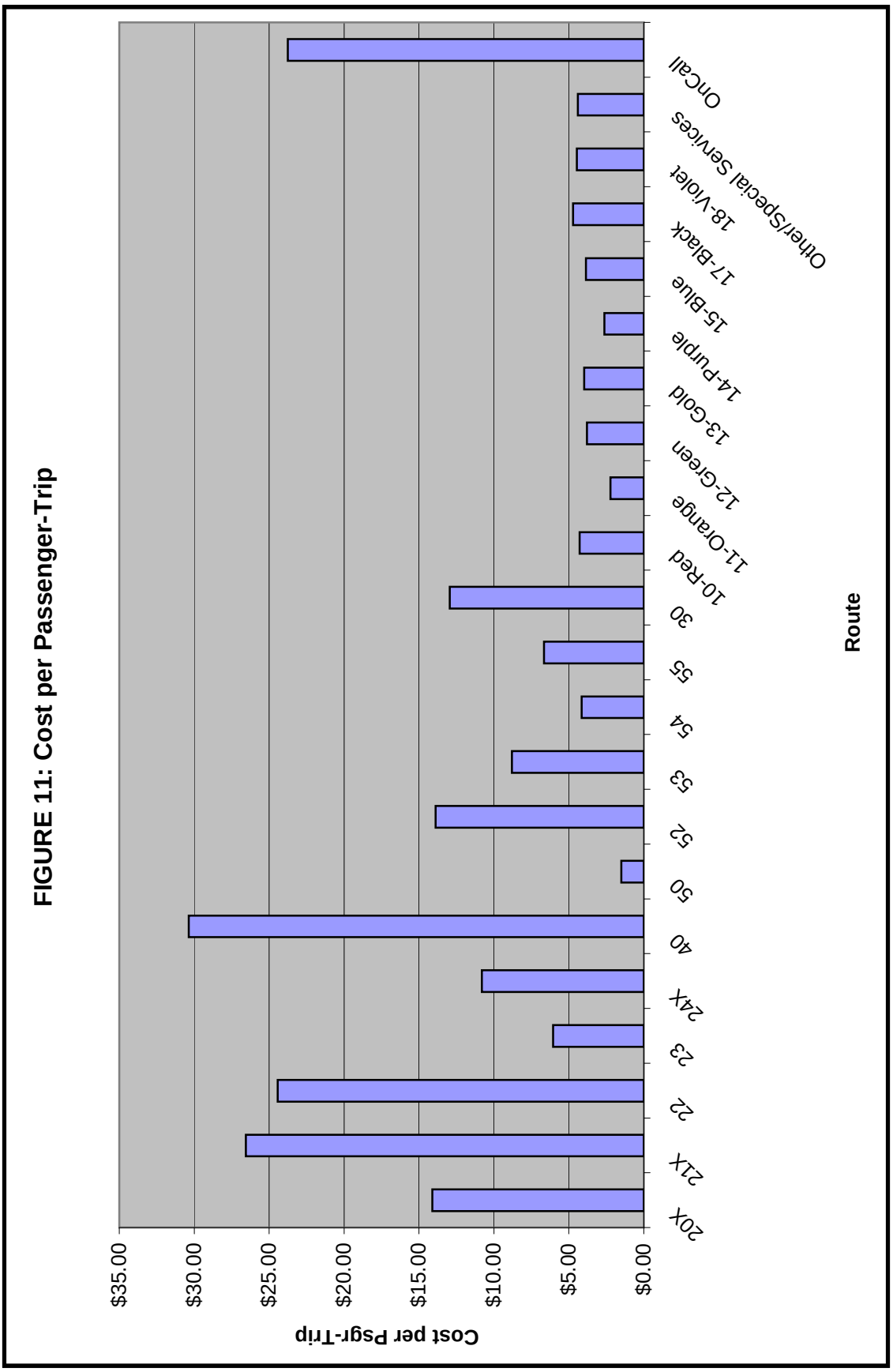
FIGURE 11: Cost per Passenger-Trip
Cost per Psgr-Trip
$35.00
$30.00
$25.00
$20.00
$15.00
$10.00
$5.00
$0.00
20X
21X
22
23
24X
40
50
52
53
54
55
30
10-Red
11-Orange
12-Green
13-Gold
14-Purple
15-Blue
17-Black
18-Violet
Other/Special Services
OnCall
Route

winter shuttles combined, for a total of $3.13 per passenger-trip. Route 54 was also efficient, with a cost of $4.15 per passenger-trip. Overall, the BlueGO system fared quite well, at $5.74 per passenger-trip.

Farebox Return

A cost efficiency indicator to consider is the farebox return ratio. This is the amount of fare revenue collected per operating cost expended. Minimum farebox return ratios are set as a condition of state and federal funding, and BlueGO's systemwide minimum requirement is 10 percent. Overall, the BlueGO system is meeting this standard, with an estimated farebox return ratio of 15 percent, systemwide, as shown in Table 13 and Figure 12. The figure is inclusive of the Nevada and California fixed-route services, as well as other special services and the OnCall program. The winter shuttles are not included since there is no fare associated with the service.

The fixed-routes in California had a combined farebox return ratio of 34 percent. Route 50 is estimated to have a 100 percent farebox return ratio, reflecting its very strong ridership. Following is Route 54 with a 36 percent ratio and Route 55 with a 20 percent farebox return ratio. The Meyers route (Route 40) had the lowest farebox return ratio, at 5 percent, followed by Route 52 with a 9 percent farebox ratio. The summer Trolley, Route 30, resulted in a 9 percent farebox return ratio.

In total, the Nevada fixed-routes resulted in an 8 percent farebox return ratio. The best performing routes were Route 24x with 15 percent and Route 20X with an 11 percent farebox ratio. Route 21X followed, with a 9 percent ratio, while Route 22 had a 6 percent farebox ratio and Route 23 only resulted in a 5 percent farebox return ratio.

BlueGO OnCall services are estimated to have a 16 percent farebox return ratio for FY 2010-2011. With further fixed-route reductions that may occur, this may increase as demand and ridership on the service increases.

Passengers per Hour

A good measure of service effectiveness is the number of passenger-trips carried per hour of service. As shown in Table 13 and Figure 13, Route 50 was the most effective route, generating 43.81 passenger-trips per hour. Additionally, the winter shuttles were highly effective, with a combined passenger-trips per hour of 20.99, as was Route 54, which carried 15.85 passenger-trips per hour. On the low side was Route 40, which only carried 2.16 passenger-trips per hour. Route 21X was also very ineffective, with 2.48 passenger-trips per hour, followed by Route 22 with 2.69 passenger-trips per hour. The OnCall service had only 2.77 passenger-trips per hour, however it is typical for Demand Response services to be less effective than fixed-route services.

Subsidy per Passenger-trip

A performance indicator that is a good measure of service effectiveness is the total subsidy required per passenger-trip. This number is determined by subtracting the fare revenue received from the operating cost of a service and dividing it by the number of passenger-trips. The results

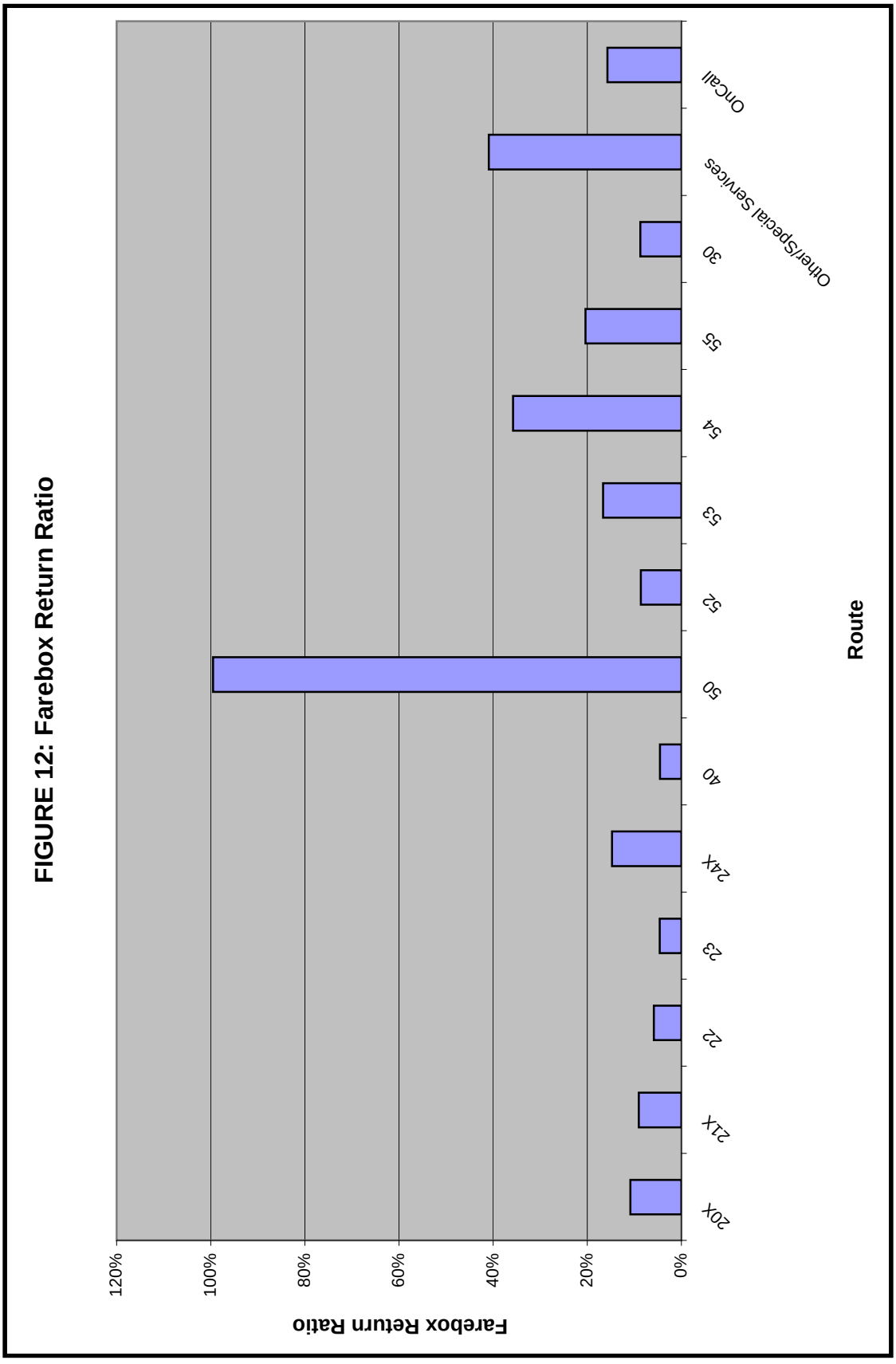
FIGURE 12: Farebox Return Ratio
Farebox Return Ratio
120%
100%
80%
60%
40%
20%
0%
Route
20X
21X
22
23
24X
40
50
52
53
54
55
30
Other/Special Services
OnCall

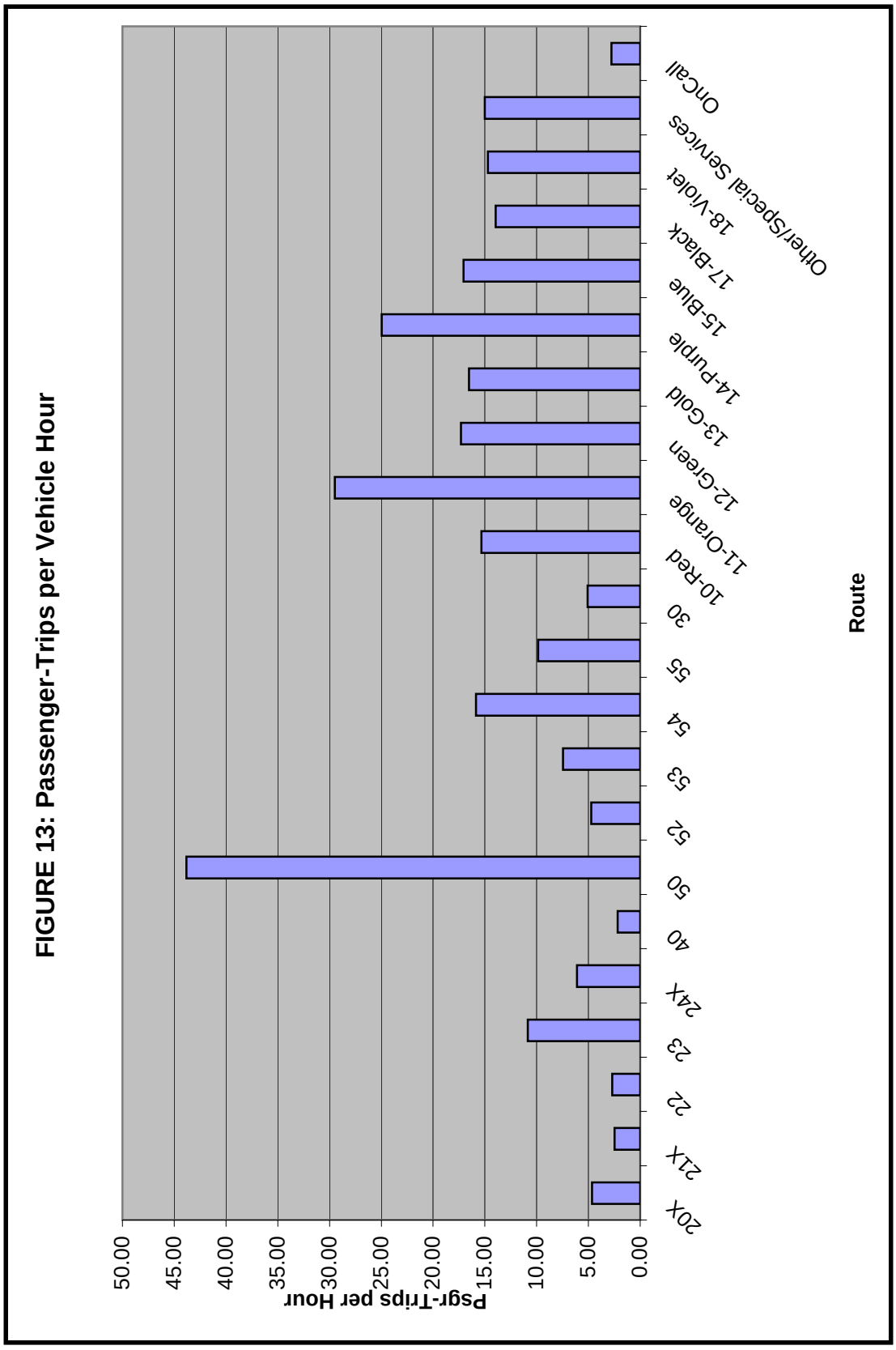
FIGURE 13: Passenger-Trips per Vehicle Hour
Psgr-Trips per Hour
50.00
45.00
40.00
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00
Route
20X
21X
22
23
24X
40
50
52
53
54
55
30
10-Red
11-Orange
12-Green
13-Gold
14-Purple
15-Blue
17-Black
18-Violet
Other/Special Services
OnCall

indicate that the South Lake Tahoe fixed-route service is the most effective at a subsidy per passenger-trip of just $2.84; within this category, Route 50 is the most effective, requiring only $0.01 per passenger-trip of subsidy. The winter shuttles are also performing well, with a subsidy per passenger-trip of $3.13. The least effective service is the OnCall service, which requires a per passenger subsidy of $20.01. This information is shown in Table 13 and Figure 14.

Ridership by Season

The South Lake Tahoe region experiences strong seasonal visitation, which is reflected in ridership statistics. Using the most recent 12-months of ridership data from 2009 and 2010, as presented in Table 14, seasonal variations can be observed, particularly between the most popular times of the year, summer (June through August 2009) and winter (December 2009 through March 2010). As indicated, fixed-route ridership is greatest in the winter, with 149,737 one-way passenger-trips; summer fixed-route ridership followed closely, which had a total of 136,637 one-way passenger-trips.

Winter transit services are operated from November through April, and add a significant amount of ridership to the BlueGO system. As shown, this service generates the most ridership in January (78,233 passenger-trips) and March (71,621 passenger-trips). On a systemwide basis, total winter ridership (BlueGO fixed-route and ski shuttle services) totaled 452,684 one-way passenger-trips during the 2009/2010 season.

BlueGO Fare Structure

The BlueGO fare structure is shown in Table 15. The base fare for local services is $2.00, with a 50 percent discount for youths aged 5 to 18, elderly, and persons with disabilities. Base fares on express routes are $4.00, and general public fares on the BlueGO OnCall (DAR) service are $6.00; Discount fares for these services are both $2.00. As shown in the table, there are numerous options for passes, tokens or other multi-ride options. The winter Ski Shuttle routes are free.

BlueGO Organization and Staffing

As of October 2010, the BlueGO program is overseen by the Tahoe Transportation District (TTD). The TTD has an 11-member Board of Directors, with the following seats:

- Placer County
- Carson City
- Douglas County
- El Dorado County
- Washoe County
- Truckee – North Tahoe Transportation Management Association
- South Lake Tahoe Transportation Management Association
- City of South Lake Tahoe
- At Large Representing Public and Private Transit Services in the Basin

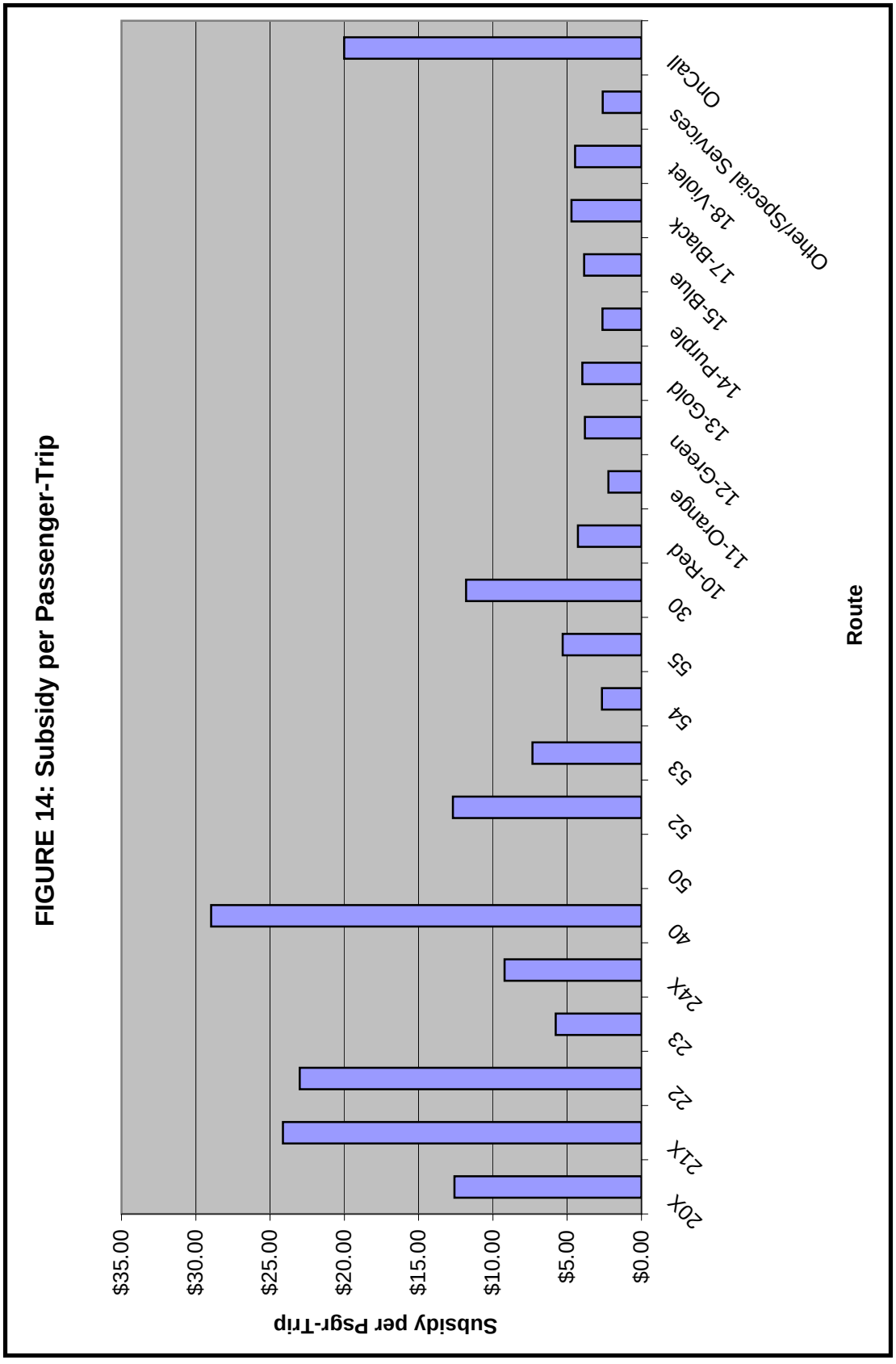
FIGURE 14: Subsidy per Passenger-Trip
Subsidy per Psgr-Trip
$35.00
$30.00
$25.00
$20.00
$15.00
$10.00
$5.00
$0.00
20X
21X
22
23
24X
40
50
52
53
54
55
30
10-Red
11-Orange
12-Green
13-Gold
14-Purple
15-Blue
17-Black
18-Violet
Other/Special Services
OnCall
Route

TABLE 14: BlueGO Seasonal Ridership 2009/2010

	2009							2010					
		Summer						Winter					
	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	*Total Passenger Trips*
Fixed Route													
20X	1,698	1,620	1,847	2,097	1,789	1,655	1,540	1,913	2,145	1,877	1,980	1,750	*21,911*
21X	641	845	1,191	1,016	1,016	887	790	1,081	1,459	1,201	1,183	925	*12,235*
22	364	616	701	558	390	178	126	218	372	133	232	191	*4,079*
23	2,684	4392	5675	6377	4745	2930	2681	7,067	6,649	6,727	6,896	3,732	*60,555*
24X	-	-	-	-	200	385	338	186	492	365	408	289	*2,663*
40	793	370	678	804	630	784	521	602	850	640	714	635	*8,021*
41X	19	0	0	0	200	-	-	-	-	-	-	-	*219*
50	20,247	21,099	26,531	25,851	21,654	19,773	17,306	23,821	19,835	14,403	14,864	14,012	*239,396*
51	644	154	173	179	37	-	-	-	-	-	-	-	*1,187*
52	2,491	2223	1952	2310	1465	1534	1334	1,295	1,578	1,388	1,559	1,672	*20,801*
53	1,874	1550	1945	1867	1761	1915	1976	2,141	2,199	1,546	1,569	1,157	*21,500*
54	-	-	-	-	-	556	451	659	2,064	2,585	3,036	2,421	*11,772*
55	-	1,253	1,712	2,110	2,743	2,792	2,556	2,821	2,716	1,961	2,307	2,085	*25,056*
30	408	2,071	3,473	3,668	784	180	-	-	-	-	-	-	*10,584*
Total Monthly Fixed Route	*31,863*	*36,193*	*45,878*	*46,837*	*37,414*	*33,569*	*29,619*	*41,804*	*40,359*	*32,826*	*34,748*	*28,869*	*439,979*
Winter Routes	-	-	-	-	-	-	4,709	51,117	78,233	68,863	71,621	28,404	*302,947*
OnCall	2,965	2,570	2,569	2,590	2,711	2,833	2,431	3,124	2,693	2,266	2,469	2,453	*31,674*
Total Systewide	*34,828*	*38,763*	*48,447*	*49,427*	*40,125*	*36,402*	*36,759*	*96,045*	*121,285*	*103,955*	*108,838*	*59,726*	*774,600*

Total Summer Fixed Route Ridership	*136,637*	***Total Winter Fixed Route Ridership***	*149,737*	***Total Winter Services (including Skier Shuttles)***	*452,684*

Source: BlueGO, compiled by LSC Transportation Consultants, 2010

TABLE 15: BlueGO Fares

Fare Category	Fare
Local Routes	
One-Way Fares	
General	$2.00
Senior / Youth / Disabled	$1.00
GOPass Fares	
General Day GOPass	$5.00
Senior / Youth / Disabled Day GOPass	$2.50
General Monthly GOPass	$70.00
Senior / Youth / Disabled Monthly GOPass	$35.00
Employer Monthly GOPass	$35.00
Summer Youth GOPass (age 5-18 with Student ID, June 1 - August 31)	$45.00
Pack of 10 Tokens	
General	$18.00
Senior / Youth / Disabled	$8.00
Ski Shuttles	Free
Route Deviation Fare	$1.00
Express Routes (Routes with X Designation)	
One-Way Fares	
General	$4.00
Senior / Youth / Disabled	$2.00
GOPass Fares	
General Day GOPass	$9.00
Senior / Youth / Disabled Day GOPass	$6.00
10-Ride GOPass	$30.00
20-Ride GOPass	$55.00
Monthly Express GOPass	$35.00
BlueGO OnCall	
One-Way Fares	
General Fare	$6.00
Senior / Youth / Disabled	$2.00
ADA Paratransit	$4.00
GOPass Fares	
General 10-Ride GOPass	$60.00
Senior / Youth / Disabled 10-Ride GOPass	$15.00
Transfer to BlueGO Local Fixed Route	
Service for Passengers at Locations Outside Fixed Route Service Area	$4.00
Standard OnCall Transfer to Fixed Route	One Free Ride

Note 1: On local and express routes, free rides are offered to Ridge Resort and BlueGO employees to/from work, passengers with a Lake Tahoe Community College Pass from the college only, personal care attendants, and children under 5 years of age with a fare paying passenger.

Note 2: On BlueGO On Call, free rides are offered to Ridge Resorts guests, passengers with a Lake Tahoe Community College Pass from the college only, BlueGO employees to/from work, personal care attendants, and children under 5 years of age with a fare paying passenger.

- Caltrans (ex-officio)
- NDOT (ex-officio)

TTD is staffed by a District Manager, Transportation Projects Manager, Accountant, and Administrative Assistant, and is currently in the process of retaining a Transit Operations Accountant and a Transit Operations Manager.

All BlueGO services are operated by a private contractor, currently Transit Resource Center (TRC). The current program employs roughly 54 full-time and 21 part-time employees, including the following:

- One Project Manager
- One Operations Manager
- One Operations Supervisor (Heavenly)
- Two Administrative Assistants
- One Customer Service Specialist
- Five full-time and one part-time Dispatchers
- One full-time and one part-time Road Supervisor
- Four Utility/Bus Stop Workers
- One Maintenance Manager
- One Parts Clerk
- Five Mechanics
- Thirty-one full-time and nineteen part-time bus operators

FINANCIAL CHARACTERISTICS

Revenues

BlueGO derives its revenues from a large number of sources, including private industry, local, state, and federal government, fares, and mitigation fees. BlueGO revenue is projected to be $4.29 million in FY 2010-11, as shown in Table 16. The top five revenue sources are from Heavenly Mountain Resort ($839,296), fares ($625,400), Local Transportation Funds ($640,686), and Nevada Department of Transportation 5311 funds (NDOT) ($869,876).

Approximately 30 percent of the revenue comes from private resorts, 21 percent from California state LTF and STA funds, and 20 percent from NDOT (which passes through federal funds allocated to the state). Caltrans administered 5311 funds totaled roughly 6.8 percent of the revenues, while other local and state funds totaled 5.4 percent of the revenues.

Expenses

BlueGO transit services are estimated to cost over $4.21 million annually for FY 2010-11, as shown in Table 17. The largest expense is associated with the transit operations contract (including wages, maintenance parts and supplies, taxes and insurance), which totals 69 percent of the total expenses at $2.92 million. Other operating expenses, such as fuel, deferred

TABLE 16: BlueGO Revenues

for Fiscal Year 2010/2011

Source	Amount	Percent
Heavenly	$839,296	19.6%
Lakeside Inn & Casino	$38,000	0.9%
Harrah's/Harveys	$250,000	5.8%
MontBleu Resort	$73,600	1.7%
The Ridge	$108,640	2.5%
Grace Academy	$10,725	0.2%
S. Lake Tahoe - Local Transportation Funds	$444,343	10.4%
El Dorado County - Local Transportation Funds	$196,343	4.6%
El Dorado County - State Transit Assistance	$93,950	2.2%
S. Lake Tahoe - State Transit Assistance	$187,500	4.4%
STPUD	$30,000	0.7%
TTD - Rental Car Mitigation Funds	$0	0.0%
Caltrans 5311 Program	$92,992	2.2%
Caltrans CMAQ Flexed to 5311 Program	$200,000	4.7%
NDOT 5311 Program	$869,876	20.3%
Carson City RTC	$100,000	2.3%
Southern Nevada Public Land Management Act	$100,256	2.3%
Farebox Revenue (Forecast for FY 2010/2011)	$656,400	15.3%
Total Revenue	**$4,291,921**	**100.0%**

Source: BlueGO, 2010

maintenance and expenses related to the facilities total $768,466, or 18 percent of the expenses. Administration expenses, including personnel at TTD TRPA and legal counsel, encompassed roughly 13 percent of the total expenses, or $527,578.

Cost Model

The costs associated with a transit service can be used to create a "cost model," which is an equation that can be used to estimate operating costs based upon service levels. Each cost item is assigned to a service variable that best correlates with the cost, as shown in Table 17. For example, driver salaries are assigned to vehicle-hours, fuel costs are assigned to vehicle-miles, while administrative costs are fixed (not varying by service levels). For the current fiscal year (2010-11), the cost model is as follows:

Total Annual Operating Costs = (Vehicle Revenue Hours x $24.22) +
(Total Vehicle Miles x $1.08) + $1,705,840

For planning purposes, these contract costs can be used to estimate the cost of any changes in service, such as the operation of additional routes, route cuts, or changes in the span of services. These costs are used as part of this study to evaluate the cost impacts of this plan.

TABLE 17: BlueGO Operating Expenditures and Cost Model

For the Fiscal Year Ended June 30, 2011

	Expenditures		Cost Model		
	Total	Percent	Fixed	Per Revenue Vehicle-Hr	Per Total Vehicle-Mi
Transit Operations - TCRN					
Salaries & Wages	$1,770,825	42%	$619,789	$938,537	$212,499
Payroll Taxes	$144,163	3%	$50,457	$76,406	$17,300
Workers Compensation Ins.	$140,557	3%	$49,195	$74,495	$16,867
Pension (Starting May 2011)	$1,080	0%	$378	$572	$130
Maintenance Parts & Supplies	$279,450	7%	$0	$0	$279,450
Insurance	$170,000	4%		$170,000	
Facilities Maintenance	$45,000	1%	$45,000		
Phone	$4,970	0%	$4,970		
Uniforms	$22,360	1%		$22,360	
Professional Services	$26,734	1%	$26,734		
Other Operating Expenses	$30,000	1%		$30,000	
Management Fee (10% of Operations Costs)	$281,514	7%	$85,093	$140,202	$56,219
Subtotal: TRCN	*$2,916,653*	69%	*$881,616*	*$1,452,573*	*$582,464*
Operating Expenses					
Fuel	$470,520	11%			$470,520
Sales Tax on Fuel	$1,300	0%			$1,300
Deferred Maintenance (FY 2010-11 Only)	$100,000	2%	$100,000		
Operations Facilities Rent	$36,000	1%	$36,000		
Trolley Storage Rent	$4,900	0%	$4,900		
Phone	$22,572	1%	$22,572		
Utilities	$46,917	1%	$46,917		
Professional Services	$49,998	1%	$49,998		
Legal Notices	$3,334	0%	$3,334		
Reproduction & Printing	$32,925	1%	$32,925		
Administration Expenses					
Salaries & Wages	$241,639	6%	$241,639		
TRPA Admin. & Operations	$138,797	3%	$138,797		
Insurance	$12,667	0%	$12,667		
Advertising	$15,000	0%	$15,000		
Legal Services	$67,000	2%	$67,000		
Auditing Fees	$9,600	0%	$9,600		
Interest & Finance Charges	$35,000	1%	$35,000		
Other Admin. Expenses	$7,875	0%	$7,875		
Total	$4,212,697	100%	$1,705,840	$1,452,573	$1,054,284
Annual Quantities of Service Used as Basis for Budget				59,982	972,798
Unit Cost: FY 2010-11			$1,705,840	$24.22	$1.08
Unit Cost: FY 2015-16 (Note 1)			$1,821,034	$28.08	$1.25

Allocation of Personnel Costs to Variables				
Management Salaries	$233,750	$233,750		
Operator Wages	$939,720		$939,720	
Mechanics Wages	$218,400			$218,400
Dispatching Wages	$153,400	$153,400		
Road Supervisors	$74,880	$74,880		
Utility Crew	$81,120	$81,120		
Admin/Public Information Staff	$69,555	$69,555		
		$612,705	$939,720	$218,400
Percent by Cost Item		35%	53%	12%

Note 1: Excludes $100,000 of 2010-11 deferred maintenance costs and $35,000 of 2010-11 in litigation costs. Assumes 3% annual inflation in all other costs.

Source: TTD Budget Amendment dated October 15, 2010

BLUEGO CAPITAL ASSETS

Transit Fleet

There are a total of 41 vehicles available in the BlueGO fleet, as shown in Table 18, within five classes of vehicle as defined by the FTA. Currently, roughly 5 vehicles need to be replaced immediately, and an additional 17 will need to be replaced during the timeframe of this SRTP due to age or mileage. Two other vehicles will need to be replaced in the first year after the SRTP timeframe, in FY 2015-16.

The vehicles range in type from specialty use buses, such as the trolley vehicles, to 44 passenger diesel heavy duty transit buses. The vehicles are fueled by diesel, gasoline, bio-diesel, and Compressed Natural Gas (CNG). The two diesel vehicles in service are in need of immediate replacement. Most of the vehicles were purchased using FTA grant funds, particularly FTA 5308 (Clean Fuel funds) and 5309 (Transit Capital Improvement Grant funds).

Transit Centers

BlueGO has four transit centers. The region's major passenger facility is the Stateline Transit Center, located on US 50 at the base of the Heavenly Gondola in Heavenly Village. This facility has enough space to accommodate 13 buses at one time. The enclosed building provides a waiting area with restrooms and a visitor center. The US Forest Service shares the space and provides local visitor information. Passengers can purchase fare media at this location.

A second facility is located at the South Y Transit Station on the southwest corner of the intersection of US 50 and Emerald Bay Road (SR 89). This lighted facility is equipped with restrooms, a waiting room, phone, change machine, ATM, vending machine, customer service window, and a BlueGO phone. The South Y Transit Station can accommodate three buses at a time.

A third transit center is located at Kingsbury Grade. This lighted facility is also equipped with restrooms, a waiting room, and a phone. It is located at Kahle Drive and US 50 and can accommodate up to five buses.

Lastly, a fourth transit center is located at Lake Tahoe Community College. This minimal facility has bus shelter, lighting, and a BlueGO phone. This facility can accommodate a total of three buses.

Street Furniture and Amenities

The "street furniture" provided by a transit system is a key in a system's attractiveness to passengers, residents, and visitors. In addition, they increase the physical presence of the transit system in the community. Bus benches and shelters can play a large role in improving the overall image of a transit system and improve the convenience of transit as a travel mode. More importantly, shelter is vital to those waiting for buses in harsh weather conditions. In addition to the transit centers, BlueGO currently has 12 shelters, as listed in Table 19.

TABLE 18: Active BlueGO Vehicle Fleet

Make	Fuel	Year	Length	Capacity	Wheelchair Stations	Miles as of September 2010
Large Heavy-Duty Transit Buses						
Blue Bird Xcel	Bio Diesel	2006	34 ft	38	2	67,631
Blue Bird Xcel	Bio Diesel	2006	34 ft	38	2	79,937
Blue Bird Xcel	Bio Diesel	2006	34 ft	38	2	77,883
Blue Bird Xcel	Bio Diesel	2005	34 ft	38	2	99,064
Blue Bird Xcel	Bio Diesel	2005	34 ft	38	2	104,719
Blue Bird	Diesel	1996	40 ft	44	0	227,109
Blue Bird	Diesel	1994	40 ft	44	0	122,773
Blue Bird Xcel	Bio Diesel	2008	35 ft	36	2	35,816
Blue Bird Xcel	Bio Diesel	2008	35 ft	36	2	44,987
NABI LFW-15	Bio Diesel	2009	35 ft	30	2	13,691
NABI LFW-15	Bio Diesel	2009	35 ft	30	2	11,994
NABI LFW-15	Bio Diesel	2009	35 ft	30	2	14,175
NABI LFW-15	Bio Diesel	2009	35 ft	30	2	14,467
NABI LFW-16	Bio Diesel	2009	35 ft	30	2	2,748
NABI LFW-16	Bio Diesel	2009	35 ft	30	2	18,020
NABI LFW-16	Bio Diesel	2009	35 ft	30	2	3,757
Medium Size Heavy-Duty Transit Buses						
Blue Bird CSRE	CNG	1999	34 ft	32	2	376,178
Blue Bird CSRE	CNG	2002	34 ft	32	2	297,869
Blue Bird CSRE	CNG	2002	34 ft	32	2	205,823
Medium Size Medium Duty Transit Buses						
Chevy Glaval Titan	CNG	2006	27 ft	28	2	148,838
Chevy Glaval Titan	CNG	2006	27 ft	28	2	121,900
Chevy Glaval Titan	CNG	2006	27 ft	28	2	120,567
Chevy Glaval Titan	CNG	2006	27 ft	28	2	112,388
Ford Aerotech	Gasoline	2008	25 ft	24	0	96,098
Ford Aerotech	Gasoline	2008	25 ft	16	2	54,817
Starcraft Allstar	Gasoline	2008	25 ft	18	2	77,847
Chevy Glaval Titan	CNG	2008	27 ft	28	2	85,574
Chevy Glaval Titan	CNG	2008	27 ft	28	2	73,487
Starcraft Allstar	Gasoline	2008	25 ft	18	2	79,839
Starcraft Allstar	Gasoline	2008	25 ft	18	2	80,836
Glaval Titan	Bio Diesel	2008	35 ft	30	2	152,756
Glaval Titan	Bio Diesel	2008	35 ft	30	2	155,408
Glaval Titan	Bio Diesel	2008	35 ft	30	2	149,432
Medium Size Light Duty Transit Buses						
Ford Allstar	Gasoline	2007	25 ft	18	2	175,579
Starcraft Starlite	Gasoline	2009	25 ft	9	2	131,072
Starcraft Starlite	Gasoline	2009	25 ft	9	2	129,981
Specialty Use Buses						
Chevy Trolley	Gasoline	1993	30 ft	28	2	181,387
Cable Car Classics	CNG	2004	40 ft	34	2	57,350
Cable Car Classics	CNG	2004	40 ft	34	2	75,627
Chance	CNG	2000	28 ft	27	2	48,553
Chance	CNG	2000	28 ft	27	2	55,506

Source: BlueGO, 2010

TABLE 19: BlueGO Transfer Centers and Bus Shelters Locations

Street	Cross Street or Location	Direction	Routes Served	Bus Shelter	Bench	Trash/ Recycle Can	Other
South Y Transit Station	US Highway 50	Westbound	17X, 30, 40, 50, 51, 52, 55, Amtrak California, Kirkwood, Sierra-At-Tahoe		Yes	Yes	Restrooms, Waiting Room, Phone, Change Machine, ATM, Vending Machine, BlueGO Phone, Lighted
Stateline Transit Center	Transit Way	Westbound	20X, 21X, 22, 23, 41X, 50, 53, Amtrak California, Kirkwood, Sierra-At-Tahoe		Yes	Yes	Restrooms, Waiting Room, Phone, Vending Machine, BlueGO Phone, Lighted
Kingsbury Transit Center	Kahle Drive	Westbound	20X, 21X, 22, 23, 41X, 50, 53, Amtrak California		Yes	Yes	Restrooms, Waiting Room, Pay Phone, Lighted
US Highway 50	Al Tahoe Blvd	Eastbound	50, 52, 55	Yes		Yes	
Visitor Center	US Highway 50	Eastbound	40, 50, 52, 53, 55	Yes		Yes	Lighted
US Highway 50	Safeway	Eastbound	Red Route 10, 50	Yes		Yes	
US Highway 50	Lakeland Village	Westbound	Red Route 10, Gold Route 13, 50, 55	Yes		Yes	
US Highway 50	Bigler Ave	Westbound	40, 50, 52, 55	Yes		Yes	
3rd Street	Tahoe Senior Plaza	Northbound	51, 55	Yes		Yes	Lighted
Roundhill Square Shopping Center	US Highway 50	Northbound	21X, 22	Yes		Yes	
State Route 89	Sky Forest Acres	Westbound	30, 51	Yes		Yes	
Ski Run Boulevard	Pioneer Trail	Eastbound	Gold Route 13, 17X, 53, 55	Yes		Yes	
Ski Run Boulevard	Pioneer Trail	Westbound	Gold Route 13, 17X, 52, 53	Yes		Yes	
Lake Tahoe Community College	Al Tahoe Blvd	On Campus	40, 41X, 52, 53, 55	Yes		Yes	BlueGO Phone
Melba Drive	Tahoe Valley Campground	Westbound	30	Yes			Lighted, BlueGO Phone

Source: LSC Transportation Consultants, Inc., 2009

Operations and Maintenance Facility

BlueGO is operated out of a maintenance/administration facility located at 1679, 1669, and 1663 Shop Street in the western portion of South Lake Tahoe. This facility is owned by the City of South Lake Tahoe. This site is conveniently located for the operation of BlueGO services. The facility includes bus storage, bus maintenance, parts storage, contractor offices, driver training/break room, and restrooms.

OTHER REGIONAL TRANSIT PROVIDERS

Carson City "Jump Around Carson" (JAC)

JAC serves four major routes in Carson City. JAC interconnects with the transit systems servicing Reno (RTC INTERCITY) and South Lake Tahoe (BlueGO). JAC buses run Monday through Friday from 6:30 AM to 6:30 PM and from 8:30 AM to 4:30 PM on Saturdays. Routes are on 60 minute headways, Monday through Saturday. JAC buses are not in service on Sundays or major holidays.

Washoe County RTC INTERCITY

Washoe County RTC operates a commuter service between Reno and Carson City which it calls RTC INTERCITY. This service, which was initiated in March 1999, connects with BlueGO Route 21X in Carson City, as well as JAC services. There are two roundtrip morning runs and three roundtrip afternoon runs from Reno, on weekdays only. The service uses upgraded intercity-style transit buses with cloth seats, small storage areas, and free Wi-Fi. Fares are $4.00 for adults, discounted to $2.00 for elderly, disabled, and youth, or for passengers with an RTC ACESS ID. With a transfer, fares are reduced to $2.75 for adults and $1.25 for reduced fares. Transfers are free from RTC INTERCITY to JAC (one trip), and transfers from JAC to RTC INTERCITY are $2.00.

Douglas Area Regional Transit (DART)

DART provides DAR transportation to seniors, elderly, and the general public in the Minden/Gardnerville area, with selected trips to Carson City. Service is provided Monday through Friday, except holidays, between 8:00 AM and 5:00 PM. While DART does not provide direct service to Reno or the Tahoe area, it does connect to BlueGO Routes 20x and 21x.

Tahoe Area Regional Transit (TART)

TART is a fixed-route system operating on the North and West Shores of Lake Tahoe, as well as to Squaw Valley, Truckee, and Northstar (winter only). BlueGO provides a connection to TART on the West Shore at the PDQ Market in Tahoma in summer months only via the BlueGO Nifty Fifty Trolley (Route 30). This allows South Shore passengers to travel to North Shore as far as Incline Village, to Squaw Valley, and to Truckee.

Amtrak California Thruway: Sacramento to South Lake Tahoe via Placerville

Amtrak funds regional bus services intended to connect passengers with rail services, such as the *Capital Corridor* service between Auburn, Sacramento and the Bay Area, as well as the Amtrak California *San Joaquin* service between Sacramento and Bakersfield with connection to Los Angeles. This includes one roundtrip per day between Sacramento, South Lake Tahoe, and Stateline. Advance reservations are required on most Amtrak California Thruway Bus routes.

The Amtrak California Thruway schedule for service to and from South Lake Tahoe/Stateline is shown in Table 20.

TABLE 20: Amtrak Schedule to and from South Lake Tahoe

Sacramento to South Lake Tahoe	Departure
Sacramento-Amtrak	10:00 AM
Placerville	11:00 AM
South Tahoe Transit Station	12:20 PM
Stateline Transit Center	12:30 PM
Stateline Kingsbury Transit Center	12:35 PM
South Lake Tahoe to Sacramento	Departure
Stateline Kingsbury Transit Center	2:45 PM
Stateline Transit Center	2:50 PM
South Tahoe Transit Station	2:55 PM
Placerville	4:15 PM
Sacramento-Amtrak	5:25 PM

Source: Amtrak Timetable

While most Amtrak California Thruway routes require a passenger to make a portion of their trip by rail, passengers may now purchase Amtrak California Thruway bus tickets for bus-only trips between Stateline, South Lake Tahoe, Placerville, and Sacramento. A legal exemption to California law has been granted so that travel in conjunction with a rail segment is no longer required. Purchase of tickets is as follows:

- Eastbound from Sacramento – Passengers departing Sacramento and traveling to Placerville, South Lake Tahoe, or Stateline, Nevada may purchase tickets at the Sacramento Amtrak station.

- Westbound to Sacramento – Passengers boarding at unstaffed stations traveling to the Sacramento Amtrak station will be allowed to travel (without a ticket) provided they present a valid government issued photo ID to the driver upon boarding. The ID will be returned to the passenger at the ticket office once their ticket is purchased. Standard discounts for seniors, disabled, and children are available.

- Between Placerville and South Lake Tahoe – Since no ticket office is available at Placerville or South Lake Tahoe, local passengers may pay a cash fare directly to the driver when traveling solely between Placerville, South Lake Tahoe, Stateline or Kingsbury. Fares to and from Placerville are $20.00 for adults and $10.00 for children 2-15 years old. No other discounts are available.

Eastern Sierra Transit

The Eastern Sierra Transit Authority (ESTA) is the primary provider of public bus services throughout Inyo and Mono Counties and a primary provider of interregional public transportation for the Eastern Sierra Region.

ESTA offers a variety of bus services including DAR (for special needs users, or the general public where other bus service is not offered); Town-to-Town Services, providing connections between communities within Inyo and Mono Counties and beyond; Local Area Fixed-Routes in Bishop and Mammoth Lakes; and Inter-Regional Service through the CREST route, which connects the Eastern Sierra corridor along US 395 and travels north to Reno (including a stop at the Reno-Tahoe International Airport) and south to Lancaster, California with connections to Los Angeles and Kern Counties.

BlueGO passengers may potentially catch the CREST bus in Gardnerville or Carson City, on Mondays, Tuesdays, Thursdays and Fridays. Northbound CREST buses arrive in Gardnerville at 10:50 AM and Carson City at 11:10 AM, while southbound buses arrive in Carson City at 2:25 PM and in Gardnerville at 2:55 PM.

Alpine County Transit

Alpine County has worked over the years to provide public transportation to its citizens with varying success. A brief but unsuccessful local service (with three day a week service to Gardnerville) was operated in 1994. Service was reinstituted as the Alpine Mountain Transit (AMT) in 2003, under contract with Douglas County, Nevada (Douglas Area Rural Transit or DART). Initially geared to provide transportation to medical appointments, AMT instead began to focus on connecting Woodfords/Paynesville/Hung-a-Lel-Ti residents to services in Gardnerville. However, this also had very low ridership and was discontinued.

Most recently, the County's Health and Human Services and Public Works Departments are providing DAR transportation services which are available to all persons residing within the County. Service is offered on Tuesdays and Wednesdays, weather permitting. Two weeks notice is required for service to Reno and Sacramento. Service areas include: Gardnerville, Minden, Dresslerville, Lake Tahoe, Carson City, Reno, and Sacramento. Ridership for 2009 has varied from 24 to 56 passenger-trips per month, with a few long distance trips to Reno and Sacramento, but most trips provided locally. Alpine County Transit does serve Barton Memorial Hospital in South Lake Tahoe. Fares are just being established for the service and have not yet been determined.

El Dorado County Transit Authority

El Dorado Transit is a regional transit system headquartered in Placerville, California, in Western El Dorado County. Local fixed-route service is provided as far east as Pollock Pines and as far west as Cameron Park. Commuter service is provided to downtown Sacramento. There has been discussion over the years regarding the need for limited commuter service between Placerville and South Lake Tahoe. Some El Dorado County employees work in both locations, and sometimes employees' jobs are transferred from one location to the other, potentially necessitating a commute.

Chapter 4
Transit Needs and Demand

This chapter first presents a discussion of transit demand in the South Shore area, based on resident and visitor characteristics. Public input regarding unmet transit needs is also presented. In addition, a summary of a series of key person interviews is provided.

TRANSIT DEMAND SUMMARY

A key step in developing and evaluating transit plans is a careful analysis of the mobility needs of various segments of the population and the potential ridership of transit services. The discussion below summarizes relevant data collected in the previous chapters and reviews the potential transit demand which stems from four categories:

- Transit Dependent Transit Demand
- Employee Transit Demand
- Human Service Program – Related Transit Demand
- Visitor Demand

Transit Dependent Transit Demand

In many areas, the majority of transit passengers consists of persons that are considered to be "transit dependent" due to their demographic characteristics. The census block groups with the greatest number of transit dependent population (youth, mobility limited, elderly, low income, and members of zero vehicle households) are presented in Figures 5-9 in Chapter 2. The census block group/regions which include the largest number of transit dependent persons are highlighted below:

<u>City of South Lake Tahoe</u>

- The Tahoe Keys/Tahoe Valley and Tahoe Island neighborhoods (Census Tract 304.01, Block Groups 1 and 2) have the highest largest concentration of **senior** residents. This is followed by the Stateline Residential/Heavenly neighborhood (Census Tract 301.02, Block Group 4) and the Rancho Bijou/Bijou Acres neighborhood (Census Tract 302, Block Group 6).
- The Bijou Park, Rancho Bijou, Bijou Acres, and Stateline residential areas have relatively high populations of **mobility limited** persons compared with the remaining areas in South Lake Tahoe.
- The Bijou neighborhoods and the Stateline residential area also have large concentrations of **low income** residents.

- Once again, the Stateline residential, Rancho Bijou, and Bijou Acres neighborhoods have high populations of residents living **in zero-vehicle households**. In fact, the Stateline residential/Heavenly Valley neighborhood has nearly twice as many zero-vehicle households than the block group containing the Rancho Bijou and Bijou Acres neighborhoods.

An overall review of the demographic data shows residents with a high propensity to use transit are located near Stateline and adjacent areas just southwest of US 50, which is within very close proximity to the commercial and casino core of the City.

Meyers

- The largest **senior** population concentrations are found in Census Tract 305.01, Block Group 1 and Census Tract 305.02, Block Group 3. Both areas directly abut US 50, however existing flex-route transit services only serve the latter area, which is west of the highway.

- Census Tract 305.01, Block Group 3 and Census Tract 305.02, Block Group 2 have the largest **mobility limited** populations within Meyers.

- The highest populations of **low income** residents in Meyers are located in Census Tract 305.01, Block Group 6 and Census Tract 305.02, Block Group 2.

- Few households in the Meyers area have **zero vehicles**, however those that do are located in neighborhoods within Census Tract 305.01 Block Groups 3 and 5, both of which are located to the east of US 50 and south of Pioneer Trail.

Douglas County

- The greatest **senior** populations are located within the Zephyr Cove and Round Hill neighborhoods.

- The Glenbrook and Kingsbury areas of Douglas County have the highest **mobility limited** populations.

- The **low income** populations in the Tahoe area of Douglas County are concentrated in the Zephyr Cove and Stateline areas.

- While few households in this area have **no vehicles available**, the highest proportion are found in Stateline and Kingsbury.

Employee Transit Demand

One element of the total demand for transit services in the region is commuter services. This element has become an important market for many transit systems. According to the 2008 Census LEHD database, 55 percent of employed residents in the South Tahoe area commute to either the City of South Lake Tahoe or the Stateline area. In the opposite direction, commuters

into the South Tahoe area for work primarily came from the City of South Lake Tahoe (35 percent), while areas in outlying Douglas County (Gardnerville, Minden and Kingsbury), Washoe County and Carson City also generated commuters into the area. Despite these large numbers of very "local" commuters that have access to transit, only 2.8 percent of area residents stated that they were using public transit to get to work (per the 2000 US Census). However, in the past ten years since the Census, new transit services have been established, yielding an increasing transit demand in the area (and surrounding, as riders may also have used the commuter services from Carson City and along Kingsbury Grade, SR 207) may be present.

The City of South Lake Tahoe is currently developing the Tahoe Valley Community Plan, which is analyzing alternatives that would substantially increase the commercial square footage in the South Y area, as well as new affordable housing developments. The new retail/commercial would increase the number of employees in the area that could increase the employee transit demand. However, the provision of affordable housing nearby may partially negate this. Additionally, there are many existing transit routes that serve this area already that operate out of the South Y Transit Station, which could potentially minimize the need for more routes, but may warrant larger vehicles or more frequency to accommodate more riders.

Visitor Demand

One of the objectives of this study is to determine the transit needs, if any, for visitors to the area. As a tourist oriented community, there is the potential for significant visitor transit demand. However, there are many second home owners and out of town visitors that tend to arrive by private automobile and are thus less likely to use transit services. This is evidenced by information provided in the *Tahoe Interregional/Intraregional Transit Study* (LSC Transportation Consultants, Inc., 2006). The study observed visitor travel patterns collected from a number of surveys and found that roughly 92 percent of overnight visitors in the winter arrived by car (49 percent traveled to South Lake Tahoe by car and 43 percent arrived by air and rental car), while 94 percent of summer overnight visitors arrived by car (65 percent traveled to South Lake Tahoe by car and 29 percent arrived by air and rental car). These high figures can be in part attributed to the fact that the majority of visitors (45 percent in winter and 40 percent in summer) are traveling from Northern California. As the Bay Area and the Sacramento area generate the most visitors, it is important to note that from each location, 76 percent of summer visitors traveled by car. Further, 59 percent of visitors from Southern California also arrived by car (visitors from Southern California attributed to 20 percent of the visitors in summer). Unfortunately, an extremely low percentage of visitors (1.2 percent in winter and 0.3 percent in summer) used shuttle services to travel to South Lake Tahoe.

Another indicator of transit demand is the hotel room data, as presented in Chapter 2. Given the decline in hotel room nights rented and room tax collections over the past 5 years, it is likely that transit demand generated from visitors has proportionately declined, as there are fewer visitors in the South Tahoe area. This is further supported by the decline in gaming revenues, which is a significant indicator of visitor activity.

Planned future development can have an impact on transit demand, especially with visitors considering the tourist-oriented nature of South Lake Tahoe. Currently, as mentioned in Chapter 2, the most prominent development with the potential to increase demand is the Convention Center project near Stateline. Given the amount of units proposed, as well as the mix of uses, a significant amount of transit need may be generated. In particular, this project will increase the need for recreational transit trips to nearby destinations, such as Camp Richardson.

Human Service Agency Related Demand

Another major element of transit demand is ridership that is generated directly from human service programs or agencies. As part of the *Coordinated Human Services Transportation Plan* (Tahoe Metropolitan Planning Organization, March 2008), stakeholders from various human service organizations and transportation agencies identified gaps and unmet transit needs as they pertain to mobility for the disadvantaged population in the Lake Tahoe area:

Non-Emergency Medical Transportation

- Clients that require travel to out-of-area medical facilities can encounter problems, particularly if eligibility requirements differ.
- Advance reservations can make it difficult to reach a doctor for same-day appointments if there is an illness or emergency.
- Scheduling pick-up times can be difficult, as it is hard to predict how long an appointment may last.
- For clients with ill health, long pick-up waits can be difficult.
- The pick-up requirements of on-demand service for clients to wait outside can be hard on clients that are frail or ill, particularly during inclement weather.
- Clients that are quite frail can find it difficult to use the curb-to-curb service since they may require more assistance to and from the vehicle.
- Medical conditions can be exacerbated during van transportation.
- An increased need for on-demand services by dialysis clients is reducing capacity for other users.
- There can be a lack of schedule coordination between agencies on route connections to reach medical centers.
- There is a need for a transportation provider for Medi-Cal clients.

Demand Response Service

- Advance scheduling requirements are not acceptable or can be difficult.
- The service has insufficient hours and capacity, and does not serve enough areas.
- There can be long waits for pick-up times.
- Intercity connections can be difficult.
- Curb-to-curb service can be difficult for those who need additional help to and from the vehicles or to carry packages.

Fixed-Route Service

- There is insufficient service, especially midday, evenings, weekends, holidays, and in more rural areas.
- There may be a lack of fixed-route transit near where people live and serving their destinations.
- Ride times can be too long, particularly if the passenger is transferring.
- Bus stops can be far from destinations or have poor physical access.
- Fare increases and transfer costs can be difficult for passengers.
- Drivers may not be following all rules or training concerning seniors or disabled passengers.
- The transit information may not be reaching the public sufficiently.
- There is a lack of system integration across the geographic boundaries of providers, resulting in poor timing and schedule coordination, making it difficult for passengers who connect to intercity travel or require multiple transfers.

Fall 2008/Winter 2009 Transit Passenger Survey Results

BlueGO conducted passenger surveys in Fall 2008 and Winter 2009 on the local BlueGO routes and the curb to curb service. Much of the information collected provides insight into potential transit demand, particularly for the transit dependent population.

BlueGO Findings

Key findings regarding the fixed-route and shuttle routes that pertain to transit needs consist of the following:

- One important finding within the local route survey was that the majority of passengers are residents, which indicates that few visitors may be using the services. Expanding the attractiveness of public transit services to visitors is an important ongoing need.

- 31 percent of riders used the services for work, while another 13 percent rode the bus to get to school. This indicates that BlueGO services are effective in meeting some of the needs for these services.

- 73 percent of passengers walking to their bus stop walked 3 blocks or less, while only 4 percent walked a half-mile or more. While reflecting to a degree the transit service's coverage, it also underscores the importance of providing service close to area residents.

- The boarding/alighting pattern observed in the surveys conducted in fall 2008 show a very high concentration of passenger activity along the US 50 corridor. All of the stops with 3 or more boardings or alightings were within a few hundred feet of this corridor, with only seven exceptions (Emerald Bay, Camp Richardson, F Street/Bonanza Avenue, Lake Tahoe Community College, Herbert/Glenwood, Minden-Gardnerville area, and Zephyr Cove). This may indicate the need for a greater quality of service along this key corridor.

- When asked "What service improvement is most important to you," the greatest response was for later evening service (32 percent) followed by more frequent service (26 percent). Interestingly, only 6 percent indicated that service to other destinations is most important. This indicates that improvements within the existing service corridors are more important than expansion of the service area, at least to existing riders.

OnCall (Demand Response) Findings

Based on the survey results, the majority of the transit dependent population's needs are being met by the DAR service. The majority of curb to curb passengers are special needs clients, followed by disabled persons, senior citizens, and the general public. Additionally, 60 percent of passengers have a disability that impacts their personal mobility.

Very few DAR passengers have access to a personal vehicle, showing that the service is a very important part of their ability to carry on activities throughout the day. Further, the overwhelming majority of these passengers make less than $20,000 annually (combined family income), further illustrating the need for transit services amongst the mobility limited, senior, and low-income demographics of the area. As reference, nearly all of the respondents were residents of the City of South Lake Tahoe.

UNMET TRANSIT NEEDS

The Transportation Development Act (TDA) provides requirements for the uses of LTF dollars, which are used for road improvements and transit services. Transit needs are the highest priority for funds received under the TDA and before they can be allocated for street and road purposes, an unmet transit needs hearing must be conducted. Should needs be identified that are considered "reasonable to meet," funds must be used for transit services first. In accordance with TDA rules, the TRPA Governing Board has adopted the following definition of "Unmet Transit Needs:"

> *Those public transportation improvements identified for implementation in the claimant's jurisdiction during the first five-year phase of the Transportation Element of the Regional Plan.*

The TRPA Governing Board also adopted the following criteria for "Unmet Needs that are Reasonable to Meet:"

> *New, expanded or revised transportation service to the public that offers equitable access, can be implemented within the first five-year phase of the Transportation Element of the Regional Plan, is technically feasible, would be accepted by the community, can be funded within the five-year time period, and is cost effective.*

FY 2007-08 Unmet Needs Process

The FY 2007-08 public outreach effort and Unmet Needs Hearing took place in June of 2007. The following transit needs were found reasonable to meet:

- Improve regional transit connectivity and affordability to the Sacramento, Reno, Carson City, and Gardnerville areas
- New transit services for longer trips, similar to Greyhound services
- Rides should always be available
- Fixed-route deviation information should be consistent and accurate
- ADA Paratransit Service should be consistent with 49CFR 37 and the certification process should be pursuant to 49CFR 37.125
- A TTY line for deaf or hard of hearing persons should be available
- Provide information for persons with impaired vision
- Fixed-route bus stops should be audible, pursuant to 49CFR 37
- Revise schedules to minimize layover, if possible (example was given for travel between Bijou and Stateline Transit Center)

- Connecting service to the North Shore should be provided
- Service should be extended to El Dorado County
- Update schedules on buses regularly
- Bus service at the college should be extended to 8:00 AM to 10:30 PM
- Transit information should be provided in Spanish
- Schedule information should be revised to be more clear and better articulated
-
- Transit shelters should be installed

The following were transit needs found to be not reasonable to meet:

- Response times for called rides should be improved to lessen wait times
- El Dorado County should provide paratransit service
- Eliminate transfers from City of South Lake Tahoe to Douglas County
- Extend the "H" route to the Casinos, Lake Tahoe Community College, and Pioneer Trail
- Improve the transfer timing for bus connections
- Need unified multiservice schedule information
- A senior citizen service to El Dorado County after 7:00 PM should be provided
- Reliability should be improved
- Improve response time on the phone for on-demand services
- Provide more wheelchair access
- The shuttle to the college is untimely
- Facilities should be improved
- Roadways should be improved to provide better conditions in winter and for wheelchair access

FY 2008-09 Unmet Needs Process

The unmet needs process for FY 2008-09 received six comments regarding BlueGO services during the public participation opportunities. Ultimately, there were no unmet needs identified or none that were reasonable to meet.

KEY PERSON INTERVIEW SUMMARY

To gain a better understanding of transit issues in the South Shore area, STATA Board members and others were asked in 2009 to respond to a number of questions. Some responded through interviews, and some provided written responses. The responses (5 total) are provided anonymously below.

1. What important issues face the South Shore area and how does public transit relate in importance to these issues?

- Development patterns and land use scenarios will need to include more non-auto development. Development will depend on viable, attractive transit.
- Tourism is down in our area and affordable, effective transportation service plays a role. How our guests view their vacation experience is directly related to public transit.
- Funding and providing affordable, clean, timely service.
- A major focus is jobs, in terms of being competitive and providing a reliable work force.
- A lot of places – shopping, recreation sites – it would be better for people to get there without cars. Transit can help reduce emissions. Also, there are a lot of people in South Lake Tahoe who are low income and don't have cars, and transit is important to them.

2. How do you think the need for transit service in the area will change in the future?

- Hopefully, demand will increase with thoughtful land use planning. As the area grows and more development includes transit and non-auto transportation in its planning, transit demand should increase. Is this realistic? The opportunity is huge and there are currently very strong public-private partnerships.
- We will need more equipment and need to move to a ride-for-free service which will require more transit dollars from local government.
- Funding, efficiency, availability, quality, and cost to the consumer.
- In the future, new development will be more centralized and accessible by transit. But it's hard to say if Tahoe will continue to get more or fewer people.

- Transit will continue to be more important from a tourism perspective, especially in the ski season. Compared to Colorado and Utah, South Shore has a ways to go. We're competing for the same tourists, and yet they have strong transit programs.

3. What is your general perception of the existing BlueGO system and its operation?

- BlueGO is doing very well, and MV is very professional. The downfall is funding. After BlueGO underwent a huge, huge overhaul eight months ago, now they are having to respond to budget cuts.

- It has vastly improved over the past but, it has a long way to go to provide the type of service expected for a resort community.

- Getting better. Needs more ridership. Needs to make on-demand less expensive. To be able buy affordable monthly on demand passes for children.

- BlueGO is pretty well received. The Ridge has 600 units on what is known as the "time-share run." Transit is critical for these customers. Skiers from the Ridge had a negative experience last ski season. The route made one long loop to get to the ski resort, and some passengers had to ride on the bus a long time to get to their unit when by car it would have been a short trip. BlueGO tried to alleviate the problem by cutting through the Heavenly parking lot, but that was congested and ineffective. The Ridge may have to solve this internally with its own transportation.

- BlueGO is pretty good. I use it, and it works well for me, but I use Route 50 and have heard complaints about other routes – particularly that they don't stay on time. Others also say transit is too expensive, and that the route design is not great. The public has a lot of complaints.

4. What do you see as BlueGO's role in the community, both during the upcoming five years and beyond? Who benefits from transit service?

- Their role is to respond to public needs. They are doing well at this. The Board helped put a face to BlueGO. For years no one knew if BlueGO was part of the TRPA, or what, but now it has an identity. BlueGO needs to be responsive to the public. Who benefits? The transit dependent, obviously. Hopefully, the visitor will increasingly benefit. For that to happen it needs to be user friendly, easy to figure out – make it "brainless."

- Everyone benefits. BlueGO's role will not change, we need to continually look for ways to improve our image and service.

- Locals, some visitors. For the most part visitors come with stuff and it is easier to take their cars.

- BlueGO should be a major organization that is well known. It should be that people could easily use it. It would be nice if visitors thought of it as an integral part of their trip planning to Tahoe.

- BlueGO will have a significant role. Transit needs to be a key piece of the big picture. Residents, tourists, employees all need to be served.

5. Where should BlueGO focus their energies? Is it more important to focus on new or expanded services, or to improve the quality and capacity of existing services?

- Their role is to respond to public needs. They are doing well at this. The Board helped put a face to BlueGO. For years no one knew if BlueGO was part of the TRPA, or what, but now it has an identity. BlueGO needs to be responsive to the public. Who benefits? The transit dependent, obviously. Hopefully, the visitor will increasingly benefit. For that to happen it needs to be user friendly, easy to figure out – make it "brainless."

- Quality, capacity and funding of existing service. Once that is achieved only then should we consider expansion.

- Funding and all of the items above.

- Transit is relatively new already. Sometimes too much growth is not a good thing, and it has been a problem for BlueGO to grow so rapidly.

- Transit benefits people who don't want to pay for parking; people who can't or don't want to drive; people who want to access busy sites without the hassle of parking. Transit should be a key component of access to places like Emerald Bay, Camp Richardson, and the South Shore beaches. It works well for accessing skiing and the casinos. Transit should serve the main routes well and keep that as a focus. It should not serve every tiny little neighborhood.

- BlueGO should improve existing services until they reach capacity, and then determine how to deal with meeting that capacity. The trunk route works really well – but it's at 20 minute headways.

- The signs at stops should let people know when the next bus is due to arrive.

- The trip planning online is a really good tool.

- Calling for information is not always a positive experience. Those answering the phone should never be surly, and people shouldn't have to wait on hold long at all.

6. How can transit services help support economic growth?

- BlueGO is at a state where we're assessing the success of serving neighborhoods. We need to focus on the corridor service for sure, but also the denser, year-round neighborhoods. To attract visitors, though, we need to serve recreation areas or the visitor won't use it. We need to serve areas like Emerald Bay and trailheads.

- Transit aides the locals in affordable service to and from jobs and daily lives. Transit aides the business community by providing easy access to our business as well as providing on-going positive memories of Lake Tahoe for those vacationing with us. In all cases, BlueGO, local Government, Chamber, LTVA, must remain focused on the guest experience. Transit services plays a key role as well as meeting the needs of the TRPA's goals in keeping the lake clear and pollutants down. All of which have an economic impact.

- When you have the ability for tourists to easily get on and off at retail locations and restaurants, that benefits the businesses and tourists. Efficient transit gets employees access to work, which is good for the employees and employers.

- Visitors knowing they can leave a car behind should be a positive economic factor.

7. What improvements/changes to the transit service should be considered?

- By reducing congestion and making a better visitor experience. By serving workers and getting them to work on time.

- On-time performance. This is a biggie. Also, the core areas need to be served for maximum effectiveness.

- Sustainable operating budget – additional funding to allow movement toward a free public transit service is key. New, modern equipment is another ongoing effort which again plays a role in how we are viewed as a destination resort community.

- Provide less expensive group on demand and providing affordable on demand test pilot program St. Theresa School. Have other ski resorts be part of the overall transportation group.

- A continued public relations effort is critical. The routes need to be better identified at stops. Tourists (and others) don't know how to use the service. It should be simple.

- BlueGO should carefully look at where the service has ridership, and where it doesn't, and make decisions to serve based on ridership. For example, service was recently expanded to Kingsbury Grade. Does the ridership warrant keeping that? I don't know – but it should be looked at.

- BlueGO should make the day pass cheaper. This is especially true for neighborhood routes. The $1 and $2 fares are fine, but the day pass should be cheaper.

- BlueGO should keep up with using technology.

8. Any further comments or suggestions?

- I think we should look at having a CPA for doing the monthly accounting/finance.

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Chapter 5
Passenger Activity and On-Time Performance Analysis

INTRODUCTION

Between July 31 and August 4, 2009, a minimum of half of the runs on all BlueGO routes were surveyed. Surveyors were stationed on the buses and counted passengers boarding and alighting at each stop, along with the time of departure from each stop. The data collected provides valuable information regarding the strengths and weaknesses of the service plan in place in the summer of 2009 (which has subsequently be revised) and provides important guidance in developing an effective service plan.

Passenger Activity by Stop and Zone Analysis

The boarding and alighting data was factored to reflect total daily ridership, based on the ratio of the average daily ridership of each route for the days surveyed to the total ridership on the runs surveyed. This resulted in estimates of boarding and alighting activity at each stop over the course of a summer day. The resulting daily passenger activity by stop data is presented in Table 21 and shown in Figure 15. As indicated, the stop with the greatest daily passenger activity is the South Y Transit Center, with 21.3 percent of all passenger boarding and alightings (296 boardings and 296 alightings per day). Other stops with more than 70 boardings plus alightings per day consist of the Stateline Transit Center, the Embassy Suites/Harrah's, the DMV at US 50 and Takela Drive, the Heavenly Gondola, US 50 at Bigler, the Kingsbury Transit Center, the Holiday Inn Express at US 50 at Pioneer Trail, the Outlets at Emerald Bay Rd/89/50, and the KFC at Ski Run.

Figure 15 presents a very revealing pattern of passenger activity. The figure demonstrates the strong ridership generated in the US 50 corridor, as well as key recreational and lodging locations such as Camp Richardson and the Ridge at Tahoe. (As discussed in greater detail below, fully 90.8 percent of boarding/alighting activity on the California side occurs along or within a quarter mile of US 50 between Stateline and the Y.) Also clearly demonstrated are the areas with very low ridership, including Meyers, Tahoe Keys, the Sierra Tract, and Al Tahoe (beyond the quarter mile US 50 corridor), the Julie Lane/F Street area and Bijou Pines. Stops without any activity (no observed boardings or alightings) are not shown.

Existing Performance by Transit Zone

The BlueGO service area was divided into 25 “transit zones,” in order to define the amount of ridership by zone generated in proportion to the amount of service received. The transit zones were designed to reflect transit target areas, such as the casino corridor, the US 50 corridor (including a quarter mile walk distance on either side of the highway), and neighborhoods such as Al Tahoe and Meyers. The above data was then evaluated by transit zone.

TABLE 21: BlueGO Boarding & Alighting by Stop and Transit Zone

Sorted from Highest Number of Boardings per Stop, to Lowest

Zone	Bus Stop Location	Passenger Activity On	Off	Total On and Off #	%	Zone	Bus Stop Location	Passenger Activity On	Off	Total On and Off #	%
13	South Y Transit Center	296	296	592	24.6%	5	Gilman Sr Center	4	4	8	0.3%
7	Stateline Transit Center	174	27	201	8.4%	5	Centerville Rd	4	8	12	0.5%
7	Hwy 50 at Pioneer Trail (Holiday Inn Express)	68	6	74	3.1%	7	Hwy 50 at Pioneer Trail	4	36	40	1.7%
6	Embassy Suites/Harrah's Hwy 50	61	77	138	5.7%	3	Marla Bay & 50	3	0	3	0.1%
13	Hwy 50 at Grocery Outlet	55	10	65	2.7%	13	Carrows	3	0	3	0.1%
6	Lakeside Inn	47	4	51	2.1%	19	3rd Street at Barton Memorial Hospital	3	0	3	0.1%
9	Hwy 50 at Takela (DMV)	44	45	90	3.7%	23	USFS Visitor Center	3	10	13	0.5%
13	Hwy 50 at Factory Stores	44	0	44	1.8%	25	PDQ Market	3	4	7	0.3%
7	Hwy 50 at Ski Run (KFC)	36	36	72	3.0%	25	Meeks Bay Resort	3	4	7	0.3%
3	Kingsbury Transit Center	35	42	77	3.2%	13	Tata Lane (CHOICES)	3	0	3	0.1%
4	Tramway at Tina Court	30	6	36	1.5%	8	Spruce Ave at Blackwood (Bijou Elementary)	2	0	2	0.1%
4	Ridge Clubhouse and Tower	27	36	63	2.6%	8	Ski Run	2	0	2	0.1%
9	Hwy 50 at Al Tahoe	25	33	58	2.4%	3	Kahle Drive	2	2	4	0.2%
9	Hwy 50 at Rufus Allen (library)	25	19	44	1.8%	4	SR 207 & Market (Mott Canyon)	1	0	1	0.1%
9	Hwy 50 at Fairway Ave (Longs/Lakeland Village)	25	17	42	1.8%	4	Olmpic Court at Ridge Sierra	1	0	1	0.1%
7	Heavenly Village Way	25	5	30	1.2%	4	Tramway at Tahoe Summit Village	1	0	1	0.1%
9	Hwy 50 Visitor's Center	25	9	34	1.4%	4	Ridge Club Drive	1	0	1	0.1%
9	Hwy 50 at Bigler	23	57	80	3.3%	4	Ridge Resorts Clubhouse	1	1	3	0.1%
6	Harvey's Bus Center	21	15	36	1.5%	1	Hwy 50 at Glenbrook Fire Station	1	1	3	0.1%
23	Pope Beach Entrance	20	0	20	0.8%	2	Stewart at JoAnn Fabric	1	0	1	0.1%
8	Tamarack Ave	19	0	19	0.8%	3	Hwy 50 at Zephyr Cove Resort	1	8	9	0.4%
6	Montbleu	19	34	53	2.2%	3	Roundhill Pines Beach	0	3	3	0.1%
6	Horizon Casino	18	43	60	2.5%	3	Zephyr Cove Campground	0	3	3	0.1%
9	Hwy 50 at Johnson Blvd (Safeway)	17	23	40	1.7%	4	Tramway at Worldmark #2	0	4	4	0.2%
9	Hwy 50 at Los Angeles Drive	15	18	33	1.4%	4	Tramway at Kingsbury of Tahoe	0	1	1	0.1%
17	Sky Forest Apartments	13	11	24	1.0%	4	Quaking Aspen Drive	0	10	10	0.4%
9	Al Tahoe at LTUSD Bus Garage	12	10	22	0.9%	4	Heavenly Stagecoach Lodge	0	1	1	0.1%
10	Herbert at Kelly Ridge	12	3	15	0.6%	7	Hwy 50 at Heavenly Gondola	0	83	83	3.5%
5	207 At Foothill Park and Ride	12	12	24	1.0%	7	Pioneer Trail at Moss Road	0	0	0	0.0%
4	Tramway at Ridgeview	11	6	17	0.7%	7	Pioneer Trail / 7-11	0	0	0	0.0%
6	Harvey's on Hwy 50	11	8	19	0.8%	8	Glenwood Way & Blackwood Way	0	0	0	0.0%
13	Hw 50 at Sierra Blvd	11	36	47	1.9%	8	Ski Run at Terry	0	3	3	0.1%
23	Camp Richardson Resort	10	22	32	1.3%	8	Ski Run at Willow	0	0	0	0.0%
9	Hwy 50 at Fairway Ave (Days Inn)	9	11	21	0.9%	9	Hwy 50 at Lyons (Middle School)	0	2	2	0.1%
4	End of Ridge Drive	9	9	18	0.8%	10	Herbert	0	3	3	0.1%
2	Plaza at Washington	9	1	10	0.4%	11	Al Tahoe Blvd at Bijou Com Park	0	3	3	0.1%
24	Eagle Falls Trailhead	9	6	15	0.6%	11	Lake Tahoe Community College	0	5	5	0.2%
5	Kimmerling Rd @ Tillman	8	9	17	0.7%	13	Emerald Bay Rd/89/50	0	73	73	3.0%
15	Pioneer Trail at High Meadow Trail	8	3	10	0.4%	13	Carson Avenue	0	2	2	0.1%
17	Anderson Bike Rentals	7	0	7	0.3%	13	Hwy 50 at American Legion	0	0	0	0.0%
7	Cedar Avenue	7	0	7	0.3%	16	Twelvth (After Tahoe Island, before 89)	0	3	3	0.1%
7	Belamy Court	7	0	7	0.3%	17	Hwy 89, South of 12th	0	3	3	0.1%
13	South Avenue	6	0	6	0.2%	17	Thirteenth Street	0	3	3	0.1%
2	Topsy Lane/WalMart	5	5	10	0.4%	19	Tahoe Valley Campground	0	16	16	0.7%
2	7th Boys & Girls Club	5	0	5	0.2%	19	Melba	0	3	3	0.1%
22	N. Upper Truckee & Mewuk	5	0	5	0.2%	19	3rd Street	0	12	12	0.5%
10	Spruce Ave at Herbert	5	0	5	0.2%	22	Hwy 50 & 89	0	3	3	0.1%
7	Pine Blvd at Tahoe Best West Inn	4	0	4	0.2%	23	Camp Richardson Stables	0	3	3	0.1%
5	Waterloo Skateboard Park	4	4	8	0.3%	24	Emerald Bay State Park	0	4	4	0.2%
							Total Boardings and Alightings	**1,394**	**1,013**	**2,407**	**100.0%**

Note: Based on Summer 2009 Survey Data

Source: LSC Transportation Consultants, Inc., 2009

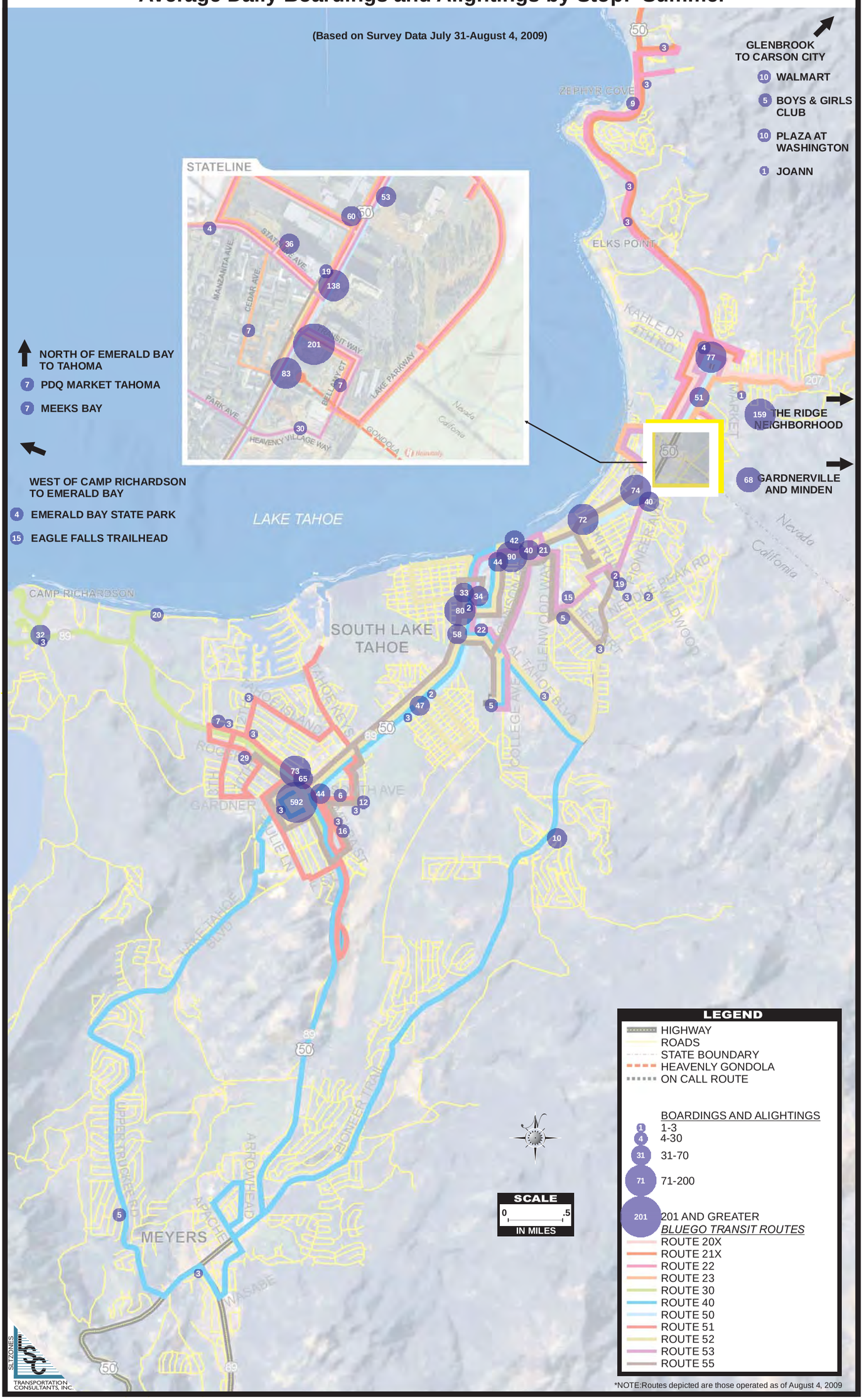
The estimated average daily summer boardings and alightings for each transit zone are shown in Table 22. The four zones with the greatest activity are those along US 50 between the Y and the Kingsbury Transit Center. On the other extreme, *no* ridership was observed on the days of the surveys in a total of five zones (Al Tahoe/Regan Beach, Sierra Tract, Tata/Industrial, Airport Area, Pioneer Trail West, and Meyers).

Table 22 also presents several key performance measures for transit service in the various zones. It should be noted that this methodology considers passenger-trip-ends (i.e., boardings and alightings) rather than passenger-trips, as individual passenger-trips travel through multiple zones. Each individual passenger-trip generates two trip-ends (one at either end). This analysis procedure is particularly useful regarding service to outlying zones with few passenger-trips traveling through the zone.

FIGURE 15

Average Daily Boardings and Alightings by Stop: Summer

(Based on Survey Data July 31-August 4, 2009)



*NOTE:Routes depicted are those operated as of August 4, 2009

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The **passenger-trip-ends per vehicle-hour of service** is a good measure of the effectiveness of a public transit service. As shown in Table 22, the most effective zone by this measure is the South Y zone, with 39.0 trip-ends per vehicle-hour of service. In addition to those zones listed above with zero recorded ridership (and thus 0.0 passenger-trip-ends per vehicle-hour), other zones with low (less that 3) passenger-trip-ends per vehicle-hour consist of Zephyr Cove – Glenbrook, Glenbrook – Carson City, Bijou Pines, Tahoe Keys, and North of Emerald Bay.

TABLE 22: BlueGO Ridership and Performance by Transit Zone

Transit Zone		Performance Measures								
		Daily Boardings & Alightings				Daily Minutes of Service		Marginal Cost of Service [1, 2]	Marginal Subsidy per Passenger-trip	Passenger-Trips per Vehicle Hour of Service
#	Description	Ons	Offs	On/Off	%	#	%			
1	Zephyr Cove to Glenbrook	1	1	3	0.1%	176	1.7%	$92	$34.19	0.9
2	Glenbrook to Carson City	21	5	26	0.9%	576	5.7%	$300	$10.14	2.7
3	Kingsbury Grade to Zephyr Cove	41	58	100	3.5%	728	7.2%	$380	$3.33	8.2
4	Kingsbury Grade in Basin	85	75	160	5.6%	834	8.3%	$435	$2.57	11.5
5	Minden/Gardnerville/Airport	32	37	68	2.4%	396	3.9%	$207	$2.72	10.3
6	Stateline to Kingsbury Grade	187	196	383	13.4%	905	9.0%	$472	$0.89	25.4
7	Ski Run to Stateline	332	195	527	18.5%	1,221	12.1%	$637	$0.51	25.9
8	Ski Run / Wildwood	27	7	34	1.2%	198	2.0%	$103	$2.13	10.4
9	Rufus Allen	225	247	473	16.5%	1,143	11.3%	$596	$0.70	24.8
10	Bijou Acres	36	6	42	1.5%	184	1.8%	$96	$1.43	13.8
11	Bijou Pines	7	6	13	0.5%	380	3.8%	$198	$14.63	2.1
12	Al Tahoe/Regan Beach	0	0	0	0.0%	64	0.6%	$33	INF	0.0
13	Tahoe Highlands-South Y-Hwy 50	418	417	835	29.2%	1,283	12.7%	$669	$0.16	39.0
14	Sierra Tract	0	0	0	0.0%	64	0.6%	$33	INF	0.0
15	Pioneer Trail West	8	3	10	0.4%	120	1.2%	$63	$5.24	5.1
16	Tahoe Keys	0	3	3	0.1%	70	0.7%	$37	$14.39	2.2
17	Tahoe Island	20	17	37	1.3%	476	4.7%	$248	$6.27	4.7
18	Tata/Industrial	0	0	0	0.0%	102	1.0%	$53	INF	0.0
19	Barton	3	31	34	1.2%	84	0.8%	$44	$1.22	24.3
20	Airport Area	0	0	0	0.0%	105	1.0%	$55	INF	0.0
21	Meyers	0	0	0	0.0%	65	0.6%	$34	INF	0.0
22	Upper Truckee	5	3	8	0.3%	52	0.5%	$27	$2.74	8.8
23	Camp Richardson	33	35	68	2.4%	180	1.8%	$94	$0.80	22.8
24	Emerald Bay	9	10	19	0.7%	288	2.9%	$150	$7.40	3.9
25	North of Emerald Bay	6	9	15	0.5%	378	3.8%	$197	$13.09	2.3
	All Zones	**1,497**	**1,359**	**2,856**	**100.0%**	**10,072**	**100.0%**	**$5,254**	**$1.30**	**17.0**
	Highway 50 Corridor South Y to Zephyr Cove [3]	1,203	1,113	2,317	81.1%	5,280	52.4%	$2,754	$1.19	26.3
	Highway 50 Corridor South Y to Stateline (CA only)	976	859	1,835	91.0%	3,647	65.0%	$1,903	$1.04	30.2

Note 1: Assumes a marginal cost of $25.70 per hour based on MV Contract and $5.60/hr fuel costs.

Note 2: INF = Infinite cost per passenger trip.

Note 3: Includes Zones 3, 6, 7, 9 and 13

Source: LSC Transportation Consultants, Inc., 2010

The best overall measure of financial efficiency is the **subsidy per passenger-trip-end**, as it relates the key public "input" of a transit system (operating subsidy) to the key public "output" (serving passenger-trips). These results are presented in Table 22. This data was derived by calculating the minutes of service spent in each zone (based on the route schedule and ridership during the survey period of July 31 to August 4, 2009), applying the hourly contract cost of $25.70 per hour, adding estimated fuel costs, and subtracting estimated farebox revenue. The resulting subsidy required to serve each zone was then divided by the estimated ridership by zone to determine the marginal subsidy per passenger-trip. For zones without recorded ridership, the resulting subsidy per passenger-trip is essentially infinite. Within the remainder of zones, the most effective is Zone 13, which includes the South Y and US 50 to just before Al Tahoe Boulevard. With over 835 average daily boardings and alightings (592 of them at the South Y transit center) and 21 vehicle-hours of service, this zone averages a marginal subsidy of just $0.16 per passenger-trip. Zone 7 averages $0.51 per passenger-trip, Zone 9 averages $0.70 per passenger-trip, and Zone 23 (Camp Richardson) averages $0.80 per passenger-trip. The system wide average is $1.30 per passenger-trip. Table 22 also presents the passenger-trips per vehicle service hour. In each zone In terms of passenger-trips per vehicle service hour, again, Zone 13 is strongest, with an average of 39 passenger-trips per service hour. Zones 6 (Casino Corridor), 7 (Ski Run to Stateline) and 9 (Rufus Allen/US 50) also show efficient service, with approximately 25 passenger-trips per hour. Other zones with high ridership per passenger hour of service include Zones 19 (Tahoe Valley Campground); Zone 23 (Camp Richardson); and Zone 10 (Bijou Acres).

To get a better understanding of the proportion of service in relation to the ridership that is generated, Table 22 includes a summary of the service in the US 50 Corridor from the South Y to Zephyr Cove. An estimated 81.1 percent of the ridership occurs within this corridor (which includes Zones 3, 6, 7, 9 and 13), while only 52.4 percent of the vehicle service hours are operated in these zones. As another example, looking at just the California side (not including Camp Richardson to Emerald Bay), 91 percent of the ridership is generated in the US 50 corridor, which receives just 65 percent of the service hours. This means in contrast that just 9 percent of the ridership on the California side is generated by a 35 percent of the service hours.

Overall, the following conclusions can be drawn from this analysis:

- The US 50 Corridor easily generates 82 percent of the ridership, but receives just over 50 percent of the service hours, while many of the outlying residential neighborhoods are very unproductive.

- Service to Minden and Gardnerville is reasonably effective, but service to Carson City is not.

- Service to The Ridge is effective. Two stops (Tramway and Tina Court, and the Ridge Clubhouse) generated most of the ridership in this zone.

- Zone 22 (Upper Truckee) had minimal ridership that may be commuter-related. The existing fixed-route service plan is not effective in this area and in other zones in the Meyers area including Zones 20 and 21.

- There was no ridership to the airport or surrounding Zone 20.

- There was no ridership to several neighborhoods outside of a quarter mile of US 50, including the Sierra Tract and Al Tahoe, and very minimal ridership in the Tahoe Keys and Bijou Pines,

- Zone 23 (Camp Richardson) was served efficiently, but service to Emerald Bay (Zone 24) was less efficient, and service north of Emerald Bay (Zone 25, to Tahoma) was inefficient.

- Zone 11, which includes the Lake Tahoe Community College, receives 3.8 percent of the service hours, but only 0.5 percent of the ridership occurs in this zone.

On-Time Performance Data Analysis

In addition to the passenger activity data, on-time performance was also tracked, with data collected from one-half of the runs on each route operated by BlueGO. A summary of the results can be found in Table 23.

As shown, roughly 56 percent of observed time check stops systemwide (a total of 1,044 time checks) were considered on-time, which is defined as being not earlier than the scheduled time and less than 5 minutes late. Another 21 percent were 5 to 10 minutes late, 15 percent were more than 10 minutes late, and 8 percent were observed to depart early.

Routes 52 and 55 had the best on-time performance, each with roughly 87 percent of observed stops to be on-time. Route 52 had only 6 percent of stops served late (5 to 10 minutes late), while Route 55 had only 4 percent of stops served late. Early stops were observed on both, with 7.5 percent on Route 52 served early and nearly 10 percent served early on Route 55.

The poorest performing routes were Route 22 and Route 30, with only 13 percent and 26 percent of stops on-time, respectively. No early stops were observed on Route 22, however 57 percent of stops were between 5 and 10 minutes late and 30 percent were more than 10 minutes late. Roughly 3 percent of stops on Route 30 were early, 13 percent were between 5 and 10 minutes late, and 58 percent of stops were more than 10 minutes late.

Observations regarding individual routes are as follows:

- On the day that data was collected, **Route 22** became late on the 9:40 AM run between the Kingsbury Transit Center and the Safeway/Round Hill stop, after which the route was consistently behind schedule and couldn't catch up. On average, the bus was 9 minutes late throughout the observed times (between 9:40 AM and 12:38 PM), with a minimum of 1 minute and a maximum of 14 minutes behind schedule. This suggests that additional travel may need to be incorporated to ensure this route can operate on-time.

- The data for **Route 30** shows that on-time performance was notably inconsistent throughout the day. For the runs beginning from South Y Transit Center at 9:15 AM and 11:15 AM, the bus was on average only 3 minutes behind schedule, but when looking at individual time

TABLE 23: BlueGO On-Time Performance by Route

Based on Survey Results: July 30 - August 4, 2009

	Route											
	20X	**21X**	**22**	**23**	**30**	**40**	**50**	**51**	**52**	**53**	**55**	**System Wide**
Total Time Checks												
Times early	15	1	0	3	3	1	27	8	4	9	11	82
Times on-time	22	13	1	4	5	7	36	15	26	17	29	175
Times 1-4 min late	18	34	6	40	18	7	149	15	20	34	68	409
Times 5-10 min late	4	32	31	19	12	8	70	17	3	22	4	222
Times 10+ min late	2	0	16	33	52	0	38	13	0	3	0	157
Times observed	59	80	54	99	90	23	321	68	53	85	112	1044
Performance												
Early	25.4%	1.3%	0.0%	3.0%	3.3%	4.3%	8.4%	11.8%	7.5%	10.6%	9.8%	7.9%
On-Time	67.8%	58.8%	13.0%	44.4%	25.6%	60.9%	57.6%	44.1%	86.8%	60.0%	86.6%	55.9%
5-10 Minutes Late	6.8%	40.0%	57.4%	19.2%	13.3%	34.8%	21.8%	25.0%	5.7%	25.9%	3.6%	21.3%
More than 10 Mintues Late	3.4%	0.0%	29.6%	33.3%	57.8%	0.0%	11.8%	19.1%	0.0%	3.5%	0.0%	15.0%

Source: LSC Transportation Consultants, Inc.

check stops, the data reveals that the bus was anywhere between 2 minutes early and 9 minutes late. Most of the delays occurred near the US Forest Service Visitor Center near Camp Richardson and at the Eagle Falls Trailhead stops, both of which generate a high amount of visitor (and vehicular) traffic. Significant delays were found on the runs leaving the South Y Transit Center at 12:15 PM, 2:15 PM, and 4:15 PM. During these periods, the bus averaged 26 minutes late, with a minimum of 8 minutes late and a maximum of 39 minutes late. These delays were consistent during each run and began on the first run at the transit center. An interesting observation is that, while the bus was considerably late, that actual travel times between each time check point were not inconsistent with the scheduled travel time. This indicates the delays were not a result of unfeasible route scheduling, but a substantial delay at the beginning of the route that made it impossible for the bus to catch up during the remainder of the runs.

- **Route 23** also did not perform well based on the on-time data results. A total of 52 percent of the time checks surveyed on Route 23 were late: 19 percent between 5 and 10 minutes late and 33 percent more than 10 minutes late. The route performed well in the morning and midday, however during the 8:10 PM run, all of the time checks were considered late, which continued over the rest of the evening. Based on the data, the route started the 8:10 PM run late by 10 minutes, and subsequently, the route was never able to completely recover. While the travel times between each time check were fairly consistent with the scheduled travel times, the route could benefit from additional time built into the schedule, as there were a few instances of the bus taking several minutes longer between stops.

- On **Route 51**, 44 percent of the time checks were late, including 25 percent between 5 and 10 minutes late and 19 percent more than 10 minutes late. The route fell behind during the mid-morning runs, with significant problems occurring during the 11:45 AM, 1:15 PM, 2:45 PM, and 4:15 PM runs. During this time, the bus was on average 7 minutes late, and ranged between 3 minutes late and 24 minutes late. As with other routes, the data suggests that the route began a run late and each run thereafter was late as well. Further, the individual time check data shows that the scheduled travel times are appropriate, as the time required between each stop was consistent with the schedule. Despite this, it would be beneficial to provide additional recovery time at the end of each run.

- On **Route 50**, roughly 58 percent of the time checks were on-time, however 34 percent of routes were considered late and 8 percent were early. Particular issues with the route running late occurred between 11:45 AM and 1:30 PM, where the bus was late by a maximum of 15 minutes, and between 2:30 PM and 5:00 PM, where the bus was as much as 30 minutes late. Despite this, many of the runs were considered on-time, suggesting that specific and localized issues occurred that made the bus run late rather than simply not having enough time built into the schedule.

- The data for **Route 20X** showed that 65 percent of the time the bus was on-time, while 25 percent of the time it was early. Another 7 percent of the time checks were 5 to 10 minutes late and the remaining 3 percent were more than 10 minutes late. For the most part, this route did not experience many difficulties, although the bus was as much as 16 minutes late on one run, however it was able to catch up quickly and maintain the schedule.

- **Route 21X** was considered on-time for 59 percent of the time checks surveyed, and was 5 to 10 minutes late on roughly 40 percent. The remaining 1 percent of time checks were early. The morning runs were surveyed and during which, the route had on-time issues during the 7:35 AM run leaving Carson City and was not able to catch up during the subsequent runs (surveys ended at 10:42 AM). While late, the route was running between 5 and 13 minutes behind schedule.

- On **Route 40**, the bus was on-time for 56 percent of the time checks, 5 to 10 minutes late for 32 percent, more than 10 minutes late for 8 percent, and early for 4 percent. During the survey period, the bus had significant delays on the 2:00 PM run, where the bus was consistently between 10 minutes and 20 minutes behind schedule. This may be a result of the 1:15 PM run on Route 51 running late, as these routes are interlined; the Route 51 run was significantly late, as previously discussed. The 11:00 AM run also experienced substantial delays, with time checks a maximum of 10 minutes behind. The data suggests that additional time may be necessary in order to maintain an on-time route, as the bus was taking longer to complete segments that the schedule currently allows.

- During the survey period, approximately 60 percent of time checks on **Route 53** were on-time, while 11 percent were early, 26 percent between 5 and 10 minutes late and 3 percent more than 10 minutes late. As with many of the other routes, the bus was on-time for many of the runs, however the bus experienced an issue that forced it to fall significantly behind schedule without the ability to recover. The majority of the late time checks were found on the 3:38 PM and 5:53 PM runs.

Chapter 6
Service Plan

This chapter presents the short range plan of transit services for the BlueGO system. This plan is very much dependent upon the availability of ongoing operating subsidy funding. Due to recent reductions in such funding, this plan has been developed to provide a financially constrained plan that is sustainable based on current financial projections that can provide a more stable system.

TRANSIT SERVICE OVERALL STRATEGY

In comparison with other mountain resort communities, the BlueGO system (excluding the ski shuttle routes and, to a degree, the Trolley route) has not been successful in attracting visitor transit ridership[1]. A key overall goal is to increase the attractiveness of public transit to new elements of the community, including residents and particularly visitors, in order to increase ridership and farebox revenues. Further, the recent budget crisis experienced by BlueGO required the need for somewhat severe service reductions in order to maintain a financially viable system, while still providing adequate levels of service for existing transit-dependent passengers. The following overarching strategies are reflected in this plan:

- Build from the service reductions that were recently implemented in order to provide a sustainable service plan.

- Upon stabilization of the system, begin to reintroduce additional service that will attract ridership and adequately serve the needs of both residents and visitors.

- Simplify the route structure, reducing the overlap of multiple routes on particular streets, and maximizing the streets provided with two-way service on the same route.

- Design schedules for "clock headways" by which buses serve a particular stop at the same time past the hour. The convenience to passengers of simply having to remember, for example, that "the bus serves the stop near my hotel at 15 minutes past the hour" has proven to noticeably increase ridership.

- Schedules for additional peak period runs should simply add to off-peak runs, rather than eliminate off-peak runs. For example a scheduling plan for 30 minute service in off-peak periods and 20 minute service in peak periods requires that some off-peak departure times (such as at the top of the hour) not be served during the peak periods (which is confusing to the infrequent passenger), while a frequency of every 15 minutes in the peak periods simply adds additional runs between existing off-peak runs.

[1] An onboard survey of local route ridership conducted in 2008-09 indicated that less than 10 percent were riding for "other" purposes (including recreation), 82 percent indicate that they ride at least one day per week, only 36 percent of passengers have access to a personal vehicle, and 73 percent live in households with total income below $30,000 per year.

- Increase the visibility, safety, and amenities of bus stops, particularly along major roadways and in visitor activity areas.

- Avoid large one-way loops, which result in excessive in-vehicle travel time as well as confusing visitors and other infrequent transit users.

- Increase service frequency along high-demand corridors.

SERVICE PLAN

Transit service plans have been developed for both the near-term (2011) as well as for the last year (2015) of the five-year SRTP period. Reflecting the high degree of uncertainty regarding future funding sources, two scenarios have been developed for the 2015 planning horizon. The transit services provided to the South Tahoe region are very dependent on the availability of ongoing operating subsidy funding. Before identifying services, it is therefore necessary to assess the potential future subsidy levels. However, this is a particularly uncertain time regarding various funding programs/sources, at the national, state, and local levels. To "bracket" the realistic range of funding levels (and thus service levels), two scenarios were developed: a "base" scenario as well as a "recovery" scenario.

Recent Service Changes

As a basis for discussion of plan elements that will occur after adoption of this plan, it is useful to review the recent changes to BlueGO service made as part of the "Sustainable Service Plan." In July 2010, changes were implemented to the BlueGO service as a result of funding issues and reduce operating budget. The following bullet points summarize the changes that were put in effect (as of July 18, 2010):

- **Expand US 50 Service to Half-Hourly, 7:00 AM to 7:00 PM in Summer** – Service frequency on Route 50, which runs between the Stateline Casinos and the South Y Transit Station, was increased to operate every 30 minutes during the summer season. This element enhances the route from the current hourly service levels along the key Highway 50 corridor. Some of the additional runs along US 50 were operated using a trolley.

- **Elimination of Route 22 and Route 40** – Both routes were terminated as of July 18, 2010, due to poor ridership performance. Route 22, providing service in Stateline and Zephyr Cove, was serving only 2.7 passenger-trips per vehicle revenue hour; even in the peak summer season it only served 3.0 passengers per hour. Similarly, Route 40 (Meyers Circulator) only served 2.2 passenger-trips per vehicle revenue hour, with poor productivity on both weekdays and weekends.

- **Provide OnCall Transfer Fare of $4.00 for General Public** – This plan element was implemented as a means of addressing the impacts of the elimination of Routes 22 and 40, to increase the productivity of the OnCall service, and to provide enhanced access to transit services for all the portions of the OnCall service area not located convenient to a fixed-route. This $4.00 fare ($2.00 for seniors/special needs) is valid for trips that include transfers

to or from a fixed-route (Route 50, 52, 53, 54, and 55). For instance, for a $4.00 fare, a Meyers general public resident calls for a reservation and is provided with service from their home to the South Y Transit Center, as well as a free transfer to Route 50. There are five valid transfer points: the South Y Transit Station, Lake Tahoe Community College, the South Lake Tahoe Visitor Center, Stateline Transit Center and the Kingsbury Transit Center.

- **Provide Special 4th of July Service** – BlueGO services were expanded to provide enhanced benefits to the community at large. In summer, one such opportunity is to operate enhanced service along the US 50 corridor between the South Y Transit Station and the Stateline area to serve the 4th of July fireworks display.

The following plan elements were implemented October 3, 2011, (or were selected by the STATA Board for implementation with the 2010/11 winter service season):

- **Expand Route 50 Service** – In addition to the half-hourly summer service that was implemented in July 2010, half-hourly service will also be provided in winter from 6:45 AM to 7:45 PM. Overall, service will be provided from 5:15 AM until 12:15 AM in both peak summer and winter seasons, and from 5:15 AM to 11:15 PM in the spring and fall. The route was also revised to also serve Barton Memorial Hospital on the eastbound trip towards the Kingsbury Transit Center.

- **Expand Route 53 Service** – Route 53 was revised and the schedule expanded to provide hourly service from 6:45 AM to 12:45 AM, year round. This route was extended to provide service from the South Y Transit Center to the Stateline Transit Center via Al Tahoe Blvd, Johnson Blvd, the Bijou neighborhood, and Pioneer Trail. The route also serves the Kingsbury Transit Center after 10:30 PM to allow transfers to the Carson City and Minden/Gardnerville routes. After 10:30 PM on weekdays/Saturdays and throughout the day on Sundays and holidays, the route stays on US 50 between Fairway Drive and Al Tahoe Boulevard.

- **Eliminate Routes 52, 54 and 55 Service** – These routes were eliminated due to budget constraints, and due to their poor ridership generation. Most of the existing ridership continues to be served by the enhanced Route 50 and Route 53 services discussed above. In addition, the enhancements to OnCall services, including the $4.00 General Public fare to/from transfer points, also expands transit service options to locations off of Routes 50 and 53.

- **Provide New Years Eve Service** – This element includes operating 6 buses for 5 hours, each providing express service on US 50.

- **Eliminate Late Night OnCall Weekday Service** – In an effort to provide more efficient and timely daytime service, OnCall service was eliminated between 12:30 AM and 5:30 AM on weeknights (Sunday morning through Thursday morning). The driver hours were shifted to provide additional pre-trip time for drivers at the beginning of shifts and to operate an additional vehicle and driver during peak times (8:00 AM to 12:00 PM, and 2:00 PM to 4:00 PM).

- **Provide Tripper Service to Improve Service Quality** – 200 annual hours of transit service was also included in the operating plan, to be focused on peak demand periods (such as holiday periods) when typical transit capacity is insufficient to serve peak needs.

Table 24 presents the BlueGO operating plan characteristics, reflecting a full year of these recent service changes. Note that the figures differ from those presented in the Sustainable Service Plan prepared in September 2009, as that plan reflected implementation of these plan elements in only a portion of a fiscal year.

2011 Near Term Plan

In the near term, BlueGO will continue to operate under the "Sustainable Service Plan" discussed above, and as reflected in Figure 16. In addition, BlueGO will work with other regional partners to implement and directly operate the "Triangle Plan" providing service between South Lake Tahoe (Stateline Transit Center), Minden/Gardnerville and Carson City. This service will be operated by the BlueGO contractor, using buses based in South Lake Tahoe, Minden, and Carson City. This plan will (1) provide a more efficient service by reducing the existing excessive "deadhead" travel to/from South Lake Tahoe, (2) provide a more integrated regional service, and (3) expand service for persons traveling for reasons other than work.

A schedule for this service is provided as Table 25. As shown, both the Tahoe-Carson City and Tahoe-Minden/Gardnerville legs will be served by two runs in each direction during both the morning and afternoon commute periods. In addition, a single midday run will be operated in both directions on these legs, in order to better accommodate medical, shopping, and recreational trips. The third leg of the triangle along US 395 between Minden/Gardnerville and Carson City will be provided with six runs per day in each direction, roughly every two hours between 6:00 AM and 7:00 PM. The primary Carson City stop will be at Fuji Park (near the US 50/US 395 southern intersection) where direct transfers will be available to/from the Jump Around Carson (JAC) system. For those service times after the last JAC scheduled run at 5:50 PM, Triangle Route buses will directly serve the NDOT stop along Little Lane.

The Triangle Route will replace existing BlueGO Routes 20X and 21X, as well as service provided along the US 395 corridor by Douglas County Senior Services. BlueGO Routes 23 and 24X will continue to be operated separately from the Triangle service.

It would not be equitable for existing local funds generated in the Tahoe Basin to provide any of the "local match" subsidies for the Carson City – Minden/Gardnerville leg of the service that does not directly serve the Tahoe Basin. Rather, this local match will need to be generated by a combination of Carson City and/or Douglas County area sources, in a manner that does not reduce local match available from existing BlueGO subsidy sources. For purposes of this plan, therefore, a new source of operating subsidy is included. The funding level identified for this source is calculated based on the local match that would be required for the NDOT 5311 grant (per the current grant agreement formula), and is the value necessary for the other portions of the BlueGO service to be "made whole" with regards to the overall cost and revenues for this third leg of the "triangle."

TABLE 24: BlueGO Year One Operating Plan

Assumes Sustainable Service Plan Implemented for Full Year

Route	Ridership	Annual Revenue Vehicle Hours	Annual Total Vehicle Miles	Marginal Operating Cost	Farebox Revenue	Marginal Subsidy	Passengers per RVH	Passengers per TVM	Marginal Operating Subsidy per Psgr-Trip
Fixed Route									
20x	19,900	4,106	91,323	$198,082	$39,203	$158,879	4.85	0.22	$7.98
21x	13,100	4,102	107,493	$215,442	$25,807	$189,635	3.19	0.12	$14.48
Min/Gdvl-CC	14,000	2,651	100,631	$172,882	$27,580	$145,302	5.28	0.14	$10.38
Subtotal: Triangle	47,000	10,859	299,446	$586,407	$92,590	$493,817	4.33	0.16	$10.51
23	70,300	6,198	88,012	$245,168	$19,684	$225,484	11.34	0.80	$3.21
24x	3,200	288	9,000	$16,695	$5,088	$11,607	11.11	0.36	$3.63
30	12,200	2,088	43,297	$97,332	$13,786	$83,546	5.84	3.70	$6.85
50	255,300	9,412	123,297	$361,120	$380,397	-$19,277	27.12	2.07	-$0.08
53	36,100	2,373	101,178	$166,734	$52,706	$114,028	15.22	0.36	$3.16
Other Services [1]	1,700	260	3,300	$9,861	$3,060	$6,801	6.54	0.52	$4.00
Winter Services									
10-Red	19,400	1,265	11,220	$42,756	$0	$42,756	15.34	1.73	$2.20
11-Orange	128,100	4,345	15,840	$122,343	$0	$122,343	29.48	8.09	$0.96
12-Green	20,000	1,156	9,460	$38,215	$0	$38,215	17.30	2.11	$1.91
13-Gold	19,400	1,173	12,342	$41,734	$0	$41,734	16.54	1.57	$2.15
14-Purple	37,600	1,507	12,870	$50,399	$0	$50,399	24.95	2.92	$1.34
15-Blue	44,500	2,610	26,840	$92,191	$0	$92,191	17.05	1.66	$2.07
17-Black	14,700	1,054	11,253	$37,672	$0	$37,672	13.95	1.31	$2.56
18-Violet	19,400	1,238	1,452	$31,540	$0	$31,540	15.68	13.36	$1.63
Subtotal	303,100	14,346	101,277	$456,850	$0	$456,850	150.29	32.75	$1.51
On Call	30,805	12,566	215,845	$537,472	$115,212	$422,260	2.45	0.14	$13.71
Marginal	759,705	58,390	984,652	$2,477,639	$682,523	$1,795,116	13.01	0.77	$2.36
Fixed	--	--	--	$1,705,840	--	--	--	--	--
Total	--	--	--	$4,183,479	--	$3,500,956	--	--	--

Note 1: Other services include additional tripper and holiday services

Source: LSC Transportation Consultants, Inc.

FIGURE 16

BlueGO 2011 Service Plan

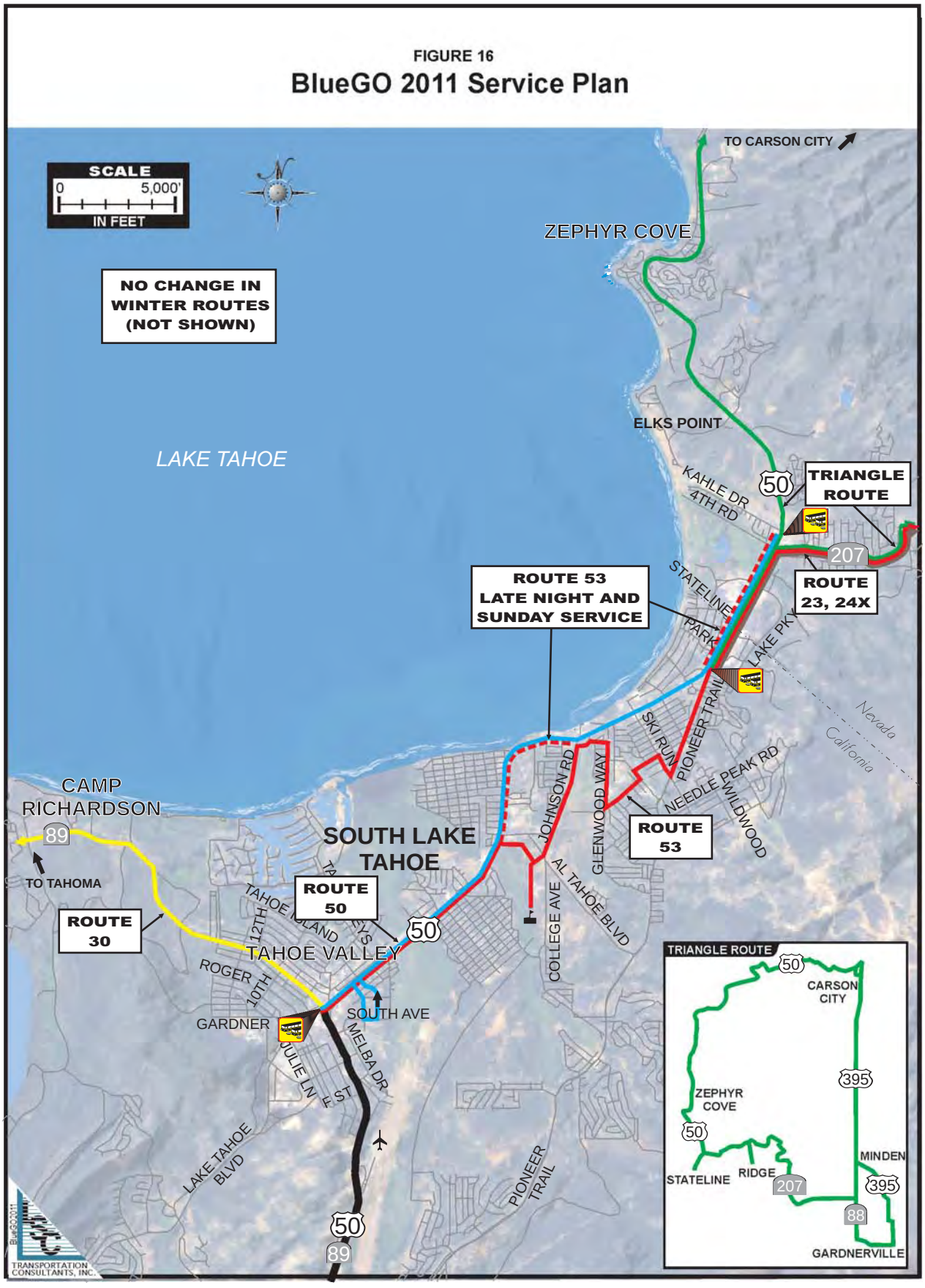


TABLE 25: Triangle Plan Service Schedule

Depart Minden / Gardenerville	Arrive Carson City	Depart Carson City	Arrive South Lake Tahoe	Depart Minden / Gardenerville	Arrive South Lake Tahoe
5:55 AM	6:25 AM	6:50 AM	7:40 AM	6:45 AM	7:50 AM
7:15 AM	7:45 AM	7:50 AM	8:40 AM	7:05 AM	8:20 AM
9:15 AM	9:45 AM	11:50 AM	12:40 PM	11:10 AM	12:15 PM
12:15 PM	12:45 PM	2:50 PM	3:40 PM	2:45 PM	3:50 PM
2:15 PM	2:45 PM	3:50 PM	4:40 PM	4:05 PM	5:10 PM
6:20 PM	7:00 PM				

Depart Carson City	Arrive Minden / Gardnerville	Depart South Lake Tahoe	Arrive Carson City	Depart South Lake Tahoe	Arrive Minden / Gardnerville
6:30 AM	7:00 AM	7:55 AM	8:45 AM	8:05 AM	9:10 AM
8:50 AM	9:20 AM	8:55 AM	9:45 AM	8:45 AM	9:50 AM
9:50 AM	10:20 AM	12:55 PM	1:45 PM	12:20 PM	1:25 PM
12:50 PM	1:20 PM	3:55 PM	4:45 PM	4:10 PM	5:25 PM
4:50 PM	5:20 PM	5:15 PM	6:15 PM	5:10 PM	6:15 PM
6:20 PM	7:00 PM				

The level of NDOT 5311 funding is calculated per the current grant agreement formula for the entire Triangle Plan service. As this funding level is dependent on the proportion of total BlueGO services provided within Nevada, it is worth noting that the inclusion of the Triangle Plan services raises this percentage from the current level of 53 percent to a future level (under this scenario) of 58 percent. As a result of this increase in proportion as well as the increase costs of the Triangle Plan, annual NDOT 5311 funds are expected to increase by $95,400 over current levels. Table 26 presents estimates of subsidy funding under this plan scenario.

Table 27 presents a summary of the overall operating/administrative budget balance under this scenario. As indicated, total revenues are forecast to equal $4,486,096, while total operating costs are forecast to equal $4,183,479. The difference of $302,617 represents funds that could be used as operating reserves or for capital programs. This figure is equal to 7 percent of the overall annual budget.

2015 Base Scenario

The "Base Scenario" assumes no recovery in the local economy, but no further decline. For this scenario, the existing funding sources are all expected to remain and to increase based on the rate of inflation (assumed to be 3 percent, and simply matching the assumed inflation in transit operating costs) over the course of the next five years, with the following exceptions:

- No private funding (such as that provided by Big George Ventures) is assumed.
- No Southern Nevada Public Lands Management Act funding available is assumed.
- TTD Rental Car Mitigation Funds are assumed to return, at FY 2009-10 levels increased for inflation.

TABLE 26: BlueGO Operating Subsidy Forecast

			FY 2015-16 Forecast	
Available Subsidy (Excluding Farebox)	FY 2010-2011	Full Year of Plan	Base Scenario	Recovery Scenario
Heavenly	$839,296	$839,296	$972,970	$972,970
Lakeside Inn & Casino	$38,000	$38,000	$44,050	$47,580
Harrah's/Harveys	$250,000	$250,000	$289,819	$313,004
MontBleu Resort	$73,600	$73,600	$85,320	$92,150
The Ridge	$108,640	$108,640	$125,940	$125,940
Grace Academy	$10,725	$10,725	$12,430	$12,430
S. Lake Tahoe - Local Transportation Funds	$444,343	$444,343	$515,120	$704,470
El Dorado County - Local Transportation Funds	$196,343	$196,343	$227,620	$486,290
El Dorado County - State Transit Assistance	$93,950	$93,950	$91,600	$91,600
S. Lake Tahoe - State Transit Assistance	$187,500	$187,500	$182,810	$182,810
STPUD	$30,000	$30,000	$34,780	$51,980
TTD - Rental Car Mitigation Funds	$0	$0	$23,190	$23,190
Caltrans 5311 Program	$92,992	$92,992	$107,800	$109,900
Caltrans CMAQ Flexed to 5311 Program	$200,000	$200,000	$231,850	$236,360
NDOT 5311 Program	$869,876	$965,277	$1,073,096	$952,354
Carson City RTC	$100,000	$100,000	$115,930	$115,930
Southern Nevada Public Land Management Act	$100,256	$100,256	$0	$0
Private Contributions	$0	$0	$0	$75,000
Local Match for US 395 Leg of Triangle Plan	$0	$72,651	$84,114	$83,322
Total Subsidy	$3,635,521	$3,803,573	$4,218,438	$4,677,280

Source: LSC Transportation Consultants, 2010

TABLE 27: BlueGO Annual Operating Budget Balance

	FY 2010-2011	Full Year 1 of Plan	FY 2015-16 Forecast	
			Base Scenario	Recovery Scenario
Total Operating Costs	$4,212,697	$4,183,479	$4,800,234	$5,706,834
Total Subsidies	$3,635,521	$3,803,573	$4,218,438	$4,677,280
Total Farebox Revenues	$656,400	$682,523	$831,598	$1,497,172
Total Revenues	$4,291,921	$4,486,096	$5,050,036	$6,174,452
Capital Reserve/Contigency	$79,224	$302,617	$249,802	$467,618
Percent of Annual Budget	*2%*	*7%*	*5%*	*8%*

Source: LSC Transportation Consultants, Inc., 2010

- State Transit Assistance funds (through both the City of South Lake Tahoe and El Dorado County) are expected to drop slightly. Caltrans recently released a report summarizing the provisions and impacts of AB6/AB9 legislation (the "gas tax swap") that was signed into law in March 2010. Included in this memo were calculations for STA funding until FY 2020-21. These figures indicate that by FY 2015-16, funding would have decreased roughly 2.5 percent since FY 2010-11.

- As discussed above, local match funds for the US 395 leg of the Triangle Plan will be provided by others.

- NDOT 5311 funding is calculated per the current formula. Under this scenario, the proportion of total BlueGO mileage within Nevada would be 57 percent.

As shown in Table 26, under this scenario the total available subsidy would equal $4,218,438. The modest growth in available subsidy (beyond the effects of inflation) would allow a parallel modest growth in services, even under this financially constrained scenario. A range of potential improvements were evaluated, and the following were found to be the most beneficial service expansions that could be provided under this scenario. This scenario is also graphically represented in Figure 17.

Improve Route 50 Service

- Expand summer and winter season evening service to 30-minute headways by operating a second bus from 7:45 PM to 12:45 PM.

- Expand offseason daytime service to 30-minute headways by operating a second bus from 7:45 AM to 5:45 PM.

The service, cost, and ridership impacts of these improvements are presented in the top portion of Table 28, while the elasticity analysis resulting in the ridership forecasts are presented in Table 29. As shown, together these improvements would increase ridership by an estimated 29,900 passenger-trips per year. Total subsidy requirements would increase by roughly $64,000.

FIGURE 17
BlueGO 2015 Service Plan - Base Scenario

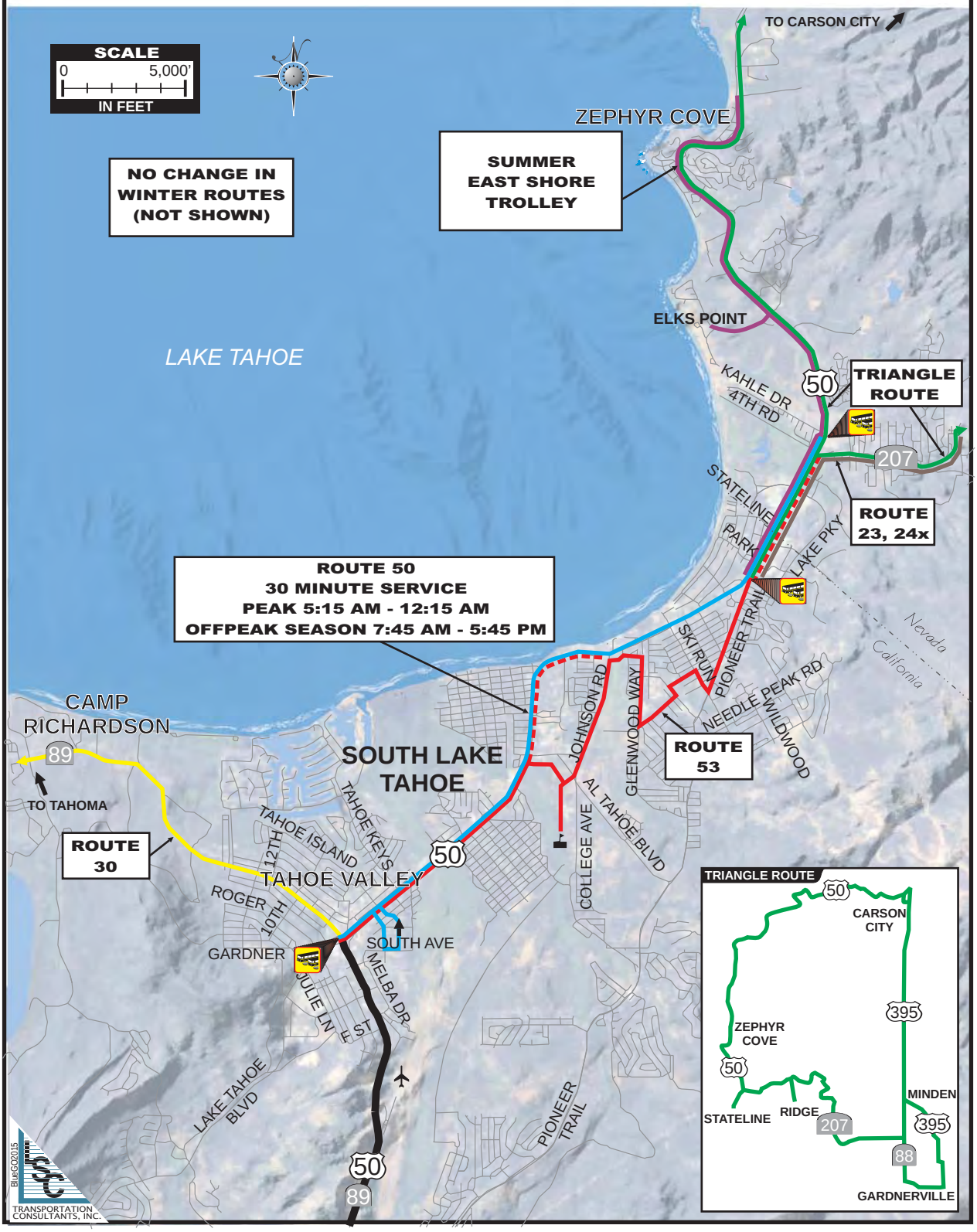


TABLE 28: BlueGO 2015 Scenarios Service Improvements

Service Element Options/Details	Marginal Service Operating Characteristics									
		Total Daily		Total Annual			Ridership Impact		Annual	
	Change in Peak Vehicles[1]	Veh. Total Miles	Veh. Serv. Hours	Veh. Total Miles	Veh. Serv. Hours	Operating Cost[2]	(One-Way Trips) Daily	(One-Way Trips) Annual	Farebox Revenue	Subsidy Required
Base Scenario										
Rt 50 Peak Season Evening Half-Hourly Service	*0*	*52*	*5*	*10,693*	*1,015*	$41,868	*61*	*12,343*	*$18,391*	$23,476
Rt 50 Offseason Daytime Half-Hourly 7:45AM-5:45PM	*0*	*104*	*10*	*17,067*	*1,620*	$66,823	*109*	*17,600*	*$26,224*	$40,599
				27,760	*2,635*	$108,691		*29,943*	*$44,616*	$64,076
Recovery Scenario										
Rt 50 Peak Season 10-minute Service: 7AM - 7PM	*4*	*499*	*48*	*102,655*	*9,744*	$401,930	*729*	*147,897*	*$220,366*	$181,564
Rt 50 Peak Season Evening 20-Minute Service	*1*	*83*	*8*	*17,109*	*1,624*	$66,988	*104*	*21,175*	*$31,550*	$35,438
Rt 50 Peak Season Early Morning Half-Hourly Service	*0*	*10*	*1*	*2,139*	*203*	$8,374	*7*	*1,444*	*$2,151*	$6,222
Rt 50 Offseason Consistent Half-Hourly Service	*0*	*187*	*18*	*30,721*	*2,916*	$120,282	*147*	*23,864*	*$35,557*	$84,725
South "Y" Circulator: 6 AM - Midnight	*1*	*158*	*21*	*58,235*	*7,665*	$288,027	*105*	*38,325*	*$38,921*	$249,106
Third Summer Trolley for Camp Richardson Area	*1*	*90*	*9*	*9,664*	*954*	$38,868	*42*	*4,505*	*$5,090*	$33,778
Rt 23 Peak Season Evening 30-Minute Service	*1*	*82*	*6*	*15,574*	*1,134*	$51,310	*49*	*9,249*	*$2,590*	$48,720
East Shore Beach Route: Summer 8:30AM-5:30PM[4]	*1*	*142*	*9*	*13,075*	*828*	$39,594	*72*	*6,624*	*$7,832*	$31,762
Total				*249,171*	*25,068*	$1,015,373		*253,082*	$344,058	$671,315

Source: LSC Transportation Consultants, Inc., 2010

TABLE 29: Ridership Elasticity Impact Analysis

Route	Season	Period		Elasticity Analysis						Change in Ridership
				Factor	Existing Level	Future Level	Elasticity Factor	Existing Psgrs	Future Psgrs	
50	Summer & Winter	Evening	Expansion from 60 to 30 minute service	Frequency	60	30	-0.37	42,220	54,563	12,343
50	Summer & Winter	Evening	Expansion from 60 to 20 minute service	Frequency	60	20	-0.37	42,220	63,395	21,175
50	Spring & Fall	Day	Expansion from 60 to 30 minute service	Frequency	60	30	-0.37	68,054	87,950	19,896
50	Summer & Winter	Early Morning	Expansion from 60 to 30 minute service	Frequency	60	30	-0.37	4,938	6,382	1,444
50	Spring & Fall	All	Expansion from 60 to 30 minute service	Frequency	60	30	-0.37	81,626	105,489	23,864
50	Summer & Winter	7AM-10PM	Expansion from 30 to 10 minute service	Frequency	30	10	-0.37	294,889	442,786	147,897
30	Summer	Day	Expansion from 60 to 30 minute service	Frequency	60	30	-0.5	10,876	15,380	4,505
23	Summer & Winter	Evening	Expansion from 60 to 30 minute service	Frequency	60	30	-0.5	22,329	31,578	9,249

Source: LSC Transportation Consultants, Inc., 2010

Modest ridership is also expected on other routes and services by 2015 under this scenario. This growth reflects a partial rebound in the drop from historic ridership levels that have occurred over recent years due to the numerous changes in services. As residents and visitors begin to gain an understanding of a consistent system, ridership can be expected to rise somewhat. The following ridership trends are included in this scenario:

- Triangle route: 2 percent annual growth on the Carson City – Tahoe and Minden/Gardnerville – Tahoe legs, and 3 percent annual growth on the US 395 leg (reflecting higher growth on the leg with significant new service).
- Route 50 and Route 53 – 3 percent annual growth.
- Route 30 – 5 percent annual growth.
- Route 23 – a return of 40 percent of recent ridership loss.
- Route 24X – no change
- OnCall Service – An improvement in service productivity from the current level of 2.45 passenger-trips to 3.0 passenger-trips per vehicle-hour, reflecting recent dispatch/operating changes that will improve service quality and productivity.

Table 30 presents the total 2015 BlueGO operating characteristics under this base scenario, and including these service expansions. As shown, total operating costs are estimated to equal $4,800,234, while operating subsidy requirements are estimated to equal $3,968,636. As indicated in Table 27, total funds available for BlueGO operating are forecast to equal $5,050,036, allowing $249,802 (or 5 percent of total budget) to be used as operating reserve or capital funding.

2015 Recovery Scenario

This scenario assumes a partial recovery of the local economy, though not to the levels of the middle of the last decade. It also assumes a base rate of inflation of 3 percent per year, matched by the inflation rate for transit costs. Specific assumptions are as follows:

- It is assumed that funding from Heavenly Ski Resort, Grace Academy, and Ridge Tahoe grow only by the rate of inflation.
- Casino funding is related to the revenues of these establishments. For the purposes of forecasting funding, LSC assumed that casinos would recover 25 percent of the 32 percent total loss in revenues between 2005 and 2009 (or an increase of 8 percent over current levels); the resulting factor was applied to the funding amounts, plus inflation.
- Carson City RTC (FTA 5307) funds would increase at the rate of inflation, or about 3 percent each year.

TABLE 30: BlueGO 2015 Service Plan -- Base Scenario

Service	Ridership	Annual Revenue Vehicle Hours	Annual Total Vehicle Miles	Marginal Operating Cost	Farebox Revenue	Marginal Subsidy	Passengers per RVH	Passengers per TVM	Marginal Operating Subsidy per Psgr-Trip
Fixed Route									
20x	21,971	4,106	91,323	$229,500	$33,616	$195,884	5.35	0.24	$8.92
21x	14,463	4,102	107,493	$249,500	$34,857	$214,643	3.53	0.13	$14.84
Min/Gdvl-CC	16,230	2,651	100,631	$200,200	$31,973	$168,227	6.12	0.16	$10.37
Subtotal: Triangle	*52,665*	*10,859*	*299,446*	*$679,200*	*$100,446*	*$578,754*	*4.85*	*0.18*	*$10.99*
23	71,740	6,198	88,012	$284,100	$20,087	$264,013	11.57	0.82	$3.68
24x	3,200	288	9,000	$19,300	$5,088	$14,212	11.11	0.36	$4.44
30	13,470	2,088	43,297	$112,800	$15,221	$97,579	6.45	0.31	$7.24
50	325,906	12,047	151,057	$527,100	$485,600	$41,500	27.05	2.16	$0.13
53	41,850	2,373	101,178	$193,100	$61,101	$131,999	17.64	0.41	$3.15
Other Services [1]	1,700	260	3,300	$11,400	$3,060	$8,340	6.54	0.52	$4.91
Subtotal: Fixed Route	*510,530*	*34,113*	*695,290*	*$1,827,000*	*$690,602*	*$1,136,398*	*14.97*	*0.73*	*$2.23*
Winter Services									
10-Red	25,220	1,265	11,220	$49,500	$0	$49,500	19.94	2.25	$1.96
11-Orange	166,530	4,345	15,840	$141,800	$0	$141,800	38.33	10.51	$0.85
12-Green	26,000	1,156	9,460	$44,300	$0	$44,300	22.49	2.75	$1.70
13-Gold	25,220	1,173	12,342	$48,400	$0	$48,400	21.50	2.04	$1.92
14-Purple	48,880	1,507	12,870	$58,400	$0	$58,400	32.44	3.80	$1.19
15-Blue	57,850	2,610	26,840	$106,800	$0	$106,800	22.17	2.16	$1.85
17-Black	19,110	1,054	11,253	$43,700	$0	$43,700	18.14	1.70	$2.29
18-Violet	25,220	1,238	1,452	$36,600	$0	$36,600	20.38	17.37	$1.45
Subtotal	*394,030*	*14,346*	*101,277*	*$529,500*	*$0*	*$529,500*	*27.47*	*3.89*	*$1.34*
On Call	37,699	12,566	215,845	$622,700	$140,995	$481,705	3.00	0.17	$12.78
Total Marginal	942,260	61,025	1,012,413	$2,979,200	$831,598	$2,147,602	15.44	0.93	$2.28
Fixed	--	--	--	$1,821,034	--	--	--	--	--
Total	--	--	--	$4,800,234	--	$3,968,636	--	--	--

Note 1: Other services include additional tripper and holiday services

Source: LSC Transportation Consultants, Inc.

- For the LTF funds received by South Lake Tahoe and El Dorado County, LSC reviewed the historical amounts received between 2005 and 2009 and assumed that roughly 80 percent of the losses would be recovered for FY 2015-16 in addition to 3 percent annual inflation.

- The South Tahoe Public Utility District funding was also factored by assuming that roughly 50 percent of the revenue lost between 2005 and 2009 would be recovered, in addition to inflation (3 percent per year).

- Both of the Caltrans funding programs associated with 5311 were assumed to increase 5 percent in the first year, and 3 percent each year thereafter. The initial increase is based upon historical data that shows that greater revenues are typically available during the first year of federal funding reauthorization. (In 2010, FTA 5311 funds were scheduled to be reauthorized through the calendar year).

- Private funding (such as Big George Ventures) is assumed to return to current levels, plus an increase for inflation.

- STA revenues are assumed to decline slightly, as discussed above.

- No SNPLMA funding is assumed to be available by the end of the plan period, along with any other public lands-related funding source.

- The slight reduction in STA funding discussed above is also assumed under this scenario.

- Provision of local match funds for the US 395 leg of the Triangle service is assumed, as discussed above.

- NDOT 5311 funding is calculated per the current formula.

As shown in Table 26, total available subsidy under this scenario would equal $4,677,280. This growth in available subsidy (beyond the effects of inflation) would allow a substantial expansion in BlueGO services. After evaluation of a range of potential improvements, the most productive expansions that could be provided under this scenario were determined. Figure 18 graphically shows this service plan scenario.

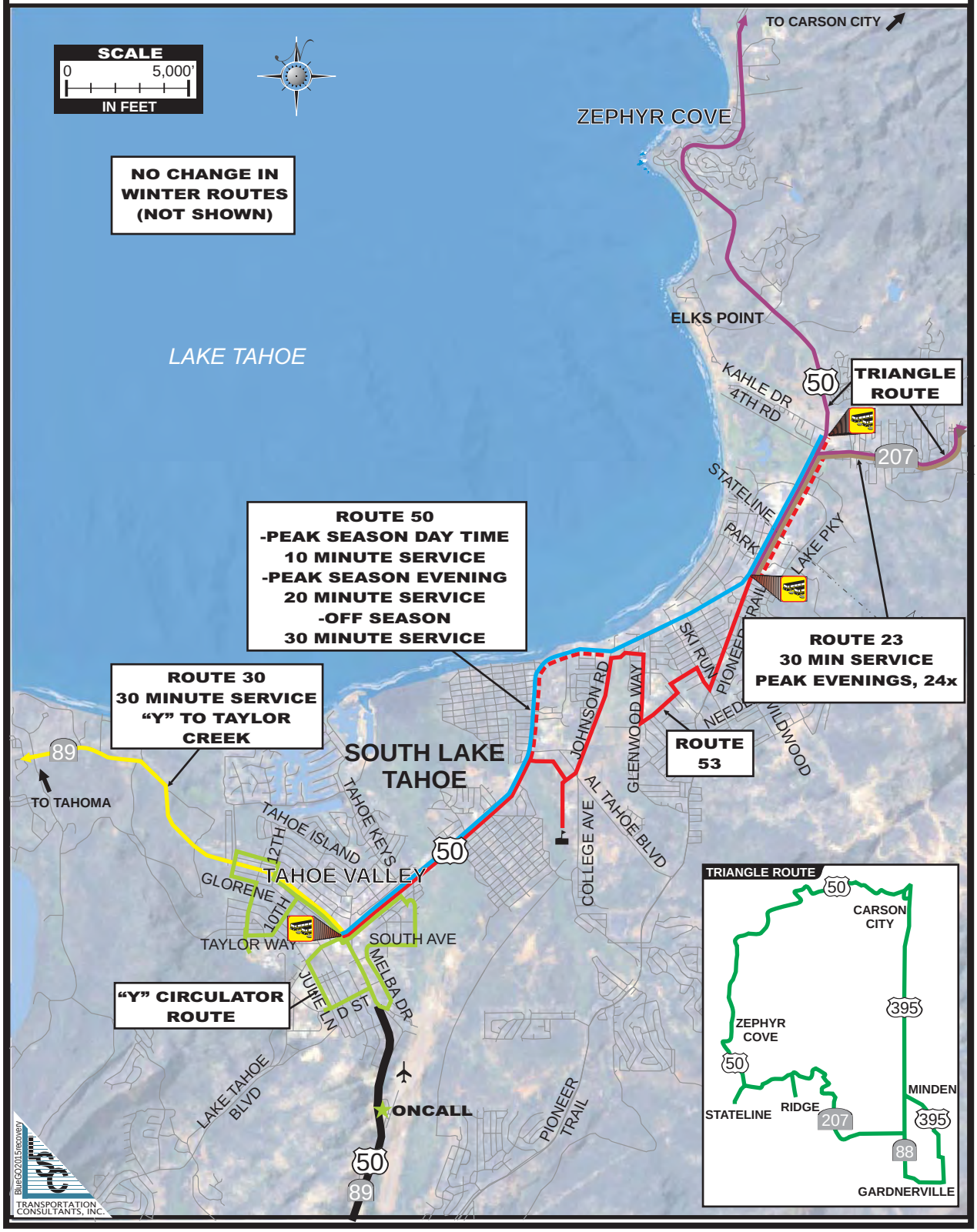
Enhance Route 50 Corridor Service

A central recommendation of this SRTP is to enhance public transit service along the US 50 corridor between the Y Transit Center and the Kingsbury Transit Center. Under the Recovery Scenario, as funding allows the following should be implemented:

- Improvement in service frequency to every 10 minutes from 7:00 AM to 7:00 PM during the summer and winter peak seasons. Studies have shown that achieving 10 minute frequency is particularly beneficial to transit ridership, as it is the level at which most passengers decide

FIGURE 18

BlueGO 2015 Service Plan - Recovery Scenario



there is no need to refer to a schedule, and instead assume that a bus will be along within a convenient wait time regardless of when they arrive at a stop. As a result, there is an additional increase in ridership.

- Provision of half hourly service from 5:15 AM to 7:00 AM, and provision of 20-minute service from 7:00 PM to 12:45 PM

- In the off-seasons, provide consistent 30 minute service from 5:15 AM to 12:45 AM.

- Study and implement a transit signal priority system along US 50 between Kahle Drive and the Y. This will not always guarantee a transit bus a green light, but can extend the green indication if a bus is approaching near the end of the green signal phase. It can also potentially include allowing right turn lanes to be used by buses to make through movements.

- Enhance approximately 12 major bus stops along US 50 in each direction, and increase their visibility through improved signage and lighting.

- "Brand" the US 50 transit service separately from the remainder of the BlueGo program, such as "BlueGoPlus," "Blue50," or "BlueHighway."

This is effectively a "Bus Rapid Transit - Light" strategy for South Lake Tahoe. It builds on the proven success of similar projects in other analogous highway corridors with frequent traffic signals in other urban areas. Additional discussion regarding the transit priority program is provided below in the Capital Plan.

Establish Y Circulator Route

When funding allows, a Y Circulator route (Route 51) will be operated hourly from the Y Transit Center, first serving a loop to the southeast serving the Barton Hospital area (US 50, E Street, Melba Drive, South Avenue, 3rd Street and Lake Tahoe Boulevard), serving a loop to the southwest (US 50, then serving D Street, Julie Lane and Lake Tahoe Boulevard), and finally a loop to the north (Emerald Bay Road, 12th Street, Eloise Avenue, 15th Street, Glorene Avenue, 13th Street, Gardner Street, Shady Lane, 10th Street and returning on Emerald Bay Road). One bus will operate this route once an hour, providing direct transfers to US 50 Route service at the Y Transit Center at both ends of the route. This bus will also serve an "on call" stop at the Lake Tahoe Airport. (Other on call stops could also potentially be served.) When this service is implemented, Route 50 will be streamlined by eliminating service to Barton Hospital.

Provide Summer East Shore Beach Bus

When funds allow, it is recommended that a summer "Beach Bus" be implemented that provides hourly service seven days a week from 8:30 AM to 5:30 PM. This service should be marketed through lodging properties, homeowner associations and resort properties along the service area, and should directly serve Nevada Beach, Round Hill Pines Beach and Zephyr Cove.

Monitor Route 24 Service

This route should be carefully monitored, with continuation of service only if it maintains performance standards and does not require resources needed to provide other service more central to the mission of the BlueGO program.

Expand Route 23 Peak Season Evening Service

When funding allows, evening Route 23 peak seasons service should be expanded to 30 minute service frequency.

Expand Route 30 Trolley Service Between Taylor Creek and the Y

As funds allow, a 3rd trolley should be added serving an hourly route during the summer between the Y, Camp Richardson and the USFS Stream Profile Chamber. This should be scheduled with the existing hourly trolley service to provide half-hourly service between Stream Profile Chamber and the Y Transit Center.

Another potential service improvement would be to add an additional trolley in order to expand hourly service north of Tahoma to Tahoe City (using three trolleys on a three-hour roundtrip route). This would avoid the need for transfers in Tahoma, would provide the opportunity to serve additional areas along the West Shore (such as Granlibakken Resort), and would provide direct transfers to existing summer half-hourly service along SR 28 eastward of Tahoe City. Scheduled to fit between the existing hourly TART runs between Tahoe City and Tahoma, this would provide half-hourly summer service to the West Shore, and would offer riders a direct, no-transfer service between the Y Transit Center on the south and the new Tahoe City Transit Center on the north. Implementing this service expansion would require coordination with North Shore services as well as additional public-lands-related funding. (As this additional improvement is outside of the study area, ridership and financial impacts were not quantified.)

2015 Recovery Scenario Operating Budget Balance

Table 28 presents the operating and ridership impacts of the various recommended Recovery Scenario service improvements, based on the ridership estimates shown in Table 29. As shown, these improvements are estimated to increase annual ridership by roughly 253,000 passenger-trips, and increase subsidy requirements by $671,000.

Other ridership growth is also expected, as the consistency of service is regained and the local economy improves. Background ridership growth under this scenario is assumed to be as follows:

- Triangle route: 4 percent annual growth on all legs.
- Route 50 and Route 53 – 5 percent annual growth.
- Route 30 – 5 percent annual growth.

- Route 23 – a return of 80 percent of recent ridership loss.
- Route 24X – no change
- OnCall Service – An improvement in service productivity from the current level of 2.45 passenger-trips to 3.2 passenger-trips per vehicle-hour.

Table 31 presents the total 2015 BlueGO operating characteristics under this recovery scenario, and including these service expansions. As shown, total operating costs are estimated to equal $5,706,834, while operating subsidy requirements are estimated to equal $4,209,662. As indicated in Table 27, total funds available for BlueGO operating are forecast to equal $6,174,452, allowing $467,618 (or 8 percent of total budget) to be used as operating reserve or capital funding.

DISCUSSION OF COMPATIBILITY OF THE SRTP WITH REGIONAL LONG RANGE PLANS

As this SRTP is being developed, there are several long range planning processes underway, including the TRPA's update of the Regional Plan and the City of South Lake Tahoe's update of the General Plan. While the SRTP has been prepared to address short-range (within five years) improvements in light of current ridership potential and financial considerations, it is worthwhile to review how this plan corresponds with emerging long-range planning concepts. For both the City's and TRPA's long-range plans, the concepts for South Shore that are emerging are for a focus of future development within key "nodes," notably the Stateline area, the Kingsbury area, the Y area, and (to a lesser extent) the Al Tahoe/56 Acre Park area. The shift in transit service to expand the convenience of transit service along the US 50 corridor between Kingsbury and the Y, along with the transit capital improvements along this corridor, would reinforce and support these land use concepts. Improvements in capacity along this corridor (and associated growth in ridership), moreover, would serve as a logical next step in any future long-range strategies to further enhance transit capacity and convenience along this key corridor.

TABLE 31: BlueGO 2015 Service Plan -- Recovery Scenario

Service	Ridership	Annual Revenue Vehicle Hours	Annual Total Vehicle Miles	Marginal Operating Cost	Farebox Revenue	Marginal Subsidy	Passengers per RVH	Passengers per TVM	Marginal Operating Subsidy per Psgr-Trip
Fixed Route									
20x	24,211	4,106	91,323	$229,500	$37,043	$192,457	5.90	0.27	$7.95
21x	15,938	4,102	107,493	$249,500	$38,411	$211,089	3.89	0.15	$13.24
Min/Gdvl-CC	17,033	2,651	100,631	$200,200	$33,555	$166,645	6.43	0.17	$9.78
Subtotal: Triangle	57,183	*10,859*	*299,446*	*$679,200*	*$109,010*	*$570,190*	5.27	0.19	$9.97
23	73,181	7,332	103,585	$335,400	$23,080	$312,320	9.98	0.71	$4.27
24x	3,200	288	9,000	$19,300	$5,088	$14,212	11.11	0.36	$4.44
30	20,075	3,042	52,961	$151,600	$27,776	$123,824	6.60	0.38	$6.17
50	520,213	23,899	275,921	$1,016,000	$1,064,742	-$48,742	21.77	1.89	-$0.09
53	46,074	2,373	101,178	$193,100	$67,268	$125,832	19.42	0.46	$2.73
South Y Circulator	38,325	7,665	58,235	$288,000	$38,921	$249,079	5.00	0.66	$6.50
East Shore Beach Trolley	6,624	828	13,075	$39,600	$7,832	$31,768	8.00	0.51	$4.80
Other Services [1]	1,700	260	3,300	$11,400	$3,060	$8,340	6.54	0.52	$4.91
Subtotal: Fixed Route	*766,575*	*56,546*	*916,701*	*$2,733,600*	*$1,346,777*	*$1,386,823*	*13.56*	*0.84*	*$1.81*
Winter Services									
10-Red	25,220	1,265	11,220	$49,500	$0	$49,500	19.94	2.25	$1.96
11-Orange	166,530	4,345	15,840	$141,800	$0	$141,800	38.33	10.51	$0.85
12-Green	26,000	1,156	9,460	$44,300	$0	$44,300	22.49	2.75	$1.70
13-Gold	25,220	1,173	12,342	$48,400	$0	$48,400	21.50	2.04	$1.92
14-Purple	48,880	1,507	12,870	$58,400	$0	$58,400	32.44	3.80	$1.19
15-Blue	57,850	2,610	26,840	$106,800	$0	$106,800	22.17	2.16	$1.85
17-Black	19,110	1,054	11,253	$43,700	$0	$43,700	18.14	1.70	$2.29
18-Violet	25,220	1,238	1,452	$36,600	$0	$36,600	20.38	17.37	$1.45
Subtotal	*394,030*	*14,346*	*101,277*	*$529,500*	*$0*	*$529,500*	*27.47*	*3.89*	*$1.34*
On Call	40,213	12,566	215,845	$622,700	$150,395	$472,305	3.20	0.19	$11.75
Total Marginal	1,200,818	83,458	1,233,823	$3,885,800	$1,497,172	$2,388,628	14.39	0.97	$1.99
Fixed	--	--	--	$1,821,034	--	--	--	--	--
Total	--	--	--	$5,706,834	--	$4,209,662	--	--	--

Note 1: Other services include additional tripper and holiday services

Source: LSC Transportation Consultants, Inc.

Chapter 7
Capital Plan

Before transit services can be provided, a myriad of capital items are required. The capital items required for public transit service consist of vehicles, vehicle maintenance facilities, computer equipment, and passenger amenities such as shelters and benches. Indeed, many capital elements will be required to maintain and potentially expand BlueGO services over the coming years, as discussed below.

US 50 Transit Priority Corridor

As discussed in the Operating Plan, a key element of this SRTP is improvements to the US 50 corridor between the Y (northern intersection with Lake Tahoe Boulevard and SR 89) and Kahle Drive. At a minimum, signal priority should be provided for some or all of the existing 21 traffic signals along this 5.9 mile corridor.

Under signal priority, a detector is installed (typically a video detector) that is triggered when a transit vehicle approaches the signal. A signal is then sent to the computer controlling the signal, generating a request for priority. The computer then identifies if the request should be accommodated (given pre-determined parameters). A second detector also identifies when the transit vehicle has cleared the intersection.

There are a variety of types of signal priority:

- A transit vehicle can be provided with a **green extension** if detected at a point in the cycle timing when additional green time (up to a pre-determined maximum) would aid transit operations. This is typically the most effective form of signal priority, as it does not require additional clearance phases that waste intersection time. This is the type of system being evaluated in this study.

- An **early green** signal indication can be provided to a transit vehicle arriving during a red phase, speeding green phases for other movements to allow faster movement of the priority vehicle.

- **Phase insertion** can be provided only when a transit vehicle is present, such as a left-turn movement that is allowed only for transit vehicles.

- **Phase rotation** can change the order of specific phases in order to speed transit movements, such as providing a transit vehicle with a left-turn indication prior to the parallel through movement (a “leading left-turn phase”) where left turns are typically provided with a phase after the parallel through movement (a “lagging left-turn phase”).

A key consideration is the difference between transit signal preemption and transit signal priority. Under preemption, a transit vehicle is automatically provided with a green signal indication, regardless of where the signal is in the typical cycle of phases. In comparison, priority reflects a system in which a transit vehicle is provided with a higher percentage of green

indications, but is not always provided with a green indication. As signal preemption can substantially impact overall traffic operations, priority is a much more common and feasible strategy.

It may also be feasible and beneficial to provide "jump queue" lanes for transit buses at specific intersections. One option would be to designate some existing right-turn lanes along US 50 as "Right Turn Only – Buses Excepted" in order to allow buses to jump the through traffic queue. Merging back into the through traffic stream could potentially be accomplished by either (1) providing an acceleration lane on the far side of the intersection to allow buses to get up to speed and merge to the left, or (2) providing a special signal indication (and timing phase) to give buses a short head start before the through general traffic movement phase.

A field review of the existing configuration of the signalized intersections along this corridor indicates that many have either no right turn lane along the highway, or a right turn lane too short to provide a queue jump travel time benefit. Without substantial expansion of existing intersections, potential queue jump opportunities could only be provided at the following cross streets:

- **Eastbound**: Al Tahoe Boulevard, Ski Run Boulevard, Park Avenue, and Kingsbury Grade
- **Westbound**: Lake Parkway (with redesign of existing right turn island)

Examples of similar projects in the region include Alameda County Transit's San Pablo and Telegraph/International/East 14th corridors in Berkeley and Oakland, the Santa Clara Valley Transportation Authority program along the El Camino/Santa Clara Street/Alum Rock Avenue corridor, the Sacramento Regional Transit District's corridors along Watt Avenue and Stockton Boulevard, and UC Davis's Hutchinson Street Corridor project. The Washoe Regional Transportation Commission is also currently implementing a similar project along South Virginia Street in Reno (the "RTC Rapid" service). It should be noted that many of these projects use a fleet of dedicated, specialized buses (such as 60-foot flexible buses); while a specialized fleet is not recommended within this SRTP, it could be a potential enhancement in the future.

In addition to the ridership increase that accompanies reduced travel time, this strategy has the potential benefit of reducing operating costs as fewer buses are required to provide a specific service frequency. Similar projects across the country have yielded travel time savings through individual intersections ranging from 9 percent to 70 percent, with a typical value in the range of 20 to 30 percent. Studies have also shown that these projects have had very little negative impact on non-priority street traffic.

It is also important to note that a transit priority program along US 50 is consistent with recent Caltrans "Complete Streets" policies. In particular, the Caltrans Deputy Directive DD-64-R1 published in October 2008 established a series of goals and responsibilities to Caltrans staff to *"develop integrated multimodal projects in balance with community goals, plans and values. Addressing the safety and mobility needs of bicyclists, pedestrians and transit users in all*

projects, regardless of funding, is implicit in these objectives." Among the policies identified in this Directive is to *"Promote partnerships with local, regional and State agencies to plan and fund facilities for integrated multimodal travel and to meet the needs of all travelers."*

A transit priority corridor of the magnitude desired for South Lake Tahoe would cost in the range of $410,000. Hardware required at each signal (optical detectors, phase selector channel card, cabling) and associated installation costs approximately $10,000 per intersection, while emitters mounted on the vehicles cost approximately $1,000 per unit. An estimated $150,000 would also be required for detailed engineering/signal system design study and for control equipment and hardware.

BlueGO should conduct a study as soon as possible to determine the best implementation strategy for the Transit Priority Corridor and determine an accurate pricing. In year two or three of this Short Range Transit Plan, BlueGO should seek a capital grant for implementation.

VEHICLE PURCHASES

The size and types of vehicles in the BlueGO fleet are presented in Chapter 3. In summary, there are a total of 41 vehicles available in the BlueGO fleet, as shown in Table 32, within five classes of vehicle as defined by the FTA. Currently, roughly 5 vehicles need to be replaced immediately, and an additional 17 will need to be replaced during the timeframe of this SRTP due to age or mileage.

Table 32 details the vehicles in need of replacement and the replacement schedule. As shown, all of the diesel vehicles (2 vehicles) currently in the fleet are to be replaced, in addition to 9 CNG vehicles, 8 gasoline vehicles and 3 bio diesel vehicles. These vehicles will need to comply with new air quality emissions requirements, as discussed below, and would not need to be replaced with the same fuel type.

To reduce pollution from mobile sources, the United States EPA has adopted a variety of regulations as required by the Clean Air Act Amendments (CAAA) of 1990. In addition, on February 24, 2005, the California Air Resources Board (CARB) adopted new emissions reduction regulations applicable to diesel or alternative fueled transit vehicles. According to the rule, on-road vehicles operated by a public transit agency that are less than 35 feet in length and 33,000 pounds Gross Vehicle Weight Rate (GVWR), but greater than 8,500 GVWR, powered by heavy-duty engines fueled by diesel or alternative fuel are considered transit fleet vehicles and are subject to the following requirements (CARB, 2007):

- The particulate matter emissions of the total transit fleet (excluding non-transit fleet vehicles such as gas-powered vehicles) as of January 1, 2005, is considered the baseline emissions measurement.

- By December 31, 2010, total particulate matter emissions of transit fleet vehicles must be reduced by 80 percent from baseline and Nitrogen Oxide (NOx) must be no more than 2.4 g/bhp-hr.

TABLE 32: BlueGO Fleet Replacement

Make	Fuel	Year	Miles as of September 2010	Replacement Requirement
Large Heavy-Duty Transit Buses				*12 years or 500,000 miles*
Blue Bird Xcel	Bio Diesel	2006	67,631	
Blue Bird Xcel	Bio Diesel	2006	79,937	
Blue Bird Xcel	Bio Diesel	2006	77,883	
Blue Bird Xcel	Bio Diesel	2005	99,064	
Blue Bird Xcel	Bio Diesel	2005	104,719	
Blue Bird	Diesel	1996	227,109	FY 10-11
Blue Bird	Diesel	1994	122,773	FY 10-11
Blue Bird Xcel	Bio Diesel	2008	35,816	
Blue Bird Xcel	Bio Diesel	2008	44,987	
NABI LFW-15	Bio Diesel	2009	13,691	
NABI LFW-15	Bio Diesel	2009	11,994	
NABI LFW-15	Bio Diesel	2009	14,175	
NABI LFW-15	Bio Diesel	2009	14,467	
NABI LFW-16	Bio Diesel	2009	2,748	
NABI LFW-16	Bio Diesel	2009	18,020	
NABI LFW-16	Bio Diesel	2009	3,757	
Medium Size Heavy-Duty Transit Buses				*10 years or 350,000 miles*
Blue Bird CSRE	CNG	1999	376,178	FY 10-11
Blue Bird CSRE	CNG	2002	297,869	FY 12-13
Blue Bird CSRE	CNG	2002	205,823	FY 12-13
Medium Size Medium Duty Transit Buses				*7 years or 200,000 miles*
Chevy Glaval Titan	CNG	2006	148,838	FY 13-14
Chevy Glaval Titan	CNG	2006	121,900	FY 13-14
Chevy Glaval Titan	CNG	2006	120,567	FY 13-14
Chevy Glaval Titan	CNG	2006	112,388	FY 14-15
Ford Aerotech	Gasoline	2008	96,098	FY 13-14
Ford Aerotech	Gasoline	2008	54,817	
Starcraft Allstar	Gasoline	2008	77,847	FY 14-15
Chevy Glaval Titan	CNG	2008	85,574	FY 13-14
Chevy Glaval Titan	CNG	2008	73,487	FY 14-15
Starcraft Allstar	Gasoline	2008	79,839	FY 14-15
Starcraft Allstar	Gasoline	2008	80,836	FY 14-15
Glaval Titan	Bio Diesel	2008	152,756	FY 11-12
Glaval Titan	Bio Diesel	2008	155,408	FY 11-12
Glaval Titan	Bio Diesel	2008	149,432	FY 11-12
Medium Size Light Duty Transit Buses				*5 years or 150,000 miles*
Ford Allstar	Gasoline	2007	175,579	FY 10-11
Starcraft Starlite	Gasoline	2009	131,072	FY 11-12
Starcraft Starlite	Gasoline	2009	129,981	FY 11-12
Specialty Use Buses				
Chevy Trolley	Gasoline	1993	181,387	FY 10-11
Cable Car Classics	CNG	2004	57,350	
Cable Car Classics	CNG	2004	75,627	
Chance	CNG	2000	48,553	
Chance	CNG	2000	55,506	

Source: BlueGO, 2010

An urban bus is a passenger carrying vehicle owned or operated by a public transit agency, powered by a heavy heavy-duty engine, intended primarily for intra-city operation. Typically this includes buses 35 feet or longer and/or greater than 33,000 pounds GVWR. CARB set different standards for urban buses:

- NOx emissions fleet average must be no more than 4.8 g/bhp-hr.

- Diesel-powered urban bus particulate matter emissions must be reduced by 85 percent or meet 0.01 g/bhp-hr times the total number of diesel-powered urban buses in the fleet.

If the transit agency chooses an alternative fuel path, at least 85 percent of urban bus purchases must be fueled by alternative fuel and particulate matter emissions need only be reduced by 60 percent from the 2002 baseline by 2007. The 85 percent reduction of particulate matter emissions will apply to transit agencies using alternative fuel in 2009.

A commuter service bus means a passenger-carrying vehicle powered by a heavy heavy-duty diesel engine that is not otherwise an urban bus and which operates on a fixed-route primarily during peak commute hours and has no more than ten scheduled stops per day, excluding Park-and-Ride lots. A commuter service bus is subject to transit fleet vehicle rules.

In addition, global climate change or "global warming" is a major environmental issue which needs to be acknowledged in planning documents. Climate change is caused by the release of greenhouse gases (GHG's) such as carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride into the atmosphere which traps heat and increases temperatures near the earth's surface. Forecasted, long-term consequences of climate change range from a rise in the sea-level to a significant loss of the Sierra snow pack. As a direct result of Assembly Bill (AB) 32, CARB has been charged with developing rules and regulations that will reduce GHG emissions in the State of California to 1990 levels by 2020. The global affect of each alternative fuel is also considered in the alternative fuel discussion.

Ways that these requirements can be met are typically through various alternative fuel options, which may include ultra low sulfur diesel, methanol, ethanol, CNG, liquefied natural gas (LNG), hybrid electric, and biodiesel. Of the BlueGO fleet vehicles, 17 are operated on biodiesel and 13 vehicles are operated on CNG, and 9 run on gasoline. The remaining two vehicles are diesel and warrant replacement due to mileage and vehicle age.

BlueGO and the Tahoe Region as a whole has already taken the initiative in pursuing alternative fuels (focusing on CNG propulsion), and this effort will be continued. Additional strategies that should be considered over the SRTP period is the potential use of diesel-electric or gasoline-electric hybrid vehicles, as well as the improved clean diesel options. The hybrid technology on these propulsion options is evolving rapidly, particularly with regard to smaller (less than 40-foot) transit vehicles. This technology also can result in a substantial reduction in GHG emissions, even in comparison with CNG. As future vehicle procurements are being prepared, the state of the technology should be reviewed and the potential for application in the BlueGO fleet should be considered.

Transit vehicles range in cost depending on size, fuel type, and a myriad of other factors. For planning purposes, it is assumed that all newly purchased vehicles will meet air quality standards. At this time, no specific recommendation will be made until BlueGO staff has thoroughly investigated which option is best for their needs and service.

With the service plan elements discussed in the previous chapter, an additional 8 vehicles may be needed in order to operate the Recovery Plan scenario in FY 2015-16. Table 33 compares the existing vehicle needs and the needs associated with the Recovery Plan scenario. As shown, a total of 28 vehicles would be required to operate the service plan. Of these, 9 full size buses, 14 small to medium size buses and 5 trolleys would be required. At present, given the existing stock of full size buses and their suggested replacement schedule, it is not anticipated that any additional vehicles of this size would be needed. However, the small and medium size buses may warrant new vehicles beyond what should be replaced. As such, BlueGO should reassess the fleet and determine if new vehicles will need to be purchased in order to operate the service plan. If new vehicles are needed, they would need to meet the requirements set forth by CARB, or whatever applicable requirements are in effect at the time.

TABLE 33: Fleet Requirements -- 2015 Recovery Plan

	Existing Plan			2015 Recovery		
Vehicle Category	In Service	Spare	Total	In Service	Spare	Total
Full Size	3	1	4	7	2	9
Small - Med Size	9	2	11	11	3	14
Trolley	2	1	3	4	1	5
Total Vehicles Required			***18***			***28***

Source: LSC Transportation Consultants, Inc., 2010

Bus Painting

Painting buses is an important element of both maintenance and marketing for a transit system. In addition to replacing vehicles, BlueGO will need to paint vehicles both to protect them from the elements and to continue branding the system with BlueGO colors and logos. The cost of painting buses is estimated at $84,000.

Brochure Holders

BlueGO is currently producing new Riders Guides and needs to provide better information to passengers at transit stations and on vehicles. Providing such information at bus stops is particularly important in reaching visitors and seasonal employees. Brochure holders should be provided at the transit centers, major bus stops and on BlueGO vehicles. A reasonable amount to budget for this is $10,000.

PASSENGER FACILITIES AND AMENITIES

The "street furniture" provided by the transit system is a key determinant of the system's attractiveness to both passengers and community residents. In addition, they increase the physical presence of the transit system in the community. Bus benches and shelters can play a large role in improving the overall image of a transit system and in improving the convenience of transit as a travel mode. More importantly, shelter is vital to those waiting for buses in harsh weather conditions. In addition, passengers could benefit by installing passenger amenities at major bus stops, particularly adjacent to regional shopping centers, medical facilities, and social service agencies.

Adequate shelters and benches are particularly important in attracting ridership among those that have a car available as an alternative to the bus for their trip. Preference should be given to locations with a high proportion of elderly or disabled passengers and areas with a high number of daily boardings. Lighting and safety issues are also of high importance, particularly along major highways.

Improvements to Bus Stops and Shelters

As discussed in Chapter 3, the bus stop amenities along the BlueGO routes warrant improvement. Many busy locations provide no protection from the elements and are undersized for the level of use.

As mentioned in Chapter 8, it is recommended that stops with 10 or more boardings per day have a bus bench (minimum). An appropriately sized bus shelter should be provided at local stops with 25 or more boardings per day or in locations with more than 10 boardings on commuter or rural routes. A standard bus shelter adequate to address the requirements of the ADA is approximately 5 feet in depth and 10 feet in width, and can accommodate roughly ten passengers at a time. Shelters for stops with more than ten passengers at a time should optimally be sized to provide 4 additional square feet for every additional passenger.

According to the boarding and alighting survey conducted in August 2009, there are a total of 9 stops that warrant bus shelters along the BlueGO routes, which are shown in Table 34. Similarly, the survey data showed the need for 8 benches along the BlueGO routes. These figures are not inclusive of existing amenities, and they are considered additional amenities to meet the needs of the passengers.

The cost of a shelter varies significantly depending on whether it is very basic or custom and depending on the types of materials used. Bids recently received by BlueGO for shelters to be installed in 2009 were $6,850 per shelter (large) and $6,400 (cantilever style) and $245 for a trash/recycle can. The proposed price installation was $1,745 for installation, and $2,910 for the construction of a cement pad. Therefore, the cost per shelter is approximately $11,750.

TABLE 34: Locations of New Passenger Amenities

	# of Boardings	Routes Served
Benches		
7th Boy and Girls Club	5	21x
Bellamy Court	7	21x, 23, 50
Kimmerling Rd at Tillman	8	20x
Ridge Drive	9	20x
Hwy 50 at Fairway Avenue (Days Inn)	9	50
Camp Richardson Resort	10	30
Tramway at Ridgeview	11	23
Pope Beach Entrance	20	30
Shelters		
WB Kimmerling Road @ Tillman Road	8	20x, 24x
Foothill Park and Ride Lot (EB)	12	20x, 24x
Hwy 50 at Los Angeles Avenue	15	50, 53
Hwy 50 at Rufus Allen (Library)	23	50
Heavenly Village Way	25	21x, 23, 50
Tramway at Tina Court	30	23
Hwy 50 at Takela (DMV--EB Hwy 50)	32	50
Hwy 50 at Ski Run (KFC)	36	50
Embassy Suites/Harrah's (EB Hwy 50)	61	23, 50, 53

Note 1: Routes 20x and 21x are also part of the Triangle Route

Note 2: May require coverage to construct shelter.

Source: LSC Transportation Consultants, Inc., 2009

Enhance Transit's Role in a Multimodal Alternative Transportation Network

Along with bicycle and pedestrian travel, public transit can play a key role in a comprehensive transportation network for the South Shore area (and beyond) that is an alternative to private automobile travel. In particular, transit services can aid in providing the longer inter-community portions of individual trips, while non-motorized modes can serve the shorter local portions. To fulfill this potential, BlueGO will undertake the following:

- BlueGO will strive to provide bicycle lockers at transit centers.

- BlueGO will work to ensure that adequate bicycle parking is available at high-activity stops, focusing on those with observed or potentially high bicycle usage. Stops with high observed bicycle use of the vehicle bike racks will also be reviewed to identify if improved bicycle parking can avoid the need for passengers to bring their bicycle along on the bus.

- Where physically feasible, BlueGO will provide three-position bicycle racks on transit vehicles.

BlueGO's interest in bicycle/pedestrian facilities extends beyond the bus stop. At one end of their trip or the other, virtually all transit passengers also travel on foot or on bicycle as part of their transit trip. A key element of a successful transit system is a convenient system of sidewalks and bikeways serving the transit stops. BlueGO will continue to work with the planning and public works departments of El Dorado County, the City of South Lake Tahoe, and other jurisdictions in the service area to review construction plans and schedule priorities for pedestrian and bicycle improvements to coordinate with the needs of transit passengers.

IMPLEMENT AN AUTOMATIC VEHICLE LOCATION/FLEET MANAGEMENT/PASSENGER INFORMATION SYSTEM

In July 2010, the STATA Board authorized a contract with Avego for a comprehensive Automatic Vehicle Location (AVL)/Fleet Management/Real-Time Passenger Information System. BlueGO should continue the implementation of the Avego system. In particular, this system will provide an AVL system to improve service reliability, service monitoring, and real-time information available to passengers and staff. AVL is particularly beneficial for BlueGO services given (1) the large geographic area served, (2) the need for transfers between routes and services, (3) the variation in route running times resulting from snow and traffic conditions, and (4) the flexible forms of transit services provided. To ensure accurate data collection and to get the most out of this technology, BlueGO will complete the implementation of the Avego system, installing this equipment on all buses. This contract has a total cost of $150,000.

Expand Number of Automatic Passenger Counters (APC)

Under this plan, BlueGO will also continue its program to provide Automatic Passenger Counters (APCs) on the BlueGO fleet. Some of the BlueGO vehicles are already equipped with APCs. APC systems provide accurate ridership data that can identify operational strengths and weaknesses or justify service level changes. When combined with AVL, it becomes an automated method for collecting information about passenger boardings and alightings at a range of system levels; these include passengers by route, route segment, day of week, and specific stop by time of day. Further, the APC and AVL technologies combined can allow for automatic collection of vehicle wait times, door cycles, distance traveled, and average speed. The cost of this technology has decreased substantially over the past several years, equating to $1,000 to $1,200 per bus if installed at the same time the AVL system is installed. By installing APCs on the entire fleet, BlueGO will gain more accurate and timely ridership data on which to make service decisions.

Implement Electronic Fareboxes

BlueGO should also pursue installation of electronic fareboxes in all transit vehicles. Fare payment technology has come a long way since the original mechanical "drop box" that has been in use for several decades. As the single-ride fare at more and more transit agencies approached $1.00 in the 1970s, transit agencies began turning to electronic fareboxes to process cash, tickets, and tokens. In addition, electronic fareboxes allowed planners to track trip-related data such as zone and passenger type.

Electronically registering fareboxes are becoming more and more commonplace in transit buses. Somewhat more simple systems require that drivers use a keypad to indicate a fare category. More complex systems allow the fitting of swipe card readers to accept magnetic tickets and multi-ride passes. Leading edge technologies involve integration with other on-board electronic equipment, including AVL, automatic passenger counters, destination signs, and others. Integration of the various electronic components requires them to be compatible with one another, which may be difficult if they are procured independently at different times. Such systems would be beneficial to BlueGO, as it would allow for more detailed data collection regarding type of fare passengers and would ensure accurate financial reporting. A budget of $200,000 is included in this plan for this program element.

RECENT EQUIPMENT PURCHASES AND NEEDS

In 2010, MV Transportation ceased operating the BlueGO system and as such, there became an immediate equipment need upon their departure. This equipment is primarily required for operations, such as diagnostic equipment, computer software and hardware, safety equipment, security systems, and furniture. There is also a need for non-revenue vehicles, as well as miscellaneous spare parts and equipment for on-board fare collection systems.

At the TTD Board meeting in October 2010, an inventory was provided for the above equipment needs, for a total of $625,811. The TTD has submitted a grant request for ARRA funding, which included the following:

- $86,761 for spare parts to ensure that parts will be on the shelf during peak demand.
- $60,571 for basic shop equipment that is needed to maintain the fleet.
- $20,000 for maintenance management software that is required for proper tracking of work orders, vehicle history, etc.
- $163,004 for facility equipment/improvements, which included furniture, computer equipment, bus washing equipment, and building repairs, upgrades and painting.
- $200,475 for a fare collection system for 12 fixed-route buses and a projector for safety/training presentations.
- $95,000 for non-revenue vehicles, including a truck with snow plow capability, a car to serve as a driver shuttle for lunch or route relief, and a truck or SUV for road supervisor use

OPERATIONS FACILITY IMPROVEMENTS

The Operations Facility located on Shop Street in South Lake Tahoe provides for the basic needs of the transit system. The “Bus Garage” has administrative offices for the contractor, a small dispatching office with a money-counting room and driver check-in space, and a two-bay maintenance garage. The facility includes a bus parking lot. While this facility is adequate for

operations, it is in poor repair, provides marginal space for administration, and is close to capacity for transit vehicle parking. Providing a new facility, however, is a large undertaking both in terms of planning, finding an adequate location, and acquiring funding.
The current site is situated on roughly 1.5 acres, and includes two buildings – one with administration and another for maintenance and dispatch.

Table 35 presents an analysis of the requirements for a maintenance facility, taking into consideration the various existing and planned uses under this SRTP. Applying the planning methodology presented in *Transit Garage Planning Guidelines: A Review* (US Dept. of Transportation, 1987), a site of 1.6 acres would be needed for an adequate operations and maintenance facility for BlueGO. This indicates that the current site is just on the border of being the proper size. This figure also does not expand driveway circulation space; at present, limited circulation space requires "tight" movements into/out of bus parking areas, as well as some double stacking of bus parking that reduces operating efficiency. In addition, if the existing site were used, it would benefit from a redesign so that the facility could be brought up to date and provide enough office space for administrative and operations staff. This could also provide for better (though still probably not optimal) circulation on site.

Defining a new facility program is an in-depth process and best carried out by conducting a facility design and site alternatives study. It is recommended that TTD appropriate funds for such a study that would identify a number of options, including: 1) a more detailed analysis of the most appropriate site size for BlueGO's needs, 2) the overall needs for a maintenance and operations facility, 3) whether the existing location is adequate, 4) other alternative locations that might be better options for a facility, and 5) potential site designs including building layout and overall site layout. It is estimated that the study would cost between $30,000 and $40,000.

TABLE 35: BlueGO Maintenance Facility Space Requirements -- 2015 Recovery Scenario

Input Data	
Administrative Employees on Site	2
Total Employees on Site	35
Number of Peak Buses	28
Annual Vehicle Service Miles Maintained On Site	1,233,823
Number of Staff Cars	2
Number of Vans in Fleet	2
Number of Mini-Buses in Fleet (16-32 psgr)	28
Number of Buses in Fleet	11

Program Element	Factor	Ind Var	Y Int	Subtotal	Square Feet
Operations Building					
Administrative Space	258	2	752		1,300
Offices					
Passenger Services			150		
Storage					
Operations Space	22	28	938		1,500
Conference/Training Room				1,000	
Restrooms/Showers				300	
Locker Room				200	
Maintenance Area	1,389	12	564		4,500
Work Bays	2.34	1	3.79	2	
Parts Storage	233	12	(1,923)	1,000	
Maintenance Storage	52	12	(402)	300	
Parts Cleaning				50	
Maintenance Offices				150	
Circulation and Utilities					730
Total Operations Building Minimum Floor Area					8,030
Vehicle Storage and Wash Building					
Full-Size Bus Storage	900	11			9,900
Mini-Bus Storage	675	28			18,900
Van Storage	420	2			840
Service Lane / Wash					3,500
Total Vehicle Storage and Wash Building Minimum Floor Area					33,140
Parking and Vehicle Circulation					
Circulation (Depending On Site)					15,000
Employee Parking	300	35			10,500
Staff Vehicle Parking	300	2			600
Parking for Other Vehicles Maintained on Site		2			800
Visitor Parking	300	5			1,500
Subtotal: Pavement					28,400
Subtotal: Developed Area					*69,570*
Total Minimum Site Area					69,570 Sq. Ft.
				or	1.6 Acres

Source: Transit Garage Planning Guidelines: A Review, USDOT, 1987.

Chapter 8
Institutional, Management, and Marketing Plan

Beyond the "nuts and bolts" of operations, vehicles and facilities, there are numerous institutional and management factors that must be considered in providing an effective public transit service. This chapter presents institutional and management strategies that should be pursued over the SRTP plan period. In addition, marketing improvements should also be identified.

INSTITUTIONAL STRATEGIES

Tahoe Transportation District Role in BlueGO

The TTD assumed an operations management role in the BlueGO system in October 2010. In an effort to continue strengthening BlueGO, the TTD should determine what role the district will play within the BlueGO system in the next five years and how future contracts for operations are handled. It is recommended that operations/service contracts go out to bid, through a Request for Proposal (RFP) process, offering contracts for a three year period with the option of up to two one-year extensions to qualified firms. This process should be conducted at least every five years to ensure a fair bid process and to be consistent with the standards of the transit industry and Federal Transit Administration policies.

Review Private Sector Participation Agreements

Private sector participation in the BlueGO program is essential to the success of public transit for the South Shore region. A large portion of the funding for BlueGO is provided by the private sector. As different private organizations have become involved in BlueGO at various times over the course of the program, their relative level of participation as well as the benefits of participation vary. Moving forward, there is a need for a consistent and comprehensive policy towards the support (both capital as well as ongoing operating funding) provided by private sector participants as well as the benefits (such as the provision of free service to employees of participating entities) provided to each. One goal of this should be to develop a policy that can attract participation by an increased number of employers. This could potential be coordinated with changes to TRPA's Employer-Based Trip Reduction Program.

Partnerships in the Development Process

BlueGO should be an important part of the local development process in order to facilitate the potential to include transit-friendly design. Particularly in the development of new commercial areas in the South Lake Tahoe area, but also in developing low income housing or senior housing, it would benefit the entire community if transit-friendly design and passenger amenities could be included in new developments. While no ordinances currently require such facilities be included, it is recommended that the City of South Lake Tahoe, El Dorado County, Douglas County, and the TRPA all commit to informing BlueGO staff when development proposals are

submitted that are along existing transit routes or that could generate substantial calls for DAR service. In turn, BlueGO should commit to the timely review and provision of comments regarding how development plans can best accommodate the provision of transit services.

MANAGEMENT STRATEGIES

In addition to improving marketing strategies, it is also critical to the success of BlueGO to improve management strategies, as discussed in the following sections.

Adopt OnCall Service Area Map

The area served by the OnCall paratransit program is not currently well defined. While the Americans with Disabilities Act (ADA) requires paratransit service to be provided to all areas within a three-quarters of a mile distance from fixed-routes, there are other portions of the South Shore region (such as Fallen Leaf Lake) that would be unduly expensive to serve. To ensure that OnCall services are equitably provided, the service area map shown as Figure 19 should be adopted. There are two areas provided with BlueGo route service beyond this boundary but not provided with paratransit service by other programs such as Jump Around Carson or Douglas County Seniors or Placer County: along existing Route 20 north of Cave Rock and south of Carson City, and along Route 30 north of Camp Richardson and south of Tahoma. In these areas, the respective routes should operate route deviation services, providing door-to-door service for eligible ADA passengers.

Transit Goals, Objectives and Standards

It is important for a transit agency to establish a series of goals, objectives, and performance measures by which to evaluate existing and proposed services. A mission statement sets the tone of the organization by establishing the overall policy direction and philosophy of the organization. The mission of BlueGO is stated as:

> *The Tahoe BlueGO Partnership Provides Safe, Friendly, Convenient, and Innovative Transit Solutions, Enhancing the Quality of Life for Our Resort Community.*

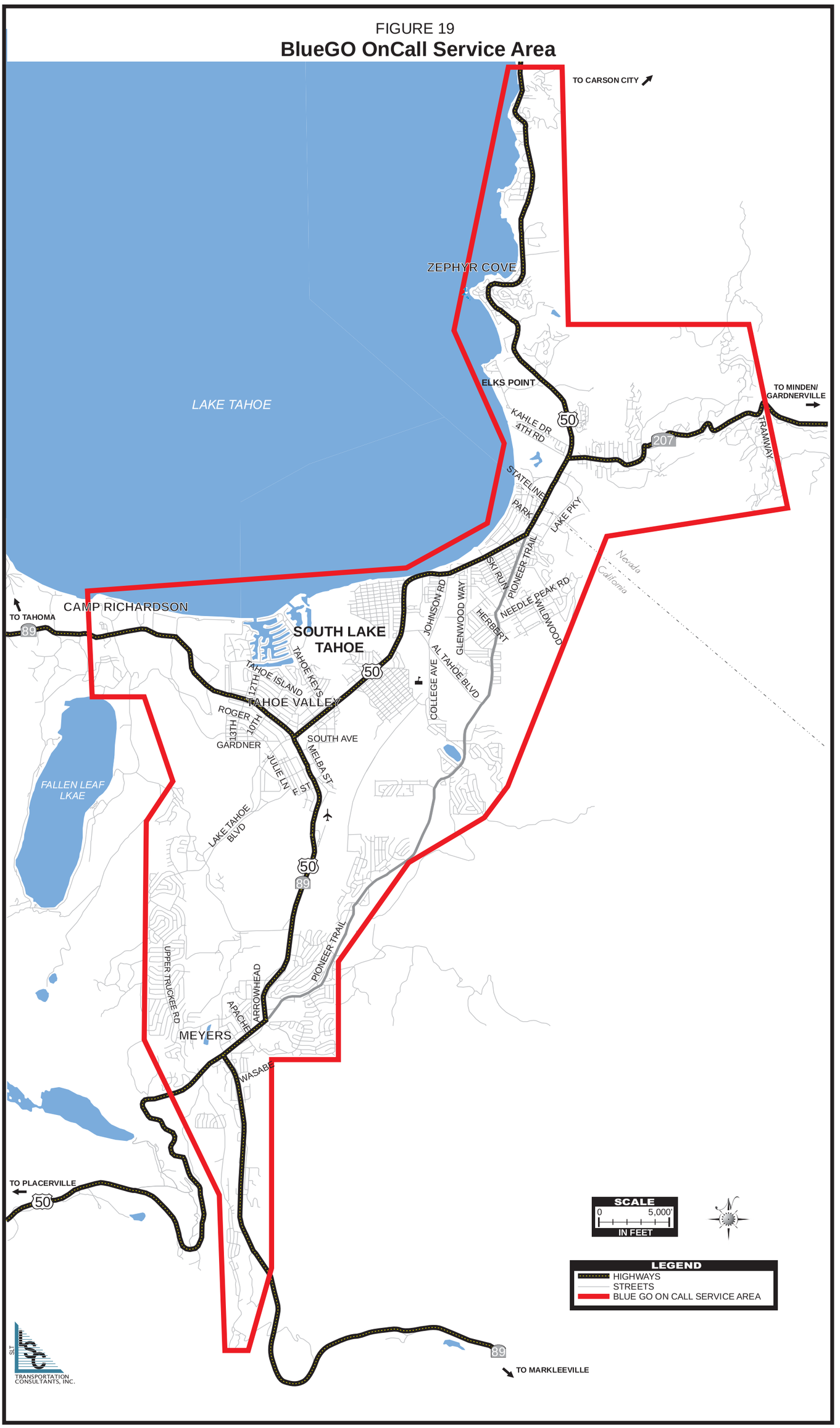
Furthermore, BlueGO offers a vision statement:

> *The vision statement of BlueGO is to provide a transit service that allows anyone to go anywhere easily on a service that is clean, accessible, reliable, efficient and safe which hereby improves the environment and the quality of life in our resort community.*

The STATA Board has previously approved General Standards and Performance Measures. However, these standards and performance measures are in need of review and refining. It is worth noting that the goals of a transit system inherently conflict with each other, such as the goals of (1) providing a high level of service and (2) minimizing financial cost to the community.

FIGURE 19

BlueGO OnCall Service Area



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In such cases, local officials and residents will need to make policy decisions to balance these conflicting goals. All goals, of course, must be considered in light of the available financial resources.

BlueGO General Performance Standards

Many of the existing BlueGO Performance Standards warrant revisions. Below is a list of these existing approved General Standards for which modifications are recommended, including a description of the changes made to the selected standards and justifications for the modifications. The strikeout text is the original text that should be deleted, and the italic text is the recommended replacement text. If the standard is not listed, there was no change recommended and the standard should remain as-is. (As a result, numbers are skipped in places in this discussion.)

A. Accessibility

1. ~~In urbanized areas,~~ Strive to provide *service so* at least 70% of ~~the riders~~ *residents and visitors in urban areas* ~~should be~~ *are* within one quarter of a mile or a five minute walking distance from a fixed ~~or flex~~ transit route, ~~or~~ *and* 100 percent of the population in rural, unincorporated areas ~~should be~~ *are*-served by a general public DAR service,

   Accessibility standards typically consider the proportion of residents (or, in the case of resort areas, residents and visitors) that are effectively served rather than the proportion of riders (which is a self-fulfilling condition, as few persons choose to use a fixed-route bus service more than a quarter mile walk from their home. Given the low ridership generated by recent efforts to serve low density portions of the service area, as well as limited operating financial resources, this remains a valid standard, though it needs to be carefully balanced against the higher ridership potential associated with greater service frequency in key travel corridors that could be provided within limited resources.

2. Transit services should be provided between major activity centers, *as demand warrants*.

   This remains an important standard and is currently being achieved. However, there are locations that historically have very low transit demand and do not warrant consideration as a major activity center for purposes of transit service.

B. Convenience

~~1. Maintain average operating speeds for fixed-route services as follows:~~
   ~~i) Urbanized area: 13 miles per hour~~
   ~~ii) Rural areas: 25 miles per hour~~

   Routes should be planned based on transit demand; travel speeds will vary by area served and traffic conditions, and should not be a consideration in evaluating performance. On-time performance is a better evaluation tool. This standard should be eliminated.

~~2. In urbanized areas, design routes and schedules to efficiently serve a maximum number of persons. (Coverage).~~

The goal of providing service to the greatest geographic area possible is addressed in previous policies, above. The ridership analysis presented in this plan shows that ridership and other regional goals can be better met (given limited financial resources) by enhancing service frequency along the US 50 corridor. This standard should be eliminated.

3. No more than 30 percent of passengers should be required to transfer between fixed-routes. Where transfer rates between routes exceed 30 percent, potential for providing direct routing should be investigated. Change to: *The need for passengers to transfer should be minimized, within funding and service productivity constraints.*

   Due to the geographic scope and complexity of the BlueGO service area, transfers are a necessary part of many transit riders' trips. In addition, the majority of transit demand is along US 50, making it more efficient to provide a high-frequency US 50 corridor service with connecting neighborhood shuttles than the existing model which has neighborhood shuttles provide redundant service along US 50. While the transfers are inconvenient for some, the higher frequency and improved allocation of resources is a priority. Thus this standard should be revised.

5. Maximum headway for fixed-route service in urbanized areas should be as follows:

   a. On high demand fixed-routes, ski shuttles, special shuttles and during peak time periods: 30 minutes
   ~~b. Flex routes: 30 minutes~~
   c. Rural routes and other services: 60 minutes
   d. Specialize services: based on demand

   Maintain this standard, except that Flex Route service is no longer operated.

6. Designate bus stops at locations that are served by fixed-route transit, at least every 4 to 6 blocks in urbanized areas and areas that would generate passenger activity and ~~every 1 to 3 miles in rural areas~~ *and as necessary to serve concentrations of ridership in rural areas. Maintain this standard in urban areas. In rural areas, a standard stop spacing is not typically defined, as the appropriate location of stops depends much more on the location of rural residential areas, recreational areas, and other trip generators.*

~~7. Other fixed-route service should maximize the efficiency of one-directional service in rural and low-density areas.~~

Large one-way loops increase coverage, but at the expense of requiring passengers to make long out-of-direction travel paths in one direction of their trip or another. Transit standards do not typically define service strategies. This standard should be eliminated.

8. *Allow* flag stops ~~used~~ on neighborhood shuttles in low density areas and rural areas as a convenience to passengers *where they can be safely provided.*

   While flag stops can add convenience (particularly at night), they should only be allowed in areas where the passenger is in a highly visible, well lit location and the driver determines he or she can safely stop to board the passenger.

C. Reliability

1. Schedule adherence.

   a) Buses should not depart earlier than time indicated on fixed schedules. *No more than 80 percent of local fixed-routes should arrive* ~~Arrivals~~ more than five minutes late ~~should be minimized~~ *and no more than 10 percent of regional fixed-routes should arrive more than ten minutes late.*

   Maintain this standard, and train drivers to never depart earlier than the scheduled departure. Services also should be monitored to ensure compliance, using the Avego system. (7.9 percent of departures were early during survey observations). It is also appropriate to set a numeric standard for late trips. The recommended values are considered to be achievable based on the results of the on-time performance surveys.

2. Programmed trips and/or vehicles.

   a) ~~100~~ *99* percent of scheduled trips should be provided on fixed-route systems. Where temporary vehicle shortages exists, preference should be given to routes serving transit-dependent areas.

   Scheduled trips are missed on rare occasions, due to factors such traffic delays and weather; a more realistic standard is 99 percent.

D. Comfort

~~1. A seat should be available for every passenger except during peak hours between 7:30 AM to 7:30 PM – Sunday to Thursday and 7:30 AM to 9:30 PM on Friday and Saturday.~~ *For passenger safety and comfort, vehicles should be sized and the transit service operated to require standees on no more than 20 percent of the runs for any route, and to avoid any recurring loads of more than 150 percent of the seated capacity*

   Given the variation in peak passenger activity by day and by season, it would be better to define a more flexible standard. In addition, it is also beneficial to define a maximum "standing load" of 150 percent of seating capacity.

4. ~~Provide route and schedule information on all fixed-route and flex route bus stops located throughout the service area~~. *At all stops, provide phone number and website, along with the route(s) serving the stop. At major stops, also provide detailed schedules and route maps.*

   Providing detailed service information is appropriately done on the website, with more simplified schedules and bus stop information provided in Riders Guides and at major bus stops and transfer locations.

E. Performance

3. New services should meet *expected* ~~the above~~ performance standards after the second full fiscal year of operation.

   Maintain this standard with minor revision.

4. Expansions of existing transit services should meet one-half the *expected* ~~above~~ performance standards during the first year of operation *and the full performance standard after the second full year of operation.*

   Maintain this standard with revision.

5. ~~Route changes should be evaluated after 90 days and 180 days of implementation with a recommendation developed after 180 days of implementation for modification.~~ *Performance on route changes should be monitored monthly and reviewed after 90 days of service. If after 180 days of implementation the service does not generate 50 percent of expected ridership or if other operational issues are observed, a recommendation for modification should be considered.*

   This standard warrants more flexibility.

F. Marketing

3. BlueGO should make efforts to make information regarding its service available to users of ~~private~~ intercity transit services (e.g., ~~Greyhound~~ Amtrak Thruway, South Tahoe Express) and their operators.

   Maintain this standard with minor modification.

4. BlueGO should *continually maintain the* ~~establish an~~ Internet site describing their services.

   Maintain this standard with minor revision.

G. Management

1. The following basic information is essential for transit system management and should be collected *and reviewed* on a monthly basis:

    a) Total passengers carried, by route
    b) Revenue passengers carried, by route
    c) Vehicle hours of service provided, by route
    d) Vehicle miles of service operated, by route.
    e) In-service vehicle breakdowns.
    f) Passenger complaints.

    Maintain this standard with minor revision, and include in contract with operator.

2. The following information should be assembled at least monthly and in response to passenger complaints and/or driver reports of operational problems:

    a) Schedule adherence *and missed trips*, by route (fixed-routes)
    b) Response times (DAR and flex routes)
    c) Pick-up time deviation (DAR and flex routes)
    d) Service Refusals (DAR and flex routes).

    Maintain this standard and include in contract with operator.

3. Buses should be considered for replacement according to schedule included in the FTA Circular 9030.1a.

    a) The number of spare buses (i.e., those not normally used during peak hour operation) should not exceed 20 percent of the total fleet size, *for each specific vehicle type*.

    Maintain this standard, with revision. The need for some services (such as the Trolley) to use a specific type of vehicle can potentially (and appropriately) increase the overall vehicle spare ratio.

6. All safety-sensitive positions (Bus Operators, Dispatchers, Operations Managers, Safety & Training Supervisor) ~~would~~ *shall* be certified with a valid California Commercial Divers License, Class A or B with passenger endorsement, air brakes certification and a verification of transit training certificate.

    Maintain this standard, with revision.

7. BlueGO ~~should~~ *shall* ensure that the California and Nevada Highway Patrol perform a terminal inspection at least once a year.

    Maintain this standard, with revision.

Additionally, the following standards are recommended:

8. *Vehicle Cleanliness Standard – The exterior of each vehicle used in service will be washed twice weekly, and the interior will be swept daily and detailed at least weekly. Vehicle detailing includes mopping the floor, washing the windows, and removing any minor stains that may have accumulated on the passenger seats. A vehicle that experiences a major stain will be removed from service as soon as possible and cleaned/repaired before re-entering service.*

9. *Training Standard – All services shall be provided by trained, courteous, respectful employees, who appreciate the needs of the passengers. Each driver shall have a minimum of eight hours annually of ongoing driver training.*

10. *Planning Standard – The Short Range Transit Plan shall be updated at a minimum of every five years.*

11. *Land Use Planning Standard – BlueGO transit staff will review development proposals within the South Lake Tahoe Region to identify the effects of development on transit service, and to ensure site plans and amenities are compatible with the transit program.*

SERVICE PERFORMANCE MEASURES

BlueGO has established twelve performance measures for its various services. It is recommended that several of the performance measures be eliminated as unnecessary, difficult or expensive to track, or redundant. Providing too many performance measures can make record-keeping burdensome, and trying to adhere to all measures can limit flexibility. All measures should be revised to include only five categories: 1) urban routes (routes that travel only within the South Lake Tahoe service area), 2) regional services (routes that travel outside the Tahoe Basin), 3) winter services, 4) OnCall, and 5) systemwide. Existing and recommended performance measures can be found in Table 36.

- Farebox Return Ratio – The recommended numbers do not accurately reflect the current farebox ratios. BlueGO should adjust to reflect recent trends. Based on current farebox ratios, and projected ratios discussed in the Service Plan chapter, the marginal farebox ratio performance measure should be revised to not fall below 25 percent on the urban routes, 13 percent on regional routes, 20 percent for OnCall service, and 20 percent systemwide.

- Operating Cost per Hour – Unless this rate is adjusted annually for inflation, it is not a useful performance measure. It is recommended that this measure be eliminated in favor of more accurate measures of cost performance (such as operating cost per one-way passenger-trip).

- Subsidy per Passenger – These numbers are established at a much higher rate than has recently been measured, and should therefore be adjusted for the plan period not to exceed amounts of 3.50 per passenger on urban routes, $6.50 per passenger on regional services, $1.50 per passenger on winter routes, $13.00 per passenger for OnCall, and $2.50 per passenger systemwide.

TABLE 36: Recommended BlueGO Performance Measures

	Urban	Regional	Winter	OnCall	Systemwide
Farebox (*not fall below)*					
Existing	10%	N/A	N/A	10%	10%
Recommended	25%	13%	N/A	20%	20%
Operating Cost per Hour					
Existing	$70.00	N/A	N/A	$70.00	$70.00
Recommended	Eliminate Measure Entirely				
Subsidy per Passenger (*not to exceed*)					
Existing	$10.00	N/A	N/A	$25.00	$17.50
Recommended	$3.50	$6.50	$1.50	$13.00	$2.50
Subsidy per Passenger Mile					
Existing	$2.00	N/A	N/A	$5.00	$3.50
Recommended	Eliminate Measure Entirely				
Subsidy per Revenue Hour (*not to exceed)*					
Existing	$40.00	N/A	N/A	$60.00	$50.00
Recommended	$16.50	$50.00	$37.00	$38.50	$35.00
Subsidy per Revenue Mile (*not to exceed)*					
Existing	$2.00	N/A	N/A	$5.00	$3.50
Recommended	Eliminate Measure Entirely				
Passengers per Revenue Hour (*not fall below)*					
Existing	15.0	18.0	20.0	2.5	4.0
Recommended	12.0	8.5	27.5	3.25	14.0
Passengers per Revenue Mile *(not fall below)*					
Existing	0.75	0.10	0.50	0.25	0.30
Recommended	0.75	0.40	3.75	0.25	0.80
Revenue Miles Between Collisions (*not fall below)*					
Existing	200,000	N/A	N/A	55,000	127,500
Recommended	No Change				
Complaints per 1,000 Passengers (*not to exceed)*					
Existing	0.00015	N/A	N/A	0.00015	0.00015
Recommended	No Change				
Total Miles Between Road Calls (*not to exceed)*					
Existing	8,000	N/A	N/A	4,000	6,000
Recommended	15,000	N/A	N/A	5,000	12,000
Trips On-Time (*not fall below)*					
Existing	95%	N/A	N/A	95%	95%
Recommended	85%	N/A	N/A	85%	85%

Source: LSC Transportation Consultants, Inc., 2010

- Subsidy per Passenger Mile – Calculating this number requires time-consuming surveys of boarding and alighting counts between bus stops in order to define the passenger-miles by service. While larger urban transit systems are required by federal regulations to collect this data, this is not a requirement of BlueGO. Due to the cost and as service effectiveness is adequately reflected in other performance measures, this is not a practical measure to track on an ongoing basis and should be eliminated.

- Subsidy per Revenue Hour – While a useful measure, it needs to be tied to the rate of inflation. Furthermore, it should be adjusted to current statistics, which is recommended as $16.50 per revenue hour for urban routes, $50.00 per revenue hour for regional services, $37.00 per revenue hour for winter services, $38.50 per revenue hour for OnCall services, and $35.00 per revenue hour systemwide.

- Subsidy per Revenue Mile – This measure is redundant with the previous measure, Subsidy per Revenue Hour, and it is recommended that this measure be eliminated. As most costs relate to hours of service operated, the Subsidy per Revenue Hour is a better measure.

- Passengers per Revenue Hour – This performance measure is an accurate measure of service efficiency and can quickly convey the success or failure of a route. However, adjustments should be made based on recent statistics: 12.0 passengers per revenue hour on urban routes, 8.5 passengers per hour on regional services, 27.5 passengers per hour on winter services, 3.25 passengers per revenue hour on OnCall, and 14.0 passengers per hour systemwide.

- Passengers per Revenue Mile – This performance measure also accurately measures service efficiency. However, adjustments should be made based on recent statistics, as well as to encourage improvement. Recommended modifications include not to exceed measures of 0.75 passengers per revenue mile for urban routes, 0.40 passengers per revenue mile for regional services, 3.75 passengers per revenue mile for winter services, 0.25 passengers per revenue mile for OnCall and 0.80 passengers per revenue mile systemwide.

- Total Miles Between Road Calls – This rate of miles between road calls equates to a road call for DAR service every sixteen days and for fixed-route services less than every three days. A higher measure is recommended of 15,000 for all fixed-route service, 5,000 for OnCall service, and 12,000 systemwide.

- Trips On-Time – Due to the resort and seasonal nature of the South Lake Tahoe region, it is not realistic to expect the current 95 percent on-time performance on an annual basis. Through a combination of better route planning and improved driver training (such as training drivers to never leave a stop before the scheduled departure time), this performance can be improved. The current on-time performance (based on July/August 2009 surveys) was a mere 55 percent. The recommended percentage of on-time trips is 85 percent for all service categories. As discussed above, a standard of “never early and no more than 5 minutes late” is recommended for the urban routes, and “never early and no more than 10 minutes late” is recommended for the regional routes.

MARKETING STRATEGIES

Marketing in its broadest context should be viewed as a management philosophy focusing on identifying and satisfying customers' wants and needs. The basic premises of successful marketing are providing the right product or service, offering it at the right price, and adequately promoting or communicating the existence and appropriateness of the product or service to potential customers. Unfortunately, the word "marketing" is associated only with the advertising and promotional efforts that accompany "selling" the product or service to a customer. Instead, such promotional efforts are only a part of an overall marketing process. Without a properly designed and developed product or service offered at the right price, the expenditure of promotional monies is often ill-advised.

Obviously, the marketing program must fit within budgetary limitations of any organization. According to the American Public Transit Association, transit providers typically budget between 0.75 and 3.0 percent of their gross budget on marketing promotions (excluding salaries), with the majority around 2 percent. Although this is slightly less than most private sector businesses, public sector organizations can rely more heavily on media support for their public relations programs.

Provide Transit Information in Spanish

According to the 2000 US Census, roughly 27 percent of the City of South Lake Tahoe population is Hispanic or Latino. As a significant proportion of the overall population, it is important to make transit information more accessible to these residents, particularly if they are more inclined to use the transit services. Further, roughly 36 percent of California's population, according to the Census 2008 American Community Survey, is Hispanic or Latino, therefore increasing the potential for Spanish speaking visitors. It is recommended that basic information be translated into Spanish, such as simple route descriptions and schedules. Information should be provided on the website, as well as at major transit stations. Further, where feasible, marketing efforts to advertise new and revised services should also be produced in Spanish, including newspaper ads and posters for distribution at markets and social service agencies.

System Map and Schedule

A large component of a successful transit system is offering accurate and detailed transit information. Currently, BlueGO route information can be found on the website, as well as printed materials at the major transit stations and on vehicles.

Given the number of routes currently operated, it is difficult to provide great detail on the routes on such a small document. Further, during the public open houses held in August, many riders stated that the font size on the printed materials was too difficult to read. BlueGO should revise the route brochures to allow for additional detailed map insets (such as at the Y area) and increased font size for easier reading. One way this can be achieved is to reduce the number of stops shown on the schedules; rather than include all stops shown, only include major time points. More detailed schedule and stop information could be included on the website, where there is more flexibility, and posted in larger font at the transit centers. Additionally, the

document could be redesigned to provide space for the inclusion of information on the deviation provisions (three-quarters of a mile deviations, per ADA requirements). The result would be a map that makes detailed service area and schedule information easier to decipher.

Destination displays are another way to provide transit information to the public. Such displays would be permanent fixtures in locations such as medical clinics, senior centers, social service agencies, and the Lake Tahoe Community College. The displays would be in a high visibility locations, such as the lobby, and would not only give easy access to transit information (schedules and maps), but would also build general awareness of the services offered by BlueGO. Given the high visibility of these displays, it is imperative that this information be kept up to date and revised as needed.

Expanding further, the BlueGO system could benefit from developing a comprehensive riders guide. This guide would provide route and schedule information, as well as a rider "how-to" section, pertinent policies (i.e. bicycle policy), fares and deviation provisions. Both BlueGO fixed-route and DAR service information would be provided, so as to serve as a comprehensive document for potential and existing passengers. A single marketing piece showing all routes is particularly important for visitors to be able to quickly understand the entire transit system and the opportunities it provides for multiple route transit trips. As an example, at present a visitor staying in Stateline wishing to access Camp Richardson via transit must consult a system map, a Route 50 schedule and a Route 30 schedule, which is undoubtedly one reason why visitor ridership is so low. Development of a systemwide riders guide would provide the opportunity for the visitor to pick up a single marketing piece in their lodging property (or, preferably, in their visitor information received prior to arrival in the Tahoe Region). It is important to note that completing such a guide is not recommended immediately, as BlueGO and its riders would benefit more from this once the system has had a chance to settle since all the service modifications. Rather, waiting until the "new" service changes are implemented and stable, would allow better use of funds. As such, this may be an option more suitable for implementation in FY 2011-12.

It is also important to recognize the importance of updating the website frequently, as service changes are made. The website does a good job of updating current delays through the Twitter application, informing passengers of any traffic incidents and similar issues. However, when changes are made to the routes or schedule, it is imperative that the map and schedule links on the website be updated immediately, so as to ensure accurate information to all riders.

Another improvement would be to revise the bus stop signs to list the routes that serve each stop. This makes it easier for riders, both resident and visitor, to know which routes are served at stops near their home, lodging facility, place of work, or other destination. Further, it would serve as a marketing tool for the system, educating potential users of what routes are located at stops that may be useful to them if they rode the transit system.

Improve Service Quality

A key precept of marketing is that it is essential to provide a quality "product." In the case of public transit, a reputation for providing quality service encourages increased ridership and

public support for transit. Tax-based funding and fares are more acceptable when service quality is high. A key marketing effort, therefore, is to improve on-time performance, passenger amenities, and reduce in-vehicle travel time. Solving these problems and subsequently improving the public perception of BlueGO's quality of service through marketing is essential. The following service monitoring techniques should be ongoing:

- **On-Time Performance** – Comprehensive records of on-time performance are useful in determining proper scheduling and ensuring quality service. At a minimum, transit supervisors should be required to do a standardized observance of on-time performance as part of their service checks. This data should be entered into spreadsheets to allow tracking. In addition, on-time performance surveys should be conducted at least twice per year. Note that implementation of a full AVL system (as discussed above) will provide the opportunity to largely automate the collection and summary of on-time performance data.

- **Annual Passenger Survey** – On-board passenger surveys are a vital source of planning information regarding the ridership and the purpose of their trip-making. In addition, surveys are the single best way to gain "feedback" regarding the service. Funding for annual on-board surveys should be a priority. Questions that should be addressed in the annual passenger survey include the following:

  - Day and date that the survey is completed
  - Time at which the survey is completed
  - Route that the passenger is traveling, and other routes used as part of the trip
  - Passenger gender
  - Passenger age
  - Whether the passenger is disabled, and if so, the type of disability
  - Origin of trip (major intersection near trip origin) and trip destination (major intersection near trip destination)
  - Purpose of trip, typically categorized as work, shopping, recreational, social, educational, other
  - Rating of the transit service (poor, fair, good, very good, excellent)
  - Suggestions for improvements in transit service

- **Boarding and Alighting Counts –** It is worthwhile, on at least an annual or biannual basis, to conduct a day-long count for boarding and alighting by stop for each of the services operated. There are a number of useful pieces of information that can be gleaned from a boarding and alighting count:

  - Rank bus stops for potential passenger amenities, such as shelters or benches.

  - Identify the most important stops.

  - Identify the section along the route where the maximum load occurs. This information is very important in identifying the appropriate vehicle size for the service, as well as to track the service quality issues, such as passenger overcrowding.

Marketing for New Services and Service Changes

One common and important aspect of marketing that could be particularly effective is to increase the awareness of residents to any service changes before they are implemented. This increased awareness would translate into higher demand for transit services. There are several methods BlueGO can use to inform residents and passengers of changes to existing services and newly implemented services.

News and Media Coverage

There are many advantages to pursuing news media coverage for a transit system whenever possible. There is no cost, it reaches across a broad spectrum of the population, it is credible, and in small communities media are often anxious for news stories. By being proactive, a transit agency can make it easy for news media to tell their story. The better the information is that is provided to the media, the more likely they are to use it and the more likely the transit agency will be pleased with the results.

Several steps are involved in taking advantage of local media. The transit system should know the local media (TV stations, newspapers, radio stations) and should form a relationship with them. The transit agency should know what is newsworthy, such as large system changes or special events. Further, the transit system manager should know how to write a news release and should create a news release calendar to make sure they are regularly taking advantage of this resource.

Community Marketing

Community marketing is direct marketing through partnerships with community organizations such as schools and colleges, businesses and employers, social services, senior residences and senior centers, and neighborhood associations. The benefits of community based marketing are that it is effective and inexpensive, and that it capitalizes on transit's unique role as a community service. It also allows the transit agency to target messages to specific groups, and it allows them to provide the high information content necessary to generate ridership. It also allows the partner to provide direct feedback on how well transit is meeting their needs.

The first step in community based marketing is to identify a target group and then determine the "gatekeeper" for that audience. For example, the "gatekeeper" for social services would be the director.

Presentations

Public speaking, if done well, is the ultimate low cost marketing tool. It shows confidence in your message and is a great image builder. It puts a face on the transit organization. It can be done interactively so that the speaker can answer questions and convey customized information. The target audience would likely be seniors, students, welfare to work clients, and employee groups and could be held at senior centers, social service programs, job fairs and various community functions, such as the Farmer's Market. In addition to providing information on how to ride the services and where the routes serve, there should be an opportunity for free trial rides. Such presentations can show potential users how the bus can be used to get to programs, job opportunities and maintain independence. It is also beneficial to provide take home handouts appropriate for the specific audience targeted that contain information on how to ride and schedules.

Marketing for Increased Tourist/Visitor Ridership

While the South Shore economy is reliant upon the tourism industry, such as the ski areas and casinos, ridership generated by these groups is relatively small considering the number of visitors. To increase ridership and subsequently revenues, more marketing efforts should be focused towards these groups.

To raise tourist's awareness of the transit services offered by BlueGO, the system should work with local tourism agencies and providers to include links to the BlueGO website on the business or agency's websites. These may include hotels/motels, ski resorts, boating marinas, and US Forest Service establishments (Camp Richardson Resort, campgrounds, and major trailheads like those found in Emerald Bay). The link could direct visitors to a special tourist-specific BlueGO webpage, customized for visitors to certain destinations. For example, a visitor to Zephyr Cove could be provided with route information that specifically serves this area (Routes 21X and 22), as well as how to transfer to another route that might be of interest, such as Route 50 and the Trolley (Route 30). Locations that should be included are Zephyr Cove, the Stateline Casino Core area, Camp Richardson, and The Ridge area. Additional information regarding these destinations should also be included, such as nearby activities, as well as seasonal route information with regard to ski shuttles or the summer Trolley service.

Another strategy that can increase tourist ridership is to focus on route names, rather than just route numbers, throughout the system. Visitors in an unfamiliar area are more likely to understand and remember names, rather than number. For instance, Route 22 could also be called the "East Shore Route," thus providing a geographical description of the route's service area. More than likely, a tourist would understand that such a route may be able to take them to their destination and would then be more inclined to use the services.

BlueGO should also work with visitors centers (Chamber of Commerce, for example), lodging facilities and major tourist destinations to provide system guide brochures (as discussed above) on the transit services offered by BlueGO. These brochures should provide all schedule information, route maps, and how to get to certain popular tourist destinations via public transit. Schedules should also be provided at US Forest Service destinations in Emerald Bay and Camp Richardson, if possible, to inform day users that public transit is an alternative travel mode.

Additional training to hospitality service workers is also a valuable tool in disseminating information to tourists. Front desk clerks and other employees that visitors regularly come in contact with are a *key* element in transit marking to visitors. Presentations to these groups (perhaps as part of larger hospitality training efforts) could inform hotel and casino concierge services of the fixed-route and DAR services available to visitors at their establishments. Employees should be specifically informed of the routes that can get visitors to the major tourist destinations in the various seasons. For example, the ski shuttles and BlueGO routes that provide access to ski resorts should be discussed, as well as the Trolley route offered in the summer. Given the high rate of employee turnover in the industry, it can be useful to make contact with hospitality workers at least twice over the course of a winter or summer season.

Educate Local Agencies and Businesses on BlueGO Services

During the public open house held as part of the SRTP study, certain passengers, some of which were disabled, mentioned that they knew little about the DAR services and as a result, did not use them. Additionally, it was noted that the social service agencies and casino/hotel concierge services were not educated on the DAR services, and may possibly be giving inaccurate information leading to lower ridership than could potentially be generated.

To address this, BlueGO should increase efforts to educate local agencies and service-related businesses on the DAR and fixed-route services. Speaking to members of civic and business organizations enables the transit agency to set up an identity as part of the community. This could be achieved by holding employee meetings or training sessions at social service and business organization staff meetings, senior centers, and the Lake Tahoe Community College. Handouts could be distributed that include why and how BlueGO services are beneficial to the community, as well as rider information that could be filtered to potential users. Also, BlueGO should develop and distribute a newsletter at the start of the summer and winter seasons targeted at employees providing any updates to service changes, general BlueGO information, and other information that will keep persons current on the services offered.

It is also useful to present to decision makers and elected officials to maintain a positive image. BlueGO should make regular presentations or announcements at commission and board meetings to inform decision makers of service changes, improvements made to the system, and any updates on ridership, such as if there was an increase due to increased marketing efforts.

Chapter 9
Financial Plan

This chapter first presents the financial requirements for the Service Plan presented in Chapter 6. Funding sources are then identified, for both ongoing operations as well as capital improvements. Overall, ongoing funding sources are found to be adequate to fund the Service Plan and Capital Plan.

FINANCIAL SOURCES

Funding for BlueGO services is provided through numerous channels, including various federal, state, and local sources. Because BlueGO services span throughout two states, three counties and one incorporated city, the general funding and allocation structure is quite complex. Routes operating solely within certain areas received funding only from their respective county or state, while available TRPA funds are distributed amongst all service areas. For instance, California's LTF can only be distributed amongst the routes that operate within the state. As the administrative costs associated with BlueGO benefit services in all jurisdictions, however, it is appropriate for various funding sources to share in the funding for these costs.

The following discussion provides information on the funding sources available to BlueGO, with specifics regarding the current fiscal year (FY 2010-11) and projected conditions during the final plan year (FY 2015-16). Table 37 details the funding sources for the current and final plan years under both service plan scenarios.

Operating Funds

Local Transportation Funds (LTF)

LTF is a mainstay for transit funding in California and is provided through the TDA. The funds are generated by a one-fourth cent statewide sales tax and returned to the county of origin. Funding must be provided for bicycle facilities, and the remaining funds spent for transit and paratransit, unless the Transportation Commission finds that no unmet transit needs exist that can be reasonably met. For FY 2010-11, BlueGO is forecasting to receive $640,686, of which $444,343 is from the City of South Lake Tahoe and $196,343 is from El Dorado County. As these funds are tied to sales levels that have been negatively impacted by the current recession, this source has dropped in recent years, necessitating cuts in BlueGO programs. These funds are used for routes that operate within California and BlueGO OnCall services.

Table 37 shows the potential funding for the final year of the SRTP, for the two scenarios discussed in the Service Plan chapter. Despite recent reduction in LTF funding, it is assumed that levels will start to increase as the economy recovers. As such, the plan assumes that LTF funding may increase to between $742,000 and $893,000, depending on the economic climate. These figures were estimated by reviewing historical amounts received by BlueGO between 2005 and 2009, and assuming that roughly 80 percent of the losses would be recovered, in addition to 3 percent inflation, for FY 2015-16.

TABLE 37: BlueGO Funding Sources and Forecast

Available Subsidy (Excluding Farebox)	FY 2010-2011	FY 2015-16 Forecast	
		Base Scenario	Recovery Scenario
Heavenly	$839,296	$972,970	$972,970
Lakeside Inn & Casino	$38,000	$44,050	$47,580
Harrah's/Harveys	$250,000	$289,819	$313,004
MontBleu Resort	$73,600	$85,320	$92,150
The Ridge	$108,640	$125,940	$125,940
Grace Academy	$10,725	$12,430	$12,430
S. Lake Tahoe - Local Transportation Funds	$444,343	$515,120	$704,470
El Dorado County - Local Transportation Funds	$196,343	$227,620	$486,290
El Dorado County - State Transit Assistance	$93,950	$91,600	$91,600
S. Lake Tahoe - State Transit Assistance	$187,500	$182,810	$182,810
STPUD	$30,000	$34,780	$51,980
TTD - Rental Car Mitigation Funds	$0	$23,190	$23,190
Caltrans 5311 Program	$92,992	$107,800	$109,900
Caltrans CMAQ Flexed to 5311 Program	$200,000	$231,850	$236,360
NDOT 5311 Program	$869,876	$1,073,096	$952,354
Carson City RTC	$100,000	$115,930	$115,930
Southern Nevada Public Land Management Act	$100,256	$0	$0
Private Contributions	$0	$0	$75,000
Local Match for US 395 Leg of Triangle Plan	$0	$84,114	$83,322
Total Subsidy	$3,635,521	$4,218,438	$4,677,280

Source: LSC Transportation Consultants, 2010

State Transit Assistance (STA)

Previously, the TDA included a STA funding mechanism; the sales tax on gasoline was used to reimburse the state coffers for the impacts of the one-fourth cent sales tax, and any remaining funds were available to counties for local transportation purposes. Due to state budgetary constraints, this important funding source was diverted to other (non-transit) programs. The California State Supreme Court recently upheld an Appeals Court decision that this diversion was unconstitutional. AB6/AB9 legislation (the "gas tax swap") that was signed into law in March 2010 changed the source generating STA and re-established this funding program. For FY 2010-11, BlueGO received $93,950 from El Dorado County and $187,500 from the City of South Lake Tahoe.

For the final year of the SRTP, both plan scenarios have assumed $91,600 from El Dorado County and $182,810 from the City of South Lake Tahoe. Recently, Caltrans released a report summarizing the provisions and impacts of the Gas Tax Swap that was signed into law in March 2010. Included in this memo were calculations for STA funding until FY 2020-21. Based on these figures, Caltrans shows that by FY 2015-16, funding would have decreased roughly 2.5 percent since FY 2010-11.

Farebox Revenues

Farebox revenues are generated through the cash and pass fares of the transit system. Farebox revenues are forecast to increase as plan elements generate increases in ridership. Even under the status quo, farebox revenue would be expected to increase as services become better established and consistent. The estimated farebox for FY 2101-11 is $656,400. Under the Base Scenario plan, the farebox revenue is forecast to grow to $831,598 in 2015-2016, and up to $1.5 million under the Recovery Scenario plan.

Federal Transit Assistance

The federal government provides a number of grant programs that assist in transit operations. Many of these grants are administered through the statewide transportation agencies, the California Department of Transportation (Caltrans) and the Nevada Department of Transportation (NDOT). The following are programs that are planned to fund BlueGO programs:

- FTA Section 5307 Transit Capital and Operating Grants for Urbanized Areas: This program is available for incorporated areas with a population of 50,000 or more and makes resources available to these urbanized areas and to state governors for transit capital and operating assistance, and for transportation-related planning. In FY 2010-11, it is estimated that $100,000 will be available through the Carson City RTC, which will be applied to Route 21X. In the final plan year, this is expected to increase to $115,930, which reflects an increase due to inflation.

- FTA Section 5311 Non-Urbanized Area Formula Program: Federal transit funding for rural areas is currently provided through Section 5311 and requires a 50 percent local match for operating expenses. The amount of funding anticipated for the upcoming year has decreased from the previous two years, to an estimated level of $92,992 from Caltrans and $869,846 through NDOT. Neighborhood shuttles within the City of South Lake Tahoe receive funding from this source through Caltrans and the TRPA, while Nevada services use NDOT funds.

  In future years, both of the Caltrans funding programs associated with 5311 were assumed to increase 5 percent in the first year, and 3 percent each year there after for the Recovery Scenario. The initial increase is based upon historical data that shows a greater revenues available during the first year of federal funding reauthorization (in 2010, FTA 5311 funds were scheduled to be reauthorized through the calendar year). This would result in a total of $109,900. For the Base Scenario, the increase was expected to follow the rate of inflation (3 percent), and would result in a total of $107,800.

  NDOT 5311 funding was calculated per the existing formula used for BlueGO funding. This reflects the subsidy required for services in Nevada, based upon the proportion of total vehicle-miles of BlueGO service provided in Nevada. It also reflects the 3 percent inflation rate in operating costs included in the

- FTA Section 5316 Job Access and Reverse Commute Program (JARC): The JARC program assists states and localities in developing new or expanded transportation services that connect welfare recipients and other low-income persons to jobs and other employment related services. Applicable projects are targeted at developing new or expanded transportation services such as shuttles, vanpools and new bus routes. Routes 20x, 24x, and BlueGO On-Call night service have received this funding in the past.

- FTA Section 5317 New Freedom Program: This program under SAFETEA-LU provides formula funding for "new" public transportation services beyond those required by ADA for persons with disabilities. In past years, BlueGO received 5317 funding, which are administered through Caltrans and NDOT and were applied to Route 55 and the BlueGO On-Call services.

- Congestion Management/Air Quality (CMAQ) SAFETEA-LU Funding: A strong source of funding for many transit services across the country has been provided by the CMAQ program, and is available to regions that are not in compliance with federal air quality standards regarding ozone or carbon monoxide. Funding was received in FY 2010-2011 ($200,000), however it was transferred to the Caltrans 5311 program. These totals are expected to increase to $231,850 in the Base Scenario and $236,360 in the Recovery Scenario, both assuming an increase due to inflation.

- American Recovery and Reinvestment Act of America (ARRA): This act, signed into Law in 2009, is intended to create jobs and encourage consumption through public works projects and tax breaks. Transit capital assistance projects are a major portion of the stimulus package, and funds dedicated for mass transit purposes are intended for capital and operating purposes. No local match is required, and eligible recipients include current grantees of FTA 5307, 5311, and 5309 programs. For operations, BlueGO has submitted a grant application for $625,811 that would be used for facility upgrades and maintenance activities.

Casino Funding

Per the Participation Agreement, local casinos in the Stateline area contribute funds that aid in transit operations. These casinos include Lakeside Inn, Harrah's/Harvey's Lake Tahoe, Montbleu Casino and the Ridge Resort. This funding is applied to Routes 21x, 23, 50, 53 and BlueGO On-Call services. In FY 2010-11, these funds totaled $470,240.

Casino funding is related to the revenues of these establishments. For the purposes of forecasting funding, it is assumed that casinos would recover roughly 25 percent of the total revenues lost between 2005 and 2009 in the Recovery Scenario; the resulting factor was applied to the funding amounts, plus inflation. This results in a total of $578,674. For the Base Scenario, the funding contributions were increased for inflation, which totaled $545,129.

Heavenly Ski Resort

Heavenly Resort provides funding to BlueGO to support winter shuttles as part of the BlueGO program. In FY 2010-11, BlueGO estimates they will receive $839,296 from Heavenly Resort to operate these services. This rate is designed to cover the cost BlueGO pays the service contractor for this service, as well as an allocated portion of the operations and administrative overhead incurred by BlueGO. These funds are expected to increase by FY 2015-16 as a result of inflation, which would total $972,970.

Private Contributions

Private contributions are an important aspect to the BlueGO system. In prior years, Big George Ventures was a private funding source, contributing to the operation of Routes 20X, 21X and 24X. However, this funding has expired and is no longer available. While no other private contributions have been identified specifically at this time, the Recovery Scenario assumes an additional $75,000 in funding under this category.

Southern Nevada Public Land Management Act Funding

The Southern Nevada Public Land Management Act was enacted in 1998, and allows the Bureau of Land Management to sell public land in specified areas around Las Vegas, Nevada. Revenues from the sales are split between the State of Nevada General Education Fund and the Southern Nevada Water Authority, as well as a special amount to the secretary of the interior. These special funds can be used for capital improvements and Lake Tahoe Restoration Act projects. BlueGO anticipates receiving an estimated $100,256 in FY 2010-11. These funds are planned were used for marketing activities associated with Route 30 (Nifty Fifty Trolley) and general BlueGO administrative activities. However, due to the current economic climate, particularly in Nevada, it is assumed that these funds would not be available in future plan years.

Tahoe Transportation District (TTD) Car Rental Mitigation Funds

The TRPA adopted a Rental Car Mitigation Fee Program within the Code of Ordinances in 1993 with the intent to assist in "*the achievement and maintenance of environmental thresholds for transportation, water quality and air quality.*" Revenue is generated from each rental transaction associated with the Tahoe Basin. A fee is assessed for each day a car is rented, with the exception for local residents who can show residency. In FY 2010-11, these funds were not available for transit uses, however in the future plan years, it is estimated that they will return for a total of $23,190, calculated based on a level of $20,000 in recent years, increased for inflation.

South Tahoe Public Utilities District Mitigation Funds

The South Tahoe Public Utilities District imposes mitigation fees on new developments within the South Tahoe area, a portion of which is used for transit operations. Due to lack of construction, revenues from this source are decreasing. In FY 2010-2011, BlueGO received an estimated $30,000, a 49 percent decrease from the previous year. Over the next five years, funding is expected rebound towards the end of the plan timeframe, up to $34,780 in the Base

Case and $51,980 in the Recovery Scenario. For the Recovery Scenario, this was factored by assuming that roughly 50 percent of the revenue lost between 2005 and 2009 would be recovered, in addition to inflation (3 percent per year). The Base Scenario was assumed to increase at the rate of inflation.

Outside Local Match

For the FTA 5311 funds managed by NDOT that fund much of the planned Triangle Service, a 50 percent local match is required. While ongoing existing BlueGO funding sources can provide the local match for the Stateline – Carson City and the Stateline – Minden/Gardnerville legs of the triangle, it would not be equitable for existing local funds generated in the Tahoe Basin to provide any of the "local match" subsidies for the Carson City – Minden/Gardnerville leg, and this service does not directly serve the Tahoe Basin. This local match will need to be generated by a combination of Carson City and/or Douglas County area sources, in such a way that other funding available from existing BlueGO subsidy sources is not reduced. For purposes of this plan, therefore, a new source of operating subsidy is included. The funding level identified for this source is calculated based on the local match that would be required for the NDOT 5311 grant (per the current grant agreement formula).

CAPITAL FUNDING

Capital funding to support transit in the South Shore area is received on behalf of BlueGO by the TTD. Potential capital funding sources (federal, state and local) are listed and described below.

Federal Capital Funding

In addition to operating funding, a number of grant programs are offered by the FTA that assist with transit capital. These include:

- FTA Section 5308 Clean Fuels Program: This is a discretionary grant program funding through SAFETEA-LU. Recipients must be eligible for FTA 5307 funding and be classified as a maintenance or non-attainment area for ozone and carbon monoxide. The program assists non-attainment and maintenance areas in achieving or maintaining National Ambient Air Quality Standards and to support emerging clean fuel technologies for transit buses.

- FTA Section 5309 Capital Program: These grants are split into three categories, New Starts, Fixed Guideway Modernization, and Bus and Bus Facilities. The Small Starts component of the New Starts program provides funding and oversight for projects seeking less than $75 million in New Starts funds. A 20 percent local match is required. In the past, the TTD and BlueGO has obtained 5309 funding for slow fill CNG stations, bus shelters, a bus garage, bus painting and GPS equipment, as well as bus purchases.

- FTA Section 5310 Elderly and Persons with Disabilities Program: The goal of this program is to improve mobility for elderly and disabled persons by providing financial assistance for transportation projects that will benefit these groups in rural, small urban, and urbanized

areas. Apportionments are determined by a formula based on US Census data, and a 20 percent local match is required. In previous years, BlueGO has used this funding to purchase buses and radios.

- FTA Section 5311 Non-Urbanized Area Formula Program: For capital projects, FTA 5311 requires a 20 percent local match for capital and project administration expenses unless the project meets the requirements of the ADA, the Clean Air Act, or is a bicycle access project (such as installing bicycle racks on buses).

- American Recovery and Reinvestment Act of 2009 (ARRA): As previously mentioned, ARRA funds can be used for both operating and capital purposes, with no local match required. As discussed earlier, BlueGO has requested $625,811 in ARRA funds for maintenance, facility, vehicle and other miscellaneous upgrades.

California Proposition 1B

This proposition, approved by voters in 2006, authorized the issuance of general obligation bonds to invest in high-priority improvements to the state's transportation system and to finance strategies to improve air quality. Among the programs are the Public Transportation Modernization, Improvement and Service Enhancement Account. Funds can be used for rehabilitation, safety and modernization improvements (Prop 1B Safety), and capital enhancements or expansion, to name a few. In the past, BlueGO has used these funds for bus garage improvements (i.e. security cameras), vehicles, schedule holders, and bus shelters.

California Transportation Development Act

As previously described, TDA and LTF funding is provided through the state from a one-fourth cent sales tax. A portion of these funds may be used for capital purposes.

City of South Lake Tahoe Air Quality Mitigation Fund

Another potential funding source for capital purposes is the City of South Lake Tahoe's Air Quality Mitigation Fund. In prior years, this revenue has been used to purchase vehicles, including a bus and trolley.

Air Mitigation Credits

Capital purchases may also be made from air mitigation credits collected in the City of South Lake Tahoe, El Dorado County, and Douglas County. Previously, these funds have been used for trolley and bus purchases, a shelter in Meyers and other miscellaneous bus shelters.

Rental Car Mitigation Fee Funds

The revenue collected from the Rental Car Mitigation Fee program in the Tahoe Basin is also used for various capital projects. These funds have been used in the past toward installation of bicycle racks on buses.

Heavenly Ski Resort Funds

Heavenly Resort also contributes funding for purchasing buses used for winter services.

Other Local Funds

Other revenues are provided to BlueGO and the TTD by local sources as local match. The City of South Lake Tahoe has provided local match towards the purchase of vehicles in past years, while other local sources have been used as match to for FTA 5310 grant funds through Caltrans and FTA 5309 grant funds through NDOT, as well as the purchase of GPS equipment and two buses.

FARE CHANGES

BlueGO's current fare structure includes numerous types of passes that can become confusing for passengers. The system would benefit from simplifying the fare structure in a manner that is easier for passengers and drivers to understand and reduces the purchases on the bus, which has led to slower boarding.

The first step in simplifying the fares would be to eliminate the token system that is offered. These create another layer of "passes" that can add to the confusion of both passengers and drivers. By eliminating the tokens, the fare structure would include only cash, day passes, punch cards and monthly passes. The following provides more detail of each category.

- **Cash** – Passengers will still have the option to purchase single, one-way tickets with cash. These tickets will be available for purchase on-board, at BlueGO transit centers, hotels and other locations. This will not only provide for more convenient purchase locations, but also more payment options (i.e. credit cards, cash, etc.). Fares will stay at the current level of $2.00 one-way for general passengers and $1.00 for senior, youth, and disabled passengers for local fixed-route services. BlueGO passengers have recently experienced a fare increase, and current fares are near the upper end of the range of typical fares among similar transit programs. A fare increase in the immediate future would work against efforts to increase ridership (and maximize the benefits of public transportation to the region). Maintaining the current fare levels is predicated on (1) continuing relatively low level of inflation in wages and fuel costs and (2) continued participation by existing transit funding partners.

- **Day Pass** – Day passes will continue to function as they currently do, where passengers purchase one pass that is valid for multiple rides all day. The fare will stay at $5.00 for general passengers and $2.50 for senior, youth, and disabled passengers. There is also the option of purchasing a day pass with a punch card (discussed below). Day passes could be purchased at transit centers, on-board the buses, at hotels and other locations.

- **Punch Card** – This fare type will simplify ticketing, as one punch card could be used for multiple rides, and will eliminate the need to purchase one-way fares. As with the cash fares, passengers will be able to purchase punch cards at multiple locations where BlueGO serves, including hotels, stores and the transit centers. The punch cards also have the advantage that

they could be used for multiple people – each passenger will not need their own pass, but rather all could pay their fares through a single punch card. This will be particularly convenient for families as well as tourists.

Within this category there will be four different pass levels: general, senior/youth/disabled, college student, and single ride. Each will be color coded so that accurate record keeping can occur. The single ride punch card will be sold only by social service agencies, which will essentially replace the current token system available to these passengers, and will allow for two single-rides (2 punches). Fare amounts will remain the same as a cash ticket – one punch will equal a one-way ride and will be equivalent to $2.00, two punches will be used for a round trip ($4.00), and so on. The punch cards will also be valid for upgrading to a zone (discussed later), which will be one extra punch per ride, for OnCall services (3 punches), and for day passes (2 punches, which provides an overall discount for passengers).

These passes will provide for a discount when compared to purchasing single rides, with the exception of the social service agency single ride pass. The general public punch card, loaded with 20 total punches (or 10 round-trips), is recommended to sell for $36.00 (versus $40.00 if purchased in single ride tickets). Senior/youth/disabled and college student punch cards will be available for $18.00, each of which also has a total of 20 punches available.

- **Monthly Pass** – The last fare category available will be the monthly passes, and will remain at the same price point that they are currently offered at, which is $70.00 for the general public and $35.00 for senior, youth and disabled passengers.

Another new addition to the fare system will be zones, which will apply to the express routes that travel out of the Tahoe Basin. For cash passengers, this will equal an additional $2.00 for general fares and $1.00 for discount fares, and could also be purchased using an additional punch on the punch cards.

It is the goal of the new simplified system to attract more passengers to BlueGO, both locals and visitors. These changes will provide more options for passengers and will vastly simplify how bus tickets can be purchased, resulting in more efficient operations.

FINANCIAL SUMMARY

In conclusion, the recommended operating plan annual costs of $4,183,479 (for the first plan year) can be funded through the identified operating funding sources, which total $4,486,496. While many of the capital funding sources are discretionary, this operating funding balance as well as the local record of success in obtaining capital grants indicates that the capital plan presented in this document can realistically be funded through existing sources. Given the complex variation in revenue sources, and especially given the volatile economy and shifting landscape of both state and federal funding programs, it is not feasible to develop accurate forecasts of future funding levels. However, it can be concluded that funding sources will be available that are sufficient to support the financially constrained service plan, as well as the important enhancements identified in the capital plan. In addition, key revenue sources may increase with an improving economy. This may well allow implementation of the Recovery Alternative service improvements to begin over the course of this plan period.