

The Economics of Land Use



Final Report

The Economic Benefits of the North Lake Tahoe/Truckee Transit Vision

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North Lake Tahoe Resort Association

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INTRODUCTION AND SUMMARY

This economic analysis of the proposed North Lake Tahoe/Truckee Transit Vision (*Transit Vision*) improvements to existing transit services has been prepared as part of a multi-year process of developing the *Transit Vision*, an effort led by the North Lake Tahoe Resort Association. The economic analysis provides a summary of the proposed *Transit Vision* service improvements, an economic overview of the North Lake Tahoe/Truckee resort area, a presentation of transit services in three competing “peer” destination resort communities (Park City, Aspen/Snowmass, and Vail), and a regional economic analysis of the *Transit Vision*.

The economic analysis evaluates how the expanded transit service made available by implementing the *Transit Vision* will contribute to the local economy by (1) directly benefiting riders and adding expenditures to the area; (2) the “ripple effect” as these direct economic benefits are expended in the area; and (3) inducing additional economic activity, as part of a broader resort revitalization effort, by capturing more value from the existing visitor base and attracting additional visitors. The key to the economic analysis is reaching a conclusion that the necessary public investments in the *Transit Vision* are exceeded by local economic benefits that are expected to result from the investments.

Summary of Findings

1. The *Transit Vision* will provide a substantial increase in transit service.

The *Transit Vision* provides a substantial increase in transit service, mainly increasing frequency of service, making adjustments to routes, and significantly, eliminating fares. Travel patterns (travel origins and destinations), the existing volumes of travel on the served corridors, and experience with market response to frequent and free service in the peer destinations suggest that expected ridership forecasts can be achieved.

2. Enhanced transit services are an integral part of the peer destination resort communities.

While it is difficult to isolate any single factor leading to the competitive success of destination resorts, “free, fast, and fun” transit is increasingly a component of this success. The destination resorts reviewed as part of this assignment all have, over the past 20 years, reorganized original service providers, expanded services for both resort employees and visitors, and lowered or eliminated fare revenues. The North Lake Tahoe/Truckee area lags these areas in this regard, but the *Transit Vision* makes a substantial move toward transit service that can have a substantial effect on travel behavior. Each of the peer resorts has funded their improvements to local and regional transit service with local voter-approved tax measures. In each location these measures have been extended or increased in subsequent ballot measures, indicating that once transit service is expanded, public support is increased as the multiple benefits are realized.

3. Ongoing economic benefits of the *Transit Vision* are likely to substantially exceed its recurring costs.

Economic benefits of the *Transit Vision* include “direct” benefits (essentially, rider cost savings and new expenditures associated with providing the service); “indirect” benefits that

result from the local economic expenditure of these cost savings and service expenditures; and "induced" benefits (attraction of investment dollars to take advantage of new market opportunities and attraction of additional visitors or residents, bringing their expenditure potential to the area).

In the case of the *Transit Vision* it is conservatively estimated that direct and indirect benefits will total on the order of \$4.0 million annually. Set against an annual *Transit Vision* cost of approximately \$3 million, the benefit/cost ratio could exceed 1.5, easily justifying the public investment. The induced benefits associated with improved transit service, will confer additional economic benefits over time as additional visitors and longer visitor stays lead to increased resort expenditures and retail sales estimated to be proportionately in the range of \$18 million annually. These direct, indirect, and induced benefits accrue to the area's resident households (additional income), visitors (reduced transportation costs), retail businesses (increased sales potential), lodging properties and the major resorts (increased visitation).

4. The economic benefits of transit accrue to subareas in the Study Area.

The geographic distribution of economic benefits have been estimated to show where these benefits are concentrated throughout the Study Area. Given the size and diversity of the Study Area this information measures the more local benefits which can help justify the investments necessary for creating and sustaining the Transit Vision improvements. A summary of the distribution of benefits is shown in **Table 1**.

5. The North Lake Tahoe/Truckee has market potential for upgrading and expansion.

The economic effect of any "capacity" improvement (including transit) depends upon broader economic factors affecting a region's potential including market demand, potential for expansion and improvement, and adequate attractions and amenities, with which the North Lake Tahoe/Truckee area is amply blessed. The magnitude of economic effects is also dependent upon potential market demand. While North Lake Tahoe's primary visitor markets, the Bay Area and the Sacramento Valley, have other destination resort options, these key "feeder" regions are large, vital, and growing, providing an ample source of visitors for all-season activities in future years. Nationally and internationally-based visitors present a greater challenge given the area's access issues and aggressive competition from other mountain sports destination resorts.

6. Improved transit services, along with a range of other concerted actions, including further private resort upgrading and expansion, can improve the market attractiveness of the North Lake Tahoe/Truckee area.

Attracting a greater portion of both California-based regional and nationally or internationally-based destination visitors will require improvements to and expansion of the North Lake Tahoe/Truckee area's lodging facilities, improved retail shopping and entertainment districts, and access and mobility improvements, including expanded transit services as initiated by the *Transit Vision*. There are parallel resort development efforts underway including resort expansion and improvement projects in the Olympic Valley, at Northstar Resort, Homewood Mountain Resort, and Diamond Peak Ski Resort; residential developments in the Martis Valley; and village center revitalization efforts underway in Tahoe City and Kings Beach, the combination of which will increase the attractiveness and competitiveness of the area.

Table 1 Distribution of Economic Benefits by Subarea

Geography	Direct and Indirect Benefits	Induced Benefits	Total Benefits
Lakeside Placer	\$1,326,719	\$6,421,403	\$7,748,122
Squaw Valley/Alpine Meadows	\$680,733	\$3,742,907	\$4,423,640
Northstar/Martis	\$727,577	\$3,537,287	\$4,264,864
Truckee	\$1,212,080	\$3,991,088	\$5,203,168
Donner Summit	\$49,545	\$284,315	\$333,859
Total Estimated Benefits	\$3,996,653	\$17,977,000	\$21,973,653

Summary of the *Transit Vision*

The *Transit Vision* has been crafted over the past several years of community outreach, collaborative inter-jurisdictional planning, technical analysis, and public presentation. This effort has been undertaken under the leadership of the North Lake Tahoe Resort Association because improved local and regional transit service is expected to achieve a range of benefits to the region including an enhanced visitor experience, improved and lowered employee and other residents' mobility costs, increased economic vitality of resort and community servicing businesses, reduced traffic congestion, reduced parking conditions, reduced air pollution and greenhouse gas emissions, and improved capability to host and mobilize large events.

The *Transit Vision* would combine and substantially expand existing Tahoe Area Regional Transit (TART) and Town of Truckee transit services and eliminate fares. The following improvements to existing transit service would be made:¹

- Service is provided throughout the year on SR 267 between Truckee, Northstar, Kings Beach, and North Stateline. This addresses the long-term desire to provide year-round service on this key regional corridor.
- Evening hourly service is provided throughout the year around the 89/267/28 triangle as well as on the West Shore, with service until 2:00 AM in the summer and winter, and until 9:00 PM in the spring and fall.

¹ Memorandum to North Tahoe *Transit Vision* Service/Cost Committee, dated August 7, 2013; LSC Transportation Consultants.

- Service frequency is improved to consistent half-hourly service around the 89/267/28 Resort Triangle and on the West Shore, during both summer and winter daytime periods. (Existing half-hourly service between Crystal Bay and Incline Village would remain.) Hourly service is provided in the off seasons.
- The peak summer season is expanded from the current 68 days (June 27 to Labor Day) to 93 days (June 15 through September 15).
- Consistent local service is provided in Truckee throughout the year, along with winter service between Truckee and Donner Summit. This eliminates the existing service plan that reduces service within Truckee during the winter.
- While the existing Placer County Cab Coupon program remains (providing ADA service throughout the year), it is enhanced with an additional paratransit van operating in the summer and winter daytime periods. The existing Truckee Dial-A-Ride program also remains.
- Transit fares are eliminated. To provide adequate capacity, additional winter peak-period runs are provided along SR 28, on SR 89 between Tahoe City and Squaw Valley, and on SR 267 between Kings Beach and Northstar.
- Advanced technologies will be deployed to improve the convenience and efficiency of transit service, including automatic vehicle location, real-time traveler information displays, and enhanced communication systems.

The vehicle-hours of service required to operate these services is summarized in **Table 2**. As shown, a total of 65,679 vehicle-hours of service would be operated each year. As a point of comparison, the TART program currently operates 25,800 vehicle-hours per year, while the Town of Truckee is roughly 6,800 vehicle-hours per year. Thus, the *Transit Vision* would more than double the service offered by the existing transit programs in the North Lake Tahoe/Truckee region.

While providing a very substantial improvement over existing service levels with no fares required, the *Transit Vision* is part of a longer range resort development strategy and a first step toward further improve local transit service within the North Lake Tahoe/Truckee area and also improve transit links to regional transportation systems (e.g., Amtrak, Reno Tahoe International Airport), and to surrounding areas including South Lake Tahoe, Reno, and the I-80 Corridor. As noted above, the North Lake Tahoe/Truckee *Transit Vision* Plan service improvements have the potential to take advantage of regional transportation and access improvements under consideration as well as ongoing resort improvement and expansion planning and investments.

Table 2 Vision Ridership Increase by Type of Trip

Season / Service	Existing Service						With Transit Vision						Additional Ridership - %					
	Resident:		Visitor:		Total:		Resident:		Visitor:		Total:		Resident:		Visitor:		Total:	
	Work Trip	Other	Work Trip	Other	Work Trip	Other	Work Trip	Other	Work Trip	Other	Work Trip	Other	Work Trip	Other	Work Trip	Other	Work Trip	Other
Day: 6:30 AM - 6:30 PM																		
J	10,631	6,797	1,112	18,541	13,062	10,443	16,793	40,298	2,431	3,646	15,681	21,757	23%	54%	1410%	117%		
u	1,567	1,002	164	2,733	3,399	3,749	11,979	19,127	1,831	2,747	11,815	16,394	117%	274%	7205%	600%		
n	29,108	18,610	3,045	50,763	31,855	22,732	20,772	75,359	2,748	4,122	17,725	24,596	9%	22%	582%	48%		
S	7,727	4,940	809	13,475	9,493	7,590	12,205	29,388	1,767	2,650	11,396	15,813	23%	54%	1410%	117%		
e	9,032	5,774	945	15,751	9,884	7,053	6,445	23,383	863	1,279	5,500	7,632	9%	22%	582%	48%		
2	192	1,613	115	1,920	2,579	4,795	2,502	9,876	2,387	3,183	2,387	7,956	1243%	197%	2072%	414%		
7					0	1,443	0	1,443	0	1,443	0	1,443						
M	137	2,512	82	2,730	401	3,504	148	4,053	265	392	66	1,323	194%	39%	81%	48%		
E																		
R	924	1,175	2,099	4,198	1,343	1,805	3,149	6,297	420	630	1,050	2,099	45%	54%	50%	50%		
h	805	1,025	1,931	3,661	1,172	1,574	2,746	5,492	366	549	915	1,831	45%	54%	50%	50%		
f	2,001	2,547	4,548	9,096	2,001	2,547	4,548	9,096	0	0	0	0	0%	0%	0%	0%		
u	683	869	1,552	3,104	683	869	1,552	3,104	0	0	0	0	0%	0%	0%	0%		
Season Subtotal																		
	62,805	46,864	16,302	125,972	75,872	68,104	82,839	226,815	13,067	21,240	65,536	100,843	21%	45%	408%	80%		
Day: 6:30 AM - 6:30 PM																		
D	21,707	9,303	1,632	32,642	31,830	24,192	25,559	70,947	10,123	14,889	23,927	38,305	47%	160%	1466%	117%		
e	24,550	10,522	1,846	36,918	35,999	27,361	28,907	80,240	11,449	16,840	27,062	43,322	47%	160%	1466%	117%		
c	39,051	16,736	2,936	58,723	57,262	43,522	45,981	127,633	18,211	26,786	43,045	68,910	47%	160%	1466%	117%		
T	10,510	4,504	790	15,805	15,412	11,714	12,376	34,352	4,901	7,209	11,585	18,547	47%	160%	1466%	117%		
3	7,662	3,284	576	11,522	10,758	7,838	7,894	23,238	3,096	4,554	7,318	11,716	40%	139%	1270%	102%		
W	10,824	4,639	814	16,276	12,908	7,704	5,740	24,162	2,064	3,065	4,926	7,886	15%	66%	605%	48%		
I	0	0	0	0	4,243	5,658	4,243	14,144	4,243	5,658	4,243	14,144						
N	0	0	0	0	0	2,066	0	2,066	0	2,066	0	2,066						
T	197	3,629	118	3,945	580	5,063	214	5,956	382	1,434	96	1,911	194%	39%	81%	48%		
E																		
A	2,825	3,596	6,421	12,842	4,109	5,522	9,632	19,263	1,284	1,926	3,211	6,421	45%	54%	50%	50%		
P	2,072	2,636	4,708	9,416	3,013	4,049	7,062	14,124	942	1,412	2,354	4,708	45%	54%	50%	50%		
r	5,231	6,657	11,888	23,776	5,231	6,657	11,888	23,776	0	0	0	0	0%	0%	0%	0%		
7	2,620	3,335	5,955	11,910	2,620	3,335	5,955	11,910	0	0	0	0	0%	0%	0%	0%		
Season Subtotal																		
	127,249	68,841	37,685	233,775	183,964	154,680	165,451	451,712	56,715	85,839	127,766	217,937	45%	125%	339%	93%		
Day: 6:30 AM - 6:30 PM																		
S	12,885	10,902	991	24,778	16,529	16,262	3,993	36,784	3,644	5,360	3,001	12,006	28%	49%	303%	48%		
P	0	0	0	0	7,210	10,605	5,938	23,752	7,210	10,605	5,938	23,752						
R	19,871	16,814	1,529	38,213	25,491	25,080	6,157	56,728	5,620	8,266	4,529	18,515	28%	49%	303%	48%		
R	4,377	3,703	337	8,417	5,615	5,524	1,356	12,495	1,238	1,821	1,020	4,078	28%	49%	303%	48%		
I	5,801	4,909	446	11,156	7,442	7,322	1,798	16,561	1,641	2,413	1,351	5,405	28%	49%	303%	48%		
N	227	1,904	136	2,267	3,045	5,662	2,954	11,661	2,818	3,758	2,818	9,394	1243%	197%	2072%	414%		
G	242	4,461	145	4,849	712	6,223	263	7,198	470	1,762	117	2,349	194%	39%	81%	48%		
/																		
Evening: 6:30 PM - 9:30 PM																		
F	0	0	0	0	1,411	2,116	1,175	4,702	1,411	2,116	1,175	4,702						
A	0	0	0	0	1,230	1,845	1,025	4,100	1,230	1,845	1,025	4,100						
L	0	0	0	0	2,490	3,735	2,075	8,301	2,490	3,735	2,075	8,301						
L	0	0	0	0	850	1,275	708	2,833	850	1,275	708	2,833						
Season Subtotal																		
	43,402	42,694	3,584	89,680	72,024	85,649	27,443	185,116	28,621	42,956	25,859	95,436	66%	101%	666%	106%		
TOTAL	233,457	158,399	57,571	449,427	331,860	308,434	275,733	863,643	98,403	150,035	218,161	414,216	42%	95%	379%	92%		

NORTH LAKE TAHOE ECONOMIC PROFILE

The improved transit service proposed by the *Transit Vision* occurs in the context of an existing, and evolving, local resort economy of the North Lake Tahoe/Truckee area. The improved transit service is designed to benefit the businesses, employees, visitors, and residents of the area in a variety of ways, providing a range of economic benefits. This section provides an economic profile of the area that serves as a basis and baseline for considering economic effects of the proposed expanded transit service.

Geography

The *Transit Vision* study area is located in the central Sierra Nevada mountain range and encompasses the entire portion of Placer County east of the Sierra Crest, which stretches from the Interstate 80 corridor southward through the Martis Valley, and through the Truckee River Corridor to the North Shore of Lake Tahoe. The area includes Lake Tahoe's major arterials of Interstate 80 from Boreal Resort to Truckee, California; Highway 89 from Truckee to Tahoma; Highway 267 from Truckee to Tahoe Vista; and Highway 28 from Tahoe City to Sand Harbor. The study area includes the Town of Truckee; Placer County communities of Carnelian Bay, Dollar Point, Homewood, Kings Beach, Olympic Valley, Tahoe City, Tahoe Vista, Tahoma; and Washoe County's Incline Village located in the State of Nevada.

The study area includes the winter sports resorts of Squaw Valley, Alpine Meadows, Northstar, Diamond Peak, Sugar Bowl, Boreal Ridge, Homewood, Tahoe Donner, and Tahoe XC; and a host of other recreational assets centering on Lake Tahoe and the surrounding mountains, as well as a range of lodging and visitor-servicing facilities such as the Granlibakken Conference Center and Resort. **Map 1** shows the study area and proposed *Transit Vision* service routes.

Demographics

Population

The resident population of the study area is widely distributed in its residential communities with concentrations located in Truckee, Tahoe City, and Kings Beach. Recent population trends of communities within the study area, including Carnelian Bay, Dollar Point, Homewood, Incline Village, Kings Beach, Soda Springs, Squaw Valley, Tahoe City, Tahoe Vista, Tahoma, and the Town of Truckee, are shown in **Table 3**. As of 2010, the study area was home to a resident population of approximately 40,729 full-time residents. **Table 3** shows a 2 percent decline in population in the *Transit Vision* plan area from 2000 to 2010. This 2 percent population decline is unevenly distributed among the communities. Many small lakeside communities decreased in population, whereas Truckee experienced a significant gain in population. The lack of population growth in the area is attributable to the weak economic conditions that accompanied the Great Recession and limited site opportunities for additional development.

Map 1 North Tahoe Truckee Transit Vision Study Area

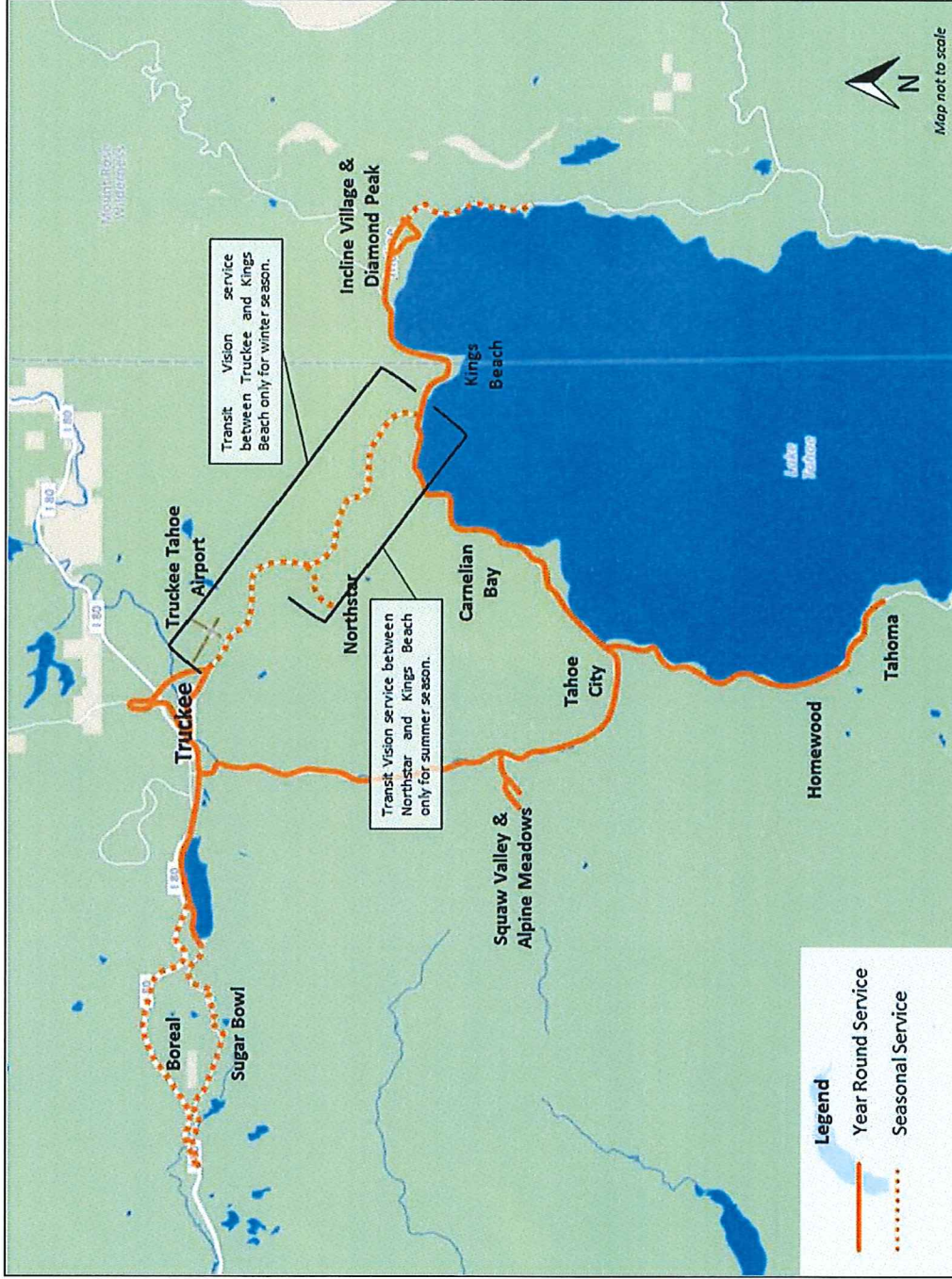


Table 3 North Lake Tahoe Population Trends

Item	2000 Population	2010 Population	% Change
Carmelian Bay	1,928	1,170	(39%)
Dollar Point	1,539	1,215	(21%)
Homewood	840	744	(11%)
Incline Village	9,952	8,777	(12%)
Kings Beach	4,802	4,414	(8%)
Soda Springs	97	81	(16%)
Squaw Valley	2,691	3,162	18%
Tahoe City	3,997	3,161	(21%)
Tahoe Vista	669	788	18%
Tahoma	1,282	1,037	(19%)
Truckee	13,864	16,180	17%
Total	41,661	40,729	(2%)

population

Source: Placer County; TBCP Background Report dated April 23, 2013; US Census; EPS.

There is a strong component of “absentee” home owners in the *Transit Vision* study area who live elsewhere, but own homes in North Lake Tahoe for occasional use or vacation purposes, and/or as a vacation rental available to regional visitors. As shown in **Table 4**, it is estimated that 60 percent of study area residences are designated as vacation homes or second homes. Thus, in combination with commercial lodging facilities and day visitors, the population at any given time is much larger than the resident population alone, doubling or even greater the resident population at peak visitor periods.

Future Population

Resident population levels in the study area have been stable in more recent years and growth restrictions in the Tahoe Basin will prevent substantial increases. However, in portions of the study area beyond the Basin, there remains substantial residential development capacity. Sources indicate that Truckee and communities in Martis Valley and the Tahoe Basin expect approximately 15,700 homes to be built in the *Transit Vision* study area within the next 30 years. **Table 5** shows the projected number of homes to be built in the Town of Truckee, Martis Valley, within the Tahoe Basin, and at Squaw Valley. Assuming consistent existing persons per household and absentee homeowner rates, there could be an additional 11,758 permanent residents in the *Transit Vision* study area within 30 years.

Table 4 Absentee Ownership of Residential Units, 2012

Community	Owner Occupied	Absentee Owner	Total Units	Percent Absentee
Carnelian Bay	2,932	3,127	6,059	52%
Homewood	125	933	1,058	88%
Kings Beach	421	1,623	2,044	79%
Olympic Valley	267	1,579	1,846	86%
Tahoe City	4,202	7,586	11,788	64%
Tahoe Vista	145	642	787	82%
Tahoma	31	153	184	83%
Truckee	6,343	6,464	12,807	50%
Total	14,466	22,107	36,573	60%

absentee

Source: DRAFT Economic Significance of Travel to the North Lake Tahoe Area, prepared by Dean Runyan Associates, 2013; Town of Truckee.

Table 5 Projected North Lake Tahoe Residential Development

Project	Projected Buildout	Proposed Number of Units	Estimated Persons Per Household	Absentee Rate	Projected Permanent Residents
<i>Formula</i>		<i>a</i>	<i>b</i>	<i>c</i>	$a * b * (1-c)$
Martis Valley					
Coyote Run	N/A	20	2.5	60%	20
Lahontan II	N/A	73	2.5	60%	73
Martis Camp	N/A	653	2.5	60%	653
Martis Valley West Parcel	N/A	1,360	2.5	60%	1,360
Northstar [1]	N/A	620	2.5	60%	620
The Highlands	N/A	1,450	2.5	60%	1,450
Timilick	N/A	462	2.5	60%	462
Martis Valley Subtotal		4,638			4,639
Town of Truckee	2025	4,993	2.5	50%	6,254
Tahoe Basin	2032	580	2.6	64%	547
Squaw Valley	N/A	868	2.5	86%	318
Total		15,717			11,758

projected dev

Source: Town of Truckee General Plan, 2006; Tahoe Basin Community Plan Policy Document, 2014; The Village at Squaw Valley Specific Plan, 2014; Census; EPS.

[1] Includes the Northstar Affordable Housing, and the Northstar Village and Northside developments.

Employment

The *Transit Vision* study area employment composition by industry changed dramatically in the 10 years from 2002 to 2011. Though the total number of jobs in the study area has not been seriously affected, the region experienced a dramatic shift within employment industries. As shown in **Table 6**, the Construction and Transportation and Warehousing industries were seriously impacted. Combined, these industries lost over 1,150 jobs in that timeframe. On the other hand, industries that grew and currently support significantly more workers are Real Estate, Accommodation and Food Services, and Public Administration.

Table 6 North Lake Tahoe Work Area Profile

Industry	2002	2011	Change	% Change
Agriculture, Forestry, Fishing and Hunting	32	4	(28)	(88%)
Mining, Quarrying, and Oil and Gas Extraction	16	0	(16)	(100%)
Utilities	349	311	(38)	(11%)
Construction	1,882	1,180	(702)	(37%)
Manufacturing	127	147	20	16%
Wholesale Trade	199	104	(95)	(48%)
Retail Trade	1,343	1,287	(56)	(4%)
Transportation and Warehousing	561	111	(450)	(80%)
Information	64	100	36	56%
Finance and Insurance	181	97	(84)	(46%)
Real Estate and Rental and Leasing	351	627	276	79%
Professional, Scientific, and Technical Services	586	583	(3)	(1%)
Management of Companies and Enterprises	25	2	(23)	(92%)
Administration & Support, Waste Management and Remediation	550	527	(23)	(4%)
Educational Services	910	840	(70)	(8%)
Health Care and Social Assistance	1,028	1,175	147	14%
Arts, Entertainment, and Recreation	2,098	1,931	(167)	(8%)
Accommodation and Food Services	3,836	4,432	596	16%
Other Services (excluding Public Administration)	382	454	72	19%
Public Administration	195	452	257	132%
Total	14,715	14,364	(351)	(2%)

work

Source: US Census Bureau LEHD OnTheMap Application; EPS.

Regional Affordability

North Lake Tahoe became significantly less affordable for permanent residents from 2000 to 2010. As shown in **Table 7**, housing prices increased significantly while household incomes decreased. Median home values increased 46 percent from 2000 to 2010 while median household incomes decreased 12 percent in the *Transit Vision* study area during that same timeframe. Median housing values as a percentage of income, a key indicator of housing affordability, increased from 641 percent in 2000 to 1,064 percent in 2010. According to a report produced by the Tahoe Metropolitan Planning Organization and the Tahoe Regional Planning Agency, housing costs are a far greater burden on residents in the North Lake Tahoe

area than the San Francisco Bay Area, the Reno-Sparks Metropolitan Area, the Sacramento Metropolitan Area, and the State of California, as shown in **Table 7**.

Table 7 North Lake Tahoe Affordability

Item	2000	2010	% Change
North Lake Tahoe Basin			
Median Home Values	\$442,786	\$648,409	46%
Household Income	\$69,039	\$60,948	(12%)
Median Housing Values as % of Income	641%	1,064%	66%
San Francisco Bay Area			
Median Home Values	\$447,341	\$637,000	42%
Household Income	\$78,489	\$75,989	(3%)
Median Housing Values as % of Income	570%	838%	47%
Reno-Sparks			
Median Home Values	\$204,499	\$295,200	44%
Household Income	\$57,977	\$55,724	(4%)
Median Housing Values as % of Income	353%	530%	50%
Sacramento Metropolitan Area			
Median Home Values	\$202,095	\$357,700	77%
Household Income	\$58,345	\$60,330	3%
Median Housing Values as % of Income	346%	593%	71%
State of California			
Median Home Values	\$267,646	\$458,500	71%
Household Income	\$60,101	\$60,883	1%
Median Housing Values as % of Income	445%	753%	69%

affordability

Source: TMPO; TRPA; Census.

Tourism

Visitor Profile

Tourism is the primary economic driver of the North Lake Tahoe/Truckee study area, which experiences approximately 3.1 million visitor days per year (exclusive of visitors to Incline Village and other communities on the Nevada side).²

² The Economic Significance of Travel to the North Lake Tahoe area, DRAFT report, September 2013, Dean Runyan Associates.

Most visitors to the area derive from the regional “drive-up” markets of the Sacramento/Central Valley and San Francisco Bay Area. Southern California residents also are a sizable market segment, which has great promise for future growth. Tourism businesses and marketing organizations are working to enhance North Lake Tahoe’s appeal to destination visitors from across the United States, as well as from international markets. Recently, the North Lake Tahoe Resort Association enhanced its marketing efforts to these markets and is reportedly gaining some traction. A visitor survey administered in summer 2012 indicated 21 percent of visitors came from the San Francisco-Oakland/San Jose metropolitan area, 12 percent were international visitors, 10 percent came from Los Angeles, and 8 percent came from the Sacramento-Stockton, Modesto metropolitan area.³

According to Dean Runyan Associates, approximately 42 percent of the trips to the North Lake Tahoe area are from those that are traveling just for the day (and not staying overnight). However, Dean Runyan Associates also reports that just 14 percent of the spending to the North Lake Tahoe area comes from these day travelers, while the remaining 86 percent comes from overnight travelers who are staying at a variety of accommodations types. **Table 8** shows the average visitor spending by type of traveler accommodation.

Table 8 Visitor Spending by Accommodation Type

Accommodation	Average Daily Spending Per Person	Total Visitor Spending (Millions)	Visitor-Days (Thousands)	Visitor-Days %	Length Of Stay (Days)	Visitor-Trips (Thousands)	Visitor-Trips %
Overnight Travelers							
Hotel / Motel / Bed & Breakfast	\$233	\$204	876	27.9%	3.4	257	24.8%
Rented Condo / Home	\$204	\$158	775	24.7%	3.5	219	21.1%
Private / Vacation Home	\$69	\$64	932	29.6%	10.4	90	8.7%
Campground	\$48	\$6	125	4.0%	3.5	36	3.5%
Overnight Travelers Subtotal	\$160	\$432	2,708	86.1%	4.5	602	58.0%
Day Travelers	\$126	\$55	436	13.9%	1.0	436	42.0%
Total	\$155	\$487	3,144	100.0%	3.0	1,038	100.0%

Source: Dean Runyan Associates.

spending

Visitor Accommodations

There are nearly 2,000 hotel rooms in the *Transit Vision* study area, as shown in **Table 9**. There are currently 785 hotel rooms within the Tahoe Basin (communities of Carnelian Bay, Kings Beach, Tahoe City, Tahoe Vista, and Tahoma) portion of the study area, 531 hotel rooms in the Truckee/Martis Valley area, 596 hotel rooms in Olympic Village, and 27 hotel rooms at the Sugar Bowl Resort in Norden. Much of the existing hotel stock has become outdated, especially in the Tahoe Basin. There has not been a new hotel developed in the Tahoe Basin since the 1960s.

³ North Lake Tahoe Visitor Survey, Summer 2012, RRC Associates.

Table 9 Commercial Lodging Properties in the North Lake Tahoe/Truckee Area

Item	City, State	Zip Code	Open Date	Rooms
Tahoe Basin Communities				
Carnelian Bay, CA				
Carnelian Woods Lodge	Carnelian Bay, CA	96140	Jun 1972	32
Kings Beach, CA				
Sun N Sand Lodge	Kings Beach, CA	96143	Jun 1954	26
Crown Motel	Kings Beach, CA	96143	Jun 1956	71
Tahoe Inn [1]	Kings Beach, CA	96143	Jun 1965	90
Big 7 Motel [1]	Kings Beach, CA	96143	Jun 1976	22
Stevenson's Holliday Inn [1]	Kings Beach, CA	96143	Jun 1978	22
Kings Beach Subtotal				231
Tahoe City, CA				
Sunnyside Resort	Tahoe City, CA	96145	Jun 1907	23
Tamarack Lodge Motel	Tahoe City, CA	96145	Jun 1930	21
Cottage Inn @ Lake Tahoe	Tahoe City, CA	96145	Jun 1938	22
River Ranch Lodge	Tahoe City, CA	96145	Jun 1960	19
Americas Best Value Inn Tahoe City	Tahoe City, CA	96145	Jun 1960	46
Aviva Motor Inn	Tahoe City, CA	96145	Jun 1960	23
Pepper Tree Inn [1]	Tahoe City, CA	96145	Dec 1970	51
Granlibakken Resort	Tahoe City, CA	96145	Jun 1975	50
Tahoe City Inn [1]	Tahoe City, CA	96145	Jun 1981	33
Tahoe City Subtotal				288
Tahoe Vista, CA				
Rustic Cottage Resort	Tahoe Vista, CA	96148	Jun 1925	20
Firelite Lodge	Tahoe Vista, CA	96148	Jun 1950	27
Cedar Glen Lodge	Tahoe Vista, CA	96148	Jun 1960	31
Tahoe Vistana Inn	Tahoe Vista, CA	96148	Jun 1962	28
Franciscan Lakeside Lodge [1]	Tahoe Vista, CA	96148	Jun 1980	60
Mourelatos Lake Resort [1]	Tahoe Vista, CA	96148	Jun 1993	32
Tahoe Vista Subtotal				198
Tahoma, CA				
Meeks Bay Resort & Marina	Tahoma, CA	96142	Feb 1932	20
Tahoma Meadows Bed & Breakfast Cottages	Tahoma, CA	96142	N/A	16
Tahoma Subtotal				36
Tahoe Basin Communities Subtotal				785
Outer Basin Communities				
Norden, CA				
Sugar Bowl Resort	Norden, CA	95724	Jun 1939	27
Olympic Valley, CA				
Plump Jack Squaw Valley Inn	Olympic Valley, CA	96146	Jun 1960	61
Resort @ Squaw Creek	Olympic Valley, CA	96146	Dec 1990	357
Village @ Squaw Valley	Olympic Valley, CA	96146	Jun 2002	178
Olympic Valley Subtotal				596
Truckee, CA				
Hampton Inn Suites Tahoe Truckee	Truckee, CA	96161	Jun 1978	64
Truckee Donner Lodge	Truckee, CA	96161	Mar 1984	42
The Cedar House Sport Hotel	Truckee, CA	96161	Jun 1984	40
Donner Lake Village	Truckee, CA	96161	May 1999	64
Hotel Truckee Tahoe	Truckee, CA	96161	Jun 2005	109
Inn at Truckee	Truckee, CA	96161	May 2006	42
Ritz-Carlton Lake Tahoe	Truckee, CA	96161	Dec 2009	170
Truckee Subtotal				531
Outer Basin Communities Subtotal				1,154
Total				1,939

hotels

Source: STR; EPS.

[1] Open date represents date of major renovation. Original opening date is not available.

Truckee and the Martis Valley area have experienced an additional 321 hotel rooms within the past decade, and the Olympic Village has not had a new hotel developed since the 178 room Village at Squaw Valley resort was completed in 2002.

The commercial lodging properties account for less than 25 percent of visitor trips, reflecting the relatively large supply of rental condominium properties and vacation homes in the rental pool in the area. The existing inventory of lodging properties includes a number of older, outdated properties in need of renovation or replacement to better match the preferences of the destination visitor. Increasing and upgrading commercial lodging, particularly adding full service branded “upscale class” lodging, will be an important component of attracting national and international destination visitors.

Tourism Performance

Figure 1 shows visitor spending performance in the North Lake Tahoe Basin over time.⁴ As shown, visitor spending has been slowly and steadily growing over the past 10 years at an average annual rate of 4 percent. This constant growth is quite remarkable, considering major declines in spending and economic activity associated with the Great Recession beginning in 2007, and points to the North Lake Tahoe area’s popularity, strength, and resiliency as a visitor destination.

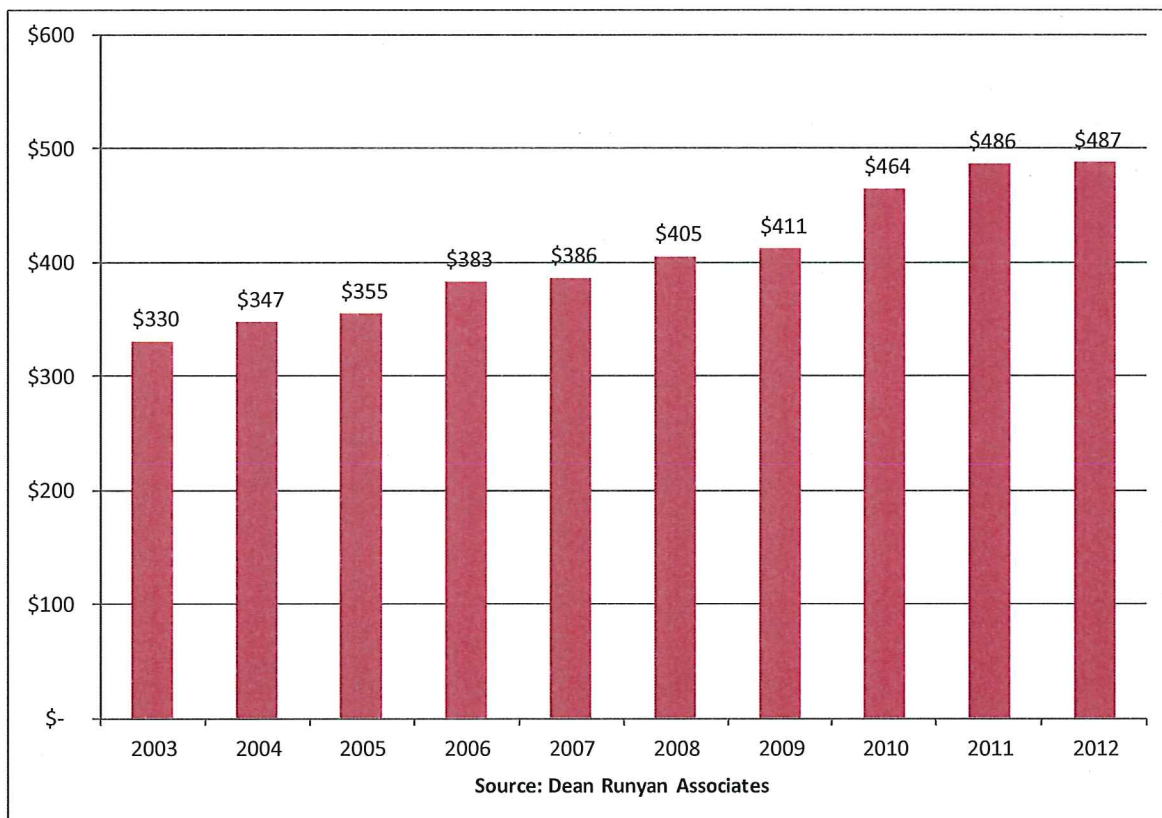
Special Events

Special events are a large driver of visitation in North Lake Tahoe, and the area has been successful in attracting many popular events such as the Ironman Triathlon, Tough Mudder, Amgen Tour of California, Wanderlust Squaw Valley, and the Northstar Beer & Bluegrass Festival. These events have helped to fill hotel rooms and attract visitor spending—often during the “lean” shoulder months of spring and fall. The athletic events have been especially beneficial to the local area because they fit well within the local culture, are popular with visitors and locals alike, and tend to foster “multiple” visits from competitors as they seek to conduct their training in the high-altitude environment the region offers. Recent efforts by the North Lake Tahoe Resort Association have attracted more than 300,000 people to North Lake Tahoe events in 2013.

Older clientele, including many boaters, seem to prefer the summer season in North Lake Tahoe, according to local stakeholders. European and Asian tourists typically prefer the late summer. Overall, younger tourists appear to be more likely to depend on transit.

⁴ It should be noted that **Figure 1** does not include the visitor spending from other important tourism areas in the *Transit Vision* study area such as Truckee, Incline Village, or other areas outside the Tahoe Basin portion of Placer County.

Figure 1 Total Annual Travel Expenditure, North Lake Tahoe Basin



Seasonal Trends

The North Lake Tahoe area experiences a majority of visitation during the summer and winter months. **Table 10** and **Figure 2** show the weekend lodging barometer by season for various *Transit Vision* area communities. Occupancy rates in the summer months demonstrate the highest number of visitors followed by the winter, fall, and spring months, respectively. These seasonal occupancy rates, while varying by season and reflecting a strong summer season and winter season, also show reasonable performance in the spring and fall shoulder seasons. These seasonal occupancy numbers compare favorably with the peer destination resorts and attest to the strong link and loyalty of the area to the Bay Area and Sacramento Valley-based visitors.

Table 10 Weekend Lodging Barometer by Season

Item	Hotel Occupancy Rates			
	Winter Dec-Feb [1]	Spring Mar-May [2]	Summer Jun-Aug [2]	Fall Sep-Nov [1]
Tahoe City & West Shore	59%	54%	81%	61%
Tahoe Vista, King's Beach & Incline Village	76%	67%	89%	73%
Squaw Valley	80%	68%	86%	60%
Other Vacation Rentals	61%	33%	63%	35%
Total	69%	56%	80%	57%

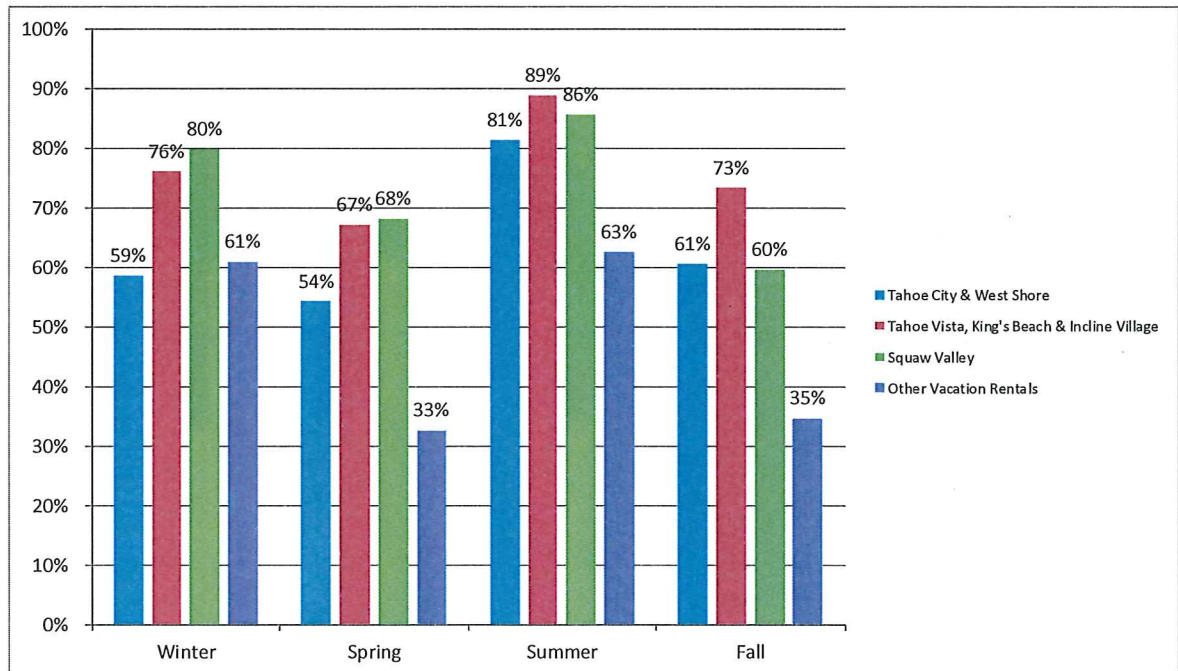
barometer

Source: North Lake Tahoe Resort Association; EPS.

[1] Lodging barometer data for 2012 & 2013.

[2] Lodging barometer data for 2012, 2013, & 2014.

Figure 2 Weekend Lodging Barometer by Season



PEER RESORT CHARACTERISTICS AND TRANSIT SERVICE

While the North Lake Tahoe/Truckee resort area enjoys a strong market relationship with the Bay Area and other parts of California (the primary source of its visitors) it also competes with other major destination resorts in the Western United States for these regional visitors and other nationally or internationally-based visitors. The destination resort business is highly competitive, demanding continual reinvestment, upgrading, and improvements to the visitor experience in order to remain attractive, competitive, and profitable. The North Lake Tahoe/Truckee resort area faces a number of competitive challenges, including an aging and undersized lodging property stock, dispersed recreation destinations and assets, and limited transit services.

Over the past generation, a high level of quality transit service has become a key element of the destination resort experience—most all of the resorts that compete for destination visitors have over the past decade developed “free, fast, and fun” transit service serving visitors, resort residents and employees commuting from within or beyond the primary resort areas. There are three main reasons for this resort transit service phenomenon:

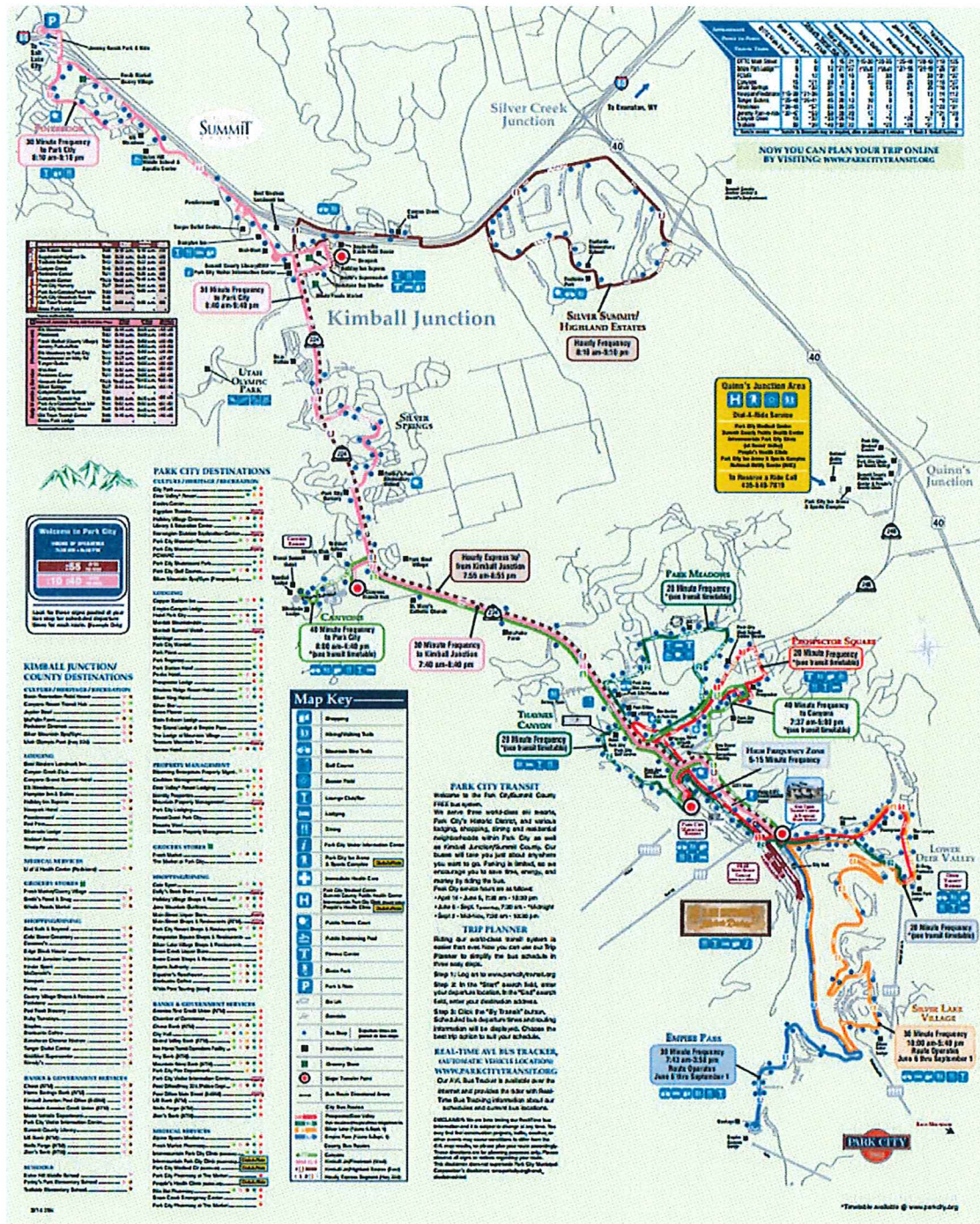
1. Visitors have become increasingly accustomed to free and fast connections between lodging areas and resort destinations including ski slopes and shopping districts, and lodging locations that reduce or even eliminate the need for automobile trips and related parking hassles.
2. Since resort employees often live a distance from the individual destination resort facilities and driving cars is increasingly expensive, there is a need to move these employees in an efficient and cost effective manner without adding to traffic congestion and increasing demand for parking.
3. Reducing automobile trips within and around the resort core areas greatly enhances the visitor experience and at the same time reduces cost of creating and maintaining expensive parking structures.

Park City

The Service

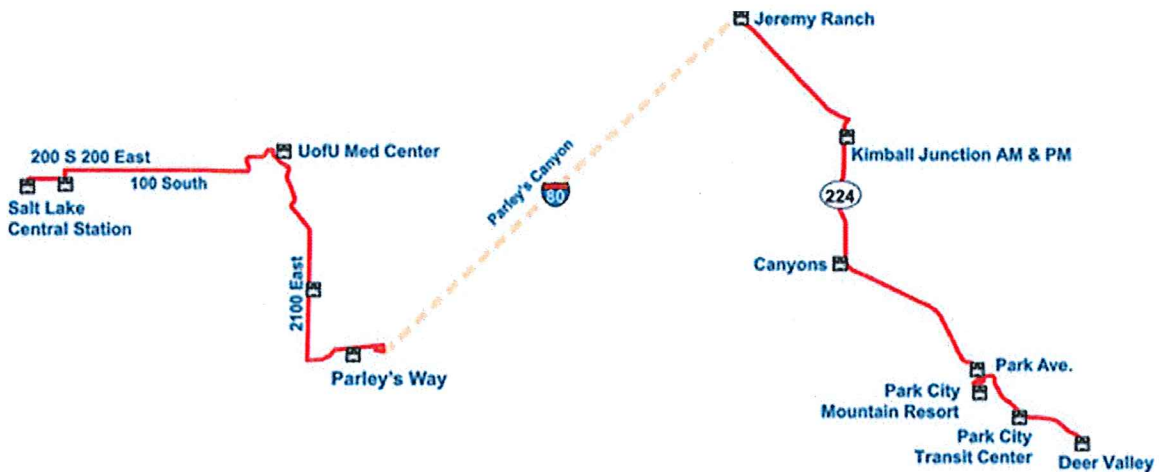
Park City’s fare free transit system provides access to recreational areas for lodging, shopping, dining, and residential neighborhoods within Park City, as well as to Kimball Junction and nearby portions of Summit County. All Park City Transit buses are ADA accessible. The City also has a paratransit service for ADA certified passengers unable to use the regular service. It serves three world-class ski resorts: Canyons Resort, Park City Mountain Resort, and Deer Valley Resort. There are a total of nine transit routes depending on the season, and a Dial-A-Ride service to Quinn’s Junction, via which general public passengers with reservations are picked up or dropped off along its route. The service’s real-time Automatic Vehicle Location (AVL) Bus Tracker provides riders with real time information for more efficient access. In addition to its intracity service, the City is served by the Park City-Salt Lake City Connect (PC-SLC) funded by the Utah Transit Authority as well as Park City and Summit County.

Figure 3 Park City Transit System Routes



Source: Park City Government Website

Figure 4 Park City–Salt Lake City Connect Routes



Source: Utah Transit Authority Web site

Evolution of the System

Transit service in Park City began in 1975 and has grown to provide a robust free fixed-route and demand response service to Park City as well as many areas within Summit County. Fixed-route service is provided through two schedules—winter and non-winter (spring, fall, and summer) — each of which is tailored to the seasonal variations experienced in such a resort-oriented town. Most routes operate every 20 minutes in peak periods. Demand response service is available for disabled persons throughout Park City and the Kimball Junction area, and to seniors within the Park City limits.

Currently, transit in the Park City and Summit County areas is offered year round; however, the span of service (period of the day served) and frequency of the routes changes by season. Public transit services in Park City are managed by the Park City Municipal Corporation. The City's Public Works Department is responsible for planning, overall operation, and maintenance of local transit buses. The system is overseen by the Joint Transit Advisory Board, and ultimately by both the Summit County Council and Park City Council to ensure cohesiveness in regional transit.

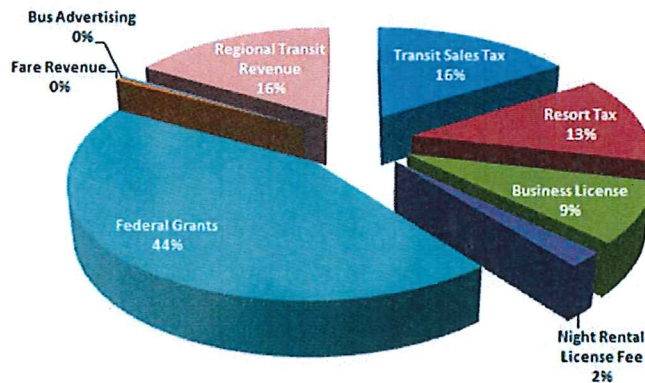
In 2011, Park City was named the International Mountain Bike Association's first Gold Level Ride Community in recognition of their cycling infrastructure. In 2012, the League of American Bicyclists recognized Park City as a Silver Level Bicycle Friendly Community. In order to continue with the City's success in expanding multimodal transit, the City plans to integrate walking and biking access with surrounding jurisdictions to improve access to the entire network of pathways and trails with kiosks, maps, and work stations for on trail repairs.

Funding

Local funding sources are derived from transit sales tax, resort tax, and business license assessments (linked to the estimated traffic generation of the respective businesses). Other funding sources outside of local funding are largely contributed by regional transit revenue and federal grants. Park City has performed well in achieving or securing federal capital grants ever

since the 2002 Olympics. This may be attributable to the limited number of competing transit services in the State of Utah and effective competition for the limited federal transit funding.

Figure 5 2011 Estimated Revenue Composition



Source: Park City/ Summit county 2011 Short Range Transit Development Plan, Prepared by LSC Transportation Consultants, Inc.

Noted Benefits

- Transit from the Salt Lake Valley metropolitan area has increased the labor pool available to the resort community.
- Workers in Park City have the highest use of public transit within Summit County and lowest travel time to work when compared to other Utah county commute times.
- Transit service capacity is re-deployed for special events (e.g., the Sundance Film Festival) to reduce congestion and improve the visitor experience.
- Park City's transit system provides free mobility and accessibility for senior citizens and the disabled, including ADA accessibility on all buses and the ADA paratransit service.

Vail

The Service

The Town of Vail's Transit Department provides free year-round bus service throughout Vail. The Town's bus service is the largest free transportation system in the country, offering its riders timely service to and from Vail Mountain and throughout the Town. The Town has some of the highest ridership in the state with six outlying routes and a central "spine" route referred to as the In-Town shuttle.

Vail also provides real-time information to passengers within the Vail Village, Lionshead, and Golden Peak corridor. The real-time information is provided by NextBus Information Systems,

which uses Global Positioning Satellite (GPS) technology to track buses while en route and then transmits the information to the Internet and digital bus signs.⁵

Additionally, regional bus service with modest fares is provided daily by Eagle County Transit (ECO Transit) with service throughout Eagle County to Vail, Leadville, Minturn, Eagle-Vail, Avon, Edwards, Eagle, and Gypsum. As the regional transit service for Eagle County, ECO Transit provides bus service 21 hours per day, every day with a total fleet of 31 buses.⁶

Evolution of the System

The Town of Vail operated a local bus service until 1980, upon the founding of ECO Transit, the regional transit system. Since then, the local bus service runs in conjunction with ECO Transit, linking regional travelers to local roads.

Originally funded by Vail Associates, ECO Transit operates a bus service between Vail and Beaver Creek and throughout Eagle County. The initial bus service was designed primarily to transport skiers between Beaver Creek and Vail Mountain, and also to carry employees between Edwards and Vail. It brought workers residing in Leadville to the valley. In the mid-eighties, Eagle County operated the regional bus service by way of contract with various transportation providers. In the winter of 1987-88, the Town of Avon took over the operation of the regional bus service and continued operation through intergovernmental agreements until April 2001 when ECO Transit officially assumed day-to-day operations for regional bus service.

A nine-member board of elected officials from the incorporated towns was established to develop operating policy. This board has since been reduced to eight members who represent the towns of Red Cliff, Minturn, Vail, Avon, Eagle, Gypsum, Eagle County Government and Beaver Creek.

ECO Transit and the Roaring Fork Transportation Authority (RFTA) are currently exploring the possibility of establishing a connecting route between Glenwood Springs and Gypsum.⁷

Funding

In the early years (1987-88) the regional bus service was funded by fare box revenues and through subsidies from the towns of Vail and Avon, Beaver Creek Resort, and Eagle County. At that time, regional bus service was limited to early morning and late afternoon employee routes including a Leadville run and a skier shuttle that operated ten hours per day.

In 1994 the funding partners decided to seek a dedicated funding source (Eagle County transportation sales tax) for regional transportation. As the valley's population grew, the demands for transportation also increased, and this translated into a larger financial commitment from the funding partners. A ballot initiative for a dedicated funding source was approved by the

⁵ Town of Vail Government Web site.

⁶ Eagle County, ECO Transit History Web site.

⁷ Regional Connector Feasibility Study, July 2009. Prepared by TransitPlus, Inc.

voters in November 1995. The Eagle County Regional Transportation Authority was made official on January 1, 1996.⁸

Noted Benefits

- Transit has led to reduced costs for visitors and employees moving within Vail on the local buses.
- Commuter services connecting Vail to Down Valley residential communities have expanded the labor pool for the resort and improved quality of life for resort employees.
- The Town of Vail and Eagle County have linked transit service and facilities to enhance use of their pedestrian trails and bikeways.
- Reductions in resort development costs due to reduced parking requirements (onsite structured parking) have improved the feasibility of private investment and stimulated construction activity.
- Transit services provide skier/boarders with more choices regarding where to access and depart from the mountain and reducing base facility congestion during peak morning and afternoon periods.

Aspen/Snowmass (Roaring Fork Valley)

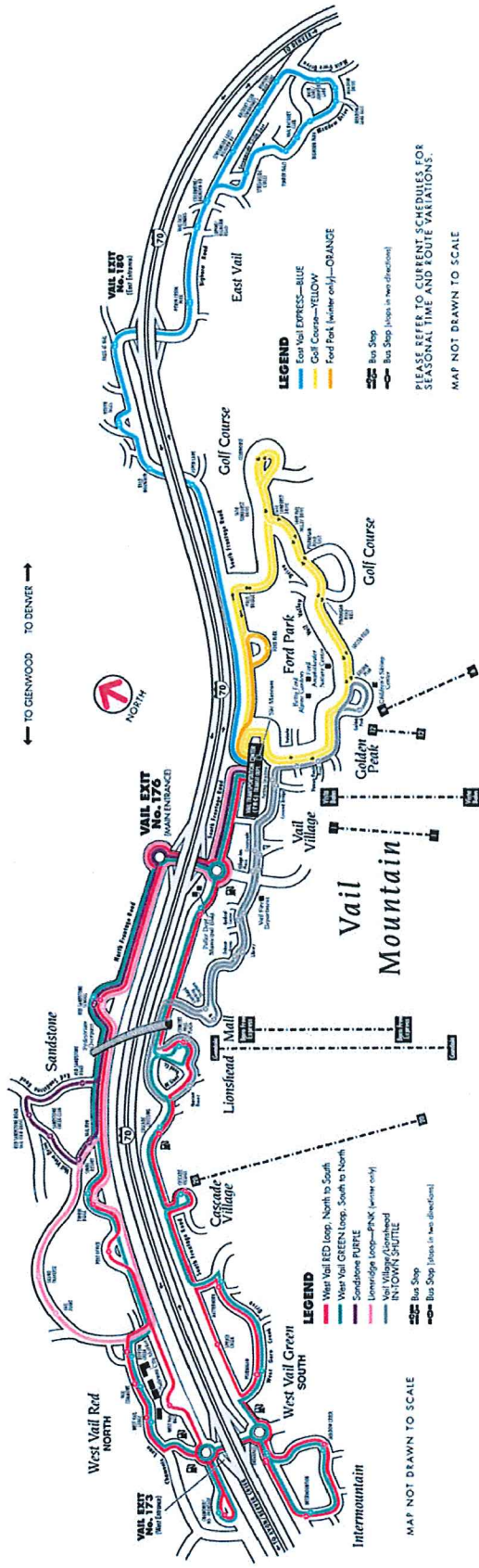
The Service

The regional transit service provided by RFTA serves the communities of Aspen, Snowmass Village, Pitkin County, Basalt, a portion of Eagle County, Carbondale, Glenwood Springs and New Castle. RFTA provides commuter bus service from Aspen to Glenwood Springs (RFV), Glenwood to Rifle (Hogback), intracity service in Aspen and Glenwood Springs, ski shuttle service to the four Aspen Skiing Company ski areas, Maroon Bells Guided Bus Tours, and a variety of other seasonal services. The service currently operates a fleet of over 82 vehicles, carrying an estimated 4.5 million passengers annually. The agency also manages the Rio Grande Trail which extends from Glenwood to Aspen, and serves 10 communities and three counties with transit. RFTA recently opened the first rural bus rapid transit system in the nation. Due to its commitment to environmental preservation, the system uses Biodiesel fuel in all of its fleet of diesel power vehicles including the hybrid buses, and ethanol in its gasoline vehicles.⁹

⁸ Eagle County, ECO Transit History Web site.

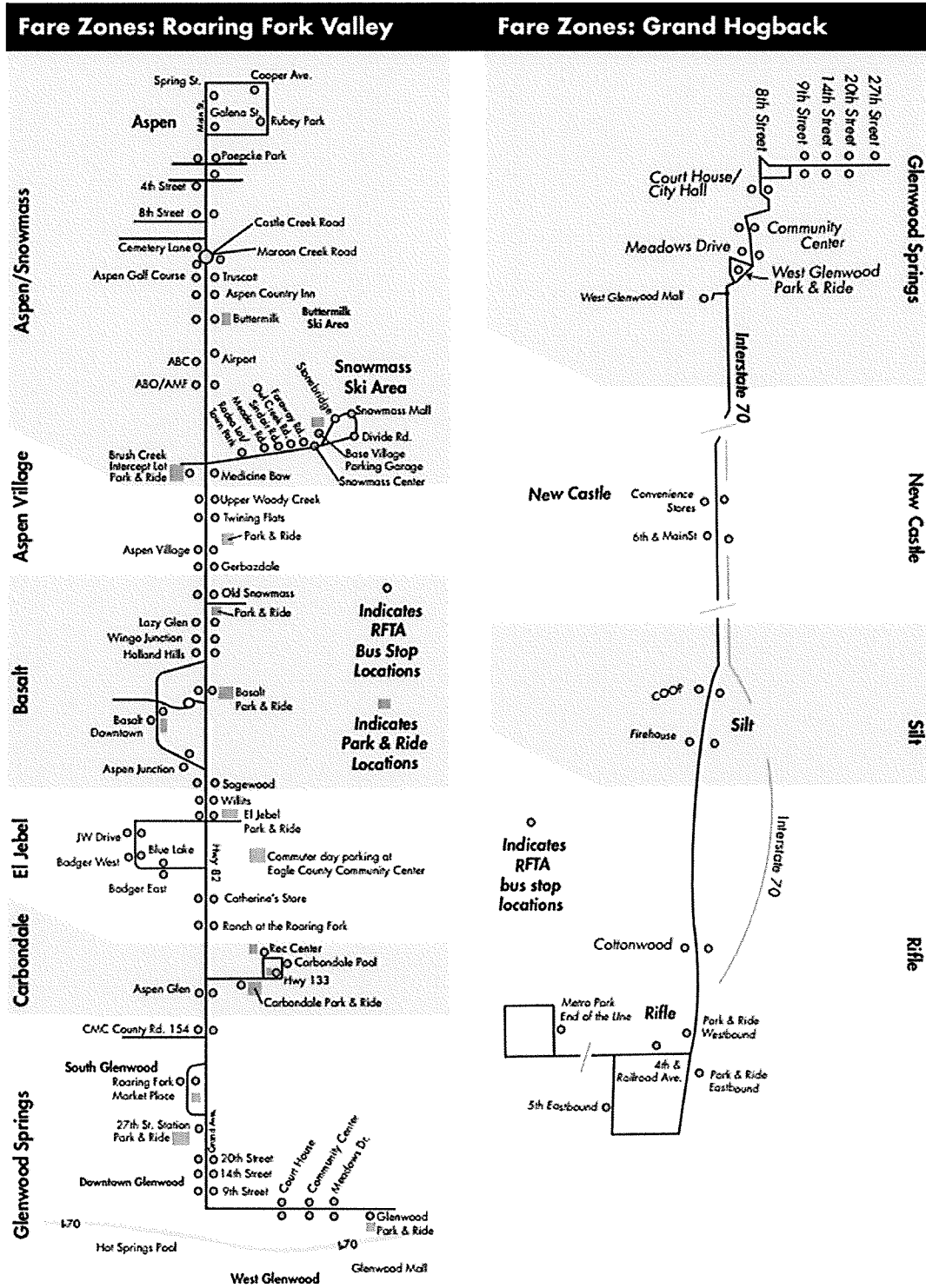
⁹ Roaring Fork Transportation Authority Web site.

Figure 6 Town of Vail Transit System Routes



Source: Eagle County, ECO Transit History Web site

Figure 7 Roaring Fork Transportation Authority Routes



Source: Roaring Fork Transportation Authority Web site

Evolution of the System

RFTA was formed by the City of Aspen and Pitkin County as an intergovernmental agreement in 1983 to establish a transit system to combine resources and achieve economies of scale. Before the formation of the RFTA, the City of Aspen operated city routes and skier shuttles, while Pitkin County provided commuter services between Aspen and El Jebel.

The initial board was made up of five members appointed by the City of Aspen and the County. Pitkin County was responsible for issuing the debt of the RFTA along with its accounting. To further cement the concept of County and City cohesiveness, RFTA employees were considered both employees of Pitkin County and the City of Aspen.

As the demand for regional transit services increased, it necessitated the expansion of the original organizational structure. In 2000, the voters of the RFV approved the establishment of RFTA. The authority initially encompassed the City of Glenwood Springs, Town of Carbondale, Town of Basalt, Town of Snowmass, City of Aspen, Pitkin County and Eagle County. The agency and authority merged into one entity, RFTA, with the purpose of maintaining and improving regional transit services. In 2004, the City of New Castle joined RFTA.

In November 2008, the authority passed a 0.4 percent sales tax increase to raise funds for the implementation of a Bus Rapid Transit (BRT) system. Implemented in 2013, the BRT Service (VelociRFTA) became the nation's first rural bus rapid transit system.

ECO Transit and RFTA are currently exploring the possibility of establishing a connecting route between Glenwood Springs and Gypsum, thus connecting the Aspen/Snowmass area to the Vail Valley.¹¹

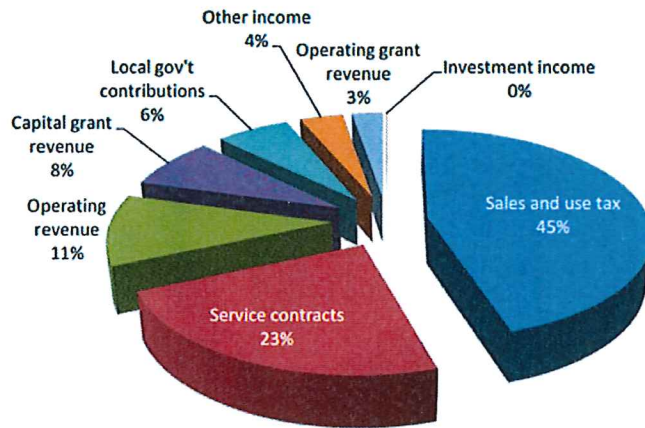
Funding

RFTA relies on diverse funding sources with the two largest sources being local sales taxes and service contracts. Notably, it was a regional¹² sales tax approved with the creation of RFTA in 2000 that funded the initial expansion and reconfiguration of transit services. RFTA added to the initial regional sales tax levy with a 2008 ballot measure. The service contract with the Aspen Skiing Company primarily funds the skier shuttle that connects Aspen with Snowmass Village. RFTA also receives operating and capital grants from the Federal Transit Administration and the Colorado Department of Transportation. At this time RFTA is considering a property tax levy to fund additional capital equipment, perhaps including a light rail system connecting downtown Aspen to an intercept parking and transit hub just outside the City.

¹¹ Roaring Fork Transportation Authority, 2014 Budget.

¹² Sales tax implemented by all jurisdictions in the Roaring Fork Valley, excluding Garfield County.

Figure 8 2014 Estimated Revenue Composition



Noted Benefits

- Commuter-oriented transit routes provide resort employees with low cost alternative to automobile travel, especially given the “long haul” required given the region’s live/work patterns.
- RFTA’s transit services have substantially reduced parking demand and the ability to direct valuable real estate to more productive uses. In the case of Aspen, current levels of visitation and employment would simply be impossible without transit service as there are no sites for additional parking lots or structures.
- Transit provides the ability to more efficiently and cost effectively move skier/boarders between major resort nodes (e.g., Aspen and Snowmass) and avoids related vehicle congestion and improves utility of skier capacity at the individual mountain portals.

ECONOMIC BENEFITS OF THE TRANSIT VISION SERVICE

Transit is known to offer a range of economic benefits to a local economy and provides some unique benefits to destination resort areas. Numerous studies documenting these benefits have been prepared in various locales and as academic or government agency studies. While the range and degree of economic benefits vary greatly depending upon local circumstances, following regional economic practice, benefits are typically organized into three categories:

- Direct Economic Benefits
- Indirect Economic Benefits
- Induced Economic Benefits

Direct Economic Benefits

Direct economic benefits accrue primarily to the users and providers of the system via the operations of the system. The economic and social services made accessible by transit—employment, human investment, health, social services, shopping, entertainment/community, and visits to friends/relatives—are each associated with direct users, the riders, who receive such direct economic benefits of the system. Also, the operators and administrators of this system, their jobs, and related resources, are direct beneficiaries. These benefits can be local, regional, or national.

In the case of the Vision Plan transit improvements, direct benefits include cost savings to those riding transit by comparison to driving private vehicles, as well as improved health, safety and mobility of those dependent upon transit. Direct benefits also include expenditures necessary to create, operate, and maintain the transit improvements insofar as the funding for these improvements and services derives, in one manner or another, from outside the region (e.g., from visitor-based expenditures, federal grants, etc.).

A summary of the direct economic benefits of the *Transit Vision* is shown on **Table 11**, which indicates a total direct economic benefit of \$2.7 million annually. These benefits are distributed as follows:

- 42 percent accruing to additional local economic activity (retail sales, rents, etc.) created by the transit-related expenditures in the region (driver salaries and benefits, etc.), insofar as funding of these expenditures derive from sources beyond the region (i.e., visitor expenditures, State and Federal funding, etc.). A conservative estimate of this proportion has been applied. Depending on the actual mix of funding sources this benefit could be higher.
- 38 percent accruing to riders (residents and visitors) who experience lower transportation costs and other benefits of riding transit.
- 20 percent accruing to resorts and lodging properties who have the opportunity to lower costs for vehicle parking capacity and operations.

Table 11 Summary of Direct Benefits

Item	Annual Amount Saved	Table Reference
Reduced Automobile Costs	\$878,901	Table 12
Reduced Capital Costs of Parking Construction	\$540,000	Table 14
Health Benefit	\$108,925	Table 15
Reduced Property Damage	\$8,812	Table 17
Reduced Damage to Life		
Fatalities	\$52,134	Table 19
Injury	(\$25,452)	Table 20
Subtotal Reduced Damage to Life	\$26,682	
Operating Expenditures potentially funded by Visits	\$1,133,333	[1]
Total	\$2,696,652	

Source: EPS.

[1] Transit Vision Cost Estimate, LSC Transportation Consultants, July 2013, adjusted by EPS to reflect expected level of funding generated by visitors or otherwise external to the region.

Saved Rider Automobile Costs

Shifting to mass transit modes of travel allows new transit riders to save money through reduced fuel expenditures and automobile maintenance costs. To the extent that expanded transit service allows households to reduce the actual number of automobiles owned, transit riders further benefit from the reduced cost of vehicle ownership. These estimated savings are shown in **Table 11**, based on the total estimated reduction in automobile vehicle miles traveled, and the operations and ownership costs computed in **Table 12**.

Table 12 Estimated Automobile Operating and Ownership Cost Savings

Route/Service	Growth in Annual Passenger Trips	Percent Shifting from Automobile	Average Vehicle Occupancy	Avoided Automobile Trips (Rounded)	Average Auto Trip Length (Miles)	Avoided Auto Annual VMT (Rounded)	Average Annual Operating Cost Savings (Rounded)	Average Annual Ownership Cost Savings (Rounded)	Total Ownership and Operating Cost Savings
<i>Assumption</i>							\$0.2042 per mile	\$0.4039 per mile [1]	\$0.6081 per mile [1]
Tahoe City - Truckee	66,832	90%	1.92	40,700	8.8	358,200	\$73,100	\$144,700	\$217,800
Truckee - Crystal Bay	95,390	90%	1.92	44,700	8.7	388,900	\$79,400	\$157,100	\$236,500
Tahoe City - Crystal Bay	123,029	90%	1.92	57,700	7.7	444,300	\$90,700	\$179,500	\$270,200
West Shore	42,064	90%	1.92	19,700	6.2	122,100	\$24,900	\$49,300	\$74,200
Truckee - Donner Summit	4,131	90%	1.92	1,900	9.2	17,500	\$3,600	\$7,100	\$10,700
Truckee - Local	31,866	80%	1.42	18,000	2.2	39,600	\$8,100	\$16,000	\$24,100
Truckee DAR	5,762	100%	1.42	4,100	3.5	14,400	\$2,900	\$5,800	\$8,700
Incline Village - Crystal Bay	21,592	90%	1.92	10,100	4.0	40,400	\$8,200	\$16,300	\$24,500
Supplementary Placer DAR Van	3,546	100%	1.42	2,500	8.0	20,000	\$4,100	\$8,100	\$12,200
Total	414,212			199,400		1,445,400	\$295,000	\$583,900	\$878,901

Source: LSC Transportation Consultants, Inc.; AAA; and EPS.

[1] Assumes 15,000 average annual miles.

op costs

Table 13 Costs of Vehicle Ownership

	Average of Small, Medium, and Large Sedans [1]		
	10,000 miles /yr	15,000 miles /yr	20,000 miles /yr
Operating Costs			
gas	\$0.1445	\$0.1445	\$0.1445
maintenance	\$0.0497	\$0.0497	\$0.0497
tires	\$0.0100	\$0.0100	\$0.0100
Operating Cost per Mile	\$0.2042	\$0.2042	\$0.2042
Operating Cost per Year	\$2,042	\$3,063	\$4,084
Ownership Costs			
full-coverage insurance	\$1,029	\$1,029	\$1,029
license, registration, taxes	\$611	\$611	\$611
depreciation	\$3,305	\$3,571	\$3,802
finance charge	\$848	\$848	\$848
Ownership Cost per Year	\$5,793	\$6,059	\$6,290
Total cost per year (2014\$)	\$7,835	\$9,122	\$10,374
Total cost per mile (2014\$)	\$0.7835	\$0.6081	\$0.5187

"driving"

Source: AAA "Your Driving Costs" 2014 Edition.

[1] Average of sedans used for City commuters. SUV and minivans excluded.

Parking Facility Construction

The capital cost to construct parking facilities is a significant expense for resort developers and operators, which must be largely internalized and may impact room rates and other charges paid by visitors and guests. To the extent that transit riders reduce the demand for structured parking, developers and operators are able to construct fewer parking spaces, at a significant savings. **Table 14** estimates the capital costs saved in avoided parking construction due to increased transit ridership will total approximately \$5.4 million. Annualized over 10 years, this represents a savings of approximately \$540,000 a year.

In addition, expanded transit services will generate limited parking savings benefitting visitors to North Lake Tahoe utilizing transit services who would otherwise have to pay for parking. Because few areas in North Lake Tahoe charge for parking, this analysis does not quantify visitor parking savings. While not all visitor destinations will charge for parking, visitors (particularly winter travelers) will also reap other convenience and travel time savings benefits not accounted for here.

Table 14 Estimated Parking Cost Savings

Item	Amount
Reduction in Required Parking Spaces [1]	
Squaw Valley	80
Northstar	100
Total Parking Space Reduction	180
Capital Cost per Space [2]	\$30,000
Total Capital Parking Costs	\$5,400,000
Annualized Costs (Over 10 Years)	\$540,000

[1] North Tahoe Truckee Transportation Vision Plan Environmental Benefits, LSC Transportation Consultants.

[2] EPS estimate.

Health Benefits

Empirical research in the United States and throughout the world has thoroughly documented the negative impacts of physical inactivity and the associated benefits of exercising in terms of reduced morbidity and mortality rates. Physical inactivity contributes to lost productive working time, increased employer health care costs, and other costs to society. The U.S. Surgeon

General recommends at least 30 minutes of physical activity at least 5 days a week. By walking or biking from transit stops to their ultimate destination, research demonstrates that the use of public transportation can satisfy this requirement for many riders by itself. Transit users in this country walk a median of 19 minutes a day to and from transit, and 29 percent walk upwards of 30 minutes a day.¹³

The cost of transit investments can therefore be partially offset by the health savings generated. Several studies have estimated the medical costs to society of physical inactivity, and on average the annual costs of physical inactivity in the United States are estimated to be \$1,374 per person.¹⁴ Utilizing this figure, EPS computed the estimated health savings associated with increased transit usage assuming that a portion of new riders regularly riding transit (i.e., work riders) are “new exercisers.” By virtue of introducing additional walking or biking to their daily routines, these new exercisers are anticipated to generate nearly **\$110,000 in annual health care savings, as** shown in **Table 15**.

Table 15 Estimated Avoided Health Costs

Season	Weeks per Season	New Work Riders
Summer	17	77
Winter	13	424
Spring/ Fall	22	65
Weighted Average Weekly New Riders [1]		158
Assumed Percent of New Riders Now Exercising		50%
Avoided Health Costs per New Exerciser [2]		\$1,375
Total Avoided Health Costs		\$108,925

health

[1] LSC Transportation Consultants.

[2] Estimated costs per physically inactive person derived from Pratt et al; "The Cost of Physical Inactivity: Moving into the 21st Century, November 2012. Uses average of costs reported by U.S. based studies on the costs of physical inactivity. Costs inflated to 2014\$ using the CPI for medical care.

¹³ "Walking to Public Transit: Steps to Help Meet Physical Activity Recommendations", LM Besser, 2005. http://www.cdc.gov/healthyplaces/articles/besser_dannenberg.pdf.

¹⁴ "The Cost Of Physical Inactivity: Moving Into The 21st Century", Pratt et al, 2012. <http://www.epode-international-network.com/sites/default/files/Pratt%20et%20al.%20The%20cost%20of%20physical%20inactivity%20moving%20into%20the%2021st%20century.%20BJSM%202014%5B1%5D.pdf>.

Safety Benefits

Through provision of more convenient, accessible, and efficient services, the *Transit Vision* transit improvements will encourage a shift away from vehicular modes of travel to public transit modes, namely motorbus transit. The safety benefits associated with mass transit modes of travel are quantified by comparing the fatality, injury, and property damage rates of vehicle travel to that of motorbuses. These benefits then are monetized through application of data regarding the statistical value of life, injuries, and property damage.

This analysis calculates fatality, injury, and property damage rates for mass transit based on total passenger miles, utilizing the simplifying assumption that avoided automobile passenger miles are equivalent to increased mass transit passenger miles. Although increased transit ridership will increase the number of persons affected (i.e., injured or killed) when an accident occurs, actual accident rates are not expected to increase directly in proportion to increased passenger miles traveled and may be somewhat overstated. These calculations therefore likely understate the net benefits of shifting travel modes.

Table 16 below offers a comparison of incident, injury, and fatality rates per passenger mile for automobile and motorbus modes of travel. While accident and fatality rates are lower for motorbus travel, injury rates are actually somewhat higher per passenger mile traveled, likely due to the increased number of persons involved in motorbus accidents.

Table 16 U.S. Travel Safety Statistics and Incident Rates

Mode	Automobile		Motor Bus		Difference
	Amount	Rate per 1 M Passenger Miles	Amount	Rate per 1 M Passenger Miles	
Total Vehicle Miles Traveled (Millions)	2,950,402		N/A		
Persons per Vehicle		1.92	N/A		
Total Passenger Miles Traveled (Millions)	5,664,772		17,366		
Incidents	5,337,829	0.942	9,708	0.559	0.383
Injury	2,216,962	0.391	12,585	0.725	(0.333)
Fatality	32,479	0.006	64	0.004	0.002

safety

Source: Bureau of Transportation Statistics, 2011.

Property Damage

U.S. Department of Transportation statistics demonstrate that the incidence of motorbus accidents is lower than that of automobiles, as is the estimated cost of property damage per incident. As shown in **Table 17**, the projected shift from automobile travel to motorbus travel is anticipated to save slightly over \$8,800 in property damage annually.

Table 17 Value of Reduced Property Damage

Route/Service	Avoided Automobile Passenger Miles	Automobile		Transit		Net Benefit	
		Accidents	Total Property Damage	Accidents	Total Property Damage	Accidents	Total Property Damage
	[1]	[2]	[3]	[2]	[4]		
<i>Assumption</i>		<i>0.94 per 1 M Passenger Mile</i>	<i>\$4,990 per vehicle crash</i>	<i>0.56 per 1 M Passenger Mile</i>	<i>\$2,655 per accident</i>		
Tahoe City - Truckee	687,744	0.65	\$3,234	0.384	\$1,021	0.26	\$2,213
Truckee - Crystal Bay	746,688	0.70	\$3,511	0.417	\$1,108	0.29	\$2,403
Tahoe City - Crystal Bay	853,056	0.80	\$4,011	0.477	\$1,266	0.33	\$2,745
West Shore	234,432	0.22	\$1,102	0.131	\$348	0.09	\$754
Truckee - Donner Summit	33,600	0.03	\$158	0.019	\$50	0.01	\$108
Truckee - Local	56,232	0.05	\$264	0.031	\$83	0.02	\$181
Truckee DAR	20,448	0.02	\$96	0.011	\$30	0.01	\$66
Incline Village - Crystal Bay	77,568	0.07	\$365	0.043	\$115	0.03	\$250
Supplementary Placer DAR Van	28,400	0.03	\$134	0.016	\$42	0.01	\$91
Total	2,738,168	2.58	\$12,875	1.53	\$4,063	1.05	\$8,812

Source: U.S. Department of Transportation, LSC Transportation Consultants, and EPS.

[1] Based on VMTs and average persons per vehicle shown in Table 12 for calculation of reduced passenger miles.

[2] See Table 16.

[3] The Economic Impact of Motor Vehicle Crashes 2000, US Department of Transportation, National Highway Traffic Safety Administration. Inflated to 2013\$.

[4] US Dept. of Transportation, Federal Transit Administration, Safety and Security Statistics for Motor Bus Transit Vehicles. <http://transit-safety.volpe.dot.gov/Data/SAMIS.aspx>

Damage to Human Life (Fatalities and Injuries)

Table 18 below offers a summary of the reduced damage to life (fatalities and injuries) benefits resulting from the shift away from automobile travel to motorbus travel as projected by the Vision Plan. As mentioned previously, while injury rates are somewhat higher for motorbus travel, the fatality rate is lower. Given the higher statistical cost of fatalities, as shown in **Table 19**, the Vision Plan transit improvements are expected to generate a net benefit in terms of **reduced damage to human life of approximately \$27,000 annually**.

Tables 19 and **20** offer additional detail regarding the calculation of the value of reduced fatalities and injuries, respectively.

Table 18 Net Statistical Value of Reduced Damage to Life

Route	Net Value of Reduced Fatalities	Value of Reduced Injuries	Total Reduced Damage to Life Benefits
<i>Table Reference</i>	<i>Table 19</i>	<i>Table 20</i>	
Tahoe City - Truckee	\$13,094	(\$6,393)	\$6,702
Truckee - Crystal Bay	\$14,217	(\$6,941)	\$7,276
Tahoe City - Crystal Bay	\$16,242	(\$7,929)	\$8,313
West Shore	\$4,464	(\$2,179)	\$2,284
Truckee - Donner Summit	\$640	(\$312)	\$327
Truckee - Local	\$1,071	(\$523)	\$548
Truckee DAR	\$389	(\$190)	\$199
Incline Village - Crystal Bay	\$1,477	(\$721)	\$756
Supplementary Placer DAR Van	\$541	(\$264)	\$277
Total	\$52,134	(\$25,452)	\$26,682

"safety_net"

Table 19 Statistical Value of Reduced Vehicle Fatalities

Route	Automobile Passenger Miles Avoided	Fatality Rate Reduction	Total Statistical Value of Reduced Fatalities
	[1]	[2]	[3]
<i>Assumption</i>		<i>0.002 per 1 Million Passenger Miles</i>	<i>\$9,295,782 per fatality</i>
Tahoe City - Truckee	687,744	0.00141	\$13,094
Truckee - Crystal Bay	746,688	0.00153	\$14,217
Tahoe City - Crystal Bay	853,056	0.00175	\$16,242
West Shore	234,432	0.00048	\$4,464
Truckee - Donner Summit	33,600	0.00007	\$640
Truckee - Local	56,232	0.00012	\$1,071
Truckee DAR	20,448	0.00004	\$389
Incline Village - Crystal Bay	77,568	0.00016	\$1,477
Supplementary Placer DAR Van	28,400	0.00006	\$541
Total	2,738,168	0.00561	\$52,134

fatal

Source: LSC Transportation Consultants, U.S. Department of Transportation, and EPS.

[1] See Table 12 for calculation of reduced VMT.

[2] See Table 16.

[3] U.S. Department of Transportation, Value of Statistical Life (VSL) 2013 Revised Guidance.

Table 20 Estimated Value of Reduced Passenger Car Injuries

Route	Automobile Passenger Miles Reduction	Net Injury Reduction	Value of Injury Reduction
	[1]	[2]	[3]
<i>Assumption</i>		-0.33 per 1 M VMT	\$27,887 per injury
Tahoe City - Truckee	687,744	(0.229)	(\$6,393)
Truckee - Crystal Bay	746,688	(0.249)	(\$6,941)
Tahoe City - Crystal Bay	853,056	(0.284)	(\$7,929)
West Shore	234,432	(0.078)	(\$2,179)
Truckee - Donner Summit	33,600	(0.011)	(\$312)
Truckee - Local	56,232	(0.019)	(\$523)
Truckee DAR	20,448	(0.007)	(\$190)
Incline Village - Crystal Bay	77,568	(0.026)	(\$721)
Supplementary Placer DAR Van	28,400	(0.009)	(\$264)
Total	2,738,168	(0.913)	(\$25,452)

injury

Source: LSC Transportation Consultants, U.S. Department of Transportation, and EPS.

[1] See Table 12 for calculation of reduced VMT.

[2] See Table 16.

[3] Assumes all injuries are minor based on the values reported in "Treatment of the Value of Preventing Fatalities and Injuries in Preparing Economic Analyses - 2013 Revisions."

Transit System Operating Expenditures

The Vision Plan would expand on existing transit services provided by TART, City of Truckee, and the TMA by adding new buses and equipment and increased and reconfigured service routes. The majority of costs for these improvements will be for the increased operating hours of the bus fleet, with driver salary and benefits being the largest component of operating costs. It is estimated, based upon the *Transit Vision* service plan, that an additional 39 "full time equivalent" drivers will be needed. The incremental cost of these additional drivers, in addition to other incremental costs, is estimated to cost just over \$3 million annually.¹⁵

As noted above, the direct economic effect of these additional local expenditures depends, in large measure, on how the costs are funded. Assuming that the funding is a new source derived entirely or largely from visitor expenditures (transient occupancy tax or other excise taxes) or local taxes with a substantial visitor contribution (sales tax), new State or Federal grant funding, or other external sources, the expenditures will have a direct economic benefit, creating new

¹⁵ Personal communication, Gordon Shaw.

jobs and increasing household incomes and expenditures in the North Lake Tahoe/Truckee area. For purposes of analysis is assumed that funding will be derived from a sales tax measure applicable to the area, although it is likely that the revenue will likely be derived from a variety of sources, including State and federal grant funding and that alternative funding, such as an increase in the transit occupancy tax, may be the selected key revenue service. In any event, research indicates that at the present time taxable visitor retail expenditures equal nearly \$230 million. A ½ cent sales tax override (the common levy for “self-help” county tax measures in California) would thus generate approximately \$1.1 million. This additional visitor-generated revenue, deployed to fund the *Transit Vision* would constitute a net economic benefit for the area.

Indirect Economic Benefits (“multiplier effect”)

Indirect benefits accrue to those who are affected by the transit-related activities of the direct benefits (and beneficiaries). Thus, for the employees who are riders of rural public transit (direct beneficiaries), their employers are impacted as indirect beneficiaries since these employers work hours and reliability of attendance are likely affected by the system (either positively, e.g., indirect benefits, or negatively, e.g., from any indirect dis-benefits). Likewise, some service providers, like health or social services, may gain more customers or their customers may demand more services via the access provided by transit — leading to indirect economic benefits:

- Increased disposable income of employee and student families
- Redirected visitor expenditures and behavior
- Increased local employment and expenditures
- Increased feasibility of development given lowered parking costs

These “indirect” effects are typically measured by estimating the “multiplier effect” (how these redirected dollars ripple through the local economy as dollars that might have otherwise “escaped” the region are captured locally). The components of indirect benefits likely to occur in the North Lake Tahoe/Truckee area are described below.

Increased disposable income of employee and student families

Households that save money related to automobile commute costs have the opportunity to redirect these funds to other discretionary spending. Research suggests that low or moderate income households have a high propensity to spend additional discretionary income whether coming in the form of increased income or lower costs for other household expenditures, such as transportation cost savings afforded by transit service. While the direct household expenditure savings are modest by comparison to the local economy, it is likely that there will be additional expenditures for goods and services provided by local businesses, leading to the multiplier effect as these sales reverberate through the economy.

Redirected visitor expenditures

In a manner similar to households, visitors who save money related to avoiding automobile trip costs during their visit to the area have the opportunity to redirect a portion of these funds to other discretionary spending, including recreation services, retail goods, and eating and drinking and entertainment.

Increased local employment and related local household expenditures

The expenditures required to provide the *Transit Vision* improvements will result in increased local employment of approximately 39 full-time jobs, primarily involving new transit bus drivers along with some additional administrative and maintenance staff. A portion of the household disposable income from these new or expanded jobs will be spent in the area on housing, retail goods and services, and professional services.

The “multiplier effects” resulting from these three indirect benefits typically range from 50 percent to 100 percent (1.5 to 2.0) of the direct benefits, depending upon the size and diversity of the local economy being considered. Given the relatively small size of the North Lake Tahoe/Truckee area and the leakage of sales and other economic activity to surrounding regions, it is likely that the multiplier effect will be at the lower end of this range. With direct benefits estimated to be \$2.7 million the indirect benefit to the area would be in the range of \$1.3 million.

Distribution of Direct and Indirect Economic Benefits

The direct and indirect economic benefits of expanded and free transit service will accrue to portions of the study areas following where the transit service “nodes” and also concentrations of economic activity. As part of this analysis a methodology was developed to estimate these economic benefits by key sub-areas North Lake Tahoe area. These areas, shown on **Map 2**, include:

- Lakeside Placer
- Truckee
- Squaw Valley/Alpine Meadows
- Northstar/Martis
- Donner Summit

Benefits were allocated to these sub-areas based on the nature of the benefit category and the concentrations of beneficiary population. The allocation method is shown in **Table 21**. As shown, the allocation falls into two 2 categories: benefits to transit users/riders and benefits associated with increased economic activity. Benefits to transit users/riders are measured by geography based on total trip ends originating and ending within each geographic area, as trip ends provide a reasonable proxy by which to measure where transit users reside, work, and visit. TOT and sales tax revenues generated within each geographic area provide the basis to allocate benefits associated with increased economic activity.

Map 2 Subarea Map

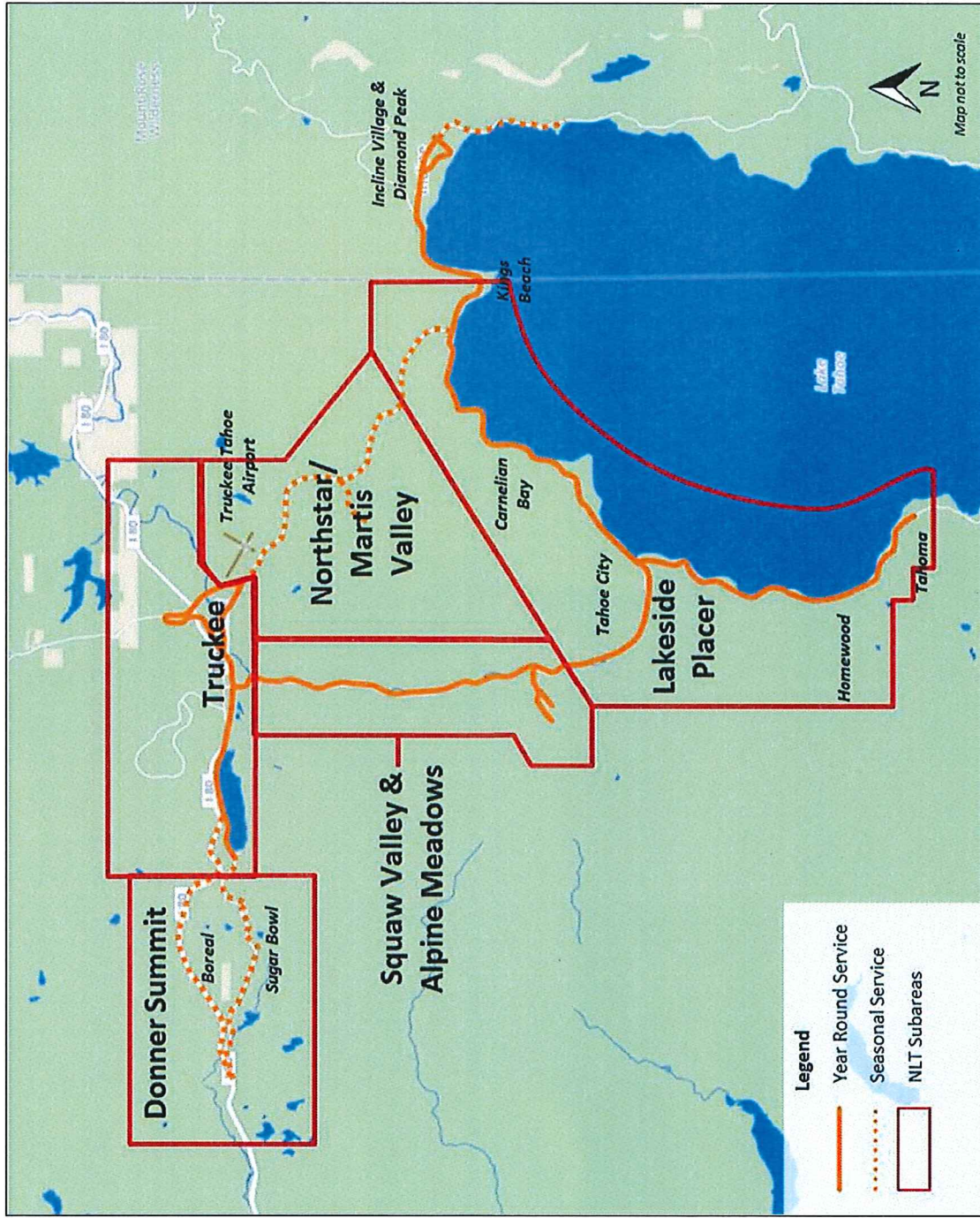


Table 21 Geographic Distribution of Benefits—Cost Allocation Approaches

Geography	Selected General Fund Revenues				Trip Ends							
	TOT [1]		Sales Tax [2]		Total TOT and Sales Tax		Destination		Total Trip Ends			
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent		
Lakeside Placer	\$4,803,408	36%	\$1,705,703	34%	\$6,509,111	36%	154,200	56%	101,900	37%	256,100	46%
Squaw Valley/Alpine Meadows	\$3,347,036	25%	\$446,994	9%	\$3,794,030	21%	14,900	5%	32,300	12%	47,200	9%
Northstar/Maritis	\$3,187,887	24%	\$397,715	8%	\$3,585,602	20%	16,000	6%	38,100	14%	54,100	10%
Truckee [3]	\$1,650,000	12%	\$2,395,601	48%	\$4,045,601	22%	82,600	30%	96,300	35%	178,900	32%
Donner Summit [4]	\$288,198	2%	NA	0%	\$288,198	2%	8,500	3%	8,600	3%	17,100	3%
Total	\$13,276,529	100%	\$4,946,013	100%	\$18,222,542	100%	276,200	100%	277,200	100%	553,400	100%

Source: Placer County and LSC Transportation Consultants.

[1] FY 2013-14 TOT revenues reported by Placer County except as otherwise noted.

[2] 2013 Sales Tax revenues reported by Placer County except as otherwise noted.

[3] Town of Truckee TOT and sales tax revenues based on estimated actual revenues for FY 2013/14, as reported in FY 2104/15 Budget document.

[4] A portion of this area is located in Placer County and a portion is located in Nevada County. Placer County provided TOT revenue information for the Placer County portion. Nevada County TOT revenue estimated assuming that approximately 50% of the unincorporated area TOT revenue generated is generated by the Donner Summit area. Sales Tax revenue estimates for the Donner Summit area are not available.

tax

Table 22 Allocation of Direct and Indirect Benefits by Geography

Geography	Direct Benefits							Subtotal Direct Benefits	Indirect Benefits	Total Direct and Indirect Benefits	Percent of Total
	Reduced Automobile Costs	Reduced Capital Costs of Parking	Health Benefits	Reduced Property Damage	Reduced Damage to Life	Operating Expenditures	Sales Tax Revenues				
Allocation Basis	Total Trip Ends	Reduction in Required Parking Spaces	Total Trip Ends	Total Trip Ends	Total Trip Ends	TOT and Sales Tax Revenues					
Lakeside Placer	\$406,734	N/A	\$50,408	\$4,078	\$12,348	\$404,828	\$878,395	\$448,324	\$1,326,719	33%	
Squaw Valley/Alpine Meadows	\$74,962	\$240,000	\$9,290	\$752	\$2,276	\$235,966	\$563,246	\$117,487	\$680,733	17%	
Northstar/Martis	\$85,921 ¹	\$300,000	\$10,648	\$861	\$2,608	\$223,003	\$623,042	\$104,535	\$727,577	18%	
Truckee	\$284,126	N/A	\$35,213	\$2,849	\$8,626	\$251,612	\$582,425	\$629,655	\$1,212,080	30%	
Donner Summit	\$27,158	N/A	\$3,366	\$272	\$824	\$17,924	\$49,545	\$0	\$49,545	1%	
Total Estimated Benefits	\$878,901	\$540,000	\$108,925	\$8,812	\$26,682	\$1,133,333	\$2,696,653	\$1,300,000	\$3,996,653	100%	

Benefits to transit users/riders include safety (reduced property damage and damage to life), reduced automobile costs, and health benefits. Sales tax and TOT revenues provided the basis to allocate benefits associated with transit system operating expenditures, and indirect benefits. Transit system operating expenditures were allocated based on TOT and sales tax revenues as it is anticipated that operating costs will be funded through increased visitor generated tax revenues. Indirect benefits are allocated based on sales tax revenues because those benefits will largely be received by retail and service businesses in the area that will experience increased business activity derived from the redirected or increased household incomes and redirected visitor expenditures. Reduced capital costs for parking are allocated based on the location of planned resort expansions that will benefit from parking cost reductions.

Benefit Cost Analysis Conclusions

A common way in which economic benefit estimates are used in public investment decision making is to compare the estimated annual benefits to the investments and annual funding necessary to pay for the infrastructure or services. This measure is often referred to as the "benefit/cost ratio" or "return-on-investment." In summary, the analysis of the economic benefits of the *Transit Vision* described below suggests that direct economic benefits may equal \$2.7 million and indirect benefits (at the low end of the range) would equal \$1.3 million for a total of \$4.0 million. Given estimates that the *Transit Vision* would cost an additional \$3 million (over and above existing transit services costs), a benefit/cost ratio that exceeds 1.5 is likely (considering other benefits not quantified here) justifying the public investment even without considering the potential induced economic benefits. Such performance indicators can be helpful in obtaining State and federal grants, applications for which often require performance indicators (e.g., federal TIGER grants).

Induced Economic Benefits

Induced benefits accrue to regional residents and businesses over and above direct or indirect benefits as quantitative and/or qualitative growth in the region, attributable to increased transit service in concert with other capacity and resort improvement, occurs. If transit services help to improve the environment (i.e., reduce congestion) and accessibility (as they have repeatedly been shown to do in a resort areas) it will be conducive to influencing people to visit or move to the area. If the transit system serves businesses by transporting their employees, this may contribute to lower operating costs and access to a greater pool of employees fostering business expansion. Specific induced economic benefits of transit in a resort community include the following:

- Increased attractiveness of the resort to visitors leading to increased visitation and length of stay.
- Increased sales and employee access for local retail businesses, lodging properties, recreation facilities and services, and food and beverage businesses leading to improved business performance.
- Increased private investment in resort facilities (e.g., increases in lodging capacity) as improved business performance and additional visitor sales occur.

These induced economic benefits are ultimately caused by a range of factors including the region's market potential, its resort facilities' capacity, and the quality and quantity of its recreation and leisure attractions. It appears that market potential (growth of visitor demand from key visitor markets, overall recreation and leisure industry trends, and the wealth of local attractions and amenities) for the North Lake Tahoe/Truckee area is conducive to such growth. Given this growth potential, increasing resort capacity, including transportation capacity offered by the *Transit Vision's* improved and free transit service, has the potential to attract new visitors and lengthen the duration of the average visitor stay. As example of these induced benefits, it is widely agreed that the expansion of transit services in the peer resort communities has contributed, and continues to contribute to their economic success, expansion, and quality of life.

Increased attractiveness of the Resort communities to visitors

As noted in the discussion of the peer resorts, transit service, as well as other alternatives to automobile use including bikeways and improved pedestrian access and facilities, have become standard features of destination resorts, and by extension, the expectations of destination resort visitors. Even with the dispersed pattern of resort destinations within the North Lake Tahoe/Truckee area it is likely that the *Transit Vision's* improved and free transit and other alternative transportation modes will contribute to the area's attractiveness and competitiveness with other destination resort communities. It appears that the regional and national winter sports markets will remain stable or may even decline in future years. Despite these potential changes in visitor recreation activities, North Lake Tahoe's wide diversity of recreational attractions and its strong summer and comparatively strong shoulder seasons create growth opportunities.

According to the recent report by Dean Runyan¹⁶ the North Lake Tahoe/Truckee area reached 2.6 million annual overnight visitor-days in 2012. Annual expenditures by these overnight guests total \$426 million, including retail, lodging, recreation, and eating and drinking expenditures, as shown in **Table 23**. While it is difficult to precisely estimate the increase in visitors (and related visitor spending) that may be generated by the *Transit Vision* transit service improvements and the elimination of fares, there is likely to be an increase in visitor days, achieved over time, proportional to the number of visitors using the system. Ridership forecasts for the *Transit Vision* include 218,000 visitor trips (boardings) or 109,000 visitor round trips.¹⁷ It is therefore estimated that the induced economic activity that could be generated by increased visitation and associated visitor spending will be in the range of \$18 million annually, as shown on **Table 24**.

¹⁶ The Economic Significance of Travel to the North Lake Tahoe Area, Dean Runyan, November 2013.

¹⁷ Ibid.

Table 23 Overnight Visitor Counts and Expenditures, 2012

Item	Number of Visitor Days	Current Annual Spending (2012)	Assumed Spending Per Day
Visitor by Accommodation			
Hotel / Motel / Bed & Breakfast	876,000	\$204,000,000	\$233
Rented Condo / Home	775,000	\$158,000,000	\$204
Private / Vacation Home	932,000	\$64,000,000	\$69
Subtotal by Accommodation	2,583,000	\$426,000,000	\$165
Visitor Spending by Category [1]			
Accommodation	N/A	\$99,067,734	\$38
Food & Beverage	N/A	\$102,827,586	\$40
Recreation	N/A	\$146,109,606	\$57
Retail & Other	N/A	\$77,995,074	\$30
Total Visitor Spending	N/A	\$426,000,000	\$165

Source: Dean Runyan Associates; EPS.

Table 24 Induced Economic Activity Generated by Higher Visitation

Item	Amount
Estimated New Visitor Days [1]	109,000
Percent of Existing Overnight Visitor Days	4.22%
New Annual Visitor Expenditure by Category	
Accommodation	\$4,180,559
Food & Beverage	\$4,339,221
Recreation	\$6,165,678
Retail & Other	\$3,291,314
Total New Expenditure	\$17,976,771

Source: Dean Runyan Associates; LSC Transportation Consultants; EPS.

[1] Estimated new visitor days as a result of the Transit Vision provided by LSC Transportation Consultants.

Additional improvements to transit service, particularly those improvements linking the local service to regional transportation hubs and services, would increase this induced benefit proportionally.

Increased visitor expenditures generated by the increased attractiveness of the resort community will confer direct and indirect economic benefits on local retail businesses, lodging facilities and recreation facilities, offering opportunities for business expansion. New business expansion also has multiplier effects as increase employment and income generates additional consumer demand fueling further economic expansion.

Induced benefits (increased visitation due to improved mobility, lower costs for resort guests, and general attractiveness of the resort) will accrue to lodging and resort businesses and to retail and service businesses frequented by the guests. These increased visitor expenditures generated by the increased attractiveness of the resort community will confer additional direct and indirect economic benefits on local retail businesses, lodging facilities and recreation facilities, offering opportunities for business expansion. New business expansion also has multiplier effects as employment and income increases, generating additional consumer demand and fueling further economic expansion.

Key elements of the resort economy that will benefit from this induced consumer demand include retail businesses, lodging, and recreation facilities, as follows:

- Increased performance of local retail businesses. Insofar as greater expenditures occur in local businesses related to resident or visitor cost savings, these expenditures will improve performance of these existing businesses leading to expansion of these businesses providing additional goods and services to residents and visitors. One of the advantages of resort communities is that visitors create demand for a much wider range of goods and services than would be available to the resident population alone, demonstrated by the visitor spending impacts posited above. There are ample opportunities for improvements to retail and service businesses in Truckee, North Lake Tahoe and other commercial areas.
- Increased demand for lodging and recreation facilities. An improved visitation market will generate increased overnight stays for North Lake Tahoe lodging facilities both from the attraction of new visitors and increased duration of visitor stays. These visitors will generate new demand for entertainment and recreational services, which, when coupled with retail demand documented above, will create opportunities for resort upgrading and expansion.

As has been well documented in this report and elsewhere, substantial new investment in accommodations in the North Lake Tahoe area (particularly the Basin) have not been made in decades, stymied largely by development feasibility constraints generated by excessive costs, TAU commodity market complexities, and a prolonged and confusing development entitlement process. New investment in lodging facilities will require implementation of key policy initiatives and incentives, including strategic transportation and transit investments. In addition to market opportunities that support investment, transit service also has the potential for lowering development costs insofar as parking requirements can be lowered proportional to the reduced parking demand from transit trips versus automobile trips. Such construction cost reductions along with other cost controls are often the key to attracting desired investment. To the extent that these investments, coupled with other policy

interventions, strengthen visitor demand, the feasibility of new accommodations improves proportionately.

Geographic Distribution of Induced Economic Benefits

As is the case with the direct and indirect economic benefits, the induced benefits also concentrate in sub-areas of the Study Area. Given that key beneficiaries of induced economic activity are expected to be local retail and lodging establishments, these induced benefits are apportioned on the basis of total sales tax and TOT revenues generated in the major concentrations of TOT and retail sales activities as shown on **Table 25**. Given that the Lakeside commercial corridor in North Lake Tahoe has the highest concentration of economic activity it follows that it receives the highest proportion of induced economic activity, estimated to be \$6.4 million annually.

Table 25 Geographic Distribution of Induced Benefits

Geography	Induced Economic Activity
<i>Allocation Basis</i>	<i>TOT and Sales Tax Revenues</i>
Lakeside Placer	\$6,421,403
Squaw Valley/Alpine Meadows	\$3,742,907
Northstar/Martis	\$3,537,287
Truckee	\$3,991,088
Donner Summit	\$284,315
Total Estimated Benefits	\$17,977,000