



Linking Tahoe: Corridor Connection Plan

Board Adopted: September 2017

Acknowledgement - Linking Tahoe: Corridor Connection Plan

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Glossary - Linking Tahoe: Corridor Connection Plan

AirSage Analytics

Private company that collects and analyzes mobile signaling data about population mobility throughout the study area

AirSage Trip Count

The number of trips made by cellular devices between an origin and a destination

Annual Average Daily Traffic

A measure using primarily in transportation planning and engineering to reflect the total volume of vehicle traffic on a highway or road for a year and divided by 365 days

Basin

For purposes of this study the Basin is defined as the compilation of geography that represents the six corridors enveloping Lake Tahoe

Count

The number of trips, made by people with the given attribute, that started in the given Origin Zone and ended in the given Destination Zone during the Date Range and Time of Day Period

County FIPS Code

Five-digit federal information processing standard (FIPS) code, which uniquely identifies the counties in the United States.

Daily Vehicle Trip Count

Refers to a volume of traffic passing through a given point collected by a transportation agency, such as Caltrans or NDOT. Data may be periodically collected and extrapolated to obtain annual counts divided by 365 days to obtain daily counts

Destination Zone

The zone where the trips ended (e.g., census tract, traffic analysis zone)

End Date

The ending date of the Date Range (YYMMDD)

External - Internal Trip

Trip started outside of the Basin into the Lake Tahoe Basin

External Corridor

One of two project-defined boundaries outside of the Tahoe Basin that captures trips entering the Basin from I-80 or from US50 on the south end of the lake

External Zone

One of five project-defined boundaries created to capture trips made entering the Basin at each of the five entry points

Greenhouse Gas (GHG)

A gas in the atmosphere that absorbs and emits radiation within the thermal range. The process is the fundamental cause of the greenhouse effect that leads to an increase in average Earth temperature. Human activity increases the atmospheric concentration of one of the greenhouse gases, carbon dioxide, resulting in potentially harmful effects on ecosystems, biodiversity and the livelihood of people worldwide

Home Based Worker

Mobile device owner that lives and works in the same location in the study area

Inbound Commuter

Mobile device owner that works inside the study area but lives outside the study area

Internal - External Trip

Trip made from the inside of the Basin to the outside of the Basin

Internal - Internal Trip

Trip made entirely within the Lake Tahoe Basin

Internal Corridor

One of six project-defined boundaries within the Tahoe Basin

Long Term Visitor

Non-resident present in the study area between two and 14 days

Modal Share

Also called mode split. The percentage of travelers using a specific type of transportation (e.g., vehicle, bus, bike, walk, car share) or number of trips using the type of transportation

Mobility Hub

A transit access point offering frequent transit services and seamless multimodal transportation options. May include protection from the elements, washrooms, comfortable waiting areas, retail space, transportation information, parking facilities, car and bike share rentals, and cycling storage facilities within a quality public realm.

Multimodal

Referring to transportation, multimodal is characterized by several different options for movement within an area including, walking, bicycling, riding a bus, driving a car, of car-sharing

Origin Zone

The zone where the trips began (e.g., traffic analysis zone which may also include census tract(s))

Outbound Commuter

Mobile device owner that lives inside the study area but works outside the study area

Person Trips

The total number of trips identified by cellular device activity

Person Miles Traveled

A measure of person travel. One person travels one mile, one person mile of travel results. Four persons travel five miles in the same vehicle, 20 miles of travel result.

Persons per Vehicle (PPV)

Based upon the analysis conducted for this study, the PPV value for visitors equals 2.6; for commuters 1.1; for residents 1.6.

Resident Worker

Mobile device owner that lives and works in the study area

Regional Corridor

One of two regional corridors accessing the Lake Tahoe Basin: North Entry including I-80, SR 89, SR 267 and SR 431; South Entry Corridor includes NV US 50, SR 207, CA SR 89, and CA US 50.

Short-term Visitor

Non-resident present in the study area less than two days

Start Date

The starting date of the Date Range (YYMMDD)

Time of Day

Time of Day Periods are defined in five pre-defined day parts:

12:00 am - 7:00 am	4:01 pm - 7:00 pm
7:01 am - 10:00 am	7:01 pm - 11:59 pm
10:01 am - 4:00 pm	

Traffic Analysis Zone

Unit of geography created by the TRPA for their transportation planning model. The size of the zone varies. The boundaries often follow streets or census tracts.

Trip

Mobile device activity between an origin and a destination

Vehicle Trip

The total number of trips identified by cellular device activity divided by a ratio of 2.6.

Vehicle Miles Traveled (VMT)

Defined as a measurement of miles traveled by vehicles within a specified region for a specified time period. Data is compiled by monthly or yearly time frames.

Weekday (WD)

Monday, Tuesday, Wednesday, Thursday

Weekend Day (WE)

Friday, Saturday, Sunday

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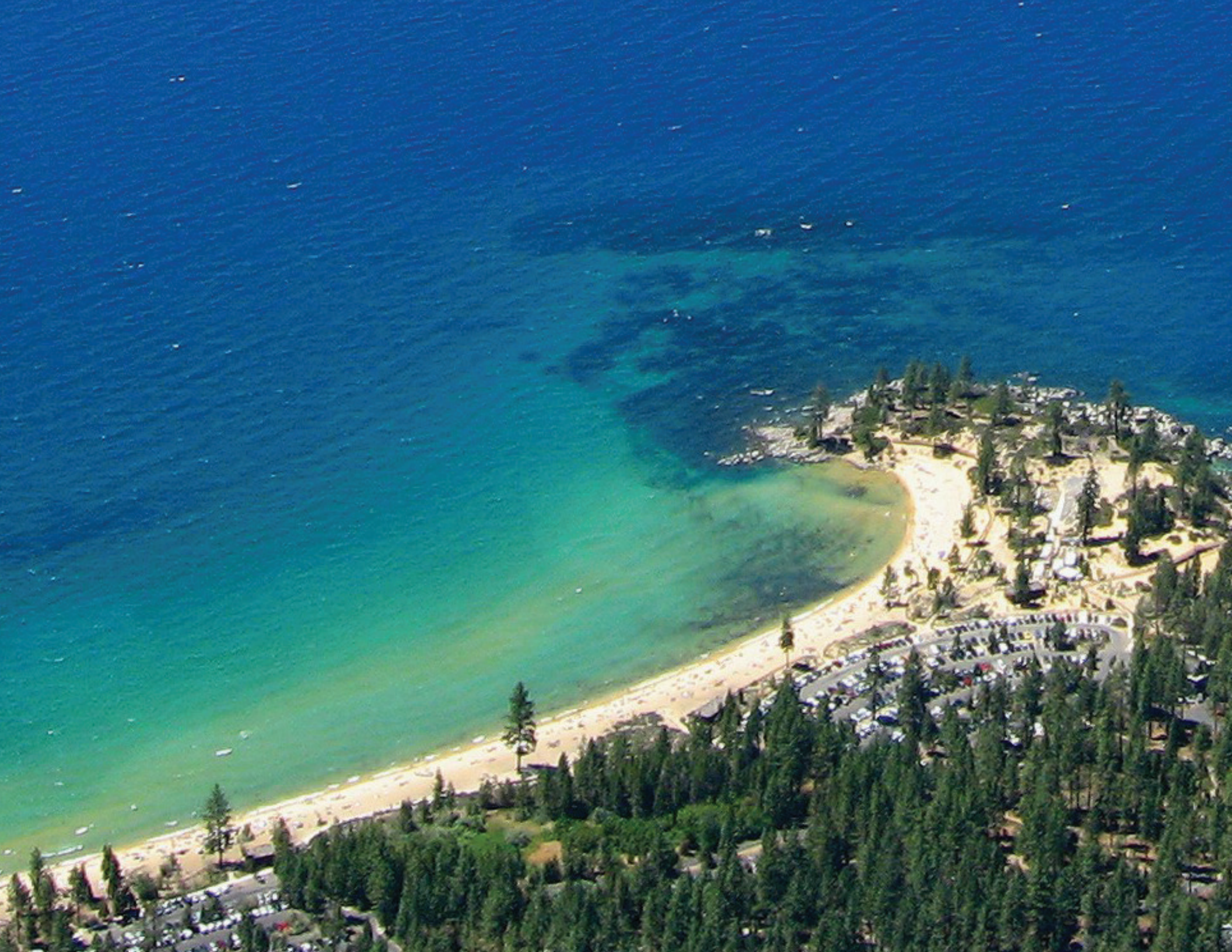
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A stylized, light gray graphic of a mountain range is positioned in the background. It features several jagged peaks of varying heights. On the left side, there is a large, solid gray shape that resembles a stylized letter 'L' or a corner of a building, partially overlapping the mountain range.

Linking Tahoe: Corridor Connection Plan

Executive Summary



Executive Summary



Descriptions of Lake Tahoe often feature words like “majestic,” “spectacular,” and “mountainous.”

More recently, Lake Tahoe is synonymous with “congestion,” especially during summer and winters with heavy snowfall. The 2017 Linking Tahoe: Regional Transportation Plan (RTP) is based, in part, on the research, analysis, and recommendations developed as part of the Linking Tahoe: Corridor Connection Plan (LTCCP) and the Linking Tahoe: Transit Master Plan (TMP). The RTP defines the policies, goals, and high level implementation strategies. The LTCCP and TMP are detailed implementation approaches. Together, they are intended to transform Tahoe from an auto-centric environment to a destination rich with multimodal options for visitors, residents, and commuters.

The primary goals of these documents are to protect the fragile environment, foster a strong economy, and balance the impact of visitor vehicles with the need to preserve the quality of life for residents. A well planned and adequately funded transportation system can make a major contribution to achieving these goals by accommodating the region’s current and future travel needs with reduced congestion, fewer vehicle miles traveled (VMT), and less environmental impact. As a practical matter, this involves making significant increases in transit services a top transportation priority. It is the only feasible path for meeting the existing and future transportation demands given the mountainous terrain. It is particularly important that transit effectively captures large numbers of recreational trips during peak periods and special events.

The LTCCP is a practical, living guide for understanding the nuanced differences between the communities that comprise the Lake Tahoe Basin and the specific recommendations to implement a transportation system that can make the region’s aspirations a reality.

How is the LTCCP Organized?

The geographic area covered by the LTCCP is illustrated in **Figure S1-1**. Many stakeholders, including two state departments of transportation, multiple land management agencies, the Tahoe Transportation District (TTD), the Tahoe Regional Planning Agency (TRPA), the Tahoe Metropolitan Planning Organization (TMPO), five California and Nevada counties, the City of South Lake Tahoe and a number of public utility districts, play a vital role as partners. This plan was collaboratively developed with members from these agencies to offer a coherent framework for creating an efficient, multimodal transportation system.

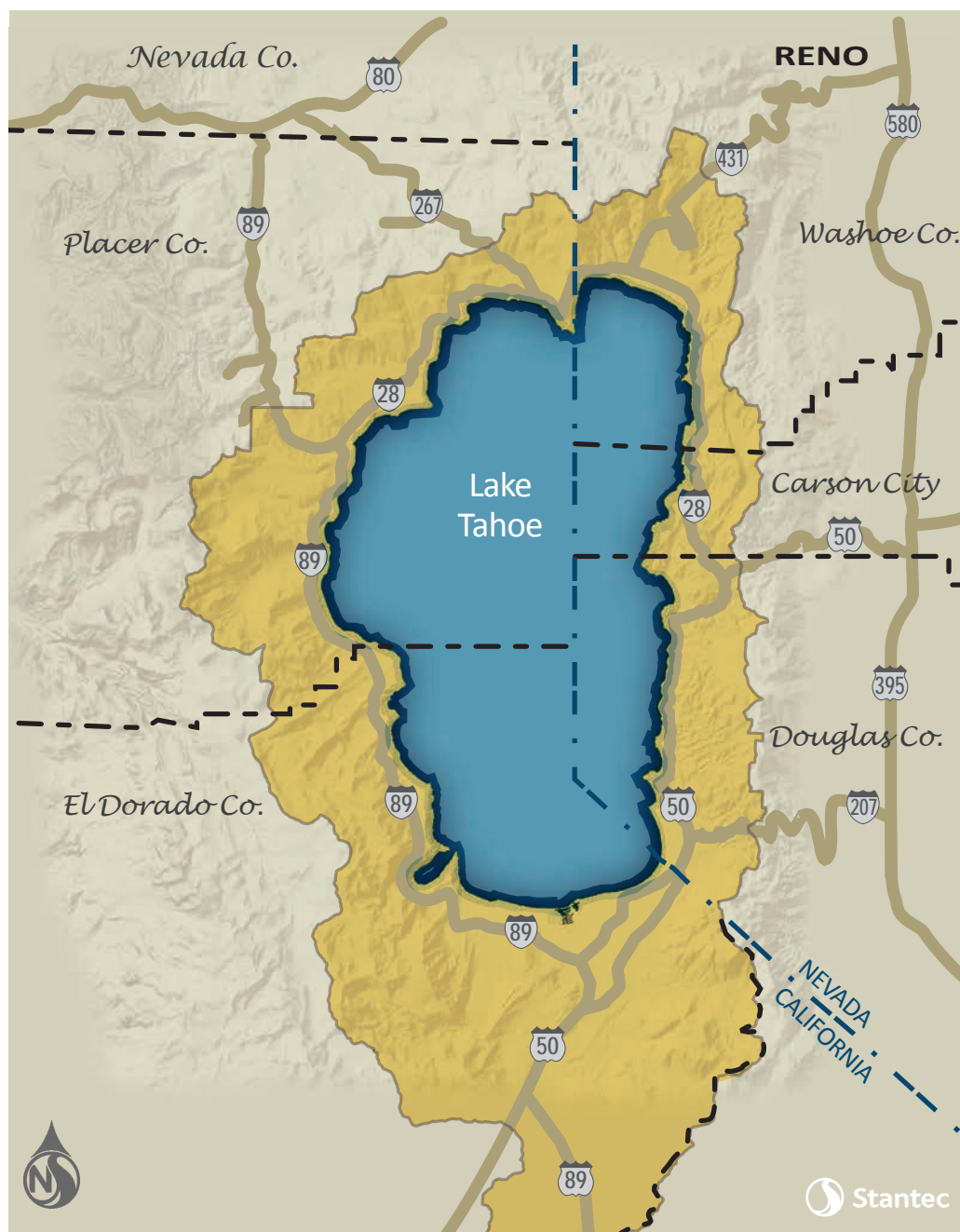
To enhance manageability of the planning process, this area has been divided into six corridors within the Basin shown above in **Figure S1-2**, with north and south entry corridors based upon the land use patterns and commonality of issues and opportunities within each of these areas.

Projects, services, and policies were identified to address the unique needs of each corridor and then integrated across all corridors to create a unified, transportation system. The LTCCP should be viewed as a useful tool to focus existing transportation resources on priorities that offer benefits within the individual jurisdictions and synergistic benefits across the entire region. The LTCCP echoes the vision articulated in the Regional Plan,

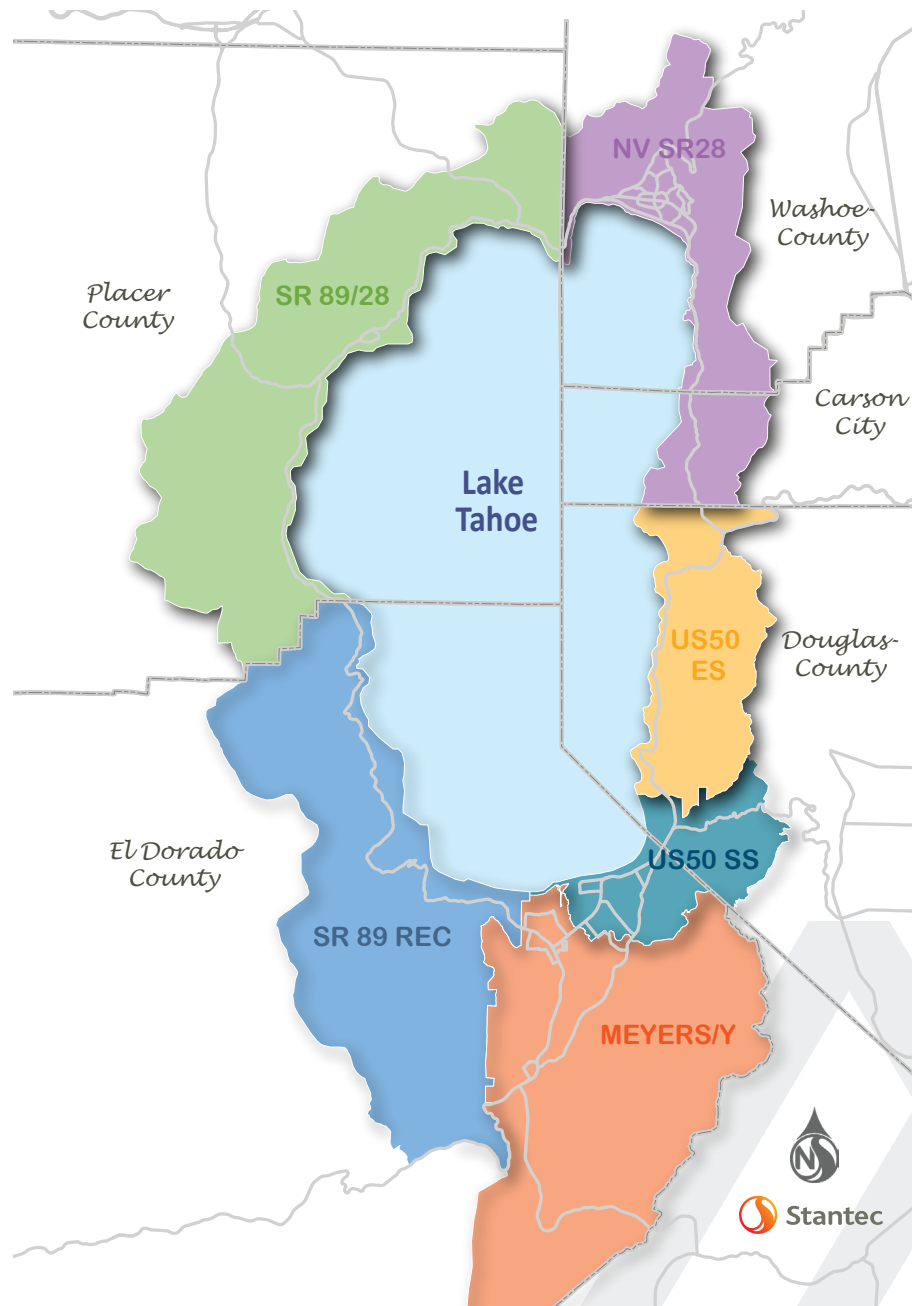
“A first-class transportation system that prioritizes bicycling, walking, and transit, and serves residents and visitors while contributing to the environmental and socioeconomic health of the region.”

~ Linking Tahoe: Regional Transportation Plan 2017

/ Figure S1-1: | Study Area Geography



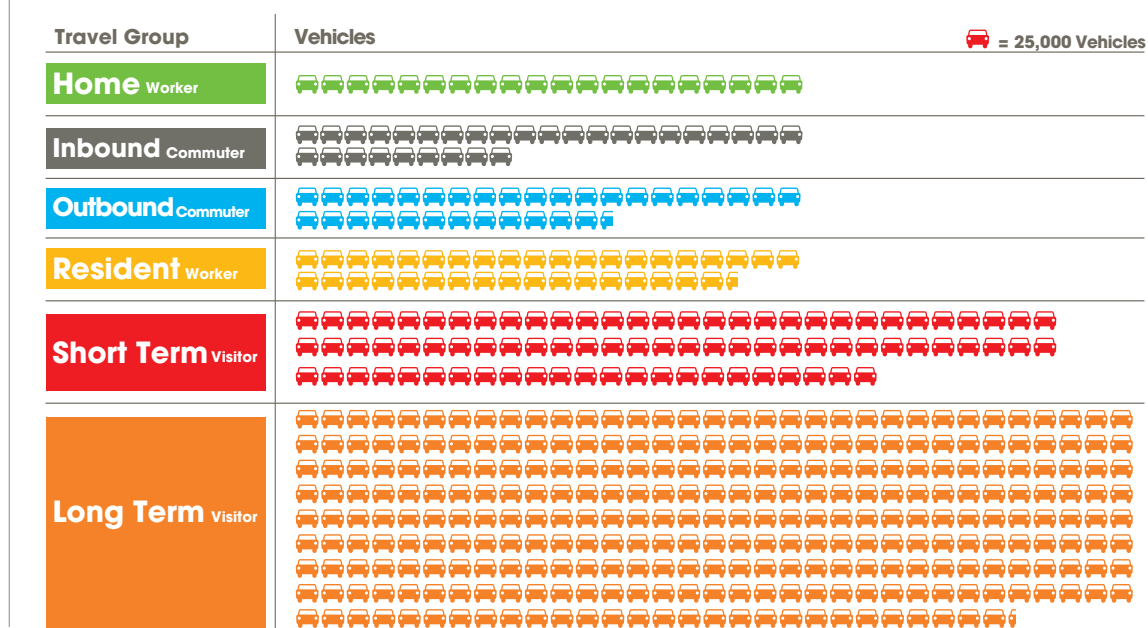
| **Figure S1-2: | Corridor Map**



The LTCCP articulates nine goals that describe TTD's long-term objectives in the LTCCP. To make sure the plan stays on-track and produces real, measurable progress towards accomplishing these objectives, each goal includes a key performance target. Progress towards achieving these targets will be measured and periodically reported to the TTD Board of Directors and community. The key strategies, tactics/actions, and policies that support each of the nine goals are referenced in **Appendix A**.

-  **Supporting Transformational Change.** A majority of trips within the Basin will be multimodal with a reduction in single occupancy vehicle trips.
-  **Multimodal First.** Multimodal transportation supports the renewal of urban form with targeted services and facilities that support walking and cycling.
-  **Manage Congestion.** The transportation system will effectively improve access for all users to reduce traffic congestion and meet community goals.
-  **Decision Making.** The transportation system shall support, enhance, and enable community land use decisions.
-  **Prioritize Safety.** Manage and expand the multimodal transportation system to offer superior safety to all users.
-  **Improve the Environment.** An enhanced multimodal transportation system will reduce congestion, VMT, greenhouse gases (GhG), and roadway impacts to improve the clarity of Lake Tahoe.
-  **Enrich Quality of Life.** An enhanced multimodal transportation system provides greater quality of life to residents and visitors.
-  **Enhance Economic Vitality.** Manage and expand the multimodal transportation system to support local businesses, recreation, and tourism by efficiently moving people and goods.
-  **Funding the Vision.** Secure sustainable funding to build, operate, maintain, and renew a multimodal transportation system that transforms the vision from concept to reality.

| Figure S1-3: | Annual Number of Vehicles Entering the Tahoe Basin by Travel Group



Challenges to Implementation

Impediments to implementing these goals cover a broad spectrum, and include:

- The disparity between winter and summer visitation is huge: more than twice the number of visitor trips were observed in July than in February (11.8 million vs. 4.7 million). Figure ES-3 illustrates the vehicles entering the Basin by each travel group i.e., Resident, Commuter, or Visitor.
- Rights-of-way are limited due to terrain and slope. Locations to add on- or off-shoulder mobility infrastructure are limited.
- Insufficient or sustainable funding to build, operate, maintain, or renew the transit system and supporting mobility infrastructure.
- Shifting visitors to transit, given they travel to Tahoe economically and efficiently by car and park free at their destinations.
- Shifting visitors to transit before the services are robust in frequency and amenities completed.
- Marketing transit services to visitors that hail from every part of the U.S. before they plan their Tahoe visit.
- Highways belong to state DOTs. They often transport trucks and vehicles at higher speeds through communities, creating safety concerns for residents and impacting the desire to walk or bike without separated shared use paths.
- More than 60% of visitors arrive by car from California. Projected growth in the California megapolitan region will exacerbate existing congestion.
- Demand to access Tahoe beaches exceeds available shoulder parking, resulting in illegal parking, safety concerns, and increased erosion.
- Travel patterns differ from traditional urban movement patterns. Resort destinations are greatly impacted by season, weather, day of the week, and proximity to nearby urban centers.
- Tremendous differences in seasonal transit demands. Transit investments historically focused on winter services. Summer presents the greater opportunity to invite transit users by offering more robust, frequent, and user friendly services.
- Closing the gaps on existing bike and pedestrian infrastructure may require changes in roadway configurations. Adding transit shelters and supporting features will require easements and possibly impact roadway configurations.
- Reaching consensus from all agency partners, stakeholders, and businesses on the use of existing, but limited, right-of-way and even private property will take time and funding.

What the Research is Telling Us

- Nearly 43% of all visitors are considered day visitors, not contributing to room taxes.
- Visitors hail from nearly every county in every state in the U.S., especially during the summer months. Over 60% of all Lake Tahoe Basin visitors in July reside in California.
- The proportion of Nevada visitors declines in July, compared to February, as relative proportions from other states increase.
- The northern California megapolitan region, home to 15 million residents, anticipates growth forecasts between 20 to 30% by 2035 which will directly impact the Tahoe Basin.
- As a percentage of all trips entering the Basin, California US 50 delivers more travelers than I-80 in both winter and summer months. In February 30% of travelers entered from California US 50 and 27% in July. I-80 delivered 24% in February 23% in July. The number of weekday arrivals exceeds weekend arrivals slightly because the trip counts include residents and commuters as well as visitors. **Figure S1-4** highlights the differences between months.
- In 2014, 24.4 million visitors entered the Tahoe Basin, equating to 9.4 million vehicles.
- Visitors account for approximately 87% of all trips entering the Basin; commuters 6%; and residents/home workers 7%.
- Applying the proportionate share of trips entering the Basin by travel group to the number of trips made internally to the Basin identified the ratio and total number of person trips and vehicle trips in the Tahoe Basin as shown in **Table S1-1**.
- The transit system is limited to the north and south shores with limited seasonal connective services. **Figure S1-5** identifies the extent of transit and magnitude of annual ridership within the Basin. Nearly 80 million person trips were counted inside the Tahoe Basin and only 1.4% of all trips utilized transit.
- Approximately 1.6 million vehicles were counted at Emerald Bay; whereas seasonal transit ridership along the west shore only totaled 7,500.
- Within the Basin, visitor destinations in winter are concentrated at Heavenly Mountain Resort; summer destinations are wide spread.

Appendix B summarizes the wireless device data collection process and results. Analysis of the data is discussed throughout the LTCCP.

Days Visitors Spent in the Tahoe Basin

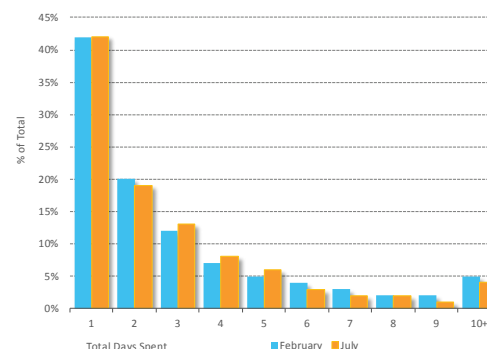


Figure S1-4: | Visitors by Entry February & July

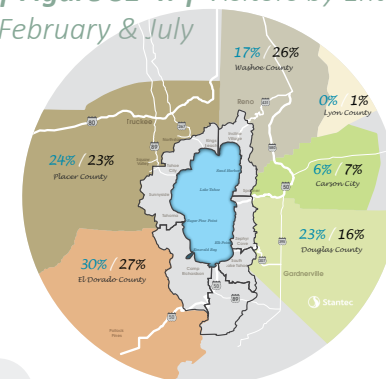


Table S1-1: | Annualized Internal Trips by Travel Group, 2014

Travel Group	Persons Per Vehicle (Est.)	Percent of Trips by Travel Group	Total Internal Person Trips	Total Internal Vehicle Trips
Resident Worker	1.5	5.1%	4,100,197	2,733,464
Home Based Worker	1.5	2.7%	2,148,151	1,432,101
Inbound Commuter	1.1	2.9%	2,334,947	2,122,679
Outbound Commuter	1.1	3.3%	2,612,064	2,374,604
Short Term Visitor	2.6	19.0%	15,190,440	5,842,477
Long Term Visitor	2.6	66.9%	53,414,201	20,543,923
Total		100.0%	79,800,000	35,049,249

Source: Stantec Consulting

Figure S1-5: | Annual Transit Ridership

Transit 1.4%

**80 Million
Person
Trips**



Recommendations

The TMP details the recommendations for creating a more robust system of transit services. In summary, the goal is to increase the transit ridership mode split to 5% within the next five years, with continued ridership expansion to 20%. Achieving the targets will require dedicated funding, supporting infrastructure, and increases in all layers of services. **Figure S1-6** displays the transit system recommendations.

In addition to augmentation of transit services and supporting infrastructure, and the expansion of bike and pedestrian facilities, the LTCCP thoroughly evaluated the potential of implementing north to south shore ferry services, accompanied by smaller water taxis transporting travelers to popular beach and restaurant destinations versus vehicles on the highway. The Ferry Oriented Development Plan includes development concepts for each ferry terminal. Transit access, passenger drop off, waiting areas, and expanded parking are a few of the prerequisites for successful implementation at the terminals and sufficient water taxis and ferry services to augment the transit fleet.

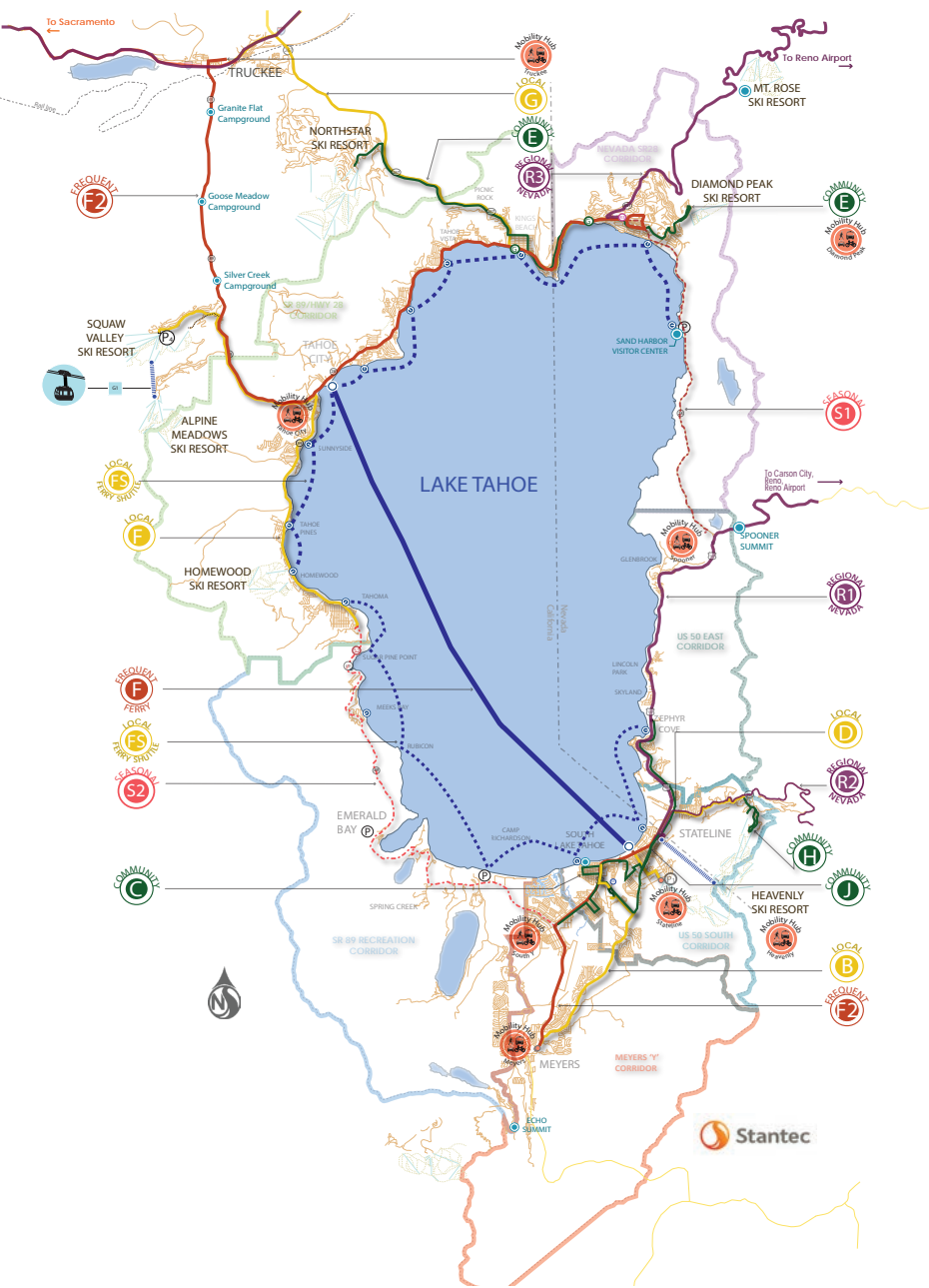
The projected ridership, mode split costs, and vehicle requirements to implement the transit and ferry service program are summarized below in **Table S1-2**.

Table S1-2: | Transit Vision
Summary of Projected Ridership

20 Percent Mode Share				
	Existing Ridership (2015-16)	Projected Ridership	Annual Operating Costs (\$Million)	Vehicle Requirements
North Shore	321,400	9,512,800	29.95	82
South Shore	754,000	6,608,200	26.65	92
Total	1,075,400	16,121,000	56.60	174

Source: Stantec Consulting

Figure S1-6: | Transit System Recommendations





Implementation

Appendix C includes a comprehensive list of projects compiled by numerous sources and includes those received by stakeholders and the public. The highest priority projects are transit-related, recommended for immediate and short term implementation. Capital projects for each corridor are extensive, but those that close the gaps for both bicycle and pedestrian infrastructure in those most frequented destinations should be prioritized. Creating bike parking facilities at popular destinations connected by bikeways would significantly increase bicycling. Dozens of bike parking facilities are listed. Numerous projects fall under the implementation planning category requiring regional efforts to study and address issues such as parking, pedestrian signalization, and financing.

Projects are delineated into the following categories:

- Capital Projects
- Technology Projects
- Transit Service (immediate to short term implementation and medium to long term implementation)
- Implementation Planning
- Implementation Policy
- Implementation Agreement

Recreation travel demand and destination use exceeds the transportation resources available to serve them well. Partnering agencies should explore and develop funding mechanisms that are appropriately addressed for residents, commuters, and visitors, so that needed transportation projects and services can be provided. Further study on which revenue sources to establish, as well as recreational travel preferences is recommended.

Information

Please visit our website for more information:
www.tahoetransportation.org

We welcome your input.

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Linking Tahoe: Corridor Connection Plan

Introduction



Introduction

The residents of the Lake Tahoe Basin and the surrounding communities have engaged in a decade's long dialog about the future they want to see for themselves, their children, and the region. While the details may vary, three overarching desires have consistently emerged:

- Outstanding quality of life, including safe, healthy, closely-knit neighborhoods with convenient access to quality schools, public services, and recreational amenities.
- Environmental protection of the land, water, air, and wildlife that make the Tahoe region “a place like no other.”
- A vibrant economy that fosters opportunity, employment, and prosperity for current residents and future generations.

A critical element to transform the Lake Tahoe Basin and realize these aspirations is the region's transportation system. Quality transportation is essential to a strong economy. It defines the experience. Are the communities congested with traffic all the time? Some of the time? Only on peak holiday weekends? Or does Lake Tahoe offer multimodal transportation options that appeal to visitors of all ages and interests? Do workers have transportation options between their homes and their jobs or is private car the only option for longer commute distances? Are delivery trucks that transport materials and supplies to businesses able to do so efficiently? Healthy economic activity generates tax revenues that support schools, parks, emergency services, and amenities that make communities great places to live. Quality multimodal transportation infrastructure can play a leading role in protecting and maintaining air quality; clarity and purity of area lakes and streams; and promoting healthy forests, wetlands, and wildlife. The scenic beauty and recreational destinations

within the Basin motivate visitors to return year after year. They are the reason people choose to make Lake Tahoe their home. Investments in transportation are critical to preserving the quality of life and recreation experiences that attract visitors and grow the economy.

By all accounts, the current transit system needs integration, branding, expanded operations, and comfortable/informative facilities. Centralized parking or Mobility Hubs, with direct access to bike rentals, shared use paths and transit stops would significantly bolster the use of transit and help convert automobile use to active transportation modes. Presently, residents and visitors are at risk in many places because the Basin lacks a complete well-connected pedestrian and bicycle network. In many places, pedestrians have no option but to walk on the roadway shoulders. Commuters on bicycles often share the road with large trucks traveling at high speeds. Visitors traveling between destinations prefer to drive personal vehicles rather than wait at poorly marked bus stops with uncomfortable benches that lack shelter. The sheer absence of an integrated and robust multimodal transportation system is a major contributor to congestion. It is worthwhile exploring if businesses are losing revenue because visitors and residents cannot easily or safely patronize their establishments due to traffic congestion.

Significant investment to fund multimodal improvements in the transportation system is critical to preventing further erosion in the quality of experience, quality of life, and quality of the environment.

Growth in Population, Commuting, and Visitation

According to the U.S. Census, the permanent resident population in the Tahoe Basin in 2014 was an estimated

56,367. By 2035, the permanent resident population is forecast to grow modestly to about 60,365.

As part of the LTCCP work, the most comprehensive data on travel into and within the Tahoe Basin was collected using anonymized wireless device data purchased from a third-party vendor. This information or “big data” offered new insights into the travel classes (e.g., residents, workers, commuters, visitors), trip types, time of day, days of the week, and the origins and destinations of all trips within the specified time period.

The wireless device data identified the total number of person trips made into the Basin, within the Basin, and leaving the Basin by travel group. The travel groups include six categories: home worker, inbound commuter, outbound commuter, resident worker, short term visitor and long term visitor. Person trips were converted to vehicle trips based upon available data sources.

In 2014, an estimated 4.1 million vehicle-trips (7.8%) were made by residents and home workers coming in, driving out, and driving within the Tahoe Basin. **Figure S2-1** illustrates the commuting patterns of Basin residents and workers. Per the Census, approximately one-third of the primary in-Basin jobs are held by residents living outside of the Basin; one third by residents living and working inside the Basin; and one third by residents living in the Basin, but working outside of it. As a percentage of total vehicle trips, outbound commuters account for 2.8% of the total and inbound commuters 2.7%. If the job market and economy improve and housing prices within the Basin continue upward, the number of inbound commuters will also increase.

Cumulatively, residents, commuters, and home workers account for approximately 9.4 million annual vehicle trips. Assuming average travel habits remain unchanged between

now and 2035 and accounting for projected population growth, the Basin will need to accommodate an increase of about 8% in the number of vehicle-trips made by residents and commuters by 2035.

Visitors account for approximately 87% of all vehicle trips coming to Tahoe. The data indicates they come from all over the U.S., but the majority (60%) comes from California counties. There is slight variation between winter and summer months, with a higher percentage of winter visitors arriving from the Northern California megapolitan; home to 15 million residents (Bay Area to northwestern Nevada) with an expected growth rate of 25 to 30% by the year 2035.

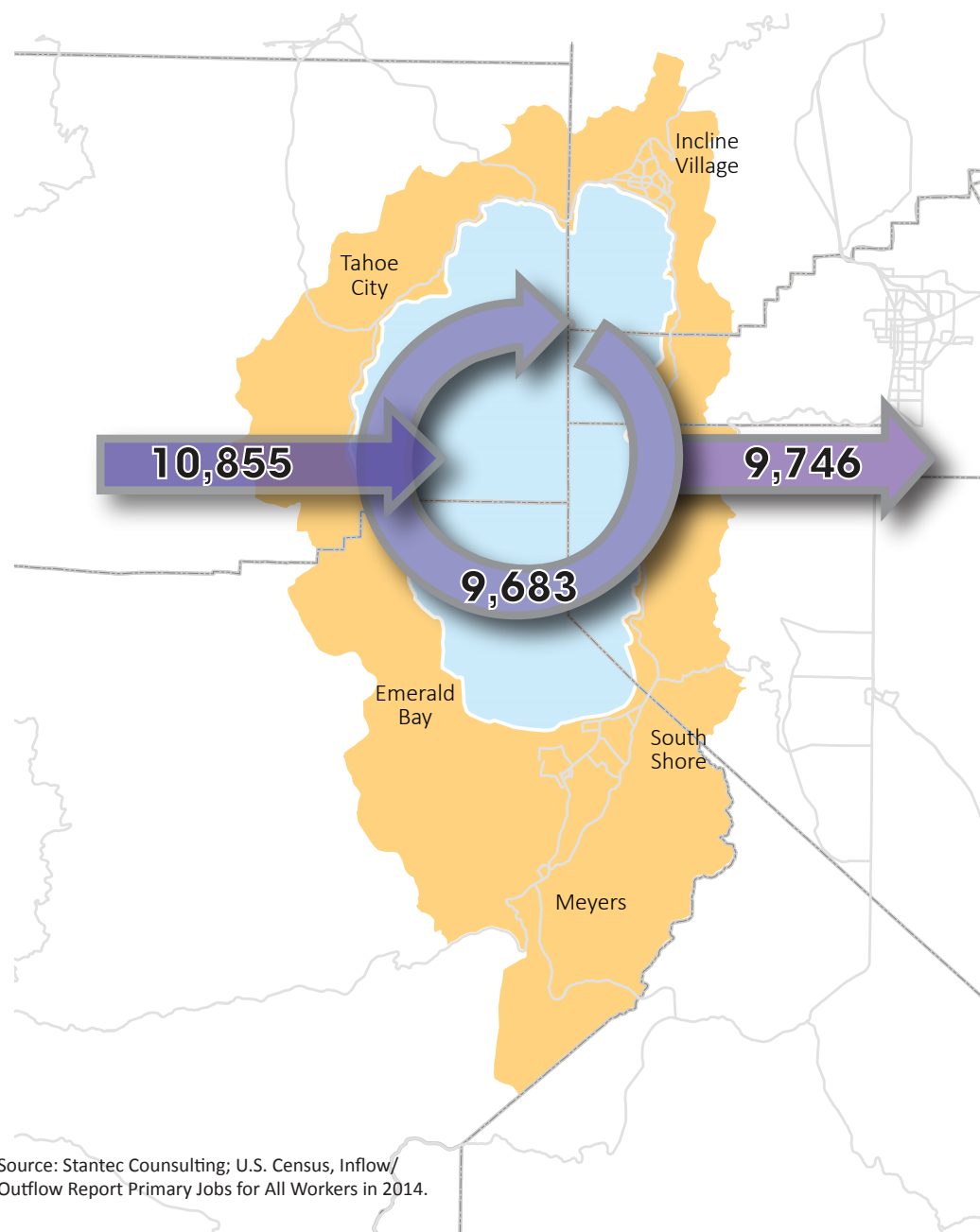
Most visitors currently arrive by car; however, construction of high speed rail and the expansion of existing rail services throughout California valleys will make the Lake Tahoe region even more accessible to California's growing population. Naturally, population growth trends in California directly impact projected visitation to the Lake Tahoe Basin. According to the wireless device data, **over 25 million vehicle trips within the Basin are attributable to visitors.** Residents, home workers and in/outbound commuters account for another 10 million vehicle trips within the Tahoe Basin annually.

The wireless device data indicates an estimated total of 21.8 million vehicle-trips in and out of the Tahoe Basin added to 28.2 million internal vehicle-trips, for a total of **50 million vehicle-trips on Basin roadways in 2014.** If the 20-year growth projection is one percent per year for 20 years, then a 20% increase will mean the Tahoe Basin will see 60 million vehicle-trips annually by 2035. See **Figure S2-2** below for a comparison of vehicle trips into and out of the Basin compared to those made internally by year.

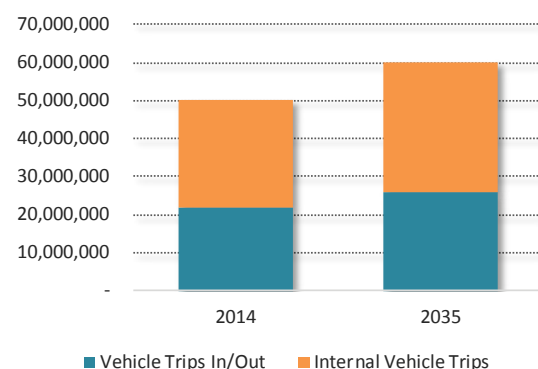
Geographic, Physical, and Community Constraints

Meeting the transportation needs of the Lake Tahoe Basin is challenging. The rugged terrain and environmental sensitivity severely limits the potential for expanding existing roadways or constructing new ones. Where opportunities for expansion are physically feasible, the costs are extraordinarily high due to environmental considerations and the need to keep existing facilities operational during

| Figure S2-1: | Inflow and Outflow of Jobs with the Lake Tahoe Basin



**| Figure S2-2: | Lake Tahoe Basin
Vehicle Trips**



construction, due to the lack of alternate routes. Lastly, Basin communities prioritized lake protection by adopting policies in the RTP that promote expansion of active transportation modes and prohibit the expansion of existing roads.

Environmental Restrictions and Mandates

The Lake Tahoe Basin is subject to specific environmental restrictions and mandates. For example, California has a mandated statewide VMT reduction. For the California portion of the Basin, the TRPA adopted a standard that limits VMT on peak summer days to no more than 2.07 million. In 2010, the peak summer day estimate was 1.98 million, according to the environmental document supporting the RTP¹. California statutes also require a reduction in per capita GhG emissions to below 2005 levels. The 1980 Tahoe Regional Planning Compact (Compact) calls for a reduction in total VMT and sets thresholds for sediments and pollutants from roadway runoff that harm Lake Tahoe's water clarity.

Travel Patterns

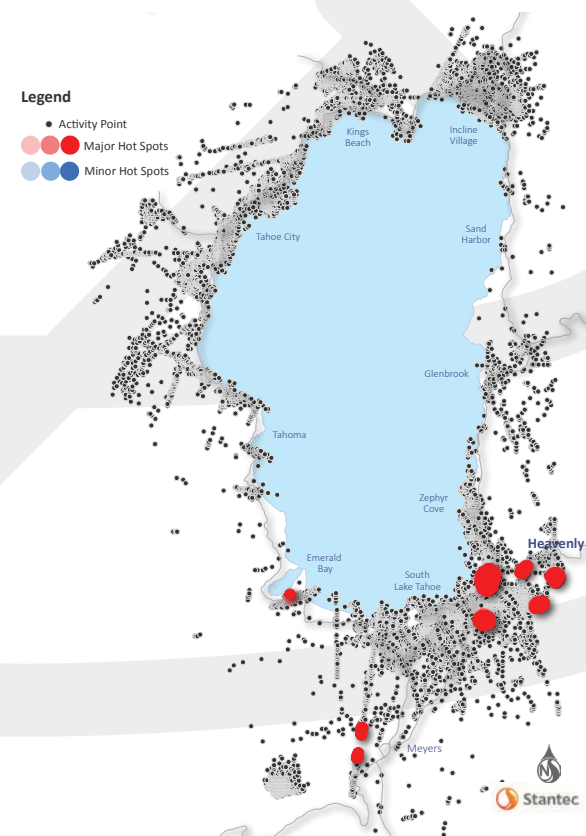
The nature of the Trans-Sierra Region creates challenging transportation demands. In winter, snowfall often affects roadway conditions by narrowing shoulders, reducing speeds, causing delays and even standstill idling. In summer, increased travel in all directions results in congestion at intersections and popular destinations. According to a summer survey conducted for the Mobility 2030: Transportation Monitoring Program, 2010, 98% of trips in and out of the Region were by automobile. Trips to and from recreational areas were 86% by auto, 6% by walking, 5% by biking, 1% by transit, and 2% other. A higher number of pedestrian and bike trips were noted to/from the commercial core areas, with a commensurate reduction in auto trips².

The Region's transportation system must address the typical local demands of the 56,367 permanent residents and 4,500 businesses. Residents deserve safe, convenient, and reliable access to work, schools, shopping, personal services, and recreational destinations. Businesses need a transportation system to bring supplies, materials, products, employees, and customers to and from their establishments in an efficient and timely manner. However, the data indicates approximately **28.4 million person trips are made into the Tahoe Basin each year**, with **24.4 million of those by visitors**. The magnitude of vehicles associated with this number of trips dramatically impacts the Trans-Sierra Region's transportation system³. Visitor trips accounted for approximately 87% of all trips in and out of the Tahoe Basin and 68% of all trips within the Basin.

Traffic counts from NDOT and Caltrans show that on portions of US 50, the number of vehicles on the peak day in July can exceed the year-round average by as much as 60 to 115%. Even in a peak month, there are large variations from day to day. The counts show that the peak day in July can exceed the average daily July count by as much as 55%. Just as significantly, location does not evenly distribute

these visits. **Figures S2-3 and S2-4** show the intensity of visitor destinations by location in February 2014 (winter peak) and July 2014 (summer peak). The wireless device data indicates **visitor trips totaled 4.7 million in February and 11.8 million in July**. Due to the vast seasonal variation, roads, highways, parking lots, transit vehicles, bike trails, and pedestrian ways that function well much of the time are overloaded during weekends, peak seasons, and special events by the huge number of visitors coming into the area. To be successful, Tahoe's future transportation system must find an effective way to accommodate the widely variable demands placed upon the network by the recreational travel market.

**| Figure S2-3: | Hot Spot Locations of
Popular Destinations, February 2014**

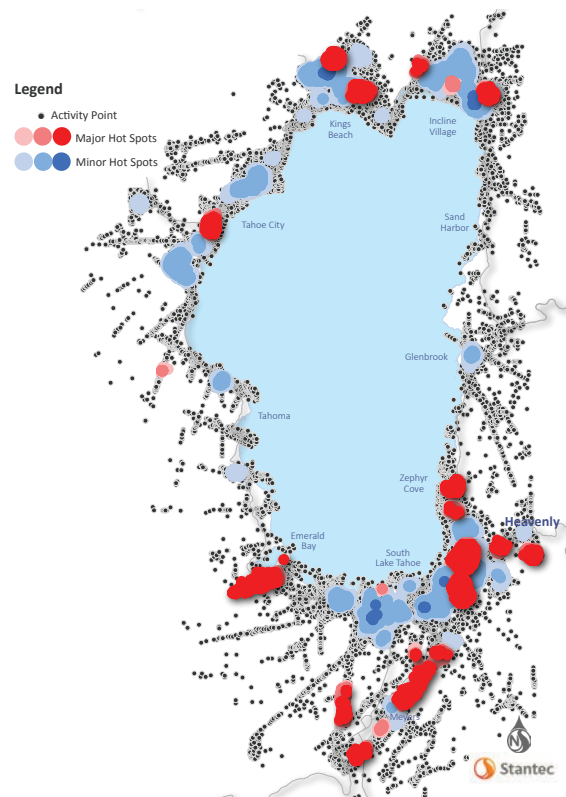


¹ Ascent Environmental. (2010). TMPO and TRPA Lake Tahoe Regional Transportation Plan, SCS Draft EIR/EIS, pg. 3.3-18.

² Mobility 2030: Transportation Monitoring Program 2010 (TRPA 2010, pp. 12-14).

³ Calculation by Stantec and based upon the midpoint between NDOT data that 11% of annual external to internal vehicle trips occur in July and Caltrans' 10% applied to the monthly estimate of 2.54 million visitors in July to derive an annual estimate for 2014.

| Figure S2-4: | Hot Spot Locations of Popular Destinations, July 2014



The Nature of Traffic Congestion

Research has demonstrated that many factors create traffic congestion. One of the most significant factors is how drivers react to increases in the number of cars on the road, which is termed traffic density. Most drivers have experienced the relatively stress free driving when traffic is congestion free with few cars on the road and traffic flows smoothly. As the number of cars increases, drivers feel greater stress and start to slow down to accommodate the decreasing distance between vehicles, and to be prepared for sudden slowdowns and stops. In many instances, just a small number of additional vehicles vying for the same space on the roadway can have a dramatic impact on driver behavior, resulting in decreased vehicle speed

and increased congestion. Changes in speeds can occur in seconds and induce another significant contributor of congestion: accidents.

Many segments of the road system in the Tahoe Basin already experience periods of considerable congestion during peak travel times and special events. Without significant improvements in the existing network and operations, the projected growth in vehicle trips could create new areas of congestion and dramatically worsen congestion at existing choke points. Presently, transit service is limited and infrequent, and does not offer a viable option to a personal car, especially for visitors unfamiliar with the system's operations.

Congestion caused by increasing traffic density is exacerbated in the Tahoe Basin by several other factors. Where there are no or inadequate bicycle and pedestrian facilities, these users enter the travel lanes. The natural response of drivers is to proceed cautiously until a passing opportunity, which worsens congestion. A similar phenomenon occurs when parking is inadequate and vehicles park on narrow roadway shoulders and walk to their destination within the roadway.

Funding

Implementing the multimodal transportation system and vision identified in the LTCCP will require significant, sustainable funding. **Current available revenue totals just over one-half of the needed funding.**

Data published in the 2015 Trans-Sierra Transportation Plan and Business Case indicates that **\$32.8 billion** is needed through 2035 to build, operate, and maintain the desired multimodal transportation system in Tahoe's five counties. Transportation **revenues** from the existing sources during this same period are estimated to be **\$18.5 billion**; a shortfall of \$14.2 billion or 43% of needed revenues. The estimates of anticipated funding from existing sources assumed that contributions from the federal and state governments will continue at historic levels. There is no certainty this will occur and the shortfall could grow dramatically if the historic transportation investments are not sustained.

The primary explanation for the shortfall in transportation funding is the heavy reliance on motor vehicle fuel taxes at virtually all levels of government. Moreover, motor vehicle fuel taxes are increasingly less effective in supporting our transportation needs due to inflation, skyrocketing construction costs, and increasing vehicle fuel economy. While federal fuel tax rates remain unchanged since 1993, the purchasing power of fuel tax revenue has steadily eroded, so much so that a dollar in 2015 buys just 50% of what it did in 1993. The story is generally similar at the state and local levels, except in a few jurisdictions where steps were recently taken to limit the inflationary loss by increasing fuel tax rates or adjusting the fuel tax rates to inflation. When combined with less gas taxes collected per mile driven, the existing gas tax method is not a sustainable revenue source.⁴

Higher contributions at the local level were made possible due to 475 local and 48 statewide transportation funding ballot questions across the nation between 1999 and 2014. Of these questions, 72% were approved by voters. California and Nevada voters helped expand funding with ballot measure approvals estimated to account for more than 50% of all transportation funding.

Closing the transportation funding gap will not happen in a single action, but rather by several incremental steps implemented at all levels of government. Washoe, Carson City, and Douglas Counties have all increased transportation funding by approving local option fuel taxes. Voters in Washoe County approved 3/8% in sales taxes dedicated to transportation, as well as adjusting (indexing) all tax rates on motor vehicle fuels sold in the county to capture the purchasing power being lost due to inflation and the cost

⁴ For example, in the state of Nevada, the nominal dollar amount of fuel tax collected per mile driven by light-duty-vehicles (LDVs) (passenger cars, pickups, and sport utility vehicles) declined an estimated 23% between 2008 and 2014. This is no trivial matter since LDVs make up 96% of the vehicle fleet and account for about 89% of total annual VMT in Nevada and the statistics are similar for most other states. With mandated fuel economy standards and no changes in tax rates, it is projected that the amount collected per mile driven by LDVs in Nevada will decline by 2025 to half of what was being collected in 2008. While increasing fuel tax rates could help offset this decline, it also exacerbates the growing inequity in what individual drivers contribute per mile driven on the system.

of street and highway construction. Unfortunately, efforts in 2016 to pass indexing in Carson City and Douglas County were unsuccessful. Concurrently, a similar measure in Placer County narrowly fell short of passage. With the inability of federal and state transportation programs to adequately address local funding demands, passage of these local measures is essential to obtain the necessary funding for implementation and long term maintenance of the vision articulated in this plan, the TMP, and RTP.

The 2015 Trans-Sierra Transportation Plan and Business Case demonstrated the substantial economic and non-economic benefits that additional transportation investment above current levels will produce in the region for residents, businesses, and visitors. The business case projected the value of these benefits would exceed the cost by healthy margins. Since demands on the transportation system will only increase and the return on transportation investments is proven positive, it is hopeful efforts to gain approval of additional funding sources will continue in the future.

The Tahoe Basin's funding challenges will be best overcome by creating an appropriate mix of revenue mechanisms that collect a reasonable share of the costs from the various travel groups (i.e., residents, commuters, and visitors) who benefit from these investments. Given the immense impacts (both positive and negative) visitors have on the Tahoe Basin, any equitable solution must include mechanisms that effectively collect the fair share of transportation investments from visitors.

The current levels of transportation investment are evident during peak periods, holiday weekends, and generally all summer long where the sheer number of vehicles overwhelms the system. Everyone feels the negative effects of summer congestion. The longer this trend continues, the more expensive reversing the impacts caused by congestion will be. Transportation can truly be transformative and the urgency to take the progressive steps to fully fund the multimodal and intra- and interregional transportation system cannot be understated.

Implementation

Development of this LTCCP relied upon the Project Delivery Team (PDT) approach. Nearly 65 individuals from numerous agencies were assimilated into small groups that collectively brought relevant knowledge and experience to a corridor. The PDT members attended a series of workshops to provide valuable insights into the problems and issues within each specific transportation system. Two subsequent open houses gathered broader public input. Finally, feedback from various agency briefings and board meetings helped to refine the LTCCP recommendations. Subsequent steps involve gathering the PDT members, representing each corridor, to plan and implement the next series of project solutions.

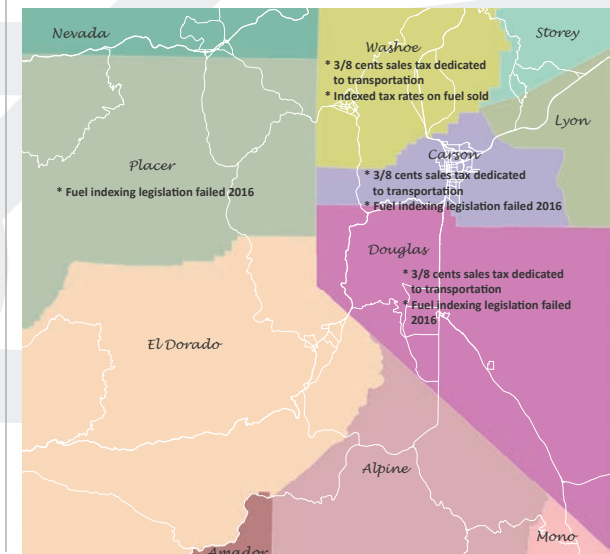
Successful implementation of the corridor approach requires a "steward" or "stewards" whose role and purpose is to facilitate collective oversight and implement recommendations within the context of the region and trans-region. This approach also requires integrating land use with transportation system improvements to ensure both land use and environmental protection/restoration outcomes. The framework laid out in the RTP, the TMP and this Plan reflects this integration. In Tahoe's case, the steward(s) will simultaneously address environmental restoration improvements and protection projects.

It is not by accident that two bi-state agencies were created at Lake Tahoe to fulfill those roles and work together to ensure the Lake Tahoe region is systemically addressed in a coherent and unifying fashion, in order that service improvements and environmental protections are employed for the benefit of the region's natural ecosystem and the region's communities. The Bi-State Compact amendment of 1980 (Public Law 96-551) gave the TRPA authority to adopt environmental quality standards, called thresholds, and to enforce ordinances designed to achieve the thresholds; environmental thresholds are tied to the carrying capacity of land and land uses. The TRPA Governing Board adopted the thresholds in 1982. The land use responsibility includes aligning transportation planning with land use and the thresholds. It oversees implementation through regulatory permitting.

The Compact change took an additional step in creating the TTD in Article XI to focus on implementing transportation system improvements and operating public transit services. TTD has its own Board of Directors and is a special bi-state district that is authorized to own and operate system elements inside the regional boundary and outside of it for purposes of connecting transit services to outside communities. TTD focuses on the implementation of projects and transit services, and has authority to establish regional funding sources.

Together, TTD and TRPA have the responsibility of addressing the planning and implementation of transportation as a system for the entire region. This is an important and purposeful direction as the administration of transportation is otherwise compartmentalized by the political jurisdictions of local governments and state departments of transportation. Each agency has an important implementing role, but the Compact recognized the need for stewards to oversee the whole system, and how the respective parts must align to achieve Compact goals.

Figure S2-5: | County Transportation Funding Map



Linking Tahoe: Corridor Connection Plan

Purpose and Plan



Purpose and Plan

What is the Corridor Connection Plan Approach and its Value?

Previous planning efforts have followed a traditional path where planners have sought solutions to transportation issues and other resource or land use objectives, laying out desired outcomes after a lengthy public input process. The outcome is articulated in well, laid-out plans that may or may not get implemented. Implementation progress has been slow and focused on “one off” projects, leaving many other objectives unattended.

Since 1987, two regional land use plans and multiple local area and local corridor management plans and/or project plans have been developed that addressed various transportation system needs. Some plans involved multiple agencies, while others were more internal to an entity. The TTD looked at other approaches to accelerate project implementation with broader objectives. This involved evaluating the fundamental obstacles to the project’s implementation and addressing them through a process that can be successfully repeated and ultimately applied at a project implementation level for maximum efficiency and cost savings.

TTD’s approach led to looking at one key obstacle: **stakeholder support**. At the implementation level, the traditional plans did not make provisions to ensure a collaborative working group of agencies and stakeholders to continue working together to fulfill plan recommendations and complete critical corridor projects. Over the last eight years, the TTD and others have been employing an implementation approach that, at its core, involves and demands aligned stakeholder participation from inception through construction.



Another fundamental factor to overcoming obstacles is to recognize that most Tahoe projects are complex. When one thinks of complexity, projects such as Boston’s “Big Dig” or California’s new Bay Bridge come to mind. While those two projects were large and complicated; even much smaller projects can involve intricacies and time consuming challenges. At Tahoe, the sheer number of agencies and property owners involved, community groups, and non-resident public constituencies significantly compound the design and construction efforts. Varied funding sources; too few staff in the organizations to support projects; the number of permitting agencies; and up to three required environmental review processes transfigure a seemingly small, simple project into a lengthy labyrinthine effort. It is common for transportation projects to have these numerous factors at play, adding to TTD’s delivery timeframe and project cost.

The LTCCP approach through corridor planning rectifies previous insufficiencies by:

- Addressing the fundamental issues generated from traffic, access, user conflicts, and their subsequent environmental impacts.
- Providing an umbrella document whereby each corridor can be addressed at a contextual/ watershed level to incorporate the spectrum of management resources and actions that may impact corridor management and enhancement.
- Delivering a living resource that will be routinely updated as projects are completed, new projects identified, and studies initiated to support the corridor goals and objectives.
- Embracing the fact that project development and implementation is complex, so approach projects accordingly.
- Monitoring the progress and achievement of established baseline targets.
- And most importantly, using project charters and inter-local agreements to establish a mechanism for implementation and continued agency coordination for a single strategy to achieve the greatest benefits and outcomes.

Previous Success

The TTD developed and used this approach in the State Route 28 National Scenic Byway Corridor Management Plan where thirteen agencies worked together to evaluate issues and develop solutions all could support. The successful outcome was a comprehensive solution to safety, travel, and recreational access issues that have plagued the corridor and its management for decades. New choices for parking and beach access via transit were implemented. Land management policies were changed at Nevada State Park to reinforce the transit system and parking changes. Enforcement was improved with involvement of the courts and law enforcement, which made fine and ticket changes. Design and construction of trailhead parking and a shared use trail were implemented and are currently underway. Long-term maintenance was addressed and agreed upon. And finally, the public’s involvement caused behavioral changes through education about access and mode options. The work in the corridor is not done, but the process is underway. **The cooperation that continues with this approach is finding its way into the development of the next segments of improvements and operation.**

This level of engagement and collaboration resulted in a far greater outcome than simply extending a shared use path along Lake Tahoe’s scenic east shore. When completed, the SR 28 corridor project addresses:

- The replacement and relocation of an aging sewage effluent pipeline under the shared use path.
- Undergrounding an 80-year old power line to improve the scenic quality and eliminate a fire hazard.
- Installation of conduit for expansion of broadband service within the Basin.
- Treatment of storm water runoff from the highway with new technology using an underground containment system.
- Installation of road safety features to improve motorist safety in the corridor.
- Identification of a permanent boat inspection facility location to prevent aquatic invasive species contamination in Lake Tahoe.

A private foundation was invited to be involved who provided matching funds that exceeded expectations. The foundation’s enthusiasm coupled with early community outreach paved the way for a well-supported design and streamlined construction schedule.

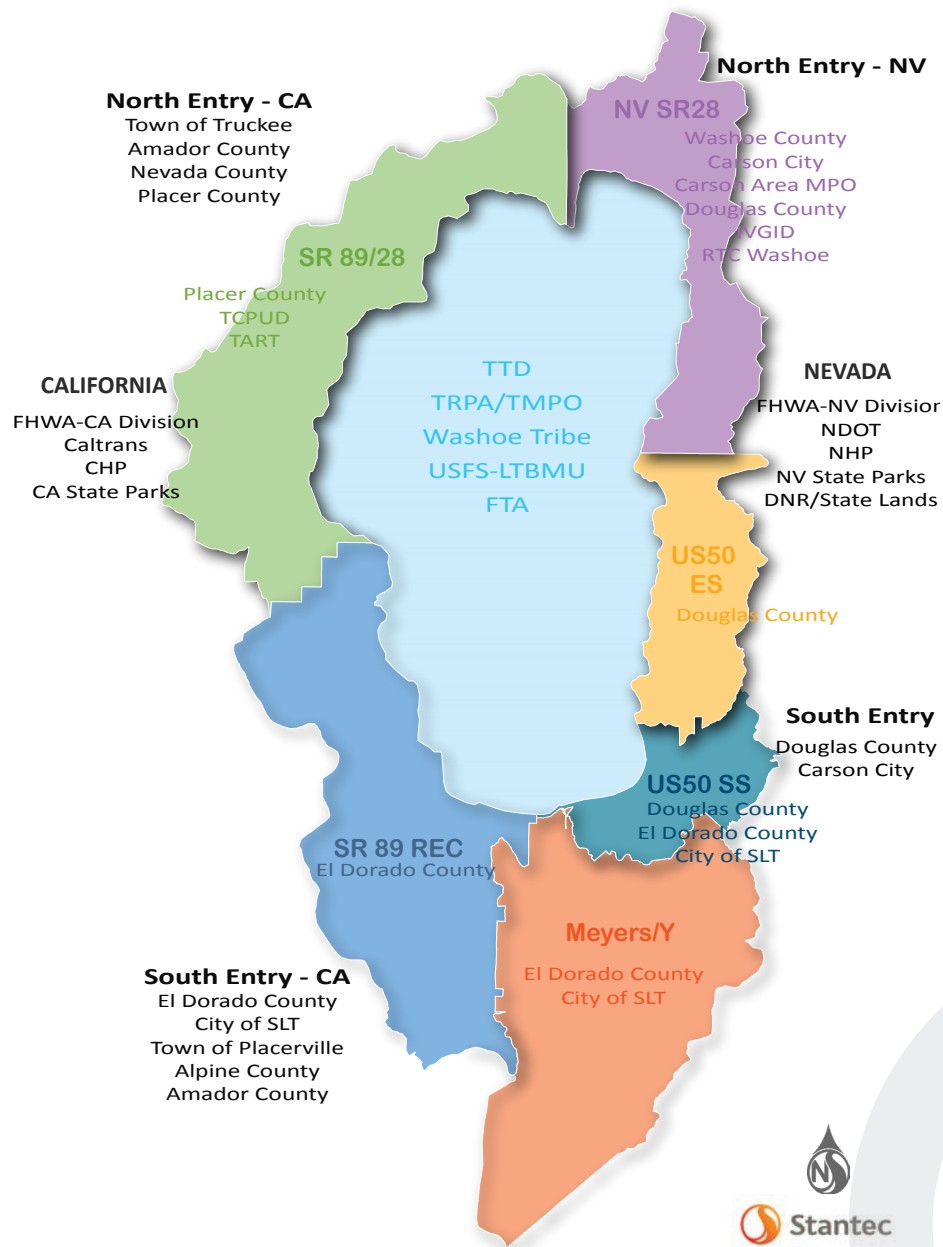
The success of this approach positively affected other TTD led projects, including the SR 89/Fanny Bridge Community Revitalization Project and US 50/ South Shore Community Revitalization Project. The traditional project implementation approach did not often consider the full range of land use, environmental, and economic goals; nor consider transportation-related systemic issues beyond the immediate project area. With this more comprehensive consideration, better design and project solutions can be made that address the community’s multiple needs.

However, this PDT inception through construction approach comes at a cost. The time-intensive effort requires project management staff willing to consistently engage key stakeholders and broker solutions; more upfront funding is needed to engage the public early; and a public marketing campaign is necessary to garner project input and support before the design is set. The approach requires persistence and a long term follow through to ensure implementation of mutually agreed upon features. The payoff for the upfront investment in time and resources is far greater agency cohesion at the end with better public support. Tahoe’s future, in the face of existing congestion and projected growth, demands a “more hands-on deck” approach to implementation to achieve the far greater outcomes desired.



Source: Congestion at Sand Harbor State Park

| Figure S3-1: | Coordinating Agencies



This LTCCP is different than the model for the SR28 Corridor Management Plan.

How? It addresses the entire Lake Tahoe Basin organized into six corridor segments. In addition, two major corridors connecting Tahoe to its greater urbanized areas from I-80 and US 50 were added for a total of eight corridors.

Why? Due to budget and time constraints, the LTCCP was prepared at a higher level of planning and analysis.

What is the purpose and value of the plan? To jump-start the implementation process and organize a more systemic approach to timelier and more comprehensive corridor solutions related to environment, safety, traffic operations, multimodal options, economic vitality, quality of life and quality of visitor experience.

And finally, who should and will be involved? All affected federal and state land management agencies, local government, state departments of transportation, federal transportation agencies, regional government, city government, permitting agencies, non-profits, businesses, chambers of commerce, and the public. **Figure S3-1** illustrates who should be involved.

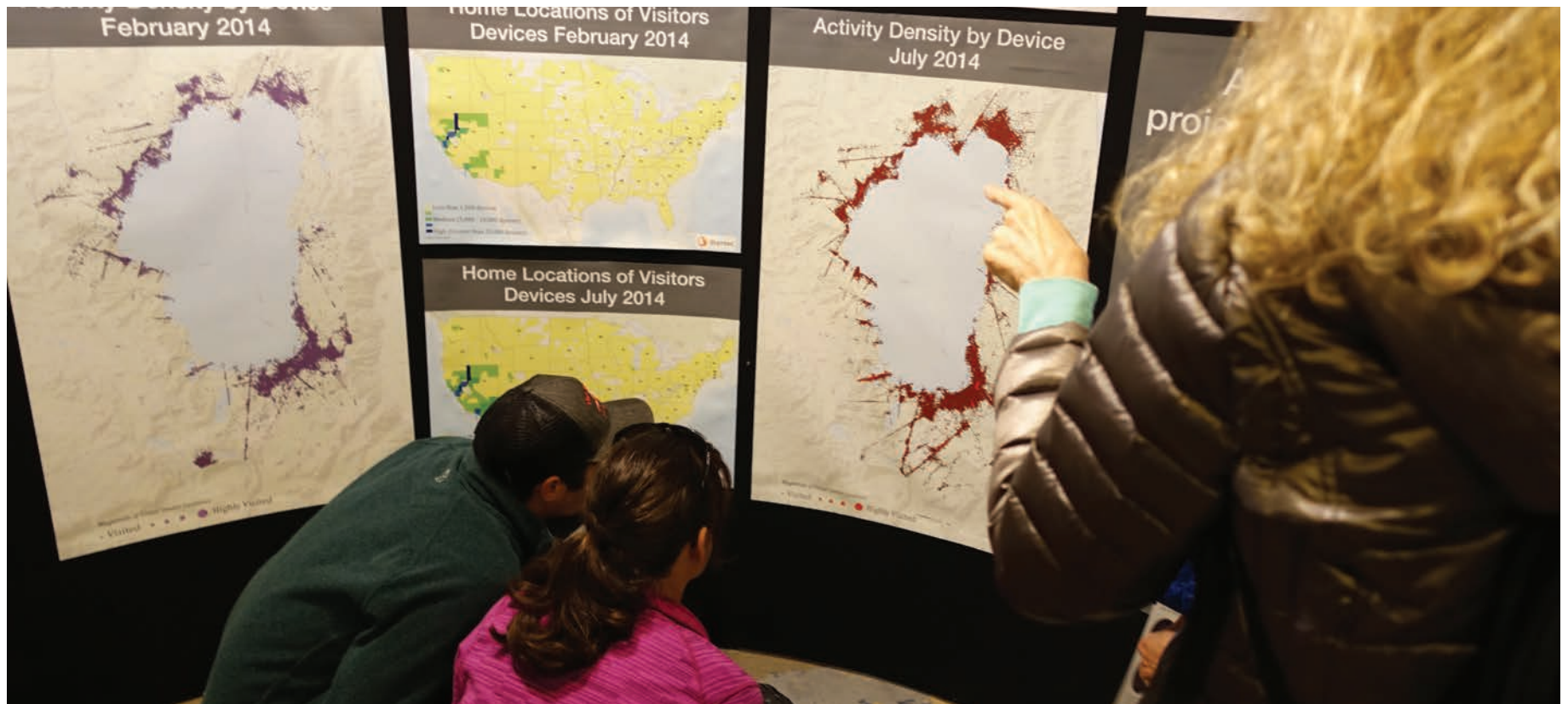
The formulaic approach of this plan can be summarized as:

- Developing integrated projects for each corridor, not just single purpose projects.
- Engaging all stakeholders early and often.
- Approaching as a comprehensive solution to all issues.
- Delivering the solutions and engaging the public.
- Continuing partnership through project construction and into the next round of multi-objective corridor projects.

The partnership can be considered a project delivery team (PDT). The PDT approach is a structured and more formal way to involve and engage agencies and technical staff needed at the core to develop implementation strategies and solutions. When combined with public outreach and community involvement, it tends to get a broader consensus or more residents and agency staff on the same page.

Upon adoption of the LTCCP, the next step will be for TTD to continue the PDT process begun with the development of the LTCCP, by assigning staff to manage the corridors and engage the PDT to identify the next set of project solutions to be implemented to address congestion, safety, and environmental quality improvements.

Special thanks to the more than 60 PDT members who participated in the development of the LTCCP.



Linking Tahoe: Corridor Connection Plan

Opportunities and Challenges



Opportunities and Challenges

Full implementation of the LTCCP may require several decades, especially if dedicated funding sources are not put in place. This chapter summarizes some of the key issues and opportunities that will impact the pace, timing, and ultimately, the success of implementing the plan.

Role of Policy

As mentioned earlier, the geographic area addressed in the LTCCP encompasses multiple governmental entities including: two state departments of transportation, multiple land management agencies, the TRPA, the TMPO, the TTD, several California and Nevada counties, numerous Nevada and California towns and cities, and diverse special purpose units of government. Current interagency interactions and actions between the public and private sectors are governed by policies within a framework. Policies may be formalized as statutes, ordinances, regulations, codes, standards, procedures, legal opinions, etc. Others may be less formal plans, procedures, processes, guidance documents, manuals, or memoranda of understanding.

This framework of policies has evolved over time and typically is not an issue, if it produces reasonably satisfactory outcomes for the various parties. Sometimes, there are mismatches between the policies within an entity or between entities that can impede progress, introduce unnecessary inefficiencies and costs, or, in extreme cases, prevent anything from getting done. When this happens, there is usually a need to expand, amend, or clarify the elements of the policy framework to bring it into better alignment. The most contentious adjustments of the policy framework seem to occur when they interrupt major projects that are underway, causing delay, increased costs, or significant missed opportunities.

The purpose of the PDT approach is to minimize any of these potential outcomes and maximize investment dollars to achieve projects that further the multi-mobility objectives while addressing environmental goals.

As the region begins implementation of the LTCCP, alignment of policies within and among the involved governmental jurisdictions is critical. While broad policy agreement for a strong economy, protection of the environment, and improving quality of life exists, explicit policy statements by all parties to implement a robust multimodal transportation system must be forefront in policy and funding decisions. This is an opportune time for the various partner agencies to collectively review their internal policies and determine whether they reflect this priority for the region. If any partner agencies have concerns that some existing policies could conflict with other agencies and/or of themselves be obstacles to effective implementation, these should be collectively discussed now to determine what changes can be made. It is recommended that the PDT agencies responsible for helping to shape

the LTCCP memorialize their commitment to efficient and cost effective implementation of this plan with a joint Memorandum of Understanding (MOU). This MOU should address the roles and responsibilities of the parties for developing, planning, funding, and implementing the various elements of the LTCCP. A commitment to jointly address shared issues was memorialized in the SR28 Corridor Management Plan shown in **Figure S4-1** below.

| Figure S4-1: | Corridor Management Plan Collaboration Commitment

Commitment

To jointly address shared issues, the TTD and its 12 partners have created a remarkable implementation mechanism: the SR 28 Corridor Management Plan. We thank the public for thoughtful comments and for supporting our commitment to protect the lake, improve safety, enhance recreation with transportation choices and benefit local/regional economies.

We, the undersigned, look forward to continued collaboration with the community as well as with each other:



13 agencies, one effort

Recreational Travel

Recreational travel is defined as travel undertaken for any home based, non-work related activity. This includes the gamut of recreation outings from the highly equipment intensive activities to low equipment intensive activities, such as sightseeing, dining, gaming, shopping, and attending cultural events.

Current Understanding of Recreational Travel

As described in Section 2, the wireless data indicates approximately **28.4 million person trips** into the Tahoe Basin occurred in 2014. A separate study conducted in 2010 for the TRPA indicated 98% of all trips into/out of the Tahoe Basin were by car¹. Of those trips, visitors made approximately 86% of all external to internal (EI) trips to the Tahoe Basin. Residents, Home Based Workers, and In/Outbound Commuter trips coming into the Basin made up the difference. Resident workers make the largest percentage of EI trips—nearly equal those made by commuters and Home Based Workers together.

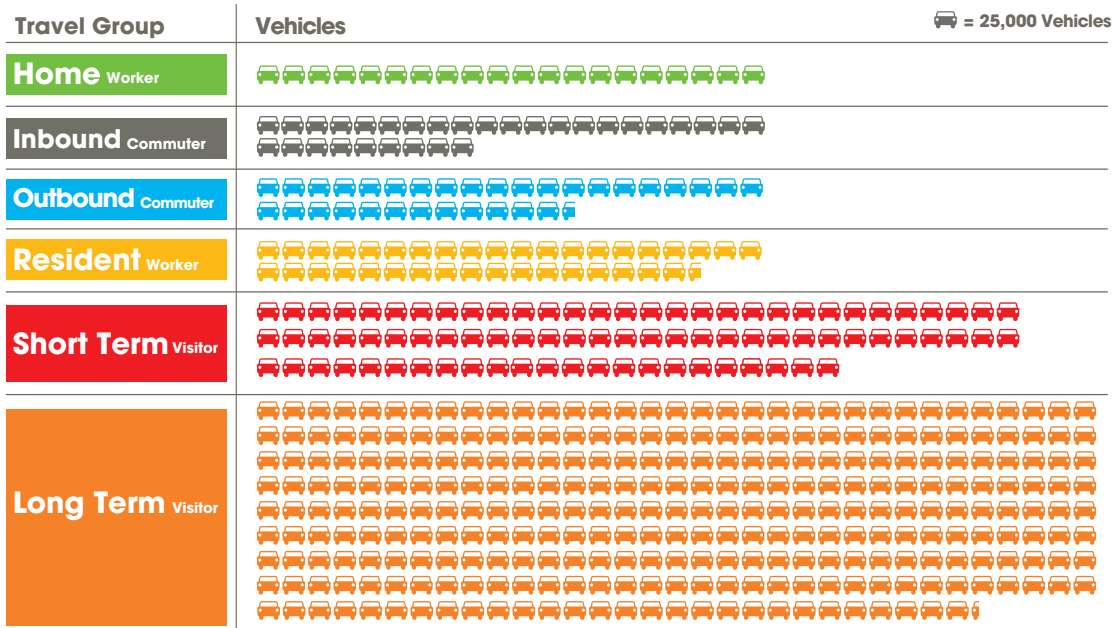
When evaluating internal trips, those made exclusively within the Basin, the number is staggering: **79.8 million person trips in 2014 using all modes**. Again, visitors account for the majority but quite a bit less than the percentage of visitors entering and exiting the Basin--66% of internal trips compared to 87% visitor trips entering the Basin. When evaluating purely internal trips, the Resident, Home Based Worker and In and Outbound Commuters were responsible for 34% of all annual internal trips. Using well established factors for persons per vehicle for each traveler class, the number of person trips were converted to the number of vehicle trips. The objective is to highlight the contributors to congestion and target the multimodal system to address those specific challenges. **Figure S4-2** illustrates the magnitude of vehicles entering the Basin annually by travel group.

Since visitors typically travel to relax or recreate, it is reasonable to assume all trips made to and within the Tahoe Basin by visitors were for recreational travel purposes. The wireless device data does indicate that internal trips by residents and Home Based Workers predominately originate and terminate within the same traffic analysis zone (TAZ).

¹ Ascent Environmental, Lake Tahoe Regional Transportation Plan, Programmatic Environmental Document, Chapter 3.3 Transportation, page 3.3-9.



/ Figure S4-2: | Annual Vehicles Entering the Basin by Travel Group, 2014



Evaluating the top destinations by residents reveals that only one in four trips occur on weekends and nine of ten trips occur between the hours of 10:00 am and 4:00 pm. Popular destinations for residents emulate those of visitors: beaches, hiking trails, and mountain biking areas. Regardless of classification, the data supports the conclusion that residents and visitors frequent the same locations. Recreational travel comprises the significant majority of the 79.6 million person trips made annually within the Basin. Traffic counts by NDOT and Caltrans correlate well with the wireless device data and indicate that most all these trips are being made using the automobile.

Importance of Recreational Travel

In the future, sustaining a vibrant economy and an outstanding quality of life for residents, while protecting Lake Tahoe's fragile environment will require reducing the number of vehicle trips within the Basin, while accommodating a projected growth in visitors. Home-to-work trips, because of their frequency and predictability, offer a promising opportunity to reduce vehicle trips through increased active modes and transit use once gaps in bike/pedestrian amenities are eliminated and transit services are more frequent. Commuting trips within the Basin via personal car can also be reduced by more frequent and improved transit services. As previously discussed, the number of inbound commuters versus residents living and working in-Basin versus outbound commuters is about the same. There are slightly more inbound commuters, 10,850 versus outbound workers, 9,750. The number of outbound commuters and residents who live and work in the Basin are nearly equal. Since the proportion of these commuter trips compared to those of visitors or residents is miniscule, the focus of transit service enhancements will be directed to capturing the recreational visitor, both outside the Basin where possible and from their lodging destinations on sidewalks, bikeways or at transit stops. Since most of all travel into and within the Basin is visitor and recreational-based, further study and evaluation is necessary to more fully understand how to transfer a significant portion of these travelers to active transportation options including transit.

Recreational Travel Data Needs

Although the existing wireless device data and previous studies indicate most travel is recreational and trips are made by car, the information is lacking to understand whether transit, walking, cycling, or a combination could be made attractive enough for travelers to choose these modes over the car. To evaluate the potential for capturing a portion of the recreational travel market with non-auto modes of travel, we need to understand in more detail the "segments" of the recreational travel market, i.e., subgroups that have common characteristics, needs, and interests. To create these segments, we need more specific information on recreational trips including:

- **"Who"** - The number of persons travelling together and their ages.
- **"What"** – Specific type of activity (or activities) undertaken during the trip.
- **"When"** - Time of day in smaller time segments than four hour increments and duration of the activity.
- **"Where"** – Destination type i.e., recreation location, restaurant, business, retail, entertainment venue, etc., within the TAZ origin and destination information already obtained;
- **"How"** - Was the trip made by car, transit, walking, cycling.
- **"Other"**
 - Willingness to consider other modes of travel or barriers to taking transit.
 - Amount, type, and source of equipment for activity (rented locally or brought with).
 - Concurrency of one or more activities.
 - Need to rapidly respond to changes in itinerary or needs of the traveling party (e.g., children or the aged).
 - Physical limitations of the members of the traveling party.
 - Special needs.

It is imperative to gather more statistically significant data on these questions to develop a reliable understanding of the various "segments" of the recreational travel market.



Serving the Recreational Travel Market

Once this data is obtained, market segments can be assessed and determined if they are significant enough to warrant further consideration for servicing with alternative transportation. Once the significant opportunities are recognized, the next step is to determine what types of non-auto services and facilities, and what levels of service would need to be in place to provide cost effective, competitive alternatives to automobile travel. Finally, a determination can be made of whether the benefits of providing alternative transportation to a market segment justify the cost of providing the facilities and services. This level of analysis provides a basis for prioritizing transportation investments and could reveal significant opportunities for capturing segments of the recreational travel market with a modest expense, as well as those opportunities that simply do not pencil with current technologies and reasonable levels of investment. For instance, it is quite possible that existing transit services could capture a significant share of the low equipment intensive recreational market (e.g., sightseeing, hiking, dining, small shopping needs) with investments in reduced headways, NextBus passenger information systems, increased advertising/information on transportation options, improved way-finding signage, comfortable shelters, and market incentives, such as free transit passes. At the other end of the spectrum, equipment intensive activities such as scuba diving, boating, camping, and beach-going with children, are best served by private automobiles.

Looking to the future, there is fertile ground for speculating on how a larger portion of the recreational travel market might be captured by alternative modes. Some of this speculation encourages consideration of a more expansive definition of a transportation system and facilities, as well as new public-private partnerships. For instance, the numerous ski destinations could attract more transit riders if the resorts would expand on-site secure equipment storage facilities to avoid hauling equipment back and forth. This approach to storage necessitates a negotiated agreement between the resorts, transit providers, public and the environmental interest groups as the cost for secure equipment storage should not be solely borne by the resorts. Developing approaches to simplify and enhance the visitors' experience makes the Tahoe Basin more competitive than other resort destinations. It's a win-win. Alternatively, resort staff could transfer equipment to the storage lockers at the ski area directly from the resort. The reverse service could be provided at the time of departure.

Another possibility is the application of technology to create integrated itineraries for visitors that include lodging, activities, and transportation in between. For instance, a website could be established for visitors planning a trip to the region in which they would enter the details of their trip arrival and departure dates, the makeup of their party (ages, disabilities, special needs, etc.), the details of their lodging requirements/preferences (number of rooms, amenities, price range, etc.), dining preferences, the activities in which they would like to participate, and any equipment they will need to rent. A customized package could then be produced that provides lodging and dining options, an activity itinerary, and transportation alternatives for traveling to Tahoe from their home and within the Basin to their various activities.

It may be determined that some portions of the recreational travel market could be more effectively served through an expansion in demand responsive transit. Unlike fixed route transit that adheres to a defined route and schedule, demand responsive services, such as rideshare by for-profit providers, traditional taxis, and dial-a-ride shuttles, respond to individual calls for service to and from specific locations. The current demand responsive services in the Basin have some capacity to serve recreational travelers, but this is limited when the travelers have significant amounts of equipment. If additional data indicates that some types of equipment intensive recreation can be reasonably served by demand responsive transit using vehicles designed for transport of equipment such as bikes, kayaks, paddleboards, and skis, investments in public/private partnerships for services and vehicles to serve this market will likely follow.

Further possibilities may be created with the eventual introduction of autonomous vehicles into traditional transit fleet operations that operate within specific corridors to key destinations. This could create a fairly substantial demand responsive fleet at much lower costs to systems with operators and reduce the overall number of vehicles traveling on Basin roadways. This type of operating system is currently in beta mode and could be deployed in the near future if transit agencies and the general public are ready to make the associated improvements to facilitate autonomous transit vehicles.

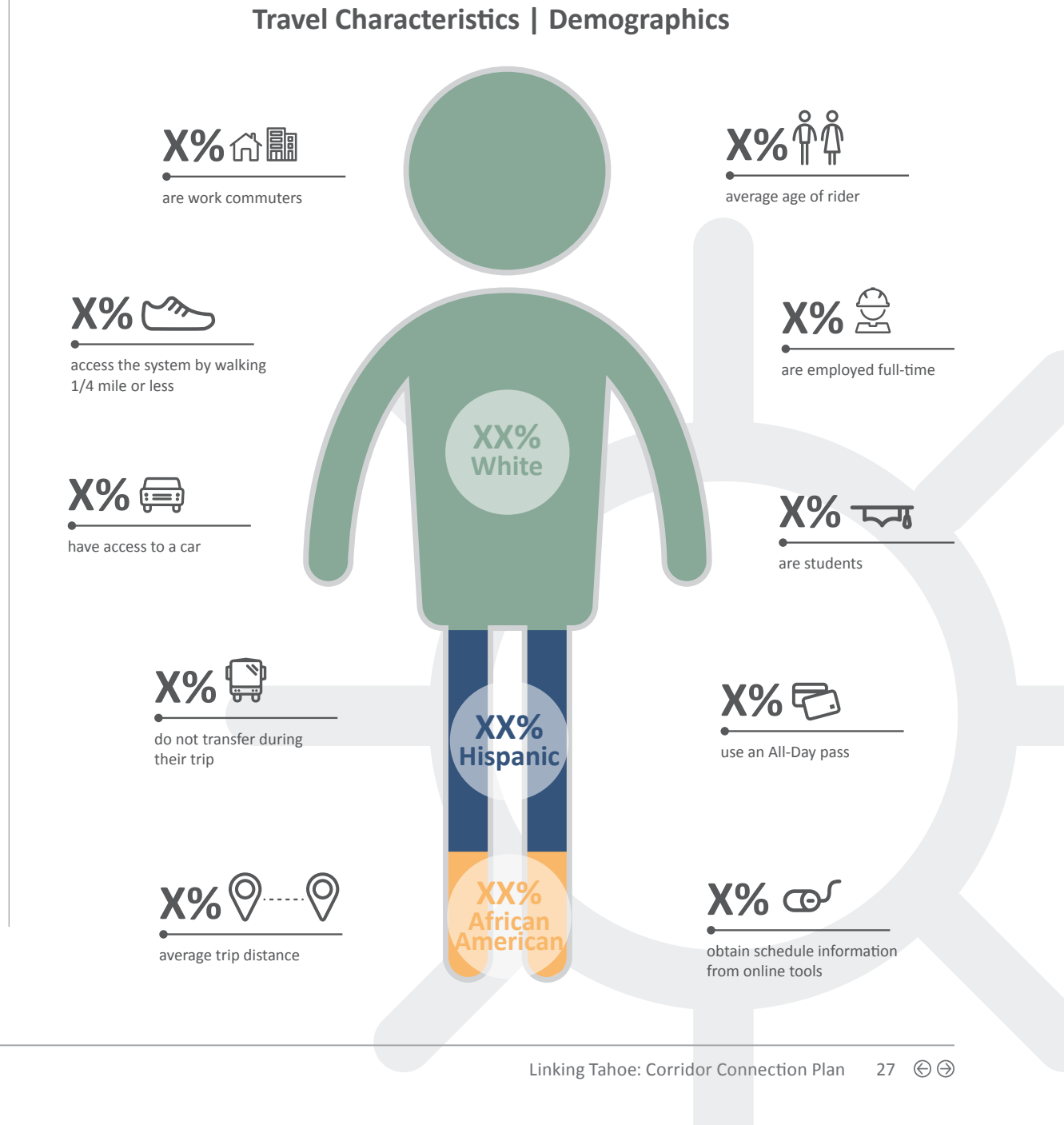


Next Steps

One can endlessly speculate about the potential to capture a greater share of the recreational market on non-auto transportation modes. However, implementing services meant to capture segments of this market with the current level of understanding of these travelers might likely have limited success. With additional data, the likelihood of implementing a successful multimodal travel program increases. It should be a priority to conduct further investigation while implementing the programs for each corridor. The data collection technologies used for this LTCCP and others are improving rapidly. They offer the opportunity to collect enormous amounts of information about travel behavior at a finer granular level and costs of that collection are dropping with competition and are comparatively much lower than previous data collection methods. When the raw data is processed with robust analytics and supplemented with follow-up surveys of users, the resulting information will allow agencies to understand recreational travel market segmentation, assess opportunities to effectively serve various segments with transportation alternatives, and implement competitive alternative transportation services where feasible. **Figure S4-3** illustrates a sampling of transit rider survey data and travel characteristics used in making transportation service changes.

More detailed information on recreational travel is not just of interest to transportation planners and providers. Private sector businesses catering to the recreational travel market could find this data of immense value in recognizing opportunities to make their current businesses more profitable, as well as developing and expanding their businesses by offering new services needed by the recreational traveler. The value of this data for multiple partners could be the foundation for new partnerships to share the cost of more detailed data collection and synergies between the public and private sectors in providing new services to this important market. To maximize the usefulness and benefits to all data users, it is important that common standards for data collection be vetted and agreed upon going forward. Past studies and data collection were often done to address specific purposes. While yielding results, these efforts could have been of greater applicability and value had they been undertaken in the broader context of regional needs.

| **Figure S4-3:** | *Sample Transit Rider Survey Data*



Building Partnerships

Partnerships with the public, other agencies, stakeholders, and the private sector will be essential to successful implementation of the LTCCP. The Tahoe Region already has several partnerships in place, which can be strengthened and expanded. In some cases, new partnerships will need to be created. Some of the key partnerships are discussed below.

Partnership with the Public

No transportation plan, regardless of how well conceived, can be successfully implemented without broad public support. Public support will be crucial to provide the financial resources necessary for implementation, as well as enactment of critical legislative and regulatory tools. Unfortunately, transportation historically is not a high priority for most citizens and building support is not easy. Traditionally, advocates have attempted to build broad support by educating the public on the importance of transportation. In these efforts, the benefits of increased transportation infrastructure investment are typically stated in terms such as reduced traffic congestion, improved fuel consumption, and safety. The advocates hoped that with these facts, a large number of individuals will make transportation one of their high priorities. These arguments are usually emotionally compelling to only a small number of people and, alone, are seldom sufficient to gain approval for legislation and funding, especially when it involves new taxes or fees. Broader success has been achieved when the public is provided information that “connects the dots” by showing how transportation can help them achieve the things that are important to them individually, such as:

- More time relaxing and enjoying the experience.
- Increased long-term prosperity allowing their children and grandchildren to stay and thrive in the community.
- Jobs and economic security.
- Clean air, improved lake clarity, and blue skies.
- Improved and sustained quality of life.
- Increased local control.
- Better schools.
- Self-reliance.
- More parks and recreation facilities.
- Political accomplishment.
- Greater public safety.

This approach honors and does not try to change everyone’s priorities. Instead, the existing emotional commitment of everyone to the issues that are important to them is collectively harnessed to support transportation. Implementation of the LTCCP may take decades. It is necessary that the public partnership supporting this effort be sustained year-in and year-out with an ongoing dialogue on how this LTCCP implementation is helping citizens accomplish the things that are important to each one of the residents, the commuters, and the visiting public.

Partnerships with Public Agencies

To sustain and enhance the existing agency partnerships, the vision, goals, performance targets, strategies, and tactics/actions of the LTCCP were developed within the context of previous planning accomplished by these agencies to maintain consistency region-wide. This approach has several benefits, namely it offers a coherent framework to understand how the actions of the many jurisdictions are being combined to create an efficient, multimodal transportation system. Most importantly however, the LTCCP gives all agencies a useful tool to focus existing transportation resources on priorities that offer benefits within their individual jurisdictions with synergistic benefits across the entire region.

Partnerships with the Private Sector

Full implementation of the LTCCP will also rely upon partnerships with the private sector. Some of these will be with private sector, non-profit entities, such as various transportation management associations, Chambers of Commerce, tourism and visitor authorities, trade associations, the League to Save Lake Tahoe and others. There has been a history of successful collaborations with these groups in the past. Since the goals of these groups have considerable overlap with the goals and objectives of the LTCCP, there will be numerous opportunities to continue this success in the future.

Full realization of the LTCCP will also present multiple opportunities to collaborate with private sector businesses. Close collaboration and coordination on land use development that facilitates and sustains alternative modes of transportation will be an important aspect of plan implementation. Partnerships to improve business accessibility and access using alternative transportation could also play a significant role. Additionally, a public-private partnership to gather more detailed data on travel patterns of all groups may reveal new opportunities for the partners to provide customized products and services, including specialized transportation services.



Technology

Technology improves the efficiency and effectiveness of transportation systems, thereby making transit service more appealing to system users. Also, it can improve safety and reliability. Occasionally, technology can result in profound, positive transformation. Unfortunately, history is replete with examples of transportation technologies that were misapplied, implemented without proper forethought, inadequately supported, and lacked the necessary training of users.

Technologies are only a means to an end. Before any technology is selected for implementation, it must be thoroughly vetted. First, the technology should make a reasonable contribution towards accomplishing the plan's stated goals. Second, the true costs to deploy, operate (including training/education for both the operators and the public), maintain, and renew the technology must be affordable and clearly understood. Too often, technological innovation fails because there was no plan beyond the initial purchase and the longer-term costs are simply unsupportable. This is a problem when grant monies become available to transit providers to buy technology, but no funding is available to maintain the technology once it is in place. Third, once the true costs of a technology are understood, there should be an assessment of whether the benefits of deploying the technology justify the true life-cycle costs. Further consideration of a particular technology should move forward when the assessment outcomes are positive.

Appendix A to the LTCCP identifies several technologies in the strategies and actions/tactics that have been used extensively and with great success in other geographies. Many of these are ready for implementation in the immediate to short-term. Others have reasonable potential for mid-term deployment. Some technologies, because of the expense, complexity, and newness, are tentatively identified for implementation in the long-term. The following summarizes potential technologies in three time frames:

Immediate and short-term technologies (0-5 years):

- Parking management information systems
- Event management information systems
- Traveler data collection - wireless, cellular, Bluetooth, and automated passenger counters
- Traveler information systems using radio, dynamic messaging, e-mail, or texts
- Clean fuels
- NextBus real time passenger information systems
- Queue jumping
- Ride sharing systems
- Bike sharing (implemented in key areas)
- Personal car sharing
- Integrated transit fare collection

Mid-term technologies (5-10 years):

- Integrated, comprehensive itinerary planning for visitors, including activities, lodging, dining, and transportation
- Congestion charging within Basin
- VMT fee within Basin
- Person miles traveled (PMT) charge within the Basin that varies by mode

Long-term technologies (10+ years):

- Autonomous vehicles
- Ferries and water taxis/shuttles



Technology will play an important role in implementing the comprehensive, multimodal transportation system of the LTCCP. Thoughtful consideration and vetting of technologies can help assure that appropriate implementation is successful and sustainable. The successful application of technology will enhance the transportation user experience and build public confidence. When properly resourced and supported, the implementing public agencies can deliver a transportation system meeting the region's vision and needs.

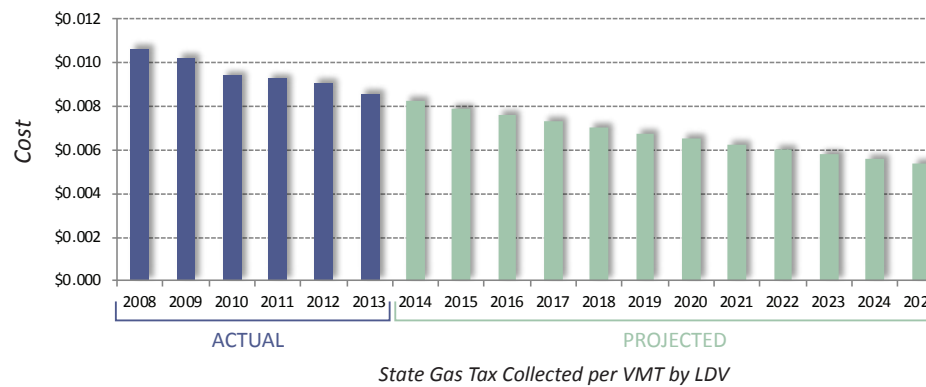
Maintenance and Monitoring

Maintaining the transportation system is essential to meet environmental goals, congestion management, and quality of life goals. Maintenance includes taking care of roads, bridges, sidewalks, and bike lanes and paths. In addition, bus stops, transit stations, transit vehicles and equipment must be maintained. As importantly, adequate levels of transportation funding must be sustained to operate, maintain, expand, and renew the transportation system now and in the future. Failure to ensure adequate maintenance in any of these areas will result in a transportation system that is ineffective in reducing pollution and congestion. The economic consequences of this will be felt as businesses, residents, and visitors seek other communities and resort destinations that embrace the importance of quality transportation systems and have committed the necessary resources to make multimodal transportation options a robust reality.

Maintenance of Road Pavements

Driving on roads that are in poor surface condition has been documented to increase vehicle fuel consumption, as well as repair and maintenance costs. TRIP, a non-profit private research group, periodically issues reports on the status of surface transportation in states and sub regions of states. Based on the TRIP reports, the 2015 Trans-Sierra Plan and Business Case estimated that motorists in the Lake Tahoe Region are paying an estimated average of \$666 per year in additional repair and operating costs from driving on roads that are in poor condition. According to research published by the Transportation Research Board, passenger cars and SUVs driving on pavements in poor condition use about 10% more fuel than when driving on pavements in good condition. Maintaining pavements in a state of good

Estimated Average Nevada State Gas Tax Collected Per Vehicle Mile Traveled (VMT) By Light Duty Vehicle (LDV) in Nominal Dollars



Source: Derek Morse, Conceptual Framework for a "Low-Cost/Low-Tech VMT Fee Collection System in Nevada.

Note: The reduction of fuel taxes in Nevada, as a source of transportation funding, is nearly identical to other states and transportation agencies across the U.S.

repair would not just save the average driver \$666 per year, the reduction in wasted fuel would also make a significant contribution to reduction in overall vehicle emissions, including GhGs.

Maintenance of Bike, Pedestrian, and Transit Facilities and Equipment

The RTP contains two primary strategies for reducing VMT and achieving the per capita reductions in GhG mandated by the State of California. The first strategy is land use and development projects that are intended to foster more travel by foot, bicycle, and transit. The second strategy, complementary to the first, is to increase investments in pedestrian, bicycle, and transit facilities and services. These primary strategies can only be fully successful if the facilities, once they are built, are properly maintained and, at the end of service life, replaced. If the condition of sidewalks and bike lanes/paths deteriorate, fewer people will use them. Similarly, transit systems with poorly maintained vehicles, stations, and stops send a clear message that they may be unsafe and unreliable and equally undesirable. Such systems are unsuccessful in attracting and retaining riders. It makes little sense to invest precious public resources in building new facilities and buying new transit vehicles, if the community is not prepared to maintain the investment.

Maintenance of Funding

As is evident from the foregoing discussion, maintenance of the transportation infrastructure is another key aspect to achieving the transportation goals and vision of the community. Maintaining this infrastructure will require significant funding, not to build or buy the infrastructure the first time, but to operate, maintain, and renew it in the future. This means that sustainable, adequate levels of funding must also be maintained to support the investments in all transportation modes identified in the LTCCP.

Maintenance Monitoring

It is essential that all partners providing transportation in the region monitor and report on the maintenance of infrastructure and maintenance funding that supports this infrastructure. Given the relatively long service lives of transportation infrastructure, it is often tempting to defer maintenance in favor of building infrastructure that can be visibly appreciated when funding is tight. The full life cycle value of infrastructure investments is realized with proper maintenance. Deferred maintenance ultimately results in significantly greater costs and disruptions. Lack of maintenance monitoring can lead to agonizing crises for the community and a loss of confidence that the transportation system is safe and reliable transportation.



Congestion Management

The Lake Tahoe Region faces a critical transportation challenge. Tourism and recreational activities largely drive the economy. Visitor trips account for an estimated 87% of all person trips into the Basin and 66% of all trips within the Basin. It is evident that the current transportation system is not meeting the demands placed upon it by the current level of these activities: increasing congestion, declining system condition, and degradation of Tahoe's water quality due, in significant part, to run off from roadways and adjacent parking areas containing brake dust and rubber particles created when brakes are applied.

The essential question is: How do we maintain a vibrant economy and preserve, maintain, and enhance the quality of the environment, visitor experience, and residents' lives in the face of increased visitation to the Lake Tahoe Region? A well planned and adequately funded transportation system can make a major contribution to addressing these challenges, if it allows more visitors to the region with no more or perhaps less congestion and VMT than we have today.

The recommended approach is to employ a mix of strategies including:

- More efficient use of existing infrastructure.
 - Operational improvements.
 - Fine tuning the roadway network to address bottlenecks due to capacity mismatches between system components.
- Targeted transportation services for the recreational traveler.
- Event management.
- Parking management.
- Increasing the number of trips made by transit, walking, and biking modes.

Changing travel behavior through punitive tools such as fines and restrictions has typically not shown itself to be very effective since it tends to impact only those at the margins. Motivating behavioral change by offering options

that are truly competitive in terms of cost, time, and convenience has been more successful. For this reason, the transformative change identified in the LTCCP requires implementing a number of actions/tactics that will make transit, walking, and biking competitive alternatives to the automobile for many trips, including:

- Realigning existing transit resources to better serve geographic areas with the highest ridership potential.
- Adding new transit service by extending hours of operation and increasing frequency on existing productive routes, and introducing new routes in areas with high ridership potential.
- Giving equal access to all modes at key destinations and significant activity centers.
- Equitably charging users of all transportation modes the cost of operations, maintenance, and capital investment proportionate to their community and environmental impacts.

Keeping on Course

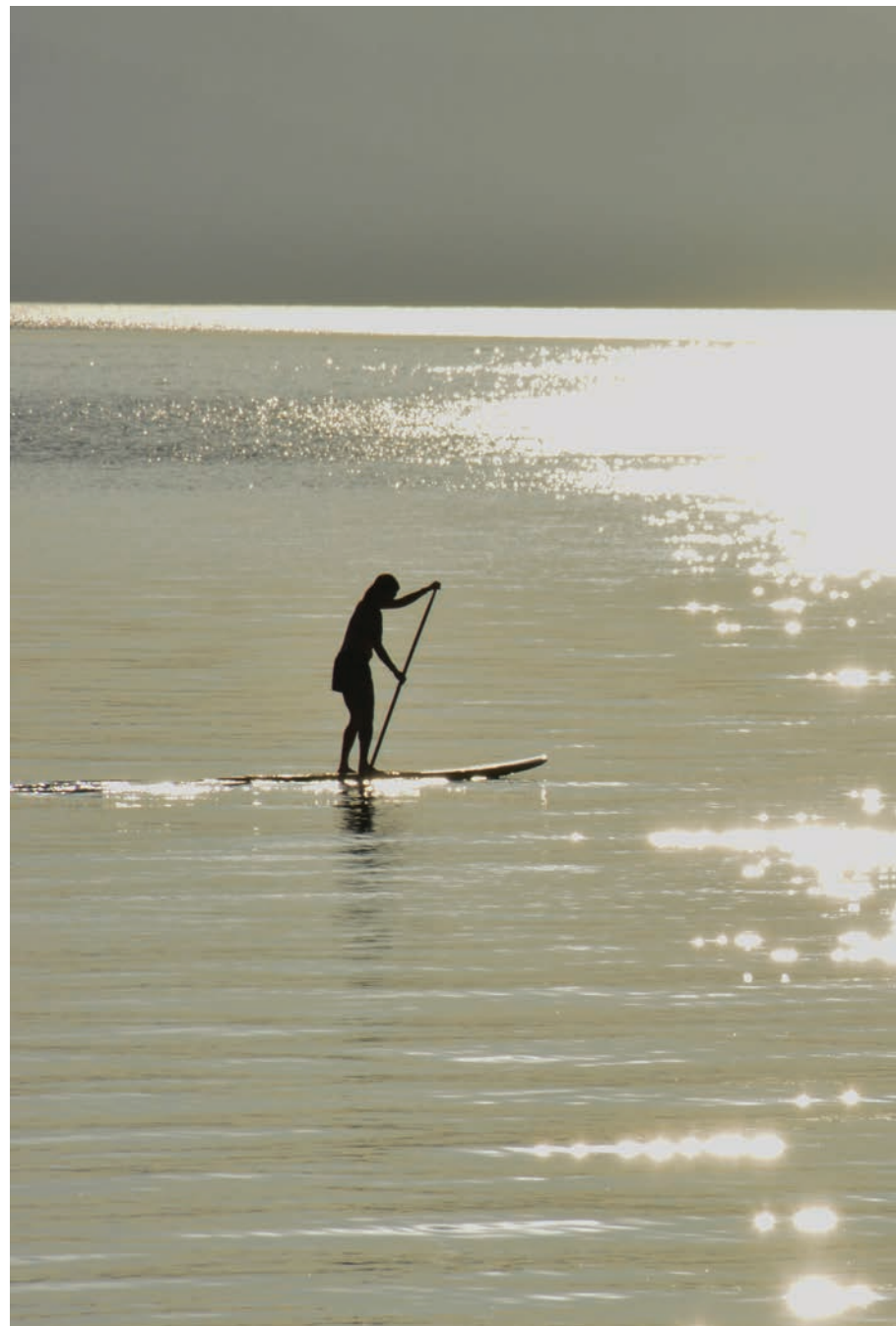
The LTCCP provides a powerful set of tools for keeping the region on course as it moves to transform its transportation vision to reality. The performance measures incorporated in the plan, if reported annually, will enable the public and political decision makers to understand if the implementing agencies are making progress at the rate needed to meet adopted performance targets. Since the time frames for achieving performance targets are typically five or more years, annual measurement will allow deviations from the planned rate of progress to be caught while they are still small. This affords the opportunity to make corrections before the negative deviations become so large as to create a crisis. If the performance targets are achieved more rapidly than anticipated, a new set of performance targets can be created to keep driving progress forward.

The detailed list of key strategies, actions and tactics is attached as an **Appendix A**. Collectively, they outline steps to accomplish the plan's goals and, ultimately, the community's transportation vision. As actions/tactics are accomplished, new projects and services will need to be identified to continue this progress. Technology may also present new and novel opportunities to progress the vision in a manner not foreseen at this time or requiring new tactics/actions.

The LTCCP should be revisited every four to five years in its entirety. This affords the opportunity to review and affirm the transportation vision and goals that are the primary drivers of the implementation strategies and tactics/actions of the plan. The success of the plan's strategies can be assessed and, as necessary, the suite of strategies amended or expanded. This is also a time to affirm performance measures and reset performance targets.

The LTCCP provides a comprehensive, coordinated path for implementing the multimodal transportation system that will be needed to provide and sustain a vibrant economy, a healthy environment, and an outstanding quality of life in the Lake Tahoe Region.

To be successful, the LTCCP must be a living plan that is updated, renewed, and supported through an on-going dialog with the public, stakeholders, and governments across the region.



Linking Tahoe: Corridor Connection Plan

Corridor Management Plan



Corridor Management Plan



Overview

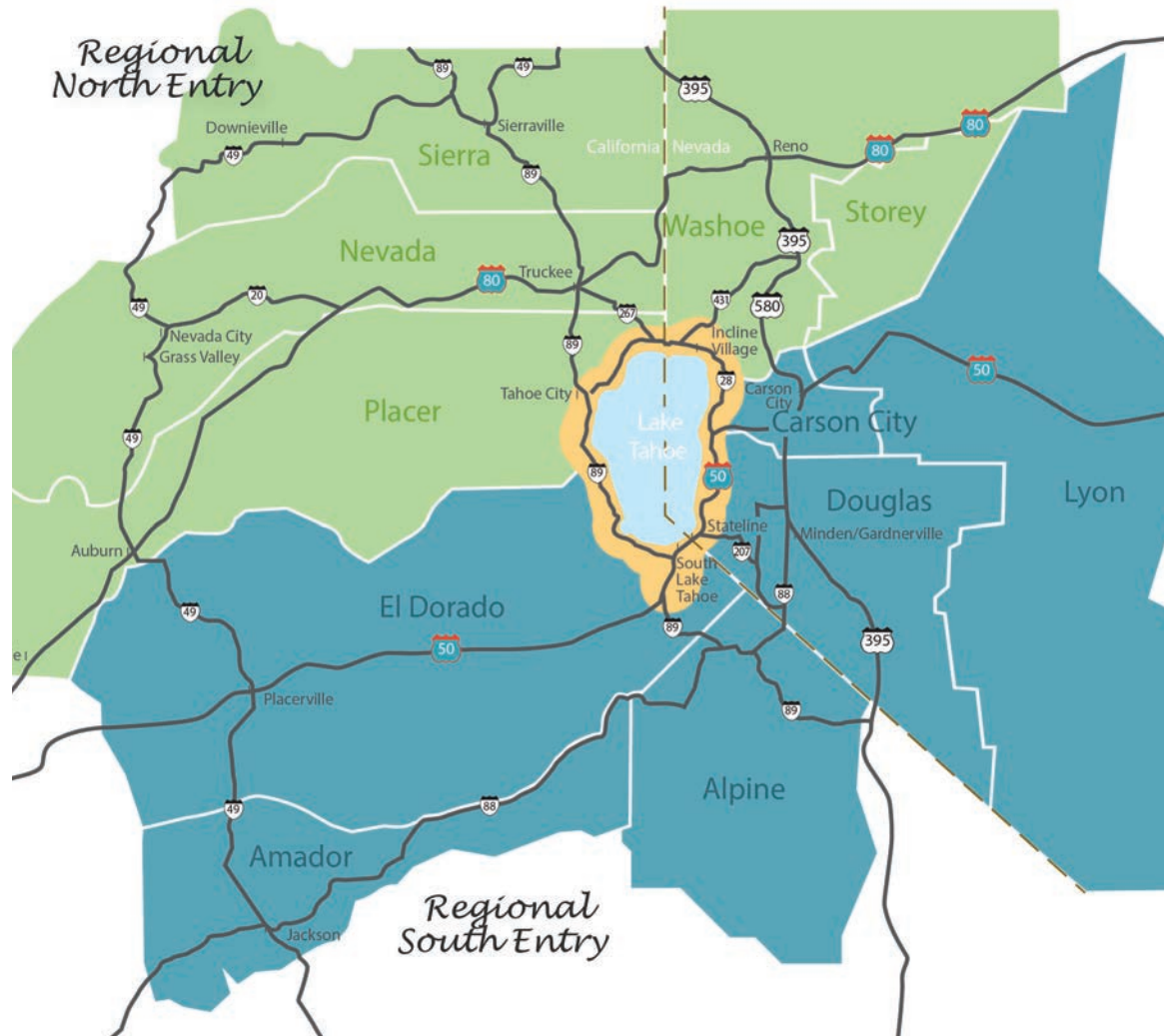
This section examines the six internal and two external corridor segments in detail. The division between corridors was based, in part, upon the TTD's understanding and functional differences between the communities that comprise the Lake Tahoe Basin. Small refinements were made to the corridors for aligning their boundaries with census tracts and TAZs. Each corridor plays an important role in supporting the functionality of the other corridors. **Figure S5-1** illustrates the two external corridors and related counties.

According to U.S. Census data on housing, the east shore is considered the residential bed base and the west shore the more transient or seasonal bed base. Incline Village, US 50 East Shore, and Meyers maintain the highest ratios of owner occupied dwellings (65% or more). SR 89 Recreation claims the highest ratio of seasonal housing (70 to 80%). From a housing density perspective, the Tahoe Keys, the area around the Meyers/Y, and the area within Northwood and Southwood Boulevards in Incline Village, report the highest density per square mile. The high-density housing locations mirror the geographic locations of high concentrations of population. For employment, jobs are concentrated in the US 50 South Shore Corridor, followed

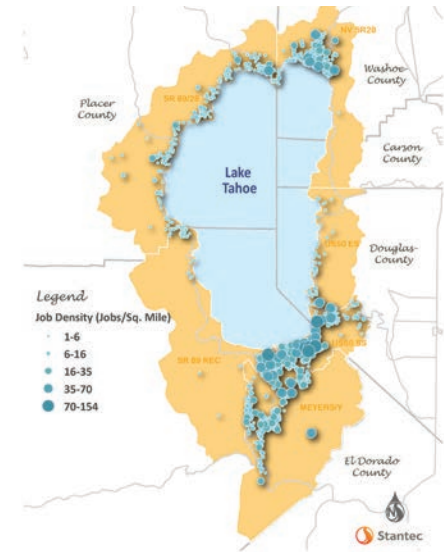
by NV SR 28 and SR 89/28, and illustrated in **Figure S5-2**. Housing types, particularly seasonal, recreational, or occasional use as a percentage of total housing is illustrated in **Figure S5-3**. **Table S5-1** provides a comprehensive corridor comparison of relevant attributes analyzed for the LTCCP.

Table S5-1: Interior Corridor Comparison Matrix

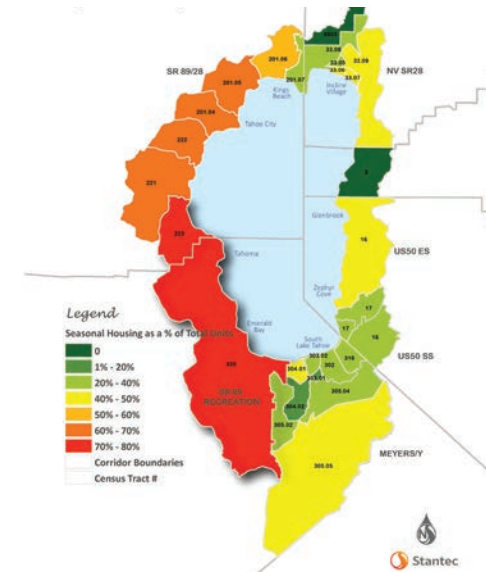
| Figure S5-1: | External Corridors to Lake Tahoe



| Figure S5-2: | In Basin Employment Destinations and Jobs per Square Mile



| Figure S5-3: | Seasonal Housing as a % of Total Units, 2010



|Table S5-1: | Interior Corridor Comparison Matrix

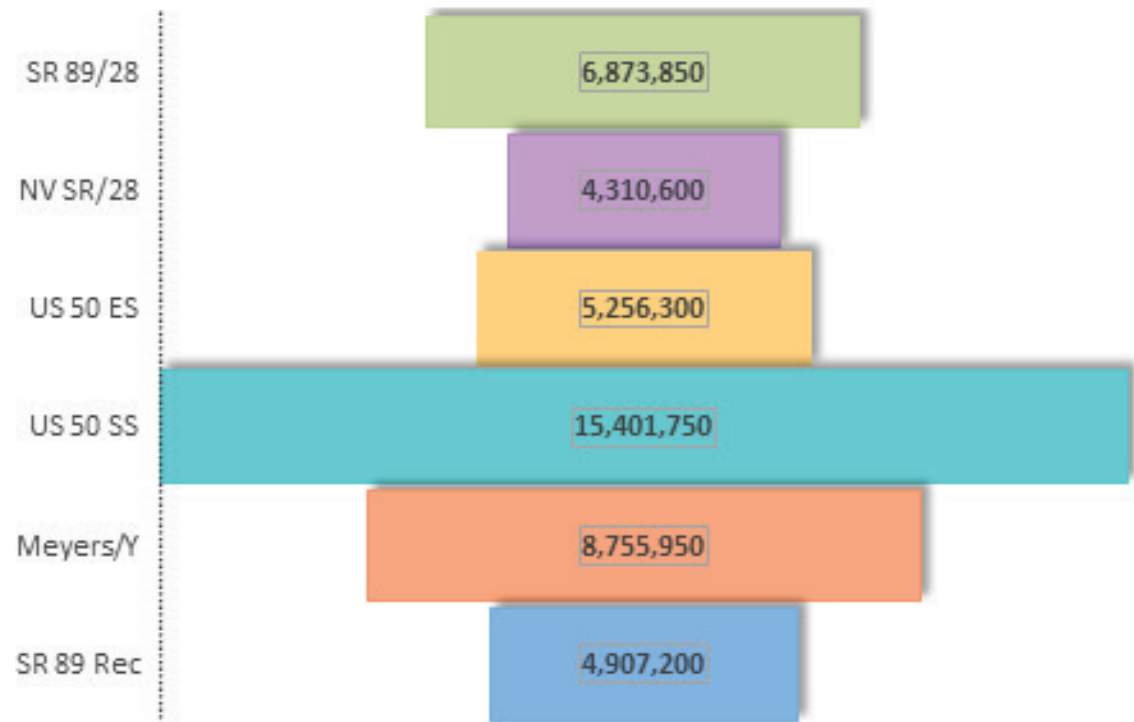
	SR 89/ 28	NV SR 28	US 50 East	US 50 South	Meyers/ Y	SR 89 Rec
Social Demographics						
Resident Population	10,448	9,095	3,192	16,387	15,478	1,015
Median Age	41.9	39.8	51.2	34.8	43.1	45.4
Median Household Income	\$67,500	\$64,972	\$54,296	\$44,559	\$55,846	\$42,500
Employment						
# of Businesses (2016)	1,248	551	289	1,232	1,088	85
# of Employees (2016)	9,243	5,558	3,224	18,415	7,595	926
Employee/Residential Population Ratio	0.8:1	0.6:1	1:1	1.02:1	0.44:1	0.89:1
Employed in the Corridor	3,176	3,988	689	9,255	3,201	224
Employed in the Corridor, but Living Outside	2,470	2,723	648	6,600	1,862	300
Employed and Living in the Corridor	706	1,265	41	2,655	1,339	5
% Resident Employees	22%	32%	6%	29%	42%	2%
Workers 16 years and over	5,723	4,282	3,178	6,579	6,771	403
Commute to Work % Drove Alone	61.5	68.1	76.9	62.6	78.1	76.1
Commute to Work % Public Transportation	5.1	< 1	< 1	3.1	1.5	5.2
Commute to Work % Walked	4.5	5.0	6.4	11.3	2.4	2.4
Housing/Land Use						
Number of Residential Units	12,106	7,884	2,957	12,574	11,695	2,784
Resident Population/ Units Ratio	0.86:1	1.15:1	1.08:1	1.30:1	1.32:1	0.36:1
% Single Family Units	75	77.7	54.9	56.0	81.2	93.5
% Multi-Family Less than 20 du/bldg	17.4	14.4	30.4	35.4	12.7	4.3
% Multi-Family 20+ du/bldg	7.6	7.8	14.5	8.5	6.0	2.0
% Seasonal Resident Units	58.0	35.0	39.8	31.0	35.8	80.0
% Owner Occupied	56.4	65.7	58.5	38.0	63.4	49.7
% Renter Occupied	43.6	34.3	41.5	62.0	36.6	50.3
Median Value (Owner Occupied)	\$547,500	\$740,600	\$448,750	\$332,700	\$371,900	\$546,900
Tourist Accommodation Units (TAU) 2015	1,349	817	0	11,584	701	103
% of Conservation/ Open Space Land Use	85	89	85	53	76	88
Persons Per Sq. Mile (Land Use Density)	139	306	113	906	189	13
Recreational						
# of Trailheads	4	4	1	1	3	7
# of Public Beaches	15	6	3	4	1	5

	SR 89/ 28	NV SR 28	US 50 East	US 50 South	Meyers/ Y	SR 89 Rec
# of Major Recreation Destinations	14	6	4	3	7	7
# of Recreation Parking Spaces	576	1,334	829	576	184	2,132
# of School District Spaces	313	296	146	295	493	0
Annual Vehicle Entries/ Recreation Parking Ratio	11,691:1	3,351:1	7,045:1	20,467:1	58,769:1	813:1
Multimodal Operations						
# Vehicles Entering Annually 2014	6,734,250	4,471,260	5,840,000	11,789,500	10,813,500	1,733,750
Internal Annual Corridor Person Trips	8,842,257	9,468,543	2,986,971	22,345,048	21,902,933	4,028,667
Annual Transit Ridership (2015-16)	248,384	51,628	118,629	462,983	170,682	7,482
% Annual Transit Ridership	23%	5%	11%	44%	16%	1%
Average Daily Transit Ridership	421	91	325	1,268	468	61
Transit Ridership/ Resident Ratio	23:1	6:1	38:1	28:1	11:1	7:1
Transit Ridership/ Visitor Ratio	0.05:1	0.02:1	0.04:1	0.06:1	0.04:1	0.004:1
# of Transit Stops per Mile	4.8	0.9	1.5	17.5	0.8	1.5
Miles of Bike Trails	29.9	11.0	3.8	23.8	23.1	5.5
Miles of Sidewalk	1.5	3.9	0.0	11.1	3.1	0.0
Active Transportation Counts (2016)	213	0	0	476	154	0
Visitors						
# of Annual Visitors 2014	4,927,619	3,052,600	2,654,990	7,991,924	3,876,962	1,782,648
% of Total Visitors 2014	20%	13%	11%	33%	16%	7%
Safety						
# of Crashes (most recent 5 years)	501	289	223	403	206	129
# of Fatalities (most recent 5 years)	2	7	0	5	2	1

Corridor Comparison Highlights

- Demographically speaking, US 50 South Shore Corridor reports the highest resident population, lowest average age, and second to the lowest median household income.
- Employees in the US 50 South Shore Corridor outnumber those in SR 89/28 Corridor two to one. However, the SR 89/28 Corridor reports a slightly higher number of individual businesses suggesting larger employers in the south shore and smaller employers in the north shore.
- The percentage of commuters walking to work is highest in US 50 South Shore Corridor.
- SR 89/28 Corridor reports the second highest number of commuters via public transit; SR 89 Recreation Corridor is the highest but the number of employees is a fraction of those in the SR 89/28 Corridor.
- Housing densities, desirable for efficient transit services, is highest in Meyers/Y, US 50 South Shore and NV SR 28 Corridors.
- Population density (persons per square mile), essential for efficient transit, is three times higher in the US 50 South Shore Corridor than in the NV SR 28 Corridor. Incline Village is nearly three times higher than Meyers/Y Corridor.
- The concentration of Tourist Accommodation Units (TAUs) within a given area is also desirable for transit and active modes. The US 50 South Shore Corridor reports a ten-fold number of TAUs compared to all other corridors.
- The SR 89/28 Corridor boasts the largest number of recreational destinations with 33. The ratio of vehicles entering the corridor to the available public parking space ratio is 11,691 to 1.
- US 50 South Shore reports the highest number of annual visitors, 33% of the total, with eight million. The visitor to public parking space ratio is 9,176 to 1. Managing the existing parking better and adding Mobility Hubs in the US 50 South Shore is important to the success of the LTCCP.

| Figure S5-4: | Annual External & Internal Visitor Trips by Corridor, 2014



SR89/28 Corridor

A Glimpse of the Future

It's a beautiful summer day, perfect for a swim. But the thought of the traffic discourages you until you remember things have changed. If you live or are staying in the SR 89/28 Corridor, there is now a safe, convenient pathway for cycling or for walking to your favorite nearby destination. Want to venture a bit further afield? Hop on a convenient bus that runs up and down the corridor every 30 minutes. Heck, you can even take your bike on the bus if you want to. Coming to Tahoe from outside the area? Head to the Tahoe City Mobility Hub, park the car and leave it. From this point, you have the option to walk, bike, or ride transit to all beaches, trailheads, shopping, dining, and other attractions this corridor offers. And now these destinations are even

easier to find with easy-to-understand wayfinding signage. Safe, pedestrian crosswalks make exploring the area simple and stress-free.

Work today? Bummer! But if you work in the Basin, leave the car at home and walk, ride a bike, or take frequent transit to your job. Looking out over the Lake is a beautiful way to start any day, even if it means going to work. With frequent transit services, you have plenty of options to get you there, reliably, rain or shine. Look at the views, catch up on your reading, and relax, this is going to be a great day!

Characteristics

From the south end, the corridor begins north of Sugar Pine Point State Park and extends north and east to the California/Nevada state line in Crystal Bay. El Dorado and Placer Counties share authority, along with California State

Parks. SR 89 and SR 28 combined encompass 20.4 miles of the 72-mile highway encircling Lake Tahoe. The corridor includes the residential areas of Tahoma, Homewood, Tahoe City, Dollar Point, Carnelian Bay, Tahoe Vista, and Kings Beach. Recreational attractions include Ellis Peak, Homewood and Alpine ski resorts, Tahoe and Burton State Parks, Sunnyside Marina and Restaurant, Commons Beach, Tahoe City Marina, 64-Acres Beach plus park and trailhead, and Brockway Summit Tahoe Rim Trail Trailhead. There are plenty of beaches, restaurants, commercial areas, and neighborhoods all connected via the highway and supported by TART transit. Public parking is extremely limited. Sidewalks are also limited to the commercial core areas in Kings Beach and Tahoe City. **Figure S5-5** illustrates the land use pattern and recreational amenities within the SR 89/28 Corridor.

| Figure S5-5: | SR 89/28 Corridor
Land Use & Recreation Facilities



Approximately 60% of the residential housing units are classified as seasonal, predominately low density single family units dispersed throughout the corridor in the residential neighborhoods.

This corridor has the highest number of recreational sites and businesses in the Basin, attracting approximately 4.9 million visitors annually (second highest visitor destination in Tahoe). The number of TAUs is just 0.03% of total visitors.

Clearly, this corridor is a popular destination for visitors with appealing retail and restaurants. Recent streetscape improvements in Tahoe City and Kings Beach significantly improved the quality of experience, generating even greater traffic. The high number of destinations coupled with the shortage of hotel/motel rooms means visitors must drive to offerings within the corridor. Ideally, visitors wake up and walk down the street for breakfast and then to a nearby bus stop to go for an excursion. Until more hotel rooms are constructed, more centralized parking, and more frequent transit services are available, congestion will continue and worsen. Or, access to transit from nearby neighborhoods that function as vacation rentals in peak seasons will need to be vastly improved.

The wireless device data corroborated by state traffic counts, indicates **6.7 million vehicles** entered the corridor in 2014: 81% visitors, 10% residents, and 9% commuters. These millions of visitor vehicles navigated the corridor searching for one of the available 567 **public** parking spaces¹. Increased parking areas directly connected to shared use paths and transit services is essential to reduce congestion. Of the **8.8 million person trips** made within the SR 89/28 Corridor, only **2.8%** of those were **via transit**.

¹ Parking at several school sites within the corridor could augment the parking supply by 322 additional spaces.

Table S5-2 summarizes the SR 89/28 Corridor statistics analyzed to develop the LTCCP.

U.S. Census employment data reveals a 22% ratio of resident employees (e.g., residents who both live and work in the corridor). Approximately 2,500 individuals live outside the corridor and work within it. TART services transport hundreds of workers daily from origins outside the corridor to destinations within the corridor. Affordable housing, easily accessible by transit, would also alleviate automobile congestion.

| Table S5-2: | SR 89/28 Corridor Statistics

Social Demographics		Recreational	
Resident Population	10,448	# of Trailheads	4
Median Age	41.9	# of Public Beaches	15
Median Household Income	\$67,500	# of Major Recreation Destinations	14
Employment		# of Recreation Parking Spaces	576
# of Businesses (2016)	1,248	# of School District Spaces	313
# of Employees (2016)	9,243	Annual Vehicle Entries/ Recreation Parking Ratio	11,691:1
Employee/Residential Population Ratio	0.9:1	Multimodal Operations	
Employed in the Corridor	3,176	# Vehicles Entering Annually 2014	6,734,250
Employed in the Corridor, but Living Outside	2,470	Internal Annual Corridor Person Trips	8,842,257
Employed and Living in the Corridor	706	Annual Transit Ridership (2015-16)	248,384
% Resident Employees	22%	% Share of Total Annual Transit Ridership	23%
Workers 16 years and over	5,723	Average Daily Transit Ridership	421
Commute to Work % Drove Alone	61.5	Transit Ridership/ Resident Ratio	23:1
Commute to Work % Public Transportation	5.1	Transit Ridership/ Visitor Ratio	0.05:1
Commute to Work % Walked	4.5	# of Transit Stops per Mile	4.8
Housing/Land Use		Miles of Bike Trails	29.9
Number of Residential Units	12,106	Miles of Sidewalk	1.5
Resident Population/ Units Ratio	0.86:1	Active Transportation Counts (2016)	213
% Single Family Units	75	Visitors	
% Multi-Family Less than 20 du/bldg	17.4	# of Annual Visitors 2014	4,927,619
% Multi-Family 20+ du/bldg	7.6	% of Total Visitors 2014	20%
% Seasonal Resident Units	58.0	Safety	
% Owner Occupied	56.4	# of Crashes (most recent 5 years)	501
% Renter Occupied	43.6	# of Fatalities (most recent 5 years)	2
Median Value (Owner Occupied)	\$547,500		
Tourist Accommodation Units (TAU) 2015	1,349		
% of Conservation/ Open Space Land Use	85		
Persons Per Sq. Mile (Land Use Density)	139		

Source: U.S. Census, American Community Survey, LEHD 2016, TRPA, TTD, TART, and Stantec Consulting.

Current Multimodal Options

The SR 89/28 Corridor has one of Tahoe's most complete multimodal networks, including well-developed transit services, a well-connected shared use path along the highway, and sidewalks within the prominent commercial areas. TART operates transit service within the corridor at one hour frequencies, centralized at the Tahoe City Transit Center, which also has a park and ride. There are **30 miles of shared use pathways**. However, two significant gaps exist in the bikeway system. And another portion of the bikeway near Sunnyside Resort, classified as an existing shared low volume roadway, should not be considered 'low volume' with an annual average daily trip (AADTs) count of 13,200. This figure suggests an incorrect bikeway classification. An extension of the off-highway shared use path should be prioritized for construction through Sunnyside. **Figure S5-6** illustrates the existing multimodal facilities in the SR 89/28 Corridor.

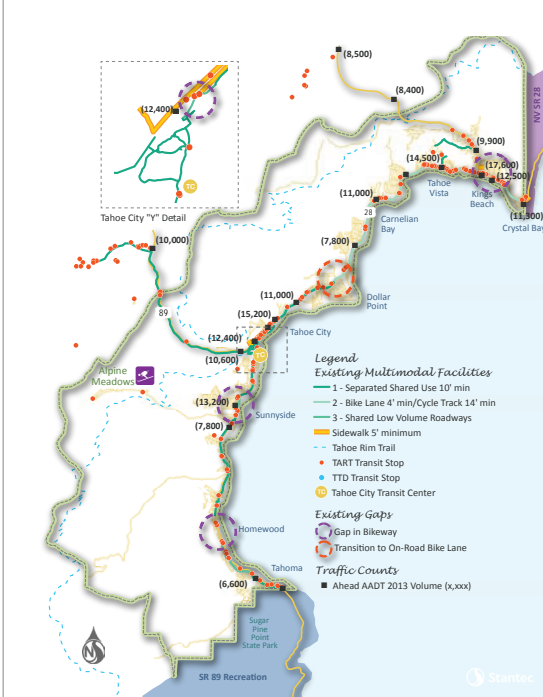
Transportation Issues

Two external state highways connect the SR 89/28 Corridor to the larger region: SR 89 that intersects at Tahoe City; and SR 267 at Kings Beach. AADTs (2013) are slightly higher on SR 89. Throughout the corridor, traffic counts rise and fall continuously with higher numbers observed in Tahoe City, Tahoe Vista, and Kings Beach; and lower numbers along the west shore between Burton Creek State Park and Tahoe Vista.

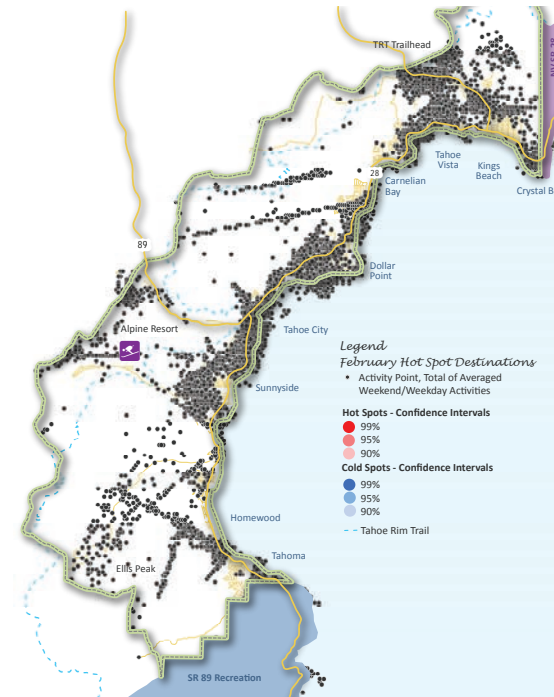
Figures S5-7 and S5-8 highlight the frequented destinations in the corridor during the peak winter month (February) and peak summer month (July) 2014. The wireless device data included activity points for all devices observed within the corridor throughout the two months. The ArcGIS Hot Spot Optimization tool uses an algorithm to filter the massive number of activity points to identify the most frequented destinations i.e., "hot spots", and the secondary

destinations or "cold spots". All other locations of activity points are deemed statistically insignificant. Device activity in February produced no significant hot spot. However, July activity points revealed Tahoe City, Kings Beach, and the residential area north of Kings Beach where the Tahoe Rim Trailhead accesses SR 267 as hot spots. Nearly all other residential communities along SR 89 were classified as cold spots. Multimodal infrastructure and improvements should be targeted to the hot spot locations.

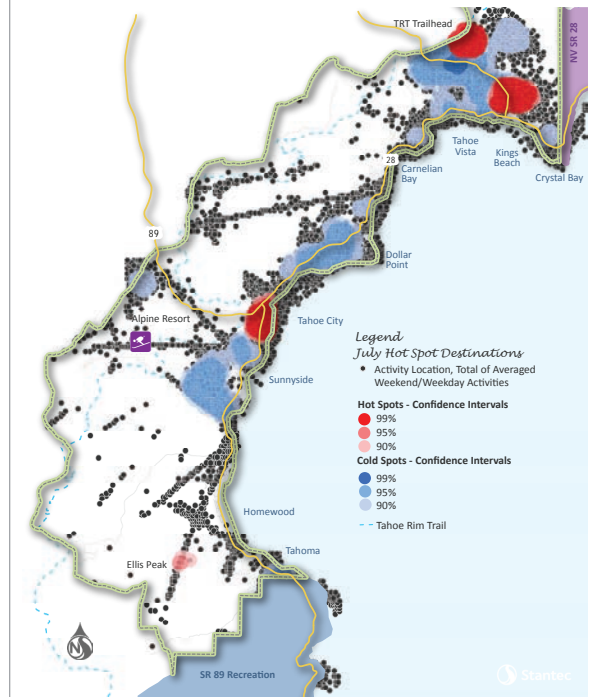
| Figure S5-6: | SR 89/28 Corridor
Existing Multimodal Facilities



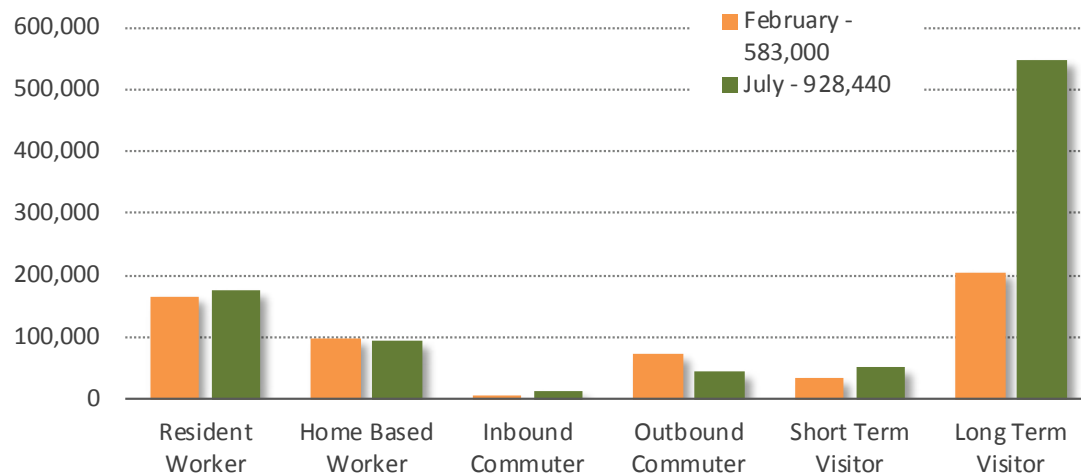
| Figure S5-7: | SR 89/28 Corridor
Hot Spot Destinations, February 2014



| Figure S5-8: | SR 89/28 Corridor
Hot Spot Destinations, July 2014



| Figure S5-9: | SR 89/28 Corridor Hot Spot Destinations, July 2014



| Table S5-3: | SR 89/28 Corridor Statistics

Travel Group	February			July			TART Average Daily Transit Boardings (2015-2016)
	Daily Trip Count	Monthly Trip Count	Travel Group % of Total	Daily Trip Count	Monthly Trip Count	Travel Group % of Total	
Resident Worker	11,736	164,065	28%	2,420	175,175	19%	421 14% of Average Daily Transit Ridership
Home Based Worker	6,950	97,430	17%	198	94,070	10%	
Inbound Commuters	510	7,190	1%	229	14,325	1%	
Outbound Commuter	5,386	74,410	13%	828	44,035	5%	
Short Term Visitors	2,605	34,685	6%	2,098	51,575	6%	
Long Term Visitors	15,713	205,210	35%	21,617	549,260	59%	
Total	42,900	582,989	100%	27,390	928,440	100%	

Source: Stantec Consulting, AirSage Analytics, TART.

Figure S5-9 displays the number of internal trips made exclusively within corridor by the various travel groups during February and July. Of note is the higher number of Resident Worker and Home Based Worker trips in February compared to July. The fewer number of trips by residents suggests some leave the area in July and possibly rent their homes to the Short Term and Long Term Visitors. The glossary includes a detailed description of each travel group.

Short-Term Visitors are non-resident travelers staying two days or less. Long Term Visitors stay three days or more.

Table S5-3 highlights the average daily and monthly total internal trips made by travel group throughout the SR 89/28 Corridor. Resident and Home Based Worker internal trips combined contribute to over 46% of the total trips in February, and 30% in July. Internal trips by Inbound Commuters is also two times higher in February than July.

TART boarding data indicates 14% of average daily trips utilized transit.

In addition to travel patterns that vary widely throughout the corridor, SR 89/28 Corridor has the following transportation challenges relating to implementation of the LTCCP:

- Transportation and land use decisions within the corridor involve multiple federal, state, and local agencies which can make collaboration and cooperation complex.
- Existing roadway infrastructure is incapable of handling peak season volumes. The Fanny Bridge Improvement Project will alleviate congestion at the SR 89/SR 28 intersection.
- Congestion is often severe in portions of the corridor, particularly near the roundabout in Kings Beach, due to heavy traffic volumes and significant vehicle and pedestrian conflicts.
- The existing public parking supply, located in **Appendix B**, is inadequate to meet the demand 4.9 million visitors, particularly during peak periods. The lack of pedestrian facilities makes travel to and/from remote parking locations inconvenient and potentially unsafe.
- Dispersed tourist accommodations often lack sidewalks to transit stops. Visitors are more likely to choose a personal car over walking along a highway shoulder to access hourly operating transit.
- Bikeway system consists of partial off-road shared use pathways and on-road bike lanes. Families with younger children are reluctant to ride bicycles in on-road lanes.
- Gaps in the bicycle network reduce cycling as a viable option to traveling by car.
- Pedestrian crossings, both in and out of crosswalks, are significant in number and back up traffic and elevate potential safety conflicts.

- The commercial core areas of Tahoe City and Kings Beach offer attractive and comfortable enclosed transit shelters. Bus stops between these two destinations are less attractive and some are difficult to identify if you are a visitor: signage is small and often attached to a nearby pole. The NextBus arrival technology is available on personal wireless devices. Having NextBus arrival information on digital displays along with transit system maps at each bus stop is more convenient and encourages visitors unfamiliar with transit operations to more easily rely upon transit.
- Existing transit operations are too infrequent and do not offer a competitive alternative to travel by car either locally or for trips in and out of the corridor for work or recreation. Existing transit cannot accommodate the high visitation numbers.

What Job Does the Transportation System Need to do for the Corridor?

- Increase transit frequency, improve ease of use, and offer free fares to reduce the number of visitor trips by car.
- Improve service delivery and customer access to businesses through congestion reduction measures.
- Augment existing services with a cross-lake ferry from Tahoe City to South Shore. **Figure S5-10** illustrates the proposed North Shore Ferry Terminal Design Concept and mobility map, with proposed parking and improved vehicle circulation through the area.
- Expand Transit Oriented Development (TOD) opportunities within the town centers and near the proposed Tahoe City cross lake passenger ferry terminal.
- Offer Mobility Hubs for easy parking and access to transit or bicycles to enter the Lake Tahoe Basin and/or travel within the Basin without a private vehicle.
- Provide safe on-highway bike use for road riders

Figure S5-11 displays the proposed multimodal facilities. Proposed bike lanes will provide off-highway paths and connect the popular destinations of Tahoe City to Kings

Beach. The graphic identifies Mobility Hub locations, the ferry terminal, and other bikeway recommendations.

TRPA Threshold Needs Related to the Corridor

Water Quality – area wide treatment, storm water districts, BMPs, TMDL targets

Air Quality – Reduce VMT, energy efficient and emission reduction building standards, multimodal improvements

Scenic – underground overhead lines, protect and enhance view sheds, gateway improvements at Tahoe City and Kings Beach

Soil Conservation – Reduce excess coverage, better utilize parking lots and standards to minimize coverage, restore SEZ

Wildlife – minimize travel corridor structure impacts on stream corridors

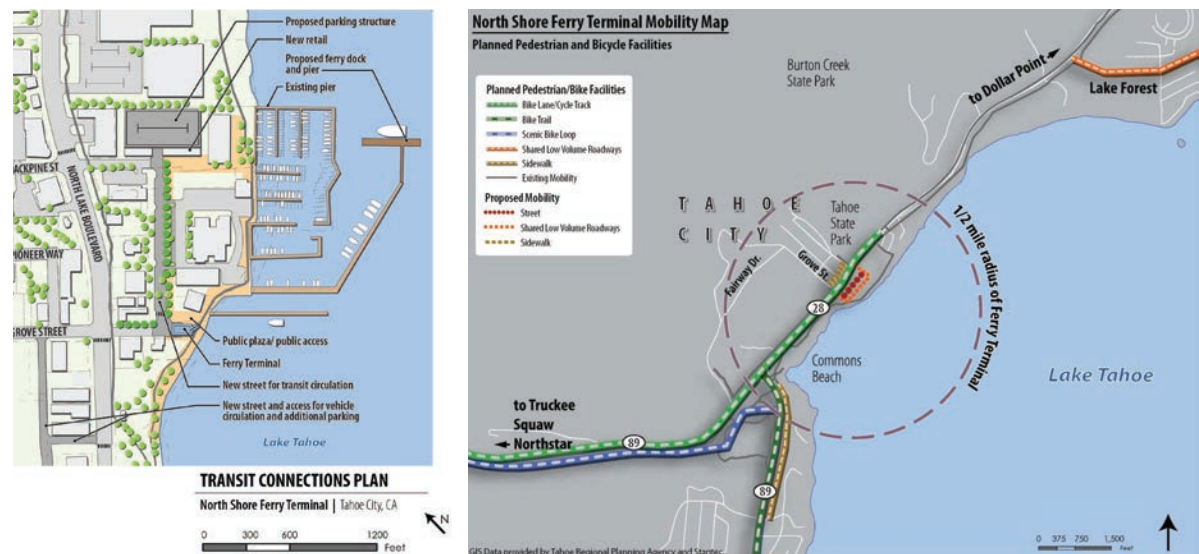
Fisheries – minimize travel corridor structure impacts on fish passage

Noise – minimize vehicle travel in town centers, relocate development to town centers, re-evaluate CNEL standard

Recreation – multi-use trails, snow clearing of trails, beach access, enhance access for cross country and back country skiers, way finding signage

Vegetation – invasive weeds control, Tahoe Yellow Cress protection, revegetation of disturbed land

| Figure S5-10: | SR 89/28 North Shore Ferry Terminal Design Concept



| **Figure S5-11:** | SR 89/28 Corridor Proposed Multimodal Facilities



Multimodal Opportunities

• Improve Transit Service:

- Expand ridership to 10.1 million annually to reduce automobile trips by 4.7 million.
- Extend service along the west shore linking Squaw Valley Resort to west shore destinations.
- Improve Transit connectivity both within the Basin and with regional services from Truckee.
- Extend the existing route from Truckee to Crystal Bay and to Incline Village
- Increase transit frequency, especially from transit centers to Emerald Bay/Eagle Falls area destinations.
- Improve and expand transit shelters and stops.
- Upgrade the Tahoe City Transit Center to a full Mobility Hub with expanded bike and pedestrian facilities.
- Plan for future higher density housing/tourist accommodations within town centers and at the proposed north shore ferry terminal.
- Implement ferry and water taxi service from new terminal in Tahoe City, linking to south shore, with stops at key destinations around the Lake.

• Improve Highway Operations, Safety, and Efficiency:

- SR89/28 intersection improvements for transit.
- Improve intersections and pedestrian crossings along SR 28 and SR 89.
- Real-time traveler information on road conditions, congestions, special events, and incidents.
- Reduce ingress/egress conflicts.

• Improve Bike and Pedestrian Facilities:

- Expand sidewalks in areas with high pedestrian activity.
- Add sidewalks in residential areas, where feasible, to connect to the main transit network and bikeways.
- Improve pedestrian crossings on the highways.
- Fill in the shared use path gaps.
- Implement the recommendations of Placer County's Tahoe City Mobility Study.



• Improve Parking:

- Expand parking facilities where feasible within the town centers.
- Implement a Parking Management System that will provide real-time information of parking locations and availability.
- Improve connections between parking areas, sidewalks, and shared use paths.

Figure S5-12 illustrates the phasing of transit services and infrastructure to realize the vision for the future.

Major Corridor Projects

A complete list of capital projects by category, transit service improvements by phase, and implementation policy projects is in **Appendix A**. The SR 89/Fanny Bridge Community Revitalization Project is scheduled to begin construction of the new Truckee River Bridge in the summer of 2017. The new roundabout work will begin construction in mid-summer 2017 through fall 2018.

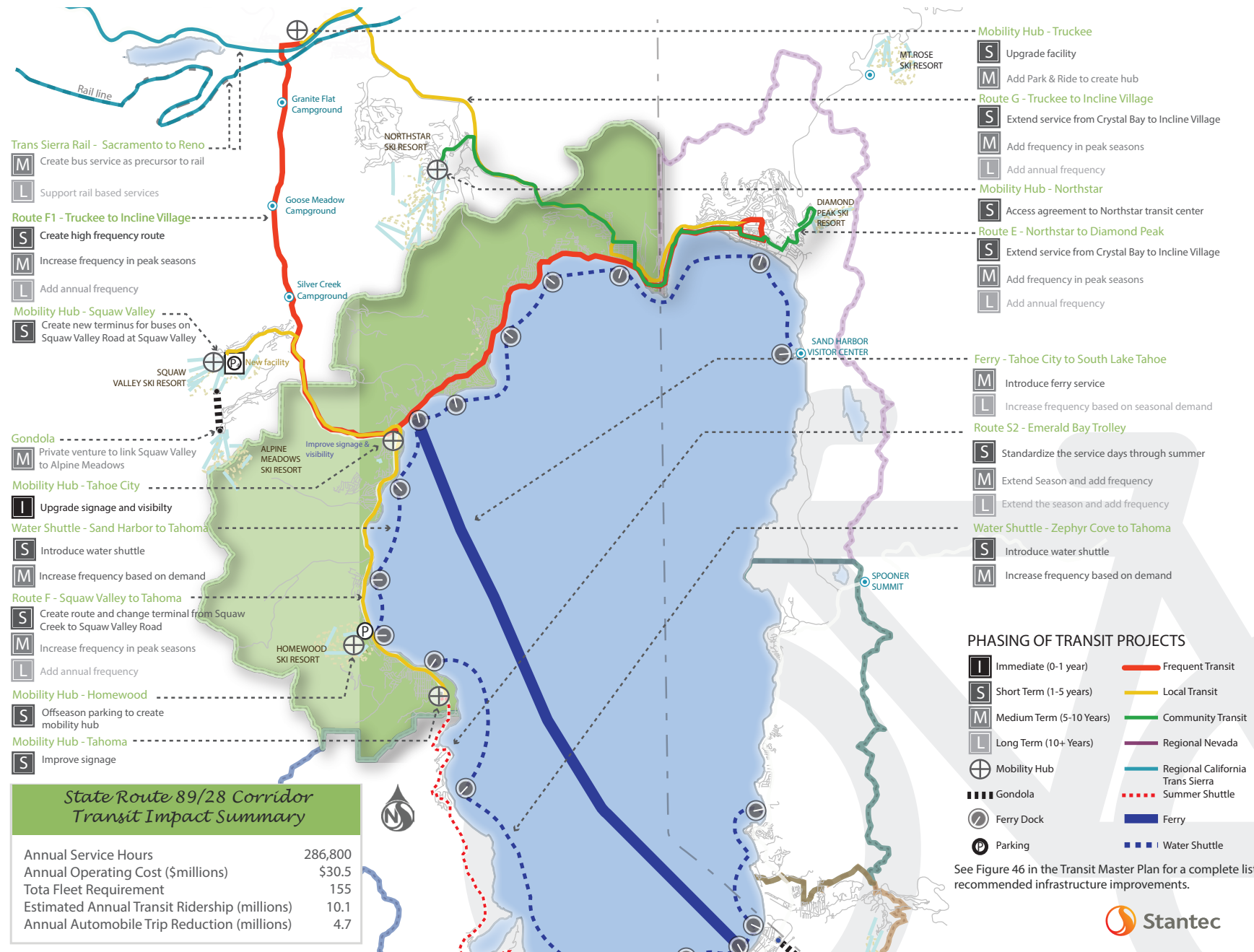
Project Partners

- California Highway Patrol
- California State Parks
- Caltrans
- FHWA California
- North Lake Tahoe Chamber of Commerce
- North Lake Tahoe Resort Association
- Placer County
- Placer County School District
- USFS-LTBMU
- Tahoe Area Regional Transit (TART)
- Tahoe City Public Utility District
- Truckee North Tahoe Transportation Management Association
- Tahoe Regional Planning Agency
- Tahoe Transportation District

Relevant Plans and Studies

- Linking Tahoe: Regional Transportation Plan (2017)
- Linking Tahoe: Lake Tahoe Basin Transit Master Plan (2017)
- Lake Tahoe Ferry Oriented Development Plan (2017)
- Linking Tahoe: Active Transportation Plan (2016)
- Lake Tahoe Complete Street Resource Guide (2016)
- North Lake Tahoe Community Wayfinding Signage Design Standards Manual (2013)
- North Tahoe Parking Study (2015)
- Placer County Tahoe Basin Area Plan (2016)
- Tahoe City Mobility Plan (2016)
- Tahoe City Road Safety Audit (2015)

Figure S5-12: | SR 89/28 Corridor Transit Vision



See Figure 46 in the Transit Master Plan for a complete list of recommended infrastructure improvements.

NV SR 28 National Scenic Byway Corridor

Vision Statement: *“Provide all users a Corridor from lake to rim that reflects its national scenic corridor status and the unique qualities of the east shore of Lake Tahoe while defining connections to recreation areas, expanding transportation choices, promoting safety, improving water clarity, and enhancing the enjoyment of Lake Tahoe.”* Source: State Route 28 National Scenic

Byway Corridor Management Plan

A Glimpse of the Future

The beaches at Sand Harbor and the east shore of the Lake are calling! Gone are the days when you had to get there by 10 am to find a parking place. Now you can hop on a bus and be dropped off, either in Sand Harbor or at the top of the paths that lead to the more secluded points like Chimney Beach. If you are coming from outside the corridor, park and ride from the Incline Village Mobility Hub or one of the over-flow facilities where modern transit vehicles can take you comfortably to beach, trailhead or other popular destination. If you feel like more exercise--walk, or ride your bike on a complete pedestrian and bicycle network that connects the community and offers a safe path for pedestrians and cyclists separated from the roadway with access to all your favorite beaches and beautiful views of the lake as you get there.

Had enough sun and sand for the day? The return buses run frequently and can take you for a great meal at one of the many restaurants in Incline Village. Feel lucky? There is also convenient access to all gaming properties by transit, foot, or bike.

But wait, it's snowing! You're covered here as well, with transit serving all the major ski areas and vehicles equipped to handle your equipment. Skiing for several days? You can store your equipment at the resort and make your journey even easier.

Commuting between Incline Village and Reno-Sparks, Carson City or points around the Lake used to be a daunting task. Now there are convenient commuter transit services that take the stress out of the commute and deliver you to convenient Mobility Hubs connecting with local transit, and pedestrian and bicycle facilities to get you to your final destination. Getting out and having fun has never been easier!

Characteristics

From the west end, the corridor starts at the state line in Crystal Bay and extends east and south to the Douglas County line near Spooner Lake Management Area. The corridor encompasses Washoe County and Carson City. SR 28 provides 15 miles of the highway encircling Lake Tahoe. The NV SR 28 Corridor interconnects the communities of Crystal Bay, Incline Village, and Lake Tahoe State Park along the eastern shore. NV SR 431 connects to this corridor at Incline Village and provides direct access to the Reno-Sparks area. US 50 connects to the corridor at Spooner Summit and provides direct access to Carson City and South Lake Tahoe. In addition to recreational land, this corridor has the residential communities of Incline Village and Crystal Bay that forms the nucleus of this corridor in a relatively compact form. At its heart is a commercial core comprised of shopping, services, restaurants, offices, and high density housing. Two golf courses serpentine through the area and sloping terrain provides dramatic views of the lake. The area offers extensive recreational opportunities year-round including boating, swimming, hiking with Tahoe Rim Trail access, camping, and skiing. The east shore entirely consists of public open space, including Lake Tahoe State Park and the popular Sand Harbor State Park. NV SR 28 Corridor boasts some of the most beautiful beaches with public

access in the Basin. **Figure S5-13** displays the land use pattern and recreational amenities within this corridor.

The NV SR 28 Corridor is about 13% of the total in-Basin area and is home to about 21% of the Basin's resident population. The median value of the owner-occupied housing in the NV SR 28 Corridor is the highest in the Basin at \$740,600 according to the U.S. Census, 2014. The highest median home values also translate into the highest median household income. Two-thirds of all dwelling units are owner occupied and one-third are seasonal units. Fourteen percent of the residential population works in the corridor, reportedly driving alone (68%) or walking (5%). Less than 1% relied upon transit to commute to work. **Table S5-4** summarizes the NV SR 28 Corridor statistics analyzed to develop the LTCCP.

From an employment standpoint, one third of jobs are held by residents who live in the corridor. They work in Incline Village. The balance of jobs is held by commuters (66%) -- the highest proportion of commuters in any corridor. U.S. Census data indicates workers live in the Reno-Sparks area (17%), Carson City (6%), Kings Beach (3%), and Truckee (2%).

Three million visitors (43% day users), and **4.5 million vehicles (79% visitors)**, 11% residents, and 10% commuters) enter the corridor annually searching for one of the 1,283 available public parking spaces, 680 of which are located at Sand Harbor State Park. The visitor to parking space ratio is 3,736 to 1. Comparatively, the NV SR 28 Corridor has a relatively lower number of visitors (3M) but a whopping **9.5 million internal annual person trips**, with less than three percent of those trips made using transit.

Table S5-5 provides a summary of the average daily and monthly total internal trips made by each travel group throughout the NV SR 28 Corridor. Resident and Home Based Worker trips in February accounted for more than one of every two trips. The proportionately low number of internal trips made by visitors suggests the Basin's visitors are not staying in the NV SR 28 Corridor. In July, the ratios change with Short and Long Term visitor trips eclipsing the Resident and Home Based Worker trips internal to the corridor. In and Outbound Commuter trips remained relatively unchanged between seasons.

| Figure S5-13: | NV SR 28 Corridor
Land Use and Recreation Facilities



| Table S5-4: | NV SR 28 Corridor Statistics

Social Demographics	
Resident Population	9,095
Median Age	39.8
Median Household Income	\$64,972
Employment	
# of Businesses (2016)	551
# of Employees (2016)	5,558
Employee/Residential Population Ratio	0.6:1
Employed in the Corridor	3,988
Employed in the Corridor, but Living Outside	2,723
Employed and Living in the Corridor	1,265
% Resident Employees	32%
Workers 16 years and over	4,282
Commute to Work % Drove Alone	68.1
Commute to Work % Public Transportation	< 1
Commute to Work % Walked	5.0

Housing/Land Use	
Number of Residential Units	7,884
Resident Population/Units Ratio	1.15:1
% Single Family Units	77.7
% Multi-Family Less than 20 du/bldg	14.4
% Multi-Family 20+ du/bldg	7.8
% Seasonal Resident Units	35.0
% Owner Occupied	65.7
% Renter Occupied	34.3
Median Value (Owner Occupied)	\$740,600
Tourist Accommodation Units (TAU) 2015	817
% of Conservation/Open Space Land Use	89
Persons Per Sq. Mile (Land Use Density)	306
Recreational	
# of Trailheads	4
# of Public Beaches	6
# of Major Recreation Destinations	6
# of Recreation Parking Spaces	1,334
# of School District Spaces	296
Annual Vehicle Entries/Recreation Parking Ratio	3,351:1

Multimodal Operations	
# Vehicles Entering Annually 2014	4,471,260
Internal Annual Corridor Person Trips	9,468,543
Annual Transit Ridership (2015-16)	51,628
% Annual Transit Ridership	5%
Average Daily Transit Ridership	91
Annual Transit Ridership/Resident Ratio	6:1
Transit Ridership/Visitor Ratio	0.02:1
# of Transit Stops per Mile	0.9
Miles of Bike Trails	11.0
Miles of Sidewalk	3.9
Active Transportation Counts (2016)	0
Visitors	
# of Annual Visitors 2014	3,052,600
% of Total Visitors 2014	13%
Safety	
# of Crashes (most recent 5 years)	289
# of Fatalities (most recent 5 years)	7

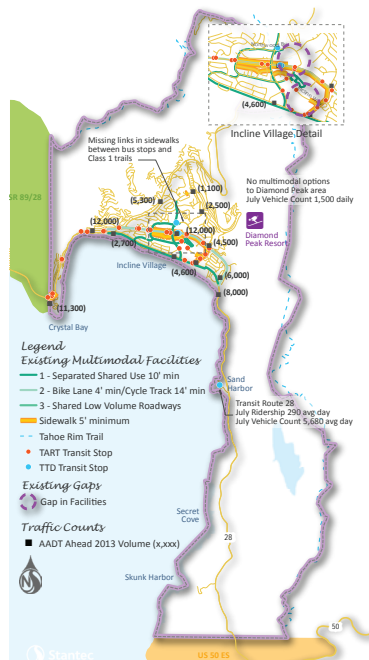
Source: U.S. Census, American Community Survey, LEHD 2016, TRPA, TTD, TART, and Stantec Consulting.

| Table S5-5: | NV SR 28 Corridor Internal Trips by Travel Group, 2014

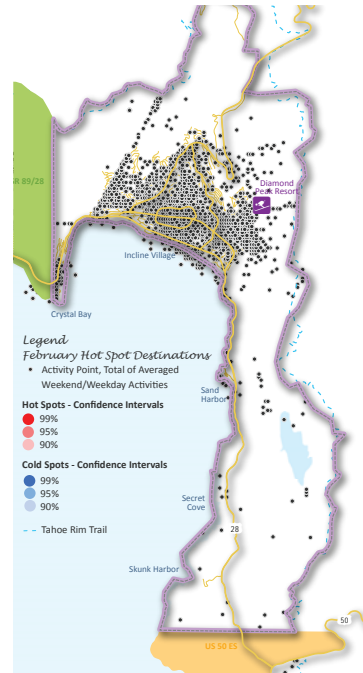
Travel Group	February			July			TART Average Daily Transit Boardings (2015-2016)
	Daily Trip Count	Monthly Trip Count	Travel Group % of Total	Daily Trip Count	Monthly Trip Count	Travel Group % of Total	
Resident Worker	10,303	144,955	29%	13,610	214,460	22%	92 3% of Average Daily Transit Ridership
Home Based Worker	9,509	133,066	27%	11,325	178,167	18%	
Inbound Commuter	2,209	9,921	2%	1,581	27,407	3%	
Outbound Commuter		21,436	4%	1,623	23,735	2%	
Short Term Visitors	1,017	13,269	3%	2,658	38,960	4%	
Long Term Visitors	12,757	169,006	34%	34,392	510,741	52%	
Total	35,795	491,653	100.0%	65,170	993,470	100.0%	

Source: Stantec Consulting, AirSage Analytics, TART.

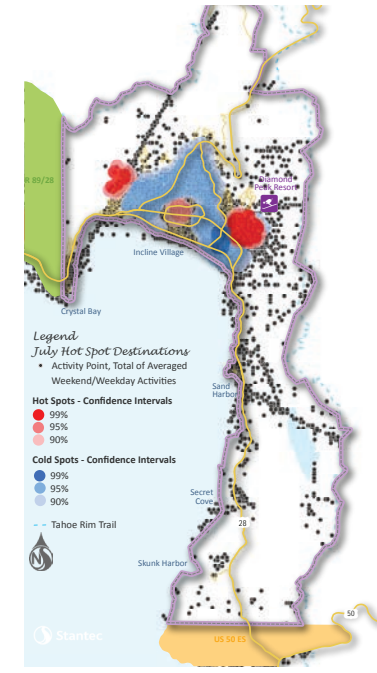
| Figure S5-14: | NV SR 28 Corridor
Existing Multimodal Facilities



| Figure S5-15: | NV SR 28 Corridor
Hot Spot Destinations, February 2014



| Figure S5-16: | NV SR 28 Corridor
Hot Spot Destinations, July 2014



Current Multimodal Options

TART provides year-round transit service with one hour frequency from Tahoe City to Incline Village. TTD provides summer seasonal transit service via the East Shore Express with 20 minute frequencies from Incline Village to the Sand Harbor (June through September). There are no park and ride facilities within the corridor. There is a temporary park and ride lot at the former Incline Elementary School site used for the East Shore Express service.

There are approximately **15 miles of bike and pedestrian facilities within Incline Village** but significant gaps exist within the network. South of Incline Village along SR 28, the East Shore Tahoe Trail is under construction with three miles of a shared use path to Sand Harbor. There are no pedestrian or bicycle facilities south of Sand Harbor despite the heavy pedestrian traffic created by beach goers and no facilities exist between Crystal Bay and Incline Village. **Figure S5-14** displays the existing multimodal facilities within the NV SR 28 Corridor.

Transportation Issues

AADTs along NV SR 28 (referred to as Tahoe Boulevard in Incline) vary from 6,000 to 12,000 vehicles per day. Several pedestrian crosswalks are placed throughout the commercial core area. However, along the nine-mile segment from SR 28 at E. Lakeshore Boulevard to the Carson/Douglas county line no pedestrian crossings exist. This creates unsafe conditions with beaches, trailheads, and residential uses on opposite sides of the highway. In addition, the NV SR 28 in this area has very narrow or no shoulders over most of its length.

TART transit stops are located within comfortable walking distances on Tahoe Boulevard and on Country Club Drive between Tahoe Boulevard and Lakeshore Drive. However, the transit stops are poorly identified and have few amenities such as shelters or benches. There are also clusters of high density residential on the fringe of the commercial area lacking transit stops.

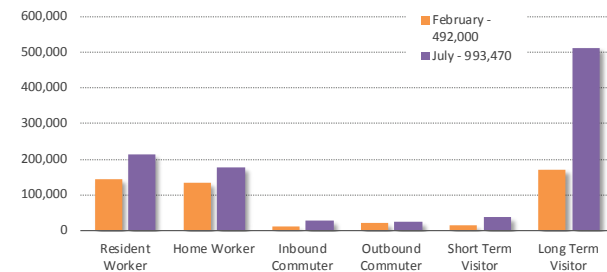
Figures S5-15 and S5-16 illustrate the most frequented destinations within the corridor during February and July 2014. Activity levels were not significant enough to result in hot spot locations in February. But July visitation levels to Diamond Peak, the commercial core encompassing Northwood and Southwood, and a residential area west of SR 431 exceeded

all other destinations within the NV SR 28 Corridor. Multimodal infrastructure and improvements should be targeted to the hot spot locations.

Figure S5-17 identifies the relative number of trips made within the peak winter and summer months by the various travel groups. Of note is the less than expected higher number of summer trips for all groups, but the nearly fourfold increase in long terms visitor trips in July 2014.

The NV SR 28 Corridor has the following primary transportation challenges relating to implementation of the LTCCP:

| Figure S5-17: | NV SR 28 Corridor Internal Trips by Travel Group, February and July



- Highway infrastructure is limited in size and cannot handle the continued increase of vehicles and visitors.
- Parking on SR28 south of Incline village is inadequate. Although there are 680 spaces at Sand Harbor State Park, the lot is typically full by mid-morning and beachgoers arriving by car are turned away.
- Parking for the many beaches and trailheads along the nine-mile stretch is daunting with demand far greater than the few available off highway designated parking places.
- Limited public parking in town centers, recreation sites, and trailheads.
- The seasonal transit vehicles serving Sand Harbor currently cannot stop at other popular beaches or trailheads due to a lack of unsafe pull outs.

- Recreational areas have out dated fee collection systems and minimal information on parking availability, creating congestion on the highway.
- Narrow shoulders, gaps in the Tahoe Trail, and lack of bicycle facilities at east shore beach/trailhead destinations eliminate biking as a mode choice.
- Limited multimodal options and connectivity to formalized park and ride areas with adequate parking leads to unsafe shoulder parking.
- The lack of staging areas similarly impedes carpooling for the last leg of a recreational trip to popular destinations.
- Year-round transit service is not frequent and well connected to other corridors.
- On-highway parking is a major safety and congestion issue.

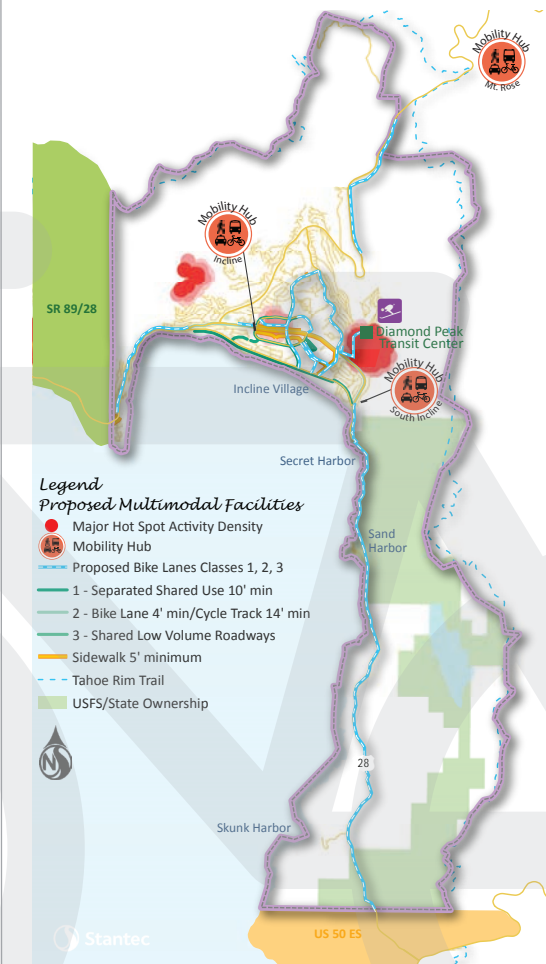
What Job Does the Transportation System Need to do for the Corridor?

- Transit needs to become more frequent, fun, and free-to-the-user to greatly reduce the number of trips made by visitors using their personal vehicle, including expansion of services to Spooner Summit.
- Improve service delivery and customer access to businesses and recreational destinations.
- Extend Tahoe Trail south of Sand Harbor to Spooner Summit and north to connect Crystal Bay and Incline Village.
- Improve parking by creating Mobility Hubs in Incline Village, Diamond Peak Ski Resort, and Mt. Rose Ski Resort.
- Expand trail head parking locations where appropriate.
- Connect town centers and trailheads by expanded transit services and Mobility Hubs.
- Enforce the no parking areas.

- Improve safety and pedestrian crossings throughout the corridor.
- Provide safe on-highway bike use for road riders

Figure S5-18 shows the proposed multimodal facilities. Proposed bike lanes fill in the missing gaps both in Incline Village and along SR 28. The graphic identifies Mobility Hub locations in the corridor, and other pedestrian and bicycle improvement recommendations.

| Figure S5-18: | NV SR 28 Proposed Multimodal Facilities



TRPA Threshold Needs Related to the Corridor

Water Quality – BMPs, TMDL targets

Air Quality – Reduce VMT, reduce vehicle trips

Scenic – undergrounds overhead lines, revegetate cut slopes, guardrail color and see through visibility, protect view sheds

Soil Conservation – reduce excess coverage, revegetate bare areas, stabilize slopes

Wildlife – minimize travel corridor structure impacts on stream corridors

Multimodal Opportunities

- **Improve Transit Service:**

- Restructure north shore set of services connecting Truckee to Tahoe City, Truckee to Crystal Bay, and into Incline Village.
- Extend service from Northstar Transit Center to Incline Village and Diamond Peak Ski Resort.
- Increase transit frequency between SR89/28 Corridor to Incline Village from 30 minutes to 15 minute headways.
- **Increase transit ridership to 8.6 million annually to eliminate 4.0 million automobile trips.**
- Extend the East Shore Express farther south to serve USFS parking areas and Spooner State Park.
- Improve and expand transit shelters and stops.
- Provide real-time information on bus arrival times.
- Acquire the old Incline Elementary School and convert the property to a Mobility Hub.

- **Implement Ferry Service:**

- Water taxi service from Sand Harbor to Tahoma and Homewood, with key stops at communities along the north shore.

- **Improve Highway Operations, Safety, and Efficiency:**

- Spot intersection improvements including SR 28/Northwood Boulevard, Lakeshore Boulevard/Village Boulevard, and Lakeshore Boulevard/SR 28.

Fisheries – minimize travel corridor structure impacts on fish passage

Noise – maintain CNEL standards

Recreation – provide safe off-highway and limited on-highway parking, control access, multi-use paths, transit shuttle service to trailheads and beaches

Vegetation – invasive weed control, revegetate cut and fill slopes with appropriate native plant community species

- Improve bike and pedestrian crossings on SR 28.

- Add guardrail, emergency pull outs, and vista points where appropriate consistent with scenic standards.

- Add parking management systems including real-time information for parking locations and availability.

- Implement traveler information systems providing real time information on congestion, road conditions, special events and incidents.

- **Improve Bike and Pedestrian Facilities:**

- Fill in gaps in the bike/pedestrian network in Incline Village, Crystal Bay, and between the two communities.

- Add sidewalks in residential areas where feasible to connect to the main transit/ Tahoe Trail network.

- Complete the East Shore Tahoe Trail to Spooner State Park.

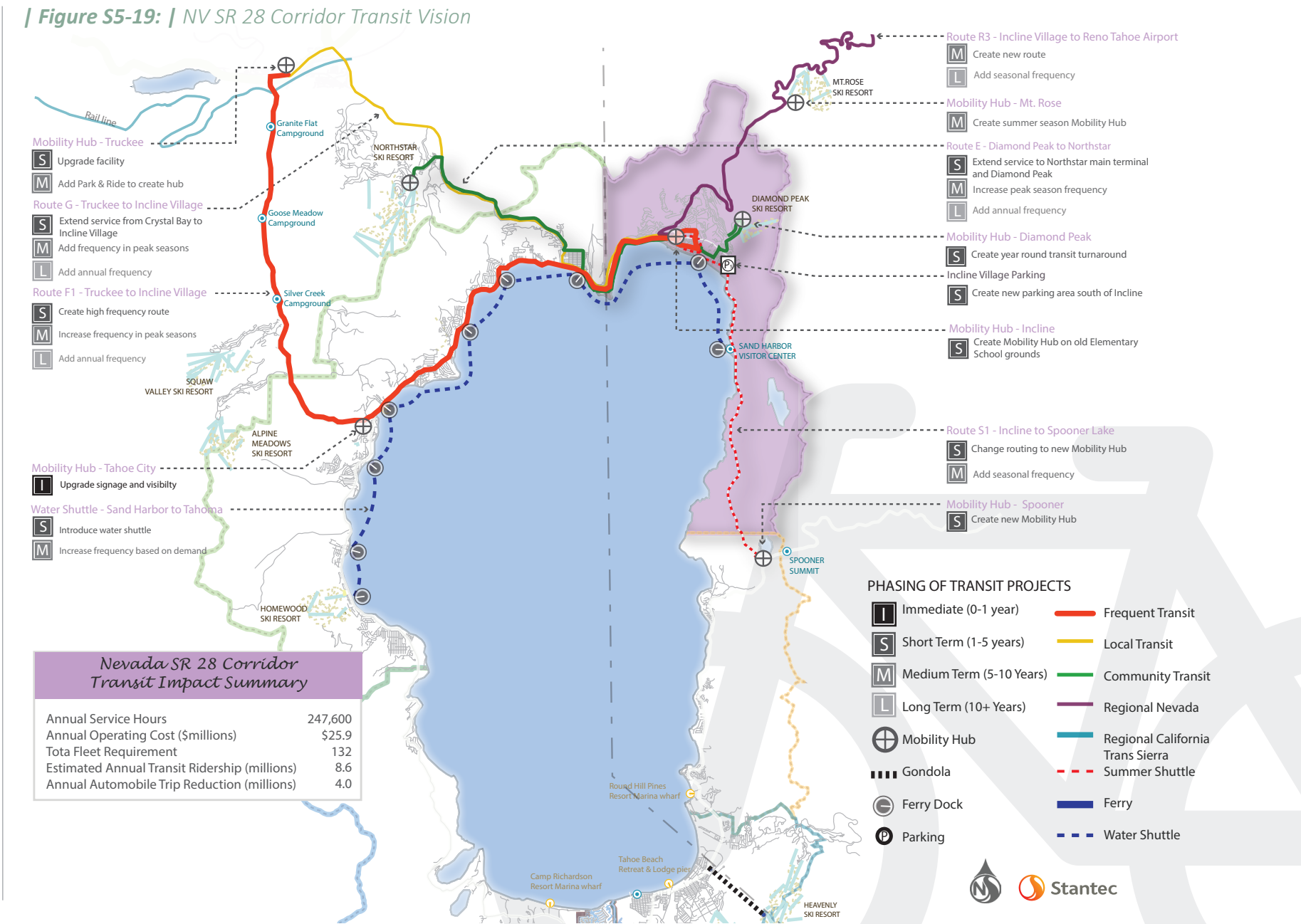
- **Improve Parking:**

- Expand existing parking facilities along the East Shore serving recreational areas.

- Implement a Parking Management System that will provide real time information of parking locations and availability.

- Improve connections between parking areas, sidewalks, and shared use paths.

Figure S5-19 establishes the phasing of transit services and infrastructure to realize the vision for the future.



Major Corridor Projects

A complete list of capital projects by category, transit service improvements by phase, and implementation policy projects is in **Appendix A**.

The East Shore Tahoe Trail Project – Incline Village to Sand Harbor State Park is currently under construction.

Project Partners

- Carson City
- Douglas County
- FHWA-Nevada
- Incline Village Chamber of Commerce
- Incline Village General Improvement District
- Nevada Department of Transportation
- Nevada Highway Patrol
- Nevada Division of State Lands
- Nevada Division of State Parks
- Regional Transportation Commission of Washoe County
- Tahoe Regional Planning Agency
- Tahoe Transportation District
- USFS-LTBMU
- Washoe County
- Washoe County School District
- Washoe Tribe

Relevant Plans and Studies

- Linking Tahoe: Regional Transportation Plan (2017)
- Linking Tahoe: Lake Tahoe Basin Transit Master Plan (2017)
- Lake Tahoe Ferry Oriented Development Plan (2017)
- Linking Tahoe: Active Transportation Plan (2016)
- Lake Tahoe Complete Street Resource Guide (2016)
- East Shore Signage Design Standards Manual (2016)
- SR 28 National Scenic Byway Corridor Management Plan (2013)
- Mt. Rose SR 431 Corridor Management Plan (2015)
- Washoe County Tahoe Basin Area Plan (Draft)
- Incline Village Commercial and Tourist Community Plans



Nevada US 50 East Shore Corridor

A Glimpse of the Future

Life is good! Continuous bike and pedestrian facilities all along US 50, and more pedestrian crossings on US 50 have reinvigorated a sense of community in the US 50 East Shore Corridor. The pedestrian and bicycle network gives convenient, safe access to frequent transit service allowing visitors and residents to easily connect to recreation spots, local businesses, and the rest of the Tahoe Basin. Commuters in and out of this corridor benefit with frequent reliable transit service that delivers them to and from places within the Basin and points beyond. With the technology of parking management and traveler information systems, visitors are alerted to congestion, incidents, and weather, as well as the availability of parking at safe, convenient sites served by transit. Spend less time traveling and more time doing the fun stuff. Ah yes, life is good!

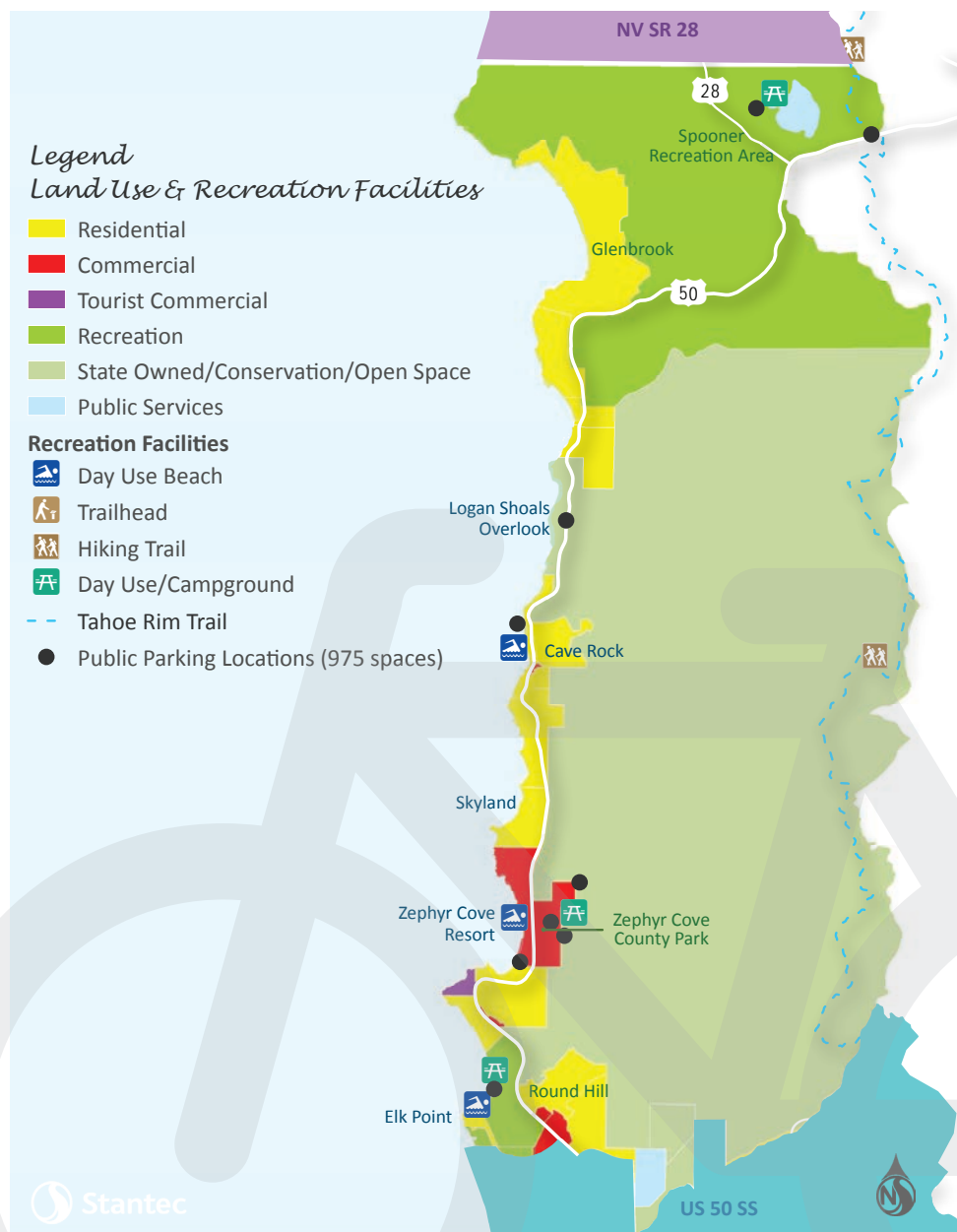
Characteristics

The US 50 East Shore Corridor includes 12.6 miles of the highway encircling Lake Tahoe from the Carson City/Douglas County line near the intersection of US 50 and NV SR 28 to Kahle Drive, north of Stateline/South Lake Tahoe. Travel from entry to exit takes 19 minutes by car. The corridor interconnects the communities of Zephyr Cove, Round Hill, Glenbrook, Skyland, and Lakeridge. US 50 provides direct access to the Carson City area. NV SR 207 (Kingsbury Grade) near the southern end provides a direct link to the Minden-Gardnerville areas.

The Nevada US 50 East Shore Corridor consumes nine percent of the total in Basin acreage and is home to six percent of the Basin's permanent residents. The corridor is dominated by residential areas straddling both sides of US 50. Employment opportunities are comparatively low and nearly all employees, 94% of the estimated 689 corridor employees, are considered Inbound Commuters. **Figure S5-20** illustrates the vast open space, recreation resources, and the long linear residential land uses punctuated by commercial clusters at Zephyr Cove and Round Hill.

Zephyr Cove Resort is the primary recreation site within the corridor offering beach access, picnicking, RV parking, campgrounds, boating, lodging, horseback riding, dining,

| **Figure S5-20:** | NV US 50 East Shore Corridor Land Use & Recreation Facilities



| Table S5-6: | NV US 50 East Shore Corridor Statistics

Social Demographics		Housing/Land Use		Multimodal Operations	
Resident Population	3,192	Number of Residential Units	2,957	# Vehicles Entering Annually 2014	5,840,000
Median Age	51.2	Resident Population/Units Ratio	1.08:1	Internal Annual Corridor Person Trips	2,986,971
Median Household Income	\$54,296	% Single Family Units	54.9	Annual Transit Ridership (2015-16)	118,629
Employment		% Multi-Family Less than 20 du/bldg	30.4	% Annual Transit Ridership	11%
# of Businesses (2016)	289	% Multi-Family 20+ du/bldg	14.5	Average Daily Transit Ridership	325
# of Employees (2016)	3,224	% Seasonal Resident Units	39.8	Annual Transit Ridership/Resident Ratio	38:1
Employee/Residential Population Ratio	1:1	% Owner Occupied	58.5	Transit Ridership/Visitor Ratio	0.04:1
Employed in the Corridor	689	% Renter Occupied	41.5	# of Transit Stops per Mile	1.5
Employed in the Corridor, but Living Outside	648	Median Value (Owner Occupied)	\$448,750	Miles of Bike Trails	3.8
Employed and Living in the Corridor	41	Tourist Accommodation Units (TAU) 2015	0	Miles of Sidewalk	0.0
% Resident Employees	6%	% of Conservation/Open Space Land Use	85	Active Transportation Counts (2016)	0
Workers 16 years and over	3,178	Persons Per Sq. Mile (Land Use Density)	113	Visitors	
Commute to Work % Drove Alone	76.9	Recreational		# of Annual Visitors 2014	2,654,990
Commute to Work % Public Transportation	< 1	# of Trailheads	1	% of Total Visitors 2014	11%
Commute to Work % Walked	6.4	# of Public Beaches	3	Safety	
		# of Major Recreation Destinations	4	# of Crashes (most recent 5 years)	223
		# of Recreation Parking Spaces	829	# of Fatalities (most recent 5 years)	0
		# of School District Spaces	146		
		Annual Vehicle Entries/Recreation Parking Ratio	7,045:1		

Source: U.S. Census, American Community Survey, LEHD 2016, TRPA, TTD, TART, and Stantec Consulting.

and lake cruises on the Tahoe Queen. Two other major public beaches, Nevada Beach and Round Hill Pines, provide recreation access to the Lake. Nevada Beach also provides additional camping and group facilities. The primary commercial area, Round Hill Shopping Center offers restaurants, retail, and professional services.

The resident population and land use density is relatively low, consistent with the sprawling development pattern. Interestingly, the south end of the corridor has 45% of the total in-Basin high density multi-family development. Nearly six of every ten residential units are owner-occupied but nearly 40% are classified as “seasonal” according to the U.S. Census. **Table S5-6** summarizes the Nevada US 50 East Shore statistics analyzed to develop the LTCCP.

TRPA data indicates this corridor has no tourist accommodation units (2015). This may account for the fact that the corridor ranks second to last in total visitation with about **2.6 million annual visitors** in 2014. The **5.8 million vehicles** that enter the **corridor each year** (88% visitors, 6% residents, and 6% commuters) jockey for one of the **829 public parking spaces**. The visitor to parking ratio is 2,723 to 1, the second lowest ratio in the Basin. This corridor also reports the lowest number of annual internal person trips, **2.9 million**.

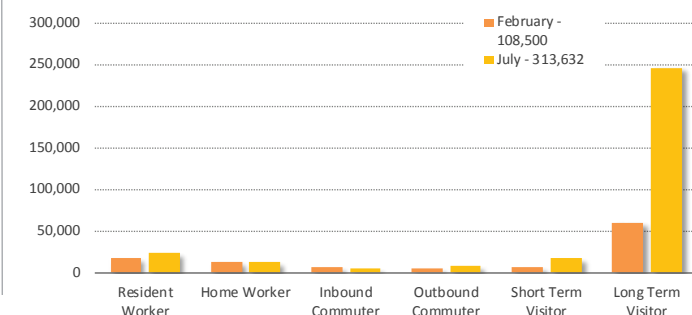
Table S5-7 provides a summary of the average daily and monthly total internal trips made by each travel group throughout the US 50 East Shore Corridor. These findings identify the relative proportion of internal corridor trips between seasons and travel groups. Of note is the absence of change between seasons amongst the travel groups in this corridor, except for long term visitors, when the July count is three times higher than in February. **On average, just 69 people boarded a bus each day**, yet the daily number of internal trips was closer to **8,000**. Average daily transit ridership reflects two percent of the total transit in the US 50 East Shore Corridor. **Figure S5-21** captures the internal trips made by each travel group during the months of February and July 2014.

| Table S5-7: | NV US 50 East Shore Corridor Internal Trips by Travel Group, 2014

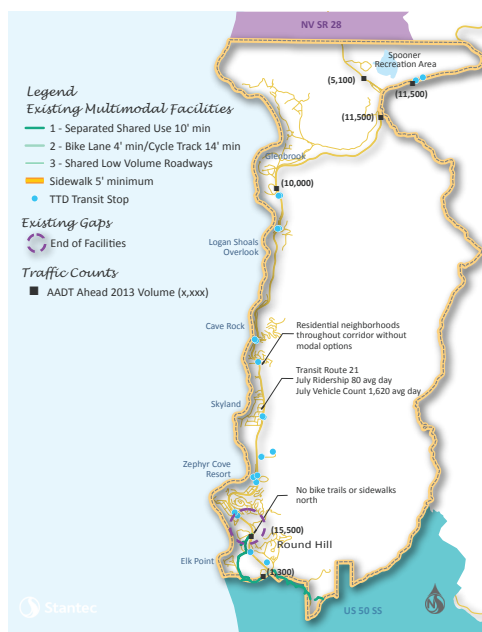
Travel Group	February			July			TTD
	Daily Trip Count	Monthly Trip Count	Travel Group % of Total	Daily Trip Count	Monthly Trip Count	Travel Group % of Total	
Resident Workers	1,280	18,095	17%	1,550	24,350	8%	Average Daily Transit Boardings (2015-2016) 69 2% of Average Daily Transit Ridership
Home Based Workers	860	12,180	11%	785	12,640	4%	
Inbound Commuters	467	7,140	7%	260	4,260	1%	
Outbound Commuters	370	5,045	4%	560	8,750	3%	
Short Term Visitors	485	6,515	6%	1,225	17,835	6%	
Long Term Visitors	4,600	59,575	55%	15,910	245,795	78%	
Total	8,065	108,550	100.0%	20,290	313,630	100.0%	

Source: Stantec Consulting, AirSage Analytics, TTD.

| Figure S5-21: | NV US 50 East Shore Corridor Internal Trips by Travel Group, February and July 2014



| Figure S5-22: | NV US 50 East Shore Corridor Existing Multimodal Facilities

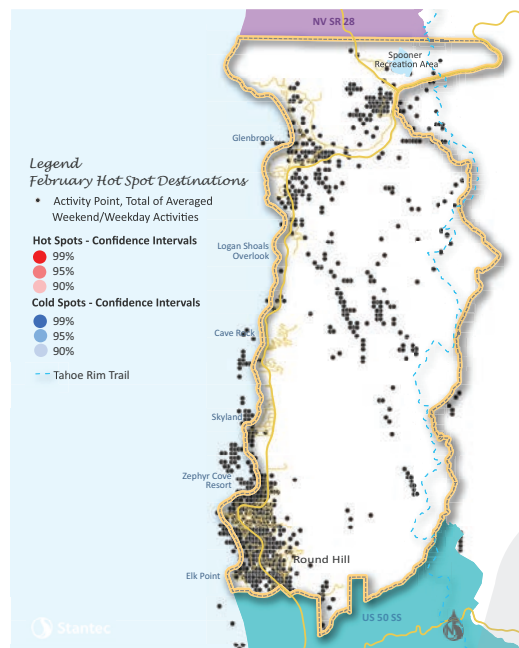


Employment opportunities are predominately located at Zephyr Cove or Round Hill. As previously mentioned, 689 people are employed in this corridor. According to the U.S. Census data, **41 are considered Resident Workers—they live and work in the corridor.** Approximately 648 commute into the corridor and 493 commute out of the corridor for work. A distance-direction analysis of home locations for all workers indicates that most workers either live and work in the Zephyr Cove-Round Hill areas or they “commute” south into the south shore corridor for employment.

Current Multimodal Options

TTD provides weekday and weekend commuter express services into Carson City and to Minden Gardnerville to/from the Kingsbury and Stateline Transit Centers. Frequency is hourly in the mornings, generally between 5:30 and 8:30 am and in the later afternoon starting at 2:30 pm. The direct

| Figure S5-23: | NV US 50 East Shore Corridor Hot Spot Destinations, February 2014

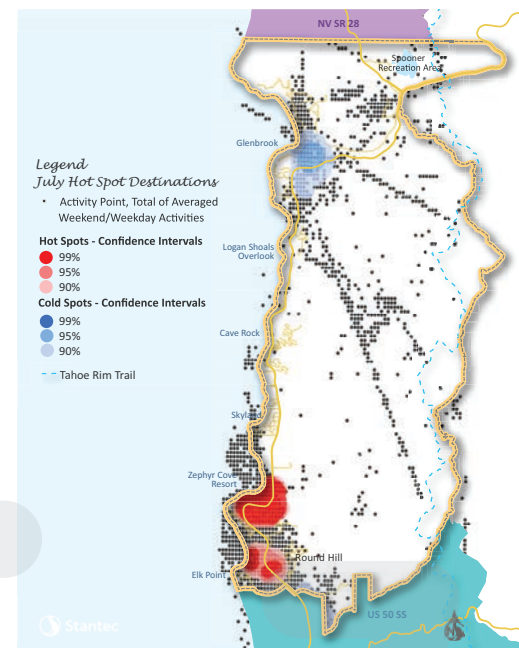


service to Carson City via US 50 was recently discontinued due to funding constraints, but the service is expected to be reinstated. This service primarily serves commuters. The Zephyr Cove Resort operates a private shuttle for guests. The number of transit stops are limited to the south end of the corridor and there is no transit service north of the Kingsbury Transit Center. Bicycle facilities are limited to 2.3 miles of the shared use path from Stateline to Round Hill and include significant gaps. Sidewalks are very limited within the corridor. The absence of both transit service and bicycle or pedestrian facilities force people to drive. **Figure S5-22** shows the extent of existing multimodal options.

Transportation Issues

NV US 50, for its entire length through this corridor, is a four-lane undivided highway with posted speeds ranging from 35 to 50 mph. AATDs vary from 12,300 in the north

| Figure S5-24: | NV US 50 East Shore Corridor Hot Spot Destinations, July 2014



end to 22,000 vehicles per day in the south. Average daily volumes on some portions of the roadway in the peak summer months are as high as 28,000 vehicles per day. Pedestrian crosswalks are limited. The absence of crosswalks isolates neighborhoods from services and recreation opportunities.

Figures S5-23 and S5-24 depict the differences between the peak winter and summer months in the frequent locations of wireless devices. In February, the activity points appear around the employment centers and the residential community of Glenbrook. In July, visitation levels revealed Zephyr Cove and Round Hill/Elk Point as “hot spots” and Glenbrook a “cold spot”. Multimodal infrastructure and improvements should be targeted to the hot spot locations.

The NV US 50 East Shore Corridor has the following primary transportation challenges relating to implementation of the LTCCP:

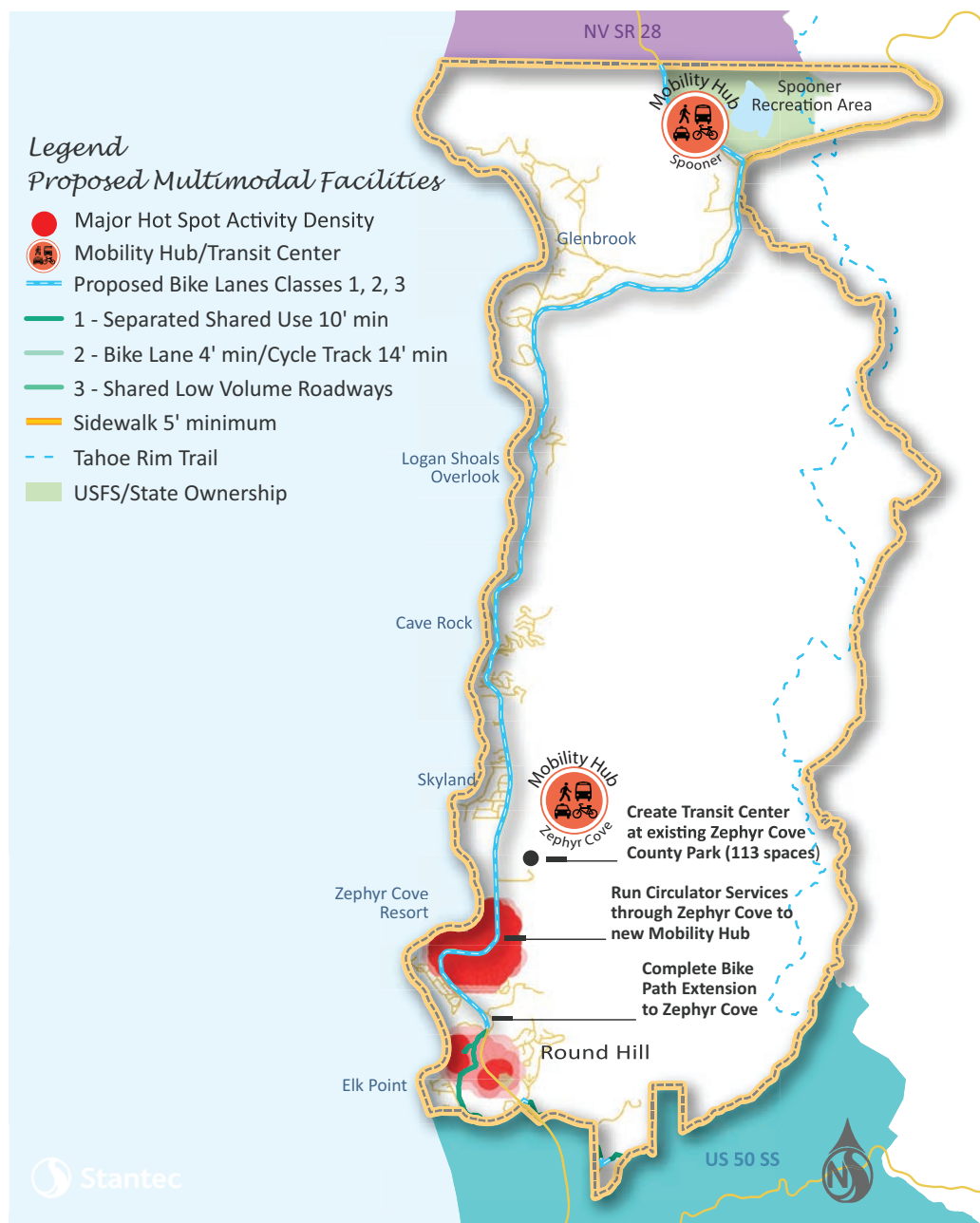
- Oversized four-lane highway with no turn pockets to access residential areas, commercial centers, or recreation sites.
- Limited sidewalks throughout commercial core.
- No transit services to Zephyr Cove Resort.
- No bike and pedestrian facilities north of Round Hill to connect communities to recreation and commercial centers.
- Gaps in the Tahoe Trail shared use path network.
- Visitor to public parking space ratio of 2,723 to 1.

What Job Does the Transportation System Need to do for the Corridor?

- Provide safe ingress/egress to neighborhoods, businesses, and recreation areas.
- Provide multimodal choices and infrastructure.
- Provide safe on highway bike use for road riders.

Figure S5-25 highlights the proposed multimodal facilities. Priority bike lanes connect Round Hill to Zephyr Cove and extend north to the Spooner Recreation Area. A circulator transit service is proposed from South Shore through Round Hill and Zephyr Cove with a turnaround at the proposed Mobility Hub. A Mobility Hub is recommended at Zephyr Cove County Park.

| Figure S5-25: | NV US 50 East Shore Corridor Proposed Multimodal Facilities



TRPA Threshold Needs Related to the Corridor

Water Quality – area wide treatment, stormwater districts, BMPs, TMDL targets

Air Quality – reduce VMT, reduce vehicle trips

Scenic – underground overhead utility lines, revegetate cut slopes, non-reflective guardrail color and see through visibility, protect view sheds

Soil Conservation – reduce excess coverage, revegetate bare areas, and stabilize slopes

Wildlife – minimize travel corridor structure impacts on stream corridors

Multimodal Opportunities

• Add Transit Service:

- **Increase ridership to 2.2 million annually to reduce automobile trips by 1.0 million.**
- Add year-round transit from Zephyr Cove to the south shore to connect the residential areas to the employment centers and the tourists to Zephyr Cove. This is referred to as Route C – Community (layer of service) described on page 174 of

• Implement Ferry Service:

- Water taxi service between Zephyr Cove, Elk Point, and Logan Shoals Overlook.

• Improve Highway Operations, Safety, and Efficiency:

- Specific intersection and operational facilities to improve safety for through traffic and traffic entering NV US 50.
- Provide parking management systems including real-time information of parking location and availability.
- Implement complete streets strategies along the corridor.

• Improve Bike and Pedestrian Facilities:

- Extend the Tahoe Trail to Zephyr Cove Resort and surrounding neighborhoods.
- Study alternatives for extending the Tahoe Trail from the Skyland neighborhood north to Spooner State Park.

• Improve Parking:

- Expand existing parking facilities at Zephyr Cove Resort, with the addition of a Mobility Hub.
- A Mobility Hub in the NV SR 28 Corridor at the Spooner Recreation Area will allow better connection to the East Shore Express.

Fisheries – minimize travel corridor structure impacts on fish passage

Noise – maintain CNEL standards

Recreation – provide safe off-highway and limited on-highway parking, control access, provide multi-use paths and transit shuttle service to trailheads and beaches

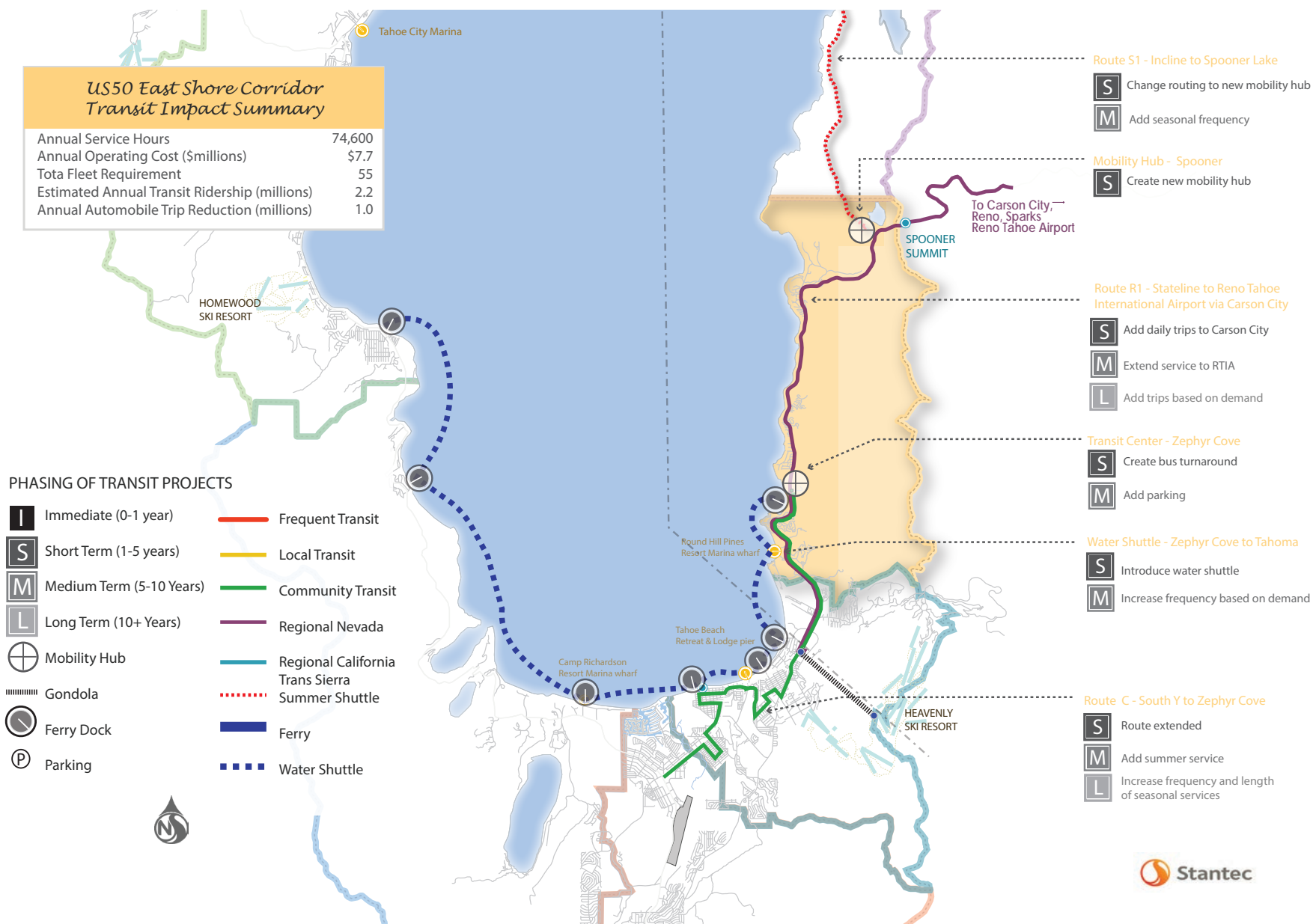
Vegetation – control invasive weeds, revegetate cut and fill slopes with appropriate native plant community species

the Transit Master Plan.

- Reinstatement of the commuter route between the Stateline area and Carson City via US 50.
- Add transit shelters and stops.
- Provide real-time information on bus arrival times.
- Reduce NV US 50 from four lanes to two lanes with center turn lanes, where feasible.
- Add bike and pedestrian facilities within the remaining right of way.
- Improve safety.
- Add sidewalks in residential areas where feasible to connect to the main transit/Tahoe Trail network.
- Add pedestrian crossings on the highway and improve safety at existing crossings to mitigate the isolating impacts of NV US 50 on the community.
- Implement a Parking Management System that will provide real time information of parking locations and availability.
- Improve connections between the parking areas, sidewalks, and shared use paths.

Figure S5-26 illuminates the phasing of transit services and infrastructure to realize the vision for the future.

| Figure S5-26: | NV US 50 East Shore Corridor Transit Vision



Major Corridor Projects

A complete list of capital projects by category, transit service improvements by phase, and implementation policy projects is in **Appendix A**.

Project Partners

- Douglas County
- Carson City
- FHWA-Nevada
- Nevada Department of Transportation
- Nevada Division of State Lands
- Nevada Division of State Parks
- Nevada Highway Patrol
- South Shore Transportation Management Association
- Tahoe Chamber of Commerce
- Tahoe Regional Planning Agency
- Tahoe Transportation District
- USFS-LTBMU
- Washoe County
- Washoe Tribe

Relevant Plans and Studies

- Linking Tahoe: Regional Transportation Plan (2017)
- Linking Tahoe: Lake Tahoe Basin Transit Master Plan (2017)
- Lake Tahoe Ferry Oriented Development Plan (2017)
- Linking Tahoe: Active Transportation Plan (2016)
- Lake Tahoe Complete Street Resource Guide (2016)
- East Shore Signage Design Standards Manual (2016)
- SR 28 National Scenic Byway Corridor Management Plan (2013)
- Tahoe Douglas Area Plan
- Round Hill Community Plan



California/Nevada US 50 South Shore Corridor

A Glimpse of the Future

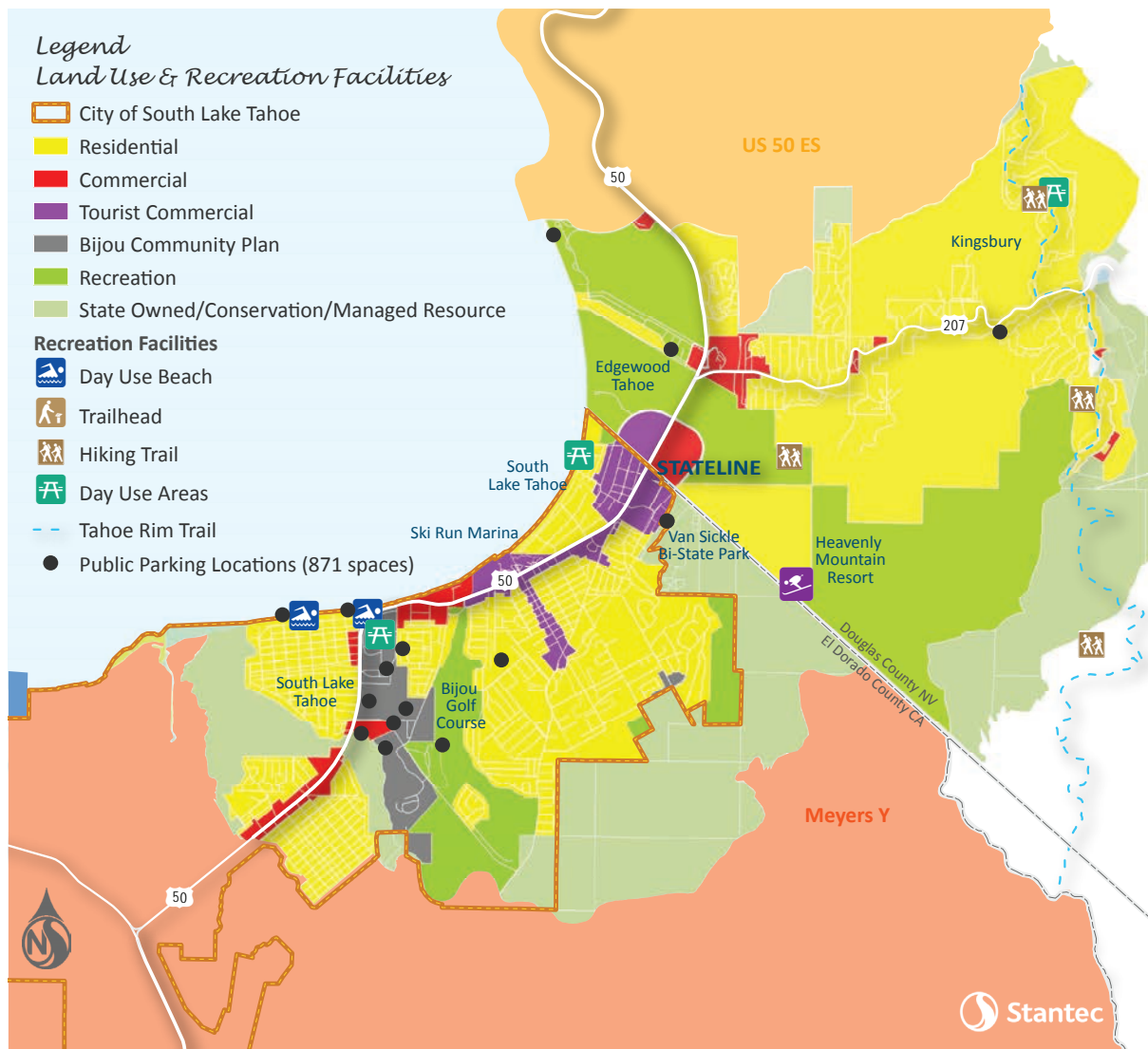
Winter or summer, South Lake Tahoe is a happening place! The downtown commercial core has something for everyone: restaurants, shopping, and gaming are a few steps from water or from the ski slopes. Broad sidewalks welcome pedestrians and plazas invite them to gather informally, engage, and explore. Throughout the entire corridor, dedicated facilities cater to pedestrians, cyclists, and transit users that integrate seamlessly in a community-wide network connecting everyone to where they live, work, and play. A convenient bypass road guides travelers around the casino core area so that people become the focus of activity in this wonderful space.

In addition to the local transportation system, year-round integrated transit services meet the needs of visitors, residents, and commuters to travel to/from other parts of the Basin and beyond to Sacramento, the Bay area, and the Reno, Carson, and Minden/ Gardnerville areas. Mobility Hubs integrate multimodal services to make journeys across several modes convenient. Mobility Hubs may be placed behind commercial areas or integrated into new mixed use development proximate to an urban plaza and midrise residential. They include ample parking, outstanding amenities, and real-time information on the best ways to reach destinations by car, transit, ferry, walking, or cycling.

Characteristics

The US 50 South Shore Corridor consists of approximately 1.6 miles of US 50 in Douglas County, Nevada and 4.0 miles of Lake Tahoe Boulevard in El Dorado County, California. The corridor is subject to regulation, in parts, by the state of Nevada, state of California, Douglas County, El Dorado County, and the city of South Lake Tahoe. US 50 is the transportation heart of this corridor providing direct access to the Sacramento area and to Carson City. CA SR 88/89 connects to the US 50 South Shore Corridor near the

| Figure S5-27: | CA/NV US 50 South Shore Corridor Land Use & Recreation Facilities



southern end. The Stateline/South Lake Tahoe area is the resort and casino core with Harrah's, Harveys, Hard Rock and Montbleu establishments on the Nevada side of state line. Heavenly Mountain Resort and all its offerings lie on the California side. The US 50 South Shore Corridor is commonly referred to as the "bed base" for the Lake Tahoe Basin with its extensive hotel room inventory. The entertainment area is bounded by preserved open space and state parks that offer pastoral views.

Figure S5-27 delineates the land use pattern, public parking locations, managed resource open space with a portion of the Tahoe Rim Trail and several trailheads. The corridor presents numerous possibilities to access the lake with marinas, beaches, and day use areas. Van Sickle Bi-State Park is a short walk from downtown and presents easy hiking trails that lead to scenic lake views. The Heavenly Mountain Resort also offers scenic views while snow skiing or riding on the gondola. The US 50 South Shore Corridor present an enormous variety of recreation opportunities for visitors of all ages and for all seasons in one compact destination.

The land area of this corridor is relatively small, six percent of the total in-Basin acreage. One third of the total Basin resident population live here and 44% of all in-Basin employees work here. Median income, median age, median value of owner occupied homes, percent single family homes, percent seasonal resident units, and percent of conservation/open space land is lower in this corridor than in any other. The population density per square mile is over 900 persons which is three times higher than the next densest corridor, NV SR 28. The majority of this population are renters living in densely populated multi-family residences that either walk to work or ride the bus. U.S. Census data indicates 11.3% of employees reportedly walk to work and 3.1% use public transportation. **Table S5-8** summarizes the California/ Nevada US 50 South Shore Corridor statistics analyzed to develop the LTCCP.

This corridor has the second highest number of businesses (over 1,200) which employs over 18,000 people, two to three times more than any other corridor. This is the only corridor with a higher ratio of employees to residents, 1.02 to 1. The corridor has a high commute pattern, with 71% commuting predominately from the Meyers/Y Corridor and Gardnerville. Over 2,600 employees live and work within the corridor, the highest in the Basin.

With approximately 11,584 TAUs, or 80% of all tourist accommodations (in 2015), it is no surprise this corridor reported the highest visitation with **nearly eight million annual visitors**. The number of **vehicles** entering the corridor totaled **11.8 million** (89% visitors, 6% residents, and 5% commuters) which is the highest in-Basin rate. The number of public parking spaces is so low compared to the number of visitors that the ratio is 9,176 to 1. Parking is a serious problem in this corridor. Private properties offer abundant parking for guests but is often underutilized and no always available for non-guest

| Table S5-8: | CA/NV US 50 South Shore Corridor Statistics

Social Demographics		Housing/Land Use		Multimodal Operations	
Resident Population	16,387	Number of Residential Units	12,574	# Vehicles Entering Annually 2014	11,789,500
Median Age	34.8	Resident Population/ Units Ratio	1.30:1	Internal Annual Corridor Person Trips	22,345,048
Median Household Income	\$44,559	% Single Family Units	56.0	Annual Transit Ridership (2015-16)	462,983
Employment		% Multi-Family Less than 20 du/bldg	35.4	% Annual Transit Ridership	44%
# of Businesses (2016)	1,232	% Multi-Family 20+ du/bldg	8.5	Average Daily Transit Ridership	1,268
# of Employees (2016)	18,415	% Seasonal Resident Units	31.0	Annual Transit Ridership/ Resident Ratio	28:1
Employee/Residential Population Ratio	1:02:1	% Owner Occupied	38.0	Transit Ridership/ Visitor Ratio	0.06:1
Employed in the Corridor	9,255	% Renter Occupied	62.0	# of Transit Stops per Mile	17.5
Employed in the Corridor, but Living Outside	6,600	Median Value (Owner Occupied)	\$332,700	Miles of Bike Trails	23.8
Employed and Living in the Corridor	2,655	Tourist Accommodation Units (TAU) 2015	11,584	Miles of Sidewalk	11.1
% Resident Employees	29%	% of Conservation/ Open Space Land Use	53	Active Transportation Counts (2016)	476
Workers 16 years and over	6,579	Persons Per Sq. Mile (Land Use Density)	906	Visitors	
Commute to Work % Drove Alone	62.6	Recreational		# of Annual Visitors 2014	7,991,924
Commute to Work % Public Transportation	3.1	# of Trailheads	1	% of Total Visitors 2014	33%
Commute to Work % Walked	11.3	# of Public Beaches	4	Safety	
		# of Major Recreation Destinations	3	# of Crashes (most recent 5 years)	403
		# of Public Parking Spaces	576	# of Fatalities (most recent 5 years)	5
		# of School District Spaces	295	Source: U.S. Census, American Community Survey, LEHD 2016, TRPA, TTD, TART, and Stantec Consulting.	
		Annual Vehicle Entries/ Recreation Parking Ratio	20,467:1		

| Table S5-9: | US 50 South Shore Corridor Internal Trips by Travel Group, 2014

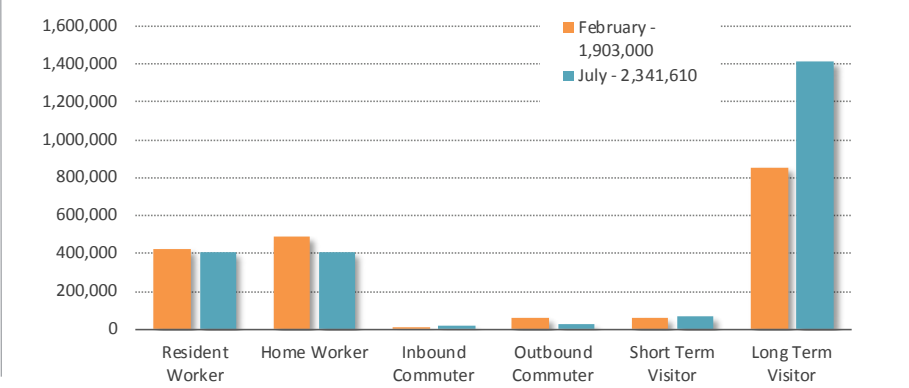
Travel Group	February			July			TTD Average Daily Transit Boardings (2015-2016)
	Daily Trip Count	Monthly Trip Count	Travel Group % of Total	Daily Trip Count	Monthly Trip Count	Travel Group % of Total	
Resident Worker	30,260	423,127	22%	26,227	409,946	18%	1,157 37% of Average Daily Transit Ridership
Home Based Worker	35,330	492,804	26%	26,227	408,620	17%	
Inbound Commuters	688	10,121	4%	1,018	16,884	1%	
Outbound Commuters	4,442	61,168		1,576	23,880	1%	
Short Term Visitors	4,310	59,161	3%	4,731	68,240	3%	
Long Term Visitors	65,275	856,715	45%	94,910	1,414,038	60%	
Total	140,305	1,903,096	100.0%	154,691	2,341,608	100.0%	

Source: Stantec Consulting; AirSage Analytics, TTD.

activities, resulting in severe congestion at peak times. A total of **22 million person trips** were made in 2014 on the four miles of US 50 and its interconnecting streets.

Table S5-9 provides a summary of the average daily and monthly total internal trips made by each travel group throughout the corridor in February and July 2014. As seen in other corridors, the ratio of Resident Workers and Home Based Worker trips exceeded visitor trips in February and fell below visitor trips in July. Commuter trips also dipped slightly in July as a percentage of the total internal trips. TTD transit boardings in the US 50 South Shore Corridor represented 37% of all average daily transit trips in 2015-16. **Figure S5-28** illustrates the internal trips made by each travel group during the months of February and July 2014.

| Figure S5-28: | CA/NV US 50 South Shore Corridor
Internal Trips by Travel Group, February & July 2014



Current Multimodal Options

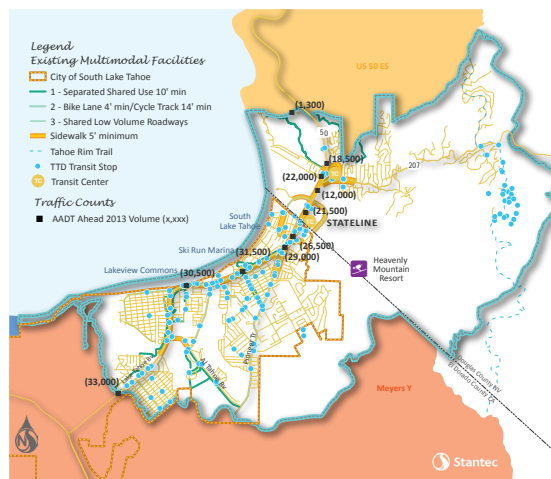
TTD currently provides year-round transit service from two transit centers with hourly headways, as well as seasonal routes during the winter months. The transit routes have comparatively high ridership relative to the service levels being provided.

Nearly 23 miles of paved bicycle lanes and shared use paths connect neighborhoods, and the neighborhoods to the employment opportunities. Another 11.1 miles of sidewalks have been constructed, mostly through the casino core area and more recently on both sides of Hwy 207 from US 50 to Market Street and to Pineridge Street on the north side of Hwy 207. The South Shore Corridor has, and continues to undergo, streetscape enhancements that improve the economic vitality and visitor experiences. The Heavenly Village shopping area has been a huge success with wide sidewalks buffered from traffic by landscaped parkways. Decorative seating and street lighting with colorful flags enhance the pedestrian experience and increase the sense of safety at night.

See **Figure S5-29** for the locations of existing multimodal facilities, including bicycle paths, sidewalks, but stops, and transit centers.



| Figure S5-29: | CA/NV US 50 South Shore Corridor Existing Multimodal Facilities

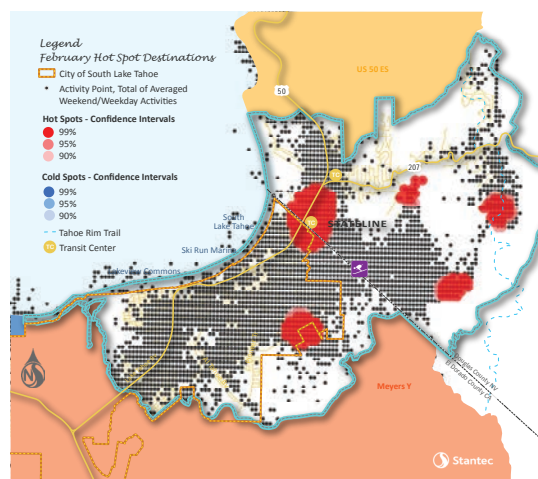


Transportation Issues

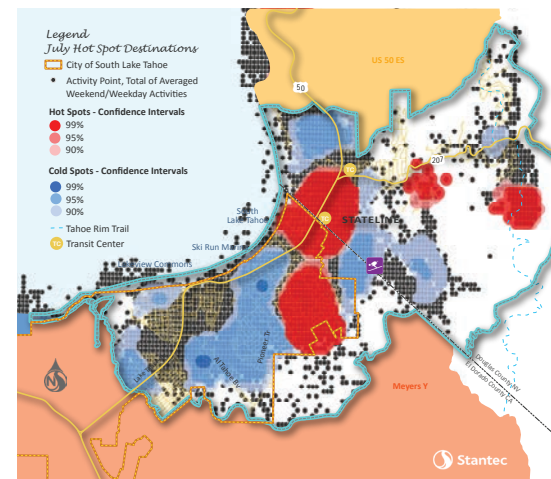
Figure S5-29 also identifies the range of AADT volumes (NDOT and Caltrans) as 12,000 to 31,500 vehicles per day in 2013. These values are comparatively high and account for the routine congestion experienced during peak seasons and holidays. US 50 through the corridor is four miles long consisting of four lanes of undivided highway with posted speeds between 25 and 45 mph. Approximately 20 signalized intersections, or one per ever 1,000 linear feet on average, control car, pedestrian and bicycle movements. This corridor reported the highest number of crashes over the previous five years and included five fatalities. In addition to US 50, this corridor also includes 2.7-miles of Pioneer Trail, a two-lane urban arterial that by-passes a portion of US 50 and ultimately rejoining US 50 in Meyers. Within the corridor, Pioneer Trail has three signalized intersections at US 50, Ski Run Boulevard, and Al Tahoe and an unsignalized crosswalk at Moss Road.

Although great progress has been made in expanding the bike/pedestrian network, significant gaps remain which depress the use of these alternative modes and inhibit access to transit services. The high levels of traffic on US 50 through the popular downtown core escalate the conflicts

| Figure S5-30: | CA/NV US 50 South Shore Corridor Hot Spot Destinations, February 2014



| Figure S5-31: | CA/NV US 50 South Shore Corridor Hot Spot Destinations, July 2014



between pedestrians, bicyclists, and vehicles. The proposed US 50 bypass project will significantly improve travel and safety for all users through the casino core area.

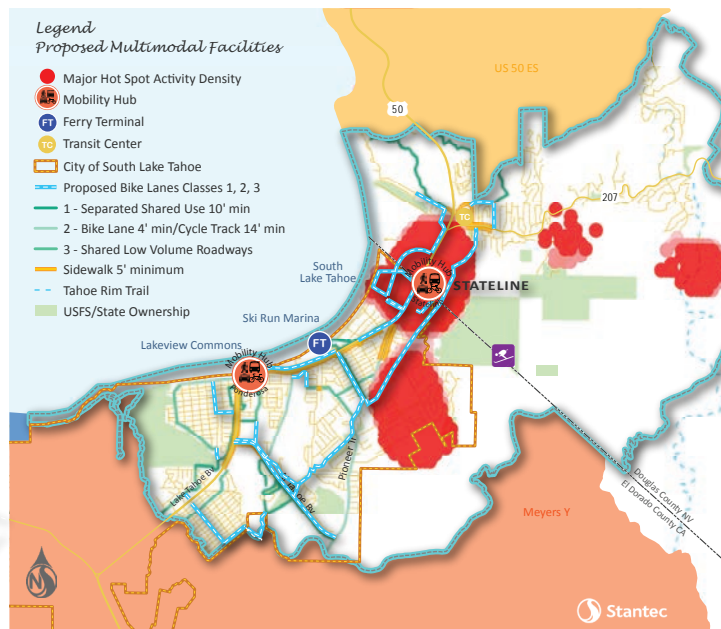
Figures S5-30 and S5-31 illustrate the most frequented destinations within the US 50 South Shore Corridor during February and July 2014. In February, popular destinations are scattered throughout the corridor and include Stateline, Heavenly Mountain Resort, and the Ridge Resort area on Tramway Drive. In July, those areas explode in magnitude reflecting the dramatic increase in visitation to these areas.

The California/Nevada US 50 South Shore Corridor has the following primary transportation challenges relating to implementation of the LTCCP:

- Major highway (US 50) with heavy traffic volumes through the casino core area create congestion and safety issues.
- High traffic volumes result in congestion for vehicles and transit riders. There are bus/bike only lanes to separate modes and give priority to transit riders. High visitation plus high traffic volumes has resulted in significant safety concerns.

- Congestion through the South Shore is customary during peak seasons and often in shoulder seasons during peak travel times. The transportation system cannot keep up with high visitation levels.
- Hotel parking is plentiful, but recreation destinations outside the commercial core face similar challenges as other corridors where parking is extremely limited.
- Major gaps in bikeway network inhibit residents, visitors, and commuters from using a bike.
- While transit ridership is strong given the current levels of service, this market is currently underserved.
- Limited affordable housing opportunities create a high commute pattern.
- Transit services to points outside the corridor and within other parts of the Basin are limited. This reduces the opportunities for visitors and commuters to use transit for travel to and from the corridor.
- Limited TOD creates challenges for transit ridership within the town center.

| Figure S5-32: | CA/NV US 50 South Shore Corridor
Proposed Multimodal Facilities



| Figure S5-33: | CA/NV US 50 South Shore Corridor
Proposed Multimodal Facilities



What Job Does the Transportation System Need to do for the Corridor?

- Transit needs to become more frequent, fun, and free-to-the-user to greatly reduce the number of trips made by visitors using their personal vehicle; Add passenger ferry service for cross-lake connectivity.
- Provide safe ingress/egress for residents, businesses, and recreation.
- Realign US 50 around the casino core area to improve the quality of experience for shopping, dining, and overall usage.
- Provide TOD to address work force housing needs and concentrate tourist accommodation redevelopment in town centers.
- Develop public park and ride facilities, or work with private businesses to utilize existing private parking facilities.
- Provide safe on-highway bike use for road riders.
- Connect parking, town centers, and recreation areas with shared use paths and sidewalks.

Figure S5-32 identifies the proposed multimodal facilities. Proposed bike lanes of all classes enhance the connectivity between the southern residential neighborhoods with the Stateline area. Mobility Hubs are recommended at the South Shore Ferry Terminal location behind Harrah's Lake Tahoe and Ponderosa Street. **Figure S5-33** provides a view of the proposed South Shore Ferry Terminal design concept and mobility map.

TRPA Threshold Needs Related to the Corridor

Water Quality – BMPs, Rocky Point Phase 4b and Bijou Erosion Control Projects

Air Quality – Reduce construction related emissions

Scenic – Scenic Quality Improvement Program design standards, City of South Lake Tahoe business façade standards, install curbs and gutters, identify new scenic resources, sidewalks on Pioneer Trail

Soil Conservation – Restore old Colony Inn parcel, remove, or mitigate excess coverage

Wildlife – N/A

Multimodal Opportunities

• Improve Transit Service:

- **Increase ridership to 5.1 million annually to reduce automobile trips by 2.4 million.**
- Increased transit frequency from area South Shore Transit Centers to Emerald Bay/Eagle Falls areas to Tahoma Transit Center on the seasonal trolley by increasing the amount of daily services and the number of days of service in the summer.
- Improve regional transit connections outside of the Basin to Carson, Minden/Gardnerville, and the Reno/Sparks area.
- Improve a portion of the Heavenly Mountain Resort parking area to a seasonal Mobility Hub.

• Improve Highway Operations, Safety, and Efficiency:

- Realign US 50 around the casino core area and implement complete streets strategies.
- Improve stop light synchronization.

• Improve Bike and Pedestrian Facilities:

- Improve bike and pedestrian facilities within the town centers with connection to recreational areas.

• Improve Parking:

- Encourage use of private parking facilities for use as public park and ride areas.
- Look for public park and ride opportunities for the future Ferry Terminal at Ski Run Marina.

Fisheries – N/A

Noise – Mitigate with physical improvements to be compatible with surrounding environment

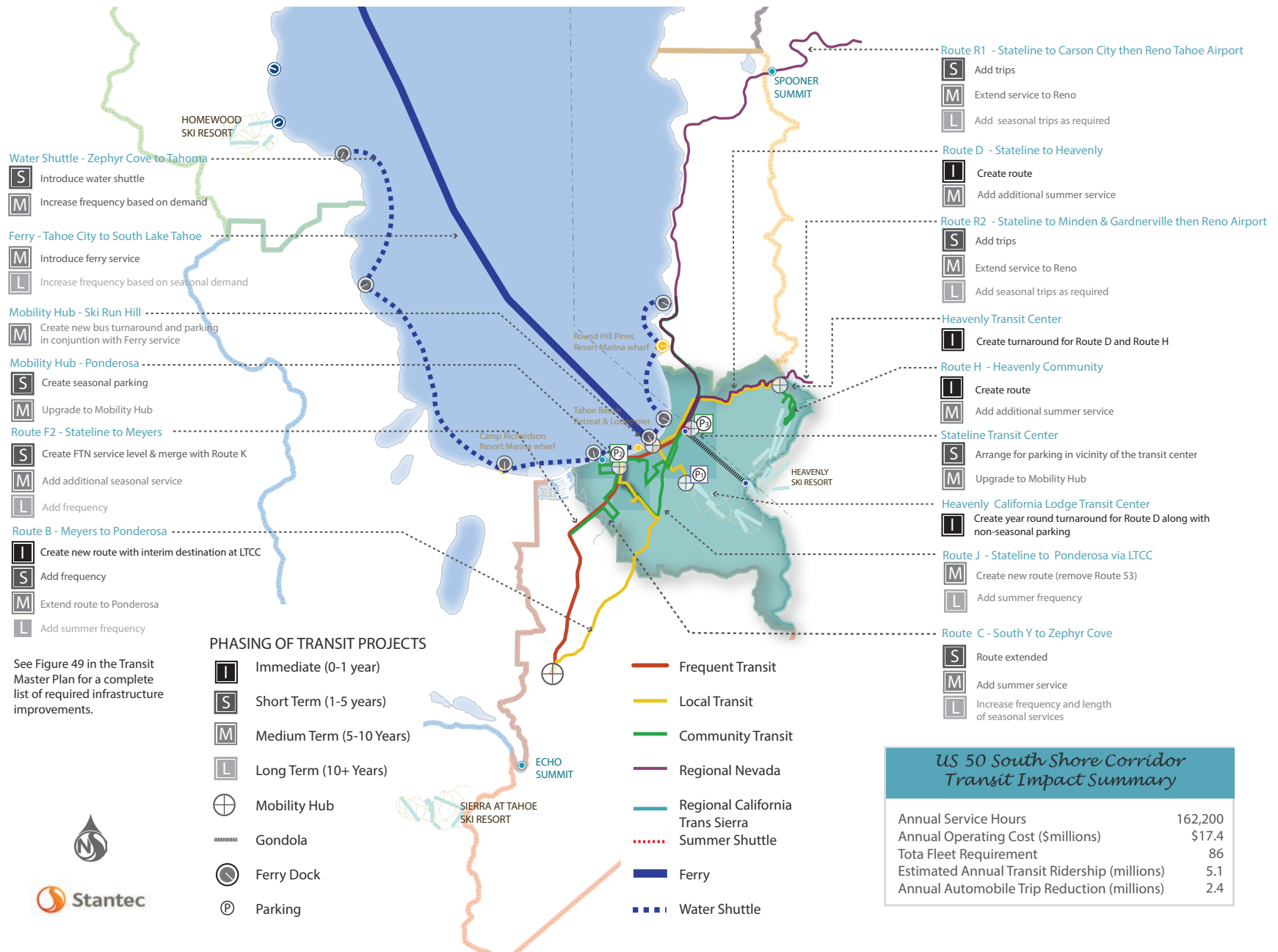
Recreation – Provide bike trail system connectivity and access to Lake and mountains, open space/gathering areas, provide way finding signage

Vegetation – N/A

- Add a new Transit Center in the Ponderosa Street area.
- Create a non-winter season parking area at California Lodge for employee parking.
- Improve and expand transit shelters and stops.
- Improve real time information on bus arrival times.
- Upgrade the Stateline Transit Center to a full Mobility Hub with expanded bike and pedestrian facilities.
- Plan for future Ferry Terminal.
- Plan for future TOD and higher density housing/tourist accommodations within town centers.
- Real-time traveler information on road conditions, congestions, special events, and incidents.
- Add sidewalks in residential areas where feasible to connect to the main transit/bike/pedestrian network.
- Implement a Parking Management System that will provide real time information of parking locations and availability.

Figure S5-34 exhibits the phasing of transit services and infrastructure to realize the vision for the future.

| Figure S5-34: | CA/NV US 50 South Shore Corridor Transit Vision



Major Corridor Projects

A complete list of capital projects by category, transit service improvements by phase, and implementation policy projects is in **Appendix A**.

The US 50/South Shore Community Revitalization Project is in the environmental document stage.

The Lake Tahoe Greenway Project is in the planning phase.

Project Partners

- California Department of Transportation
- California Division of State Parks
- California Highway Patrol
- California Tahoe Conservancy
- City of South Lake Tahoe
- Douglas County
- El Dorado County
- FHWA-Nevada and California
- Nevada Department of Transportation
- Nevada Highway Patrol
- Nevada Division of State Lands
- Nevada Division of State Parks
- South Lake Tahoe Lodging Association
- South Shore Transportation Management Association
- South Tahoe Public Utility District
- Tahoe Chambers of Commerce
- Tahoe Regional Planning Agency
- Tahoe Transportation District
- USFS-LTBMU
- Washoe Tribe

Relevant Plans and Studies

- Linking Tahoe: Regional Transportation Plan (2017)
- Linking Tahoe: Lake Tahoe Basin Transit Master Plan (2017)
- Lake Tahoe Ferry Oriented Development Plan (2017)
- Linking Tahoe: Active Transportation Plan (2016)
- Lake Tahoe Complete Street Resource Guide (2016)
- Tahoe Douglas Area Plan
- South Shore Area Plan
- City of South Lake Tahoe Tourist Core Area Plan
- South Shore Wayfinding Plan
- Lake Tahoe Unified School District Safe Routes to School Master Plan
- South Tahoe Middle School Area Connectivity Plan
- Kahle Drive Vision Plan



Meyers /Y Corridor

A Glimpse of the Future

The secret is out: Meyers is a great place to live and play! US 50 in downtown Meyers has been redeveloped to calm traffic, increase pedestrian access, improve safety, and create a sense of community. The Meyers/Y Corridor now has a seamless local transportation system that integrates a comprehensive pedestrian and bicycle network with convenient transit to effectively serve residential and commercial areas, and connect residents and visitors to the many nearby recreational sites.

Reliable transit also connects the many workers living in Meyers with the jobs in South Lake Tahoe, the larger Tahoe Basin and beyond. Traffic on the roadways traversing the community now moves more smoothly, with intersection improvements and new technologies that improve safety and efficiency, while reducing conflicts between cars, pedestrians, and cyclists. Traffic congestion has also been reduced by a Mobility Hub at the South end of the corridor, where all modes of travel come together, which has enticed visitors to the corridor to leave their cars and use the community's excellent transit and pedestrian/bike facilities during their stay.

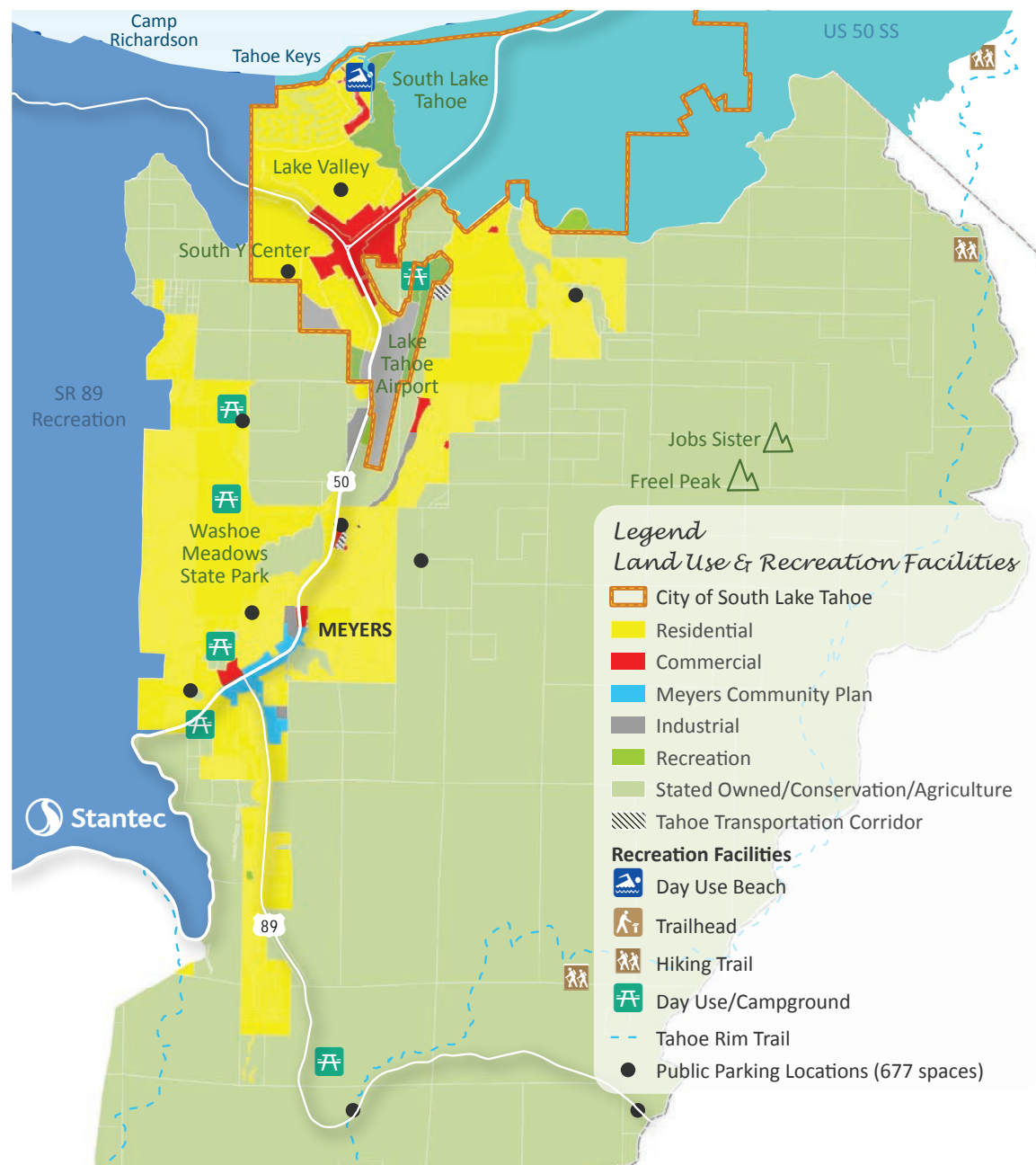
Less traffic congestion and easier traveling gives everyone more time to enjoy this great place! Isn't that one of the main reasons everyone is here?

Characteristics

The Meyers/Y Corridor consists of approximately 2.2 miles of the highway encircling Lake Tahoe from Trout Creek in South Lake Tahoe on US 50 to the western edge of South Lake Tahoe at SR 89. The corridor also includes almost six miles of US 50 south of the intersection of the "Y" at US 50 and SR 89, as well as 5.3 miles of Pioneer Trail. The corridor connects the residential bed base of Meyers with the employment base of South Shore. This corridor also functions as a pass-through for visitors from South Shore seeking the west shore destinations, as well as visitors accessing the lake via SR 89/88/395 from California.

The Meyers/Y Corridor land use is primarily suburban residential interrupted by commercial uses and the

Figure S5-35: | Meyers/Y Corridor Land Use & Recreation Facilities



industrial land associated with the Lake Tahoe airport. Vast state owned acreages are designated state owned for conservation purposes and offer residents and visitors an immense open playground for year-round recreation, including hiking, mountain biking, and golf. **Figure S5-35** reveals the roadway network that helped shape the development pattern and open landscape, as well as the locations of recreation facilities residents and visitors enjoy.

Washoe Meadows State Park is a completely undeveloped park site enjoyed by locals. The Upper Truckee River runs through the park and provides opportunities to fish and bird watch. The Meyers community hosts an annual two-day mountain bike ride and festival (2016-fourth annual). Except for the Tahoe Keys Marina, existing corridor recreation destinations are located a few miles south of the busy US 50/SR 89 “Y” intersection. Once removed from that intersection, visitors experience a general feeling this corridor functions more like a neighborhood and less like a Lake Tahoe destination.

Geographically, this corridor occupies 25% of the in-Basin land area and houses nearly 30% of the total resident population. The population/land use density is modest with 189 persons per square mile, as compared to 906 persons per square mile in the US 50 South Shore Corridor. A majority, 63.4%, reside in owner occupied housing with a median value of \$371,900 in 2014. **Table S5-10** summarizes the Meyers/Y Corridor statistics analyzed to develop the LTCCP.

Economically speaking, 2016 U.S. Census data indicates there were over 1,000 businesses in the Meyers/Y Corridor and 3,201 individuals employed in the corridor. Slightly less than a third of these individuals live and work within the corridor; the balance is Inbound Commuters. Small percentages of employees either commute by transit or walk.

TRPA data indicates this corridor has only 701 tourist accommodation units (2015), but the fourth highest visitation at **nearly 3.9 million annually**. Approximately **10.8 million vehicles** (45% visitors, 51% residents, and 4% commuters) enter the corridor annually. There are only **184 public parking spaces** available (5,727 to 1 visitor to parking ratio), the lowest amount within the Basin. **21.9 million Person Trips** are made within this corridor annually (second highest in the Basin).

Table S5-11 provides a summary of the average daily and monthly total internal trips made by each travel group throughout the corridor in February and July 2014. Resident and Home Based Worker trips account for 63% of the total in February when visitation is low. In July, the internal daily trips by Short and Long Term Visitors quadruples from 18,555 to 88,050. Unlike other corridors, total trips attributed to Resident Workers and Home Based Workers declines only slightly between February and July. Transit ridership

/Table S5-10: | Meyers/Y Corridor Statistics

Social Demographics		Housing/Land Use		Multimodal Operations	
Resident Population	15,478	Number of Residential Units	11,695	# Vehicles Entering Annually 2014	10,813,500
Median Age	43.1	Resident Population/ Units Ratio	1.32:1	Internal Annual Corridor Person Trips	21,902,933
Median Household Income	\$55,846	% Single Family Units	81.2	Annual Transit Ridership (2015-16)	170,682
Employment		% Multi-Family Less than 20 du/bldg	12.7	% Annual Transit Ridership	16%
# of Businesses (2016)	1,088	% Multi-Family 20+ du/bldg	6.0	Average Daily Transit Ridership	468
# of Employees (2016)	7,595	% Seasonal Resident Units	35.8	Annual Transit Ridership/ Resident Ratio	11:1
Employee/Residential Population Ratio	0.44:1	% Owner Occupied	63.4	Transit Ridership/ Visitor Ratio	0.04:1
Employed in the Corridor	3,201	% Renter Occupied	36.6	# of Transit Stops per Mile	0.8
Employed in the Corridor, but Living Outside	1,862	Median Value (Owner Occupied)	\$371,900	Miles of Bike Trails	23.1
Employed and Living in the Corridor	1,339	Tourist Accommodation Units (TAU) 2015	701	Miles of Sidewalk	3.1
% Resident Employees	42%	% of Conservation/ Open Space Land Use	76	Active Transportation Counts (2016)	154
Workers 16 years and over	6,771	Persons Per Sq. Mile (Land Use Density)	189	Visitors	
Commute to Work % Drove Alone	78.1	Recreational		# of Annual Visitors 2014	3,876,962
Commute to Work % Public Transportation	1.5	# of Trailheads	3	% of Total Visitors 2014	16%
Commute to Work % Walked	2.4	# of Public Beaches	1	Safety	
		# of Major Recreation Destinations	7	# of Crashes (most recent 5 years)	206
		# of Recreation Parking Spaces	184	# of Fatalities (most recent 5 years)	2
		# of School District Spaces	493	Source: U.S. Census, American Community Survey, LEHD 2016, TRPA, TTD, TART, and Stantec Consulting.	
		Vehicle Entries Annually/ Recreation Parking Ratio	58,759:1		

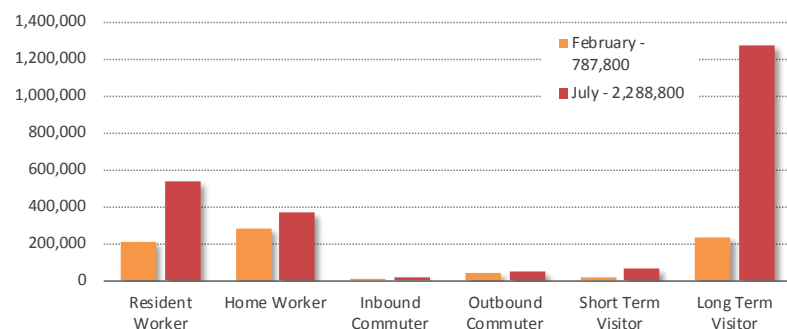
/Table S5-11: | Meyers/Y Corridor Internal Trips by Travel Group, 2014

Travel Group	February			July			TTD Average Daily Transit Boardings (2015-2016)
	Daily Trip Count	Monthly Trip Count	Travel Group % of Total	Daily Trip Count	Monthly Trip Count	Travel Group % of Total	
Resident Workers	14,675	208,925	27%	34,810	535,815	23%	882 28% of Average Daily Transit Ridership
Home Based Workers	20,200	284,042	36%	24,020	370,225	16%	
Inbound Commuters	415	5,993	1%	798	13,298	<1%	
Outbound Commuters	3,060	41,855	5%	3,057	44,509	2%	
Short Term Visitors	1,120	14,742	2%	4,100	60,385	3%	
Long Term Visitors	18,090	232,220	29%	88,050	1,275,575	55%	
Total	57,560	787,777	100.0%	154,835	2,299,800	100.0%	

Source: Stantec Consulting, AirSage Analytics, TTD.

in this corridor is high; transit boardings in this corridor accounted for 28% of all average daily transit trips. **Figure S5-36** illustrates the variance between travel groups for each month.

| Figure S5-36: | Meyers/Y Corridor
Internal Trips by Travel Group, February and July 2014



Current Multimodal Options

TTD operates two year-round transit routes with 60- minute frequency, and one seasonal route between the Johnson Blvd. and the Stateline area, but does not go out to Meyers. The seasonal Emerald Bay Shuttle runs up the west side of Lake Tahoe to Homewood or Tahoe City (based on funding) and operates from June to October with varying days of service and frequency to respond to seasonal demand.

The Meyers/Y Corridor has over 20 miles of completed bike trails (Classes 1 through 3). Sidewalks total three miles, but are limited to the “Y” intersection and transit center on all four corners extending in limited directions. The shared use path along Pioneer Trail provides a popular, scenic, and safe connection between US 50 in South Shore to US 50 at the Tahoe Golf Course. Other bike routes connect neighborhoods to primary facilities along US 50 and SR 89. **Figure S5-37** identifies the locations of bike paths and sidewalks, along with transit stops and gaps in existing multimodal facilities.



| Figure S5-37: | Meyers/Y Corridor
Existing Multimodal Facilities



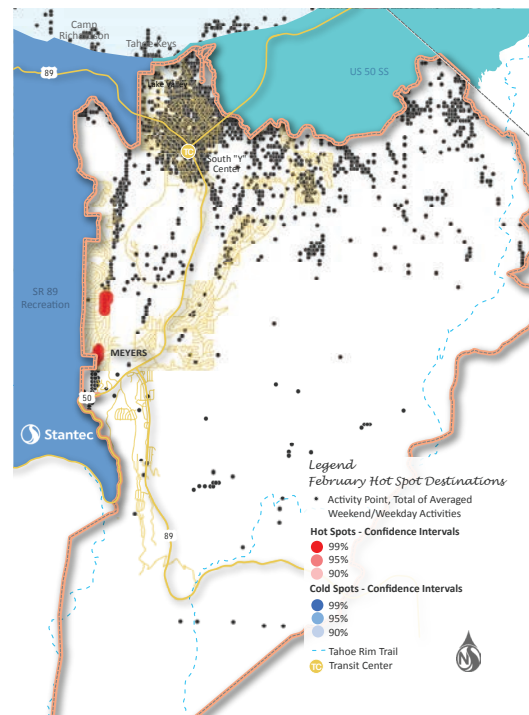
Transportation Issues

Many of the people working in South Lake Tahoe/ Stateline live in the Meyers/Y corridor. Home to work car trips by these workers adds to the congestion and creates demand on the already insufficient parking availability in South Lake/ Stateline areas during the peak seasons.

The Meyers/Y intersection is the busiest in the Tahoe Basin with AADT of 47,000 vehicles per day (vpd) and average daily traffic in the month of July exceeding 57,000 vehicles per day.

July's monthly person trip count is over 1.6 million or 52,500 daily trips. Resident workers make twice as many trips in July than February and Home Based Workers make slighter fewer trips. Understanding the destination TAZs and purpose of the two-fold increase should be evaluated

| Figure S5-38: | Meyers/Y Corridor
Hot Spot Destinations, February 2014

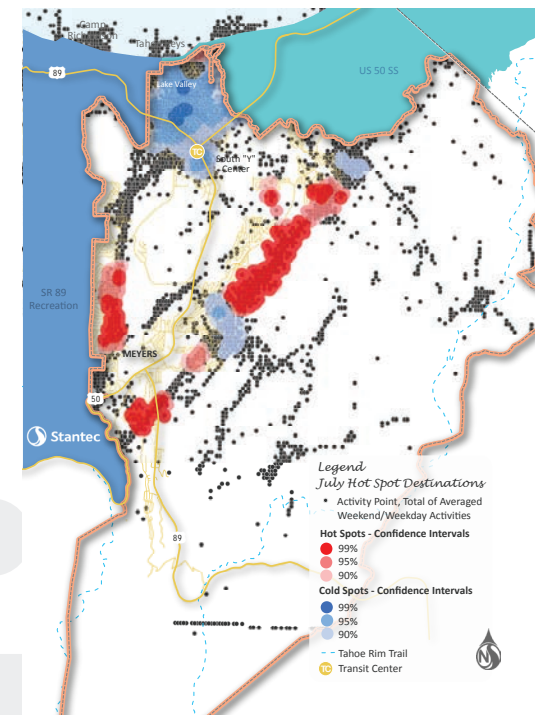


further to determine if these trips can be captured with active transportation modes.

Existing transit services do not provide a competitive alternative to the car due to their limited coverage and frequency. Transit amenities are also minimal and connectivity to the bike and pedestrian network is incomplete, both factors in making transit use less attractive. Seasonal transit services to many of the highly popular trailheads, ski resorts and other recreational destinations are lacking, which increases both congestion and demand on the inadequate parking supply.

Figures S5-38 and S5-39 illustrate the popular destinations in February and July 2014. In February, visitation levels revealed Washoe Meadows State Park/N. Upper Truckee Road area as a hot spot. In July, the magnitude of activity explodes along Pioneer Trail and in the North and South

| Figure S5-39: | Meyers/Y Corridor
Hot Spot Destinations, July 2014



Upper Truckee Road residential areas. Multimodal infrastructure and improvements should be targeted to the hot spot locations.

The Meyers/Y Corridor has the following primary transportation challenges relating to implementation of the LTCCP:

- Major highway (US 50) with high volumes of traffic through the middle of the town center, serving as one of Tahoe's gateways, creates congestion and safety issues.
- Volume of pass-through vehicles within the corridor is three times that of visitors in the corridor, highest in the Basin.

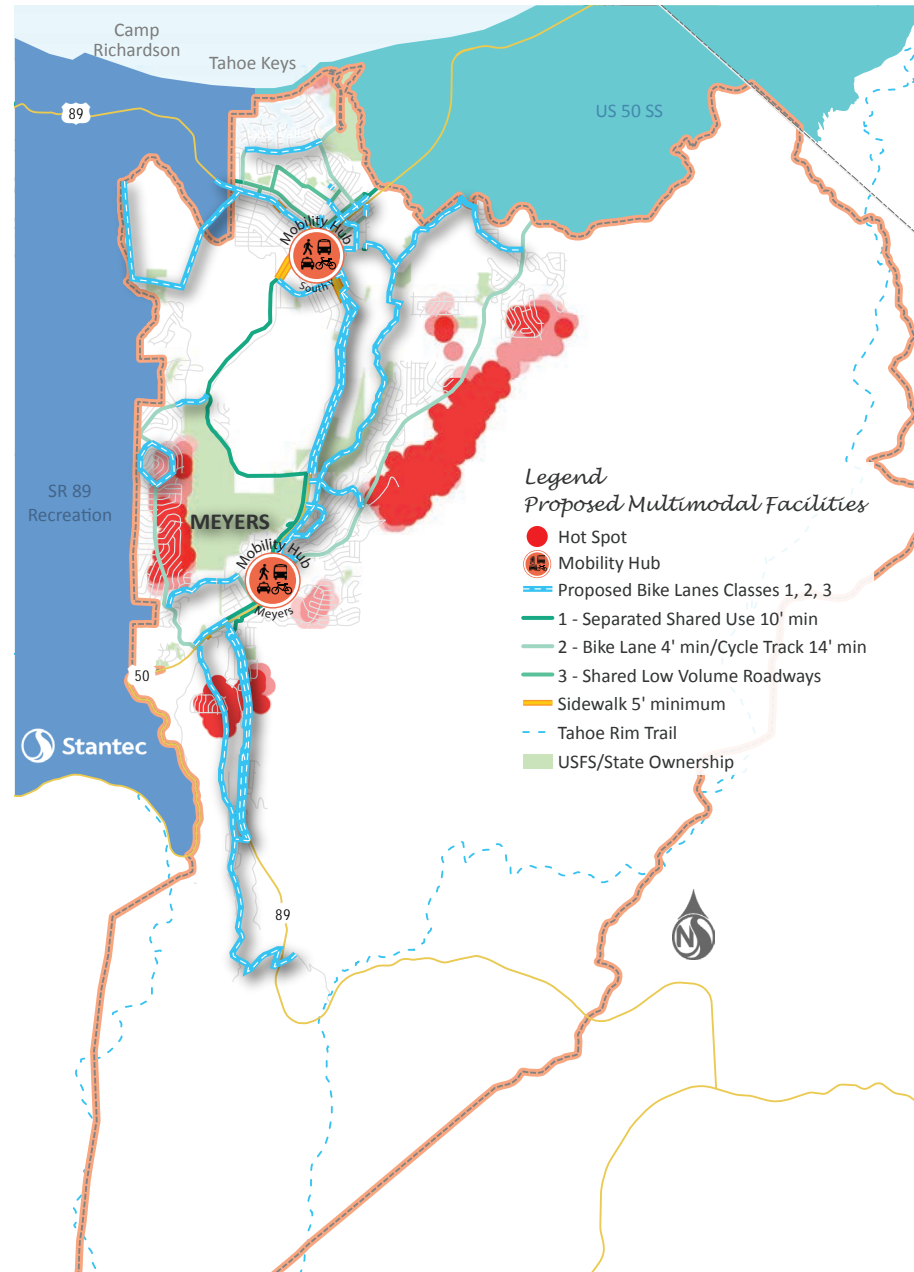
- Traffic on Pioneer Trail has increased as it has become a more popular travel route to avoid US 50 traffic, due to cell phone mapping technology.
- Major gaps in Tahoe Trail shared use path network, and lack of transit service in Meyers precludes residents, visitors, and commuters from using other travel modes.
- Limited public parking in town centers, recreation sites, and trailheads.

What Job Does the Transportation System Need to do for the Corridor?

- Transit needs to become more frequent, fun, and free-to-the-user to greatly reduce the number of trips made by visitors using their personal vehicle.
- Add service to Meyers.
- Provide safe ingress/egress to businesses and recreation areas.
- Develop public park and ride facilities to facilitate multimodal choices.
- Connect parking, town centers, and recreation areas with shared use paths and sidewalks.
- Provide safe on-highway bike use for road riders.
- Improve connectivity between Meyers and US 50 South Shore Corridor.

Figure S5-40 identifies the proposed multimodal facilities. Bike lanes of all classes are proposed to connect the residential areas near the US 50/89 up to the South “Y” commercial core. Mobility Hubs are recommended at the South “Y” Center and at a location in Meyers along US 50 to reduce vehicle trips on the highway and make the area more inviting for bicyclists and pedestrians.

Figure S5-40: | Meyers/Y Corridor Proposed Multimodal Facilities



TRPA Threshold Needs Related to the Corridor

Water Quality – BMPs implementation and maintenance

Air Quality – Reduce particulate matter (PM)

Scenic – Meyers design standards and guidelines, enhance and maintain view sheds, underground overhead power lines

Soil Conservation – Minimum five percent reduction of excess coverage, SEZ enhancement and restoration

Multimodal Opportunities

• Improve Transit Service:

- **Increase ridership to 3.2 million annually to reduce automobile trips by 1.5 million.**
- Increase transit frequency from area transit centers to Emerald Bay/Eagle Falls areas to Tahoe City Transit Center by adding the amount of daily services and the number of days of service in the summer.
- Improve and expand transit shelters and stops.
- Add a route to the transit system to connect Meyers to Stateline via US 50.
- Add a new route between Meyers and the Lake Tahoe Community College and a

• Improve Highway Operations, Safety, and Efficiency:

- Improve intersection safety and efficiency within Meyers and at the “Y”.
- Improve bike and pedestrian crossings.

• Improve Bike and Pedestrian Facilities:

- Improve bike and pedestrian facilities.
- Improve the bikeway connection from Meyers to South Lake Tahoe and the “Y”.

• Improve Parking:

- Develop a park and ride facility within Meyers.
- Add a Mobility Hub and an upgraded South “Y” Transit Center to connect regional and local service routes.

Figure S5-41 shows the recommended phasing of transit services and infrastructure to realize the vision for the future.

Wildlife – Minimize travel corridor structure impacts on river corridor

Fisheries – Minimize travel corridor structure impacts on fish passage

Noise – Varies by planning district, from 50 dBa to 65 dBa maximum

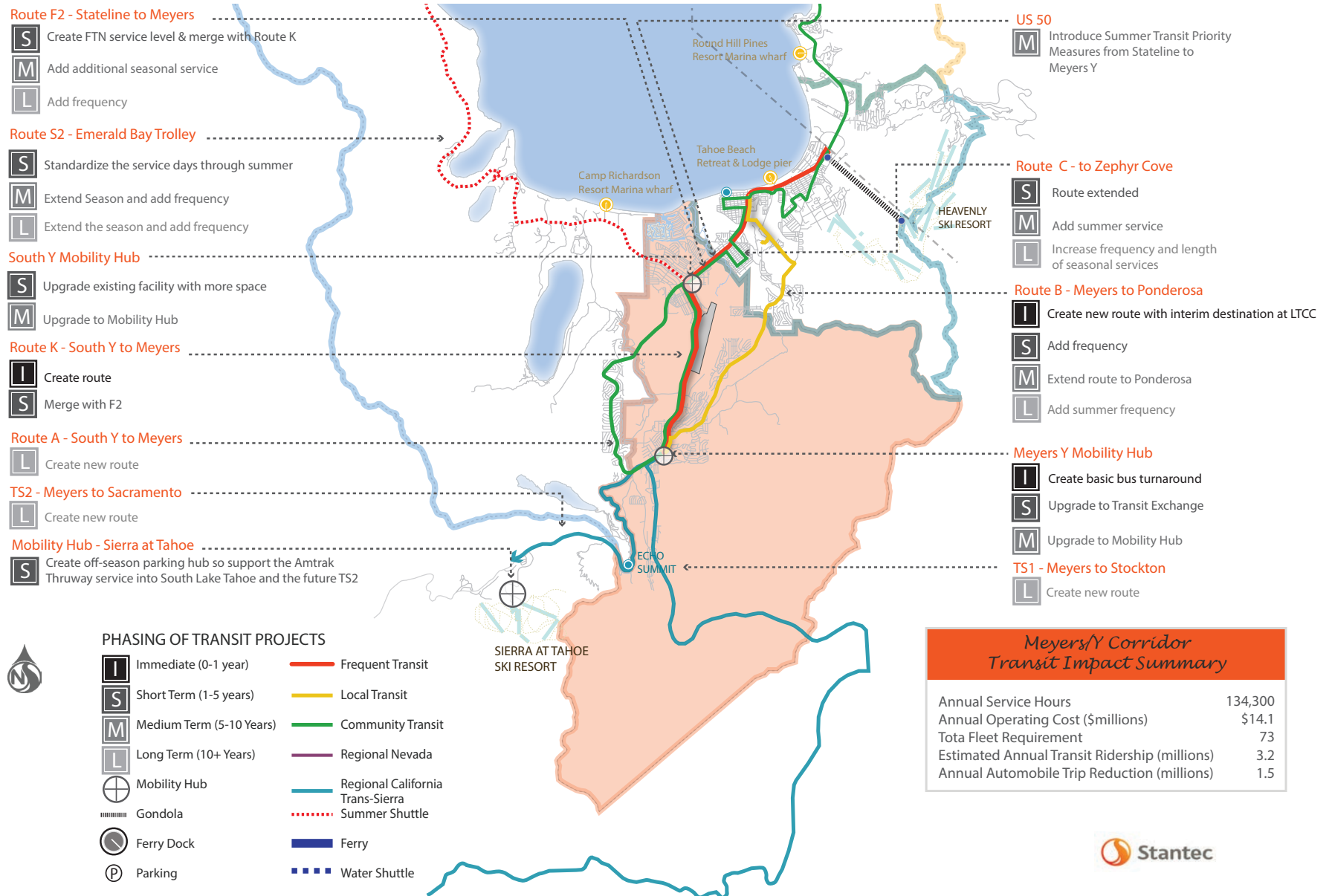
Recreation – Bike paths, recreation trails, trailheads, parking, pedestrian crossings, way finding signage, pedestrian undercrossing

Vegetation – Land mark tree protection, invasive weed control

future extension to the Harrison Avenue transfer point.

- Add a new community route connecting the South “Y” with Zephyr Cove.
- Add a new community route along the North Upper Truckee Road connecting with the South “Y” Transit Center.
- Improve real-time information on bus arrival times.
- Develop a Mobility Hub near the South “Y”.
- Augment regional connections to Sacramento and Stockton by connecting Mobility Hubs with rail stations.
- Real-time traveler information on road conditions, congestions, special events, and incidents.
- Add sidewalks in residential areas where feasible to connect to the main transit/ bike/pedestrian network.
- Add a new parking facility at Sierra at Tahoe for summer season service.
- Implement a Parking Management System that will provide real-time information of parking locations and availability.

| Figure S5-41: | Meyers/Y Corridor Transit Vision



Major Corridor Projects

A complete list of capital projects by category, transit service improvements by phase, and implementation policy projects is in **Appendix A**.

The South Tahoe Greenway Project is in the planning and design stage.

The Caltrans US 50 “Y” to Trout Creek project is under construction.

Project Partners

- City of South Lake Tahoe
- El Dorado County
- El Dorado County School District
- California Department of Transportation
- California Division of State Parks
- California Highway Patrol
- California Tahoe Conservancy
- FHWA-Nevada and California
- Tahoe Chambers of Commerce
- Tahoe Transportation District
- Tahoe Regional Planning Agency
- USFS-LTBMU

Relevant Plans and Studies

- Linking Tahoe: Regional Transportation Plan (2017)
- Linking Tahoe: Lake Tahoe Basin Transit Master Plan (2017)
- Lake Tahoe Ferry Oriented Development Plan (2017)
- Linking Tahoe: Active Transportation Plan (2016)
- Lake Tahoe Complete Street Resource Guide (2016)
- Meyers Area Plan (DRAFT)
- Tahoe Valley Area Plan
- Meyers Sustainable Mobility Plan



State Route 89 Recreation Corridor

A Glimpse of the Future

Visiting the SR 89 attractions has never been easier. If you are living or staying in South Lake Tahoe, convenient, frequent transit services to all the SR 89 attractions are a short walk away. If you are driving in from outside the area, transit hubs and both the north and south ends of the SR 89 Corridor will have ample parking for your car and waiting transit vehicles a short walk away. Don't know where the transit hub is? There is an app to give you directions, tell you how much parking is available, allow you to reserve parking, and direct you to alternate parking if needed.

When you want to get off your transit vehicle to visit Emerald Bay, Camp Richardson, or any of the other points of interest and trailheads, your transit vehicle will pull safely out of the travel way at a convenient stop to let you off. From your stop, pedestrian and bike facilities will be there with well-marked signs to take you to your destination.

Returning after a long day of hiking, picnicking, or sightseeing? Simply walk to your nearest transit stop. No need for a schedule, buses run so frequently, you won't need one. While you are waiting, relax on one of the comfortable benches. Enjoy the views on your return trip without the hassle of driving through stop and go traffic as you are delivered safely to your point of departure. Take transit and spend your time looking at Emerald Bay or take your car and spend your time looking for parking? Now that's a no brainer!

Characteristics

The SR 89 Recreation Corridor consists of approximately 17.5 miles of the highway encircling Lake Tahoe from the western edge of South Lake Tahoe at West Way to the Placer/El Dorado county line in Tahoma. The corridor connects the communities of Tahoma, Meeks Bay, Emerald Bay, Spring Creek, Camp Richardson, and South Lake Tahoe along the western shore. US 50 connects to this corridor near the southern end and provides direct access to the Sacramento area. SR 89 is a conventional two-lane highway that serves local and recreational traffic along the western shore of Lake Tahoe and provides scenic views of the lake and Emerald Bay. Segments of the roadway have extremely steep grades with hairpin curves that lack shoulders. Other areas have narrow shoulders that serve as roadside parking areas creating unsafe roadway conditions for all users.

This corridor contains about 24% of the total in-Basin acreage, but only about two percent of the Basin's total resident population. The corridor has the lowest number of residential units, but according to the U.S. Census, 80% of these are classified as for seasonal or recreational purposes.

| Figure S5-42: | SR 89 Recreation Corridor Land Use & Recreation Facilities



There are an estimated 305 primary jobs in the corridor. The share of workers employed inside, but living outside is 97.8% and a roughly equal proportion of workers live in the corridor, but are employed outside (98.4%).

Figure S5-42 shows the developed land use pattern and locations of the recreation offerings. The corridor is predominately zoned Tahoe Agriculture and remains a wilderness area with numerous formalized campgrounds, trailhead access and mountain lakes. Camp Richardson Resort & Marina is a year-round destination. Camp Richardson offers lodging options: cabins, hotel, the Richardson House, Beachside Inn, duplexes, camping and RV sites. The Ice Cream Parlor attracts herds of families on foot, bicycles, and in cars, creating significant congestion at the pedestrian activated crosswalk on SR 89. Pope Beach, Tallac Historic Site, Taylor Creek Visitor Center, Fallen Leaf Lake, and Baldwin Beach, add to the outdoor opportunities and are connected by a shared use path separated from the roadway by a dense forest. Visitors to the area could easily drive by and be unaware of the shared use path.

The proximity of Camp Richardson to Emerald Bay, coupled with the numerous attractions between the two destinations accounts for area congestion. The panoramic views of the lake from this section of SR 89 are captivating and draws an **estimated 1.7 million visitors annually throughout the corridor.**

The Emerald Bay State Park, a national natural landmark, includes Fannette Island and Vikingsholm Castle. Eagle Falls Trailhead is located across the highway, adding to the area congestion. It too is a popular destination for hikers and families since it is only 1.8 mile-out and back trail, featuring cascading waterfalls in wet seasons, and views of Emerald Bay. D.L. Bliss State Park is located on the north site of Emerald Bay and offers camping, beach access to Rubicon Point, and day parking. Meeks Bay Resort and Marina also offers cabins, campsites, marina access for boating, along with picnic tables and a sandy beach. Sugar Pine Point State Park forms the northern boundary of the SR 89 Recreation Corridor. The 2,500-acre state park features two miles of the beach area for swimming, forested mountains for hiking, a nature center, and camping. Meeks Bay and Sugar Pine Point were both considered the summer homes for generations of Washoe Indians.

The land area of this corridor occupies nearly one fourth of the Basin acreage. Despite the large land area, the permanent population is 1,015 residents and the density is 13 persons per square mile according to the 2015 U.S. Census. Employment is also comparatively small, with less than 1,000 employees and 85 businesses (2016). The percentage of resident employees is two percent. The 2015 U.S. Census data also indicates there is a total of 2,784 residential units and 93.5% of these are single family. Furthermore, 80% of all residential units are classified as Seasonal/Recreational. In summary, the permanent population is low, but swells in the summer months as owners and renters inhabit the west shore for vacation purposes. **Table S5-12** identifies all the corridor statistics analyzed for the SR 89 Recreation Corridor to develop the LTCCP.

| Table S5-12: | SR 89 Recreation Corridor Statistics

Social Demographics		Housing/Land Use		Multimodal Operations	
Resident Population	1,015	Number of Residential Units	2,784	# Vehicles Entering Annually 2014	1,733,750
Median Age	45.4	Resident Population/ Units Ratio	0.36:1	Internal Annual Corridor Person Trips	4,028,667
Median Household Income	\$42,500	% Single Family Units	93.5	Annual Transit Ridership (2015-16)	7,482
Employment		% Multi-Family Less than 20 du/bldg	4.3	% Annual Transit Ridership	1%
# of Businesses (2016)	85	% Multi-Family 20+ du/bldg	2.0	Average Daily Transit Ridership	61
# of Employees (2016)	926	% Seasonal Resident Units	80.0	Annual Transit Ridership/ Resident Ratio	7:1
Employee/Residential Population Ratio	0.89:1	% Owner Occupied	49.7	Transit Ridership/ Visitor Ratio	0.004:1
Employed in the Corridor	224	% Renter Occupied	50.3	# of Transit Stops per Mile	1.5
Employed in the Corridor, but Living Outside	300	Median Value (Owner Occupied)	\$546,900	Miles of Bike Trails	5.5
Employed and Living in the Corridor	5	Tourist Accommodation Units (TAU) 2015	103	Miles of Sidewalk	0.0
% Resident Employees	2%	% of Conservation/ Open Space Land Use	88	Active Transportation Counts (2016)	0
Workers 16 years and over	403	Persons Per Sq. Mile (Land Use Density)	13	Visitors	
Commute to Work % Drove Alone	76.1	Recreational		# of Annual Visitors 2014	1,782,648
Commute to Work % Public Transportation	5.2	# of Trailheads	7	% of Total Visitors 2014	7%
Commute to Work % Walked	2.4	# of Public Beaches	5	Safety	
		# of Major Recreation Destinations	7	# of Crashes (most recent 5 years)	129
		# of Recreation Parking Spaces	2,132	# of Fatalities (most recent 5 years)	1
		# of School District Spaces	0		
		Vehicle Entries Annually/ Recreation Parking Ratio	813:1		

Source: U.S. Census, American Community Survey, LEHD 2016, TRPA, TTD, TART, and Stantec Consulting.

| Table S5-13: | SR 89 Recreation Corridor Internal Trips by Travel Group, 2014

Travel Group	February			July			TTD Average Daily Transit Boardings (2015-2016)
	Daily Trip Count	Monthly Trip Count	Travel Group % of Total	Daily Trip Count	Monthly Trip Count	Travel Group % of Total	
Resident Workers	1,960	27,280	26%	2,040	31,775	8%	61 2% of Average Daily Transit Ridership
Home Based Workers	1,950	26,965	26%	820	12,360	3%	
Inbound Commuters	5	1,955	<1%	665	2,075	<1%	
Outbound Commuters	135		2%		8,337	2%	
Short Term Visitors	140	1,900	2%	2,570	36,770	9%	
Long Term Visitors	3,520	45,560	44%	22,020	331,695	78%	
Total	7,710	103,660	100.0%	28,115	423,010	100.0%	

Source: Stantec Consulting, AirSage Analytics, TTD.

The corridor's vacation home supply is augmented by a miniscule 103 TAU's (2015), or one percent of the Basin-wide TAU's. The relatively small residential bed base and smaller TAU's likely account for the smallest number of vehicles entering the corridor annually (1.7 million). The popularity of the corridor's scenic attractions, camping and beaches explain the four million internal person trips made annually. The magnitude of state park lands and conservation areas supply the largest number of parking spaces (approximately 2,132) in the Basin serving 19 destinations. However, a vehicle to recreation parking ratio of 813 to 1 (the lowest in the Basin) is not sufficient to mitigate the visitor demands for parking and results in congestion throughout summer.

Table S5-13 provides a count of daily and monthly trips made by each travel group in February and July 2014. Consistent with the small number of employees, the number of commuters is extremely low, but increases in July. There is a huge shift between February and July where Resident Workers and Home Based Workers comprise 50% of the internal trips and declines to 11% in July, with an enormous surge to 87% of daily internal visitor trips. This surge suggests the locals either vacate the corridor in July, renting out their homes to visitors or locals cut way back on their daily trips to avoid traffic congestion. **Figure S5-43** graphically displays the internal trips made by each travel group during the months of February and July 2014.

Current Multimodal Options

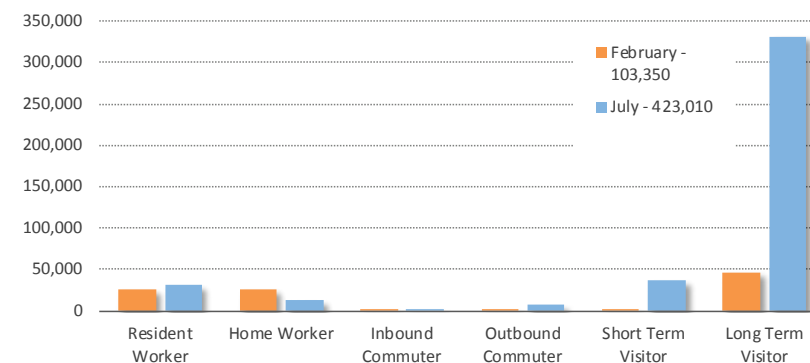
The 17.5-mile segment of SR 89 has no signalized intersections. A pedestrian activated crosswalk was installed at Camp Richardson and results in miles-long vehicle back-ups as drivers wait for a continuous onslaught of pedestrians. Without knowing the type of pedestrian crossing, a minimum time interval should be established between successive triggering of the pedestrian signal. The time interval would be a minimum of 60 to 120 seconds. Establishing a minimum interval between allowable pedestrian crossings, allows for the clearing of vehicle queues.

TTD operates a seasonal shuttle (Route 30) between South Lake Tahoe, Emerald Bay, and Tahoma or the Tahoe City Transit Center (depending on funding) from June to October, with varying days of service and frequency to match seasonal demand. This route has few amenities or pull outs for the transit vehicles, but managed 7,482 boardings in 2015-16 season. Year-round transit service with 60-minute frequency is provided from the north end of SR 89 between Tahoma and the Tahoe City Transit Center via TART. Transit along the west shore captured 0.2% of all person trips.

The significant bike and pedestrian facility in this corridor is a Class 1 separated shared use path that parallels SR 89. In the southern area, the path extends six miles through Camp Richardson and various beaches, visitor centers and historic areas, terminating at Spring Creek Road. A small section winds up Fallen Leaf Road. In the northern area of the corridor, the shared use path begins again north of Meeks Bay and follows SR 89 through Tahoma and into the SR 89/28 Corridor.

See **Figure S5-44** for the locations of existing multimodal facilities, including bicycle paths and transit stops, as well as extents of the shared use path.

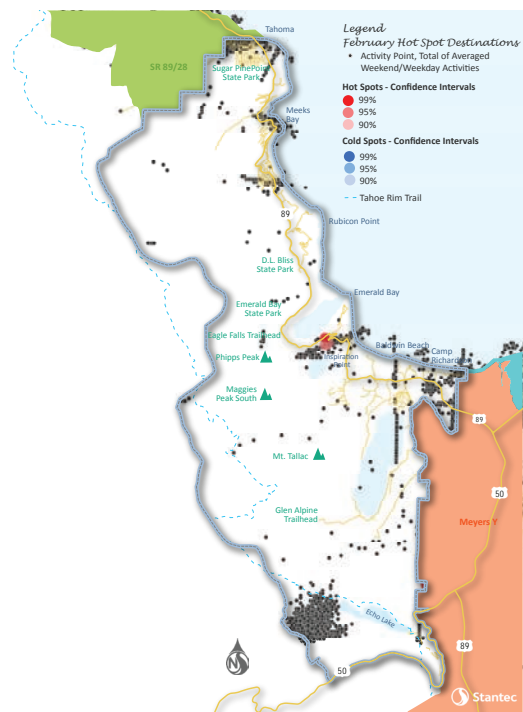
| Figure S5-43: | SR 89 Recreation Corridor Internal Trips by Travel Group, February and July 2014



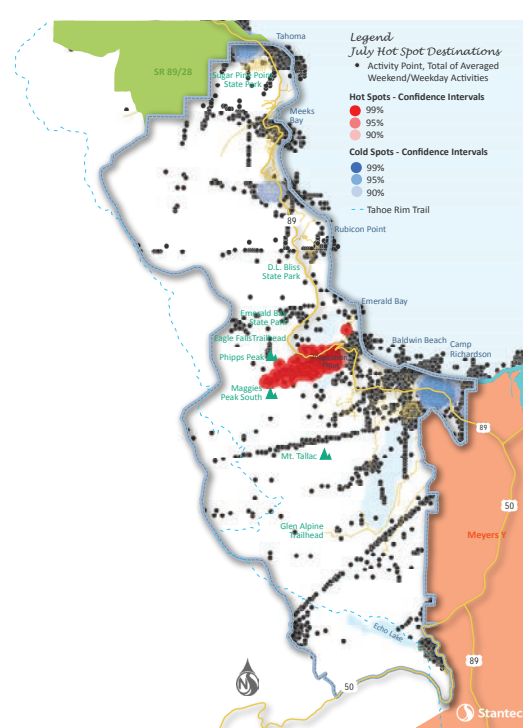
| Figure S5-44: | SR 89 Recreation Corridor
Existing Multimodal Facilities



| Figure S5-45: | SR 89 Recreation Corridor
Hot Spot Destinations, February 2014



| Figure S5-46: | SR 89 Recreation Corridor
Hot Spot Destinations, July 2014



Transportation Issues

The single biggest transportation issue associated with the SR 89 Recreation Corridor is addressing the congestion and parking issues through Camp Richardson and to Emerald Bay. **Figure S5-44** also identifies the AADTs (Caltrans, 2013). The vehicles per day, on average, are two times higher at Camp Richardson than through Inspiration Point at Emerald Bay, at 8,800 and 4,200, respectively. Extrapolated wireless device data and traffic counts indicates **1.6 million annual vehicle trips or 4.9 million person trips were made to the Inspiration Point/Emerald Bay area in July 2014**. It is undoubtedly the most popular attraction in the corridor and possibly the Lake Tahoe Basin. The 2016 Google Earth photo shows the Emerald Bay State Park accommodates 63 vehicles; others park on shoulders and navigate across the highway to experience the view.

Figures S5-45 and S5-46 illustrate the most frequented destinations within the corridor during February and July 2014. **Figure S5-45** reveals the popularity of Inspiration Point, even in February. In July, the magnitude of activity at Inspiration Point and along the nearby hiking trails swells. Camp Richardson, Rubicon and Tahoma appear as cold spots.

Existing parking capacity at Inspiration Point, the primary tourist stop for viewing Emerald Bay, is significantly lower than demand. Consequently, this creates high congestion at the parking lot. Parking is permitted along SR 89 in this area resulting in erosion, and pedestrian safety due to frequent crossings of the roadway. Other issues include:

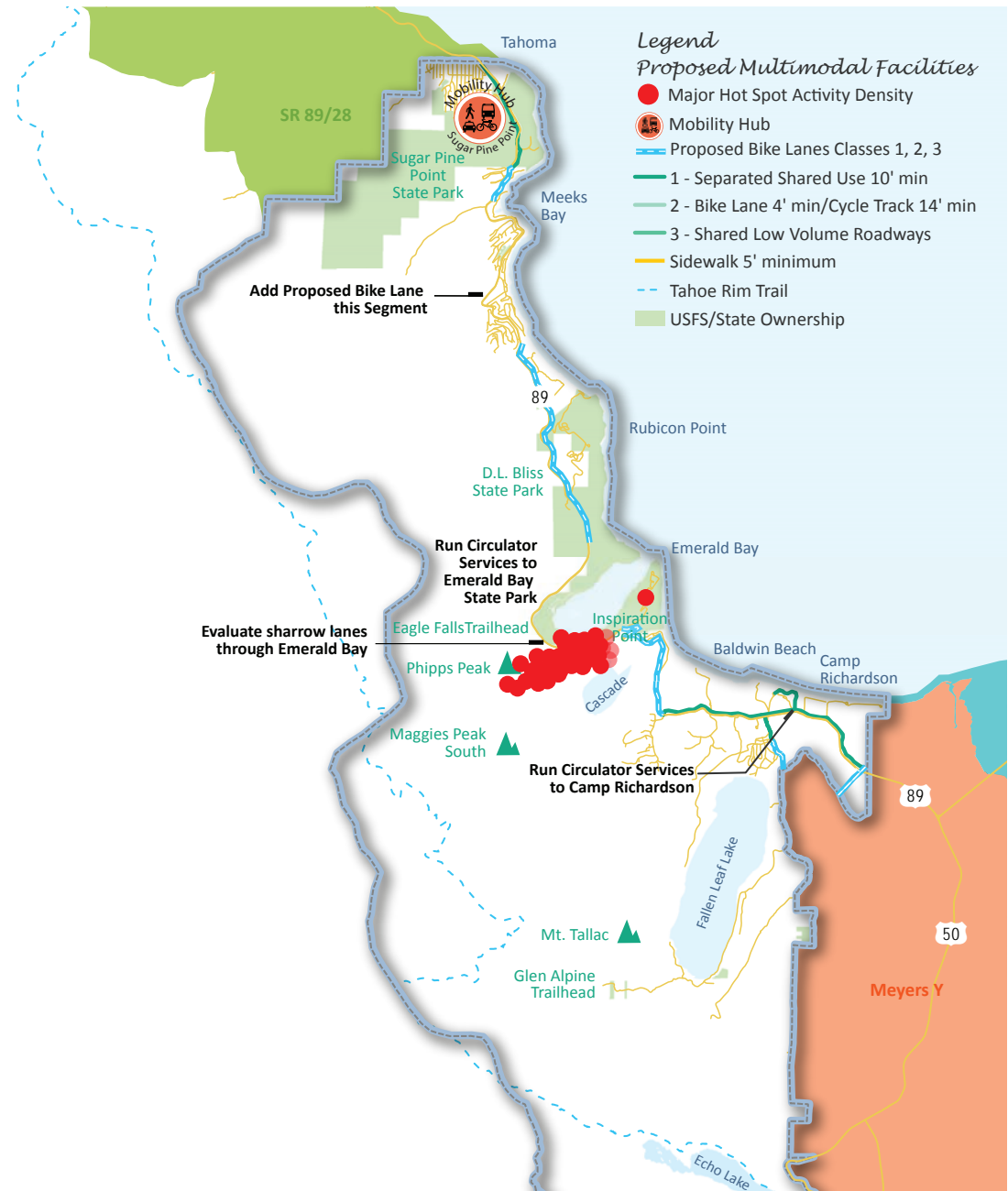
- SR89 runs through the middle of two major recreation destinations at Camp Richardson and Emerald Bay with high volumes of vehicles, bicycles, and pedestrians creating congestion and safety issues.
- Narrow roadways and minimal shoulders are not conducive for bike and pedestrian use.
- No bike and pedestrian facilities north of Camp Richardson/USFS beaches.
- Limited public parking at Emerald Bay/Eagle Falls, scenic overlooks, and other trailhead locations.
- Limited transit service and infrastructure.

What Job Does the Transportation System Need to do for the Corridor?

- Offer high frequency transit services in the peak times/seasons that is fun, and easy-to-access for visitors, that links the South Shore/Meyers Corridors to the abundant SR 89 Recreation destinations.
- Remove and/or restrict unsafe roadway parking and replace it with a transit circulator service that provides direct access from South Shore Transit Centers to Emerald Bay State Park.
- Designate a year-round public park and ride Mobility Hub to facilitate multimodal options, including transit and bicycle rentals.
- Expand and improve transit amenities, stops and turnouts.
- Provide safe ingress/egress to recreation areas; reduce the congestion and vehicle and pedestrian conflicts around Camp Richardson.
- Stripe and widen the shoulders between Meeks Bay Resort and Rubicon Point to add a bike lane to this segment.
- Complete the proposed Tahoe Trail to Inspiration Point and from Emerald Bay north through D.L. Bliss State Park.
- Improve multimodal connectivity and highway safety around Emerald Bay by making the roadways designated shared use lanes in summer with cars/bicycles/transit.

Figure S5-47 pinpoints the proposed multimodal facilities. Bike lanes on SR 89 are proposed from Spring Creek Road to Inspiration Point, from Emerald Bay State Park through Rubicon Point to Meeks Bay. The roadway between Inspiration Point and the Emerald Bay parking area should be evaluated to change the two-way narrow roadway through this area into sharrows in both directions. The “Share the Road” signage, while abundant, doesn’t send a strong enough message that cyclists have a right to occupy the roadway. Colored pavement and sharrows with reduced speeds and minimal on-shoulder parking will improve safety and expand access to more active transportation modes. Partner agencies should evaluate the feasibility of utilizing the Emerald Bay State Park parking lot as a designated Mobility Hub in the peak summer season to accommodate a continuous circulator transit service to this popular destination.

| Figure S5-47: | SR 89 Recreation Corridor Proposed Multimodal Facilities



TRPA Threshold Needs Related to the Corridor

Water Quality – BMPs implementation and maintenance, source water protection

Air Quality – Reduce vehicle trips

Scenic – Complement natural environment, Scenic Quality Improvement Program improvements, new scenic resources identified, view shed protection

Soil Conservation – Restore SEZ, reduce/relocate coverage from sensitive lands

Wildlife – Minimize travel corridor structure impacts on stream corridors

Multimodal Opportunities

• Improve Transit Service:

- **Increase ridership to 1.1 million annually to reduce automobile trips by 0.5 million.**
- Increase transit frequency from area South Shore Transit Centers to Emerald Bay/ Eagle Falls areas to Tahoe City Transit Center on the seasonal shuttle by increasing the amount of daily services and the number of days of service in the summer.
- Restrict parking or implement traffic restrictions between South “Y” and Emerald

• Improve Highway Operations, Safety, and Efficiency:

- Conduct a study to identify potential solutions to improve the operation of the pedestrian activated crossing at Camp Richardson.
- Reduce vehicle, bike, and pedestrian conflicts on the highway, improve crossings.

• Improve Bike and Pedestrian Facilities:

- Extend the Tahoe Trail south to Emerald Bay, DL Bliss State Park, and Meeks Bay.

• Improve Parking:

- Develop a park and ride facility near the South “Y”.

Fisheries – Minimize travel corridor structure impacts on fish passage

Noise – Maintain standards

Recreation – Provide off-highway parking and transit stops at trailheads, complete Tahoe Trail shared use path, provide frequent transit service to destinations and minimize auto use

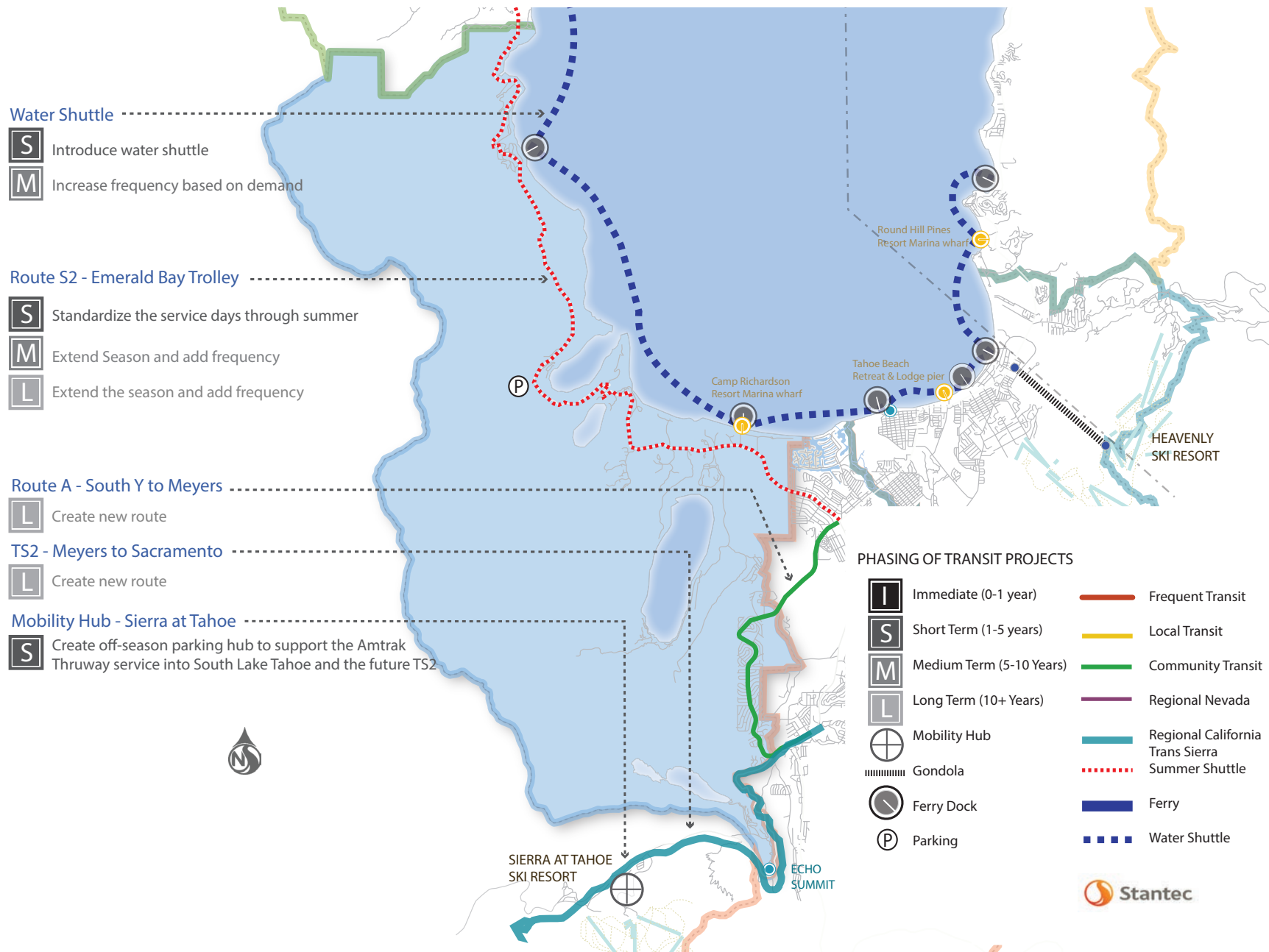
Vegetation – Control invasive weeds

Bay during peak summer season.

- Potentially eliminate parking at Eagle Falls during summer season and allow only through traffic.
- Improve and expand transit shelters, and stops
- Improve real-time information on bus arrival times.
- Develop a transit center at Tahoma/Sugar Pine Point State Park.
- Study the feasibility of a loop road option around the Camp Richardson area to remove through traffic from the recreation site.
- Develop real-time traveler information on road conditions, congestion, special events, and incidents.
- Make extensions of proposed bike lanes/ shared use paths a high priority.
- Implement a Parking Management System that will provide real-time information of parking locations and availability.

Figure S5-48 summarizes the phasing of transit services and infrastructure to realize the vision for the future.

| **Figure S5-48:** | SR 89 Recreation Corridor Transit Vision





Major Corridor Projects

A complete list of capital projects by category, transit service improvements by phase, and implementation policy projects is in **Appendix A**.

Project Partners

- California Department of Transportation
- California Division of State Parks
- California Highway Patrol
- California Tahoe Conservancy
- City of South Lake Tahoe
- El Dorado County
- FHWA-California
- North Lake Tahoe Chamber of Commerce
- Placer County
- South Shore Transportation Management Association
- Tahoe Chambers of Commerce
- Tahoe Regional Planning Agency
- Tahoe Transportation District
- Truckee North Tahoe Transportation Management Association
- USFS-LTBMU

Relevant Plans and Studies

- Linking Tahoe: Regional Transportation Plan (2017)
- Linking Tahoe: Active Transportation Plan (2016)
- Lake Tahoe Complete Street Resource Guide (2016)
- Linking Tahoe: Lake Tahoe Basin Transit Master Plan (2017)

North and South Entry Corridors

A Glimpse of the Future for the North and South Entry Corridors

Whether you are coming to Lake Tahoe in the summer or winter, you now have many more options to get there and get around. Driving your car is still an option and if that is what works best for you, there is help with real-time information accessible on-line, via radio, and on electronic roadside signs regarding road conditions, construction activity, delays due to accidents, congestion, and parking availability. To more fully relax and enjoy your Lake Tahoe experience, consider the other possibility: drive your car to one of the Mobility Hubs outside the Basin: Sacramento, Reno, Town of Truckee, Squaw Valley Resort, Mt. Rose Ski Area, or Sierra-at-Tahoe Ski Resort that support regional access to destinations within the Basin. Take the bus or the train on the I-80 corridor and pick it back up on your way home. Additional locations at Tahoe City, Incline Village, Incline South, Spooner Summit, Zephyr Cove, Heavenly Mountain Resort, the South “Y,” Harrison Avenue, Meyers, Emerald Bay, and Sugar Pine Point offer localized seasonal parking to access buses and shared use paths. Bike rentals and bike lockers are available at some locations!

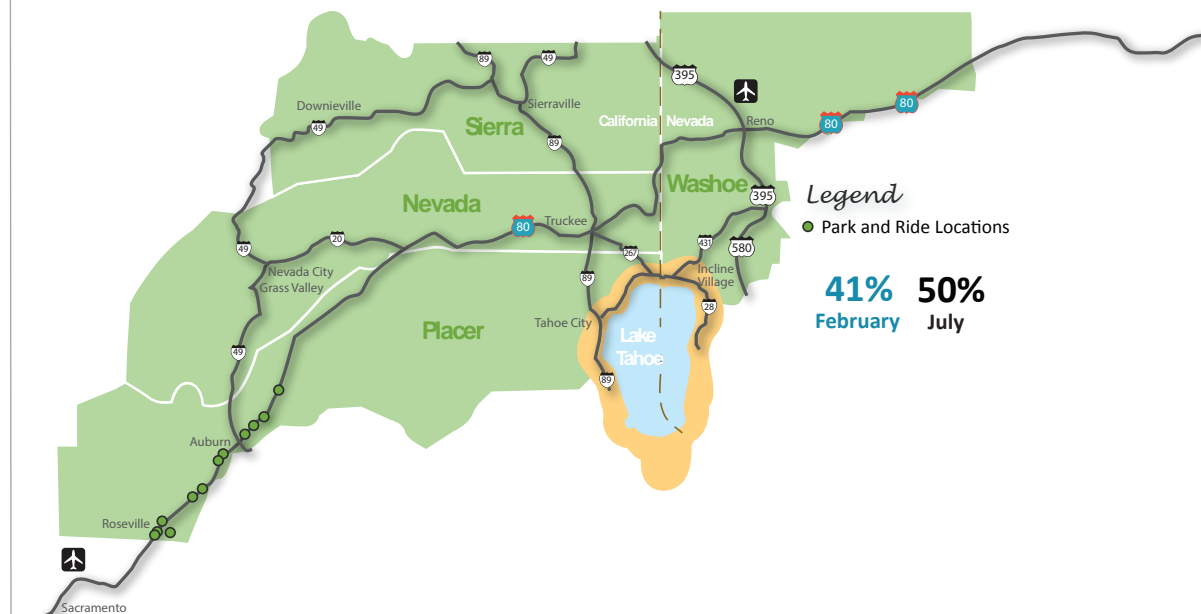
Want a break, some lunch, need to do some last-minute shopping before heading into the Basin? Picturesque Truckee has it all. When you are ready to move on, you can board a comfortable transit vehicle that will take you to your final destination—be it a hotel, one of the many ski areas for some fun in the snow, or the Lake for water sports and hiking trails. Relax you’ve earned it!

Meeting friends for a day trip into the Tahoe Basin? It’s a lot more fun to travel together, so why not take advantage of park and ride facilities in both entry corridors. Leave your extra vehicles in safe secure parking and ride to your destination together. Save gas, reduce congestion, and build memories, together!

North Entry Characteristics

Placer, Nevada, Sierra, Washoe, and Storey Counties geographically comprise the Trans-Sierra North Entry Corridor. Land uses in these counties consist of recreation, residential, and commercial and serve as a bed base for

| Figure S5-49: | Regional North Entry Corridor Percent Total Trips Accessed the Basin via these routes



day visitors to the Lake Tahoe Basin. These counties are also home to many employees who commute to the Basin for work. I-80 is a major transcontinental route and SR 89 and SR 267 are the main northern entrances into the Tahoe Basin. The two routes are parallel from I-80 to the north shore of Lake Tahoe. NV SR 431 via US 580 also provides direct access to Incline Village and the north shore. **Figure S5-49** maps the communities and roadway network that encompass the regional North Entry Corridor. **Figure S5-49** also identifies the locations of park-and-ride facilities and the percentage of total trips that entered the Basin through the North Entry Corridor in February and July 41% and 50%, respectively. **Appendix D** provides a detailed list of the available parking spaces by area type, owner, and county location.

SR 89 connecting with I-80 is a four-lane conventional highway for approximately one half mile south of I-80 before becoming a two-lane highway. It connects directly to the Town of Truckee. SR 89 links the ski resorts of Alpine Meadows and Squaw Valley to I-80, Truckee, and Tahoe

City. SR 89 crosses under the Union Pacific Railroad (UPRR) through a narrow 25-foot wide 121-foot long concrete arch structure, referred to locally as the “Mousehole”. Prior to completion of the Caltrans improvements, pedestrians and bicyclists were forced through the tunnel along with vehicles. In 2016, Caltrans constructed a multiuse path and underpass tunnel, ADA compliant trail, bus turnout and shelter, and upgraded drainage systems on SR 89 between West River Street and Deerfield Drive.

SR 267 is an undivided two lane mountain highway 11.7 miles in length that connects I-80 at Truckee to SR 28 at Kings Beach. It bypasses the Town of Truckee and continues through rolling and mountainous terrain past the entrance to Northstar Resort to an elevation peak of 7,179 feet at Brockway Summit before descending into Kings Beach. The route is of local and regional significance providing access to residential, industrial, commercial, and recreational land uses, and serves interregional, local community and recreational traffic traveling between the Tahoe Basin, Martis Valley, Truckee and I-80.

In addition to the highway network, the North Entry corridor has Amtrak rail service with one passenger train arriving and departing daily from the Bay Area to the west and to Reno-Sparks and points beyond to the east. The North Lake Tahoe Express offers one to four round trips per day to Truckee and the north shore from the Reno-Tahoe Airport. **Figure S5-50** illustrates the existing Trans-Sierra rail and transit services connecting Lake Tahoe to the larger region through both the North and South Entry Corridors.

Along I-80 in Placer County there are 14 park and ride locations offering 614 spaces. **Table S5-14** lists the number of spaces and location on I-80 by latitude and longitude. Creating better regional connectivity will require discussions with appropriate agencies to actively promote these locations and supplement them with transportation alternatives.

The data for the month of **February** 2014, the peak winter month, indicates an estimated **679,800 person trips** were observed entering the Tahoe Basin via the North Entry Corridor. The monthly total reflects approximately 25,000 daily person trips. In **July**, the total number of person trips entering the Tahoe Basin nearly doubles to **1.23 million** and computes to a daily average of nearly 40,000 trips. Proportionately, 41% of February trips and 50% of July trips entered via SR 89, SR 267, and SR 431 to access Lake Tahoe. AADT counts collected from Caltrans and NDOT confirm the wireless device data results.

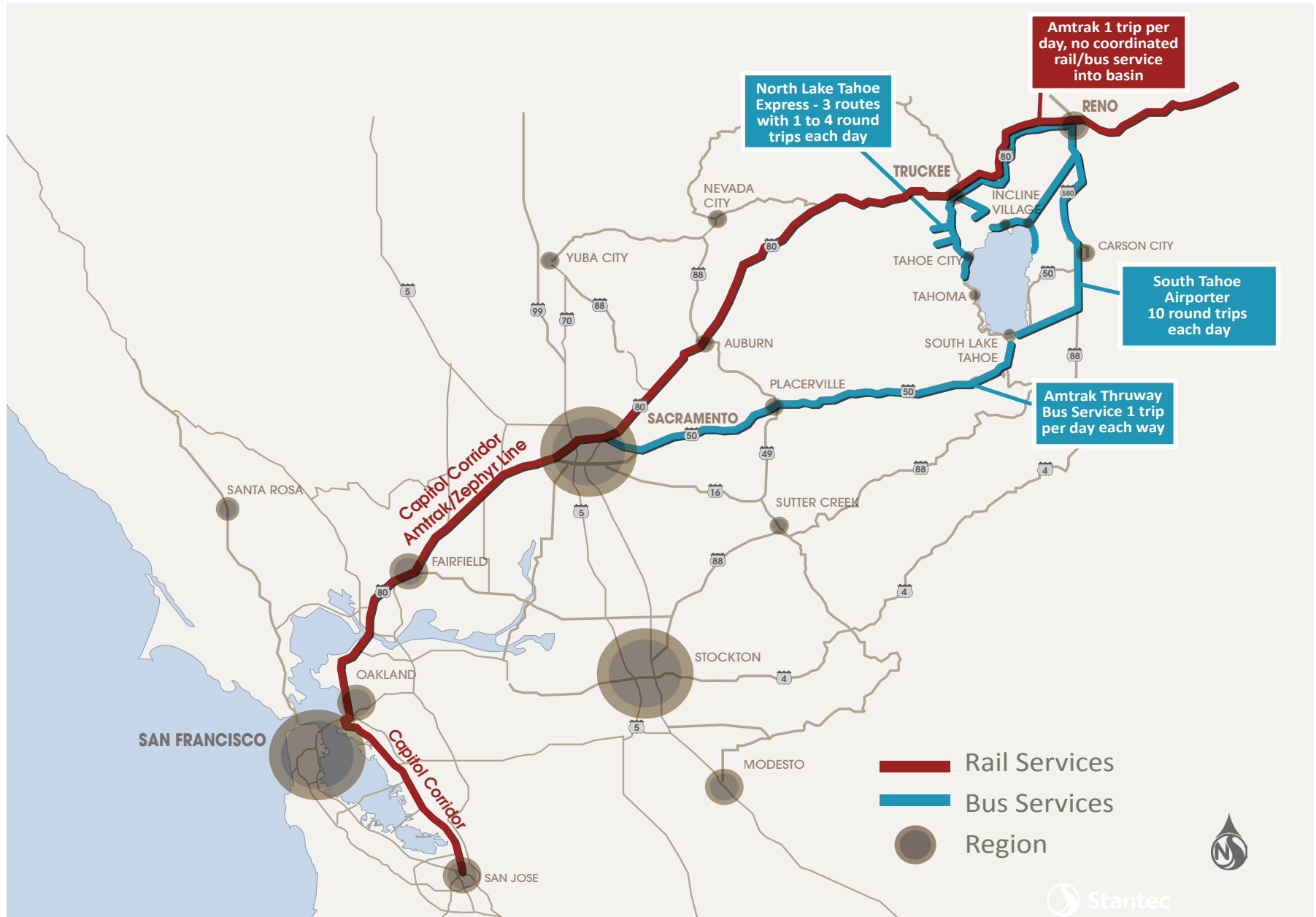
Figure S5-51 identifies the distribution of person trips entering the Basin by roadway. The optional routes include: I-80, SR 431, Nevada US 50, SR 207, and California US 50. Arrivals in February via I-80 or California US 50 surpassed those entering via SR 431, Nevada US 50, or SR 207, 54%

versus 46%. In July, the percentages shift to a 50%-50% split from westbound versus eastbound entrants into the Basin.

Fifty-four percent of all trips passed through Placer and El Dorado counties on I-80 and California US 50 in February; 46% from routes on the east side of Lake Tahoe. In July, the percentage of arr trips decreases to 50%



| **Figure S5-50:** | Existing Trans-Sierra Transportation Services Connecting to the Tahoe Basin

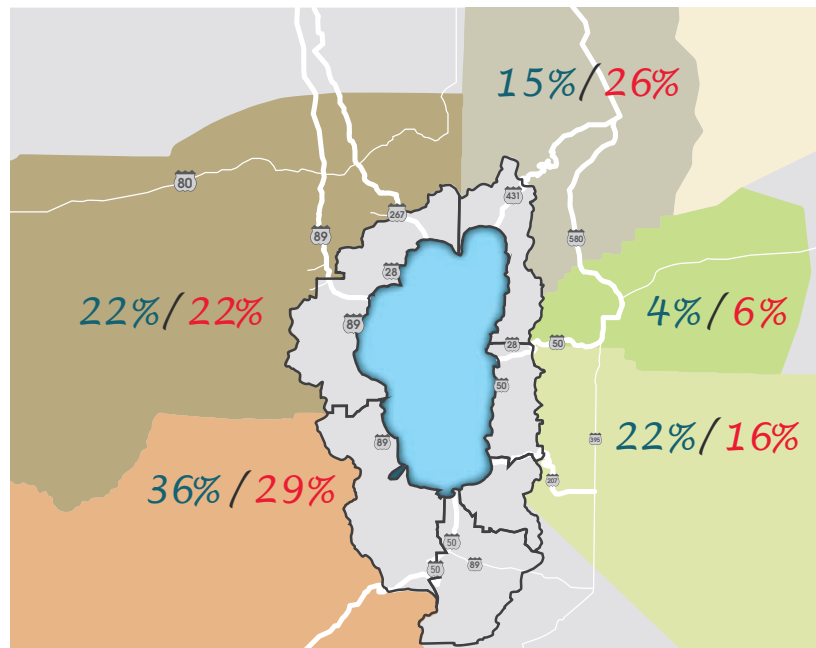


| Table S5-14: | North Entry Corridor
Park and Ride Locations by Travel Group, 2014

Park and Ride Name	County	Route	Spaces	Post Mile	Latitude	Longitude
Bell Road	Placer	80	21	R21.13	38.946099	-121.047428
Bowman	Placer	80	32	20.1	38.933448	-121.054107
Clipper Gap	Placer	80	15	23.4	38.969142	-121.016276
Horse Shoe Bar	Placer	80	24	8.7	38.815397	-121.187917
Indian Hills	Placer	80	26	13.74	38.872529	-121.130318
Maidu Park	Placer	80	50	2	38.734338	-121.252453
Newcastle	Placer	80	39	13.6	38.871655	-121.131047
Ophir	Placer	80	37	14.3	38.879391	-121.125777
Orlando/Cirby	Placer	80	40	0.7	38.728216	-121.282586
Penryn	Placer	80	39	10.4	38.835002	-121.16886
Saugstad Park	Placer	80	91	1.9	38.743321	-121.282979
Sierra College	Placer	80	38	7.34	38.804699	-121.2059
Taylor	Placer	80	150	3.7	38.759699	-121.2583
Weimar Cross	Placer	80	12	29.3	39.042767	-120.973404
Total			614			

Source: Stantec Consulting

| Figure S5-51: | Percent Visitors by Entry February/July 2014



North Entry Primary Transportation Challenges

All highways in the North Entry Corridor experience frequent congestion during the peak summer months and even in winter months due to weather, snow plows and occasional accidents. Winter congestion may be exacerbated by extreme events and road closures.

Opportunities to increase capacity on the highways in the corridor are limited by environmental and cost constraints, as well as the desire of the surrounding communities that agencies deliver solutions to congestion other than expanding roadway capacity or building new roads.

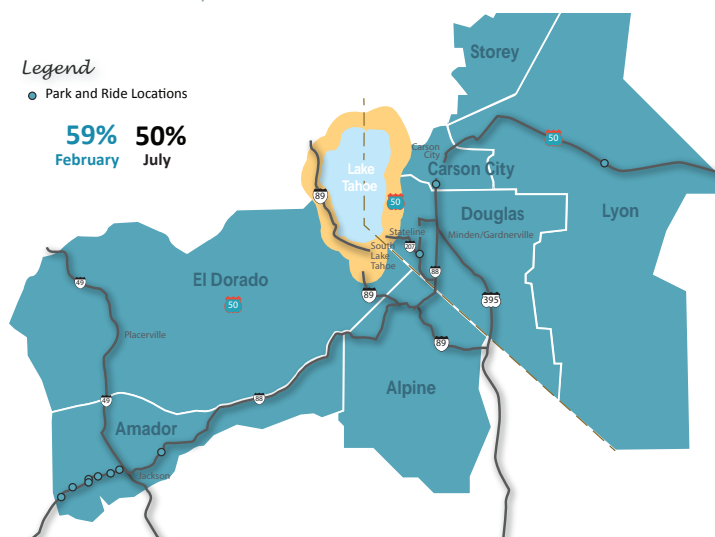
The train station in Truckee currently welcomes one passenger train per day. The connections to local transit into the Basin should be better coordinated to minimize wait times between transportation modes. Streamlining the off- and on-boardings from rail to transit, coupled with additional marketing may be sufficient to entice more travel to the Basin via rail. Ideally, the goal would be to increase the frequency of passenger trains. This will be a long-term process of negotiating for more capacity on the rail line through the Sierra Nevada with those responsible for freight rail traffic. In addition, the existing train station and transit center in Truckee would require expansion to accommodate larger numbers of passengers.

Neither CA SR 89, CA SR 267, or NV SR 431 have continuous, protected bicycle facilities over their entire extent.

North Entry Corridor Strategies/Tactics/Action Items

- Develop an inter-regional connection for transit services including direct service with short headways from all area airports.
- Unify transit through the greater Tahoe Basin and Truckee.
- Coordinate with area resorts to achieve transit unification in both services and transit branding.
- Expand marketing and outreach efforts to increase awareness of transit opportunities.
- Mobility Hubs and/or park-n-ride locations must be designed with the visitor in mind i.e., easy to find.
- Work closely with Nevada County and the Town of Truckee to identify a suitable location for a Mobility Hub.
- Improve transit connections inter-regionally and augment coach service with a connection to Sacramento from Truckee.
- Sync Amtrak rail and bus services from Truckee into North Shore.
- Augment existing coach service with a connection to Sacramento from Truckee.
- Explore bus lanes on SR 89 and SR 267.

| Figure S5-52: | Regional South Entry Corridor
Percent Total Trips Accessed the Basin via these Routes



South Entry Characteristics

Amador, Alpine, and El Dorado Counties in California plus Douglas and Lyon Counties and Carson City in Nevada geographically comprise the Trans-Sierra South Entry Corridor. Land uses in these counties consist of recreation, residential, and commercial areas and serve as a bed base for day visitors to the Lake Tahoe Basin. These counties are also home to many employees who commute to the Basin for work. US 50 begins at I-80 in West Sacramento and spans portions of Yolo, Sacramento, and El Dorado Counties before entering the State of Nevada. US 50, a major east-west corridor, is an officially designated Scenic Highway from downtown Placerville to the western city limit of South Lake Tahoe. **Figure S5-52** shows the communities and roadway network that comprise the South Entry Corridor. **Figure S5-52** also identifies the park-and-ride locations and percentage of total trips that entered the Basin through the regional South Entry Corridor in February and July 59% and 50%, respectively.

Caltrans refers to US 50 east of the Cedar Grove exit as the rural half of the roadway. From this point eastward, US 50 is a narrower mountain section traversing small communities

and over 30 miles of Eldorado National Forest until it intersects with SR 89 near the city of South Lake Tahoe. This segment of US 50 is primarily used for recreational trips to reach Lake Tahoe during the peak summer travel and winter ski months. As a result, US 50 experiences strong directional peak travel on weekends and holidays. US 50 is considered an important transportation facility for the communities of Sacramento County, El Dorado County, Meyers, and South Lake Tahoe.

The system characteristics of US 50 change significantly from its origin at the Yolo/Sacramento county line from a divided eight-lane freeway handling high traffic volumes interspersed with HOV lanes. The urban network serves a variety of uses. Gradually, the system changes from an eight-lane urban to a four-lane rural freeway as density decreases and the land use patterns transition to rolling hills, residential properties, and national forest lands. The system is a two-lane highway east of Placerville to Echo Summit, through the Eldorado National Forest to the SR 89 South junction and extends through Meyers. The segment through the unincorporated community of Meyers, past Pioneer Trail and the Lake Tahoe Airport remains a two-lane highway until it crosses into the city of South Lake Tahoe

| Table S5-15: | South Entry Corridor
Park and Ride Locations by Travel Group, 2014

Park and Ride Name	County	Route	Spaces	Post Mile	Latitude	Longitude
Cambridge Drive	El Dorado	50	75	5	38.648054	-120.998286
Camino Heights	El Dorado	50	24	23.1	38.736138	-120.710706
Durock	El Dorado	50	52	R8.56	38.661149	-120.937545
El Dorado Hills	El Dorado	50	120	1	38.64754	-121.067379
Greenstone	El Dorado	50	22	12.2	38.697014	-120.888204
Missouri Flat	El Dorado	50	70	15	38.701227	-120.838796
n/a	Carson City	50	39	Junction Dr.	39.117219	-119.779525
n/a	Douglas	207	58	Foothill Rd.	38.928561	-119.840333
Ponderosa East	El Dorado	50	28	R8.56	38.663931	-120.937792
Ponderosa West	El Dorado	50	101	R8.56	38.663137	-120.938447
Shingle Springs	El Dorado	50	19	14.9	38.681248	-120.915549
Total			608			

Source: Stantec Consulting

limits where it becomes four-lanes with a two-way left turn lane. Improvements in the South “Y” commercial area included bicycle and pedestrian facilities along the roadway. Caltrans continues expanding the bicycle and pedestrian infrastructure. Class II bicycle lanes are located on much of US 50 or Lake Tahoe Blvd. in South Lake Tahoe.

Along US 50 in El Dorado County, there are nine park and ride locations totaling 511 spaces. Two other facilities, one located at NV US 50 near the intersection of US 395 in Carson and the other at Foothill Road and Kingsbury Grade in Douglas County add 97 additional park and ride spaces for a total of 608 parking spaces. **Table S5-15** lists the number of spaces and location including the latitude and longitude. Creating better regional connectivity will require discussions with appropriate agencies to actively promote these locations and supplement them with transportation alternatives.

The data for the month of **February** 2014 indicates an estimated **965,000 person-trips** entered the Tahoe Basin via the South Entry Corridor. The monthly total computes to an average daily figure of 34,500. In **July**, the total person trips increased slightly to **1.21 million** or 39,000 daily trips. The

North Entry Corridor doubled in the number of trips entering in July over February, whereas the South Entry Corridor experienced a modest increase of 25% in trips entering in July versus February. Overall, the proportion of person trips observed at either **North or South Entry in July was split equally at 50%. In February, a far greater proportion of person trips arrived via the South Entry Corridor**, 58% compared to 41%.

South Entry Primary Transportation Challenges

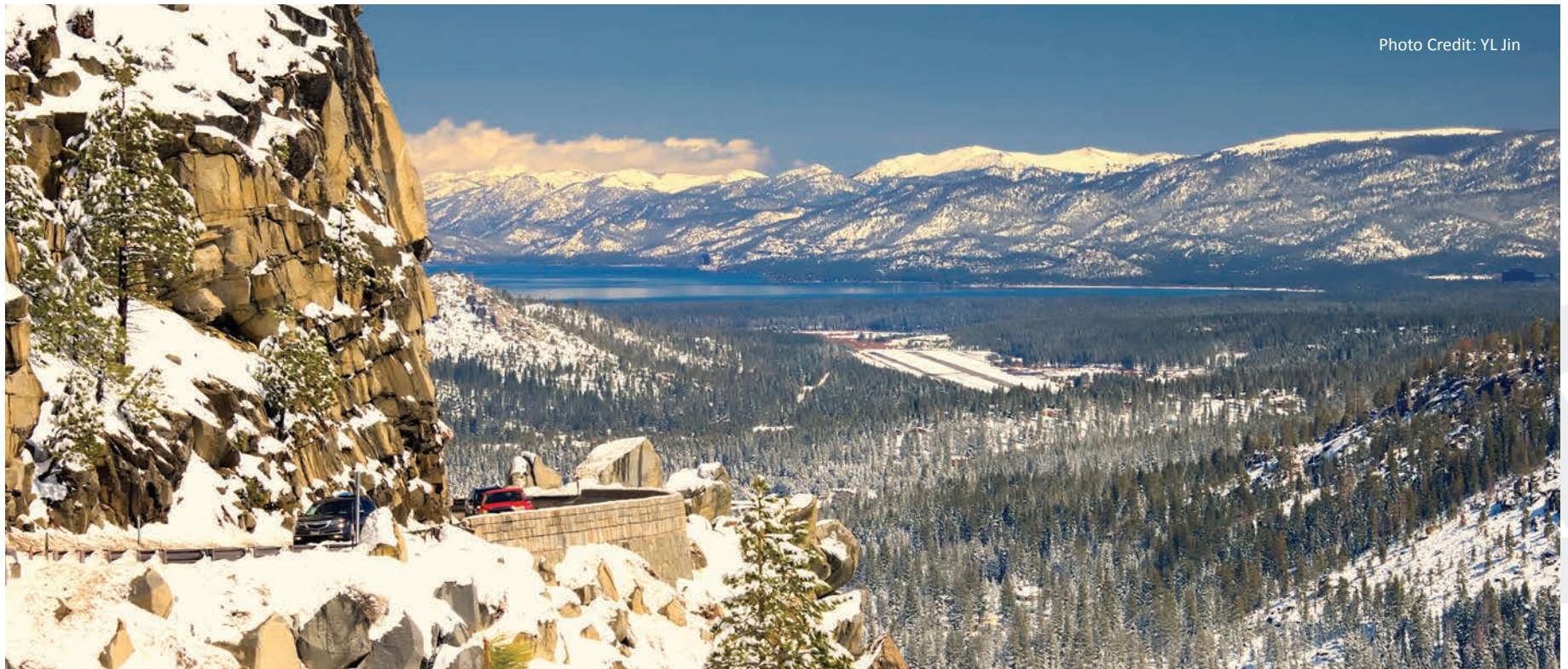
One of the challenges to accessing Lake Tahoe, particularly from the west, is the relatively obscure sense of arrival. The isolated communities along US 50 are separated by vast tracts of forest land. The current lack of a park and ride or Mobility Hub forces people to drive all the way into the Basin, touching the lake, rather than reaching a major entry point that provides alternate mode choices to complete the journey.

Another challenge associated with the Trans Sierra South Entry Corridor stems from the number of governmental entities involved in transforming the corridor to facilitate more transit trips and Mobility Hubs. The success of the State Route 28 Corridor

Management Plan indicates collaborative partnerships successfully transform challenging projects to winning solutions for the Basin. The key to implementing the TMP and the recommendations contained within this Plan is a memorandum of understanding between agencies on the agreed upon approaches to address the corridor challenges. Fostering a spirit of collaboration through such agreements produces win-win outcomes.

South Entry Corridor Strategies/Tactics/Action Items

- Develop an inter-regional connection for transit services, including direct service with short headways from all area airports.
- Add a park-and-ride location that includes rest stop amenities should be programmed for the Basin day user.
- Augment Amtrak Thruway bus service to South Shore from Sacramento. Increase from one per day to allow early morning arrivals and late afternoon departures to encourage ridership for single days or weekend journeys.

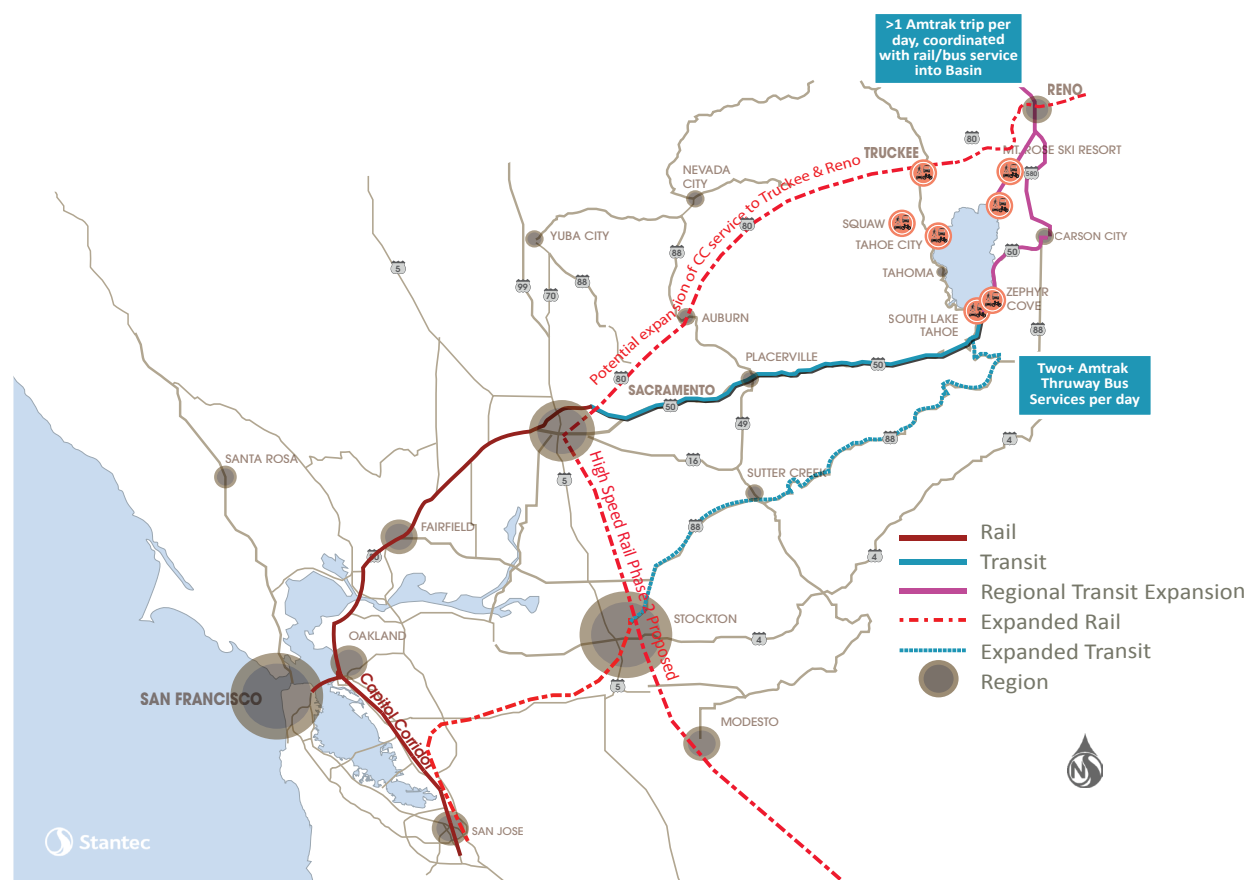


North and South Entry Multimodal Opportunities

Figure S5-53 illustrates the proposed Trans-Sierra rail and transit services to enhance regional connectivity to Lake Tahoe.

- Mobility Hubs at Truckee and Sierra at Tahoe with ample parking and amenities to create options for visitors to use transit services, the local bicycle/pedestrian network, or car sharing to reach their destinations.
- Mobility Hub in Auburn.
- Additional passenger train service to Truckee.
- Additional bus service from Sacramento and Bay area to Truckee or Meyers and points into the Tahoe Basin.
- Transit service/shuttles to ski areas from transit hubs.
- Transit service/shuttles to lake shore destinations and trailheads from hubs.
- Complete bike lane striping on SR 89 and SR 267.
- Park and ride facilities.
- Operational and spot roadway improvements to increase traffic efficiency and safety.
- Real-time traffic information services.
- Parking management and reservation services.

| Figure S5-53: | Proposed Trans-Sierra Multimodal Services Connecting to the Tahoe Basin



Major Corridor Projects

A complete list of capital projects by category, transit service improvements by phase, and implementation policy projects is in **Appendix C**.

Project Partners

- Alpine County
- California Department of Transportation
- California Highway Patrol
- Carson City Regional Transportation Commission
- Carson City Sheriff
- City of South Lake Tahoe
- Douglas County Sheriff
- Douglas County Regional Transportation Commission
- El Dorado County
- El Dorado County Transportation Commission
- El Dorado County Transit
- Federal Highway Administration-Nevada and California Divisions
- Federal Transit Administration
- Nevada County
- Nevada County Transportation Commission
- Nevada Department of Transportation
- Nevada Highway Patrol
- Placer County
- Placer County Transportation Planning Agency
- Reno-Tahoe International Airport
- Sacramento Council of Governments
- Sacramento International Airport
- South Shore Transportation Management Association
- Tahoe Area Regional Transit
- Tahoe Regional Planning Agency
- Tahoe Transportation District
- Town of Truckee
- Truckee North Tahoe Transportation Management Association
- Union Pacific Railroad
- United States Forest Service
- Washoe County Regional Transportation Commission
- Washoe County Sheriff

Relevant Plans and Studies

- Linking Tahoe: Lake Tahoe Basin Transit Master Plan (2017)
- Linking Tahoe: Regional Transportation Plan (2017)
- Lake Tahoe Ferry Oriented Development Plan (2017)
- Linking Tahoe: Active Transportation Plan (2016)
- Lake Tahoe Complete Street Resource Guide (2016)
- Trans-Sierra Transportation Plan (2015)

Linking Tahoe: Corridor Connection Plan

Conclusion





Conclusion



Challenges to Transformation

This LTCCP provides a powerful tool to create a transportation system for the region, which will allow realization of the community's aspirations. This system will support stronger, happier, healthier communities that are great places for people to live and visit. This system will make a decisive contribution to preserving and enhancing the environment by reducing greenhouse gases and other pollutants; limiting erosion and run-off into Lake Tahoe and other waters that damage the lake's clarity and purity; preserving the health of our forests and wildlife; and sustaining the scenic beauty that nurtures our spirits. This system will support a vital, vibrant economy that creates jobs and prosperity, allow us to share the treasures of the region with our many visitors, and generate the revenue to provide the services and amenities that are expected from a world class destination.

Creating this transportation system will not be easy. With the current levels of transportation investment, we are moving further away from realizing our aspirations. Significant additional revenues will be needed to create the system we need for the future. But it is worth it. The 2015 Trans-Sierra Transportation Plan and Business case demonstrated that the level of additional investment needed will more than pay for itself in the benefits that our residents, businesses, and visitors will receive.

Of equal importance is the dedication of the stakeholders within the Tahoe Basin to supporting implementation of this plan. All residents and visitors are stakeholders in this

issue; along with the multiple agencies, counties, towns, and cities as mentioned earlier. Finally, there are hundreds of private businesses and non-profit organizations that have a role to play. To be successful, these stakeholders must overwhelmingly embrace, support, collaborate, and cooperate in implementing the comprehensive multimodal transportation system articulated here.

What You Can Do

Everyone can play a role in implementing the LTCCP and creating the Tahoe of tomorrow. Residents can stay involved in the ongoing dialog that will make this a living document reflecting their aspirations and commitment. Businesses can participate by considering how their facilities and business offerings to residents and visitors support and complement the future orientated transportation system needed by the region. Visitors can help by sharing their needs and expectations for transportation with the operators of the region's transportation facilities and services so that they can be continuously improved. Government stewards at all levels can persevere in making the implementation of the LTCCP a central consideration in all their decisions. Public and private non-profit stakeholders can work to identify how much transportation impacts their objectives and then support implementation of the LTCCP where it aligns with their interests. Finally, as voters, everyone can support legislation at the local, state, and federal level that provides the additional funding and policy tools necessary to fully implement the LTCCP and transform the Tahoe of today to the Tahoe of tomorrow.

Linking Tahoe: Corridor Connection Plan

Appendix A

Key Strategies and Tactics/Actions for each Goal

Appendix A

Key Strategies and Tactics/Actions for each Goal

G1. Supporting Transformational Change Strategies

- Establish consistent standards for data collection to capture information on all transportation mode use
 - Tactics/Actions:
 - Identify appropriate performance measures and needed data, as well as practical modes of collection including traditional (e.g., passenger and traffic counts, surveys, travel diaries, etc.) and non-traditional (e.g. cell phone, blue tooth, etc.) methods and technologies
 - Implement data collection systems for all modes
 - Collaborate with agency partners to establish agreed upon data collection protocol to maximize information collection and consistency for all modes.
 - Establish regional cost-sharing agreements with agency partners to obtain basin-wide data for all transportation-related activities to avoid the expense of smaller, focused mode use studies
- Expand transit service
 - Tactics/actions:
 - TTD Bluego Service Enhancements including expanded transit from Meyers to South Lake Tahoe
 - TTD BlueGo Service Enhancements to include a 30-minute-headways on US 50, and on all seasonal routes including Spooner Summit Trailhead, Zephyr Cove, Emerald Bay, and Tahoe City
 - TTD BlueGo Transit Service up to Diamond Peak in summer months
 - TTD BlueGo Transit Service from south shore to Sacramento during peak season
 - TTD BlueGo Expand summer shuttle on east shore to beach access points
 - TTD BlueGo enhancements to facilitate increased bicycle carrying capacity
 - TTD Minden/Gardnerville Vanpool service to east and south shore destinations
 - TART Service to Brockway Summit TRT Trailhead
 - TART Service into west Incline Village neighborhoods
 - TART SR267 30-min headway service provided during shoulder seasons
 - TART SR267 15-min headway service provided during peak season
 - TART summer evening service expanded until 10PM (beyond 2017)
 - TART Peak Summer service expended to 93 days (June 15 - September 15) summer (2017)
 - TART expand evening service until 9PM to Squaw Valley and Northstar (2017)
 - TART Tahoe City to Truckee daytime 30-minute headway service winter/summer seasons (2018)
 - TART Tahoe City to Squaw daytime 30-minute headway service winter/summer seasons (2018)

- TART Tahoe City West Shore daytime 30-minute headway service winter/summer seasons (2019)
- TART Crystal Bay to Northstar daytime 30-minute headway service winter/summer seasons (2019)
- TART Free Mainline Fare service starting (2020)
- TTD/TART Facilitate discussions with Amtrak to coordinate train arrival at Truckee and TART transit schedules/destinations into the basin
- TTD/TART Increase the number of Amtrak trains from Bay Area locations to Truckee
- TTD/TART Add transit connections from Reno area to Incline Village and Carson City to Spooner and to residential areas along east shore
- TTD/TART NextBus Implementation, real time bus arrival/departure, installed at major destinations: Emerald Bay, Zephyr Cove, Incline Village, Crystal Bay, Kings Beach, Squaw Valley, Alpine Resort, Northstar, Tahoma
- TTD/TART Add new transit shelters located at SR28 EB Dollar Hill Drive; SR28 EB at Coon Street; SR28 WB at Coon Street; and Northstar Transit Center
- Agencies Collaborate to implement a Lake Tahoe Waterborne Ferry North to South Shore Project
- All Agencies Implement Lake Tahoe Waterborne Destination-based Taxi Operations
- inter-regional transit services (south shore van pool, Reno-Truckee-North Tahoe bus service)
- Remove on-shoulder parking during peak summer seasons
 - Tactics/actions:
 - TTD Eliminate roadside parking from Emerald Bay area entirely during peak season in conjunction with augmenting transit service to this destination
 - TTD Formalize currently used rights-of-way on the lake and mountain sides of Hwy 28 and 89 to create paved parking areas wherever possible
 - TTD Construct pedestrian-activated crossings from all mountain side parking areas to shoreline
 - TTD/TART Institute a paid parking program at major destinations that exceeds the cost of ride-sharing services such as Lyft, Uber, etc.
 - TTD/Caltrans Close Highway from Camp Richardson to Meeks Bay during peak season and allow transit and through cars to drive through this area
 - Implement fee structure for parking area at cost levels that encourage transit use
 - Mobility hubs to augment parking supply
- Expand parking and economic opportunities through development of mobility hubs at significant locations to intercept visitors and commuters
 - Tactics/Actions:
 - Locations will determine size and available services at mobility hubs
 - Mobility hubs recommended for US50/SR28, SR431/SR28, Tahoe City, the Y in south shore, Meyers, and Town of Truckee
- Integrate pedestrian and bicycle facilities with new construction or reconstruction
 - Tactics/Actions:
 - Encourage partner agencies to review all existing and proposed multi-modal transportation plans when considering discretionary approvals and conditioning development to include appropriate pedestrian and/or bikeway facilities in accordance with the TRPA Active Transportation Plan

- Ensure partner agency development codes require the incorporation of pedestrian and/or bikeways in conjunction with development activities even in situations where existing facilities are not adjacent
 - Accommodate additional pedestrians and bicycles, shoulders will be widened to include room for bike lanes and/or sidewalks. Priority on uphill directions given to bike lanes. In cases where width is limited, downhill directions should be designated as sharrows with clearly identifiable arrows and bright color
- Fill in the gaps in the existing bicycle and pedestrian networks
 - Tactics/Actions:
 - Stateline to Stateline bikeway
 - Develop a comprehensive, prioritized list by authority of pedestrian and/or bikeway system gaps
- Encourage and increase ridesharing
 - Tactics/Actions:
 - Develop a ride-sharing campaign in conjunction with private vendors to link congestion with lake clarity and basin-wide quality of life concerns
 - Pursue grant funding to encourage the development of a basin-wide ride-sharing program application to link people and destinations.
 - Explore means of providing ridesharing services technology and potential funding
- Facilitate complete street development
 - Tactics/Actions:
 - Complete Street Program implementation on US50 East Shore south of Glenbrook to Zephyr Cove with emphasis on residential areas, beach access points and scenic overlooks allowing for occasional passing lanes
- Improve the cost/time competitiveness of non-single occupancy vehicle modes
 - Tactics/Actions:
 - TART Free Fare service starting 2020
 - Install queue jump priority systems for transit vehicles at key signalized intersections
 - Work with legislators to require drivers to yield to buses re-entering the roadway from bus stops
 - Guaranteed ride home service for transit rider emergencies
- Integration of transit services across the region
 - Tactics/Actions:
 - Establish a consistent Basin-wide transit brand/identity
 - Integrate schedules, customer services, fare structure and collection, and revenue distribution
 - Interlining of routes to maximize one-seat passenger trips

- Integrate route structures from various providers to eliminate inefficient transfers
 - Tactics/Actions:
 - Inter-regional transit service enhancements (south shore van pool, Reno-Truckee-North Tahoe bus service)
- Provide equal access to travelers in non-automobile modes at scenic and key destinations
 - Tactics/Actions:
 - Integrate transit stops with all newly creating parking areas
 - Ensure agency partners have adopted guidelines/standards for non-automobile access in their development codes
 - Review accessibility for non-auto related modes at scenic and key destinations and then identify and prioritize these improvements

G2. Multi-modal First-Strategies

- Expand complete streets and incorporate transportation providers in the design process
 - Tactics/Actions:
 - Meyers Main Street to become a Complete Street and reduce ROW
 - US50 South Shore Community Revitalization Project
- Remove on-shoulder parking during peak summer seasons
 - Tactics/Actions:
 - See list of tactics/actions under Goal “Support Transformational Change”
- Eliminate parking at key destinations during peak summer seasons
 - Tactics/actions:
 - Close Highway from Camp Richardson to Meeks Bay during busy season and allow only transit and through cars to pass through this area
- Insure that pedestrian facilities are incorporated in new development and redevelopment that address the “last mile” to/from transit service.
 - Tactics/actions:
 - Identify and prioritize significant “last mile gaps”
 - Reach agreement with partner agencies approving development that projects will be reviewed for opportunities to address these gaps
- Prioritize public investments in new pedestrian facilities to address “last mile” gaps.
 - Tactics/actions:
 - Circulate the list of significant “last mile gaps” to partner agencies
 - Reach agreement with partner agencies that capital improvement programs in pavements and sidewalks will be reviewed for opportunities to address these gaps

- Institute bike sharing services at key, high-activity commercial nodes to expand the effective reach of transit services
 - Tactics/Actions:
 - Conduct a bike share feasibility study and incrementally integrate as funding becomes available
- Design the physical infrastructure at scenic and key destinations so that it equally accommodates all transportation modes
 - Tactics/Actions:
 - Integrate transit stops with all newly creating parking areas
 - Ensure agency partners have adopted guidelines/standards for non-automobile access in their development codes
 - Review accessibility for non-auto related modes at scenic and key destinations and then identify and prioritize these improvements

G3. Manage Congestion Strategies

- Increase transit mode share
 - Tactics/Actions:
 - See list under “Support Transformational Change” goal
- Increase amenities for transit riders (NextBus, WIFI, seating, bus stops, lighting and safe connectivity).
 - Tactics/Actions:
 - TTD Implement Real Time Bus Arrival technology to emulate TART system
 - TTD/TART Construct large capacity bus shelters complete with NextBus arrival information, level boarding, off-bus fare collection, CCTV, seating, and trash receptacles
 - TTD/TART Survey current and potential riders to identify key locations for enhanced transit stations and prioritize construction/implementation
- Operational and limited capacity improvements to address congestion
 - Tactics/Actions:
 - TTD SR89/Fanny Bridge Community Revitalization Project
 - TTD US Highway 50 signal synchronization and adaptive signals
 - TTD Meyers Y Operational Study
 - TTD/TART Install queue jump priority systems for transit vehicles at key signalized intersections
 - All Agencies Work with legislators to require drivers to yield to buses re-entering the roadway from bus stops
- Incident and activity management
 - Tactics/Actions:
 - TTD/TART Institute a courtesy service patrol during peak seasons to assist travelers with disabled vehicles
- Real time communication services reporting incidents, traffic conditions, and available parking locations

- Tactics/Actions:
 - TTD/TART/Caltrans/NDOT establish methodology to inform drivers of parking availability to better manage resources
 - Institute a real-time traffic information system via radio and or internet
 - TTD/TART Deploy a centralized web-based event planner page that provides all information on special events and/or disruptions in traffic flow
- Manage/improve pedestrian vehicle interactions
 - Tactics/Actions:
 - Utilize existing information on pedestrian/automobile conflict locations to prioritize on-shoulder parking replacement areas and add safe walking areas and/or transit facilities
- Encourage and increase ridesharing
 - Tactics/Actions:
 - Develop a ride-sharing campaign in conjunction with private vendors to link congestion with lake clarity and basin-wide quality of life concerns
 - Pursue grant funding to encourage the development of a basin-wide ride-sharing program application to link people and destinations.
 - Explore means of providing ridesharing services technology and potential funding
- Expand parking and economic opportunities through development of mobility hubs at significant locations to intercept visitors and commuters
 - Tactics/Actions:
 - Locations will determine size and available services at Mobility hubs
 - Mobility hubs recommended for US50/SR28, SR431/SR28, Tahoe City, the Y in south shore, Meyers, Truckee
- Integrate pedestrian and bicycle facilities with new construction and reconstruction
 - Tactics/Actions:
 - Encourage partner agencies to review all existing and proposed multi-modal transportation plans when considering discretionary approvals and conditioning development to include appropriate pedestrian and/or bikeway facilities
 - Ensure partner agency development codes require the incorporation of pedestrian and/or bikeways in conjunction with development activities even in situations where existing facilities are not adjacent
 - Accommodate additional pedestrians and bicycles, shoulders will be widened to include room for bike lanes and/or sidewalks. Priority on uphill directions given to bike lanes. In cases where width is limited, downhill directions should be designated as sharrows lanes with clearly identifiable arrows and bright colors
- Fill in the gaps in the existing bicycle and pedestrian networks
 - Tactics/Actions:
 - Develop a comprehensive, prioritized list by jurisdiction of pedestrian and/or bikeway system gaps
 - Class 1 Bike trail extension to Meeks Bay

- Stateline to Stateline Bikeway, Phases 2 Incline to Sand Harbor
- Stateline to Stateline Bikeway, Phases 3 Sand Harbor to US50
- Stateline to Stateline Bikeway, Phases 4 Incline to Crystal Bay
- Improve the cost/time competitiveness of non-single occupancy vehicle modes.
 - Tactics/Actions:
 - Augment fleet to address recreational traveler needs with much increased space for bikes, beach gear, hiking equipment, etc.
 - TART Free Fare service starting 2020
 - Install queue jump priority systems for transit vehicles at key signalized intersections
 - Work with legislators to require drivers to yield to buses re-entering the roadway from bus stops
 - Guaranteed ride home service for transit rider emergencies
- Provide equal access to travelers in non-automobile modes at scenic and key destinations
 - Tactics/Actions:
 - Integrate transit stops with all newly creating parking areas
 - Ensure agency partners have adopted guidelines/standards for non-automobile access in their development codes
 - Review accessibility for non-auto related modes at scenic and key destinations and then identify and prioritize these improvements

G4. Decision Making Strategies

- Increased involvement by transit providers in the land use decision making process
 - Tactics/Actions:
 - Develop formal guidelines/standards for incorporating transit amenities in new construction or redevelopment
 - Reach agreement with local agencies to formally include appropriate transit providers in the review of proposed and uses
- Increased involvement by the bicycle and pedestrian community in the land use design making process
 - Tactics/Actions:
 - Develop formal guidelines/standards for incorporating bike/pedestrian facilities in new or redevelopment
 - Utilize known bike/pedestrian stakeholder list(s) to broadly and digitally disseminate proposed development

- Encourage the development community to consult with transit agencies early in the design process
 - Tactics/Actions:
 - Develop a program to educate owners and designers to “Design with Transit in mind”
- Establish a Primary Transit Network (PTN) to foster commercial investment along major routes
 - Tactics/Actions:
 - Study the concept of a PTN in the region in cooperation with other transit providers
- Strategically plan for higher residential/commercial densities in areas that can effectively be served by transit
 - Tactics/Actions:
 - Review with TRPA opportunities to incentivize higher density development within existing regulatory constraints
- Establish clear policy by transit providers as to the balance between maximizing ridership vs. providing geographic coverage
 - Tactics/Actions:
 - Focus on transit productivity by devoting no-less-than 80% of transit resources to moving the most riders per dollar
- Integrate public transit and school transportation programs
 - Tactics/Actions:
 - Collaborate with the school districts to develop a comprehensive approach to schools and transit. Many parents currently transport students in private vehicles to avoid school transportation fees. Review the feasibility of using public transportation to transport various segments of the public-school population including economic, legal, and public perception issues

G5. Prioritize Safety-Strategies

- Incorporate dedicated pedestrian and bike facilities in all new road construction, and, where feasible, in major road reconstruction
 - Tactics/Actions:
 - Encourage partner agencies to review all existing and proposed multi-modal transportation plans when considering discretionary approvals and conditioning development to include appropriate pedestrian and/or bikeway facilities in accordance with the TRPA Active Transportation Plan
 - Ensure partner agency development codes require the incorporation of pedestrian and/or bikeways in conjunction with development activities even in situations where existing facilities are not adjacent
 - Accommodate additional pedestrians and bicycles, shoulders will be widened to include room for bike lanes and/or sidewalks. Priority on uphill directions given to bike lanes. In cases where width is limited, downhill directions should be designated as sharrows lanes with clearly identifiable arrows and bright color

- Prioritize public investments in new, dedicated pedestrian and bicycle facilities in areas with high volumes of pedestrian or bicycle traffic
 - Tactics/Actions:
 - Identify locations of high volumes of bike facilities and existing deficiencies at these locations
 - Partner with local agencies to ensure agency capital improvement programs include needed sidewalks and bike lanes to address deficiencies at high volume locations
- Manage/improve pedestrian vehicle interactions
 - Tactics/Actions:
 - Improve US50 crossings throughout the corridor
 - Utilize existing information on pedestrian/automobile conflict locations to prioritize on-shoulder parking replacement areas and add safe walking areas and/or transit facilities

G6. Improve the Environment-Strategies

- Evolve the region's transit fleet to alternative fuels derived from renewable energy sources (e.g., electric vehicles charged using electricity generated by wind, solar, geothermal; vehicles powered by hydrogen produced using electricity generated by wind, solar, geothermal).
 - Tactics/Actions:
 - Create a fleet and facility plan coordinated among all transit providers that specifically addresses a regional transition to alternative fuels including both vehicles, and fueling and maintenance facilities
 - Aggressively seek federal and state grants for implementing the fleet and facility plan
- Use best management practices during construction of transportation facilities that mitigate water and air pollution.
 - Tactics/Actions:
 - Identify best management practices and insure that all new construction plans incorporate these as appropriate
- Incorporate features into all new transportation facilities that reduce or eliminate CHG, air pollution, water pollution and scenic degradation to the lake and surrounding natural areas
 - Tactics/Actions:
 - Insure that designs for new/reconstructed facilities explicitly consider and address these factors
 - Pursue LEED certification for new/reconstructed facilities
- Maintain all public road pavements at good or better condition to increase the mechanical efficiency of motor vehicles, and reduce fuel consumption and vehicle emissions
 - Tactics/Actions:
 - Work with agencies responsible for maintaining and rehabilitating roadway pavements to set targets for keeping the region's pavements at good or better condition

- Report to the public annually the cost to driver's in the region for driving on pavements in poor condition; environmental and cost impacts; progress made to reduce these impacts
- Improve the cost/time competitiveness of non-single occupancy vehicle modes to decrease VMT
 - Tactics/Actions:
 - TART Free Fare service starting 2020
 - Install que jumping for transit vehicles at signalized intersections
 - Pass legislation requiring vehicles to yield to buses reentering the traveled way from bus stops
- Educate public on true cost of auto travel versus transit travel
 - Tactics/Actions:
 - Develop educational material on costs/impacts of auto versus transit travel and disseminate through social media and agency websites

G7. Enhance Economic Vitality Strategies

- Increase the quality of the visitor transportation experience regardless of travel mode
 - Tactics/Actions:
 - TTD/TART Transit Capital Enhancements on fleet, expanded stops and upgraded stops
- Insure that the transportation system accommodates the delivery of goods through physical design (e.g., designated truck loading/unloading areas) and regulation (e.g., time of day controls on truck loading/ unloading areas).
 - Tactics/Actions:
 - Conduct business survey to identify locations of problematic delivery areas
 - Analyze results and develop solutions to delivery bottlenecks
 - Develop goods delivery standards for new commercial development /redevelopment
 - Reach agreement with local agencies that capital improvement programs for pavement and sidewalks will be reviewed for opportunities to address delivery goods bottlenecks
 - Reach agreement with local agencies that goods delivery standards will be incorporated in land use approvals where appropriate
- Expand traveler information systems
 - Tactics/Actions:
 - NextBus Implementation, Fare system upgrade, real time bus information provided at all shelters
 - Dynamic message signs at these specific locations, at a minimum: SR28/US50; Including at SR28; Sheep Flats-SR 431; San Harbor
 - Implement a basin-wide information system to maximize roadway system user awareness and inform users of alternative modes, park and ride locations, and mobility hub locations

- Accommodate, where feasible, through truck routes that avoid crowded activity centers
 - Tactics/Actions:
 - Review with local entities the demand for through truck routes
 - Prioritize and develop implementation plans for through truck routes as identified

G8. Enrich Quality of Life-Strategies

- Deliver steady, measurable progress on achieving the transportation goals and objectives of the CMP
 - Tactics/Actions:
 - Provide a summary report of partner agency and TTD activity on each goal to the Transportation Board of Commissioners annually
- Regularly communicate with the public (residents, visitors, businesses) the value and results of transportation improvements and progress to achieving the vision (projects/service implementation, performance measures and trends, survey results, etc.).
 - Tactics/Actions:
 - Establish a uniform method of data collection regarding visitor surveys and expansion to both northern and southern California markets consistently
 - Implement an educational campaign targeting visitors on the importance of transit, ridesharing, bicycling to improve visitor experience, reduce wait times and alleviate congestion
 - Conduct annual longitudinal surveys assessing the public’s perception of transportation’s role in sustaining quality-of-life and progress in this arena
- Offer simple, timely, one stop methods for the public to provide input and feedback on transportation issues and concerns
 - Tactics/Actions:
 - Establish a single, uniform point of contact for the public in the region including dissemination of the information received to the appropriate agencies, timely follow up, and prompt response to the individual members of the public

G9. Funding the Vision-Strategies

- Educate the public on the “business case” for transportation investments
 - Tactics/actions:
 - In conjunction with local entities, develop a robust public education program on the benefits of transportation investments as identified in the Trans-Sierra Transportation Plan and Business Case including printed material, speakers’ bureau, etc.
- Support efforts by entities in the region to secure increased transportation funding
 - Tactics/actions:
 - Actively support efforts to increase transportation funding at all levels including letters of support, testimony at public hearings, editorials, etc.

- Regularly communicate to public on accomplishments and progress.
 - Tactics/actions:
 - In collaboration with other entities, issue an annual report on accomplishments and progress throughout the region in making transportation improvements
- Seek increased levels of transportation funding at the federal, state, and local levels
 - Tactics/actions:
 - Actively support efforts to increase transportation funding at all levels including letters of support, testimony at public hearings, editorials, etc.
 - Seek agreements for dedicated increments of funding for the Lake Tahoe Region from funding agencies
 - Aggressively pursue grant funding to support planning and implementation activities
- Seek transportation funding dedicated to the TTD for capital and operations
 - Tactics/Actions:
 - Charter change to enable the collection of a Toll fee upon entrance to implement Congestion pricing
 - Seek public/legislative approval of a Carbon Tax on VMT in the region
- Share costs of transportation equitably among the beneficiaries of the transportation system.
 - Tactics/Actions:
 - Engage USFS and State Parks to contribute to transit service augmentation

Linking Tahoe: Corridor Connection Plan

Appendix B

AirSage Analytics Data Summary

Appendix B

AirSage Analytics Data Summary

To: Carl Hasty, Director From: Cynthia Albright, AICP-CUD,
GISP
Tahoe Transportation Reno Nevada
District
File: 180101320 Date: May 2, 2016

**Reference: Linking Tahoe: Corridor Connection Plan
AirSage Analytics Data Summary**

Introduction

In accordance with our data collection task, Stantec contracted with AirSage Analytics to obtain basin wide project-specific transportation data to complete the Linking Tahoe: Corridor Connection Plan. Until quite recently, transportation master planning relied upon traditional traffic counts, license plate studies and polling. In the Tahoe Basin, traffic counts are conducted by NDOT and Caltrans and reliably factor into the basin traffic modeling. However, traditional counter information is geographically limited. It provides excellent data on vehicles passing a point. In the Tahoe Basin, traffic counts are collected at approximately 55 locations. Approximately 50 of those are only collected for one week out of the year. Annual volumes, peak month volumes, etc. are extrapolated from that one week's worth of information. Supplemental data collection efforts, license plate studies and polling can be also geographically limited and time constrained due to the costly expense and effort. Typically, license plate studies are performed every couple years and are limited to a handful of locations and number of days. Polling is also limited to hundreds, maybe thousands of respondents and completed every couple years. Therefore, regional traffic and travel behavior is inferred from all of

these sources combined with significant extrapolation to achieve conclusions about seasonal and annual travel.

The advancements in technology and wireless device data mining (cell phones) provides an incredible opportunity to gather mobility information for the entire Tahoe Basin and surrounding region for a specific point in time from and from hundreds of millions of data points. Wireless device data provides origin, destination and population analytics 24/7 for the entire time period studied. So instead of extrapolating from a weeks' worth of information we can evaluate months' worth of data to more clearly understand travel patterns. To understand seasonality, we acquired data for the months of February, July and August, 2014. This study got underway in December 2014. That year, and many previous years, reported lackluster snowfall and continued drought conditions were anticipated. Therefore, from a winter perspective, the travel patterns and trip counts would be viewed as conservative. Summer visitation continues to rise with forecasts suggesting a steady upward trend. February and July were selected as representative of the two primary seasons; August data confirmed the validity of July as the peak month of summer activity in the Tahoe Basin.

This data collection effort would prove to yield robust and insightful information about the travel patterns and magnitude of travel than ever before realized. The following is a summary of the data collection process and salient findings.

AirSage Overview

According to a Pew Internet Project completed in 2014, research shows that 90% of American adults have a cell phone and 64% of those own a smartphone.¹ The magnitude of Americans leaving a digital footprint enabled AirSage, an Atlanta-based company, to transform signaling data into relevant data for transportation and tourism planning. AirSage specializes in location information and population movement intelligence by capturing and analyzing more than 15 billion anonymous, real-time, cellular-signal wireless data points. These data points identify population travel patterns, transportation trends, visitor information and other analytics. Their partnerships with wireless device carriers enables AirSage to access data from over 100 million wireless devices daily. Although digital mobility data is not a substitute for traffic counters as it does not capture individual vehicles passing a point, it does provide a more vivid picture of travel behavior (origin, destination, type of trip, and subscriber classification). These technological advancements in data collection produced deliverables that included:

- A. Excel format table identifying the number of unique Visitor device arrivals and departures to the Lake Tahoe Basin summarized by day of the month;
- B. Excel format table identifying the number of days spent by unique Visitor devices in the Tahoe Basin during the month;
- C. Excel format table identifying the number of unique Visitor devices seen at Lake Tahoe aggregated by their home locations at the state level;
- D. Excel format table identifying the number of unique Visitor devices seen at Lake Tahoe aggregated by their home locations at the county FIPS² code level;

- E. Excel format table summary of unique Visitor devices seen entering any of five area airports and the Tahoe Basin in the same day and number of devices on the identified peak day for February and July;
- F. Trip Matrices in Excel format for the months of February, July and August that identify the daily and monthly counts of trips between two locations (origin-destination), time of day, type of trip made, and subscriber classification of device making the trip. *Note: Tables were provided for all trips made on a Week Day and all trips made on a Weekend Day and combined by Stantec;*
- G. Activity Density ArcGIS shape file that included x,y coordinate based point location information on unique Visitor device destinations for the months of February and July;
- H. AirSage Report Final in PowerPoint format dated March 16, 2015, presented to the TTD and TRPA staff by Ryan Kinskey, AirSage and attached hereto.

In order for AirSage to provide the deliverables described above, the project delivery team discussed at length the answers sought from the data and defined the scope of work for AirSage. Digital spatial files were provided, including geography encompassing five external zones to identify the number of trips by point of entry through one of the five gateways leading into the Tahoe Basin. TRPA provided Traffic Analysis Zone (TAZ) geography. All computed trips are coded to a TAZ or external zone in order to understand origin and destination trip movements. Trips are classified as one of four types: from an external zone into the basin (External to Internal), out of the basin (Internal to External), and internal to the basin (Internal to Internal). All External to External trips (those that did not enter the basin) were disregarded for purposes of this study.

¹ [Pewinternet.org/fact-sheets/mobile-technology](http://pewinternet.org/fact-sheets/mobile-technology)

² FIPS county code is a five-digit Federal Information Processing Standard (FIPS) code which uniquely identifies counties and county equivalents in the US.

AirSage is not able to collect signaling data from the 90% of Americans that own a cell phone. By their own account, AirSage's network providers capture approximately 40% of the market in the Tahoe Basin.³ In order to synthesize the information to the full population, AirSage leverages US Census data. To do this, AirSage analyzes their sample of 100 million devices and correlates the home locations of devices seen in the basin during the study period to census tract population. By correlating the home locations of the unique devices seen in a study area to the census tract population of these device home locations, AirSage can extrapolate the unique device count to simulate the full population of cell phone owners covered by other national carriers.

Although AirSage was able to provide a summary of the number of unique Visitor devices that arrived and departed the Lake Tahoe Basin by day of the month, those daily activity counts were collapsed in the Trip Matrices into all Week Day Trips (WD) or Weekend Trips (WE) taken between two zones. With a study area encompassing approximately 289 TAZ polygons and five external zones, the number of potential trip combinations between this many polygons was simply too large to deliver in an Excel file in single day origin-destination movements. As it is, each of the three trip matrix spreadsheets include nearly 200,000 individual rows of data. To interpret this information, Stantec developed pivot tables and ArcGIS shape files from the tabular data through a relate function. No information about the raw data was provided with the deliverable; only the information outlined in the scope of work defining the methodology. Stantec analyzed the information from the pivot tables and mapped some of the findings by building new spatial geodatabases using ArcGIS. Findings from the unique Visitor devices, before the extrapolation to the entire population are illustrated in the attached PowerPoint prepared by AirSage. The highlights of unique Visitor device data include:

³ 40% of the 90% of Americans owning cell phones totals approximately 116M wireless devices of potential data.

February 2014

1. Total unique Visitor devices seen in the Tahoe Basin totaled approximately 413,100. The peak arrival day was February 14th and peak departure day was February 17th, President's Day weekend.
2. On average, approximately 10,000 Visitors arrived in Tahoe daily. The Visitor number climbed to 24,000 daily during Presidents' Weekend.
3. Nearly 43% of all Visitors spent only one day in the basin.
4. 87.2% of all Visitors have home locations in California (61.5%) or Nevada (25.7%).
5. The number of February Visitors from California exceeded Nevada by nearly 3:1. Visitors arrived from every state in the US except for Alaska and Puerto Rico.
6. When comparing Visitor home locations by county, 58,000 visitors live in Washoe County followed by 45,600 Visitors who live in Sacramento. Placer, El Dorado, Santa Clara, Alameda, San Francisco, and Contra Costa counties made up the top six Visitor home locations.
7. Tahoe Basin arrivals by airport indicates the Reno-Tahoe International Airport delivered nearly 50% of all airport arrivals.
8. When comparing all arrivals to Lake Tahoe, Visitors arrived via airports amounted to 8.4%.

July 2014

1. Total unique Visitor devices seen in the Tahoe Basin totaled 598,600. The peak arrival day was July 3rd; peak departure day was July 6th.

2. Daily visitor arrivals escalated to an average of 19,500. That number more than doubled to 35,000 daily Visitor arrivals for the July 4th weekend.
3. Approximately 42% of all Visitors spent one day in the basin; consecutive days varied slightly as compared to February with slightly higher percentages staying 3-4 days.
4. 80.4% of all Visitors have home locations in California (60.9%); in Nevada (19.5%). Higher visitation from western states resulted in a proportion decrease from adjacent states.
5. The number of July Visitors from California continued to outpace Nevada by 3:1. They arrived from every state in the US except for Alaska and Puerto Rico.
6. When comparing counties within the states of California and Nevada for July Visitors, increases were reported across the board; Sacramento and Washoe County were nearly dead even with approximately 60,500 Visitors from each.
7. Tahoe Basin arrivals by airport indicates the Reno-Tahoe International Airport dropped slightly to 49% of all airport arrivals and San Francisco Airport quadrupling.
8. I-80 West delivered nearly twice as many person trips into the Basin on July 4th weekend than on President's Weekend in February (113,000 vs. 60,000).
9. US50 West carried nearly the same number of person trips into the Basin on July 4th as compared to President's Weekend (82,000 vs. 78,000).

Trip Matrix Data Summary

The majority of Stantec's effort with the AirSage data involved analyzing the more robust Trip Matrix information for the months February and July. Although the deliverables included a Trip Matrix for August, the findings

are not dissimilar from July except for a slight reduction in the number of overall Visitors. AirSage's extrapolated Trip Matrix data provides compelling analytics for the Linking Tahoe: Corridor Connection Plan effort and illustrates the acute need to address the Visitors' contribution to the roadway network congestion. The fields in the Trip Matrix data tables include:

Field Name	Field Description	Example Value
Origin Zone	The zone where the trip began (either an external or an internal TAZ)	42
Destination Zone	The zone where the trip ended (either an external or an internal TAZ)	1002
Start Date	The first day of the month	20140701
End Date	The ending date of the month	20140731
Time of Day	<p>The Time of Day Periods defined as follows:</p> <ul style="list-style-type: none"> a. 12:00:01 AM to 7:00 AM b. 7:00:01 AM to 10:00 AM c. 10:00:01 AM to 4:00 PM d. 4:00:01 PM to 7:00 PM e. 7:00:01 PM to 12:00 AM 	H10:H16 (10:00 AM – 4:00 PM)
Aggregation	<p>Weekday (WD) = average weekday (Mon, Tues, Wed, Thurs) for the Time Period over the Date Range;</p> <p>Weekend Day (WE) = average weekend day (Fri, Sat, Sun) for the Time Period over the Date Range</p>	<p>WE</p> <p>WD</p>
Subscriber Class	<p>A value characterizing the trips after watching the device movements for several weeks before the study period to determine if the trip is made by:</p> <ul style="list-style-type: none"> a. Resident Worker b. Home Worker c. Inbound Commuter d. Outbound Commuter e. Long Term Visitor f. Short Term Visitor 	RW
Purpose	<p>A value characterizing the departure and arrival classification of trips as:</p> <ul style="list-style-type: none"> a. Home Based Work (HBW); b. Home-Based Other c. (HBO); and Non-Home Based (NHB) 	HBW
Count	The number of trips made by the people with the given attribute that started in the given Origin Zone and ended in the given Destination Zone during the given Date Range and Time Period	1.64
Monthly Count	The count number multiplied by the number of Weekend Days in the month or the Weekdays in the month	29.07
Type	<p>A value characterizing the type of trip as:</p> <ul style="list-style-type: none"> a. External to External (EE) b. External to Internal (EI) c. Internal to External (IE) d. Internal to Internal (II) 	II

AirSage defines a trip as the movement of a device from point to point and the end of that trip when a device remains at the same location for five minutes or more. Therefore, a person entering the basin and stopping for lunch, traveling to Tallac Historic Site, stopping for coffee and driving to home out of the basin would be counted as five individual trips.

A deliverable included the spatial activity point file in ArcGIS format for the months of February and July. An activity point represents an aggregation of consecutive mobile sightings at a location. Each mobile activity (i.e., phone call, text or data session) performed at that location during a time frame are aggregated into one Activity Point record. This avoids the duplication or over counting of occurrences to more accurately represent areas with higher visitation or activity within the basin. AirSage assigned the latitude and longitude for the location based upon proprietary multi-lateral triangulation methods and algorithms. The accuracy is within +/- 300 meters; therefore, the information is intended to represent magnitude of visitation spatially. This may account for a high number of activity points in and around the water's edge and clusters of activity in areas that appear unexplainable. The concentration point may be shifted slightly.

Subscriber classes are further defined as:

Resident Worker	Lives and works in the study area
Home Worker	Lives and works at the same location in the study area
Inbound Commuter	Works in the study area but lives outside of the study area
Outbound Commuter	Lives in the study area but works outside of the study area
Long term Visitor	Is a non-resident present in the study area between 2 & 14 days (home location cannot be inside an external zone)
Short term Visitor	Is a non-resident present in the study area less than two day (home location can be inside an external zone)s

Source: Stantec Consulting Services Inc.

Stantec used the pivot table function in Excel to manipulate and analyze the data. A screenshot of the July Trip Matrix is illustrated on the following page.

	A	B	C	D	E	F	G	H	I	J	K	L
1	Origin_Zone	Destination_Zone	Start_Date	End_Date	Aggregation	Subscriber_Class	Purpose	Time_of_Day	Count	Monthly_Count	Time_of_Week	Type
2	1004	190	20140705	20140727	WE	Outbound Commuter	NHB	H00:H07	5.56	66.72	Weekend	EI
3	185	264	20140705	20140727	WE	Long Term Visitor	NHB	H10:H16	0.56	6.72	Weekend	II
4	9	74	20140705	20140727	WE	Long Term Visitor	NHB	H07:H10	2.33	27.96	Weekend	II
5	190	117	20140705	20140727	WE	Resident Worker	HBO	H10:H16	0.7	8.4	Weekend	II
6	284	500	20140705	20140727	WE	Inbound Commuter	NHB	H16:H19	0.02	0.24	Weekend	II
7	500	201	20140705	20140727	WE	Home Worker	NHB	H10:H16	0.1	1.2	Weekend	II
8	43	25	20140705	20140727	WE	Resident Worker	HBO	H00:H07	3.5	42	Weekend	II
9	255	187	20140705	20140727	WE	Long Term Visitor	NHB	H10:H16	26.26	315.12	Weekend	II
10	273	1004	20140705	20140727	WE	Short Term Visitor	NHB	H19:H24	3.46	41.52	Weekend	IE
11	65	34	20140705	20140727	WE	Long Term Visitor	NHB	H19:H24	11.29	135.48	Weekend	II

Summary Trip Matrix February 2014

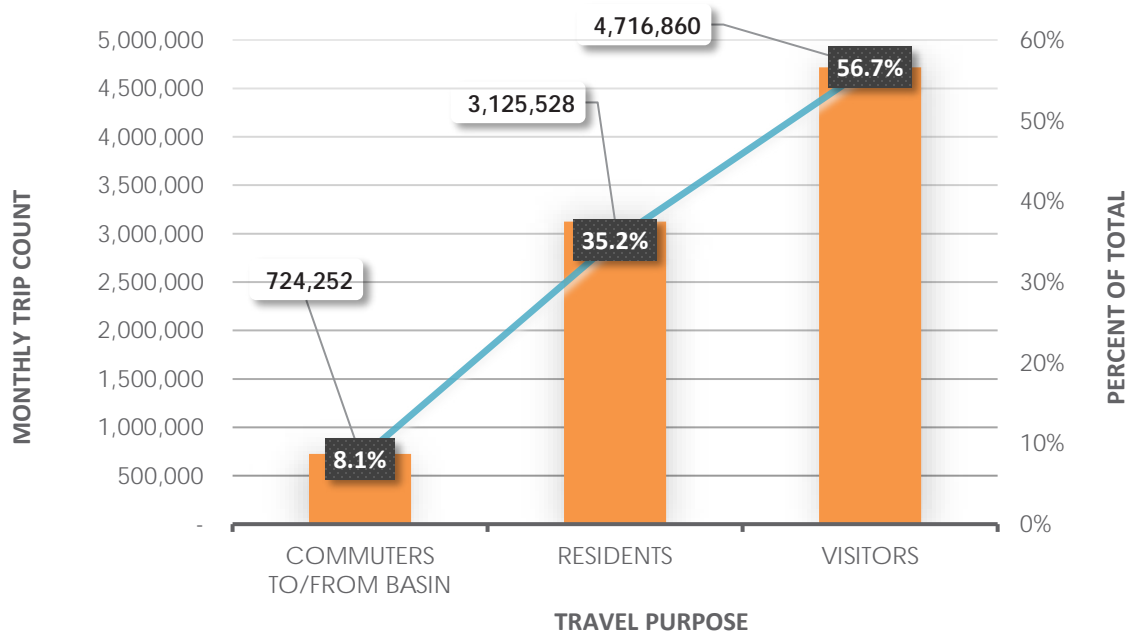
Since the Trip Matrix information was collapsed by either a Weekend Day trip or a Weekday trip, average daily totals need to be multiplied by the number of weekdays or weekend days. In February, there were a total of 16 weekdays (Monday – Thursday) and 12 weekend days (Friday – Sunday). The table below identifies the total number of average daily and monthly trips by subscriber class. A total of **4.7M Visitor trips** and **8.5M total trips** were collectively made by residents, commuters and visitors number of weekdays or weekend days. In February there were a total of 16 weekdays (Monday – Thursday) and 12 weekend days (Friday – Sunday). The table below identifies the total number of average daily and monthly trips by subscriber class. A total of **4.7M Visitor trips** and **8.5M total trips** were collectively made by residents, commuters, and visitors.

February Count of Person Trips by Subscriber Class

	Average Day	Subtotal	% of Total	Monthly Count
Inbound/Outbound Commuter WD	27,700			443,200
Inbound/Outbound Commuter WE	23,421	51,121	8.1%	281,052
				724,252
Resident Worker/Home Worker WD	113,894			1,822,304
Resident Worker/Home Worker WE	108,602	222,496	35.2%	1,303,224
				3,125,528
Short Term/Long Term Visitor WD	105,446			1,687,136
Short Term/Long Term Visitor WE	252,477	357,923	56.7%	3,029,724
		631,540	100.0%	4,716,860

Source: Stantec Consulting Services Inc.

Total Monthly Trips by Subscriber Class, February 2014



As previously discussed, multiplying the WD and WE trips by the total number of weekdays and weekend days yields the monthly total trips.

Of the **4.7M Visitor trips** in the basin, the average trip distribution by time of day is as follows:

Visitor Trip Distribution by Time of Day Segment			
Time of Day Segment	Weekday	Weekend	Time Segment as % of Total
12:00 Midnight – 7:00 AM	8%	12%	11%
7:00 AM – 10:00 AM	22%	19%	20%
10:00 AM – 4:00 PM	47%	47%	47%
4:00 PM – 7:00 PM	14%	13%	13%
7:00 PM – 12:00 Midnight	10%	9%	10%
	100%	100%	100%

Source: Stantec Consulting Services Inc.

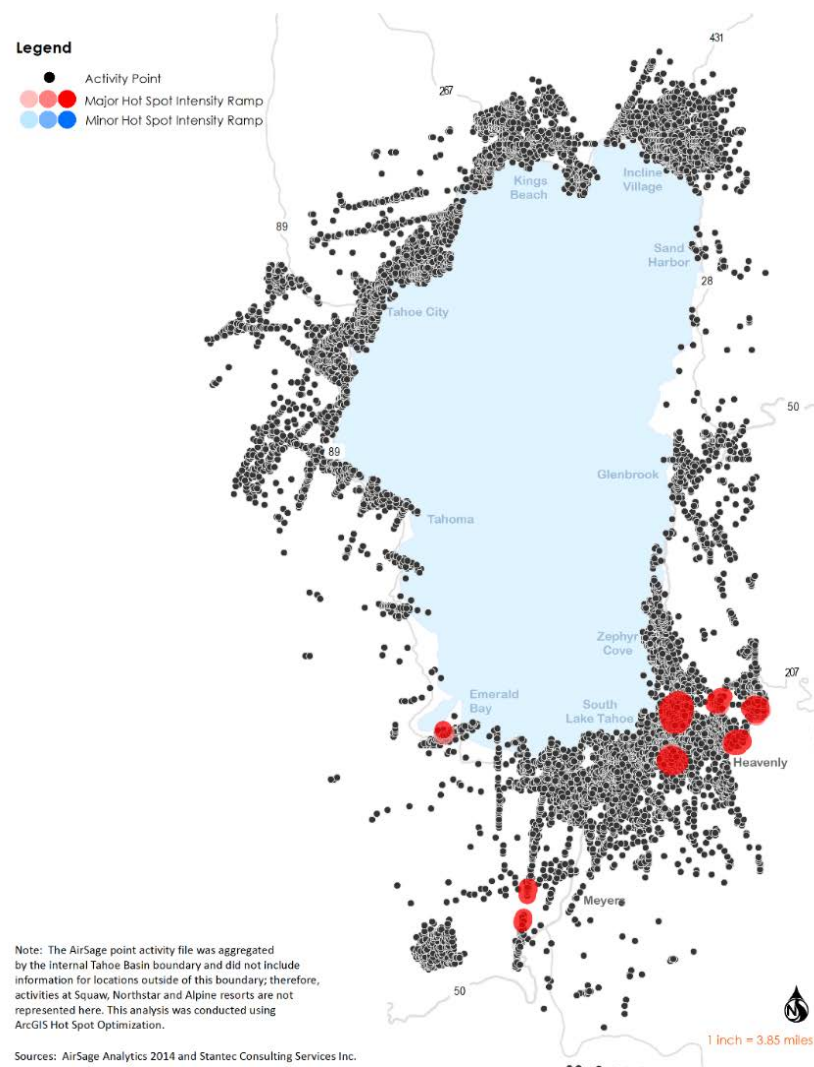
Stantec conducted a Hot Spot Optimization Analysis using an ArcGIS geoprocessing tool on the Activity point file provided by AirSage. The activity points represent an average for the total number of visits to these locations over the entire month. Using the Optimization tool, the results are based on statistical significance and are not subjective. The activity “count” field was weighted to individual points. The results illustrate where the concentration of activities occur during February.

The mapping indicates tremendous activity in both the north and south shore areas. The activity points illustrate the magnitude of visits to these various locations. The Hot Spot Optimization process identifies those locations that received the greatest number of visits when statistically compared to all other locations. The geostatistical tool identifies Major and Minor Hot Spots. All other locations are considered statistically insignificant. The amount of visitor activity in February was not significant enough to classify areas as “Major” or “Minor” in the Hot Spot Analysis. That will not be the case with July. This effort points to the well-known winter destinations of South Shore Commercial Core and Heavenly Resort. But less evident concentrations of activity include the Kingsbury Grade and Market Street areas, the Pioneer Trail/Glen Rd neighborhood, and the N. Upper Truckee Road neighborhood. Even Emerald Bay in the cold winter month of February is a magnetic draw for many person trips. The transportation plan will incorporate these findings.

Summary Trip Matrix July 2014

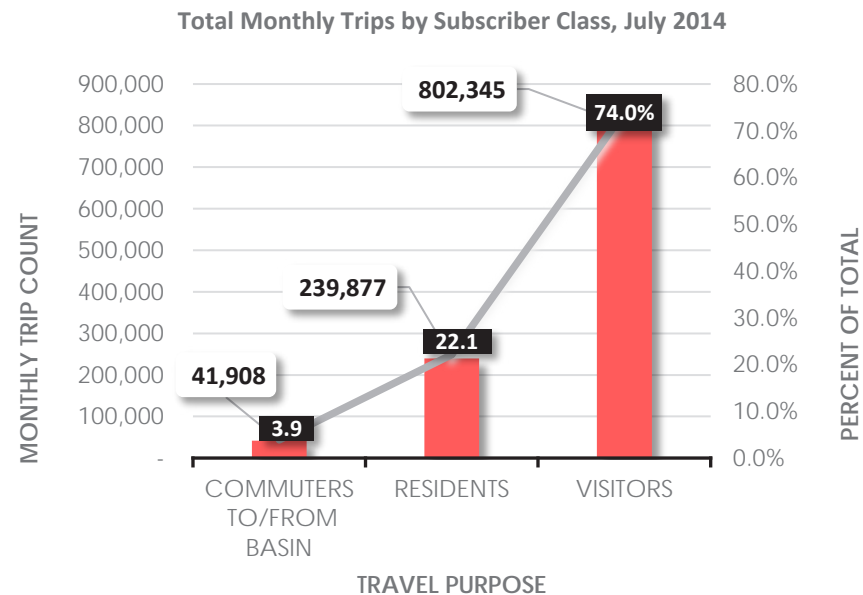
In July there were a total of 19 weekdays (Monday – Thursday) and 12 weekend days (Friday – Sunday). The table below identifies the total number of average daily and monthly trips by subscriber class. Visitor trips accounted for **11.8M** of the total **16.2M** collectively made by residents, commuters and visitors. The proportion of commuter and resident/home worker trips as a percentage of the total dropped significantly and the number of visitor trips rose sharply.

Locations of Popular Winter Destinations, February 2014 Total of Averaged Weekend and Weekday Activities



July Count of Person Trips by Subscriber Class

	Average Day	Subtotal	% of Total	Monthly Count
Inbound/Outbound Commuter WD	24,171			459,249
Inbound/Outbound Commuter WE	17,737	41,908	3.9%	212,844
				672,093
Resident Worker/Home Worker WD	123,306			2,342,814
Resident Worker/Home Worker WE	116,571	239,887	22.1%	1,398,852
				3,741,666
Short Term/Long Term Visitor WD	310,679			5,902,901
Short Term/Long Term Visitor WE	491,666	802,345	74.0%	5,899,992
		1,084,130		11,802,893



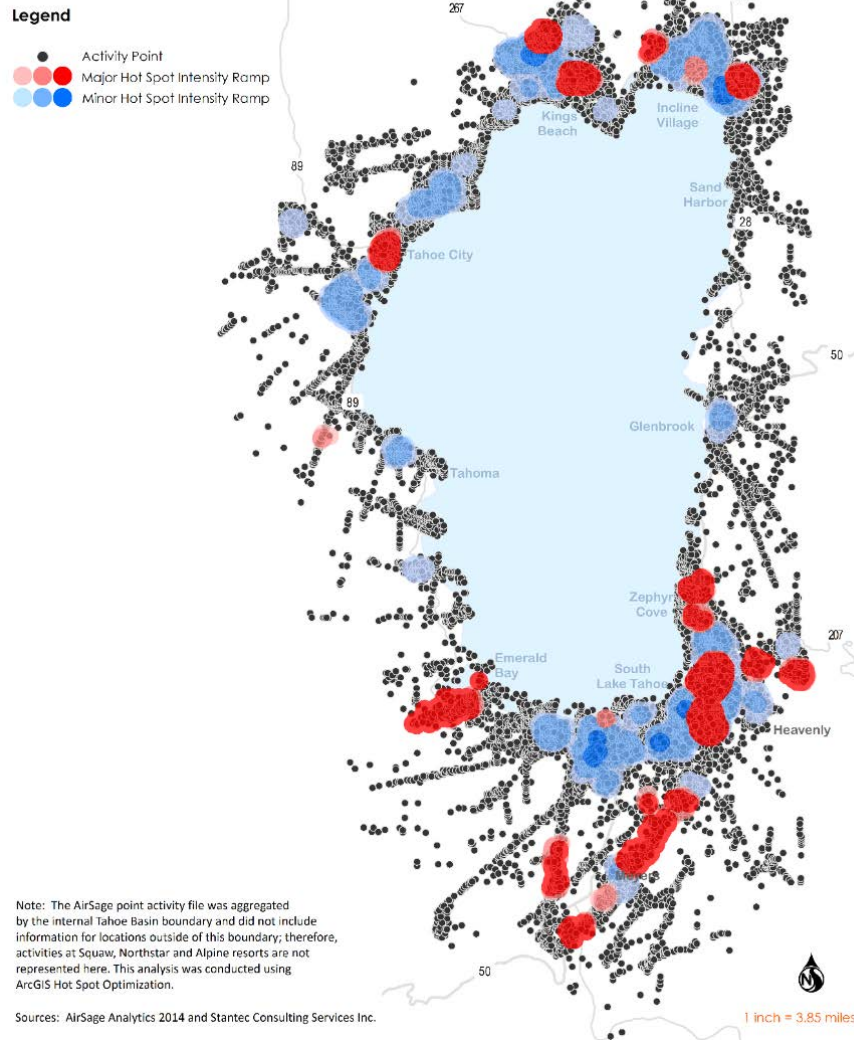
Of the **11.8M Visitor trips** in the basin, the average trip distribution by time of day is as follows:

Visitor Trip Distribution by Time of Day Segment

Time of Day Segment	Weekday	Weekend	Time Segment as % of Total
12:00 Midnight – 7:00 AM	6%	9%	8%
7:00 AM – 10:00 AM	18%	18%	18%
10:00 AM – 4:00 PM	47%	47%	47%
4:00 PM – 7:00 PM	16%	14%	15%
7:00 PM – 12:00 Midnight	13%	12%	12%
	100%	100%	100%

The Hot Spot Optimization Analysis on the July Activity point file illustrate the wide dispersion of summer destinations shown below.

Locations of Popular Winter Destinations, July 2014 Total of Averaged Weekend and Weekday Activities



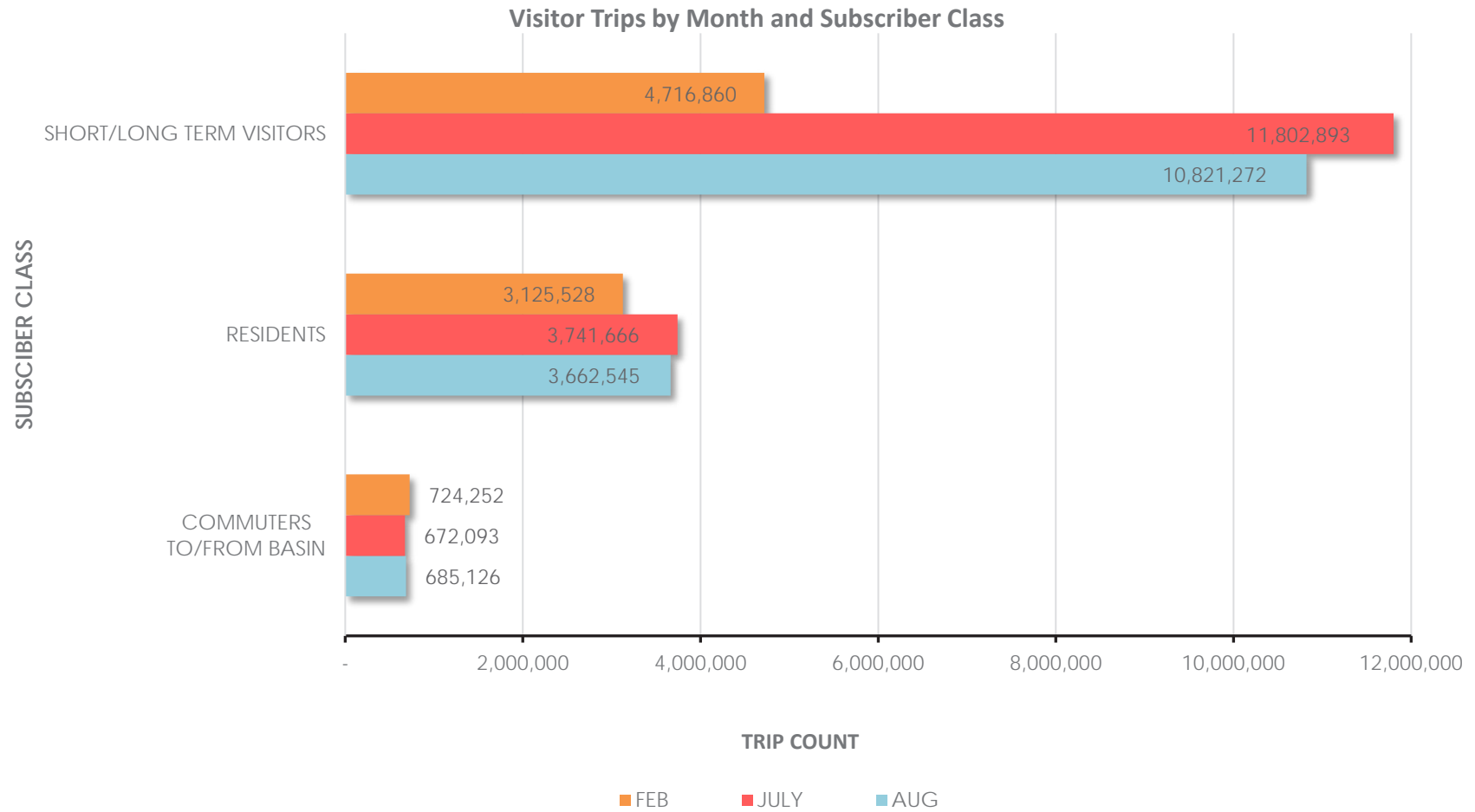
The mapping of Optimized Hot Spots in July is vastly different than February. The more frequented destinations of Tahoe City, Kings Beach, Zephyr Cove, Round Hill, the South Shore Commercial Core, Heavenly Resort and Emerald Bay feature prominently. These areas generate significant numbers of visitors; employ large numbers of people; and are patronized by residents. Most other Major Hot Spots encapsulate residential neighborhoods in the northeast and south. There were a few surprising Major Hot Spots: the Tahoe Rim Trail access at Brockway Summit; Diamond Peak (which does include residential neighborhoods); and the Pioneer Trail/High Meadows area. The recommendations put forth in the Linking Tahoe: Corridor Connection Plan and Transit Vision propose further study and potential expansion of services to these areas.

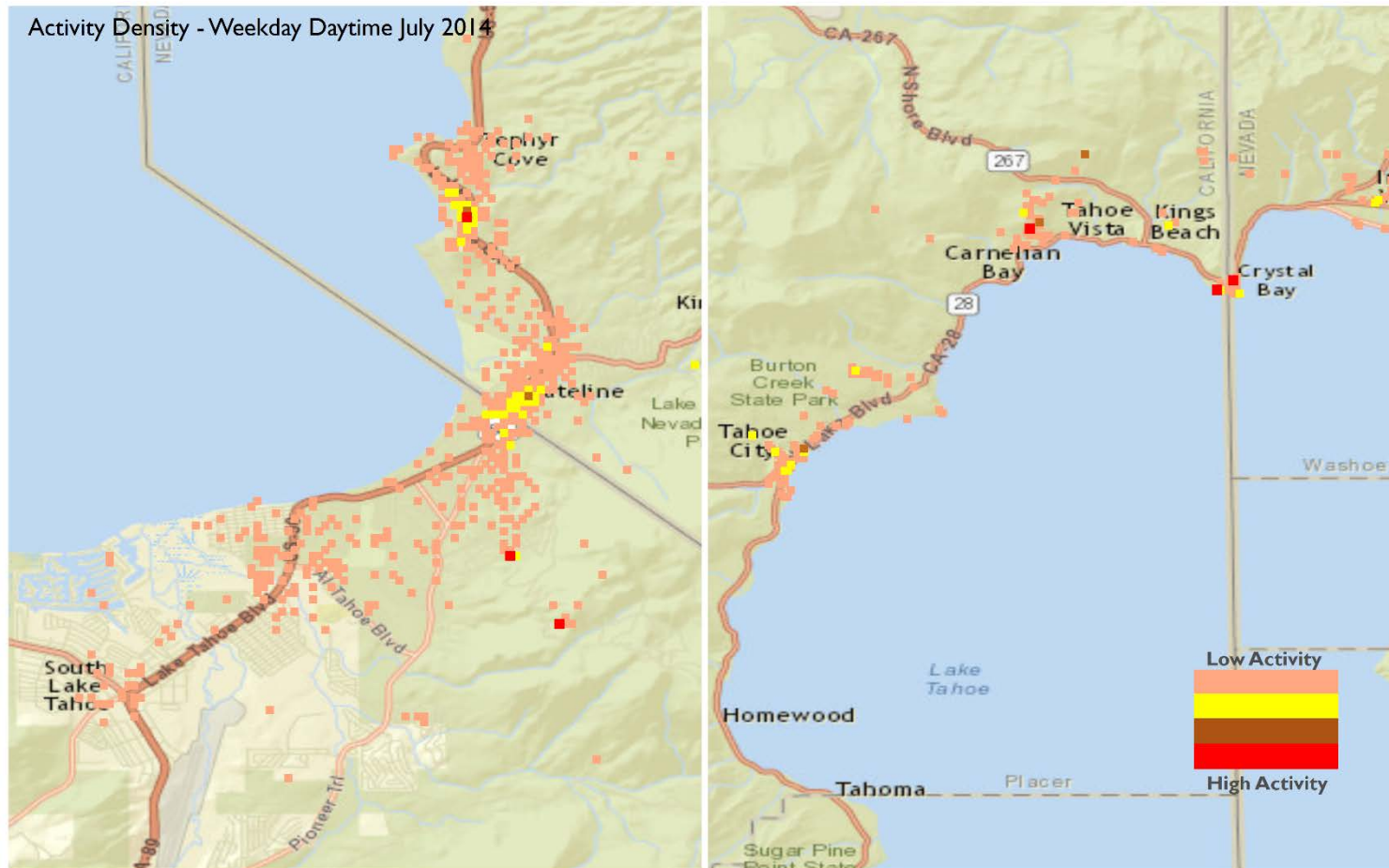
Conspicuously missing from a Major or Minor Hot Spot designation is Sand Harbor. The Nevada State Parks website for Sand Harbor reports “more than one million visitors enjoy the park annually.” To understand a possible explanation for this questionable omission, we looked closer at the trip counts for each TAZ or combination of TAZs that define Hot Spots. Sand Harbor is located in TAZ 255. AirSage attributed 103,000 person trips to that TAZ in the month of July. By comparison, the two TAZs that comprise Emerald Bay and Eagle Falls reported 326,400 trips; TAZ 224--Zephyr Cove 214,400 trips; Round Hill 166,385 trips; TAZ 187—Tahoe Rim Trail near Brockway Summit 191,900 trips; TAZs 14 and 15—a South Shore neighborhood 591,000 trips; and four TAZs associated with the South Shore Commercial Core--663,400 trips. From a pure trip count perspective, Sand Harbor falls a bit short.



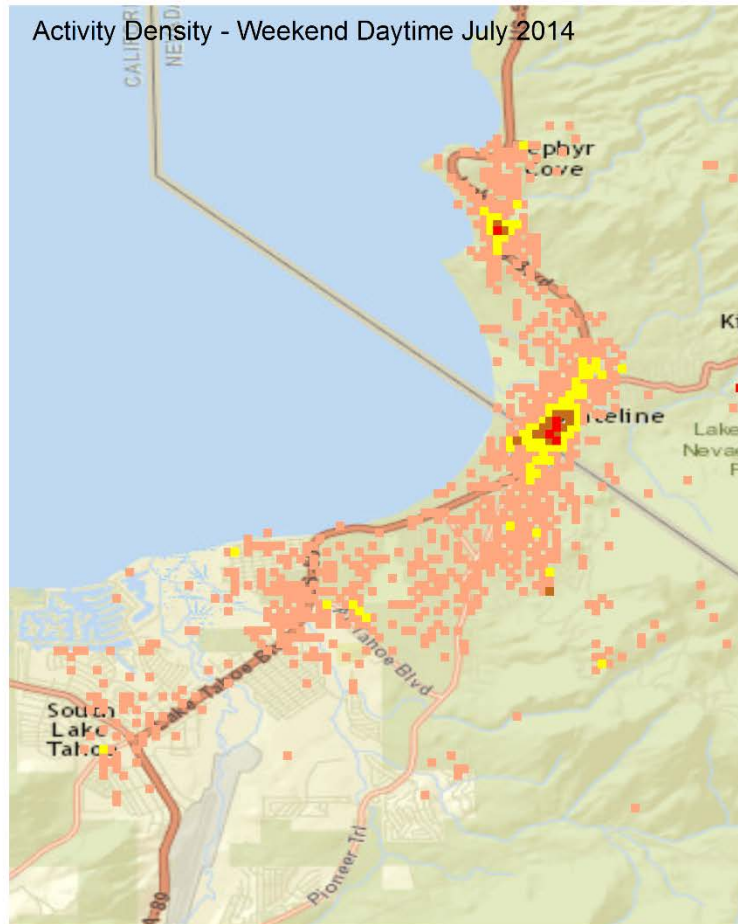
Considering the number of reported annual visitors led us to explore further by comparing the number of summer days and parking. Sand Harbor's parking lot accommodates 680 spaces. If we assume the parking lot is completely full and turns over every space to another car twice per day, every day from June 1 through September 30, and assuming every car contained four passengers, the total annual visitors would reach 663,680. Increasing the turnover rate to 2.5 times per day yields an annual visitor count of 829,600. In thinking about the average number of passengers per car made us realize the difference in demographics of those visitors: lots and lots of children. Children do not have cell phones. Therefore, the annual visitation at Sand Harbor may reach one million persons annually but a very large percentage of those visitors would not be reported as a visitor trip according to AirSage methodology. Sand Harbor is a unique destination when comparing visitor counts and trips. The transit system is not equipped to handle equipment-heavy visitor trips. Parents of young children transporting ice chests, umbrellas, beach toys, etc. simply have no option but to rely upon a vehicle to enjoy Sand Harbor. Young adults and Millennials are more likely to enjoy the Summer Shuttle to Sand Harbor and the expansion of that service is recommended.

The following page illustrates the total trips for all three months by subscriber class. The next four pages prepared by AirSage compare activity density point locations for weekdays (day and evening) and weekend days (day and evening). Additional AirSage results are reported in the Corridor Connection Plan document.



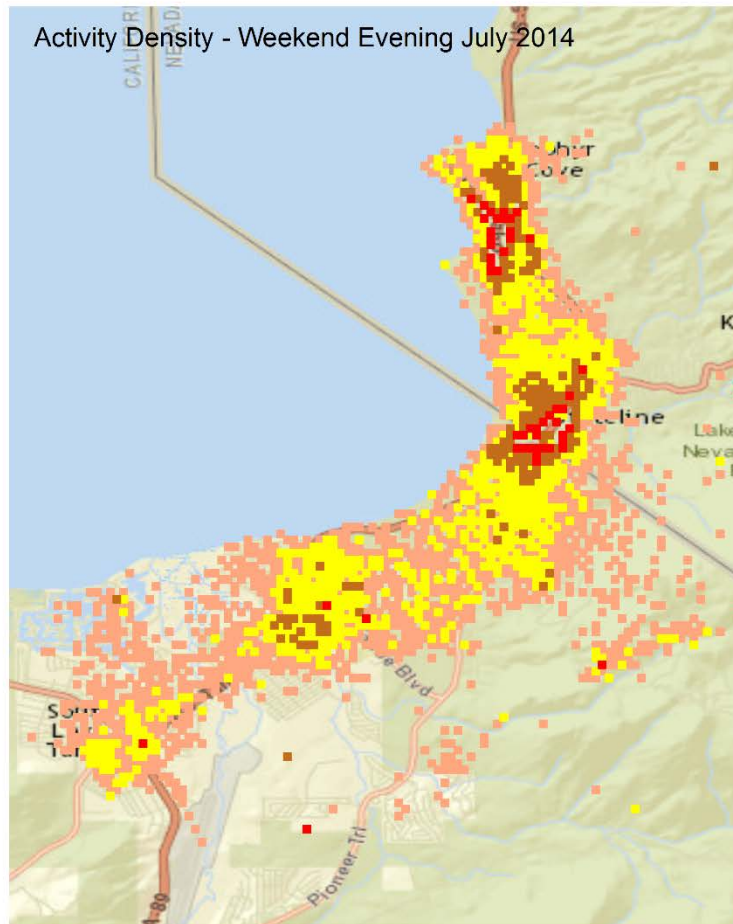


Source: AirSage Analytics

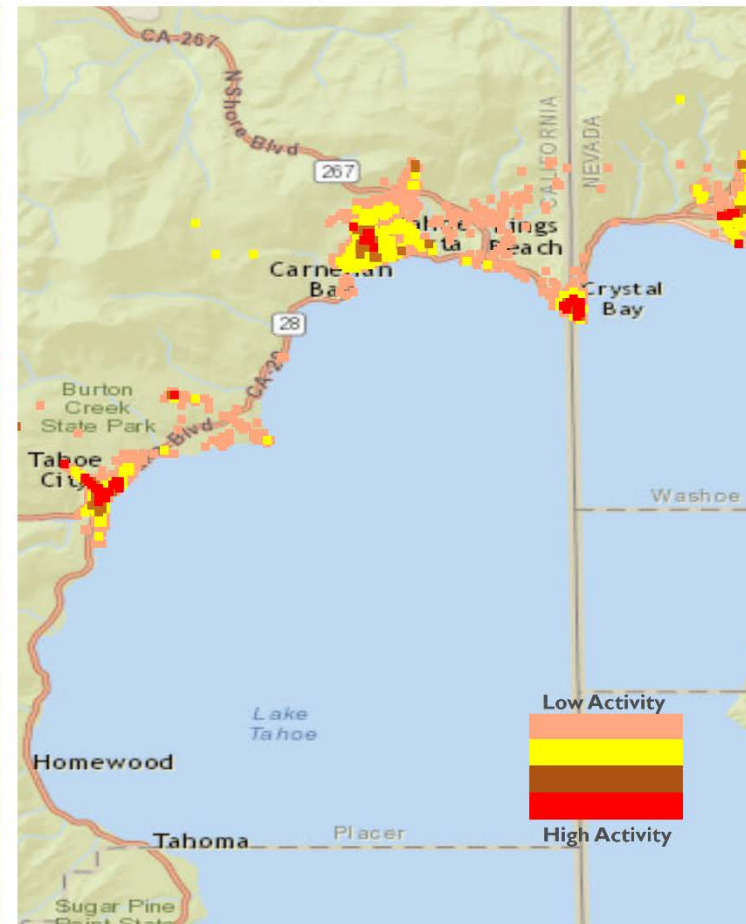


Source: AirSage Analytics





Source: AirSage Analytics



Linking Tahoe: Corridor Connection Plan

Appendix C

Project List Compiled by Corridor

Appendix C

Project List Compiled by Corridor

This is a 10-year project list, except for transit service improvements, which include a medium to long-term timeframe of 10 to 20 years.

Basin-wide

Capital Projects

- Fleet rehabilitation, replacement, and expansion (TTD/TART)
- TTD Administration and Maintenance facility
- Minor capital rehabilitation, replacement, and expansion of bus shelters, schedule holders, bus stop signs, bike racks, flat work, and trash/recycling receptacles
- Regional Traffic Management Command Center
- Multimodal recreational use upgrades on roads and parking areas to bring up to current standards, design, and capacity improvements to separate non-motorized users from vehicle traffic
- On-street bicycle infrastructure maintenance, including consistent restriping, widening, continuation through intersections, and repaving (ATP)
- Stormwater Pollution Reduction through inspection, maintenance, upgrades and decommissioning from National Forest system lands including roads and parking areas EIP

Technology

- Next Bus Implementation, fare system upgrade, real time bus information (also augment to include other important community messaging/upcoming event marketing) at Mobility Hubs, transit centers and key shelters

Implementation Planning

- Develop Regional Parking Management System, organized by corridor segment, optimizing existing parking, and encouraging alternative mode use

- Develop regional Intelligent Transportation System (ITS) to maximize distribution of information to transportation users (major categories: Road Conditions, Transit, Recreation Demand/Parking), including social media methodology
- Utilize information from fare system upgrade to track boardings, and alightings by corridor and areas within those corridors to monitor service demands and modify accordingly

SR89/28 Corridor

Capital Projects

- SR89/Fanny Bridge Community Revitalization Project
 - Roundabouts
 - Bike lanes and shared use paths
 - Pedestrian crossing improvements
 - Roadway water quality improvements
- Upgrade the Tahoe City Transit Center to a Mobility Hub status
 - Signage and visibility improvements
 - Bicycle rentals and storage
 - Well-defined pathway to the North Shore Ferry terminal building
- Complete Street Improvements - Kings Beach Boardwalk/Gateway Project
 - SR 28 and Chipmunk Street
- Intersection Priority Improvements
 - Hwy 267 and Secline Street
 - Hwy 267 and Chipmunk Street
- Crosswalk Improvements
 - SR 89 and Grove Street pedestrian activated beacon signal
 - West Shore bike path at SR 89 near Grand Avenue, Tahoe Pines

- Dollar Creek shared use trail from North Tahoe Regional Park to Dollar Point
- West Shore bike trail extension through Homewood
- Bike Lane / Trail / Shared Use Path improvements and/or upgrades
 - Dollar Creek shared use trail construction from North Tahoe Regional Park to Dollar Point
 - West Shore bike trail through Homewood
 - Kings Beach to Crystal Bay shared use path on SR89
- Add Bike Parking Facilities at Key Transit Stops and Key Hiking Trailheads
 - Tahoma
 - Hwy 28 at Fox, Coon, and Bear Streets
 - Hwy 28 at National Avenue
 - Hwy 28 at Carnelian Bay
 - Hwy 28 at Dollar Hill Drive, Lake Forest
 - Hwy 28 at Old Mill Road, Lake Forest
 - Hwy 28 at Tahoe City “Wye”
 - Hwy 89 at River Ranch across from 7-11
 - Hwy 89 at Squaw Valley Road across from 7-11
 - Ellis Peak trailhead and Brockway Summit Tahoe Rim Trailhead
- Miscellaneous Capital Projects
 - New integrated parking area between the back of existing commercial from Grove Street west to the Tahoe Mountain Brewing Co. and the Tahoe City Golf Course, including sidewalk and multi-purpose paths to connect parking with SR 89
 - TART Transit capital enhancements on fleet, expanded number of stops and upgraded facilities at all stops
 - Implement Tahoe City Mobility Plan recommendations
 - Add additional parking and/or a shuttle service from an existing parking area to the Coast Guard ramp in peak season

Transit Service Improvements

Immediate – Medium Term Implementation

- North – South Ferry Project at Tahoe City Marina planning and design phase
- Town of Truckee bus/rail station upgrade interface
- Expand TART summer seasonal transit service to Burton Creek Trailhead off SR 267

- Introduce summer ferry shuttle service
 - Create new docks, use existing docks, and/or vessels that do not require docks for transport
 - Tahoe City – Sunnyside – Tahoe Pines – Homewood – Tahoma
 - Tahoe City - Carnelian Bay – Tahoe Vista – Kings Beach
 - Increase frequency based upon demand and length of season
 - Review locations for usage
- Restructure TART route between Truckee and Incline Village to create a new service on SR 89
 - Add annual frequency service level
 - Increase frequency in peak seasons
- Restructure TART route between Truckee and Incline Village to create a new service on SR 267
 - Add annual frequency service level
 - Increase frequency in peak seasons
 - Extend service hours as demand warrants
- Extend TART local service from Crystal Bay to Diamond Peak Resort and to the main terminal at Northstar Resort
 - Add frequency in peak seasons
 - Add annual frequency
- Modify TART routes to create new local service and extend service to main Squaw Valley Resort base
 - Add frequency in peak seasons
 - Add annual frequency
- Modify TART service from Crystal Bay to Incline Village
 - Add frequency in peak seasons
 - Add annual frequency
- Extend TTD summer service route from Sand Harbor to Spooner Summit
 - Add frequency in peak seasons
- Free fare to rider service

Medium – Long Term Implementation

- North – South Waterborne Ferry Connection Project in Tahoe City construction phase to include:
 - Ferry terminal building at the foot of Grove Street
 - Extension of the existing pier to accommodate a new ferry dock

- New multimodal loop street to link Grove Street to Jackpine Street that runs parallel to N. Lake Blvd. to provide for transit circulation

Implementation Planning

- Conduct an engineering study to evaluate measures to pedestrian crossings and improve access management on SR28 at the roundabouts.
- Conduct an engineering study to determine if any of the unsignalized pedestrian crosswalks meet the warrants for pedestrian signals.
- Develop strategies and methods for financing recreational travel demand infrastructure and services.
- Expand parking area at Brockway Trailhead to the extent possible

Implementation Agreement

- Northstar Transit Center – seek permission to use existing facility
- Squaw Valley Transit Center – move terminus from Squaw Ridge Road to Squaw Valley Road and main ski base. Create stops and a bus turnaround area
 - Create opportunity to add parking in summer season

Sources: TRPA (EIP) Project Tracker database

Linking Tahoe: Active Transportation Plan

Lake Tahoe Regional Plan

Tahoe City Mobility Plan

State Route 28 National Scenic Byway Corridor Management Plan

Linking Tahoe: Corridor Management Plan

Ferry Oriented Development Plan

Linking Tahoe: Corridor Management Plan Transit Master Plan

Nevada SR28 National Scenic Byway

Capital Projects

- Intersection priority improvements
 - SR 28 and Northwood Blvd.
 - Lakeshore Blvd. and Village Blvd.
 - Lakeshore Blvd. and SR 89
- Bike Lane / Trail / Shared Use Path improvements and/or upgrades
 - Stateline to Stateline Bikeway, Phase 2 Incline to Sand Harbor to include shared use path and parking improvements
 - Stateline to Stateline Bikeway, Phase 3 Sand Harbor to Spooner Summit/US50
 - Stateline to Stateline Bikeway, Phase 4 Incline to Crystal Bay
 - Complete the missing gap of Shared Use Path on Northwood Blvd. 600 feet east of Village Blvd. to SR 28
 - Complete sidewalk on north side of SR 28 from current terminus to Country Club Dr.
 - Complete sidewalk on Incline Way from current terminus to Southwood Blvd.
 - Class 1 Bike Trail along SR 28 from Preston Field to Northwood Blvd.
- Add Bike Parking Facilities at key transit stops and key hiking trailheads
 - Stateline bus stop

Transit Service Improvements

Immediate – Medium Term Implementation

- Add Transit Center at Diamond Peak parking area
- Retrofit Incline Elementary to a Mobility Hub
- New regional transit service based on existing private services
 - Add seasonal frequencies
- Create Mobility Hub at Mt. Rose Ski Resort for summer seasonal use
- Create parking area at the south end of Incline Village to help with the Sand Harbor traffic and parking challenges
- Introduce summer ferry shuttle service
 - Kings Beach – Incline Village – Sand Harbor
 - Increase frequency based upon demand and length of season

- Expand TART summer seasonal transit service to Diamond Peak Ski Resort, with more frequent service between 10:00 am and 4:00 pm
- Implement Reno-Truckee-North Tahoe transit service over Hwy 431

Implementation Planning

- Develop strategies and methods for financing recreational travel demand infrastructure and services
- Relocate shoulder parking to expanded Secret Harbor, Chimney Beach, Skunk Harbor, and Spooner USFS parking areas

*Sources: TRPA (EIP) Project Tracker database
Linking Tahoe: Active Transportation Plan
Lake Tahoe Regional Plan
Tahoe City Mobility Plan
State Route 28 National Scenic Byway Corridor Management Plan
Linking Tahoe: Corridor Management Plan
Ferry Oriented Development Plan
Linking Tahoe: Corridor Management Plan Transit Master Plan*

Nevada US 50 East Shore Corridor

Capital Projects

- Relocate on-highway parking for public beaches to off-highway locations or Mobility Hubs
 - Facilitate pedestrian movement through expanded transit services and/or improved pedestrian access to key destinations
- Bike Lane / Trail / Shared Use Path improvements and/or upgrades
 - Nevada Stateline to Stateline Bikeway Phase 4 (Spooner Summit to Round Hill Pines Resort) achieved through potential US 50 road diet implementation

Transit Service Improvements

Immediate – Medium Term Implementation

- East Shore transit shuttle from Sand Harbor to US50 at Spooner
- Expand TTD summer seasonal transit service to Round Hill and Zephyr Cove
- Restore Route 21X to Carson City
- Add Mobility Hubs
 - Spooner Summit near the junction of US 50 and Hwy 28
 - Park and Ride location in Carson City on US 50

Medium – Long Term Implementation

- Introduce summer ferry shuttle service
 - South Shore - Zephyr Cove
 - Increase frequency based upon demand and length of season

Implementation Planning

- Develop transportation implementation plan to address safety, access, parking congestion, and multi modal connectivity for the Zephyr Cove/Skyland/Warrior Way, Round Hill Pines Resort, and Nevada Beach areas and to Glenbrook
- Conduct a feasibility study to fully understand the impacts of a road diet on the segment of US50 from Spooner to Round Hill

- Develop strategies and methods for financing recreational travel demand infrastructure and services

Sources: TRPA (EIP) Project Tracker database

Linking Tahoe: Active Transportation Plan

Lake Tahoe Regional Plan

Tahoe City Mobility Plan

State Route 28 National Scenic Byway Corridor Management Plan

Linking Tahoe: Corridor Management Plan

Ferry Oriented Development Plan

Linking Tahoe: Corridor Management Plan Transit Master Plan

California/Nevada US 50 South Shore Corridor

Capital Projects

- US 50/South Shore Community Revitalization Project/Transit Oriented Development
- Mobility Hubs at Stateline, South Shore Ferry Terminal, Heavenly Mountain Resort
 - Signage improvements
 - Bicycle rentals and storage
 - Well-defined pathway to the South Shore Ferry Terminal Building
- Construct new transit terminal off SR 207 and S. Benjamin Drive
- US 50 Signal Synchronization
- Intersection Priority Improvements
 - US 50 and Fairway Drive
 - US 50 and Johnson Blvd.
 - US 50 and Bijou Road
 - US 50 and Kahle Drive
 - US 50 and Warrior Way (may include pedestrian hybrid beach, sidewalk connection and parking, parking restrictions along US 50, bike lanes and painted crosswalks)
- Bike Lane / Trail / Shared Use Path improvements and/or upgrades
 - Stateline to Stateline Bikeway Phase 1A (Stateline to Laura Drive)
 - South Tahoe Greenway shared-use path (Van Sickle to Sierra Blvd.)
 - Mountain to beach loop shared-use path (Park Avenue, Pine Blvd., Lakeshore Blvd., and Stateline Avenue)
 - Bike trail at El Dorado Beach to Ski Run Blvd.
 - US 50 sidewalk or Shared-use trail (Kingsbury Grade to Lake Parkway)
 - Pioneer Trail buffered bike lanes
- Add bike parking facilities at key transit stops and key hiking trailheads
 - Transit Way
 - Park Avenue and Heavenly Village Way
 - US 50 and Pioneer Trail
 - US 50 and Ski Run Blvd.
 - US 50 and Johnson Blvd.
 - US 50 and Takela Drive (Bank of America)
 - US 50 and San Jose Avenue
 - Lakeview and Sacramento Avenue

- Al Tahoe and Johnson Blvd.
- Spruce and Bijou Elementary

Transit Service Improvements

Immediate – Medium Term Implementation

- Stateline Transit Center Improvements
 - Potential road changes to connect Bellamy Ct. through to Lake Parkway to allow better access
 - Obtain summer parking use agreement with Harrah's
- Add new transit service from Meyers to Lake Tahoe Community College (LTCC) with bus stop/shelter
- Add direct express transit service from Stateline to Emerald Bay
- Add transit service from South "Y" to Zephyr Cove
 - Increase frequency in peak season
- Kingsbury Transit Center
 - Utilize parking garage for Zephyr Cove parking and transit circulation
- Add new transit service from Meyers to Stateline
 - Increase frequency in peak seasons
- Revise Route 53 to establish connection between Stateline and LTCC
- Revise Route 23 to extend to Heavenly's California Lodge
 - New turnaround off Hwy 207 will allow different frequencies for winter shuttle service
 - Add additional summer service when needed
 - Determine desire of The Ridge Resort to participate rather than run their own shuttles
- Add trips to existing Route 20x during peak season
 - Expand trips into midday or weekends if demand warrants
- North – South Ferry Connection Project at the Ski Run Marina project planning and design phase
- Minden Vanpool from South Shore Transit Center

Medium – Long Term Implementation

- North – South Ferry Connection Project at the Ski Run Marina project construction phase to encompass:
 - A new replacement pier on the east side of the marina
 - A ferry terminal with ticket sales, waiting facilities and restrooms located at the proposed extension of Ski Run Blvd.
 - Extend Ski Run Blvd. 250 feet to include a landscaped turn-around circle for transit and vehicle drop off area and widened to 71 feet curb to curb to allow for a landscaped median, two travel lanes in each direction and bike lanes. A landscaped area, if additional right-of-way can be obtained, could separate shared-use paths on both sides of Ski Run Blvd.
 - Transit and/or shuttle services provided to mitigate limited parking in this area
 - Explore parking agreements with nearby resorts with large parking facilities to lease a certain number of spaces for ferry passengers
- Redevelopment of the Knights Inn property in conjunction with the City of South Lake Tahoe property located on the southwest corner of Ski Run Blvd. and US 50 into Transit Oriented Development of mixed uses and housing should be considered.
- Add seasonal capacity in summer and increase frequency based on demand to routes

Implementation Planning

- Develop strategies and methods for financing recreational travel demand infrastructure and services.
- Conduct a traffic modeling analysis for the entire US 50 corridor. The study should assess capacities of individual intersections, the corridor as a system, signalization improvements, progression, access management, etc.
- Conduct a traffic and safety study for the entire length of Pioneer Trail. This study should look at access management, turning movements, sight distance, travel speeds, accident locations, crosswalks, pedestrian and bicycle safety. This study should form the basis for maintaining Pioneer Trail's arterial function and safety in an environment of increasing traffic, pedestrian, and bicycle uses.
- Perform an engineering study quantifying the existing parking demand, congestion pricing that might prompt users to consider alternative forms

of transportation, and anticipated capital, operations, and maintenance costs for peak time transit service to Emerald Bay.

Implementation Agreement

- Create parking arrangement with Heavenly at the California Lodge to create seasonal parking area and connect with Route D
- Upgrade Heavenly's California Lodge upper parking lot for summer use and Route turnarounds
- Create parking arrangement with Harrah's Resort

*Sources: TRPA (EIP) Project Tracker database
 Linking Tahoe: Active Transportation Plan
 Lake Tahoe Regional Plan
 Tahoe City Mobility Plan
 State Route 28 National Scenic Byway Corridor Management Plan
 Linking Tahoe: Corridor Management Plan
 Ferry Oriented Development Plan
 Linking Tahoe: Corridor Management Plan Transit Master Plan*

Meyers/Y Corridor

Capital Projects

- US 50/SR 89 roundabout at Meyers
- Intersection Priority Improvements
 - US 50 and Grocery Outlet driveway
 - US 50 and Third Street
 - US 50 and Sierra Blvd.
 - US 50 and Tahoe Keys
 - US 50 and Pioneer Trail
 - US 50 and Apache Avenue
- Bike Lane / Trail / Shared Use Path Improvements and/or Upgrades
 - Shared Use Path on SR89 from South Tahoe “Y” to 15th Street
 - South Tahoe Greenway Project expansion of shared use path to LTCC
 - Meyers Bikeway Extension
 - South Tahoe Greenway “Y” Connector
 - US 50 bike lanes from city limits to Meyers
 - North Upper Truckee bike lanes
 - US 50 at Trout Creek to South Tahoe “Y” bike lanes, sidewalks, intersection, and water quality improvements
 - Class 1 Bike Trail along US 50 from H Street to City of South Lake Tahoe city limits
- Add Bike Parking Facilities at key transit stops and hiking trailheads
 - US 50/Grocery Outlet bus stop
 - US 50/3rd Street bus stop
 - US 50/Factory Stores at the Y bus stop

Transit Service Improvements

Immediate – Medium Term Implementation

- New route from Meyers to LTCC via Al Tahoe Blvd.
 - Expand route service frequency to LTCC as necessary
 - Add summer frequency service
- Extend route 50 service to Meyers to capture workers who reside in Meyers and work in South Shore
 - Add additional seasonal service

- Add frequency
- Upgrade South Y Transit Center
 - South Y Transit Center land acquisition and expansion to create parking and cycling facilities
 - Create Transit Center in Meyers near the junction of US 50 and Hwy 89
- Establish new service between South Y and Meyers Y along N. Upper Truckee Road through to Lake Tahoe Blvd.
- Enhanced service levels and frequency on Emerald Bay Trolley along the west shore to the north shore

Implementation Planning

- Develop Meyers gateway connectivity transportation implementation plan
- Develop South Y Gateway connectivity transportation implementation plan
- Perform engineering study of Pioneer Trail to evaluate traffic improvements for through flow traffic, bike use, and ingress/egress for residential access
- Develop strategies and methods for financing recreational travel demand infrastructure and services

Sources: TRPA (EIP) Project Tracker database

Linking Tahoe: Active Transportation Plan

Lake Tahoe Regional Plan

Tahoe City Mobility Plan

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Linking Tahoe: Corridor Management Plan

Ferry Oriented Development Plan

Linking Tahoe: Corridor Management Plan Transit Master Plan

SR89 Recreation Corridor

Capital Projects

- Bike Lane / Trail / Shared Use Path Improvements and/or Upgrades
 - West Shore Shared Use Path extension from Sugar Pine Point to Meeks Bay
 - South Tahoe Bikeway and Pope/Baldwin Beach Bike Path extension
 - Lake Tahoe Trail extension from Meeks Bay to Emerald Bay
 - Create a pedestrian pathway in the area in front of the parking on SR 89 and signage advising visitors to use the walkway rather than walk out in traffic; narrow lane widths or increase width on east side to create the pedestrian area on highway to off highway parking lot
- Crosswalk Improvements
 - Eagle Falls Trailhead at SR 89
 - Develop improved, but limited destination parking at Emerald Bay and Tallac trailhead locations, include transit vehicle movement and preference

Transit Service Improvements

Immediate – Medium Term Implementation

- Create a standardized service to Emerald Bay via the Trolley
 - Add frequency and reduce headways
 - Improve bus stops to include a large covered shelter for sun protection, plenty of seating and on-site ticketing
 - Expand stop signage to clearly indicate to visitors the destination of the trolley bus
 - Extend season based upon demand
- Develop South Y to Emerald Bay connectivity transportation implementation plan
 - Concepts to consider: Camp Richardson Loop Road; transit only access during peak summer season; relocation of concessions at Camp Richardson along SR 89; transit lane through Camp Richardson

Implementation Planning

- Perform a speed study and road safety audit on SR89 at the Eagle Falls and Emerald Bay areas in conjunction with Caltrans and El Dorado County to identify potential solutions to address pedestrian safety in these areas.

- Develop the Emerald Bay to Meeks Bay connectivity transportation implementation plan
- Develop strategies and methods for financing recreational travel demand infrastructure and services

Implementation Policy

- Explore the possibility of implementing a shared lane configuration on northbound SR 89 at Cascade Road through Emerald Bay to Lester Beach Road
- Consider seasonal parking ban along SR 89 through the Camp Richardson and Emerald Bay areas in combination with increased transit service

Sources: TRPA (EIP) Project Tracker database

Linking Tahoe: Active Transportation Plan

Lake Tahoe Regional Plan

Tahoe City Mobility Plan

State Route 28 National Scenic Byway Corridor Management Plan

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North and South Entry Points - Trans-Sierra Movements

Capital Projects

- Augment bus fleet to address recreational traveler needs
- Mobility Hub implementation in Reno, Sacramento, and Truckee areas
- Facilities needed for passenger rail use and access to Sierra from the Sacramento and Reno areas

Transit Service Improvements

Immediate – Medium Term Implementation

- Truckee Bus/Rail Station upgrade interface

Medium – Long Term Implementation

- Add Mobility Hub in Truckee that includes park and ride facilities
- Sacramento-South Shore Shuttle Transit Service Mobility hubs in Reno and Sacramento area

Technology

- Next Bus implementation, fare system upgrade, real time bus information (also augment to include other important community messaging/upcoming event marketing) at key shelters: Truckee, Carson, Reno Transit Center/Mobility Hubs

Implementation Planning

- Establish a uniform method of data collection regarding visitor surveys and expansion to both northern and southern California markets consistently
- Expand the Tahoe Basin Intelligent Transportation System (ITS) to target the larger regional drive-up market from the California Bay Area to northwestern Nevada to maximize distribution of information to transportation users (major categories: Road Conditions, Transit, Recreation Demand/Parking), including social media methodology.
- Develop strategies and methods for financing recreational travel demand infrastructure and services.

- Develop a unifying inter-regional transit system that is readily identifiable, integrated, and easy to use
- Develop a unifying inter-regional rail system that is readily identifiable, integrated with local transit services and easy to use
 - Will require an agreement for track usage
- Expand the Amtrak Thruway bus services between Sacramento and South Shore with more frequent arrivals per day and at time, schedules that enable visitors to arrive early and leave later (current services arrive mid-day and leave at 2:45 once daily)
 - Coordinate with resort properties to transfer visitors from the transit center to their destinations
 - Improve transit services to accommodate increased demand from the Transit Center
- Expand the Amtrak Thruway bus services to add Meyers as a new destination from Sacramento with a minimum of one daily arrival and departure
- Expand the Amtrak Thruway bus services to add Meyers/Y as a new destination from Stockton with a minimum of one daily arrival and departure
- Expand coach based connections to both the North and South shores from the Sacramento and Bay areas
- Implement an educational campaign targeting visitors on the importance of transit, ridesharing, bicycling to improve visitor experience, reduce wait-time, and alleviate congestion
- Utilize information from fare system upgrade to track boardings, and alightings by corridor and areas within those corridors to monitor service demands and modify accordingly

Implementation Agreement

- Expand rideshare options/opportunities through collaboration with private vendors, agency websites and social media outlets

Linking Tahoe: Corridor Connection Plan

Appendix D

Recreation Parking Inventory 2014

Appendix D

Recreation Parking Inventory 2014

US FOREST SERVICE RECREATION AREAS

COUNTY	AREA	LOCATION	SPACES	LATITUDE	LONGITUDE
DOUGLAS	<i>Round Hill Pines</i>	Zephyr Cove, NV	260	38.989653	-119.952732
DOUGLAS	Zephyr Cove	Zephyr Cove, NV	290	39.006938	-119.948047
EL DORADO	Camp Richardson Corral	South Lake Tahoe, CA	35	38.933492	-120.045529
EL DORADO	Camp Richardson	South Lake Tahoe, CA	148	38.934352	-120.040183
EL DORADO	Meeks Bay and Resort	Meeks Bay, CA	300	39.03832	-120.122999
EL DORADO	Angora Lakes Trailhead	South Lake Tahoe, CA	30	39.879625	-120.071007
EL DORADO	Echo Chalet	Echo Lake, CA	30	38.834886	-120.044051

1,093

SWIMMING BEACHES

DOUGLAS	Nevada Beach	Zephyr Cove, NV	131	38.980129	-119.952327
EL DORADO	Baldwin Beach	South Lake Tahoe, CA	165	38.943519	-120.06518
EL DORADO	Pope Beach	South Lake Tahoe, CA	328	38.93713	-120.028794
EL DORADO	Meeks Bay Beach	Meeks Bay, CA	67	39.036653	120.122699

691

DAY USE SITES

EL DORADO	Kiva Picnic Area	South Lake Tahoe, CA	64	38.938282	-120.048173
EL DORADO	Eagle Falls Picnic Area	Emerald Bay, CA	32	38.951583	-120.111476
PLACER	Kaspian Recreation Area	Tahoe City, CA	21	39.114042	-120.158627
EL DORADO	Sawmill Pond	South Lake Tahoe, CA	18	38.889107	-120.026256

135

INTERPRETIVE SITES

EL DORADO	Tallac Historic Site	South Lake Tahoe, CA	68	38.938416	-120.047908
EL DORADO	Taylor Creek Visitor Center	South Lake Tahoe, CA	140	38.935709	-120.053844
EL DORADO	Supervisors Office	South Lake Tahoe, CA	10	38.932241	-119.973308
EL DORADO	Inspiration Point	South Lake Tahoe, CA	20	38.946297	-120.100404
WASHOE	Stateline Lookout	Crystal Bay, NV	16	39.231648	-120.008491
DOUGLAS	Logan Shoals Vista Point	Zephyr Cove, NV	10	39.057734	-119.942991

COUNTY	AREA	LOCATION	SPACES	LATITUDE	LONGITUDE
WASHOE	Washoe Cultural	Incline Village, NV	100		

364

FACILITIES SUPPORTING DISPERSED RECREATION

EL DORADO	Bayview Trailhead	South Lake Tahoe, CA	20	38.943493	120.099763
EL DORADO	Big Meadow Trailhead	South Lake Tahoe, CA	29	38.788489	-120.000795
EL DORADO	Blackwood Day use	South Lake Tahoe, CA	15	39.1183826	-120.158452
PLACER	Brockway Trailhead	Tahoe Vista, CA	10	39.258454	-120.06469
CARSON CITY	Chimney Beach	Carson City, NV	21	39.163783	-119.930687
DOUGLAS	Dagget Pass Trailheads	Kingsbury, NV	30	28.972566	-119.898766
EL DORADO	Echo Summit/Lake	Eldorado Natl. Forest	74	38.833745	-120.042514
EL DORADO	Fountain Place Trailheads	South Lake Tahoe, CA	20	38.868306	-119.989724
EL DORADO	Glen Alpine Trailhead	South Lake Tahoe, CA	40	38.877144	-120.08047
DOUGLAS	Lam Watah Historic Trail	Stateline, NV	20	38.970766	-119.935832
EL DORADO	Luther Pass Trailhead	South Lake Tahoe, CA	30	38.789091	-119.948016
EL DORADO	McKinney Rubicon Trail	Tahoma, CA	10	39.059262	-120.148157
EL DORADO	Meeks Trailhead	Tahoma, CA	10	39.037316	-120.126361
EL DORADO	Moraine Trailhead	South Lake Tahoe, CA	30	38.930276	-120.048179
EL DORADO	Mt. Tallac Trailhead	South Lake Tahoe, CA	12	38.921561	-120.068293
EL DORADO	Secret Harbor	South Lake Tahoe, CA	31	39.221872	-119.928431
CARSON CITY	Spooner Junction	Carson City, NV	10	39.104385	-119.897074

412

CALIFORNIA STATE PARKS

PLACER	Donner Memorial SP	Truckee, CA	50	39.324617	39.324617
PLACER	Truckee River Outlet (Ta	Tahoe City, CA	55	39.166736	-120.143902
PLACER	Kings Beach SRA	Kings Beach, CA	145	39.235918	39.235918
PLACER	Ed Z'Berg Sugar Pine Poi	Tahoma, CA	175	39.057659	-120.122742
EL DORADO	D.L. Bliss SP	South Lake Tahoe, CA	115	38.97925	-120.098296
EL DORADO	Emerald Bay (Eagle Point	South Lake Tahoe, CA	30	38.961019	-120.080462
EL DORADO	Emerald Bay (Vikingshol	South Lake Tahoe, CA	60	38.954254	-120.11046

COUNTY	AREA	LOCATION	SPACES	LATITUDE	LONGITUDE
630					
NEVADA STATE PARKS					
WASHOE	Sand Harbor SRA	Incline Village, NV	680	39.197258	-119.9295
WASHOE	Spooner Lake SP	Incline Village, NV	165	39.106986	-119.912478
DOUGLAS	Cave Rock SRA	Glendbrook, NV	61	39.046297	-119.949071
DOUGLAS	Van Sickle Bi-State Park	Stateline, NV	27	38.954053	-119.938613
933					
CALIFORNIA TAHOE CONSERVANCY					
PLACER	Carnelian West / Garwood	Carnelian Bay, CA	67	39.225816	-120.083192
PLACER	Patton Landing	Carnelian Bay, CA	22	39.226574	-120.079877
PLACER	North Tahoe Beach	Kings Beach, CA	36	39.237933	-120.033325
EL DORADO	Van Sickle Bi-State Park	South Lake Tahoe, CA	13	38.954053	-119.938613
EL DORADO	Former Elk's Club Property	South Lake Tahoe, CA	75	38.875064	-120.003837
EL DORADO	Tahoe Pines Campground	South Lake Tahoe, CA	12	38.847512	38.847512
225					
Washoe County School District					
WASHOE	Incline High	Incline, NV	141	39.254908	-119.951856
WASHOE	Incline Middle/Elementary	Incline, NV	62	39.246876	-119.946968
WASHOE	Galena High	Reno, NV	659	39.387824	-119.776309
862					
Carson City School District					
CARSON CITY	Silver State Charter	Carson City, NV	207	39.168488	-119.724095
CARSON CITY	Mark Twain Elementary	Carson City, NV	67	39.180148	-119.750599
CARSON CITY	Edith West Fritsch Elementary	Carson City, NV	55	39.176555	-119.771553
CARSON CITY	Pioneer High	Carson City, NV	13	39.172126	-119.764665
CARSON CITY	Carson High	Carson City, NV	851	39.169544	-119.7482
CARSON CITY	Eagle Valley Middle	Carson City, NV	54	39.158904	-119.719943
CARSON CITY	Empire Elementary	Carson City, NV	95	39.171274	-119.729157
CARSON CITY	Al Seeliger Elementary	Carson City, NV	108	39.141988	-119.753538
CARSON CITY	Grace Bordewich Middle	Carson City, NV	26	39.16355	-119.772266
CARSON CITY	Carson Middle	Carson City, NV	53	39.164627	-119.776779
CARSON CITY	J.C. Fremont Elementary	Carson City, NV	92	39.155242	-119.750928
1,621					

COUNTY	AREA	LOCATION	SPACES	LATITUDE	LONGITUDE
<i>Douglas County School District</i>					
DOUGLAS	Minden Elementary	Minden, NV	95	38.963164	-119.756129
DOUGLAS	Jack Valley Elementary	Carson City, NV	54	39.093506	-119.798106
DOUGLAS	Pinon Hills Elementary	Minden, NV	104	39.040400	-119.7258
DOUGLAS	Douglas County High	Minden, NV	867	38.958414	-119.78072
DOUGLAS	Jacobsen High	Minden, NV	22	38.953742	-119.767841
DOUGLAS	C C Meneley Elementary	Gardnerville, NV	50	38.902685	-119.728509
DOUGLAS	Gene Scarselli Elementary	Gardnerville, NV	52	38.886231	-119.725635
DOUGLAS	Gardnerville Elementary	Gardnerville, NV	77	38.939928	-119.743944
DOUGLAS	Pau Wa Lu Middle	Gardnerville, NV	113	38.887647	-119.723237
DOUGLAS	George Whittel High	Zephyr Cove, NV	113	39.013928	-119.942025
DOUGLAS	Zephyr Cove Elementary	Zephyr Cove, NV	33	39.011581	-119.943507
1,580					
<i>Truckee Tahoe Unified School District</i>					
PLACER	Glenshire Elementary	Truckee, CA	74	39.362885	-120.100116
PLACER	Alder Creek Middle	Truckee, CA	85	39.345224	-120.177367
PLACER	Sierra Expeditionary Lea	Truckee, CA	84	39.324855	-120.213646
PLACER	Truckee Elementary	Truckee, CA	78	39.324906	-120.220476
PLACER	Tahoe Truckee High	Truckee, CA	254	39.324906	-120.216032
PLACER	Donner Trail Elementary	Truckee, CA	25	39.316089	-120.455698
PLACER	Kings Beach Elementary	Kings Beach, CA	55	39.240945	-120.028531
PLACER	North Tahoe Middle/High	Tahoe City, CA	202	39.194339	-120.120109
PLACER	Tahoe Lake Elementary	Tahoe City, CA	24	39.173407	-120.142236
PLACER	Creekside Cooperative C	Tahoe City, CA	32	39.169227	-120.148167
913					
<i>Lake Tahoe Unified School District</i>					
EL DORADO	Bijou Community Element	South Lake Tahoe, CA	49	38.940213	-119.959733
EL DORADO	South Tahoe Middle	South Lake Tahoe, CA	110	38.935821	-119.976887
EL DORADO	Sierra House Elementary	South Lake Tahoe, CA	43	38.906649	-119.963782
EL DORADO	Tahoe Valley Elementary	South Lake Tahoe, CA	50	38.921852	-120.003515
EL DORADO	South Tahoe High	South Lake Tahoe, CA	338	38.909913	-120.015235
EL DORADO	Lake Tahoe Envir. Scienc	South Lake Tahoe, CA	62	38.860396	-120.020945
EL DORADO	Al Tahoe Learning Cente	South Lake Tahoe, CA	44	38.934357	-119.976732

COUNTY	AREA	LOCATION	SPACES	LATITUDE	LONGITUDE
EL DORADO	Education Center	South Lake Tahoe, CA	52	38.9344	-119.976574

748

Subtotal
School District Parking 5,724

CITY/COUNTY OWNED PARKING

Carson City, NV

CARSON CITY	Silver Oak Golf Course	Carson City	156	39.191329	-119.779092
CARSON CITY	Mountain Street Trailhead	Carson City	65	39.172183	-119.773279
CARSON CITY	Govenor's Field Complex	Carson City	391	39.153020	-119.757805
CARSON CITY	Ross Gold Park	Carson City	58	39.125824	-119.766852
CARSON CITY	Fuji Park	Carson City	89	39.115600	-119.777400
CARSON CITY	Fairgrounds	Carson City	222	39.115844	-119.775492
CARSON CITY	Edmonds Sports Complex	Carson City	608	39.119223	-119.749668
CARSON CITY	Carson City River Park	Carson City	30	39.141064	-119.702785
CARSON CITY	Terrace Park	Carson City	15	39.172606	-119.729212
CARSON CITY	Mills Park	Carson City	377	39.169278	-119.754909
CARSON CITY	Ron Wilson Memorial Park	Carson City	26	39.193971	-119.763233
CARSON CITY	Centennial Park	Carson City	234	39.192204	-119.708542
CARSON CITY	Morgan Mill Park	Carson City	17	39.163798	-119.767403
CARSON CITY	Empire Ranch Trail	Carson City	21	39.182531	-119.705451
CARSON CITY	V and T Trail	Carson City	24	39.185995	-119.792953
CARSON CITY	Carson City Recreation District	Carson City	232	39.169631	-119.760085
CARSON CITY	Carson City Aquatics	Carson City	69	39.16862	-119.760764

2,634

Gardnerville, NV

DOUGLAS	Heritage Park	Gardnerville	37	38.941296	-119.749622
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Incline Village, NV

WASHOE	Preston Field	Incline Village	48	39.251547	-119.969405
WASHOE	Village Green Park/Aspen	Incline Village	79	39.24097	-119.945019
WASHOE	Incline Tennis/Rec Center	Incline Village	169	39.243654	-119.942899
WASHOE	Incline Skate park	Incline Village	48	39.248546	-119.946412
WASHOE	Incline/Ski Beach	Incline Village	75	39.238993	-119.94600
WASHOE	Burnt Cedar Beach	Incline Village	68	39.245741	-119.96880

COUNTY	AREA	LOCATION	SPACES	LATITUDE	LONGITUDE
487					
<i>Reno, NV</i>					
WASHOE	Neil Road Recreation Facility	Reno	131	39.488215	-119.780886
WASHOE	Sky Tavern	Reno-Mt. Rose	104	39.336911	-119.872522
WASHOE	Jamaica Park	Reno	96	39.478052	-119.77807
WASHOE	Crystal Lake park	Reno	24	39.456278	-119.789287
WASHOE	Fishermans Park #1	Reno	22	39.531291	-119.782593
WASHOE	Govenors Bowl	Reno	93	39.535832	-119.792181
WASHOE	Evans Park	Reno	29	39.53633	-119.812984
WASHOE	Dick Taylor Park	Reno	164	39.542168	-119.809547
WASHOE	Canyon Creek Park	Reno	30	39.5252	-119.882927
WASHOE	Moana Pool and Park	Reno	44	39.49076	-119.800684
WASHOE	Jack Tighe Ballfields	Reno	136	39.489084	-119.800864
WASHOE	Manzanita Park	Reno	18	39.483358	-119.802312
WASHOE	Ambrose Park	Reno	13	39.509657	-119.875193
WASHOE	Dorokstar Park	Reno	24	39.505949	-119.88668
WASHOE	Mogul Park	Reno	10	39.514723	-119.938277
WASHOE	South Valleys Regional Park	Reno	278	39.405666	-119.756719
WASHOE	Somerset Park-East	Reno	13	39.533673	-119.913245
WASHOE	Barbara Bennett Park	Reno	41	39.523492	-119.817687
WASHOE	Bicentennial Park	Reno	22	39.524178	-119.818702
WASHOE	McKinley Park and Arts Center	Reno	104	39.521462	-119.824209
WASHOE	Idlewild Park	Reno	410	39.521675	-119.83306
WASHOE	Oxbow Nature Study Area	Reno	42	39.519017	-119.845928
WASHOE	Crissie Cauglin Park	Reno	28	39.511323	-119.855665
1,876					
<i>Zephyr Cove, NV</i>					
DOUGLAS	Zephyr Cove Park	Zephyr Cove	94	39.010246	-119.942636
<i>Auburn, CA</i>					
PLACER	Ashford Park	Auburn	42	38.919878	-121.063343
PLACER	School Park/Community	Auburn	21	38.896706	-121.07379
PLACER	Auburn Recreation Area	Auburn	157	38.887493	-121.078654
PLACER	Railhead park	Auburn	107	38.887000	-121.071642
PLACER	Auburn Garden Theater	Auburn	52	38.905168	-121.080737

COUNTY	AREA	LOCATION	SPACES	LATITUDE	LONGITUDE
379					
<i>Cameron Park, CA</i>					
EL DORADO	Cameron Park Communit	Cameron Park	122	38.660588	-121.003897
277					
<i>El Dorado Hills, CA</i>					
EL DORADO	Peter Bertelsen Memoriz	El Dorado Hills	39	38.656517	-121.07694
EL DORADO	El Dorado Hills Recreatio	El Dorado Hills	71	38.682679	-121.074869
EL DORADO	El Dorado Hill Communit	El Dorado Hills	167	38.685158	-121.074714
277					
<i>Loomis, CA</i>					
PLACER	Loomis Basin Communit	Loomis	18	38.826189	-121.175059
PLACER	Loomis Basin Communit	Loomis	115	38.823324	-121.174476
133					
<i>Olympic Valley, CA</i>					
PLACER	Squaw Valley Park	Olympic Valley	124	39.204365	-120.200867
36					
<i>Placerville, CA</i>					
EL DORADO	Rotary Park	Placerville	22	38.725203	-120.795689
EL DORADO	Placerville City Park	Placerville	14	38.726096	-120.802063
36					
<i>Rocklin, CA</i>					
PLACER	Event Center	Rocklin	254	38.790289	-121.258906
PLACER	Recreation Center	Rocklin	140	38.789134	-121.244903
PLACER	Johnson Springview Park	Rocklin	139	38.789976	-121.246532
PLACER	Finn Hall	Rocklin	55	38.788726	-121.232704
PLACER	Roundhouse Park	Rocklin	15	38.793348	-121.235695
603					
<i>Roseville, CA</i>					
PLACER	Saugstad Park	Roseville	132	38.741772	-121.283379
PLACER	Westwood Park	Roseville	49	38.715803	-121.303579
PLACER	Olympus Pointe Sculptur	Roseville	37	38.754757	-121.260992
218					
<i>South Lake Tahoe, CA</i>					

COUNTY	AREA	LOCATION	SPACES	LATITUDE	LONGITUDE
EL DORADO	Bijou Community Park	South Lake Tahoe	72	38.931927	-119.966827
EL DORADO	El Dorado Beach and Box	South Lake Tahoe	41	38.944574	-119.977124
EL DORADO	Taylor Creek Visitor Cent	South Lake Tahoe	159	38.935709	-120.053844
EL DORADO	Tahoe Sports/Entertainm	South Lake Tahoe	104	38.940848	-119.97284
EL DORADO	Thomas F. Regan Memo	South Lake Tahoe	71	38.944274	-119.986072
EL DORADO	Visiting/Senior Citizens C	South Lake Tahoe	57	38.939865	-119.977125

504

Tahoe City, CA

PLACER	Commons Beach	Tahoe City, CA	124	39.169158	-120.142364
PLACER	Rideout Community Cen	Tahoe City, CA	32	39.129198	-120.165476

156

Tahoe Vista, CA

PLACER	North Tahoe Regional Pa	Tahoe Vista, CA	108	39.249013	-120.052827
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Truckee, CA

PLACER	Community Arts Center	Truckee, CA	51	39.329277	-120.183512
PLACER	West End Beach	Truckee, CA	97	39.321996	-120.28985
PLACER	Truckee River Regional P	Truckee, CA	93	39.326091	-120.182797
PLACER	Riverview Sports Park	Truckee, CA	172	39.329019	-120.156744
PLACER	Ponderosa Golf Course	Truckee, CA	28	39.32541	-120.167038
PLACER	Meadow Park	Truckee, CA	54	39.326045	-120.214815

495

Twin Bridges, CA

EL DORADO	Ralston Trailhead	Twin Bridges, CA	15	38.803798	-120.117677
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TOTAL RECREATION PARKING 18,505

Tahoe Transportation District

Carl Hasty

District Manager

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