Linking Tahoe: Lake Tahoe Basin Transit Master Plan



February 2017 Prepared for the Tahoe Transportation District



400-655 Tyee Road 250-389-2374

February 10, 2017

Carl Hasty **District Manager** Tahoe Transportation District 128 Market Street, Suite 3F Stateline, Nevada 89449

Dear Carl,

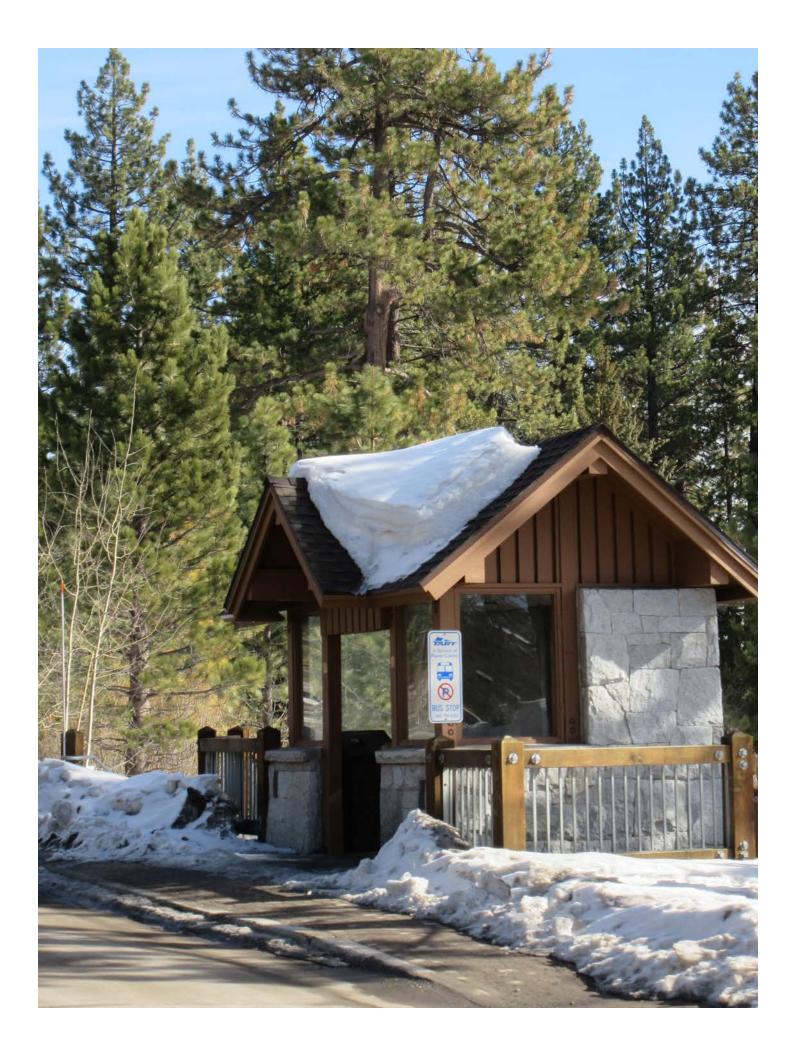
Subject: Transit Master Plan

It is my pleasure to present the Transit Master Plan component of the Corridor Management Plan for the Lake Tahoe area. This plan represents a vision of the entire basin and surrounding areas from a transit perspective to create a new network that is transformative in nature and supports the evolution of the basin for the next few decades and beyond. This plan is divided into various sections to allow them to be standalone or viewed within the full context.

Yours Truly,

Graeme Masterton **Transit Planning Leader**





EXECUTIVE SUMMARY

THE INTENT

The intent of this master plan is to effect change. Change in the way we think about movements to and within the Tahoe Basin (current data suggests that there are 24 million visitors to the basin area and a total of 79.6 million annual trips made). Change what we understand about the numbers of visitors actually coming into the basin and when. Change the way that the basin is traveled and developed. Link the basin together as a whole and change the way that land use improvements are complemented by transit.

The intent of this plan is also to create a transit system that treats all users as locals whether they are here for a day or a lifetime. A transit system is about creating movement opportunities and when the system is designed for anyone, regardless of their location within the basin, providing that choice will create change. The only change should be in the amount of service provided not the number of routes. This change should be based on demand and reflect the changes in seasonal visitors and residents during summer, winter and the off-peak seasons.

A great resort is about the experience, not just on the slopes, on the lake or on a hike but also on the travel to the resort, the services and recreational opportunities, and the ability to easily move around the resort. The intent of this plan is to create a transit network that is reflective of the visitor impacts on the region, that serves residents and workers, and that provides a positive response to one single question: can I travel to and around the region without being forced to bring my car? That is central to this plan, it is about moving people rather than vehicles.

Another consideration is that a resort like Lake Tahoe has a much larger sphere of influence in terms of the visitor market than a non-resort community. As TRANSIT IS THE VEHICLE FOR CHANGE IN THE TAHOE REGION

a result, transit must play a very different role with ebbs and flows based on visitor movements. It must also have a base system that allows daily commuters to get to work and home or local residents to buy groceries without using a car. Like peer resort areas, Lake Tahoe as a region must find ways to encourage visitors to eventually stop using cars in order to keep the area as attractive a place to live and visit as it is today.

A New VISION FOR TRANSIT

The new vision for transit can be expressed both as a statement "...Transit is the vehicle for change in the Tahoe Region...", and as a series of intents:

- If transit is the vehicle for change it means that transit must have a significant presence in the communities
- Transit must connect the residential areas with the commercial areas to allow easy use of the facilities
- Transit must connect people to recreational opportunities in summer and winter based on the volumes of demand
- Transit must be a priority investment in the region and must have impact on decisions for linking the Tahoe Basin with the key locations in California and Nevada such as Sacramento, San Francisco, Stockton and Reno.
- Transit must be organized to achieve success by being simple and understandable with the customer experiencing a single integrated system



Why is transit the way to drive change? Because transit can provide the transportation link that enables the connecting of areas by active modes rather than just the car. Transit can be an option that changes the way people experience the Lake Tahoe Basin - whether as a resident or a visitor. Transit can provide a services that reduces the number of vehicles in the basin but still allows the transportation network to move the same amount of people without new roads.

There are five key drivers for the vision and the creation of an operational transit network as shown below. These drivers help focus the style and type of transit provided but also bring forward the need to consider visitors (temporary residents) and the impact they bring both positive and negative. The drivers also put forward the notion of connectivity and the need to ensure a complete transportation network that offers choice to customers.

The plan is also focused upon being transformational in the way that people move around the region but also how connected the Tahoe Basin communities are today and how they will change with respect to housing. The Tahoe communities are beginning to see the typical signs of a resort area where housing for workers is in short supply thereby creating commuter communities outside the area. This can make the economics of Lake Tahoe more challenging as has happened in places like Vail and Aspen. Having a mixed population that contains workers creates vibrant communities rather than showcases for those able to afford the area. Transit Oriented Development can be the supporting element that provides a focus for the renewal of the transit service in the basin.

MODE SPLIT FOR TRANSIT

The current estimated mode transit split (i.e. the percentage of all daily trips that are performed using the current public transit services) is estimated at only 1.4% of the 79.6 million trips inside the basin. It is difficult to determine the full mode split for transit if all public and private services were combined due

KEY DRIVERS

Serve the exisiting high use corridors

Service local residents as well as visitors (both summer and winter)

Create regional and inter-regional connections based on data



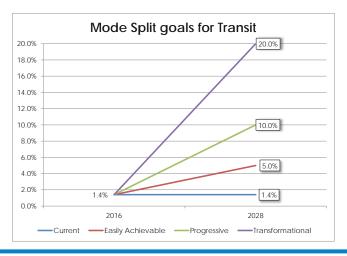


Create connections with all modes - ferry, water shuttle, biking, walking and the car

to the lack of information readily available from the private resort and hotel operators.

A series of targets have been created with the base case at 5% with a change in routing only, a more ambitious but achievable target of 10% with improvements in the medium term in the levels of service and in the long term with regional services. A transformation goal of 20% in the long term would require full implementation of the plan and changes in the use of personal vehicles to visit the basin.

It is important to understand the impact of shifting from a 2% to 10% transit mode share. Consolidating and expanding transit service to attract new customers that do have alternative transportation choices will require a considerable investment in





transit service and infrastructure. The first focus for Lake Tahoe should first be on changing patterns and increasing ridership by providing high quality service.



LAYERS OF SERVICE

The transit vision within the Tahoe basin area is based on the creation of layers of service. Each of the layers play a specific role and is targeted towards distinct movements with different levels of service. Each layer works with the others to provide a complete network of service:

Frequent

The frequent transit service aims to move towards an ultimate service frequency of 15 minutes all day and is focused upon the corridors where there is the most amount of potential travel movement.

Local

Local service is focused upon corridors and routes where there is a high level of usage but the number of origins and destinations or the level of density (both jobs and people) is not currently sufficient to warrant a Frequent level of service. The goal of this service is a 20 minute peak/30 minute off-peak frequency of service.



Community

Community service is based on the notion of access within the residential areas of the basin where housing density is low but there is a desire to have alternate mode access to shopping or services within the local area. This service connects into the Local and Frequent service levels at the nearest point of interaction.



Seasonal (Summer)

Recognizing the importance of the summer season on the amount of visitations to the Tahoe basin, there are several areas where a seasonal service currently exists and can be improved in order to minimize the amount of personal vehicle use. Winter services would be kept as increased frequency on existing routes which have been designed to provide service to the majority of winter activity locations.



Regional California (Trans-Sierra)

Connections from the Tahoe Basin across the Sierra Nevada mountain range to northern California. Truckee is included in the Frequent, Community and Local categories.



Regional Nevada

Connections around the Tahoe Basin to local communities that act as entry points or as residential bases for workers within the basin.





SUPPORTING INFRASTRUCTURE

Infrastructure is the first point of contact for users of the transit system and the transit centers and mobility hubs play a key role in ensuring that the experience is of a high quality. Transit centers are for transit vehicles only, potentially with some bike parking. Mobility hubs incorporate buses, parking, cycle facilities and have nine objectives as outlined below. They are people places that provide a focal point for the transit network at key points around the lake.

MOBILITY HUB OBJECTIVES



Some hubs, like Meyers, Truckee, Spooner Summit, and Mt. Rose provide the first point of contact for external trips to link to the local transit network. The local mobility hubs such as Stateline, Harrison Ave., South "Y", Tahoe City or Incline Village can act as connection points for those inside the Tahoe Basin to change modes and access the transit network.

Transit priority where possible in South Lake Tahoe along US 50 and within Tahoe City, would help keep buses running consistently to schedule.

There are four phases of service improvement being considered based on ease of implementation and funding as well as strategic layering of the service. The goal is to create a base level in the first two phases and then expand the network in the subsequent phases.

The implementation phases are:

- 1. Immediate term (0-1 year)
- 2. Short term (1-5 years)
- 3. Medium term (5-10 years)
- 4. Long term (10 plus years)

Each phase represents a different stage in the development of the full transit network serving the Tahoe basin as well as the regional and trans-sierra connections:

- The immediate term is focused upon changes in routes or frequencies already identified by either TTD or TART. These changes are scheduled for implementation in the next 12 months
- The short term begins the transformation of the individual systems to a regional transit network that includes additional infrastructure
- The medium term is about strengthening the system with additional frequencies and the improvement of regional connections along with a start on trans-sierra connections
- The long term focus is on the trans-sierra movements

IMMEDIATE PHASE

The Immediate phase is focused the 2016-17 year with changes proposed by TTD for immediate implementation. This does not reflect issues that have developed since the writing of this plan with the regional transit services due to external funding but rather changes to the existing system that begin to create the structure of the new regional system.

Routes



<u>Local Route B</u>

This local route is the first integration of Meyers into the regional network with a connection to the Lake Tahoe Community College. This creates a connection with the Local Route K to allow students in the Meyers area to access the college and services in South Lake Tahoe.

Local Route D

This route is a year round combination of existing Routes 23, Ski Run winter shuttle and Nevada Winter Shuttle with a new turnaround/Transit Center at Kingsbury Grade Rd and S. Benjamin Drive to meet with Community Route H.



<u>Local Route K</u>

In combination with Route B, this local route connects Meyers to the South Y Transit Center and forms the first stage of the extension of frequent service from South Lake Tahoe to Meyers as part of an extension of the current Route 50.



Community Route H

Part of the former route 23, the Upper Nevada and Nevada ski shuttles, this community route would provide service to the community residents and resort visitors to allow easy movement around the area, to the Boulder Lodge ski lifts for Heavenly and connections to Route D into South Lake Tahoe.

Infrastructure



Transit Center - Heavenly Boulder

Create a new transit center to allow passengers to transfer from Route K to Route H off Kingsbury Grade Road.



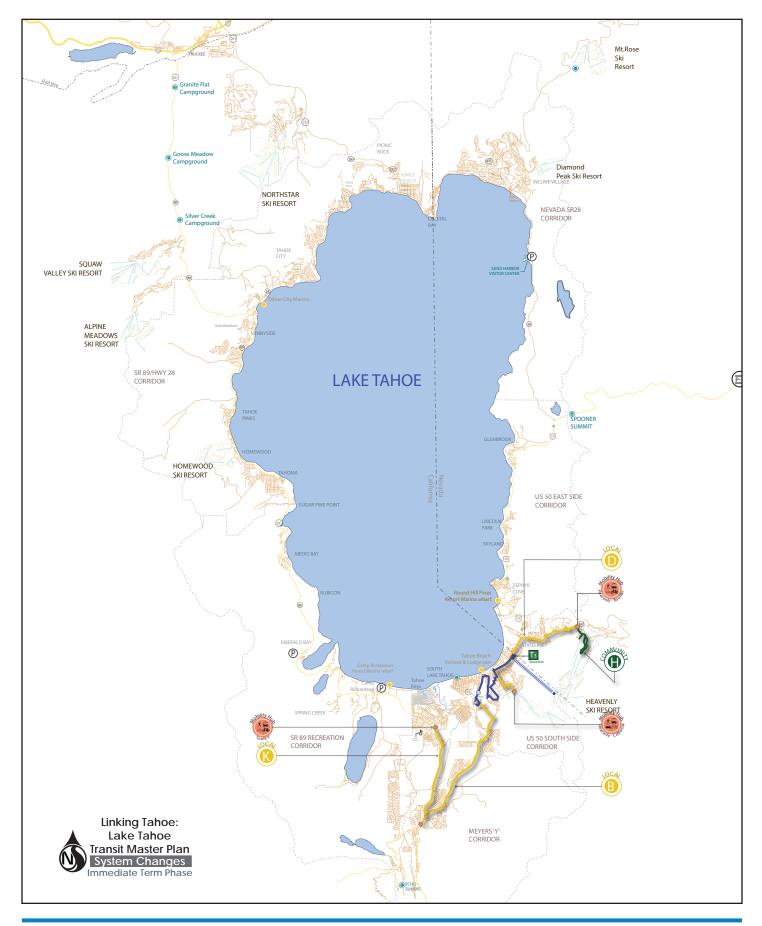
Transit Center -Tahoe Transit Center

Improve signage to the Transit Center which already has the functionality of a mobility hub but does not appear to be fully utilized.

<u> Transit Center - Heavenly California Lodge</u>

Create a year route turnaround as well as a parking area for local workers in South Lake Tahoe who would use the lot as a park and ride.







Stantec

Short Term Phase (1-5 Years)

The short term begins the transformation of the individual systems to a regional transit network that includes additional infrastructure and includes the linking of the north and south shores. Route changes and new services along with a significant investment in infrastructure will be the main features of this phase. The goal is to create the basic structure from which the network can grow and expand in the future with little further disruption to the routes.

Routes

OUE

<u>Frequent - Ferry Approval Process</u>

A process to seek approvals for the implementation of a new water based link between South Lake Tahoe and Tahoe City.

Frequent - Route F1

This major service will run from Stateline Transit Center along US50 to the South Y and then south to Meyers to act as the major service for the South Shore.



Frequent - Route F2

This route is a combination of TART routes and will be the major North Shore/Resort Triangle route linking all major residential areas between Truckee and Incline Village along SR 89 and Highway 28.

Local Route F

This route becomes the main connector along the west shore from Tahoma through Tahoe City to Squaw Valley where it terminates in a new location at the main resort area.



Local Route G

This route runs from Truckee to Incline Village as an extension of the existing service that terminates in Crystal Bay.



Local Ferry Shuttle - South Shore

This water based supplement to the road based transit network will use a fleet of smaller boats to allow short hops between Tahoma and Zephyr Cove as well as the longer journey.



Local Ferry Shuttle - North Shore

This service will operate between Homewood and Sand Harbor with stops at each residential area to allow short trips to occur, especially when there is significant road congestion.



Community Route C

This is a new service to connect residential areas on either side of US 50 from the South YTC through to Zephyr Cove.



Community Route E

This is another extension of an existing service with terminals at the main Northstar bus terminus as well as at Diamond Peak Resort. This creates a local connection between various residential areas and the services in Incline Village.

Infrastructure

Mobility Hub - Squaw Valley



A new bus turnaround at the main village base that can act as hub with parking in the nonwinter periods.

Mobility Hub - Truckee



A new facility to allow parking and interchange between vehicles, buses, bikes, walking and regional rail.

Mobility Hub - Incline Village

A new hub created on the old elementary school site that is the current terminus and hub for the East Shore Express.

Mobility Hub - South Incline

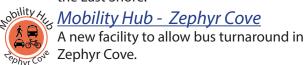


A new parking lot and bike parking facility with connections to bus to serve the demand for service to Sand Harbor.

bility A Mobility Hub - Spooner

A new facility to allow parking and transfer to buses for access to the recreation facilities on the East Shore.

Mobility Hub - Zephyr Cove



Phyr Cove obility *Mobility Hub - Stateline*



Heaventy

bility A

Meyers

Establish an arrangement with neighboring casinos to use parking facilities for park and ride activities.

Mobility Hub - Heavenly

Establish a parking arrangement to allow for a park and ride in the off-winter seasons to serve South Lake Tahoe.

Mobility Hub - Meyers

A new facility to allow bus transfer to the F1





wility x

on the old USFS park and ride site.

Mobility Hub - South Y

SQUAW VALLEY SKI RESORT

> ALPINE MEADOWS SKI RESORT

Expansion of the existing facility to add additional bus parking space.

<u>Mobility Hub -</u>

Harrison Ave.

A new smaller hub to allow localized summer parking and access to buses on the lakefront.

Mobility Hub - Sugar

<u>Pine</u>

Inclusion of parking and bike storage to increase the profile of the existing bus turnaround.

<u> Mobility Hub - Sierra</u>

at Tahoe

An off-season parking hub to support regional access to the basin.

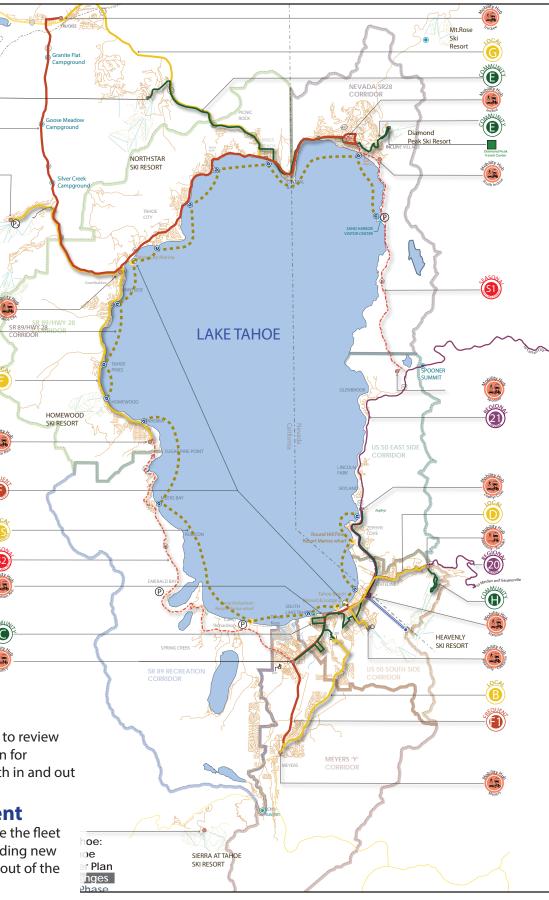
Operations

There is an ongoing need to review the need, size and location for maintenance facilities both in and out of the basin.



Fleet Management

On-going need to manage the fleet (bus replacement, and adding new buses) for services in and out of the Basin.







Medium Term Phase (5-10 Years)

The medium term is about strengthening the system with additional frequencies and the improvement of regional connections as well as establishing trans-sierra connections.

Routes

Frequent - Ferry



A new water based link between South Lake Tahoe and Tahoe City to act both as a connector, creating new movements, but also as a tourist attraction. This requires infrastructure at the two main terminal points as described in the Ferry TOD report.



Local Route B

Extension of the route from the Lake Tahoe Community College to a new terminal point at Harrison Ave..

Regional Route R1

This is an extension of Route 21X to Carson City with additional trips as well as an extension into Reno International Airport.

Regional Route R2

This increases service levels to Gardnerville and Minden to allow more access options for workers into the Tahoe Basin.

Regional Route R3



This is a new route linking Incline Village to Reno International Airport to provide access for both workers along the route more options to travel into the Tahoe Basin, as well as tourists from the airport.

Regional Coach



Based on the understanding that increasing rail based services will take time, it is proposed that coach service from Sacramento be provided to Truckee to create more access opportunities from California.

Infrastructure



Mobility Hub - Zephyr Cove

Adding parking and cycle facilities to the hub to reduce on-highway parking in summer.

Mobility Hub Stateline



Promote as a hub and add cycle parking. Mobility Hub - South Y Expand the site to include parking and

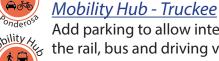


bike facilities. Mobility Hub - Meyers

Increase the size of the facility to oility Never

accommodate parking and bike facilities. Mobility Hub - Harrison Avenue Increase the facility to allow parking and





Add parking to allow interaction between the rail, bus and driving visitors and offer an alternative option to leave the car at the edge of the basin area.

Mobility Hub - Mt. Rose



uckee

Create a new, non-winter mobility hub at the Mt. Rose Ski Resort parking area to allow an option to leave the car on the outskirts of the basin area.

Operations

bike facilities.



There is an ongoing need to review the need, size and location for maintenance facilities both in and out of the basin.

Fleet Management



On going need to manage the fleet (bus replacement, and adding new buses) both in and out of the Basin

Marketing/Outreach



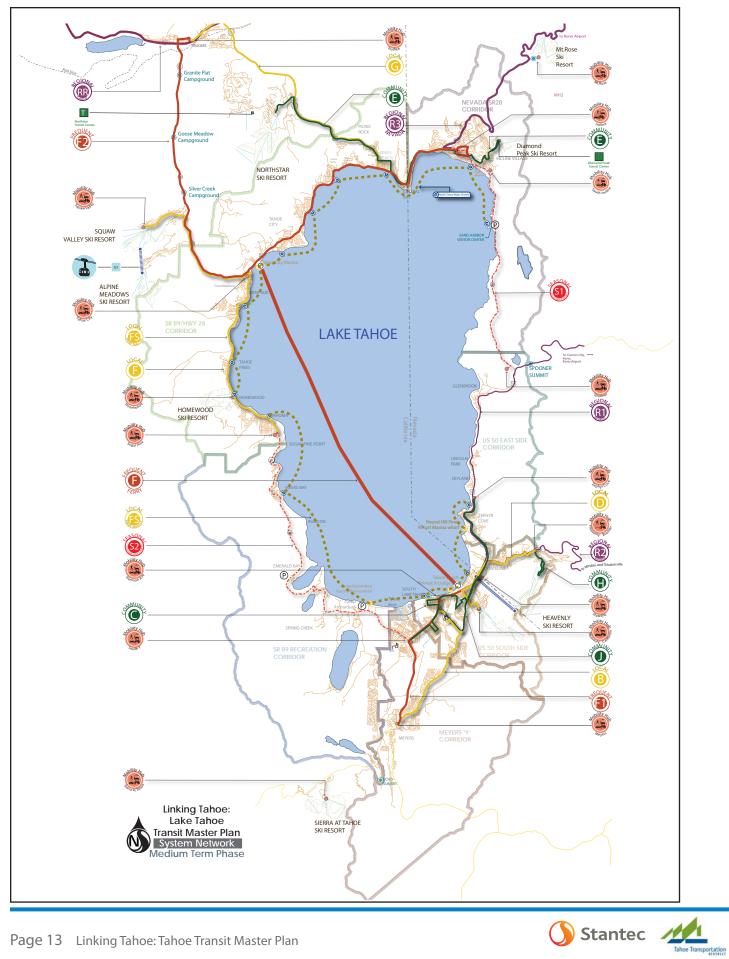
It is important to provide the correct information at the point of decision whether this is in Reno, Sacramento or somewhere else in the world. Pushing out the correct information is vital to making this program work.

ITS



Decision-making at key regional locations can help divert people from using personal vehicles.







Long Term Phase (10+ Years)

The long term focus is on the trans-sierra movements and a new route to Meyers.



Routes

<u>Community Route A</u>

This is a new route to connect Meyers to South Lake Tahoe via N. Upper Truckee Rd and Lake Tahoe Boulevard. This creates new access for the residential area as well as to the high school.



Regional Rail

Increased service between Sacramento and Reno with a stop in Truckee to provide a new alternative to driving into the Tahoe Basin.



<u>Regional Route - TS1</u>

A new route from Meyers to Stockton via highway 88 and Sutter Creek.



<u>Regional Route TS2</u>

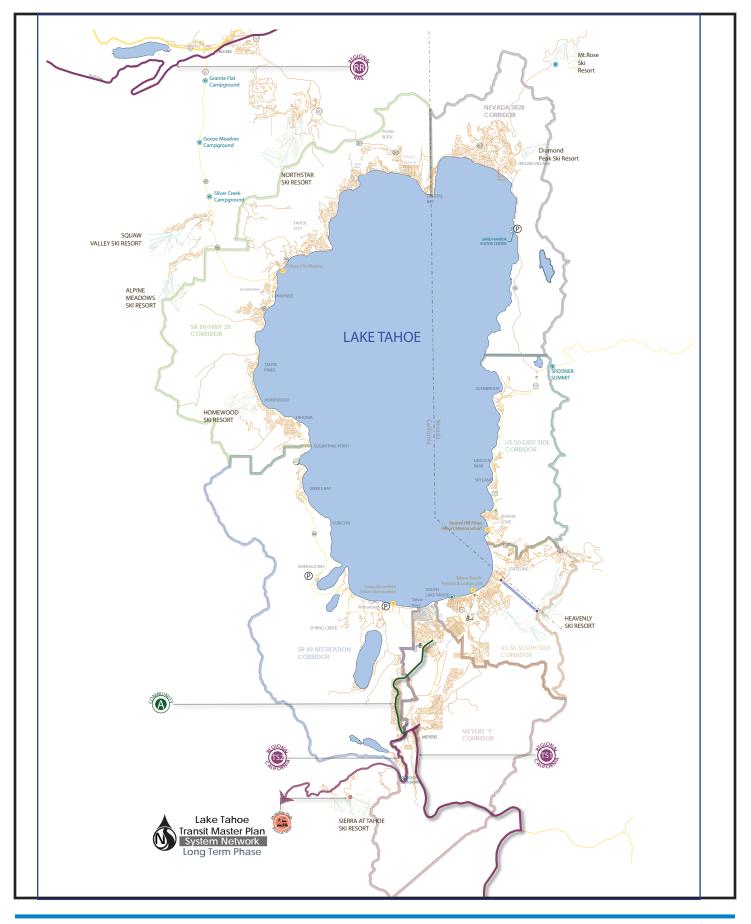
A new route from Meyers to Sacramento via US50 to provide a new option to access the south basin area that supplements the single daily Amtrak Thruway service.

Summary

The system structure is designed to achieve a 5% transit mode split based on conservative estimates for ridership. Most systems take several years after implementation to build up the ridership, particularly in a region where the private vehicle has been the mode choice for decades. An average of 16.7 passengers per hour, indicative of the effectiveness of the system, is achieved which is only a marginal increase from the current rate of 15.9. The network is set to allow for increases in frequency to respond to increased demand within peak seasons, thus a similar network that achieves 5% can achieve 10% with an increase in service hours and trips that can accommodate significant increases in passengers. 20% mode split is more challenging to meet because it requires a very large investment in transit over time but the reward is a system that removes 16M trips per year from the private vehicle mode which is better for the Tahoe Basin. Any decision to offer free transit services would require an alternate funding source to replace the forfeited farebox revenue. The net operating cost reflects the total cost to deliver the service less fare revenue. These costs reflect existing costs together with the costs of expanded services.

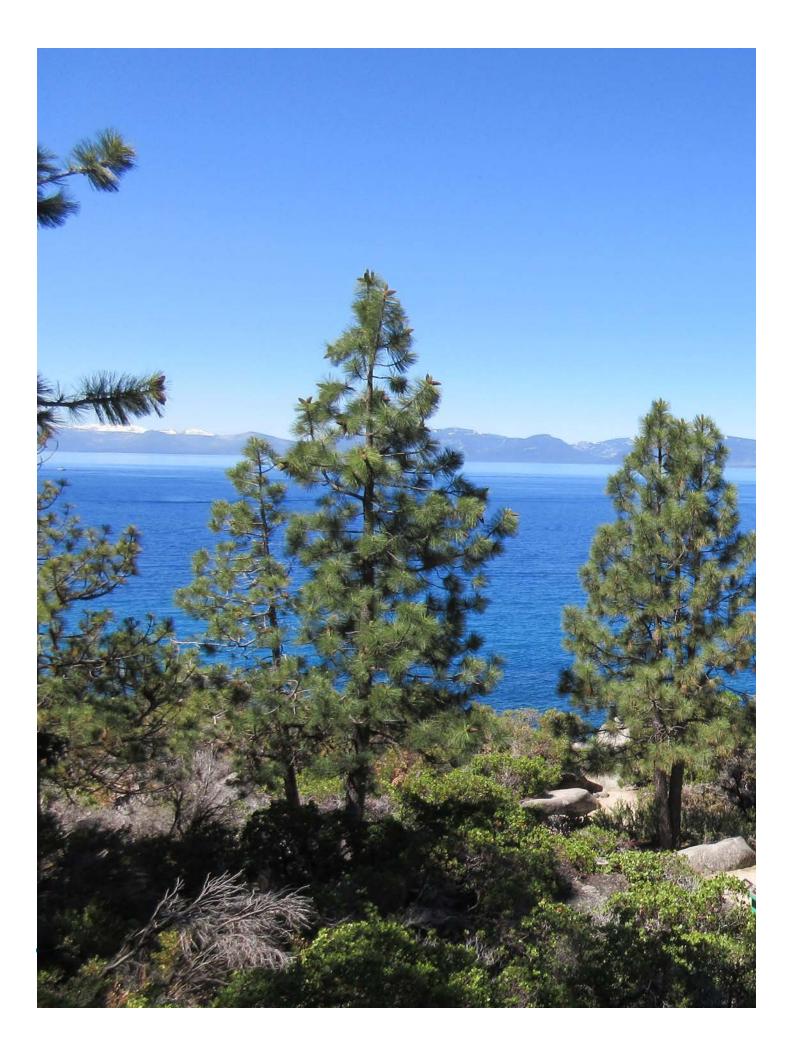
Transit Mode Share Scenarios					
Scenario Mode Share	Existing 1.4%	Easily 5%	Progressive 10%	Aggressive 20%	
Annual Service Hours	67,600	237,500	313,000	536,300	
Peak Trips per day	-	585	679	1131	
Heavy Duty Peak Buses	29	113	138	174	
Heavy Duty Total Buses	33	150	199	295	
Passengers	1,075,400	3,955,000	8,089,900	16,121,000	
Estimated Operating Cost *	\$7,101,000	\$25,016,000	\$33,063,000	\$56,597,000	
Estimated Fare Revenues *	-	\$14,014,000	\$21,470,000	\$42,987,000	
Net Operating Cost *	-	\$11,002,000	\$11,593,000	\$13,610,000	
Net Revenue/Cost Ratio	-	56%	65%	76%	
Passengers per Hour	15.9	16.7	25.8	30.1	
Average Fare	-	\$3.54	\$2.65	\$2.67	
Cost per Hour	\$105.04	\$105.33	\$105.63	\$105.53	
Equivalent Auto Trips Removed	-	1,346.000	3.278.000	7.031.000	











LAKE TAHOE TRANSIT MASTER PLAN A BLUEPRINT FOR TRANSFORMATIONAL CHANGE

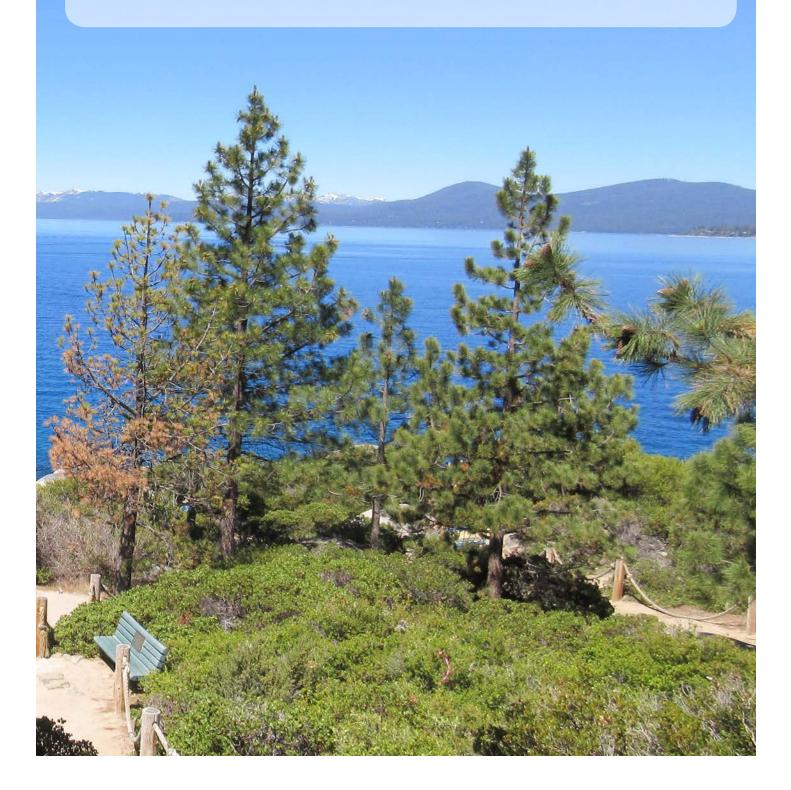


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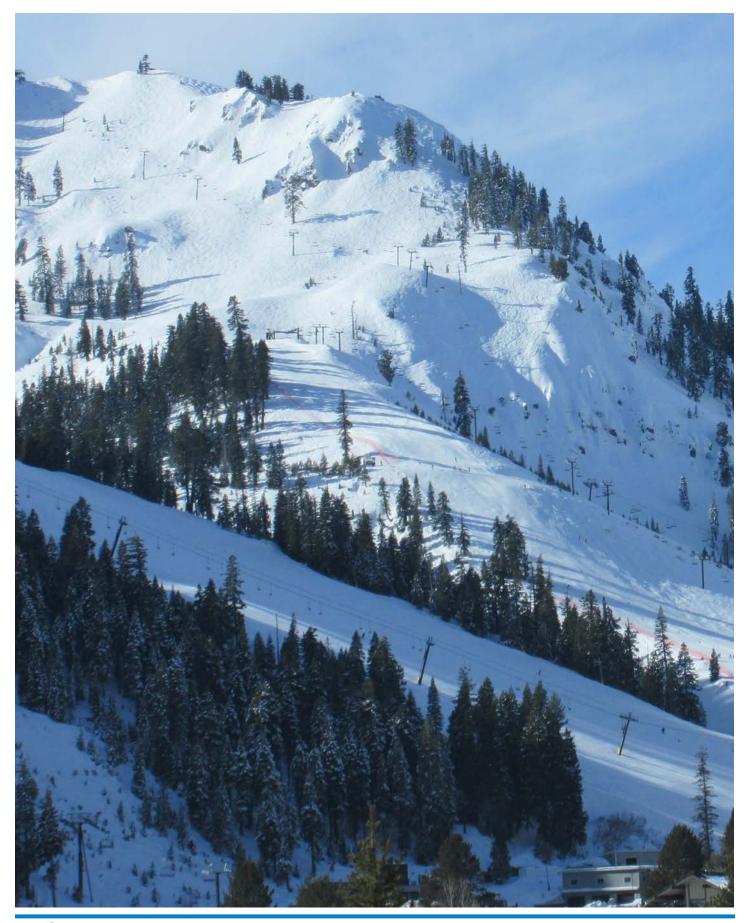


Nevada Department of Transportation

We would also like to acknowledge our appreciation for the time and effort of the Project Delivery Team for their input.



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WHAT IS A TRANSIT MASTER PLAN?

THE INTENT

The intent of this master plan is to effect change. Change in the way we think about movements to and within the Tahoe Basin. Change what we understand about the numbers of visitors actually coming into the basin and when. Change the way that the basin is traveled and developed. Link the basin together as a whole and change the way that land use improvements are complemented by transit.

The need for change is clearly shown in the data that showed the amount of visitations and movements that occur today in the Tahoe Basin during the different seasons. The congestion that occurs in the summer season is a direct result of the lack of viable alternatives to travel to Lake Tahoe and around the basin without requiring the use of a private vehicle. Today transit is a marginal player in the daily transportation movements due to a lack of resources and the need to an integrated regional view.

Why is transit the way to drive change? Because transit can provide the transportation link that enables the connecting of areas by active modes rather than just the car. Transit can be an option that changes the way people experience the Lake Tahoe Basin - whether as a resident or a visitor. Transit can provide a service that reduces the number of vehicles in the basin but still allows the transportation network to move the same amount of people without new roads.

The intent of this plan is also to create a transit system that treats all users as locals whether they are here for a day or a lifetime. A transit system is about creating movement opportunities and when the system is designed for anyone, regardless of their location within the basin, to provide that choice it will create change. The only change should be in the amount of service provided not the number of routes. This change should be based on demand and reflect the changes in seasonal visitors and residents during summer, winter and the off-peak seasons.

A great resort is about the experience, not just on the slopes, on the lake or on a hike but also on the travel to the resort, the services and recreational opportunities, and the ability to easily move around the resort. The intent of this plan is to create a transit network that is reflective of the visitor impacts on the region, that serves residents and workers, and that provides a positive response to one single question: can I travel to and around the region without being forced to bring my car? That is central to this plan, it is about moving people rather than vehicles.

Another consideration is that a resort like Lake Tahoe has a much larger sphere of influence in terms of the visitor market than a non-resort community. As a result, transit must play a very different role with ebbs and flows based on visitor movements but having a base system that allows daily commuters to get to work and home or local residents to buy groceries without using a car. Like peer resort areas, Lake Tahoe as a region must find ways to encourage visitors to eventually stop using cars in order to keep the area as attractive a place to live and visit as it is today.

THE PROCESS

Transit is an operationally based service that typically grows in an organic fashion - routes are changed or added to match the ebb and flow of demand and development over time. The master plan process offers a unique opportunity to take a step back from the day to day realities of operating a transit system and understand the current and future needs of the communities that comprise the Lake Tahoe Basin. Like most transit systems, those in the Lake Tahoe area have grown incrementally and separately and may need refinement to be consistent with the future plans, goals and objectives of the communities.

A well designed and delivered transit system can be a strong contributor to achieving the local and regional goals that are articulated in various plans for the Lake Tahoe area. Simplicity in design and functionality usually means establishing an attractive transit system that the ordinary person or visitor to the area can use. Understanding human psychology is the art behind the science of interpreting the complex relationships of movement through an urban landscape.

Understanding why people react to transit in different ways based on their different needs helps

to create a transit network that reduces the barrier to use and potentially opens up a new way of travel for many.

The expectation of the transit system is captured and incorporated in its overall vision and the transit master plan articulates this overall vision by describing what that might look like in terms of service and infrastructure, and then outlines a possible plan to evolve from the current condition towards that vision.

The transit master plan process is shown in Figure 1 and it outlines the process to develop a plan that will assist in realizing the appropriate future transit system.

CREATE THE VISION

The vision of the transit system identifies the intent and the unconstrained future of the transit service. This vision is a clear and concise statement that describes what transit is to the Lake Tahoe Basin as well as those key communities in the Trans-Sierra region such as Sacramento, Reno or Stockton. This statement provides the overall guidance to the transit system in terms of its development, expansion and evolution.

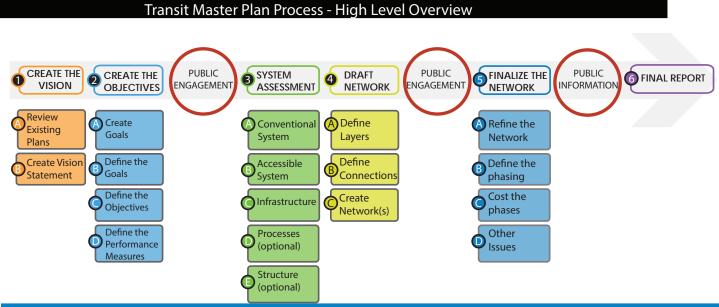


Figure 1 - Master Plan Process Overview

CREATE THE GOALS & OBJECTIVES

The goals are the key ways in which the vision will make an impact on the communities. These goals provide the parameters from which the network can be designed and are typically high level statements with a detailed description of the intent of the goal. Objectives are the intent described. From the objectives we can derive service performance targets that help monitor progress towards achieving the goals and pursuing the vision over time. Stakeholder and public engagement helps in the process of refining the vision goals and objectives at this stage.



SYSTEM ASSESSMENT

The system assessment is a detailed review of the existing transit system as well as other transportation services that are offered. This can give an indication of how the services are utilized but that must be balanced against the potential demand that is often shown in the road system usage. In the Lake Tahoe area there are three main transit providers:

- Tahoe Truckee and Area Regional Transit (TART) - public service
- Tahoe Transportation District (TTD) public service
- Northstar Ski Resort a private service

There are a multitude of private operations for casinos, ski resorts, airport connections, etc. It is challenging to gather information on non-public transit services, and therefore, the information in this plan is based on the data provided by TART and the TTD.

DRAFT NETWORK

Creating the draft network is a way to document the vision, goals and objectives for the transit service in a visual manner that shows the transit services and associated infrastructure. This stage of the process can be used to gauge reaction to several alternatives or focus on a single option that raises questions and requires providing feedback. Stakeholder and public engagement is key to examining the reaction to the proposals.

5 FINALIZE THE NETWORK

Once the public engagement and review processes have occurred, there are a number of key steps prior to finalizing the plans. There may be changes in the route structure or infrastructure placement around the lake that result from the review and feedback. Once the final system has been created, the next step is to create a phasing program for the system. The phasing program identifies when routes might change, when added frequency is required, how routes may be grouped together due to some intrinsic link (e.g. when switching route sections between different routes or combining several routes into a single service) and when infrastructure is required. In some instances, infrastructure provision may precede a set of route changes.

Once the phasing has been finalized then the proposal can be costed. Stakeholder and public information sessions are used to relay the final plans of the proposed system.

5 FINAL REPORT

The final report is a compilation that describes the process, the consultation, methodology, phasing, transit routes and infrastructure that make up the master plan.



BACKGROUND PHILOSOPHY

AND THE PROJECT PARAMETERS

The plan was created following a staged approach that builds on the previous steps. The stages are:

- Establish the overall parameters for the review of transit and the creation of a network
- Understand the operational parameters
- Create a vision
- Create goals and objectives
- Review the existing services based on the parameters
- Create a future system for Trans-Sierra and local/regional services
- Create a phasing program

Each of the phases included significant public and stakeholder engagement.

Establish the overall parameters

There are a number of forces that shape the desire to create a regional transit network. They include:

- Technology
- New mobility & social desire for alternatives
- Visitations and the understanding of magnitude and impacts in the basin
- Competition with other resort areas which may influence the economy of the basin
- Renewal of the urban fabric as older parts of existing communities change to include the creation of new urban form throughout appropriate corridors

There were a number of considerations in creating the new transit network that the TTD laid out at the start of the process:

 Be operationally agnostic (i.e. don't be hampered by operational considerations as they currently exist)

- Be transformational in scope. This plan is not to be a modest tinkering of routes but rather an overall review of how transit interacts with the entire basin, the local region, and the Trans-Sierra communities
- Be fully integrated into the active transportation modes and recreational opportunities. Do not plan in isolation of the other modes
- Be responsive to the seasons

Generalized concepts for Trans-Sierra Region

- Create opportunities for visitors to arrive by car, park at their destination and travel internally by transit
- Create the opportunity to visit and travel to the basin from key regional points such as Reno, Sacramento or Stockton without requiring a private vehicle
- Create traveler information points on key routes to allow decision making on mode prior to entering the basin

Generalized concepts for Tahoe Basin

- North and South services that are connected by a year-round link noting that land links are only available on the east shore during winter due to snow closures on the west shore
- Serve both locals and visitors
- Offer a water-based local option to supplement road-based transit
- Utilize all existing parking rather than just public areas and strategically interconnect with mobility hubs and transit access
- Connect mountainside parking to popular shore-based destination points



CREATING A VISION

Creating the vision was a two stage process. The first step in creating a transit vision is to understand the priorities or pillars upon which the plan will rest. These pillars help us understand what the parameters of the plan should be. The pillars are asked as a series of questions to identify where the region's focus is on major issues. As the pillars are examined in terms of goals and objectives, they slowly transform into a transit vision. The initial six pillars were:

Transportation Priority

Where does transit feature within the overall pyramid of transportation modes and specifically in relation to automobiles, walking and cycling in the region and within each of the six corridors?

Linking

How does transit play a role in linking the North Resort Triangle and the south shore together? What role should it play in linking neighborhoods to town centers or linking resorts to town centers?

Investment/Movement

Does the region see a link between investment in transportation projects and the vision for transit? Is the desire to focus on moving people rather than vehicles? This latter question puts priority on the active modes and transit versus the automobile in terms of investing in infrastructure, buses/ferries, as well as when difficult choices are made for new urban development and redevelopment. How do we facilitate pedestrian movement through roundabouts to reduce the impact on transit services caused by the crossings?

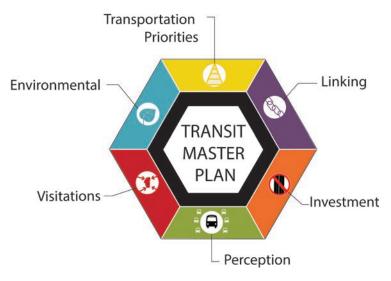


Figure 3 - Transportation Pillars - details



PRIORITIES Bicycling | Walking | Transit | Cars priorities when making decisions



LINKING

Connecting the North Resort Triangle with the South Shore



INVESTMENT

Investment in moving people rather than vehicles



PERCEPTION

One system to the customer regardless of who the operator is



VISITATIONS

Create opportunities for visitors to use transit when they reach the basin

ENVIRONMENTAL

Maintain a focus on the environment by encouraging active mode transportation as a system





Perception

What is the public perception of transit and what should it be? Can a single system be created from all the various operators that exist and is there a desire to do so both politically and institutionally? From the perspective of the customer, would a single, integrated system improve the legibility and simplicity and provide better opportunity to implement efficient improvements and expansions?

Visitations

Visitations to the Tahoe Basin create both opportunities and challenges locally. There is economic spin-off but it comes at the cost of congestion on the roads, parking on the sides of the highways, etc. How can visitors be encouraged to not use their vehicles when they arrive, or can they be encouraged to use public transportation to reach the basin? What system of services and messaging is required? Can the transit system be designed to serve both the visitors and the locals? Is there a seasonality to the visitations that is focused more upon two distinct seasons (summer and winter) rather than on one?

Offering opportunities to transport people via ferry and water taxis can increase the visitor experience, bolster economic development and allow the opportunity to see the lake from a new perspective.

Environmental

What role can transit play in the desire to keep the Lake Tahoe Basin environment as natural as possible? Can the natural asset of the lake be utilized to reduce the need for automobiles to interconnect the corridors and the region?

These pillars formed the basis for examining transit in the region, how it is currently delivered and how impactful it could be on the region in the future.

EXISTING ISSUES

The current transit services are based on winter visitations with sufficient gaps in service that there are a number of private operators who have created independent systems. Various resort operators shuttle guests to key destinations and bring them back to their points of origination.

The public transit system is not perceived nor is it designed as a year-round alternative to the private automobile.

A number of issues that have been identified by the region that need to be explicitly addressed, include:

- Safety on the highways (e.g. users parking and walking across highways to access beach locations in summer)
- Congestion (with no alternative, regional visitors drive)
- Parking (the lack of publicly available day parking in the region means more cars on the street circulating in search of parking)
- Access to services (residents and visitors using local services must drive and park or walk)
- Connecting the lake north and south (reducing the amount of traffic circling the lake to find points of access or viewpoints)

These issues can be distilled down to a single question: What is the desired mode split for the active transportation modes i.e. transit, walking and cycling, in the region? Determining the goal creates the basic tenet of transit network design for the region.

A high target mode split means a move away from focusing upon the private automobile as the primary mode of choice to visit and move around in the region. Reducing the automobile mode share requires a focus on investment in transit service, transit infrastructure, sidewalks and pathways (as all transit trips start and end as walking or bike trips), lighting, snow clearance, traveler information systems and mobility hubs.



STAKEHOLDER INPUT

One of the key steps, prior to the creation of the vision statement along with goals and objectives was to understand how others in the basin viewed the transportation priorities. Based on the initial meetings with the TTD and TRPA, a high level conceptual transit structure was created to test initial ideas on a vision. On April 12, 2016 a workshop session was held with multiple stakeholders around the region. The purpose of the workshop was:

- 1. To relay information from the cellular Air Sage data which was showed new volume of trips into and within the Tahoe Basin that were significantly different than those derived from traditional counting methods
- 2. Present information on the existing transit network and the identified issues
- 3. Present a very high level transit concept for the region
- 4. Discuss the transportation pyramid (Figure 4). This represents the priority in which decisions are made for investment into the transportation network. The higher the mode, the greater the investment priority)
- 5. Review existing projects identified in each of the corridors
- 6. Receive any feedback on transit perceptions, issues in the region or on the general system concept

The stakeholders were asked to split up into groups based on their interest in a particular corridor. For each corridor a transportation pyramid was developed based on how the working team perceived current investment priorities to be. In most cases the automobile was ranked as the highest priority with transit as the lowest priority. Workshop attendees were then asked to discuss the corridor and restructure the pyramid to accurately portray the investment priorities in the future as well as identify any additional issues or challenges. In all cases, the automobile moved to the lowest priority with transit ranking in first or second spot.



TTD's Carl Hasty sets the stage for the workshop



Stantec's Cynthia Albright presents AirSage data

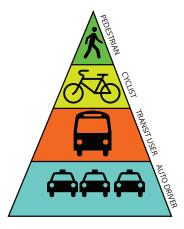


Figure 4 - Standard Transportation Pyramid







Figure 5 - Starting Pyramid for the NV SR28 corridor

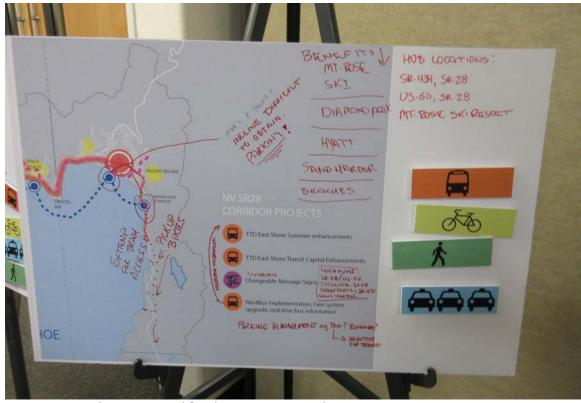


Figure 6 - Resultant Pyramid for the NV SR28 corridor



A New VISION FOR TRANSIT

With a new target for the transit modal split, the new vision for transit can be expressed as a series of intents:

- If transit is the vehicle for change it means that transit must have a significant presence in the communities
- Transit must connect the residential areas with the commercial areas to allow easy use of the facilities
- Transit must connect people to recreational opportunities in summer and winter based on the volumes of demand
- Transit must be a priority investment in the region and must have impact on decisions for linking the Tahoe Basin with the key locations in California and Nevada such as Sacramento, San Francisco, Stockton and Reno
- Transit must be organized to achieve success by being simple and understandable with the customer experiencing a single integrated system

VISION STATEMENT

The final Vision statement for this transit master plan is:

Transit is the vehicle for change in the **Tahoe Region**

To support this statement, there are a number of Goals and Objectives (See Figure 7) that provide more context for how transit can impact change in the region.

Transit First

Transit is a priority in investment and decision making in the basin to support the desire to increase the mode split from less than 2% up towards an aspirational goal of 20%.

The objective of this is to ensure that land use and transportation decisions at the Federal, State, County, Region, and municipal levels that impact the Lake Tahoe area consider the impact on expanding active mode opportunities and the transit system.

> TRANSIT IS THE VEHICLE FOR CHANGE IN THE TAHOE REGION

Creating Choice

A comprehensive transit system can help with congestion relief, allowing residents and visitors to choose not to use their automobiles and creating opportunity for better cycling and walking facilities. The regional objective would be to support improved connections to Reno, Sacramento and Stockton that allow visitors to consider not bringing a vehicle into the basin area at all. At the local level, the goal is to provide a high level of transit around the basin that allows residents to also choose not to use their vehicle on a daily basis for their activities of daily living.

Creating Connections

Transit creates local, cross-lake, seasonal, and regional connections for residents and visitors to enable different modal choice decisions on tripmaking than what occur today. The higher the quality of the service, the more it can be relied upon for trip making. Therefore performance is a key objective. The provision of real-time passenger



information and high quality roadside infrastructure supports this crossover from other modes to transit. There are also areas within the basin that currently have only seasonal access to transit services or none at all.

Supporting Transformational Change

Transit supports and promotes the development of compact urban form along high frequency transit corridors with targeted services that support walking and cycling. Development that incorporates pathways and sidewalks allowing residents to walk, bike or take transit to local destinations requires the support of higher levels of transit service to be viable. There is a symbiotic relationship between land use and transit that can be extremely effective in supporting an active style of development without increasing personal vehicle use.

Improving Safety

Transit together with an infrastructure program to create safe parking zones, can move people to key locations without the need to park on highways. This will eliminate the current practices of slowly driving along the highways looking for roadside parking on the edges or pedestrians running across the roadways with beach accoutrement in tow.

Improving the Environment

Transit can help improve the environment by reducing congestion, supporting the reduction of roadside parking and associated erosion, and reducing overall green house gases.



Figure 7 - Transit Goals, Objectives and Performance Measures



Goal: Transit is a priority in decision making and investments in the basin as part of the desire to change the mode split towards an aspirational goal of 20%

Creating Choice

Regional Goal: The Transit Network is comprehensive, allowing visitors to choose more evironmentally sustainable mode options for travel to the basin than the personal automobile

Local Goal: The Transit Network is comprehensive, allowing residents and visitors to choose more environmentally sustainable modes than the personal automobile for local travel in the basin

Creating Connections

Goal:Transit creates preferred local, cross-lake, seasonal, and regional connections for residents and visitors with a high quality service and passenger amenities

Supporting Transformational Change

Goal: Transit supports and promotes the development of compact urban form along Frequent Transit Corridors with targeted services that support walking & cycling



Improving Safety

Goal: Transit can safely deliver people to key locations to reduce congestion and remove the need to park on highways

Improving the Evironment

Goal: Transit can help improve the environment by reducing congestion, supporting the reduction of highway side parking, and reducing overall green house gases

Objective: To ensure that land use and transportation decisions consider the impact on expanding active mode opportunities and the transit system Performance Measure: Investments made in expansion of active modes and transit services and infrastructure (projects or dollars per resident)



Objective: Support the increase in the level of rail connections that can be made to key cities such as Reno, Truckee, Stockton and Sacremento. These connections are supported by regional bus routes to South Lake Tahoe

Objective: Increase the level of service and the number of connections that can be made throughout the basin and to key cities such as Reno and Sacremento. This increases the use of the system **Performance Measure**: Percentage of the long term transit network that is complete

Performance Measure: Annual growth in service hours from the 2016 base

Performance Measure: Annual growth in boardings from the 2016 base

Objective: The higher the quality of the service, the more it can be relied upon for trip making. Therefore performance is a key objective. The provision of real-time passenger information and high quality roadside infrastructure supports this

Performance Measure: Growth in boardings per trip from the 2016 base

Performance Measure: Improvement in on time Performance from the 2016 base

Objective: Transformational change means the provision of more transit service per resident (as a proxy for service hours per person in the basin) but equally, the greater the density of residents along major transit routes Performance Measure: Growth in annual service hours per resident from 2016 base

Performance Measure: Average density on Frequent transit routes from 2016 base

Objective: Safety is created by ensuring that the transit system provides a reliable alternative that makes other choices less desirable. Two key areas of reliability are the consistency of travel times and service delivery Performance Measure: Running time reliability

Performance Measure: Headway consistency

Objective: The greater the use of the transit system, the fewer vehicle miles travelled by automobile and the greater the boardings by transit per mile. Transit can also support a change from highway side parking to bus stops at key locations and designated parking areas Performance Measure: Growth in annual vehicle miles traveled from the 2016 base

Performance Measure: Growth in boardings per mile from the 2016 base











THE REGIONAL VISION - CALIFORNIA (TRANS SIERRA)

The regional vision for Trans Sierra refers to those trips that begin and end west of the Sierra Nevada mountain range - i.e. Sacramento, the San Fransisco Bay Area, Silicon Valley and San Jose. The California connection to the Bay Area and Silicon Valley represents the largest catchment area for the visitors coming into the basin - many of whom visit the area multiple times a year. The Vision for this larger regional area is largely a supportive role that would seek to improve the connectivity between the basin and northern California. Many of the services that impact the Tahoe basin today, are located in different jurisdictional areas.

Maximize Rail Service

This means politically supporting requests for investment in the rail services that connect Altamont Corridor Express (ACE) and the California High Speed Rail (HSR) in Stockton and the extension of Capital Corridor Service to Truckee and Reno.

This will create more service and more opportunity to accommodate travel without upgrades to highways into the basin. Greater bus access such as the Amtrak Thruway services in the south can be supported or supplemented from Stockton and Sacramento so that rail acts as a mobility hub in those key decision points.

Create "Mobility Hubs"

Create hubs or intercept lots around the basin and at key decision points outside the basin where secure car parking is available along with access to transit and bike storage facilities. These hubs can act as points of first contact where visitors from outside the basin can safely store a vehicle and still easily access their destination. Traveler information on congestion, parking and other issues within the basin at key external locations can allow travelers to make decisions on their choice of transportation mode prior to entering the basin. Smaller hubs can act as local points of contact within the basin area to help minimize the stress on the environment and reduce vehicle use. This approach provides the opportunity for regional visitors to drive to the basin and park or use regional options knowing that there are key points where high quality bus service will be available.

Create the Opportunity to Visit and Travel Without a Vehicle

If there are options available for regional bus movements, then the ability to reach the basin without an automobile makes the decision more viable. When accessibility to the basin is impacted by significant summer traffic or winter snowfall, the availability of bus connections to Sacramento and Stockton that connect to rail, will increase the ability of visitors to travel to the basin without a private vehicle.

Push Information to make travel decisions.

Wayfinding and the push of information through the use of highway based information signs, cellular texts or updates to travel, web-based information on congestion, travel times and travel options can all play a significant role in the decision making process before visitors even leave home.



The Regional Vision -Nevada

The region refers to the communities that surround the Tahoe Basin on the Nevada side but are not directly located within the basin (ie. Truckee is included within the non-regional services). For the purposes of this report, this refers to Reno, Sparks, Minden, Gardnerville and Carson City.

Support Regional Connections

This means higher quality and affordable connections to the communities surrounding the basin that reflect the challenges of affordable housing within the basin. Connecting to communities that can offer housing close to the basin means keeping employment and economic vitality within the basin high. Many connections exist today but are limited in the amount of service, or are privately operated at a cost that does not lend itself to daily commuting. Connections to the Reno-Tahoe International Airport (RTIA) would further support the regional vision.







THE TAHOE BASIN - TRUCKEE VISION

Consider realities and opportunities

1 B

The Tahoe Basin features specific corridor areas as identified earlier in the transportation study which can render some key areas neutral in terms of some of the data analysis. Some of these areas such as Northstar or Squaw Valley, were not part of the data sets while areas such as Sand Harbor have attributes such as strong patterns of movement at opening and closing but little in between that mean they are not identified as hot spots.

There are opportunities where transit can help create new or better linkages such as:

- The south shore area where there is significant commercial activity
- Incline Village where sidewalks are limited
- The east shore where all the majority of beach access occurs with limited parking
- Creating a year round connection between the north and south shores where there is limited seasonal connectivity and considerable congestion

Serve both locals and visitors

Focus transit where it is easy to access year round.

Issues Addressed:

 Serves vast majority of "hot spots" (places that were identified through the cellular data review as having the greatest number of visitations in the basin) with year round routes and improved frequency at peak times.

North and South services that are connected by a year-round link

Issues Addressed:

- Connects the basin's two regions including Truckee and the Resort Triangle to the South Shore with year round service
- Creates the opportunity to capture visitors who currently only stay in the north or south
- Eliminates the notion that visitors require an automobile to move around in the basin
- Creates economic opportunities that may be missed today
- Acknowledgment of the travel patterns that suggest the majority of personal trips are made within each corridor and that visitors stay in the north or south where they entered the basin

Be fully integrated into the active mode and recreational opportunities

Be responsive to the seasons

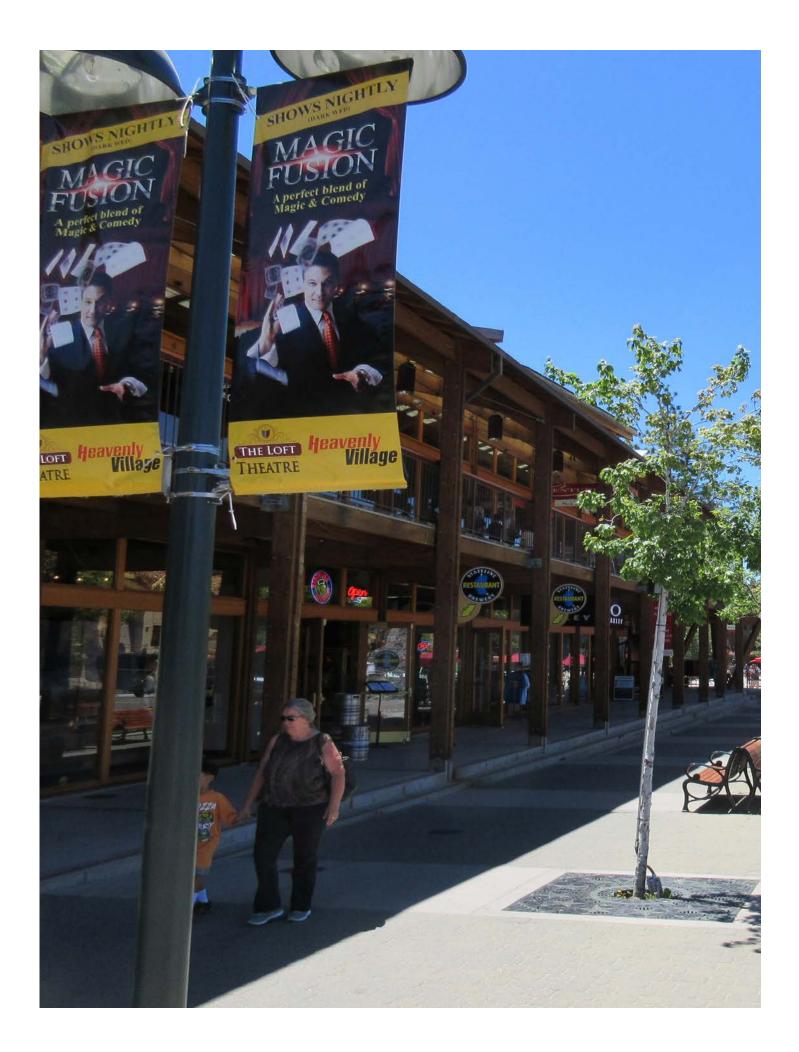
Create a transit framework that needs only changes in frequency to serve the additional demand. Add minor routes where annual service is not required by demand

Offer a water-based local option to supplement road-based transit

Issues Addressed:

- Eliminates congestion as a summer issue for transit by offering an alternative travel option
- Key recreation areas served



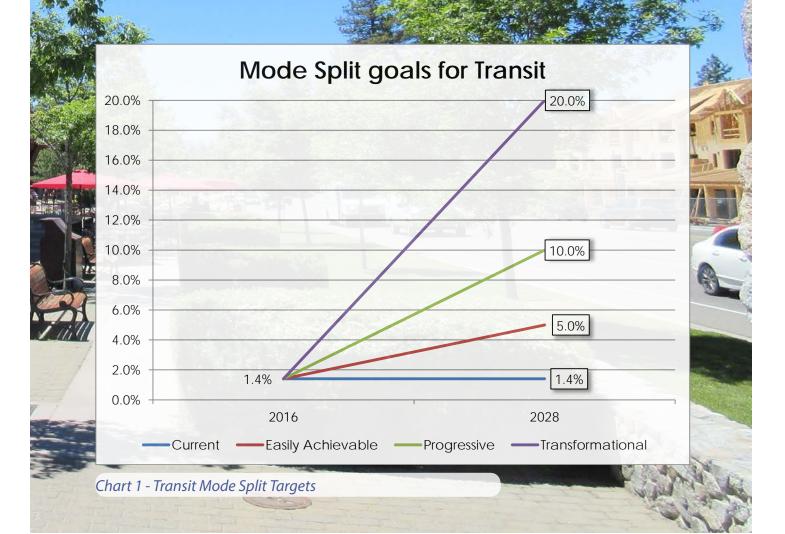


MODE SPLIT FOR TRANSIT

The current estimated transit mode split (i.e. the percentage of all daily trips that are performed using the current public transit services) is estimated at only 1.4%. It is difficult to determine the full mode split for transit if all public and private services were combined due to the lack of information readily available from the private resort and hotel operators.

A series of targets have been created with the base case at 5% with a change in routing only, a more ambitious but achievable target of 10% with improvements in the medium term in the levels of service and in the long term with regional services. A transformation goal of 20% in the long term would require full implementation of the plan and changes in the use of personal vehicles to visit the basin.

It is important to understand the impact of shifting from a 2% to 10% transit mode share. Consolidating and expanding transit service to attract new customers that do have alternative transportation choices will require a considerable investment in transit service and infrastructure. Fares in other resort areas tend to be free in the local area with a charge for the regional services but the focus for Lake Tahoe should first be on changing patterns and increasing ridership by providing high quality service. Once a base level of service throughout the basin area has been created, the debate about whether to offer free fares can occur.



EXISTING REGIONAL TRANSPORTATION SERVICES

REGIONAL (**T**RANS-**S**IERRA) FROM **C**ALIFORNIA

There is a limited amount of transit service available for traveling from the San Fransisco Bay area or Sacramento into the basin. Rail service is provided via Amtrak on the California Zephyr - a daily service running from Emeryville, CA through to Chicago, IL passing through Truckee and Reno. Connections can be make via the Capital Corridor rail service that runs between San Jose and Colfax offering 15 trips per day between Sacramento and Oakland.

From Sacramento, an alternative to rail is the Amtrak Thruway bus service that runs once daily into South Lake Tahoe and then onto Reno, NV. This bus service does not serve the north shore.

The limited options for non-vehicular use means that only highly dedicated individuals will use these options. Typically it can take 6-7 hours to make the journey depending on time of day and departing community.

Amtrak's Thruway Service

Amtrak offers one trip each day in each direction between Sacramento and South Lake Tahoe using a coach bus service that it calls the Sacramento – Lake Tahoe Thruway Bus Connection. Amtrak offers this service in a coordinated fashion with the Capitol Corridor service, which connects Oakland to Sacramento with 15 weekday and 11 weekend trips a day in each direction (with seven trips in each direction extending south to San Jose and one trip in each direction extending east to Auburn). The Sacramento – Lake Tahoe Thruway Bus Connection service leaves Sacramento at 10:15AM every day (a Capital Corridor train arrives at 9:48AM, arriving in South Lake Tahoe at 12:50PM. In the other direction, it leaves South Lake Tahoe at 2:50PM and arrives in Sacramento at 5:25PM (a Capital Corridor train leaves Sacramento at 5:40PM) meaning that you could only be in the basin for two hours.

In Sacramento, this Thruway Bus Connection serves the Sacramento Valley Station which also has local light rail and bus services, other Amtrak Thruway Bus Connection services, as well as Amtrak rail and Capitol Corridor services. In South Lake Tahoe, this service connects to the "Y" Transit Center, Stateline Transit Center, and Kingsbury Transit Center, which allows for connections with many of the local TTD transit services as well as to the Heavenly Mountain Resort.

Amtrak Rail Service

Amtrak rail service connects the Bay Area and Sacramento to Reno once daily. While this service travels through Truckee, it is not considered a feasible way to get to and from the Tahoe Basin. This is due to the lack of coordination with the local bus routes, the low reliability of the departure and arrival times and the fact that it is only offered once per day in each direction. The reliability of the rail service is a key to attracting users from their private vehicles because there is no uncertainty over the length or the trip or the trip time.

Amtrak rail is also slower than bus travel between Sacramento and Reno, making it less attractive particularly in the summer. A reliable winter rail service through the pass would be an attractive alternative to frequent closures on I-80 due to snow. Amtrak rail service as a means to travel to the Tahoe Basin may only be a viable option for people who are traveling without a tight schedule and who are willing to use a taxi or a private transport provider to get to and from the Amtrak Truckee Depot.



However, it should be noted that there are three Sacramento - Reno Thruway Bus Connection services per day in each direction that stop in Truckee. This provides some means of connection to the north shore via the Tahoe Truckee Area Regional Transit (TART) system, although not direct service.

Ski Coach Service

Ski shuttle or bus services are offered seasonally through private operators. They typically offer services on pre-scheduled trips that require a reservation. The pick-up points in the Bay Area and the destination ski resort are typically fixed, and the trips are usually one- or multi-day trips on weekends. One-way trips are offered, but require advanced planning and coordination with the operator.

The pick-up and drop-off points in the Bay Area are typically at BART stations or other transportation centers, while the destinations in and around the Tahoe Basin are ski resorts such as Heavenly, Kirkwood, and Squaw Valley.

REGIONAL FROM NEVADA

The number of regional services can be difficult to ascertain, however, there is a mix of private and public services between some of the cities that lie outside of the edge of the basin area.

Privately operated airport shuttles are offered from the Reno-Tahoe International Airport (RTIA) to both the south shore and the north shore. The services to the south shore are offered through the South Shore Airporter, which offers 10 trips in each direction each day. Services to the north shore from RTIA are offered through the North Lake Tahoe Express, which serves destinations such as Incline Village, Truckee, Tahoe City, and Tahoma on three separate routes offering one to four round trips per day depending on the destination.

These airport shuttles provide an alternative to

renting an automobile, and for Bay Area residents, offer an alternative to driving through the mountains. Southwest Airlines started offering three non-stop flights in each direction per day between Oakland International Airport and RTIA in 2016. Alaska Airlines offers two one-way trips per day in each direction between San Jose International Airport and RTIA. United offers two one-way trips per day in each direction between San Francisco International Airport and RTIA.

North Lake Tahoe Express is a private service operating on three separate routes from RTIA into the basin via Mount Rose and Truckee to Northstar; or via Truckee to Tahoe City. The routes offer between 1 and 4 trips per day depending on destination, at a cost of \$32 or more depending on the number of passengers in a group.

Figure 8 - North Lake Tahoe Express

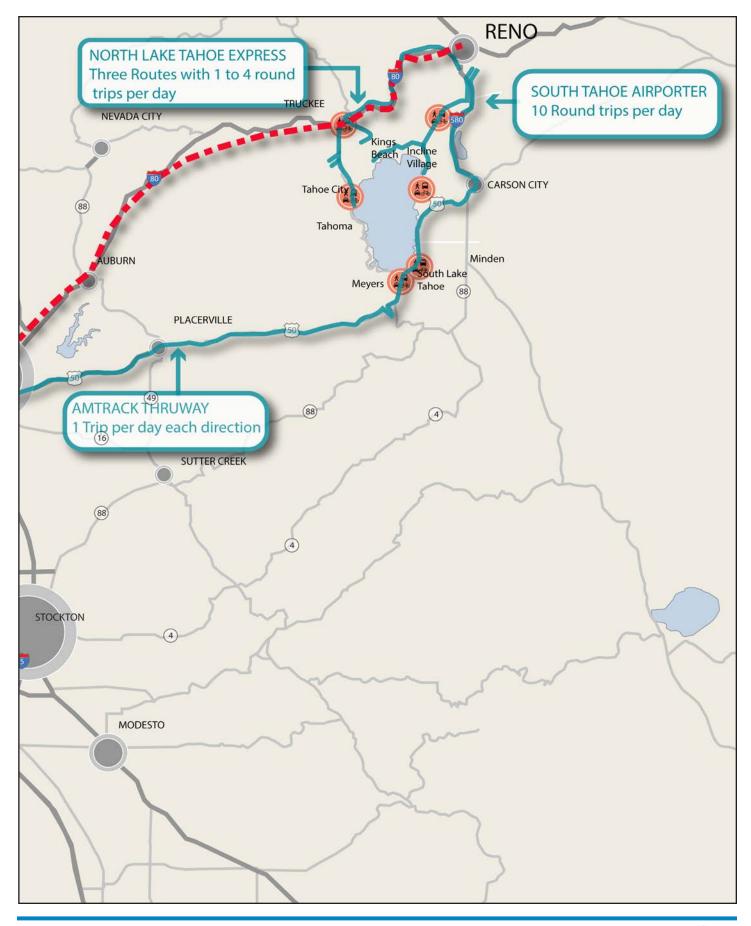


South Lake Tahoe Express is now called the <u>South Tahoe Airporter</u> which operates between RTIA and South Lake Tahoe via SR50, with stops at resorts, offering 18 trips per day.











The TTD operates <u>Route 21X</u> between Carson City and South Lake Tahoe (Stateline Transit Center) as a peak hour express service with 6 trips in each direction daily (3 in the morning and 3 in the afternoon).

The TTD also operates <u>Route 20X</u> between South Lake Tahoe (Stateline Transit Center) and the Gardnerville / Minden area that operates 5 trips daily in each direction (2 in the morning and 3 in the afternoon).

TART operates a service between Truckee and Northstar to Crystal Bay and one between Truckee and Tahoe City (with a diversion to Squaw Valley). Services are hourly.

Private Automobile Sharing Services

These services started operating in the Tahoe Basin during the winter of 2015/2016, and the company augmented its regular service with a service later that winter. The ski service offers service with All-Wheel Drive (AWD) vehicles with a ski-rack at a small premium over the standard service. This is an option for regional trips, and can be cost-effective, particular for group travel.

ISSUES/ CHALLENGES

The services listed above are well suited for certain markets, and are well priced, safe, available throughout the year (except for the ski bus services) and can accommodate bikes, skis, and other luggage that visitors to the Tahoe Basin might have. However, the following is a list of the challenges that visitors to the Tahoe Basin would likely face when considering these services versus driving.

Connections to Local Transit Services

In general, local transit services in the Tahoe Basin have service once per hour and are not coordinated with the regional services, making transfer waiting times potentially long. Local transit services may also be less accommodating of luggage than the regional transit services. Another issue is that although the entire area is served by a combination of public and private transit services, they are not coordinated to allow for seamless movement around the basin and to resorts.

High frequency local transit service, greater accommodations for bikes, skis, and luggage on local transit services, and more destinations served by local transit services would help address this challenge.

Travel Durations

For the Sacramento – Lake Tahoe Thruway Bus Connection option or even ski bus options, getting to the pick-up areas may add time to people's trips compared to driving. Also, in the case of the Thruway Bus Connection service, the interim stops take time and add to the overall travel time. Long travel durations can be addressed through the greater availability of point-to-point express bus service in the future.

Schedules

The Thruway Bus Connection service to South Lake Tahoe is scheduled such that it cannot accommodate day trips to the Tahoe Basin. Even a weekend trip would be reduced to only about 24 hours in the Tahoe Basin itself. This is because the one inbound trip of the day arrives in South Lake Tahoe at 12:50PM and the one outbound trip leaves South Lake Tahoe at 2:50PM. A service that arrived around 9:00AM and departed around 6:00PM would be more viable for day-trippers and week-enders.

Congestion

TTD buses, Thruway Bus Connection buses, private car share services, and airport shuttles are subject to the same congestion as automobiles on I-80, US50 and other roadways leading into and out of the Tahoe Basin. Transit priority in the form of exclusive bus lanes or queue jump lanes at key points along specific routes could help address this challenge.



Service Gaps

The current configuration of regional transportation services leaves several gaps. These include:

- A direct connection between Sacramento/Bay Area and the north shore
- A direct connection between points in Reno (other than the RTIA) and the north shore
- A direct connection between the ACE rail service in Stockton and the south shore
- Low levels of Greyhound service
- No direct Megabus service
- No service from the Bay area that is designed to allow for day visits in the basin

Bridging these gaps with new, direct services, could help address this challenge.

Trip Flexibility

Passengers cannot stop for sightseeing, shopping, or for meals while traveling on Thruway Bus Connection service, airport shuttle services, or TTD services. These regional services do not operate frequently enough or for enough hours of the day to make "on and off" service viable. This challenge could be addressed with alternative transportation services that accommodate visitor needs to board and alight throughout a trip.

Furthermore, with reservations required on services like the airport shuttles, passengers must often plan ahead and do research before their trips. This challenge could be reduced through greater marketing of these current and proposed services.



EXISTING LOCAL TRANSPORTATION

SERVICES

NORTH SHORE North Resort Triangle

TART provides regional connections to Truckee as well as one additional local route. The Mainline service runs between Tahoma (Sugar Pine Point) on the west shore and provides connecting service along the north shore through to Incline Village.

Northstar

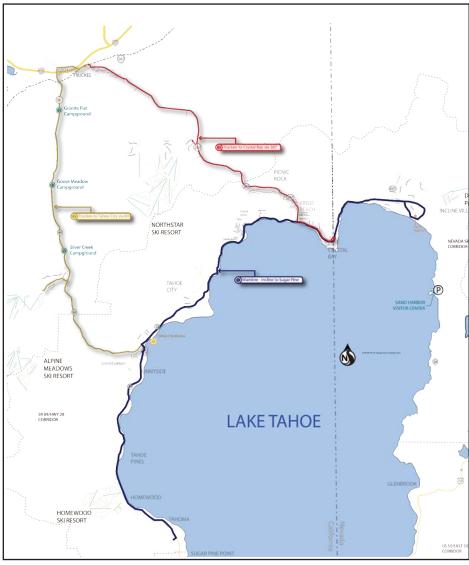
No information available at this time.

North Shore Summer Seasonal

The TTD provides a summer shuttle (East Shore Express) service between Incline Village and the Sand Harbor Visitor Center. This service operates on several different schedules between the end of June and early Fall.

Winter Ski Shuttle

To match the opening and closing of the 2015







ski season, TART operated two free ski shuttles on weekends and holiday weeks between December 18 and March 27. There were two trips in the AM and two in the PM.

Although the public schedule shows a single service, there are actually three distinct components to this service:

Incline Village to Tahoe City

The service starts as the Hyatt Regency Resort in Incline Village then proceeds to the Tahoe City Transit Center.

Tahoe City to Squaw Valley

The service finishes the Incline to Tahoe run then routes to the Village East area of Squaw Valley before returning to Tahoe City. Once the service then completes the south routing to Homewood, it makes a second run to Squaw Valley. On the second run of the morning (8:05AM from the Hyatt Regency), Squaw Valley is served only once. The

Figure 11 - TART Ski Shuttle Services

same service limitation is true for the second run of the afternoon.

Tahoe City to Homewood

The service runs to the base of the Homewood Ski Resort with a detour into Granlibakken Resort in both directions on the first run of the day only.

Summer Night Service

TART offers an altered service for evenings to reflect a slightly different demand profile. These services ran from 6:30PM to 1AM between June 30 and September 5, 2016. There are three routes in total.

Squaw Valley to Crystal Bay

This service (green route in Figure 12) runs between Squaw Valley and Crystal Bay with a detour into the Tahoe City transit center operating hourly.

Tahoe City to Tahoma

The blue route in Figure 12 is a service running between Tahoe City transit center and the

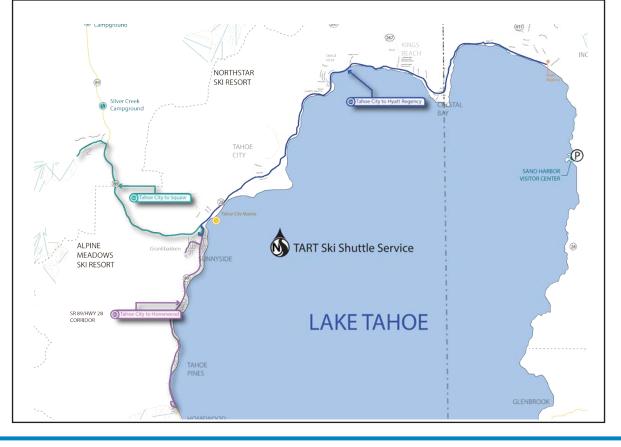
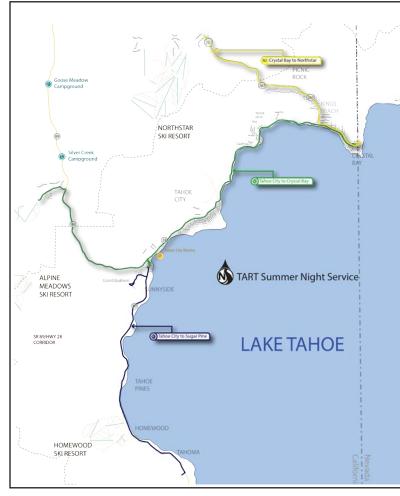






Figure 12 - TART Summer Shuttle Service



Tahoma post office and includes a stop at Granlibakken. The service operates hourly.

Northstar to Crystal Bay

The service runs from Northstar Village to Crystal Bay on an hourly frequency.

SOUTH SHORE

The TTD offers three year round services in addition to the regional and seasonal routes. Route 50 is the major route running on State Route 50 between Stateline and the South Y. Route 53 provides local service between the same two points using local roads with some evening diversion to SR 50. Route 23 provides service between South Lake Tahoe (Stateline) and Heavenly ski resort.

South Shore Winter Seasonal

TTD runs seven Blue-Go Heavenly branded services in South Lake Tahoe and to Heavenly Ski Resort that operate while the ski resort is open for limited spans of service.

Local - South Shore Summer Seasonal

The Emerald Bay Shuttle runs from the South "Y" up to Tahoe Meadows to connect with TART services from June through early Fall.

Regional (Nevada) - from Basin

The TTD operates two services out of the basin area with limited runs in the AM and PM peak for commuters. There are three total regional services with two entering the Lake Tahoe Basin.

<u>Route 20X</u>

This service runs between Stateline transit center and Gardnerville and Minden with limited peak trips.

<u>Route 21X</u>

Route 21X is a limited peak express service from Stateline to Carson City, NV.

SERVICE REVIEW

Only the TTD and TART services were able to provide statistics for analysis and as both systems collect data differently, direct comparisons in service is challenging.

Basin Wide

Figure 17 shows the level of ridership for each routes in the Tahoe Basin on an annual basis for the TTD and TART services.

The south shore services between Stateline and the South "Y" have the highest levels of ridership, followed by the north shore segment from Tahoma to Crystal Bay.



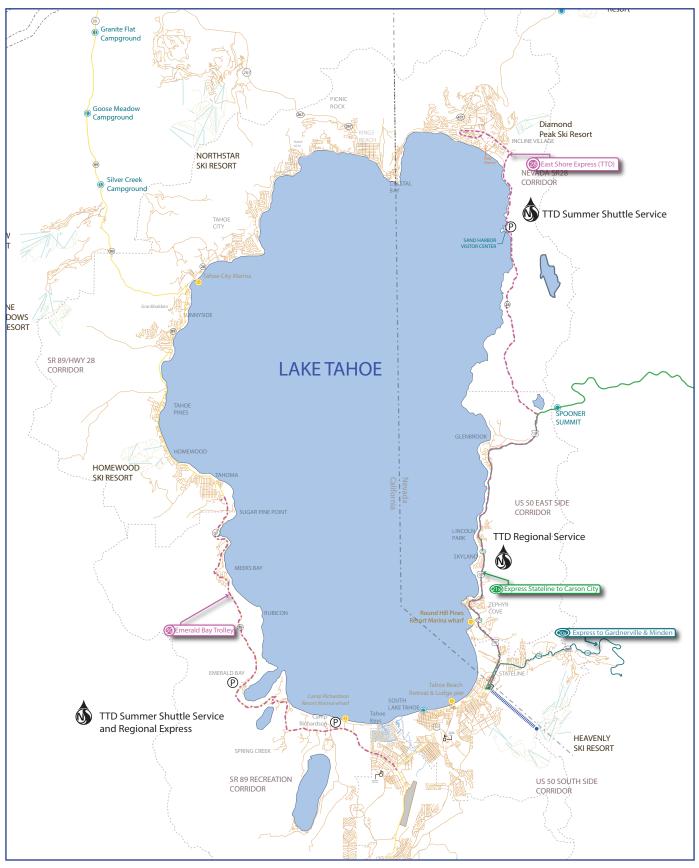


Figure 13 - Emerald Lake Shuttle (TTD), East Shore Express (TTD), and Regional Routes 20 & 21





Figure 14- South Shore Annual Services

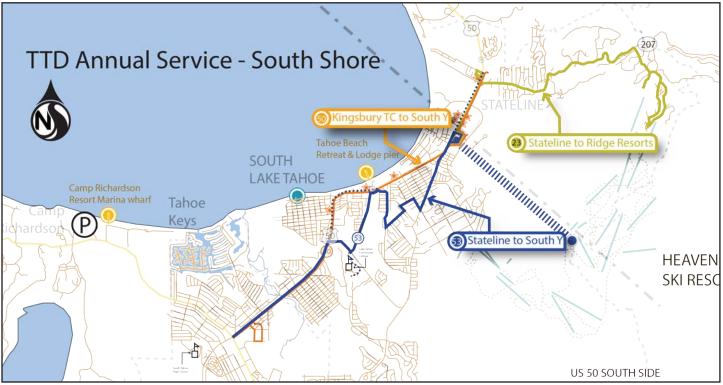
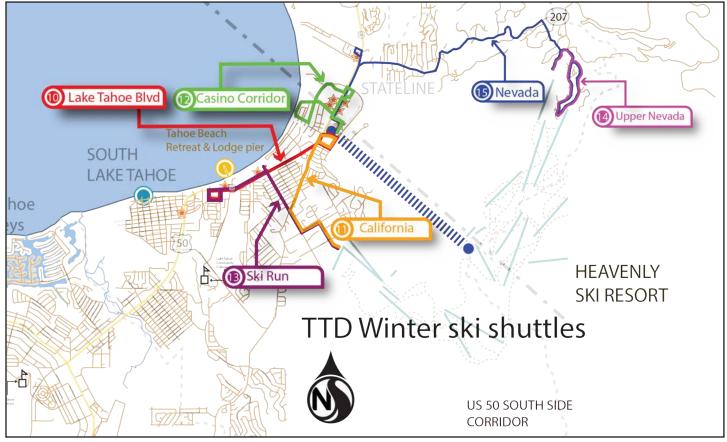


Figure 15 - TTD Ski Shuttles





The TART information includes the Northstar to Crystal Bay summer evening service. The BlueGo Heavenly winter ski shuttle services on the South Shore are not included in the diagram.

When the information is displayed by corridor rather than route (see Figure 16), it becomes clear where the majority of total basin ridership occurs with the patterns of internal corridor movement mimicking the results of the cellular data:

- The SR 50 corridor between Stateline and the South "Y" in the south
- Crystal Bay to Tahoma corridor in the south
- The Truckee to Tahoe City corridor including Squaw Valley

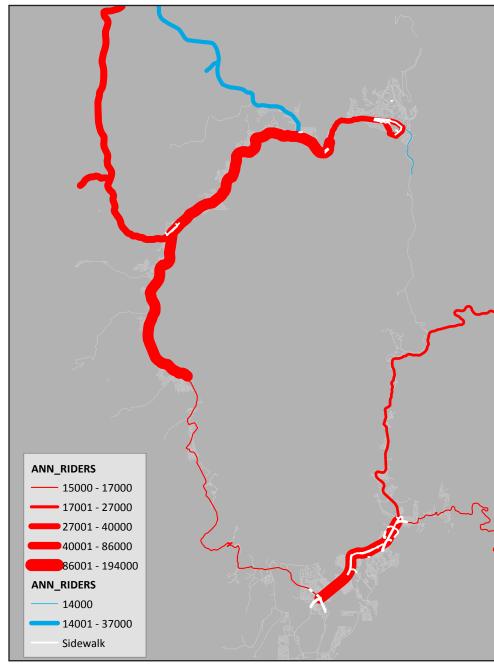


Figure 16 - Ridership by Corridor

The Emerald Bay shuttle service performs remarkably well given the limited annual span of service when compared to some of the year-round regional service offerings.

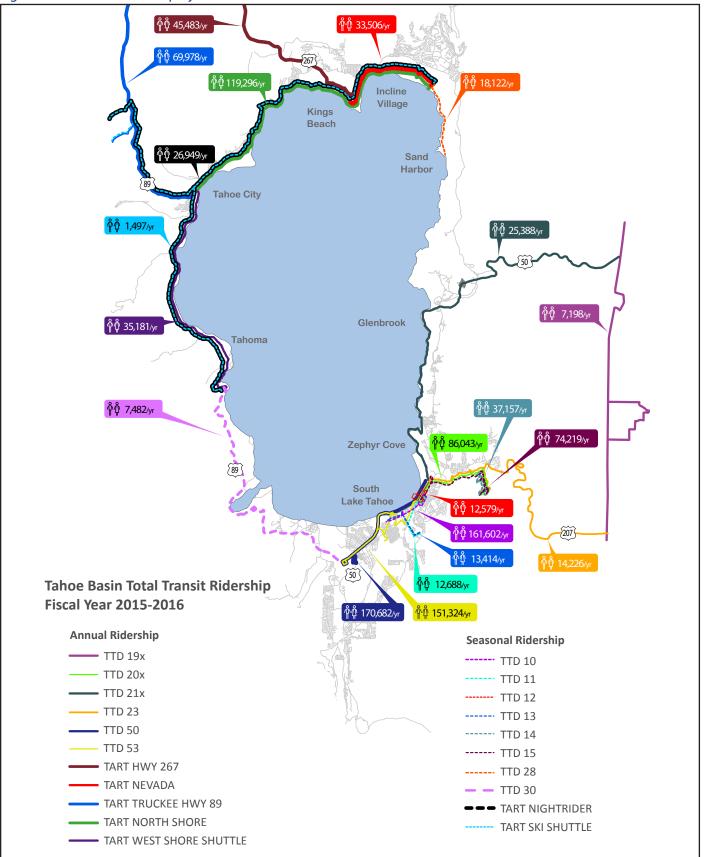
The ridership is a product of the amount of service offered on a regular basis. With the majority of public transit routes at a 60 minute frequency, the service does not currently cater to frequent travelers or visitors to the area. The region offers only a limited service to link the north with the south shore, which results in the low ridership between the two areas of Lake Tahoe.

The lack of available information on the Northstar or private services is notable in terms of providing clarity to the potential user. Private transit services feature prominently in the overall network but there is no integration.

Overall, TTD annual ridership is approximately 792,000 split between year round (57.4%) and seasonal (42.6%) service. TART carries 332,000 passengers split 91.4% year round and only 8.6% seasonal.





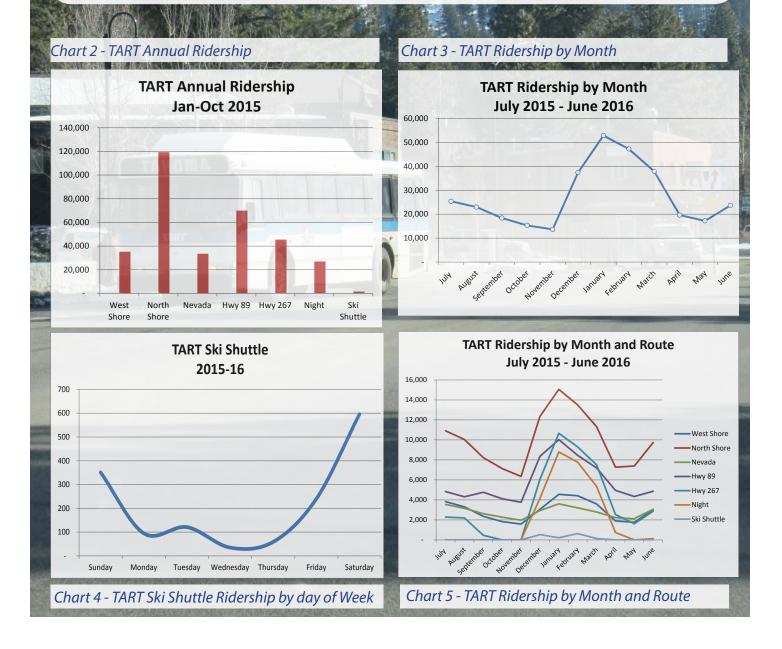




TART - ROUTE COMPARISONS

The north shore (Tahoma to Incline) service is the highest performer in terms of boardings in the system followed by the Truckee to Crystal Bay route. The three other TART services are similar in terms of passenger use. Ridership profiles by month suggests a seasonal increase in winter followed by a minor increase in ridership in the summer. This ridership profile is somewhat contrary to the visitations information which shows that there are more than double the number of visitors in the summer versus the winter. The service is geared towards the winter season but is moving towards an annual standard level of service. The majority of services are equal year round with some seasonal winter ski shuttle service and summer night service. The two shoulder seasons reflect the local usage and levels of service.

The Winter Ski Shuttle services has changed in terms of the days of week where it is the busiest. During the 2013-14 season, ridership was highest mid-week but this has changed by the 2015-16 season to a weekend usage with lower ridership during the week.



TTD - ROUTE COMPARISON

Data was provided for two months (February and July) to compare the winter versus summer system usage. The top ridership route for the annual services is Route 50 though it is notable that summer ridership exceeds winter ridership. The same is true for the local Route 53. The winter TTD ski shuttle Route 10 (Lake Tahoe Boulevard) matches the monthly level of ridership of the annual services while the other ski shuttles carry comparatively few passengers.

The regional services 20 and 21X carry small numbers of passengers, though the limited service may be a contributing factor. Each route has three AM and PM peak trips only.

The two summer services (Route 28 - East Shore Express and Route 30 - Emerald Bay Shuttle) exceed all winter services with the exception of Route 10. Given the importance and service hours dedicated to the winter season versus the summer, this shows that the summer season is likely more important overall.

Weekend ridership exceeds weekday with Saturday as the prime travel day in both seasons reflecting the importance of visitors to the basin.





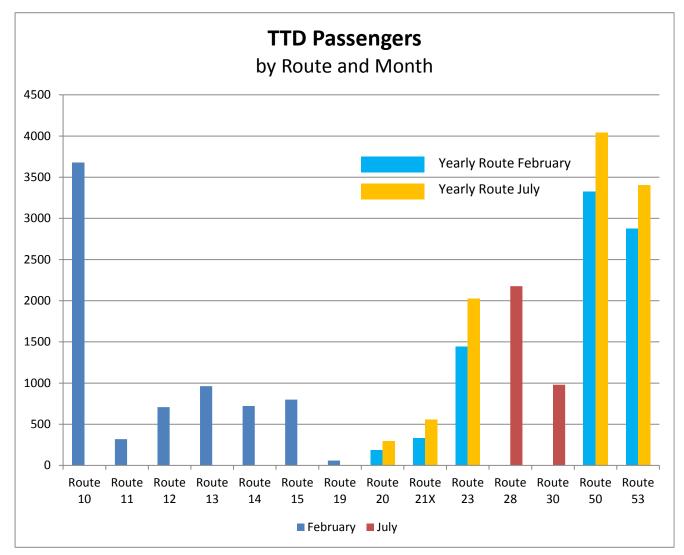


Chart 7 - TTD Passengers by Day of Week

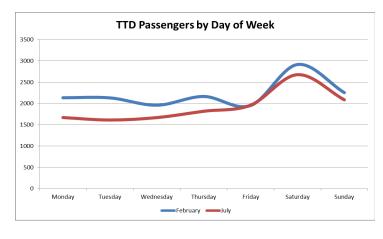


Chart 6 shows the ridership by route for two months of the year (February and July) for comparison of the winter versus summer ridership. Routes 10-19 are ski shuttle services in South Lake Tahoe to Heavenly that operate during the winter ski season only. Routes 28 and 30 are summer shuttle services that operate in the June-September time frame. Routes 20, 21X, 23, 50 & 53 are annual routes with the ridership for the two months shown separately. For the annual routes, it can be seen that there is greater usage in the summer month than the winter month. The summer shuttles outperform the ski shuttles with the exception of Route 10.

CHALLENGES

There are a number of challenges that face the existing transit network in the basin. These include:

Low frequency

The majority of the annual services operate at 60 minute frequencies with limited service for regional and seasonal services.

Missing connections

- Limited regional connections
- No Reno public transit connection
- There is no way to currently have year round connectivity from the south shore to the north shore
 on the west side of the basin. The east shore has limited potential for ridership in the non-summer
 months. The cellular data shows that there is limited movement from north to south but that may be
 in part due to the difficulty of making the movement during the seasons (winter snow closures and
 summer congestion)

Missing cohesion

 The transit services (TART, TTD, Northstar, casino shuttles, resort shuttles, limousines, airport shuttles, Tahoe Queen) create a complex web of services that lack cohesion and identity which impacts potential ridership

Lacking correlation between demand and supply

- Transit has focused on winter but summer is the largest market segment of potential ridership
- There are multiple hot spot activity areas with no public transit service to them
- The seasonality of movements and visitations is not fully understood or catered to from a transit perspective
- Transit is designed to essentially cater to local residents and winter visitors

Perception impact:

Perception is hard to overcome:

- How hard is it to catch a bus at Lake Tahoe?
- The perception of transit is based on the reality of limited service, congestion and performance challenges
- The existing travel demands and patterns are not fully understood

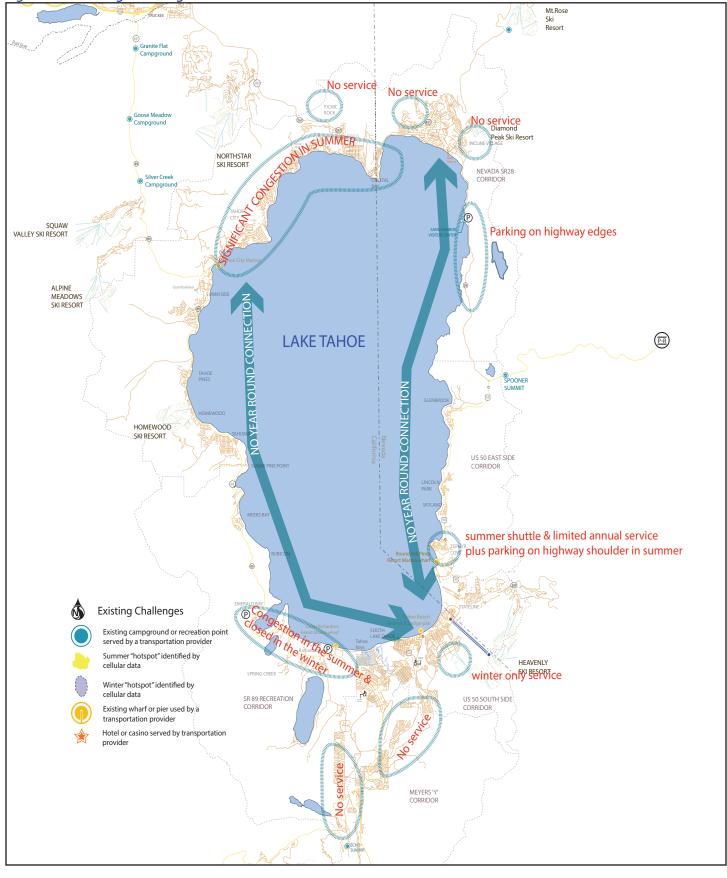
Congestion and parking impacts

- Congestion in the summer from Crystal Bay to Tahoe City impacts transit efficiency and performance
- Congestion along SR89 from Emerald Bay to South Lake Tahoe impacts the summer Emerald Bay trolley service
- Parking (private vs public stock) is not always fully utilized during peak demand seasons. For example, ski resorts have empty lots in the summer season that could be used for transit park and ride areas

Overall

Compared to other resort areas, the overall service profile is very low when considering the frequency of service.

Figure 18 - Existing Challenges





COMPARABLE RESORT REGIONS

Lake Tahoe ranks among the best ski resorts in the US, however, it tends to be marketed as a number of individual areas or resort groupings in winter with little summer based marketing. It is useful to examine other regions that have a ski resort base but have branched out into summer season services or that attempt to connect to larger regional areas. These also represent popular comparable destinations that have a direct competitive impact on Lake Tahoe.

The following comparable resort areas were identified and reviewed:

- Aspen/Glenwood Springs, CO
- Vail, CO ٠
- Mammoth Lakes, CA
- Jackson Hole, WY
- Sun Valley, ID
- Steamboat Springs, CO
- Park City, UT
- Whistler, British Columbia, Canada

Each resort tends to be a single municipal entity with no major barriers such as a lake.

Table 1 shows the transit services offered by these resorts.

Other highlights of these ski resorts:

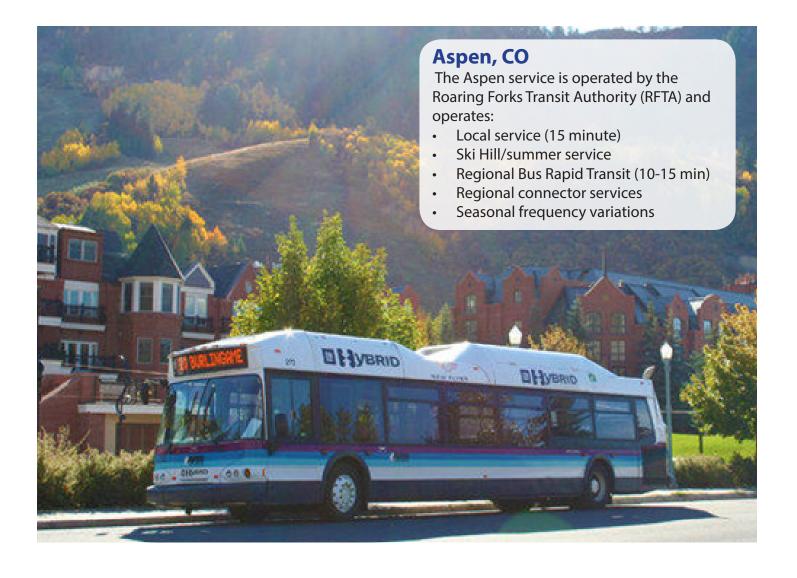
- Aspen, Mammoth, Whistler and Vail are similar in • terms of ski visits 1.2-1.5 million per year
- Sun Valley and Jackson Hole are about 1/3 the • size
- Most have a small resident population (5 to 8 • thousand) with large temporary population increases during winter and summer seasons (15 to 30 thousand)
- Typically operate permanent year round services • and some seasonal services
- Most have a local service and a separate regional service
- Service within the town is free. In all but one • case (Jackson), transit service to and from the ski resorts is free as well.
- Service day typically extends from 6AM to 2AM
- Typical frequency for main services is 15 minutes
- Each area has a single operating entity for public transit

The frequency of service is the most exceptional difference to the service that is currently offered in the basin.

Comparable Ski Resorts	Aspen/Picton County Colorado	Vail Colorado	Mammoth California	Jackson Hole Wyoming
Type of service/ routes	Local routes	2 main routes Local routes connector	Local, regional Late night trolley Dial-a-ride Connections to resorts	2 commuter routes Connector routes to ski hills
Frequency	routes	, -,	15 min main route 30 minute local 60 minute regional	30 min
Seasonal Routes	Seasonal frequencies	Seasonal frequencies	Summer and winter shuttles	Seasonal services
Fares	Free in-town service	Free transit service	In-town services are free Dial-a-ride \$3-\$4	\$1-\$3 depending on route

Table 1: Comparison of Ski Resort Transit Systems





Sun Valley Idaho	Steamboat Springs Colorado	Park City Utah	Whistler, BC Canada
Local routes Regional routes	Local routes Regional routes	Local Regional Connections to resorts	Local
15 min main routes 30/60 min for connector/community routes	20 min	60 minute regional	15-20 min for main routes
Seasonal services to ski hills	Winter service to ski hills	Summer and winter shuttles	Seasonal services
Free in-town services	Free in-town services	Free in-town services	Free in town services



Vail, CO

Vail is operated by the municipality as part of a desire to reduce vehicle traffic in the community. Parking structures act as intercept points where transfers can be made to transit. Vail has 2 main routes with 15 minute service and local or connector services that link into the main services. The connector services operate at lower frequencies of 30-60 minutes.

Mammoth Lakes, CA

Mammoth Lakes have three year round routes that are supplemented with seasonal and regional services (connecting into the TTD service area). In town services are fee. The three year round services operate on 30 minute frequencies.

Jackson Hole, WY

There are two commuter routes into Jackson Hole which is supplemented by connectors directly to the mountain resorts. There are additional seasonal services in winter. Jackson Hole advertises the bus service as the way to get around town with 30 minute services.

Sun Valley, ID

Sun Valley has multiple routes linking the local area and the region with a 15-minute primary route and community or connector services that operate on 30-60 minute frequencies. There are additional seasonal services to the ski hills. Public transit is operated by Mountain Rides Transit. Sun Valley markets the use of transit as a way to move around the community rather than the private automobile.

Steamboat Springs, CO

Steamboat Springs has local, regional and seasonal services with the main services operating on 20 minute frequencies. There are specific services to recreational opportunities with varying frequencies but generally in the 60 minute range.

Park City, UT

Park City operates 9 routes including a free Main Street Trolley with a combination of local routes, regional services and outdoor recreation routes. Service frequencies range from a high frequency zone in Park City with 5-15 minute services to 20, 30 and 40 minute service to local residential areas. Express service to Kimball Junction runs hourly.





Whistler, BC

951 www.bctransit.com

Whistler operates an annual service with changes in frequency for the summer and winter. There is only one additional summer service to a local lake. Service is higher on weekends to reflect the influx of visitors to the area. All annual services are in the 15-20 minute frequency range.



GAMES EXPRE

Trak



BOULDER, A TMP SUCCESS STORY:

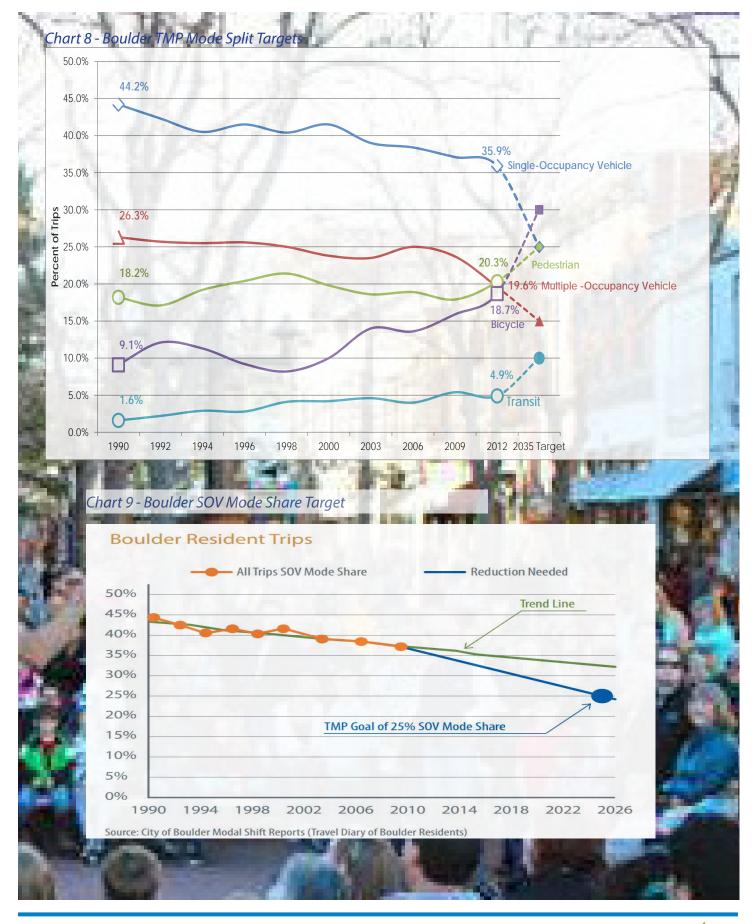
Boulder makes for an interesting case study because of the commitment made to changing the way the community operates. Starting with a Transportation Master Plan in 1989 through an update in 2014, the mode split targets of transit, cycling and walking have been aggressive but have been met over time. Newer mode split targets in the 2014 have transit in the double digits, having met the original 5% and moved past 9% in 2014. As transit, cycling and walking increases, so too does the use of single occupancy vehicles drop significantly. This provides a graphic example that a bold vision to make changes in a community can be successful if there is a steady commitment to the plan required to reach these community goals in the long term.

Overview:

- Population 105,000, ~25 miles from Denver
- Transportation Master Plan 1989, setting a new course for a community that relies less on the single-occupant vehicle (SOV)
- Vision had specific policies and goals
- Reduce SOV travel (-15% over 20 years)
- Reduce money spent on roads and increase funding for bicycles, pedestrians and transit
- Work with businesses to develop alternatives for their employees
- Funding (phased in building tax for transportation projects)
- Manage congestion and mobile source emissions
- Strategic program of capital projects and programs
- Transit mode share increased to 5% (from <2%) over a twenty year time frame which has now been increased in the TMP update to 10%

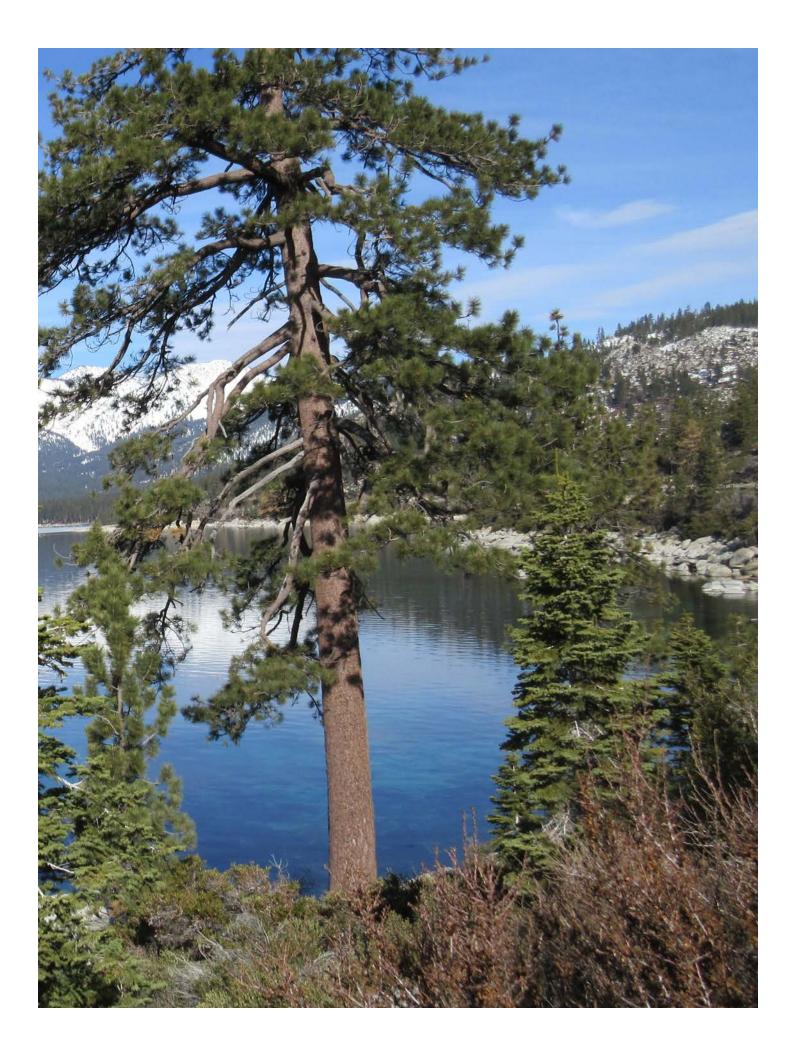








LAKE TAHOE TRANSIT MASTER PLAN TRANSIT SERVICE OPTIONS



TRANSLATING THE **V**ISION

This section identifies the recommended layers of the transit system along with the Regional and Trans-Sierra connections. The vision for each layer of the transit system is based upon the goals and objectives of the TMP. Each layer attempts to establish a specific type of service type that builds upon the other layers to create a comprehensive and integrated system for all residents - whether permanent or staying for a day. The vision also has a major focus on the regionality of the visitations as well as working commuters, that guides the creation of a network that allows for a choice to be made how people travel into the basin, how they move around the basin, and the impacts they have on the basin on a daily basis.

The plan is focused upon being transformational in the way that people move around the region but also how connected the Tahoe Basin communities are today and how they will change especially with respect to housing. The Tahoe communities are beginning to see the typical signs of a resort area where affordable housing for workers is in short supply creating commuter communities outside the area. This can make the economics of Lake Tahoe more challenging as has happened in places like Vail and Aspen. Having a mixed population that includes workers creates more vibrant communities rather than showcases for those able to afford the area. Transit Oriented Developments can be the supporting element that provides a focus for the renewal of the transit service in the basin.

SERVICE PRINCIPLES

The development of the service plan was guided by the following principles:

- Create a network that can meet the year round and majority of the seasonal needs without changing routes. The network should satisfy the key travel patterns into and within the Tahoe Basin with seasonal variations in service levels to match the changes in demand
- Mirror the major movements that occur today
- Create new connections that link the north and south areas of the Tahoe Basin to create a single, integrated network that is easy to understand

LAYERS OF SERVICE

The transit vision within the Tahoe Basin area is based on the creation of layers of service. Each of the layers plays a specific role and is targeted towards distinct movements with different levels of service. Each layer works with the others to provide a complete network of services:

To support the vision, the operational transit network is comprised of five distinct layers of service. These service layers help focus the style and type of transit provided to address the transit needs of the 3 specific market segments that they serve namely local residents, temporary visitors and tourists to the area and regular commuters from surrounding communities to access jobs. The layers of service also embrace the notion of connectivity and the need to establish a comprehensive transportation network that offers choice.





Frequent

The frequent transit service aims to move towards an ultimate service frequency of 15 minutes all day and is focused upon the corridors where there is the most amount of potential travel movement.









Local

Local service is focused upon corridors and routes where there is a high level of usage but the number of origins and destinations or the level of density (both jobs and people) is not currently sufficient to warrant a Frequent level of service. The goal of this service is a 20 minute peak/30 minute off-peak frequency of service.

Community

Community service is based on the notion of access within the residential areas of the basin where housing density is low but there is a desire to have alternate mode access to shopping or services within the local area. This service connects into the Local and Frequent service levels at the nearest point of interaction.

Summer (Seasonal)

Recognizing the importance of the summer season on the amount of visitations to the Tahoe Basin, there are several areas where a seasonal service currently exists and can be improved in order to minimize the amount of personal vehicle use. Winter services would be kept as increased frequency on existing routes which have been designed to provide service to the majority of winter activity locations.

Regional California (Trans-Sierra)

Connections from the Tahoe Basin across the Sierra Nevada mountain range to northern California. Truckee is considered to within the Tahoe Basin for this report and has services under the Frequent, Local and Community layers.



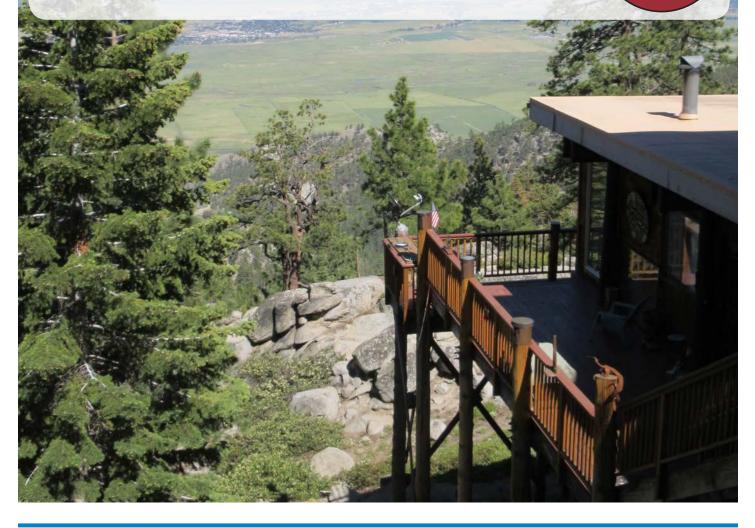
Regional Nevada

Connections around the Tahoe Basin to local communities that act as entry points or as residential bases for workers within the basin.



FREQUENT LAYER

The frequent layer of service has three basic elements to it that incorporate portions of the existing transit network services:





Frequent

Ferry

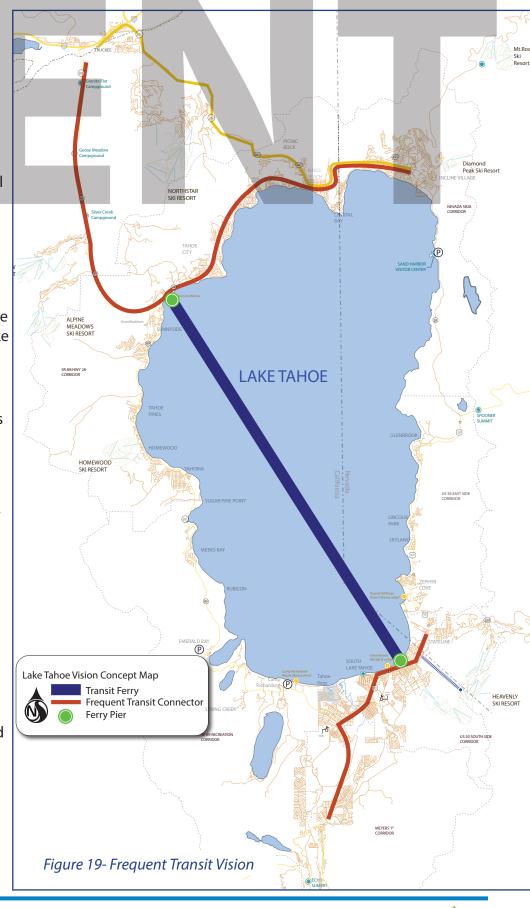
The creation of a water-based connection between Tahoe City and South Lake Tahoe will allow residents and visitors to travel between the two shores without the constraints of weather-based road closures or traffic congestion. The ferry can encourage new travel patterns by visitors who tend to stay at one end of the lake or the other based on their initial entry point. It can also provide a new way to utilize an under-used asset to allow visitors and residents the opportunity to see the Lake and the natural beauty that defines the Lake Tahoe experience.

North Shore

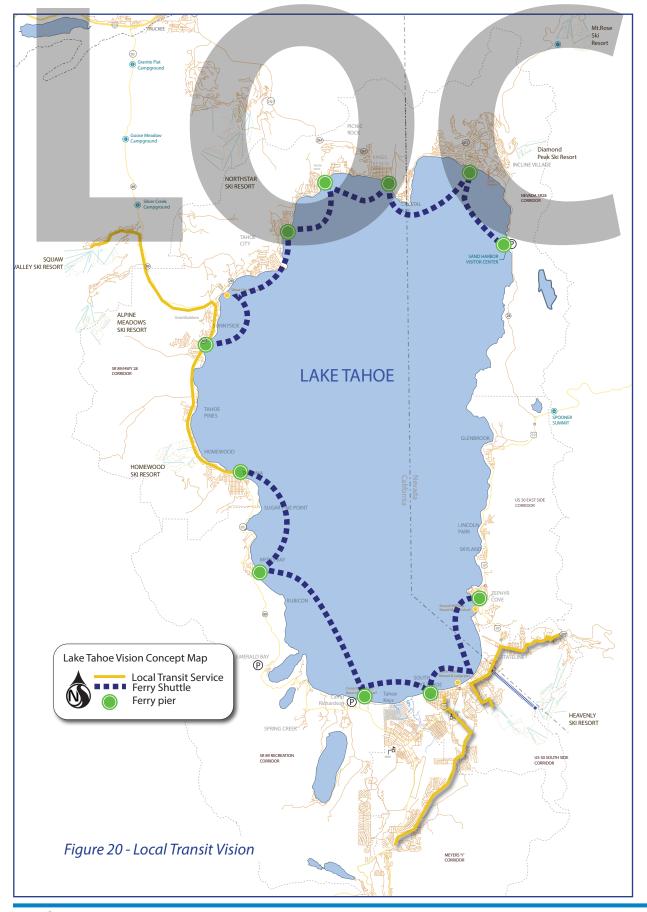
The North Shore frequent service is based on the highest use corridors in the existing TART service to create a high quality connection from Truckee to the basin and the ferry as well as between Tahoe City and Incline Village.

South Shore

The south shore service is focused upon the US50 which is the main corridor for travel within the south area. This is the key corridor for travel movements along the south shore and features connecting points at Meyers, the South "Y", the ferry terminal on Ski Run Boulevard and at Stateline. The service could be extended to the Kingsbury Transit Center.



Stantec 1





LOCAL LAYER

The local layer has multiple elements to it on both land and water. Each route has the potential to develop into a frequent service if land use changes or demand increases.

Ferry Shuttle

The Ferry Shuttle is intended to provide a seasonal relief valve to the Frequent transit service on the north shore. The shuttles (Figure 23) utilize basic docks to provide a water-side transit connection between communities that can help reduce the amount of congestion on the roadways. The small ferries operate at 5 knots and are custom built in the U.S. to carry 10 passengers. They have been tested and approved to operate on South Lake Union in Seattle. The boats can be built to hold up to 25 passengers with a modified design but the operator in Victoria, British Columbia, Canada (who owns the patent on the boat design) has found that the 10-12 passenger size has better usage. It is likely that passengers will make short hops versus a trip along the entire route.

North Shore

The north shore features two routes - the first connecting Truckee and Northstar through to Incline Village. The second connection links Squaw Valley



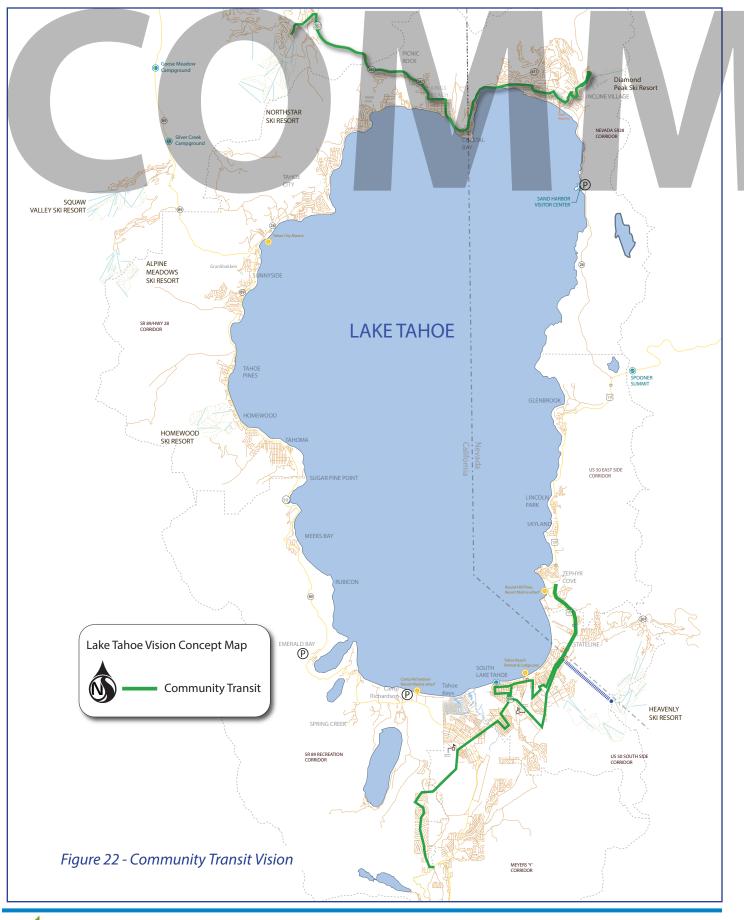
to Tahoe City and south to Homewood and Tahoma to connect with summer services at Sugar Pine Point Transit Center.

South Shore

There are two local connections that combine aspects of the BlueGo winter services with existing TTD year round services. The first connects the two sides of Heavenly from California Lodge to the main highway access point off highway 207 (where it will connect with a community route). This provides access to parking at California Lodge in the off peak seasons. The second route creates a new connection along Pioneer Trail from Meyers to Lake Tahoe Community College and then into a connecting hub at Harrison Ave. where there is access to other transit services.









COMMUNITY LAYER

The community layer has a long term goal of providing service every 30 minutes during peak periods and every 60 minutes during the off peak periods.

North Shore

There is one community route in the north that is an extension of the TART summer service linking the main terminal at Northstar village to Kings Beach, Crystal Bay, Incline Village and up to Diamond Peak Resort. This creates access to the resorts in the peak seasons as well as access to the services in the north shore from those resort areas. Links along Highway 28 include those to local, frequent and ferry shuttle services as well as regional connections.

South Shore

The south shore has a number of different community services based on the diversity of housing and road networks. One service will be in the Heavenly area with connections to Stagecoach Lodge and Boulder Lodge and the Ridge Resorts. The Ridge Resorts currently operates its own shuttle service within the community. A new service would run from the South "Y" transit center through two neighborhoods that currently have no service -O'Malley Drive area and the San Francisco Avenue area, then



along segments of the current Route 53 to connect to Stateline Transit Center and then up to Zephyr Cove.

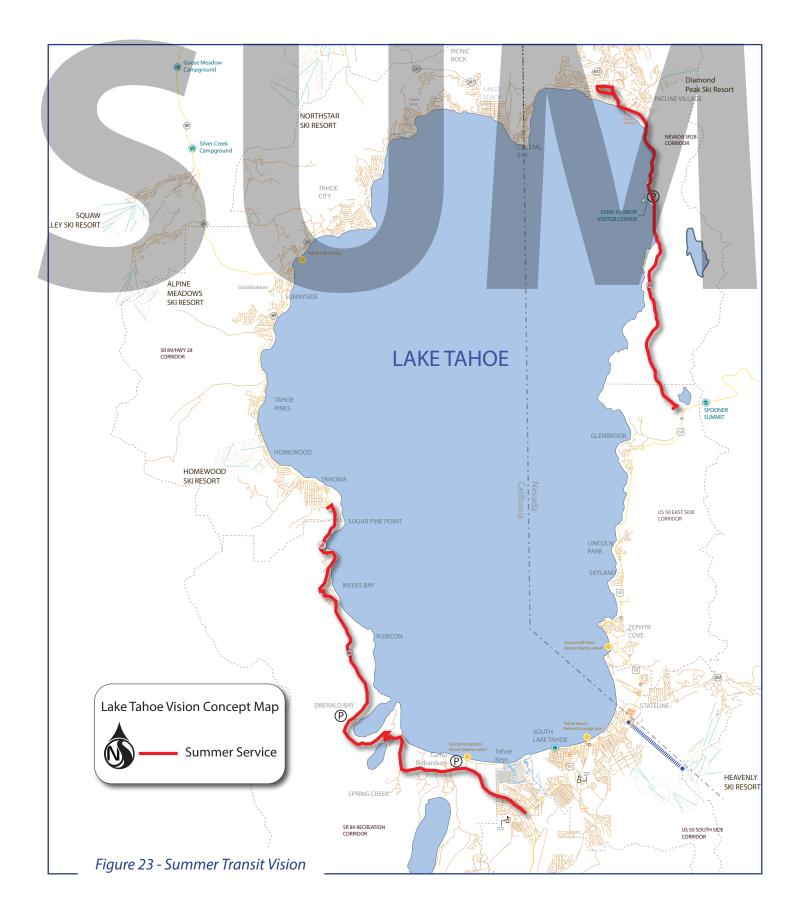
Another new service would run from Meyers along the North Upper Truckee Road and Lake Tahoe Boulevard to connect with other transit services at the South Y transit center.

Finally, another new service would link the Stateline Transit Center to the Lake Tahoe Community College and Harrison Ave. via Pioneer Trail.

These community services may have seasonal fluctuations in the level of service that reflects their ability to connect not only local areas but also recreation areas with concentrated residential housing within South Lake Tahoe.









SUMMER LAYER

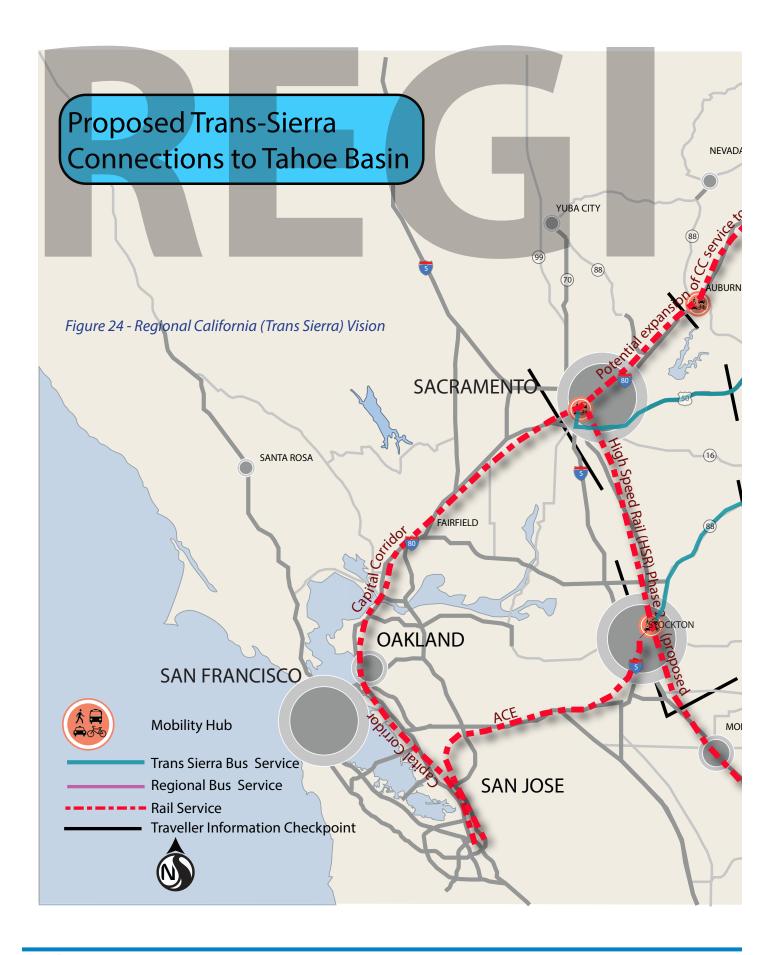
One of the key principles of this plan is to attempt to create annual transit services that serve the majority of residential, commercial and recreation areas where possible. When it is not possible, then a seasonal service would apply. In this case, there are two areas where annual service is not viable from a passenger perspective because there are significant tracts of US Forest Service (USFS) lands that are heavily used in the summer months only but have no resident population base the



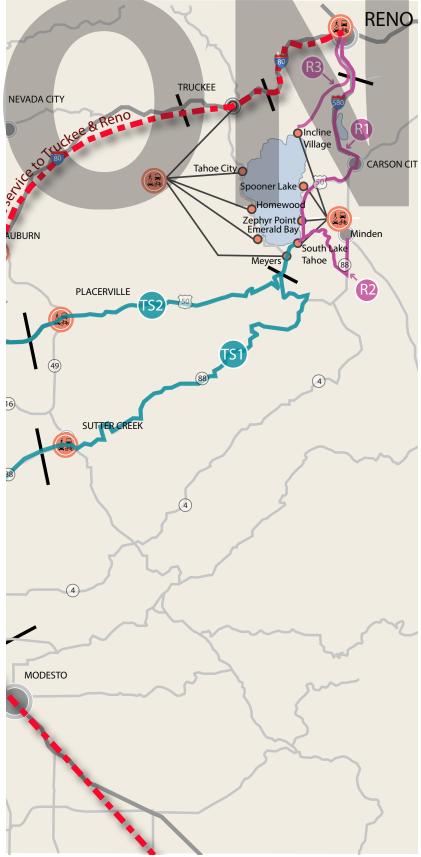
used in the summer months only but have no resident population base that requires year round service.

The two existing summer services will remain but with improvements in the service frequencies. The Emerald Bay Shuttle connects South Lake Tahoe with Tahoma in the summer and could be even more effective if there were parking or vehicle restrictions during the summer months to further reduce vehicle traffic through Emerald Bay State Park and the service levels were significantly increased. The East Shore Express, operated by the TTD, extended from Sand Harbor to Kingsbury in 2016 but would be extended to a new mobility hub near Spooner Lake. An improved shuttle service, in conjunction with additional parking areas would reduce the need for highway side parking and reduce the impacts on entry to the Sand Harbor park.





Tahoe Transportation



RENO REGIONAL TRANSIT LAYER

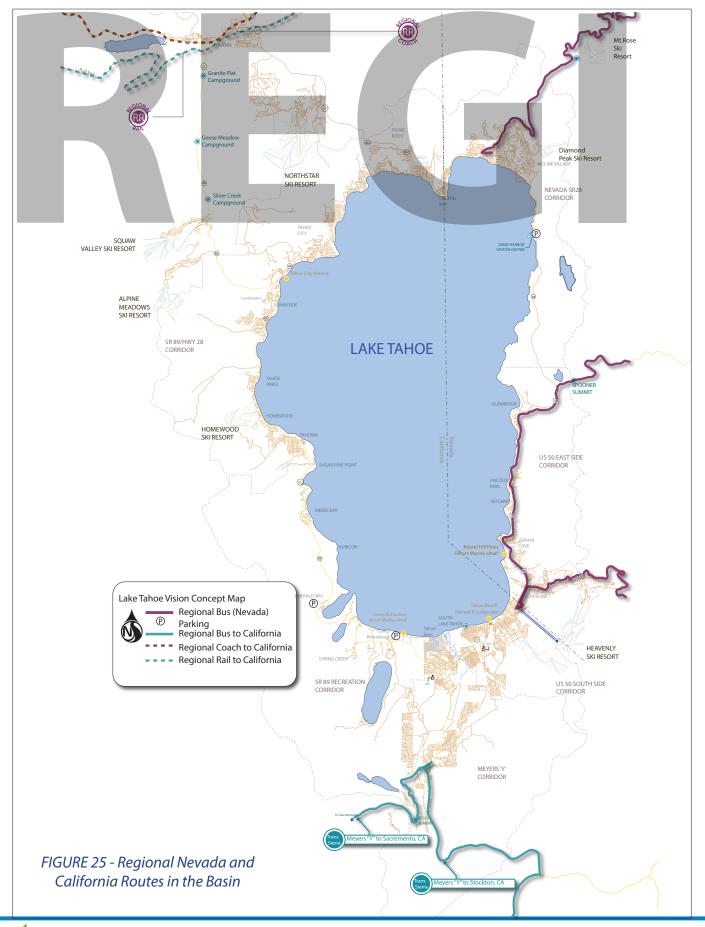
The underlying premise for the region is connectivity and choice - especially from outside the basin. There are some regional connections to Nevada and California (Trans-Sierra). There are existing plans to increase the connections for rail within the Sacramento-Stockton-San Jose-San Francisco region including improvements to the Altamont Corridor Express (ACE) service as well as a proposed High Speed Rail service. These connection improvements, while focused upon the San Fransisco Bay Area-Silicon Valley movements, can benefit the provision of transportation choice to visitors to the Lake Tahoe basin.

The choice can come from two main avenues:

- Expansion of Capital Corridor rail service between Sacramento and Reno to supplement the Amtrak services to the north shore
- Provision of coach based connections to South Lake Tahoe from Sacramento and Stockton

Traveler information points at key locations would provide the necessary basin traffic reports on congestion and parking as well as congestion on the approaches to the basin. This would allow travelers to the basin to make mode based decisions before reaching the basin. Key mobility hubs could be created in Sacramento, Stockton, Sutter Creek, Placerville and Auburn to offer secure parking and transfer opportunities to either rail or bus to travel into the basin.







From Nevada, there are existing private services to the Tahoe Basin that could be supplemented to provide more choice and greater affordability. Providing more opportunities to



reach the basin to approximately 24 million annual visitors will help reduce the vehicle congestion that is experienced within the basin. These regional connections will only be successful if they are integrated with improved service within the Tahoe Basin.

Service Components

The regional transit layer has two distinct components:

- Regional Nevada: services that link eastward to those communities outside the Lake Tahoe Basin that provide a dual purpose - bringing commuters into the basin from the surrounding communities for employment as well as bringing visitors from Reno for recreation
- Regional California (Trans-Sierra): the other • regional movement traverses the Sierra Nevada mountain range to Sacramento and Stockton serving as gateways to the San Francisco Bay Area and Silicon Valley. The routes also act as local commuter routes for those communities that may provide more affordable housing than what is available in the basin

Regional Nevada

There are three routes that emulate existing public and private transport services from Reno, Carson City and the Minden/Gardnerville areas into the Lake Tahoe Basin. These services provide access from the surrounding communities that allow workers to access employment opportunities within the basin. Housing costs are sufficiently high that there is a traditional resort phenomenon occurring where the surrounding communities become housing bases for local workers who cannot afford Lake Tahoe housing

prices. Providing transit access allows those longer commutes to occur without bringing additional vehicles into the basin as well as making the commute more convenient for workers.



One route will continue to connect Minden/ Gardnerville with South Lake Tahoe via the Stateline mobility hub. Another route will connect Carson City and Reno via US 50 to South Lake Tahoe. A third route will run via the Mt. Rose highway between Incline Village and the Reno-Tahoe International Airport (RTIA) with stops at key en route locations to maximize accessibility.

Regional California (Trans Sierra)

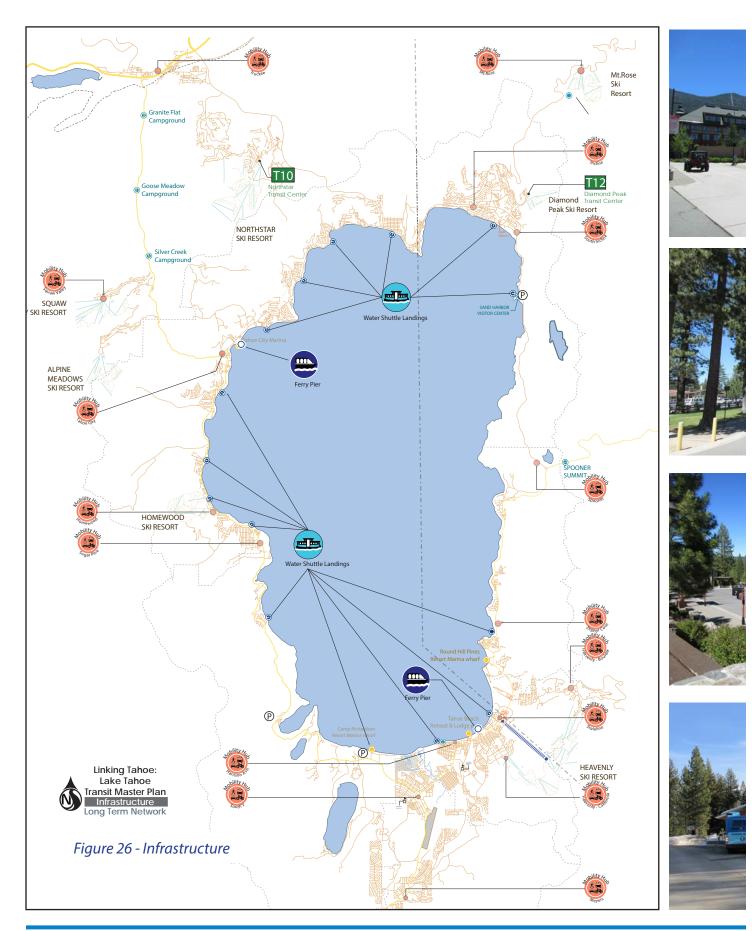
With respect to connections into California, different approaches have been taken for access via the northern route versus the southern routes. In the north, the existing rail line allows for future improvements to service between Sacramento and Reno to allow visitors access into the basin area without requiring a personal vehicle. Given the millions of visitors that access the basin annually through the northern approach via Truckee, regional rail offers the potential to drastically transform the way that people travel to Lake Tahoe. With the understanding that improving rail services can be a challenge in terms of funding and jurisdictional issues, the interim proposal is to provide road based coach services between Sacramento and Truckee.

For access from the south, two bus routes are planned in the long term that connect Meyers to Sacramento and Stockton. These routes will allow access at intermediate points along the way to create more opportunities for visitors to use an alternate mode rather than a private vehicle. These will significantly improve the existing limited Amtrak Thruway bus services.















SUPPORTING INFRASTRUCTURE

Infrastructure is the first point of contact for users of the transit system and the Transit Centers and Mobility Hubs play a key role in ensuring that the experience is of a high quality. Transit Centers are for transit vehicles only, with potentially some cycle parking such as at Northstar and Diamond Peaks. Mobility Hubs incorporate buses, parking, cycle facilities and have nine objectives as outlined below. They are people places that provide a focal point for the transit network at key points around the lake. Some hubs, like Meyers, Truckee, Spooner Summit, and Mt. Rose provide the first point of contact for external trips to link to the

MOBILITY HUB OBJECTIVES

local transit network.

Pro la				
	SEAMLESS MOBILITY Seamless integration of modes at the mobility hub	Safe and efficient movement of people with high levels of pedestrian priority	A well designed transit station for a quality user experience	
	Strategic parking management	Well designed cycling storage facilities	PLACEMAKING An attractive public realm that is designed to make the public feel safe & secure	
	Minimal ecological footprint	IMPLEMENTATION Designed for technology and wayfinding	Planned for future growth and change	
- Angeles				

Local Mobility Hubs such as Stateline, Harrison Ave., South "Y", Tahoe City or Incline Village can act as connection points for those inside the Tahoe Basin to change modes and access the transit network.

The implementation of Transit Priority measures where possible along US 50 in South Lake Tahoe and within Tahoe City would assist in promoting service reliability and schedule adherence.







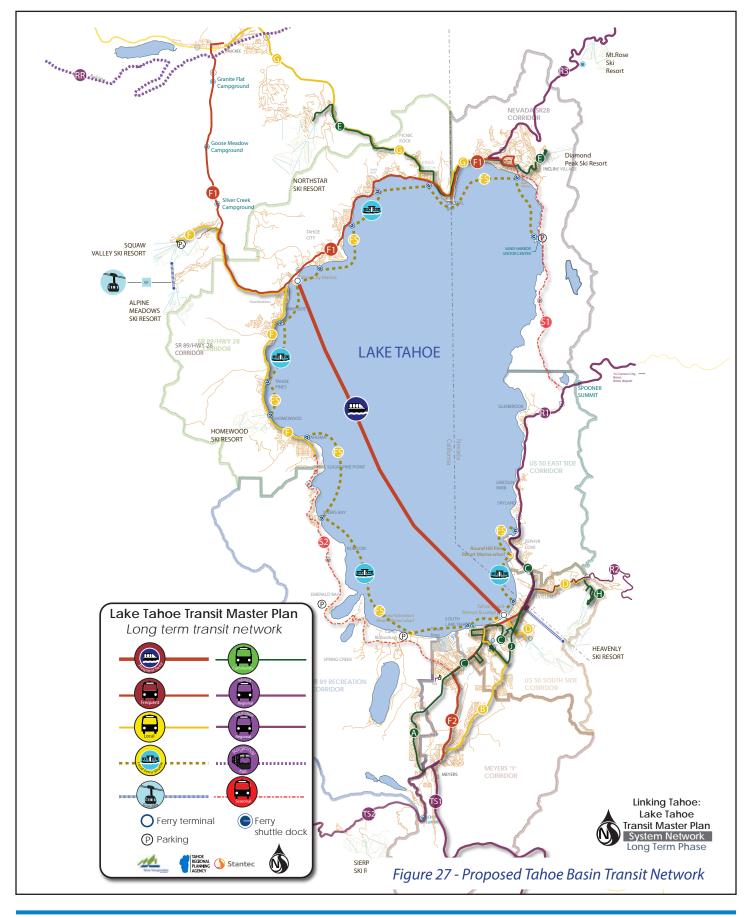


The City of Los Angeles Urban Design Studio has created an excellent summary of the elements and characteristics of mobility hubs which can serve as a useful reference (<u>http://urbandesignla.com/</u><u>resources/docs/MobilityHubsReadersGuide/lo/MobilityHubsReadersGuide.pdf</u>).</u>

SUMMARY

Overall, the goal in creating a system with different layers of service, each seeking to serve different goals and objectives but overall to create a single integrated system with a focused desire to improve mobility to the region, within the Tahoe Basin and to support the protection of the area as a place to live, work and visit. Creating choices for travel must be done in combination with infrastructure and land use changes where the urban form and the transportation network work together with a singular goal of making it easier to travel and stay in the basin as a resident, worker or a tourist (for whatever time period) without requiring the use of a personal automobile.



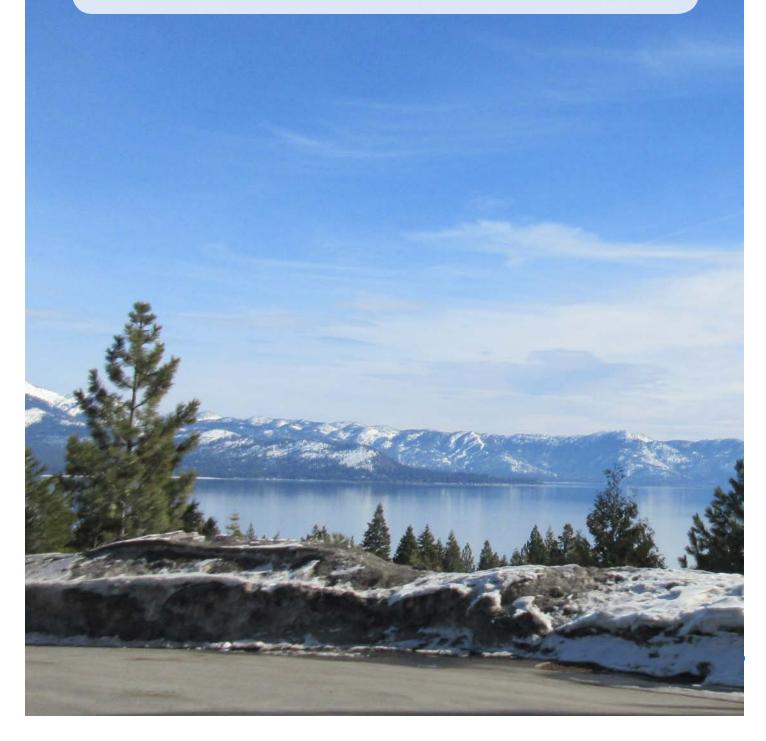






LAKE TAHOE TRANSIT MASTER PLAN Service Changes by Phase

This section presents the changes proposed to the system by time period or phase. Four implementation phases have been proposed to allow for a logical sequencing of the services as well as to reflect that some changes will be more challenging, either based on jurisdiction or funding, than others. Those considered more difficult to implement are in the later stages of the plan. Each phase has a focused strategy as noted in the phasing strategy and focus diagram.



Existing transit service provision in the Tahoe Basin can be summarized as follows:

- Transit services in the Basin are split into two service areas namely the north and the south shores without real connection between them
- Existing services are complicated and confusing to residents and visitors in terms of how and when they operate – routes and schedules can vary by time of day, day of week as well as by season
- The transit system is not geared to addressing the potential and latent demand for transportation in the area
- A fair number of private services has been developed and implemented over the years to supplement the formal transit supply. For example, regional coach services and a number of seasonal services provided by various resorts in the area
- Currently, the transit system doesn't offer consistent and adequate service to provide a realistic alternative transportation option

to visitors and residents alike. This results in the continued and increased use of private vehicles to travel within the Basin area which continues to impact traffic congestion and delay

With the forecast growth in visitors and residents over the next few years, combined with the topography challenges that limit the opportunities to improve and expand transportation infrastructure, it is crucial that an integrated and holistic regional transit system is established to offer a realistic transportation alternative to residents and visitors to and within the Tahoe Basin.

The proposed system that is recommended and described below is one that achieves a 5% transit mode split. By increasing the service frequency and utilization (ridership) of this recommended system, the 10% and 20% mode split targets are pursued.

Phasing Strategy and Focus

Immediate

what is achievable with no change in service hours



Create new system structure and connect the basin



Medium

Long Transit Sierra Connections

10+

Service Improvement approach

The proposed network is based on the following principles:

- Establishing an easy to understand, consistent and layered network of routes with different functions depending on trip purpose and demand for transit
- Providing more year-round routes
- Ensuring efficient, seamless and appropriate connections between the north and the south shores
- Providing a realistic transportation alternative to reduce the use of private vehicles and increase the transit mode share, thereby reducing congestion and delay
- Supporting regional connections outside the Tahoe Basin to offer the option of accessing the basin without a private automobile

More specifically, the proposed network:

- Incorporates all the existing services, including the winter ski services, and will augment some elements of service that are currently provided by private operators such as casinos, resorts, ski areas and airport services
- Proposes service in new areas of the south shore that are currently not served by transit to address latent demand, for example connections to Meyers

The intent is to create a year-round transit service incorporating seasonal frequency changes to address seasonal demand but not requiring different routings. This creates a simple network of services addressing differential transit demands with differential levels of service. The overall goal is to create a service that is easy to use, frequent and desirable as an alternative transportation option.

The transit network proposals are presented in three different ways to convey the changes in routes, their operating characteristics and supporting infrastructure, to improve the ease of comprehension and understanding. These three ways of presenting information are:

1. Reviewing route details by Area:

This is a logical way of reviewing the transformation of existing routes into expanded, improved and/or consolidated services due to the current structure of transit and transit governance in the Tahoe Basin (north shore and south shore). However, as a layered approach to transit provision has been followed in the design of the transit system where each route has a specific function, it is difficult to comprehend the resultant transit system. Routes by Area are presented in accordance with route function:

Local Services

•

- Frequent Transit Networks
- Local routes
- Community routes
- Seasonal routes
- Other local modes (ferry/gondola)
- Regional connections
 - Regional routes
 - Trans-Sierra routes

This section also includes an overview of transit infrastructure proposals to support transit services and are grouped as follows:

- Transit centers: to accommodate passenger transfer activities and facilitate transit operations
- Parking facilities
- Mobility Hubs: that integrate transit with facilities that accommodate other modes (walking, biking, private vehicles) and provide customer amenities
- Transit priority measures
- Ferry infrastructure

2. Reviewing the transit network by Implementation Phase

This provides an indication of the growth and evolution of the transit network. Four phases have been identified and each phase represents a different stage in the development of the full transit network serving the Tahoe basin as well as the regional and Trans-Sierra connections.



3. Reviewing detailed service improvements by corridors in the basin.

This is an effective way for presenting an overview of the overall transit proposals by relating them to the six distinct corridors that have been identified in the Tahoe Basin:

- Meyers Y Corridor
- SR 89 Recreation Corridor
- SR 89 / Hwy 28 Corridor
- Nevada SR 28 Corridor
- US 50 East Side
- US 50 South Side Corridor

The report concludes with a summary of service changes as it relates to:

- Route improvements by implementation phase
- Service level guidelines and ridership forecasts by phase of implementation

The impact of service changes is expressed as it relates to:

- Ridership projections
- Operating costs of service improvements
- Revenue service hours
- Improvement in rides per hour
- Improvement in service frequency
- Improvement in transit mode share

Phases of service

As noted, there are four phases of service being considered based on ease of implementation and funding as well as strategic layering of the service. The goal is to create a base level in the first two phases and then expand the network in the subsequent phases. They are:

Phase 1: Immediate Term (0-1 year) Phase 2: Short Term (1-5 years) Phase 3: Medium Term (5-10 years) Phase 4: Long Term (10 plus years)

Each phase represents a different stage in the development of the full transit network serving the Tahoe basin as well as the Regional and Trans-Sierra connections.

- The Immediate term is focused upon changes in routes or frequencies already identified by either TTD or TART. These changes are scheduled for implementation within the next 12 months
- The Short term begins the transformation of the individual systems to a regional transit network that includes the addition of infrastructure
- The Medium term is about strengthening the system with increased frequencies and the improvement of regional connections along with establishing Trans-Sierra connections
- The Long term focus is on the Trans-Sierra improvements



- As a first phase of establishing this connection, coach bus service is proposed between Truckee and downtown Sacramento
- This service is proposed for the medium term.
- In the long term it is proposed to establish rail service between Sacramento and Truckee (and beyond e.g. Reno)
- This will require agreements to utilize track and services from the current owner of the rail infrastructure
- This service will make use of the improved Truckee Mobility Hub (MH1) to provide appropriate passenger amenities and transfer facilities

IMMEDIATE PHASE: IMPLEMENT

CHANGES ALREADY PLANNED North Shore (see Figures 28, 29)

Existing routes maintained:

- Summer route 28 between Sand Harbor Visitor Center and Incline Village
- Night route between Tahoe City and Crystal Bay
- Night route between Crystal Bay and Northstar
- West Shore night service

Route improvements:

- Route 1 Mainline Incline to Sugar Pine (future F): increased frequency on existing route
- Route 2 Truckee to Tahoe City via 89 (future F1): increased frequency on existing route
- Route 3 Truckee to Crystal Bay via 267 (future G): increased frequency on existing route

Existing facilities:

- Truckee rail station (MH1)
- Tahoma Transit Center (TC8)

Facility improvements:

• Improve signage and visibility at the Tahoe City Transit Center (TC9)

South Shore (see Figures 30, 31)

Existing routes maintained:

- Route 10 Lake Tahoe Blvd
- Route 11 California
- Express Route 20x between Stateline and Gardnerville and Minden
- Express Route 21x between Stateline and Carson
 City
- Summer Route 30 Emerald Bay Trolley
- Route 50 Kingsbury TC to South Y
- Route 19X

<u>New routes:</u>

- New local route B, between Meyers and Lake Tahoe Community College
- New community route K, between Meyers and South Y

Route improvements:

- Local route D: new routing and become an annual service with increased winter frequency (former routes 15-Nevada, 23, 13-Ski Run)
- Community route H: new routing (former 14-Upper Nevada)
- Community route 53: routing modified and extended to Lake Tahoe Community Center





Existing facilities:

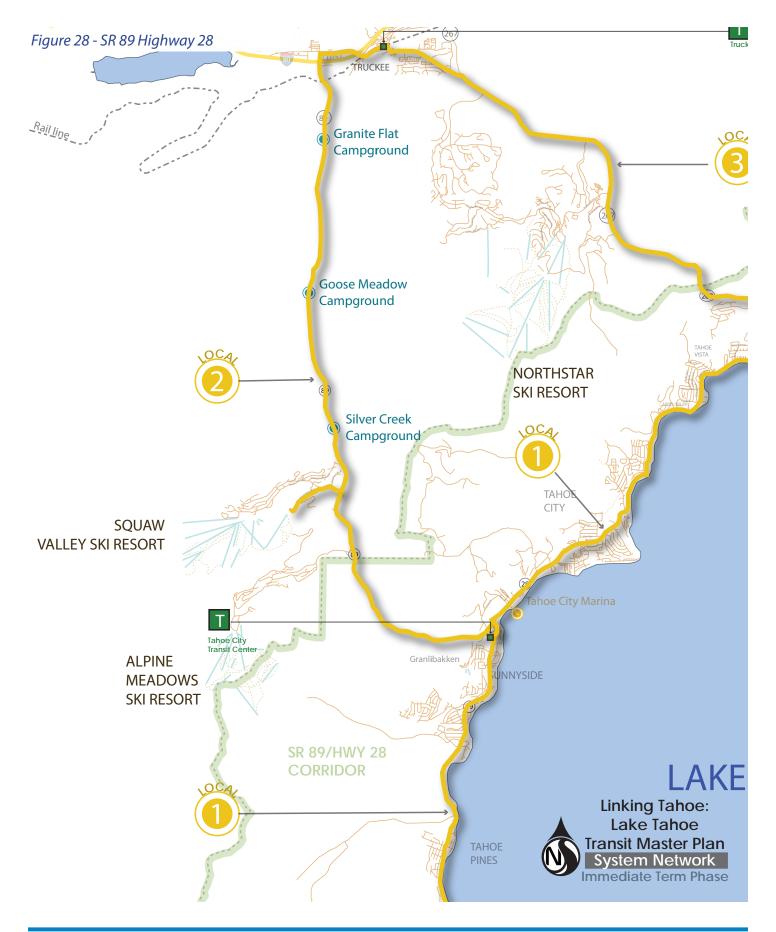
- South Y Transit Center (TC5)
- Stateline Transit Center (TC3)
- Ski Run transit turnaround (TC4)
- Kingsbury Transit Center

Table 2 - Service and Frequency Changes for Immediate Term

Lake Tahoe Master Plan Route & Frequency Changes



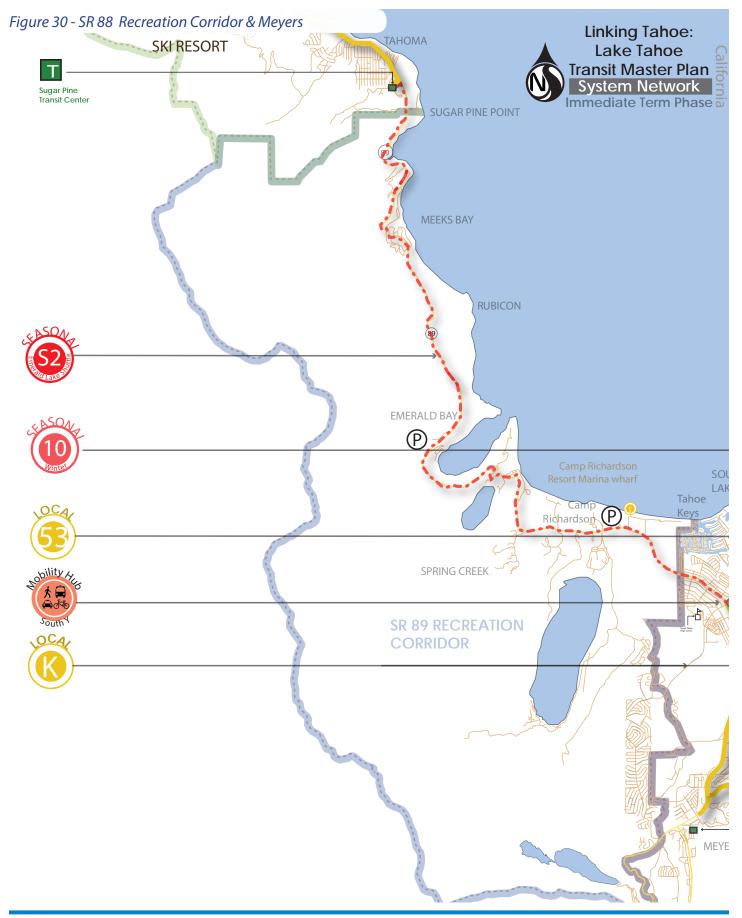
Existing			
Route	North Shore	CURRENT Route Peak Season Off Season Changes Frequency Frequency	IMMEDIATE Route Peak Season Off Season Changes Frequency Frequency
Truckee - Tahoe City	Frequent 1	60 60	60 60
Crystal Bay - Incline	Local E	60 60	60 60
Tahoma - Incline	Local F	60 60	60 60
Truckee - Crystal Bay	Local G	60 60	60 60
East Shore Express	Summer 1	20	20
New	Regional 3	NS	
New	Regional Rail 1	NS	
New	Ferry	NS	
New	Ferry Shuttle W1	NS	
	South Shore	Route Peak Season Off Season Changes Frequency Frequency	Route Peak Season Off Season Changes Frequency Frequency
Route 50	Frequent F2	60 60	60 60
New	Local B	N 60 60	60 60
Route 23, ski shuttles	Local D	6060	3030
	Route 53	6060	60 60
New	Community A	NS	NS
Tahoe Blvd shuttle	Community C	NS	NS
Route 14 Upper Nev.	Community H	3030	C 30 30
Route 12 - California	Community J	NS	NS
New	Community K	NS	N 30 30
Emerald Bay Trolley	Summer 2	60	60
New	Ferry	NS	
New	Ferry Shuttle 2	NS	
Route 21X	Regional 1	D	NS
Route 20X	Regional 2	90	90
New	Trans Sierra 1	NS	
New	Trans Sierra 2	NS	



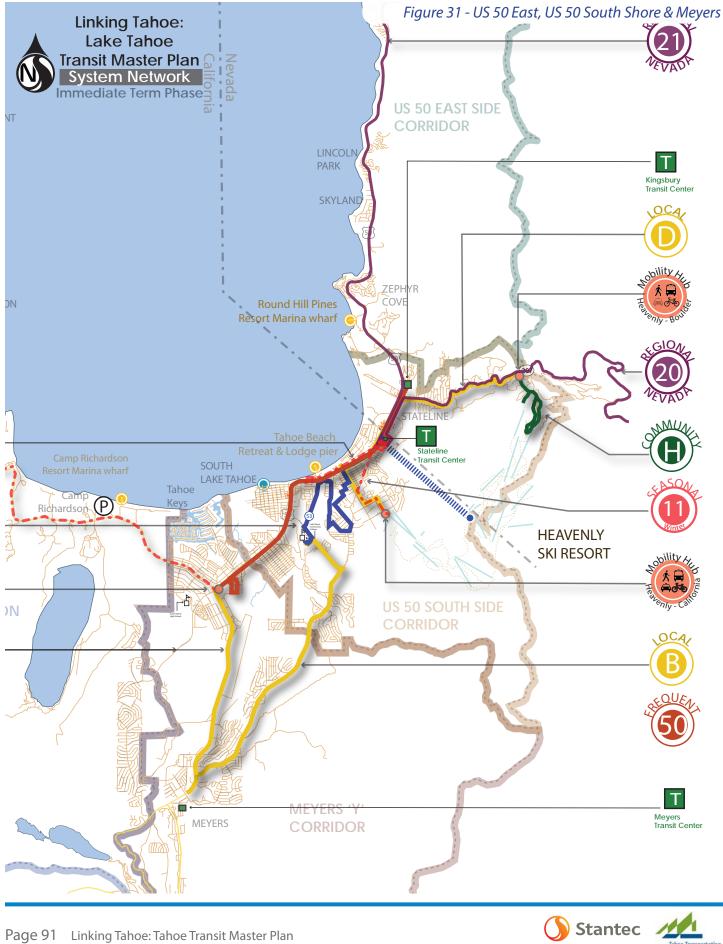














New facilities:

- Establish a new Transit Center off State Route 207 and South Benjamin to provide a turnaround for new routes D and H and a connection between these 2 new routes (TC2)
- Establish an arrangement with the Heavenly California Lodge to create a new parking area to serve route D (P1)

Facility Improvements:

 Establish a permanent turnaround facility for route D at the Heavenly California Lodge (TC7)

Route service changes are summarized in Table 2 below:

SHORT TERM PHASE North Shore (see Figures 32, 33)

Existing Routes Maintained:

None

New Routes:

- Ferry Shuttle (W1) between Sand Harbor Visitor Center and Homewood.
- New process for the approvals of the Ferry service

Route Improvements:

- Frequent route F1: extended to Incline Village
- Local route E: extended routing and year round service
- Local route F: extended routing
- Local route G: extended routing
- Summer route S1: extended routing

Existing Facilities:

- Tahoma Transit Center (TC8)
- Tahoe City Transit Center (TC9)

New Facilities:

- Upgrade Tahoe City Transit Center to a Mobility Hub (MH3)
- Establish a new Mobility Hub at Spooner Lake

(MH4)

- Establish a new Parking and a new Mobility Hub at Incline Village (P5 & MH5)
- Obtain permission to use existing North Star Transit Center (TC10)
- Establish a new Transit Center at Squaw Valley (TC11)
- Establish a new Transit Center at Diamond Peak Resort (TC12)
- Establish a new ferry dock at Tahoe City
- Establish a new ferry dock for ferry Shuttle

Facility Improvements:

- Upgrade bus and rail station interface at the Truckee rail station (MH1)
- Tahoma Transit Center(TC8)

South Shore (see Figures 34, 35)

Existing Routes Maintained:

- Local route D
- Community route H

New Routes:

- New ferry Shuttle (W2) between Tahoma and Zephyr Cove
- New process for the approvals of the Ferry service

Routes Improvements:

- Frequent route F2: new routing incorporating route K implemented in the Immediate phase, and increased frequency
- Local route B: increased frequency
- Community route C: route extension to Lake Tahoe Community College (LTCC) and Zephyr Cove, and becoming a year round service
- Summer route S2: extended seasonal service
- Express 21X (future Regional route R1): number of trips increased
- Express 20X (future Regional route R2): number of trips increased

Existing Facilities:

Heavenly California Lodge Transit Center and



Parking (TC7 & P1)

Heavenly Transit Center (TC2)

New Facilities:

•

- Establish seasonal Parking at Harrison Ave. (P2) ٠
- Establish a new Transit Center at Zephyr Cove (TC1) •
- Establish a new ferry dock at Tahoe City
- Establish a new Mobility Hub location and bus terminal to facilitate connections between futures routes • A, B, F2, TS1 and TS2 (TC6)
- Implement transit priority Table 3 - Service and Fre-٠ measures along US 50 and SR quency Changes for Short 89 Term

Facility Improvements:

- Establish a new parking facility and Improve Stateline Transit Center access (P3 and TC3)
- Improve access to Ski Run • Transit Center (TC4)
- **Increase South Y Transit** Center size (if possible) (TC5)

Facility removed:

Kingsbury Transit Center (redundant)

Route service changes are summarized in Table 3 below:

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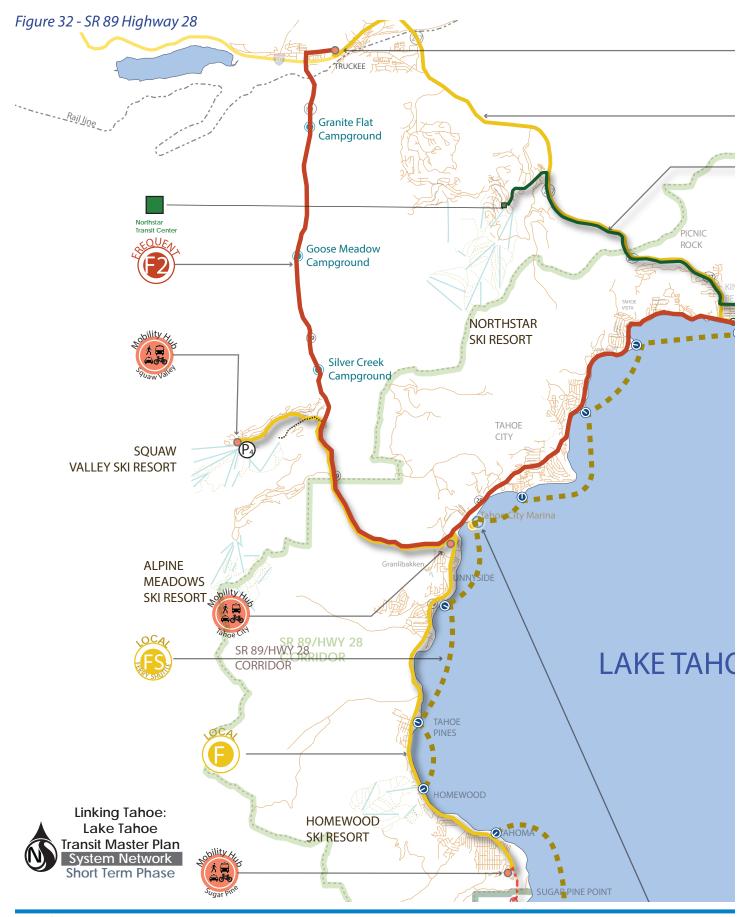
Lake Tahoe Master Plan **Route & Frequency Changes**



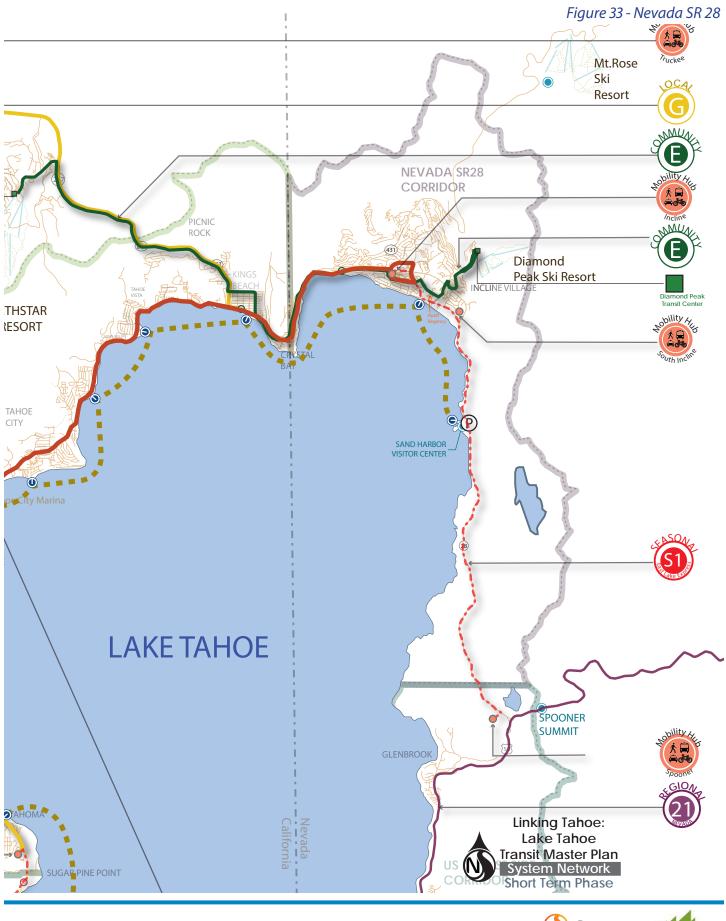
Existing		IMMEDIATE TERM	I SHORT TERM
Route	North Shore	Route Peak Season Off Season Changes Frequency Frequency	Route Peak Season Off Season Changes Frequency Frequency
Truckee - Tahoe City	Frequent 1	60 60	60 60
Crystal Bay - Incline	Local E	60 60	60 60
Tahoma - Incline	Local F	60 60	60 60
Truckee - Crystal Bay	Local G	60 60	60 60
East Shore Express	Summer 1	20	20
New	Regional 3	NS	NS
New	Regional Rail 1	NS	NS
New Approval Process	Ferry	NS	NS
New	Ferry Shuttle W1		N 90
	South Shore	SHORT TERM Route Peak Season Changes Frequency Frequency	MEDIUM TERM Route Peak Season Off Season Changes Frequency Frequency
Route 50	Frequent F2	60 60	F 15 30
New	Local B	60 60	30 30
Route 23, ski shuttles	Local D	3030	30 30
	Route 53	60 60	D
New	Community A	NS	NS
Tahoe Blvd shuttle	Community C	NS	N 60 60
Route 14 Upper Nev.	Community H	C 30 30	30 30
Route 12 - California	Community J	NS	NS
New	Community K	N 30 30	30 30
Emerald Bay Trolley	Summer 2	60	60
New Approval Process	Ferry	NS	NS
New	Ferry Shuttle 2		N 90
Route 21X	Regional - NV 1	NS	N 60
Route 20X	Regional - NV 2	90	F 60
New	Regional - CA 1	NS	NS
New	Regional - CA 2	NS	NS





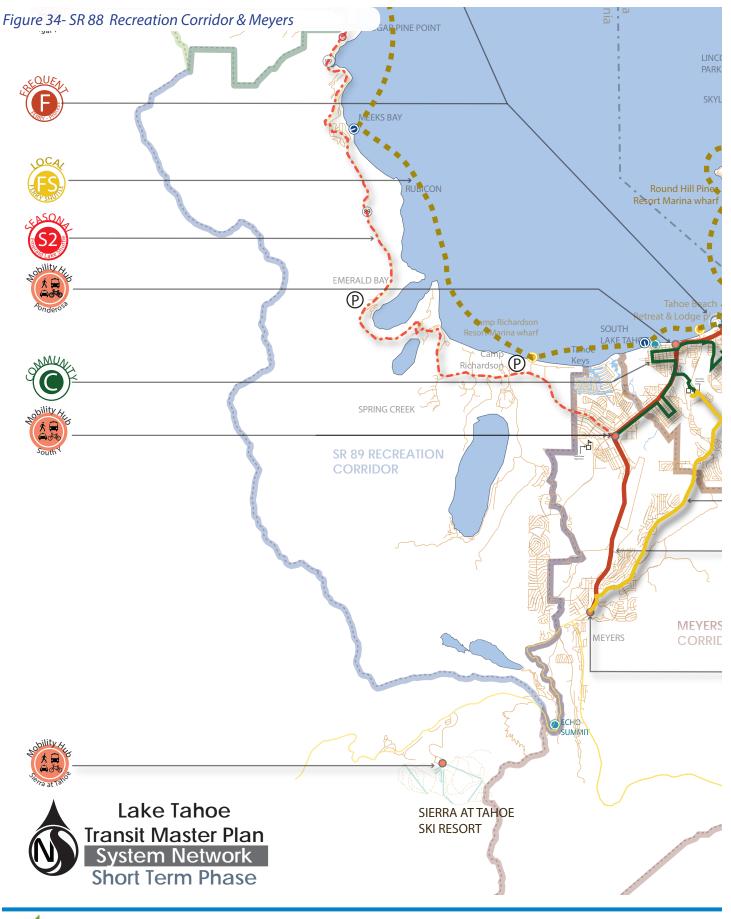


Tahoe Transportation

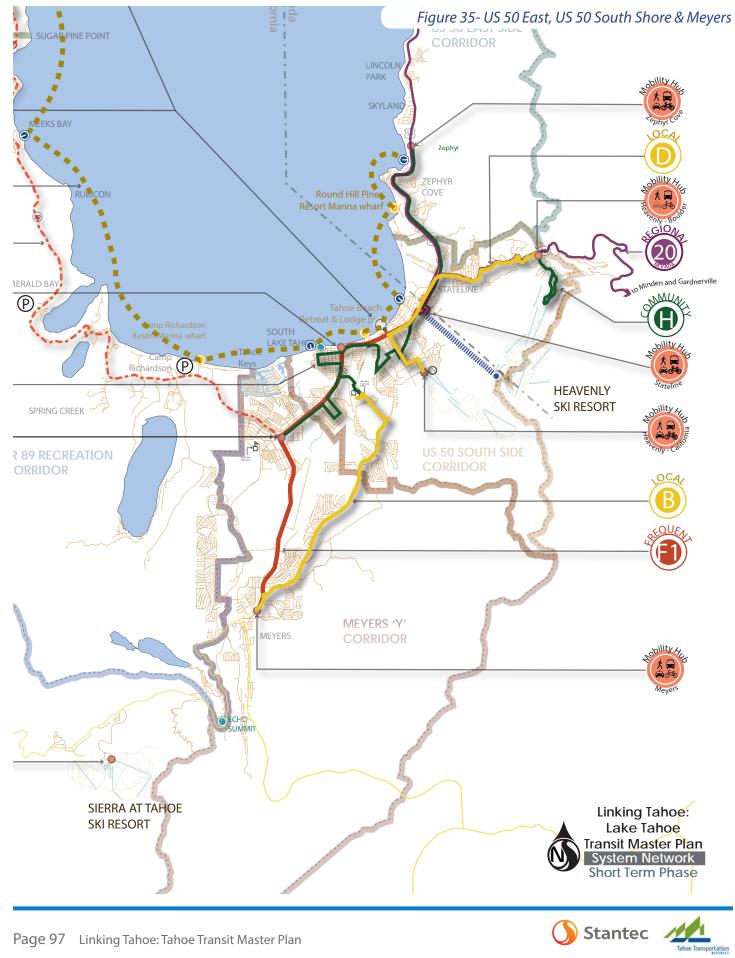


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MEDIUM TERM PHASE:

STRENGTHENING THE SYSTEM North Shore (see Figures 36, 37)

Existing routes maintained:

• None

New routes:

- New Ferry shuttle service between South Lake Tahoe and Tahoe City
- New regional route R3 between Incline Village
 and RTIA
- New gondola between Alpine Meadows Resort and Squaw Valley Resort
- New regional route RR1 (proxy for rail service) between Truckee and Sacramento

Routes improvements:

- Frequent route F1: improved frequency in summer peak season
- Local route E: improved frequency in summer peak season
- Local route F: improved frequency in summer peak season
- Local route G: improved frequency in summer peak season
- Summer route S1: improved frequency in summer peak season
- Ferry Shuttle W1: increased frequency and length of summer season

Existing facilities:

- Tahoe City Transit Center and Mobility Hub (TC9 and MH3)
- Diamond Peak Resort Transit Center (TC12)
- Incline Village Parking and Mobility Hub (P5 and MH5)
- Spooner Lake Mobility Hub (MH4)
- Ferry dock at Tahoe City
- North Star Transit Center (TC10)
- Tahoma Transit Center (TC8)

New facilities:

• Establish a new Mobility Hub at Mt Rose (MH2)

Facility improvements:

- Upgrade the Truckee rail station into a Mobility Hub by adding a Park & Ride (MH1)
- Upgrade Squaw Valley Transit Center by adding parking in the summer season (TC11 and P4)
- Review location and improvement of docks for ferry Shuttle

South Shore (see Figures 38, 39)

Existing routes maintained:

• None

New routes:

- New Ferry service between South Lake Tahoe and Tahoe City
- •

Routes improvements:

- Frequent route F2: frequency increased and new seasonal transit priority measures
- Local route B: extended routing
- Local route D: add additional summer service
- Local route 53: increased frequency
- Community route C: add summer service
- Community route H: increased frequency
- Community route J: new routing and becomes a year round service
- Summer route S2: increased frequency and extended season
- Regional route R1: extended routing to Reno and increased frequency
- Regional route R2: increased frequency
- Ferry Shuttle (W2): increased frequency and length of seasonal services

Existing facilities:

- Heavenly California Lodge Parking and Transit Center (P1 & TC7)
- Heavenly Transit Center (TC2)
- Ski Run transit turnaround (TC4)
- Ferry dock at Tahoe City
- Transit priority measures along US 50 and along SR 89



New facilities:

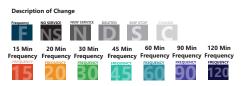
New ferry Shuttle docks and infrastructure improvements as recommended in the Ferry Oriented Development Plan (Community Design + Architecture, September, 2016) for the terminals at South Lake Tahoe and Tahoe City.

Facility improvements:

Upgrade parking at Harrison Ave. into a Mobility Hub by adding cycling facilities (P2 & MH9) •

Table 4 - Service and Frequency Changes for Medium Term

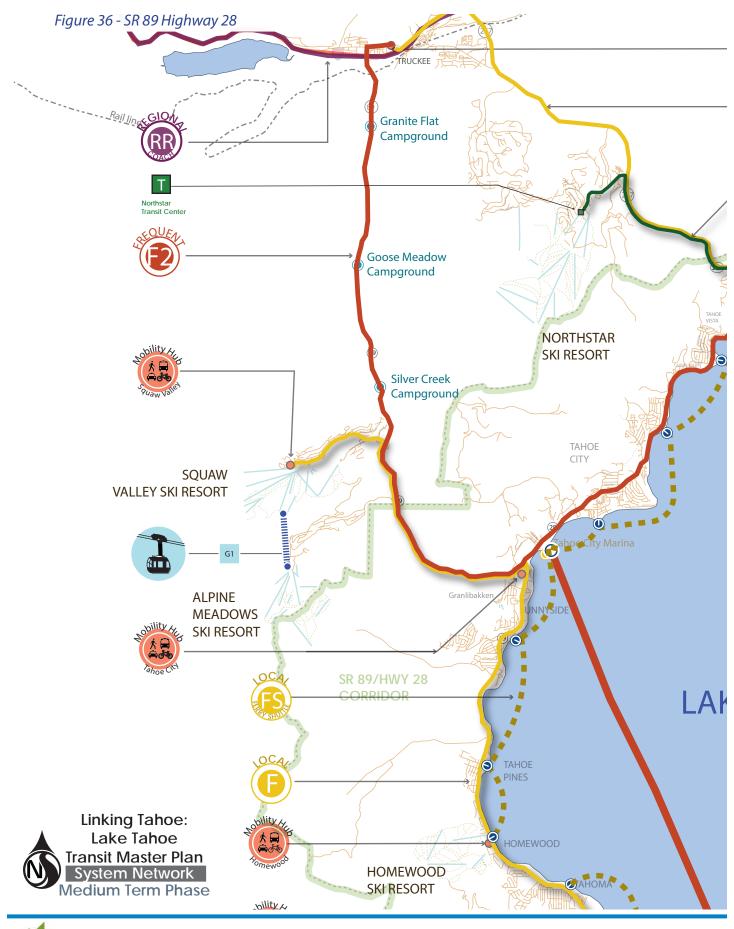
Lake Tahoe Master Plan **Route & Frequency Changes**

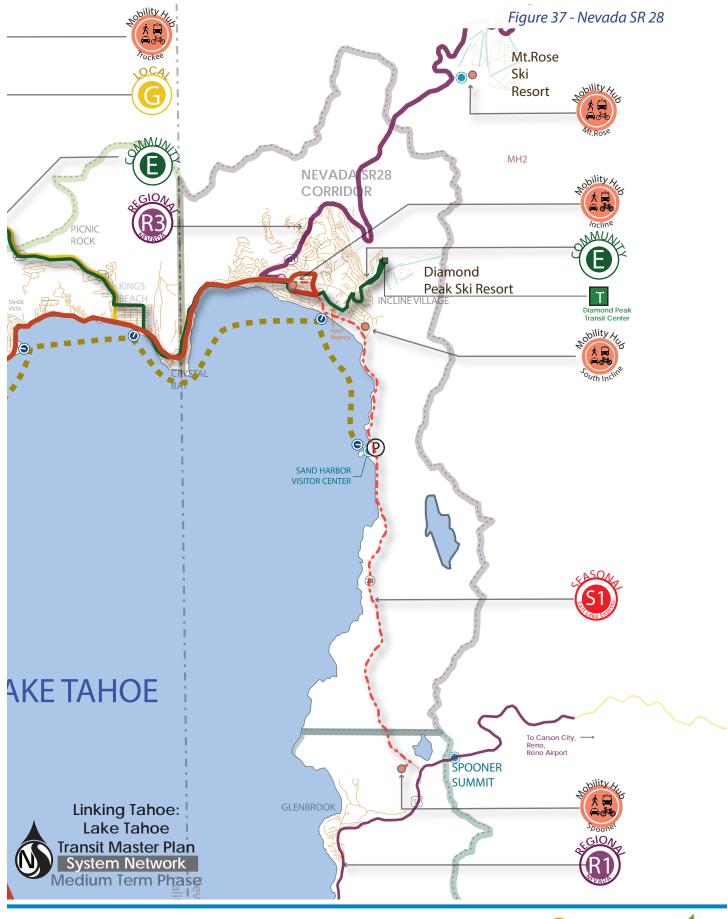


Existing			
Route	North Shore	SHORT TERM Route Peak Season Off Season Changes Frequency Frequency	MEDIUM TERM Route Peak Season Off Season Changes Frequency Frequency
Truckee - Tahoe City	Frequent 1	60 60	F 30 60
Crystal Bay - Incline	Local E	60 60	F 30 60
Tahoma - Incline	Local F	60 60	F 30 60
Truckee - Crystal Bay	Local G	60 60	F 30 60
East Shore Express	Summer 1	20	20
New	Regional 3	NS	N 60
New	Regional Rail 1	NS	N 120
New	Ferry	NS	60
New	Ferry Shuttle W1	N 90	F 45
	South Shore	Route Peak Season Off Seasor Changes Frequency Frequency	Route Peak Season Off Season Changes Frequency Frequency
Route 50	Frequent F2	F 15 30	15 15
New	Local B	30 30	30 30
Route 23, ski shuttles	Local D	30 30	30 30
	Route 53	D	
New	Community A	NS	NS
Tahoe Blvd shuttle	Community C	N 60 60	F 30 60
Route 14 Upper Nev.	Community H	30 30	F 20 30
Route 12 - California	Community J	NS	N 30 30
New	Community K	30 30	30 30
Emerald Bay Trolley	Summer 2	60	F 30
New	Ferry	NS	N 60
New	Ferry Shuttle 2	N 90	F 45
Route 21X	Regional 1	N 60	60
Route 20X	Regional 2	F 60	60
New	Trans Sierra 1	NS	NS
New	Trans Sierra 2	NS	NS



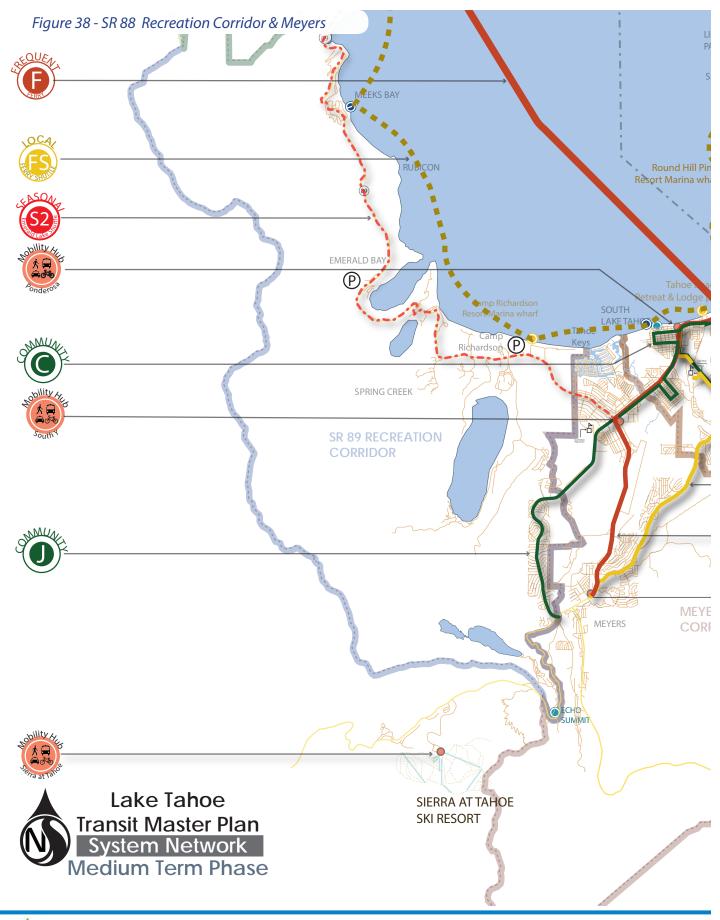




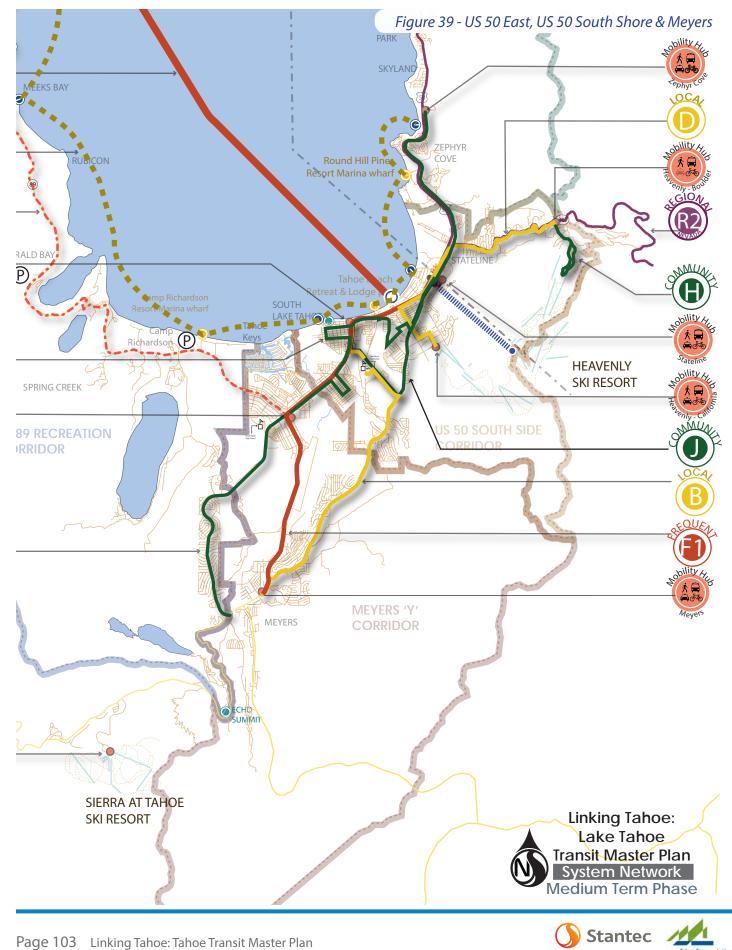


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- Upgrade South Y Transit Center into a Mobility Hub by adding Parking and cycling facilities (TC5& MH7)
- Upgrade Zephyr Cove Transit Center to a Mobility Hub by adding Parking (TC1)
- Upgrade Stateline Transit Center into a Mobility Hub (P3, TC3 & MH6)
- Upgrade Meyers Transit Center and Mobility Hub by adding a Park & Ride, cycling facilities and regional bus parking (TC6 & MH8)

Route service changes are summarized in Table 4.

LONG TERM PHASE: IMPROVE TRANS-SIERRA MOVEMENTS North Shore (see Figures 40, 41)

Existing routes maintained:

- Gondola between Alpine Meadows Resort and Squaw Valley Resort
- Summer route S1

New routes:

None

Routes improvements:

- Frequent route F1: increased frequency
- Local route E: increased frequency
- Local route F: increased frequency
- Local route G: increased frequency
- Regional bus R3: increased frequency
- Regional bus RR1: convert into rail service (between Truckee and Sacramento)

Existing facilities:

- Truckee rail station Mobility Hub (MH1)
- Mobility Hub at Mt Rose (MH2)
- Tahoe City Transit Center and Mobility Hub (TC9 and MH3)
- Spooner Lake Mobility Hub (MH4)
- Incline Village Parking and Mobility Hub (P5 and MH5)

- Tahoma Transit Center (TC8)
- North Star Transit Center (TC10)
- Squaw Valley Parking and Transit Center in summer season (P4 and TC11)
- Diamond Peak Resort Transit Center (TC12)
- Ferry dock at Tahoe City
- Docks for ferry Shuttle

New facilities and Improvements:

• None

South Shore (see Figures 42, 43)

Existing routes maintained:

- Local route D
- Local route 53
- Community route H

New routes:

- Community route A between Meyers and South Y
- Regional route TS1 between Meyers Y and Stockton
- Regional route TS2 between Meyers Y and Sacramento

Routes improvements:

- Frequent route F2: increased frequency
- Local route B: increased frequency in summer
- Community route C: increased frequency and length of seasonal services
- Community route J: increased frequency in summer
- Summer route S2: increased frequency and season extended (based on demand)
- Regional route R1: increased frequency
- Regional route R2: increased frequency
- Ferry service: increased frequency and seasonal capacity

Existing facilities:

- Heavenly California Lodge Parking and Transit Center (P1 & TC7)
- Harrison Ave. Parking and Mobility Hub (P2 & MH9).
- South Y Transit Center and Mobility Hub (TC5&



MH7)

- Zephyr Cove Transit Center and Mobility Hub (TC1)
- Heavenly Transit Center (TC2)
- Stateline Parking, Transit Center and Mobility Hub (P3, TC3 & MH6)

_ .

• Ski Run transit turnaround (TC4)

Table 5 - Service and Frequency Changes for Long Term

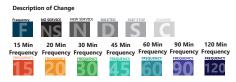
- Meyers Transit Center and Mobility Hub (TC6 & MH8)
- Ferry dock at Tahoe City
- Transit priorities measures along US 50 and along SR 89

New facilities and Improvements:

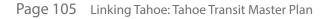
• None

Route service changes are summarized in Table 5.

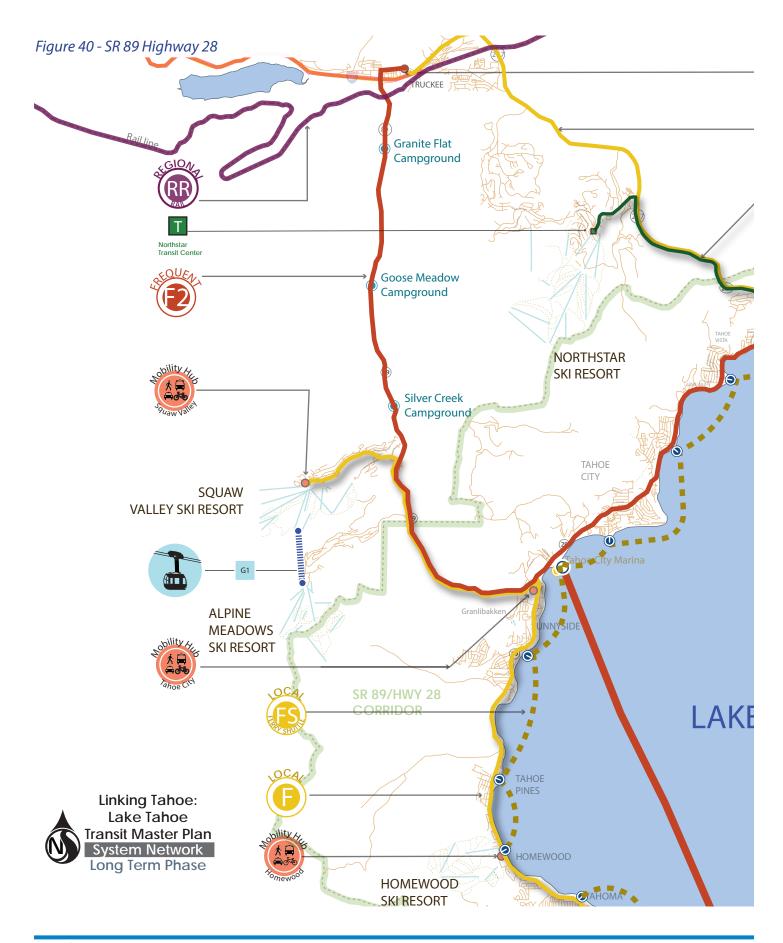
Lake Tahoe Master Plan Route & Frequency Changes



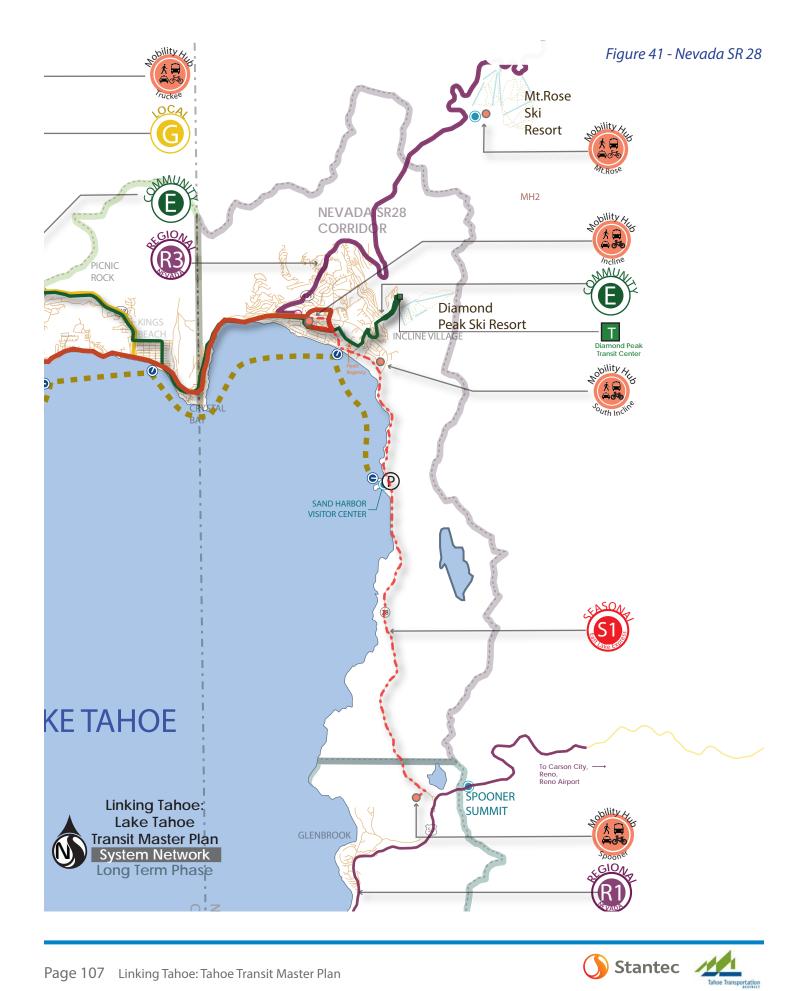
Existing			
Route	North Shore	Route Peak Season Off Season Changes Frequency Frequency	LONG TERM Route Peak Season Off Season Changes Frequency Frequency
Truckee - Tahoe City	Frequent 1	F 30 60	F 15 30
Crystal Bay - Incline	Local E	F 30 60	F 30 30
Tahoma - Incline	Local F	F 30 60	F 30 30
Truckee - Crystal Bay	Local G	F 30 60	F 20 30
East Shore Express	Summer 1	20	20
New	Regional 3	N 60	60
New	Regional Rail 1	N 120	120
New	Ferry	60	F 45
New	Ferry Shuttle W1	45	45
	South Shore	Route Peak Season Off Season Changes Frequency Frequency	Route Peak Season Off Seasor Changes Frequency Frequency
Route 50	Frequent F2	15 15	15 15
New	Local B	30 30	F 20 30
Route 23, ski shuttles	Local D	30 30	30 30
	Route 53		
New	Community A	NS	N 30 30
Tahoe Blvd shuttle	Community C	F 30 60	F 20 30
Route 14 Upper Nev.	Community H	F 20 30	20 30
Route 12 - California	Community J	N 30 30	F 15 30
New	Community K	30 30	30 30
Emerald Bay Trolley	Summer 2	F 30	30
New	Ferry	60	F 45
New	Ferry Shuttle 2	45	45
Route 21X	Regional 1	60	F 30
Route 20X	Regional 2	60	60
New	Trans Sierra 1	NS	N 60
New	Trans Sierra 2	NS	N 60

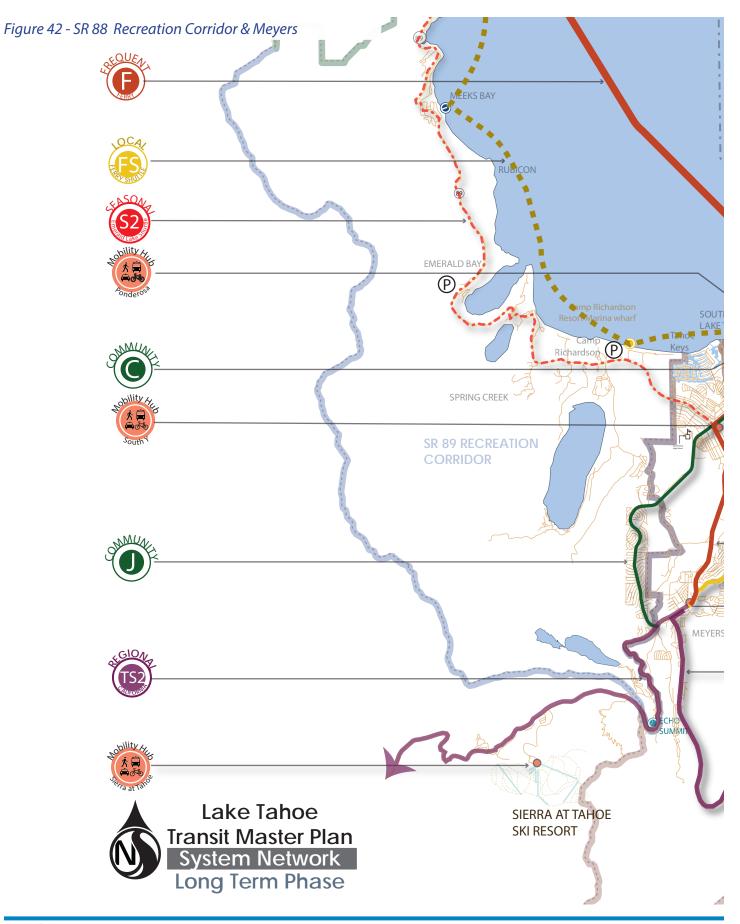




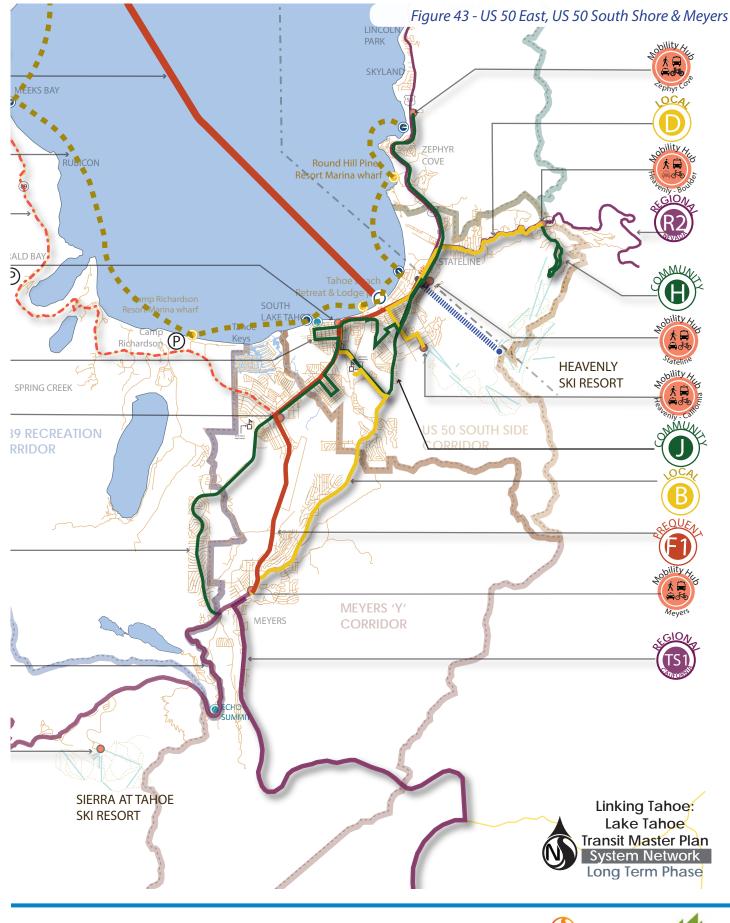


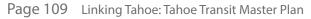












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TAHOE TRANSIT MASTER PLAN TRANSIT PLAN OPTIONS BY CORRIDORS

In this section, the proposed changes to the system are described by corridor. Six distinct corridors have previously been identified in the Tahoe Basin:

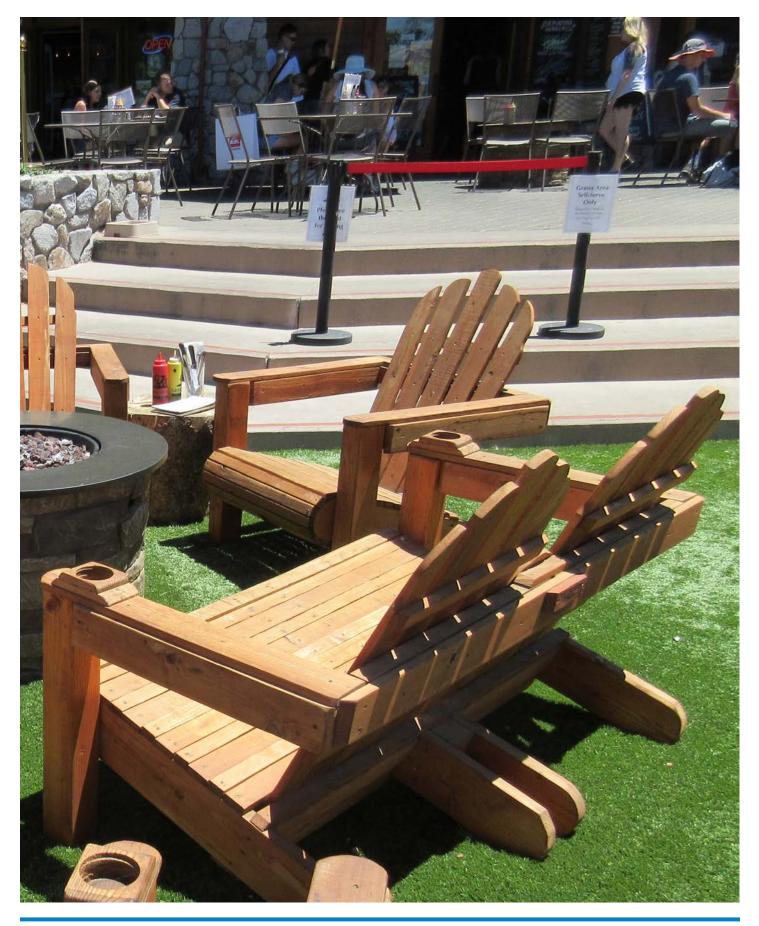
- Meyers Y Corridor
- SR 89 Recreation Corridor
- SR 89 / Hwy 28 Corridor
- Nevada SR 28 Corridor
- US 50 East Side Corridor
- US 50 South Shore Corridor

In this section each corridor is shown with all associated major transit components (routes and infrastructure) and their respective phasing.





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MEYERS Y CORRIDOR

Service in the Meyers Corridor is focused upon making stronger connections with the US50 South Shore Corridor and the SR89 Recreation Corridor as well as providing local service options. This corridor also acts as the entry point to services to Sacramento and Stockton and beyond, so it is important to have the transit services and infrastructure to act as a gateway (see Figure 44).

<u>Frequent</u>

Route F2 incorporates Meyers into the transit system and connects to Stateline via US50. This route is an extension of Route 50 and will support the changes in urban form already occurring as well as providing a direct and fast connection into South Lake Tahoe. This route serves both those using the Mobility Hub as well as residents seeking to move through town quickly.

<u>Local</u>

A new route (B) is proposed in the Immediate term between Meyers and the Lake Tahoe Community College and together with local route K, provide improved travel options - particularly for students. In the future this route would extend to a new transit transfer point in the Harrison Ave. area.

<u>Community</u>

There are two Community routes to provide new travel options for local residents to access services in Meyers and South Lake Tahoe. A route connecting the South Y with Zephyr Cove (Route C) provides connection opportunities to new neighborhoods and a second route along North Upper Truckee Road connecting with the South Y Transit Center (route A).

<u>Regional</u>

There are two Regional California (Trans-Sierra) routes proposed to provide connections to Sacramento and Stockton respectively in the long term (TS1 and TS2). The purpose of these routes is to connect to various Mobility Hubs and rail stations to provide more options for visitors to enter into the Tahoe Basin without an automobile.

<u>Seasonal</u>

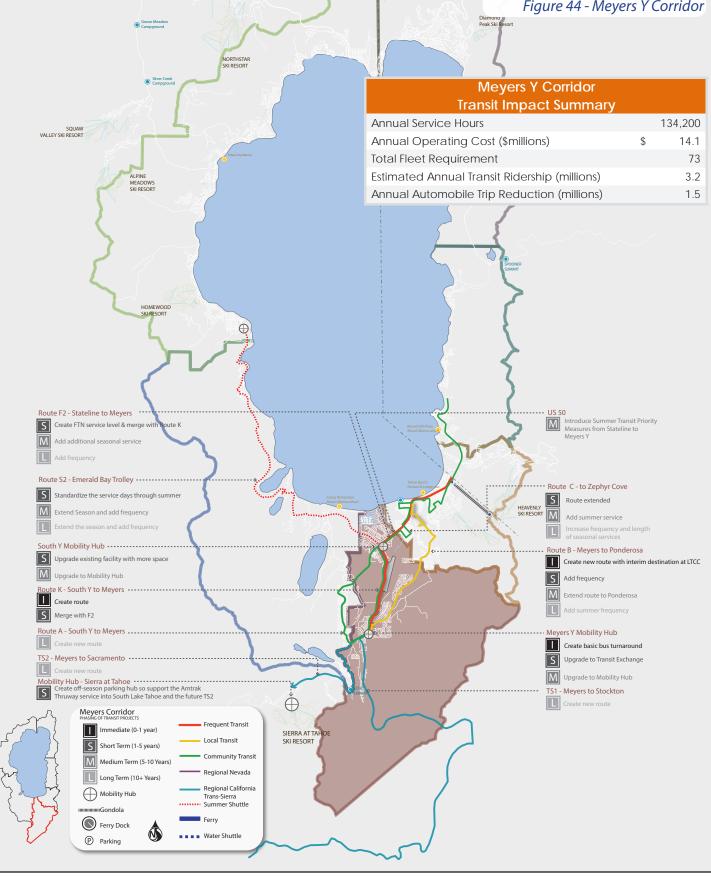
A direct summer connection with the north shore via the Emerald Bay Trolley to the Tahoma Transit Center and potentially continuing on to Tahoe City. Improvements in the frequency and length of the season along with potential restrictions in parking will help visitors travel into and through this popular recreational corridor.

Infrastructure

The transit routes are supported by Meyers Transit Center and Mobility Hub (MH8) and an upgraded South Y Transit Center for connecting Regional and Local routes as well as a new facility at Sierra at Tahoe for offseason parking.



Figure 44 - Meyers Y Corridor



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SR 89 RECREATION CORRIDOR

The SR89 Recreation Corridor consists primarily of US Forest Service lands with key view points, summer recreation sites and access points to the Lake (see Figure 45).

<u>Frequent</u>

Not applicable.

<u>Local</u>

The corridor will feature two stops in the ferry Shuttle service to allow connectivity via the lake to South Lake Tahoe.

<u>Community</u> Not applicable.

<u>Regional</u> Not applicable.

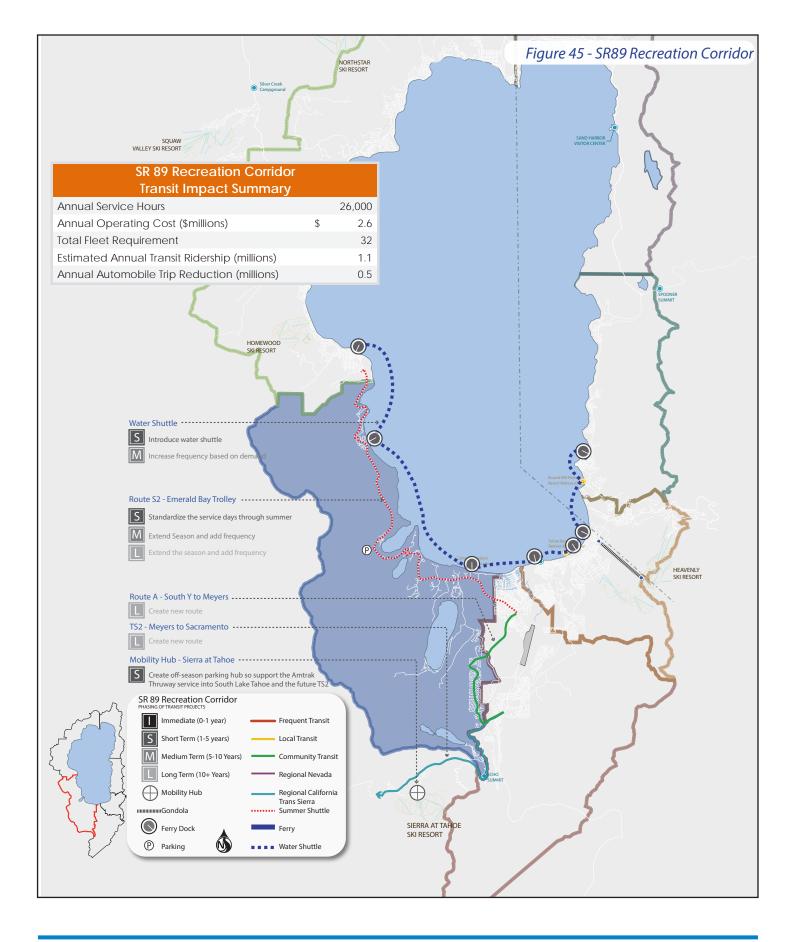
<u>Seasonal</u>

This corridor contains the Summer-only service on Route S2 (Emerald Bay Trolley) which connects South Y to Tahoma Transit Center, providing a link between the north and south shores and access to regional connections. Improvements are proposed in terms of the amount of service per day as well as the number of days of service in the summer.

Infrastructure

Parking restrictions or traffic restrictions could be possible between South Y and Emerald Bay lookout







SR 89 / HWY 28 CORRIDOR

This corridor currently has key connections to the Trans-Sierra trips to Truckee via car or train as well as multiple residential areas along the popular north shore (see Figure 46).

<u>Frequent</u>

A moderately restructured north shore set of services is led by a Frequent Transit route (F1) that connects Truckee to Tahoe City, Crystal Bay and through into Incline Village to act as the major connector route for local movements along the north shore as well as the primary connector for visitors entering the basin via regional bus/rail or using the Mobility Hub in Truckee.

A new component is a Ferry link to the south shore between Tahoe City and South Lake Tahoe. This creates a non-road based alternative to the roads around the lake and should induce a different set of travel patterns than that currently experienced by visitors. Existing data from cellular networks indicate that most visitors and residents stay within the area in which they first enter the basin. This means that millions of visitors per year never explore the opposite side of the lake and those that do are exposed to the congestion and delay that occurs in the summer which also has an impact on the air quality in the basin. This new link will offer multiple benefits ranging from an alternative travel option to supporting a new economic strategy that encourages linking and integration of the two urban centers as opposed to two isolated destinations. Finally, the lake has long been seen as a natural wonder that is actually challenging to access. The ferry fulfills a dual role of transportation alternative as well as a recreational opportunity that could become a key feature for visitors.

<u>Local</u>

An extended service along the west shore linking Squaw Valley Resort (with the turnaround moved to the main ski base) to Homewood and Tahoma (route F). This helps link communities for local movements as well as connecting into the Frequent service at Tahoe City Transit Center. This service could be expanded in summer and winter in response to seasonal demands.

A second component is the introduction of a ferry Shuttle on two different routes:

- From Tahoma to the south shore and Zephyr
 Cove with stops at key locations
- From Homewood to Incline Village with stops at key locations

These two ferry shuttles can play a role in accommodating short distance movements that can be challenging in the summer due to traffic congestion. The limited road capacity means that there is no real ability to have buses bypass congestion except on US50, therefore, a water based alternative can allow visitors and residents to make short hops along the coast using smaller 10-12 passenger water shuttles.

Finally, there is the extension of the existing route from Truckee to Crystal Bay to Incline Village (G).

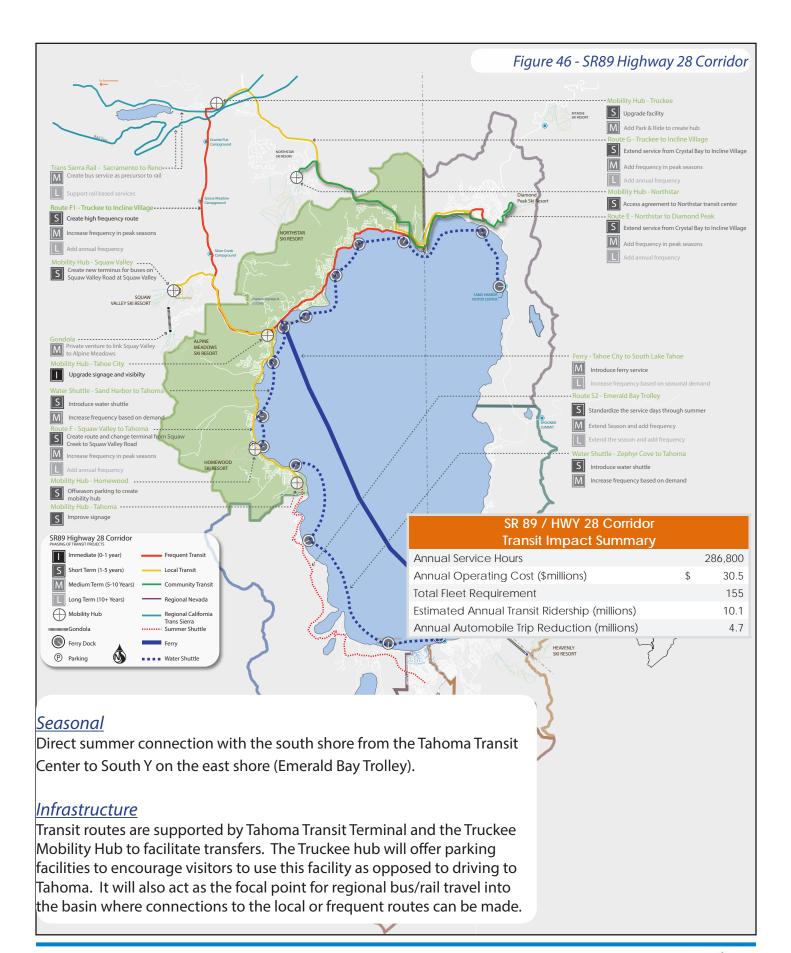
<u>Community</u>

The community route (E) follows the existing service that links the main Northstar transit center with Crystal Bay and extends it to Incline Village and Diamond Peak Ski Resort to provide winter access to ski resorts as well as access to local commercial services.

Regional -California

There are existing connections via Amtrak's rail and bus services, however it is proposed that the regional rail service be initially supplemented by additional coach service with a connection to Sacramento from Truckee. In the long term, improved regional rail service across the Sierra's into California that links Sacramento with Reno would provide significant opportunities to reduce vehicle travel along I-80 with rapid rail connections into the rest of the Silicon Valley and Bay area based on current plans for rail in those areas.









NEVADA SR 28 CORRIDOR

This corridor features the major residential area of Incline Village plus a year round link via the Mt. Rose highway to Reno and the RTIA (see Figure 47).

<u>Frequent</u>

A moderately restructured north shore set of services is led by a Frequent Transit route (F1) that connects Truckee to Tahoe City, Crystal Bay and through into Incline Village to act as the major connector route for local movements along with shore as well as the primary connector for visitors entering the basin via regional rail or using the Mobility Hub in Truckee.

<u>Local</u>

Local service is defined by the extension of the existing route from Truckee to Crystal Bay to Incline Village (route G) to connect two of the three major residential areas of the North Shore and provide an alternate movement from Truckee into the area.

A second component is a ferry Shuttle from Sand Harbor to Tahoma and Homewood with key stops at communities along the north shore. This ferry Shuttle plays a role in accommodating short distance movements that can be challenging in the summer due to traffic congestion and subsequent delay. The limited road capacity means that there is no real ability to have buses bypass congestion except on US50, therefore, a water-based alternative can allow visitors and residents to make short hops along the coast using smaller 10-12 passenger water shuttles.

<u>Community</u>

The Community route (E) follows the alignment of the existing service that links the main Northstar Transit Center with Crystal Bay and extends it to Incline Village and Diamond Peak Ski Resort to provide winter access to ski resorts as well as local commercial services. This provides year round access between the residential areas on the hills above Incline Village to the services and amenities in the village.

<u>Regional - Nevada</u>

Regional service to Reno would extend from Incline Village via Mount Rose ski resort which allows year round access into the basin for workers and visitors. This would supplement existing private services.

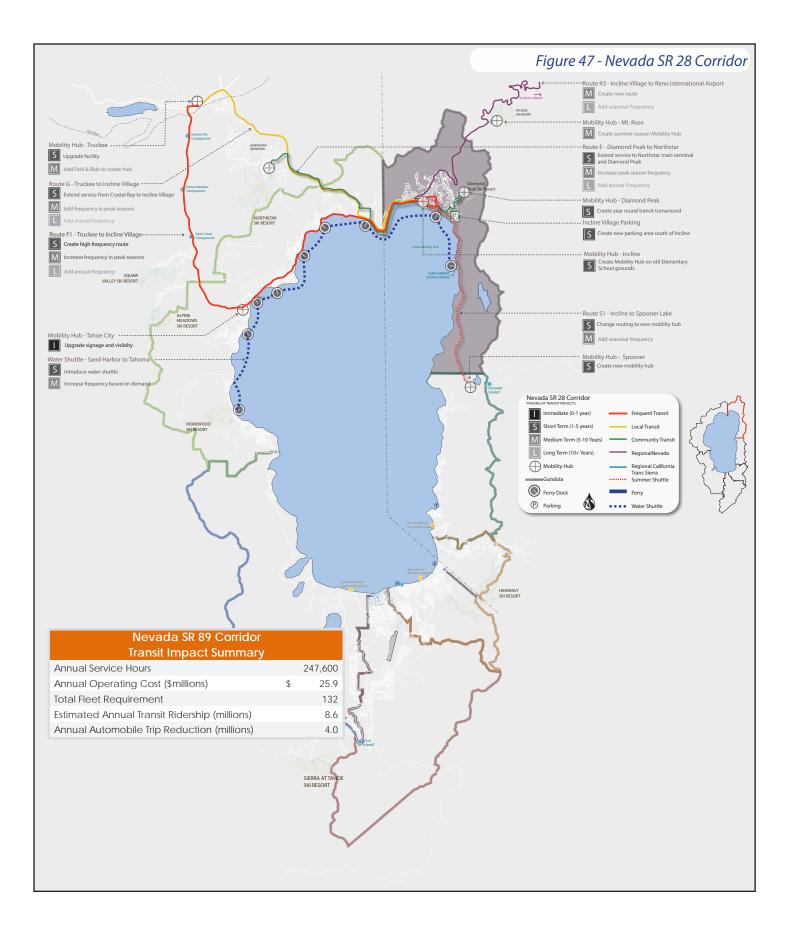
<u>Seasonal</u>

Summer service from Incline Village via Sand Harbor to Spooner Summit to access recreation destinations.

Infrastructure

There are a number of transit facilities that relate to this corridor. The first is the use of the old elementary school grounds for a Mobility Hub in Incline Village that provides access to connections to local routes as well as regional service to Reno. In addition, there is a need to establish a year round turnaround at Diamond Peak Resort. There is a turnaround available in winter but it is blocked in the off peak seasons. For the regional service there is a desire to locate a Mobility Hub at the Mt. Rose resort parking lot that could be used in the off peak seasons and summer when the lot is not used. Finally, a new parking area should be created south of Incline Village to allow access to Sand Harbor and other beaches via the East Shore Express to reduce the congestion that occurs in summer and respond to the limited parking in Sand Harbor.







US 50 EAST SIDE CORRIDOR

The East Side Corridor is primarily a through movement corridor with some residential areas that are difficult to serve by transit due to the geography of the area with the exception of the Zephyr Cove area. There is a entry point into this corridor off US50 that serves as a decision point for either heading south into South Lake Tahoe or north towards Sand Harbor and Incline Village (see Figure 48).

<u>Frequent</u>

Not applicable.

<u>Local</u>

The main local service is the proposed ferry shuttle from Zephyr Cove to South Lake Tahoe, Emerald Bay and to Tahoma. This ferry shuttle plays a role in accommodating short distance movements that can be challenging in the summer due to traffic congestion and delay. The water based alternative can allow visitors and residents to make short hops along the coast using smaller 10-12 passenger water shuttles.

Community

Year round service from Zephyr Cove to the south shore via route C will allow access to the various commercial locations bordering US 50 as well as linking Zephyr Cove to residential areas throughout the South Shore.

<u>Regional</u>

One regional connection (R1) linking the South Shore to Carson City and RTIA will offer both workers and visitors to the region an alternative travel option to the automobile.

<u>Seasonal</u>

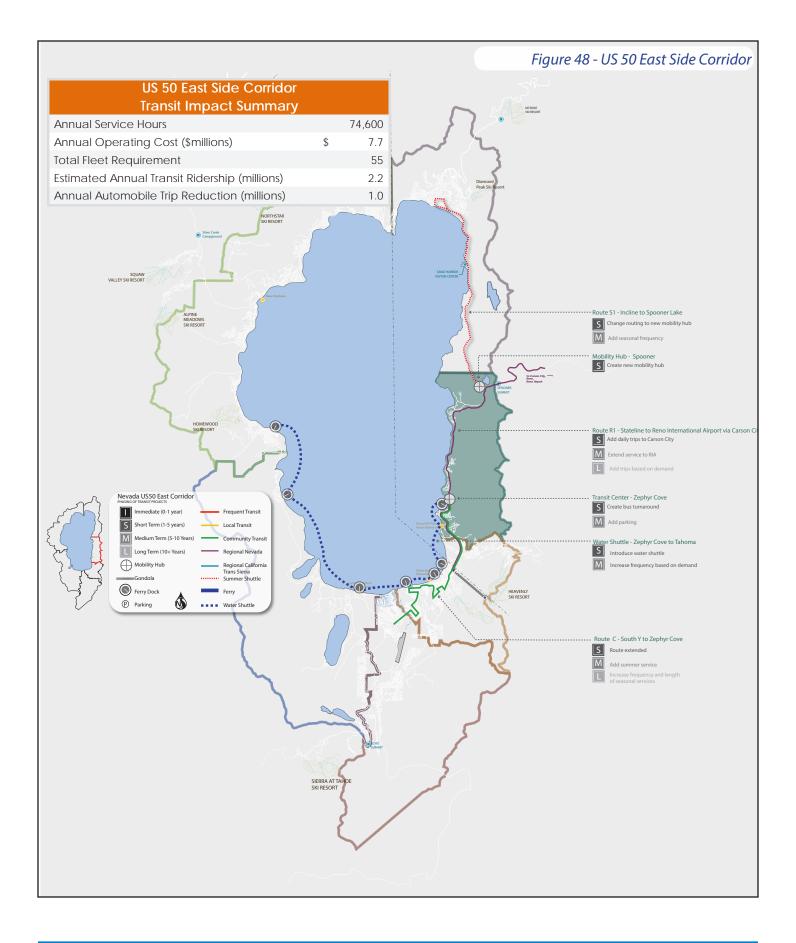
The seasonal route (S1) exending from Incline Village to Spooner Lake touched this corridor.

<u>Infrastructure</u>

This corridor will offer:

- A Mobility Hub west of Spooner Lake to allow connection to the East Shore Express
- A Transit Center and potentially a Mobility hub in the Zephyr Cove area







US 50 SOUTH SHORE CORRIDOR

This corridor encompasses the majority of the residential and commercial areas of the south shore including the Heavenly Ski Resort, major casinos and recreation areas (see Figure 49).

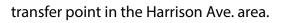
<u>Frequent</u>

Route F2 incorporates Meyers into the transit system and connects to Stateline via US50. This route is an extension of Route 50 and will support the changes in urban form already occurring as well as providing a direct and fast connection into South Lake Tahoe. This route serves both those using the Mobility Hub as well as residents seeking to move through town quickly.

A new component is a Ferry link to the south shore between Tahoe City and South Lake Tahoe. This creates a non-road based alternative to the roads around the lake and should induce a different set of travel patterns than that currently experienced by visitors. Existing data from cellular networks indicate that most visitors and residents stay within the area in which they first enter the basin. This means that millions of visitors per year never explore the opposite side of the lake and those that do are exposed to the congestion and delay that occurs in the summer which also has an impact on the air quality in the basin. This new link will offer multiple benefits ranging from an alternative travel option to supporting a new economic strategy that encourages linking and integration of the two urban centers as opposed to two isolated destinations. Finally, the lake has long been seen as a natural wonder that is actually challenging to access. The ferry fulfills a dual role of transportation alternative as well as a recreational opportunity that could become a key feature for visitors.

<u>Local</u>

A new route (B) is proposed in the Immediate future between Meyers and the Lake Tahoe Community College and together with local route K, provide improved travel options - particularly for students. In the future this route would extend to a new transit



A second service will run between Heavenly California base and the Kingsbury area via Route D and a connect to Community route H.

Supporting the bus services is a proposed ferry Shuttle from Zephyr Cove to South Lake Tahoe, Emerald Bay and Tahoma. This ferry shuttle plays a role in accommodating short distance movements that can be challenging in the summer due to traffic congestion and delay. The water based alternative allows visitors and residents to make short hops along the coast using smaller 10-12 passenger water shuttles.

<u>Community</u>

Year round seasonal service from Zephyr Cove to the south shore via Route C will allow access to the various commercial locations bordering US 50 as well as linking Zephyr Cove to residential areas throughout the South Shore.

A second route (J) will run from Stateline to Lake Tahoe Community College in the short term and extend to Harrison Ave. in the medium term to improve existing linkages.

A community service (route H) to Heavenly base and connecting from Local route D will provide access for recreational visitors and residents to move around the community with greater ease.

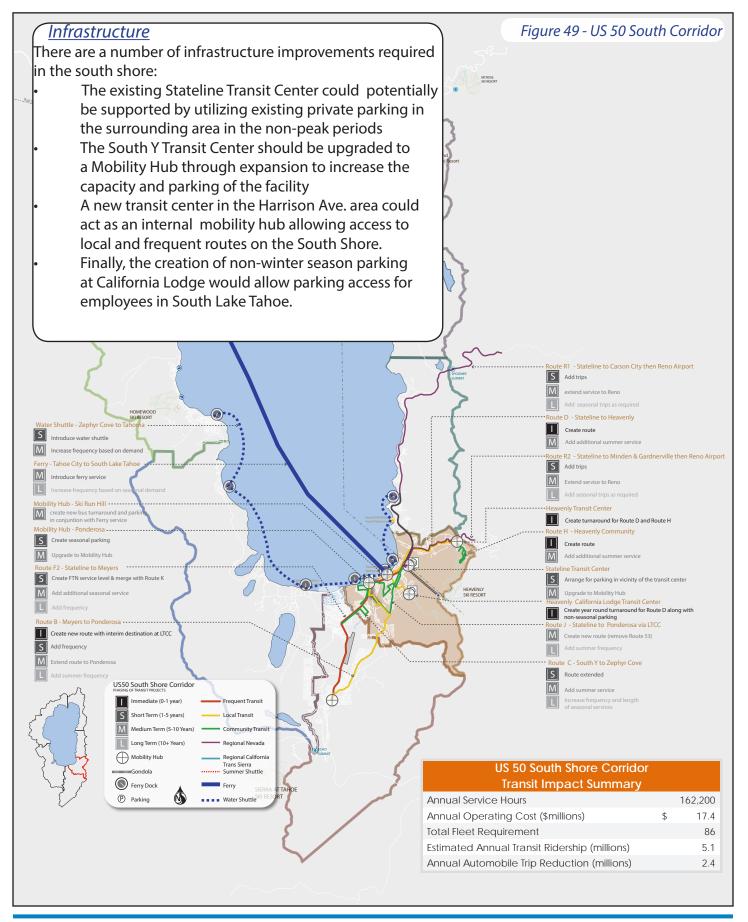
<u>Regional</u>

From Stateline, there is a connection to local and tourism destinations and regional connections in Minden, Gardnerville, Carson City and Reno in Nevada.

<u>Seasonal</u>

Not applicable





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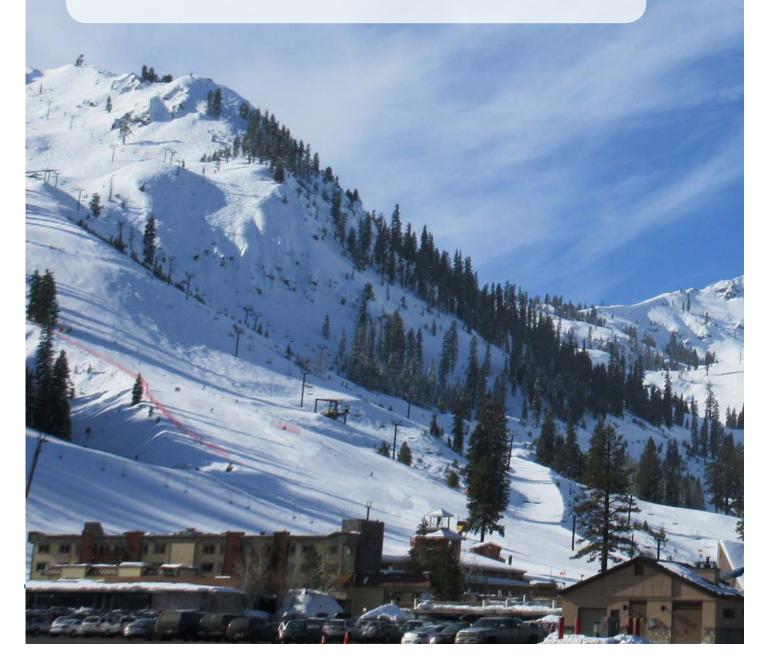


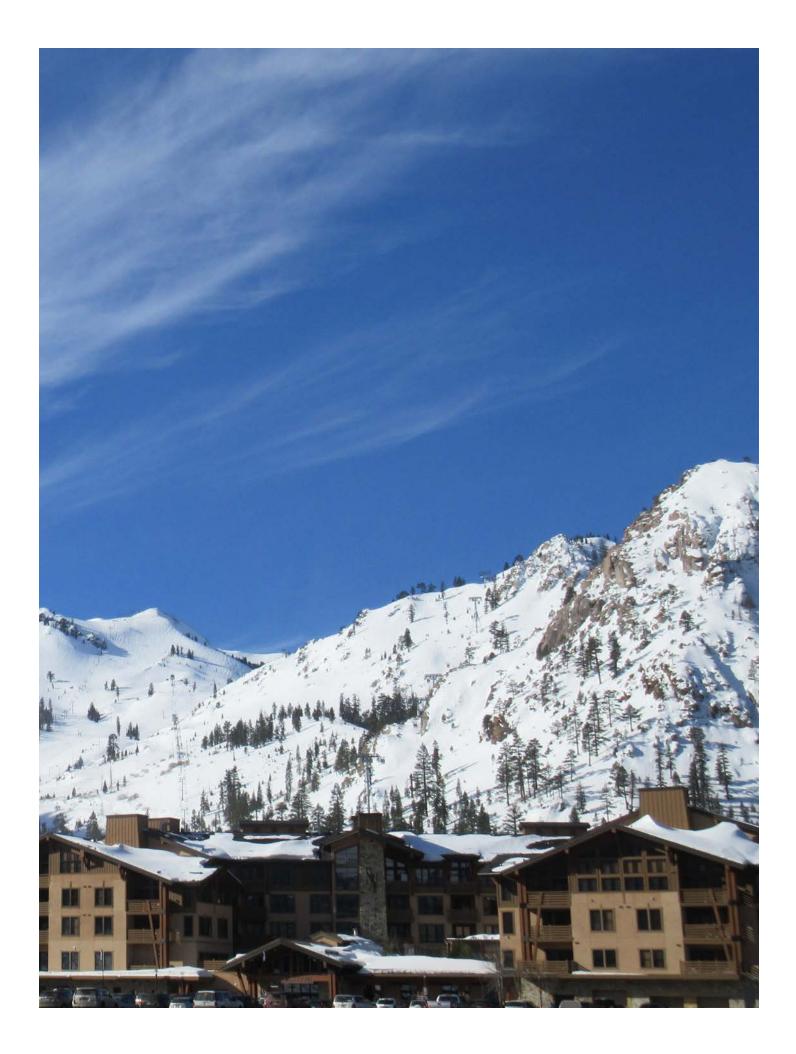


LAKE TAHOE TRANSIT MASTER PLAN PHASING & COSTING

Introduction

A summary of the impact of the proposed routes and their associated improvements over time are presented in this section. These improvements were used as a basis to estimate annual revenue hours, cost and forecast ridership. Cost estimates reflect operating cost per revenue hour while ridership is based on guidelines relating to rides per hour for the various classes of routes and phases of implementation.





Ridership and Service Guidelines

The challenge in developing a phased implementation approach and its associated financial implications, is to understand the level of affordability in each phase so that the gap between the vision and the reality of financial constraints is as minimal as possible.

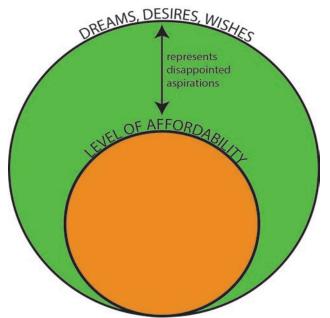


Table 6 shows service frequency and ridership guidelines that were used as a basis to develop ridership estimates. These results reflect:

- New, combined and extended routes in different phases of implementation
- Introductory service frequencies (by season if applicable) and frequency improvements over time
- The introduction of seasonal services (from yearround service) and changes (increases) to these service periods
- Changes to the length of service days generally depicting the introduction of peak service or extension of evening service
- Other factors that impact cost and ridership calculations that include route extensions and changes to ridership assumptions over time

These guidelines are based on route functionality and phase of implementation.

Service frequencies on local routes is expressed in headways (time between trips in minutes) per hour and by service period if applicable, whereas frequency on Regional and Trans-Sierra routes is expressed as the number of trips per day. These regional routes reflect significantly lower rides per hour due to the nature of regional services, based on one-way demand and limited origins and destinations that generate minimal passenger turnover on any particular trip.

Each route has been designed to reflect the seasonality in the Tahoe Basin. The goal is to create a system that does not need to change routes to meet the seasonality of visitors. The route structure and network structure should be designed for year round service. As depicted in Figure 50, it is in the winter and summer seasons that frequency is adjusted from a base level of service to meet the travel demands as required.

In addition to road based transit services, the transit system also includes two types of ferry services namely a ferry connection linking the north shore (Tahoe City) with the south shore (South Lake Tahoe); as well as ferry shuttle services serving the smaller communities along the northern and southern shores of Lake Tahoe respectively. It is envisaged that these services will be provided during the summer peak and shoulder periods and be operated with a large capacity ferry between the two main centers and smaller (12 passenger) ferry shuttles along the shoreline that do not require extensive docking facilities.

It should also be noted that in the Long term implementation phase it is envisaged that the regional service between Sacramento and Truckee be converted to a rail service potentially using existing rolling stock and rail infrastructure. Due to uncertainty of the feasibility of this service and the availability of infrastructure, the associated ridership and operating cost projections still reflect road based transit services.



TABLE 6: Ridership and Service Guidelines

	LAKE TAH	OE: SERVIC	CE GUIDELII	NES	
SERVICE	TYPE		PHAS	SING	
Local Services		Immediate/ Short Term	Medium Term	Long Term	GOAL
Frequent Routes (FTN)	Service	30/30/-	20/30/60	15/20/30	15/15/20
	Rides per hour	15 - 20	20 -25	25 -35	35+
Local Routes	Service	30/60/-	20/30/60	15/30/60	15/20/30
	Rides per hour	10 -12	12 -15	15 -20	20+
Community Routes Service		60/60/-	30/60/-	30/60/60	20/30/60
	Rides per hour	8 - 10	10 - 12	12 -15	15
Regional Services					
Regional	Trips per day	5-6	6-8	8-10	10
	Rides per hour	8 - 10	10 - 12	12 -18	15
Trans-Sierra	Trips per day	2-3	3-4	4-5	5
	Rides per hour	8	10	12	12
Service Frequency: Pe	eak/Off-peak/Eveni	ng frequency (m	inutes)		

Figure 50: Frequency Theory

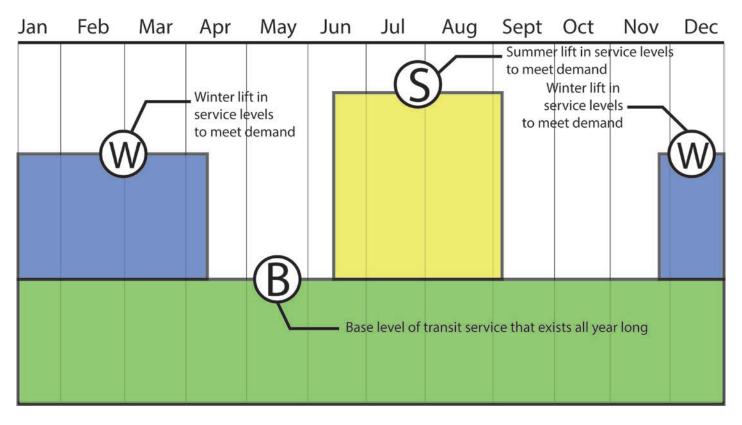




Figure 51 summarizes the phasing and improvement of proposed routes in the south and north shore areas of the Basin.

Operating Cost

Cost implications of service improvements are reflected in 2016 dollars. The average operating cost per hour that has been used for all road based transit services for all service types (e.g. community route, regional coach services, etc.), is based on the current cost structure of existing fixed route services provided by TART and TTD that include:

- Maintenance and repair costs
- Labor
- Fuel
- Insurances
- Facility rental and maintenance
- Office supplies, overheads and uniforms
- Printing and advertising
- Licenses
- Training
- Farebox replacement
- Depreciation

From the above, a rate of \$105 per hour was derived as an appropriate average operating cost per hour.

For ferry services, a slightly reduced rate of \$100/hr was assumed.

Cost and hours reflect the total to deliver transit services that include existing as well as new transit service.

Results

Three transit mode share scenarios have been developed.

The Easily Achievable scenario that produces a 5% annual transit mode share is presented in detail below by outlining the detailed service improvements that are proposed for the four implementation phases to achieve that goal.

Two further scenarios were developed at a high level to demonstrate the impact of achieving their respective goals in the long term:

- Progressive transit mode share scenario (10%)
- Aggressive transit mode share scenario (20%)

A summary of the outcome of these scenarios is summarized in Table 7 below for comparative purposes. The impact of the modal split targets is best comprehended when examining the requirements to deliver this service in terms of:

Tra	insit Mode S	Share Scenar	ios	
Scenario Mode Share	Existing 1.4%	Easily 5%	Progressive 10%	Aggressive 20%
Annual Service Hours	67,600	237,500	313,000	536,300
Peak Trips per day	-	585	679	1131
Heavy Duty Peak Buses	29	113	138	174
Heavy Duty Total Buses	33	150	199	295
Passengers	1,075,400	3,955,000	8,089,900	16,121,000
Estimated Operating Cost *	\$7,101,000	\$25,016,000	\$33,063,000	\$56,597,000
Estimated Fare Revenues *	-	\$14,014,000	\$21,470,000	\$42,987,000
Net Operating Cost *	-	\$11,002,000	\$11,593,000	\$13,610,000
Net Revenue/Cost Ratio	-	56%	65%	76%
Passengers per Hour	15.9	16.7	25.8	30.1
Average Fare	-	\$3.54	\$2.65	\$2.67
Cost per Hour	\$105.04	\$105.33	\$105.63	\$105.53
Equivalent Auto Trips Removed	-	1,346,000	3,278,000	7,031,000

TABLE 7: Summary of Transit Mode Share Scenarios



- Overall number of trips per day in the peak season
- Peak bus requirement (in service)
- Annual service hour requirement
- Net annual operating cost

Easily Achievable Scenario: as the name implies, a 5% transit mode share is forecast to be easily achieved as the transit network will have undergone a major restructuring to operate as one integrated system year-round. In the peak periods when demand increases, the frequency of service is increased. The proposed transit network therefore lays the foundation to support the more aggressive scenarios of 10 and 20% transit mode share targets.

Due to the extent of service expansion (additional service hours) and modest ridership assumptions, this scenario does not produce a significant increase in ridership. The average rides per hour increases from 15.9 to 16.7 and a cost recovery or the net revenue/cost ratio of 56% is achieved. With respect to transit revenues, as fare assumptions are simplified and do not reflect discounted fares the results should not be viewed as illustrative, serving as an indication of the revenue and cost recovery trends.

Progressive scenario: As the basic network is established, in this scenario targeted service frequency increases are proposed (peak local services on high order routes) with moderate ride per hour rate increases to achieve its goal of 10% transit market share. In comparison to the Easily Achievable strategy, this scenario sees a 32% increase in service hours and yields a doubling in annual ridership.

Based on the fare structure assumptions (no discounted fares making for a relatively high average cash fare) and the emphasis on ridership growth on the ferry services that yield a fare of \$4 per ride due to its tourism potential, a significant increase in cost recovery from 56% to 65% is projected.

Aggressive Scenario: This scenario sees an aggressive increase in the rides per hour rate (from 25.8 to 30.1) on all routes – especially regional, Trans-Sierra and ferry services. In comparison to the projected outcome of the Progressive strategy, the Aggressive scenario doubles the annual ridership while increasing service hours by 75%. This forecasts a further increase in cost recovery.

Progressing from a 5% to 20% mode share goal sees the doubling of annual service hours and peak vehicle requirement but a four fold increase in passengers due to the significant increase in average passengers per hour that reflects the acceptability of transit as an alternative mode of transportation for local, employment and visitor trips alike. This results in higher fare revenue which increases the cost recovery (net revenue/cost ratio) leading to a lower average fare.

Scenario 1: Easily Achievable (5% Mode Share) - Implementation Phasing Details

The 5% transit mode share scenario is considered a realistic and easily achievable goal that is based on:

- Realistic service guidelines in accordance with route classification and phase of implementation
- Ridership guidelines based on existing route performance and in accordance with acceptable North American transit performance guidelines

Figure 51 summarizes the phasing and improvement of proposed routes in the north and south shore areas of the Basin. Route specific details of the above summaries are contained in Appendix A and B for the north and south shore areas respectively.



FIGURE 51: Route Improvement Phasing Summary (5% mode share)

	North Shore - Phased Route Improvements												
Route	Classification	Immediate Term	Short Term	Medium Term	Long Term								
F1	FTN	No Service	60 60 60	30 30 30 Season Day Rides	15 15 30 Rides								
E	Local	No Service	60 60 60	30 30 60 Season Day Rides	30 30 60 Rides								
F	Local	No Service	60 60 60	30 30 60 Season Day Rides	30 30 60 Rides								
G	Local	No Service	60 60 60	30 30 60 Season Day Rides	30 30 60 Rides								
S1	Seasonal	No Service	30 30 30	20 30 30 Day Rides	20 30 30								
R3	Regional	No Service	No Service	60	60 Day								
W1	Ferry Shuttle	No Service	No Service	90 90 90	45 45 45 Day								
Ferry		No Service	No Service	60 60 60	45 45 45 Day								
RR1	Trans-Sierra	No Service	No Service	120	120								
	Кеу		·	·	·								

кеу	
90 90 90	Service Frequency (AM Peak/PM Peak/Off Peak)
30 30 30	Service Frequency change
Season	Seasonal Service change
Day	Length of Service Day change
Route	Route Alignment change
Rides	Estimated Rides per Hour change

		South Sh	ore - Phased Route I	mprovements	
Route	Classification	Immediate Term	Short Term	Medium Term	Long Term
F2	FTN		15 15 15 Route Season Rides	15 15 15 Day Rides	15 15 15 Season Rides
В	Local	60 60 60	30 30 60 Rides	30 30 60 Route Day	20 20 30 Season Rides
D	Local	30 30 60	30 30 60	30 30 30	30 30 30
53	Local	60 60 60	60 60 60	30 30 30 Day	30 30 30
S2	Seasonal	No Service	60 60 60	30 30 30 Season Rides	30 30 30 Day Rides
А	Community	No Service	No Service	No Service	30 30 60
С	Community	No Service	60 60 60	30 30 60 Rides	20 20 30 Day Rides
н	Community	30 30 30	30 30 30	20 20 20	20 20 20
J	Community	No Service	No Service	30 30 60	15 15 30 Season Rides
R1	Regional	No Service	60	60 Route Day Rides	30 Rides
R2	Regional	No Service	60	60 Day Rides	60 Rides
TS1	Trans-Sierra	No Service	No Service	No Service	60
TS2	Trans-Sierra	No Service	No Service	No Service	60
Ferry		No Service	60 60 60	45 45 45 Rides	45 45 45
W2	Ferry Shuttle	No Service	No Service	90 90 90	45 45 45 Rides



North Shore

The estimated ridership and total operating cost of service proposals by phase of implementation for the north shore is shown in Table 8. It shows that annual ridership on the north shore is forecast to increase from the current level of approximately 311,000 to 1.3 million in the long term. This represents an annual increase of 12.4% per annum over the next 12 years.

Transit operating cost is summarized in Table 10. This table shows that the investment in transit operating costs is projected to increase to \$10.1 million annually. This represents an average annual increase in transit funding of approximately \$777,000 over the next 12 years.

Transit revenue hours are forecast to increase from the current level of 31,100 to 97,200 hours annually. This represents an increase of 9.8% on an annual basis.

South Shore

The estimated ridership and total operating cost of service proposals by Phase of implementation for the south shore is shown in Table 9.

The table shows that annual ridership is forecast to increase from the current level of approximately 765,000 to 2.6 million in the long term. This represents an annual increase of 10.8% per annum over the period 2016 to 2028.

Transit operating cost of these service improvements is summarized in Table 11. It shows that the investment in new transit services is projected to increase to \$14,9 million annually. This represents an average annual increase of approximately \$1.24 million over the period 2016 to 2028.

Similarly, transit revenue hours are forecast to increase from the current level of 47,300 to 140,300 hours annually. This represents and annual increase of 9.5% on an annual basis.

TABLE 8: North Shore Ridership Summary (5% Mode Share)

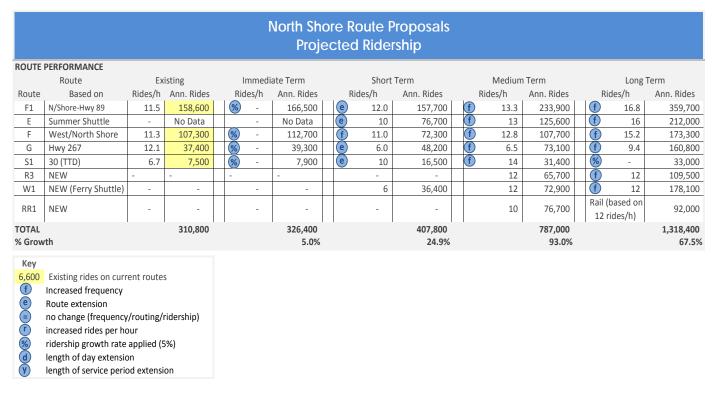
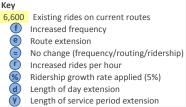




TABLE 9: South Shore Ridership Summary (5% mode share)

						Sou	th Shore	Ro	ute Pr	oposals						
							Forec	ast F	Ridersl	nip						
I	Route		Ex	isting		Immedia	te Term		Shor	t Term		Mediu	n Term		Long	Term
Route	Based	lon	Rides/h	Ann. Rides	R	ides/h	Ann. Rides		Rides/h	Ann. Rides	R	des/h	Ann. Rides	Ric	les/h	Ann. Rides
F2		50/10	29.7	332,300	=	-	332,300		25.9	335,800	f	27.6	496,200	f	30.5	679,000
B1	New		-	-		10.8	35,600	(f) 13.8	64,100	Rou	te B1 ev	olves into B2 ii	n the Med	ium Teri	n
B2	New		-	-		-	-		-	-	e	13.4	105,100	f	14.7	138,000
D	23/13/2	L5	15.9	173,500	Y	26.2	173,000	(% -	181,700	f	26.0	193,100	%	-	202,800
53		53	22.9	151,300	e	14.2	75,300		% -	79,100	f	14.5	101,100	%	-	106,200
S2		28	12.8	18,120		-	18,120	(d 9.7	11,800	f	11.9	44,600	f	14.8	69,700
А	New		-	-		-	-		-	-	(e)	-	-		12.5	63,200
С		53		-			-	(e 11.0	149,600	(f)	13.7	200,400	f	18.3	390,300
Н		14	19.8	37,100	Y	16.0	37,900	(% -	39,800	f	17	49,800	%	-	52,300
К	New		-	-		16.1	55,800	F	Route K int	egrates with F2	2					
J		11	8.6	12,700	% = =	-	13,300	(% -	14,000	f	9.6	35,000	f	13.0	61,800
R1		21	5.8	25,400	=	-	25,400		f) 6.0	26,300	f	8.0	81,800	r	10.0	127,800
R2		20	3.7	14,200	=	-	14,200	(f) 6.0	21,900	f	8.0	46,700	r	10.0	58,400
TS1	New		-	-		-	-		-	-		-	-		18.0	197,100
TS2	New		-	-		-	-		-	-		-	-		15.0	109,500
Ferry	New		-	-		-	-		-	-		35.1	115,600		46.7	226,700
W2	New		-	-		-	-		6.0	31,500.0		12.0	62,900		12.0	153,800
TOTAL				764,620			780,920			955,600			1,532,300			2,636,600
% Growth							2.1%			22.4%			60.3%			72.19



Length of service period extension

TABLE 10: North Shore Operating Cost Summary (5% mode share)

		Shore Route tal Operatin									
Route Immediate Term Short Term Medium Term Long Term											
F1	-	1,379,700	1,843,400	2,247,200							
E	-	804,800	1,033,800	1,396,900							
F	-	689,900	886,100	1,197,300							
G	-	843,200	1,179,600	1,792,800							
S1	-	178,500	239,800	251,800							
R3	-	-	574,900	958,100							
W1	-	607,200	607,200	1,484,300							
RR1	-	-	804,800	804,800							
TOTAL		\$ 4,503,300	\$ 7,169,600	\$ 10,133,200							
% Change	9		59.2%	41.3%							

TABLE 11: South Shore Operating Cost Summary (5% mode share)

		hore Route al Operating		
Route	Immediate Term	Short Term	Medium Term	Long Term
Existing Costs	4,789,000	1,060,000	-	-
F2	-	1,362,900	1,890,800	2,338,100
B1	344,900	488,600	-	-
B2	-	-	824,000	983,400
D	694,300	729,000	778,700	817,600
53	555,900	583,700	729,800	766,300
S2	-	127,900	394,400	495,200
Α	-	-	-	531,800
С	-	1,433,000	1,530,700	2,241,400
K	364,100	-	-	-
Н	247,900	260,300	313,800	329,500
J	-	-	383,300	498,400
R1	-	459,900	1,073,100	1,341,400
R2	-	383,300	613,200	613,200
TS1	-	-	-	1,149,800
TS2	-	-	-	766,500
Ferry	-	-	345,900	728,700
W2	-	524,400	524,400	1,281,900
TOTAL	\$ 6,996,100	\$ 7,413,000	\$ 9,402,100	\$ 14,883,200
% Change		6%	27%	585



Summary

Scenario 1: Easily Achievable (5% Mode Share)

Collectively, the transit performance in the Tahoe Basin for the conservative 5% transit mode share target is shown in Table 12 and can be summarized as follows:

- Increase in ridership of 11.3% per annum
- Average annual increase in gross Operating Cost ٠ of approximately \$2 million per year over the next 12 years
- Increase in revenue hours of 9.4% per annum

This table shows a small increase in the average rides per hour to approximately 17 that is estimated to be achieved due to the significant addition of both

service (revenue hours) as well as riders. However, based on an annual estimate of 80 million trips in the Tahoe Basin, the transit mode share does increase significantly from 1.3 % to approximately 5%.

It should be noted that a realistic and conservative approach has been taken in forecasting the performance of individual routes in the system. The service proposals and improvements are geared towards establishing a solid transit network and offering a realistic transportation alternative. This service structure should allow the system to achieve a long term transit mode share of 10+%.

Moving forward, a key area of focus would be the promotion of this transportation alternative in order to tap into the latent travel demand of local residents as well as to promote transit as a preferred transportation alternative for tourists visiting this region.

	Scen	ario 1: Easil	y Achievab	le	
		5% Mode	Share		
	Existing	Immediate Term	Short Term	Medium Term	Long Term
Ridership					
North Shore	310,800	326,400	407,800	787,000	1,318,400
South Shore	764,600	780,900	955,600	1,532,300	2,636,600
Total	1,075,400	1,107,300	1,363,400	2,319,300	3,955,000
Operating Cost					
North Shore	\$ 2,312,000	\$ 2,312,000	\$ 4,503,300	\$ 7,169,600	\$ 10,133,200
South Shore	\$ 4,789,000	\$ 6,996,100	\$ 7,413,000	\$ 9,402,100	\$ 14,883,200
Total	\$ 7,101,000	\$ 9,308,100	11,916,300	\$ 16,571,700	\$ 25,016,400
Revenue hours					
North Shore	22,000	22,000	42,890	68,280	97,200
South Shore	45,600	66,600	70,600	89,550	140,300
Total	67,600	88,600	113,490	157,830	237,500
Rides / hour					
North Shore	14.1				13.6
South Shore	16.8				18.8
Average	15.9				16.7
Transit Mode Share	1.3%				4.9%
Mode Share based on a	an estimated total	of 80 million annua	al trips in the Tahoe	e Basin	

TABLE 12: Easily Achievable Scenario (5% Mode Share): Transit Performance Summary by Phase





With respect to fares that offset the cost of transit service provision, any decision to offer free transit services would require the identification of an alternate funding source to replace the reduced fare revenue.

In summary, the key observations of the Easily Achievable Scenario are:

- Average rides per hour: 16.7
- Average Fares:
 - Local services: \$2
 - Regional services \$8 15
 - Ferry service: \$4 (based on tourism potential)
- Cost recovery 56% (fare revenue-operating cost ratio)
- Peak vehicle requirement of 135 buses (estimate based on individual routes)

 Rail service is proposed as a long term option for Trans-Sierra service to Sacramento. Ridership is conservatively based on 10 bus trips per day at 12 rides per hour. The rail option reflects road based transit operating cost.

Based on an average automobile occupancy of 2.14 (see p.127), this scenario is projected to remove the net equivalent of 1.3 million private vehicles from the road network.

A summary of the projected outcome of this scenario in the long term is provided in Table 13 which can be used as a basis to compare the Progressive (10%) scenario that follows.

Route	е			Mo	ode S	Share	Target: (5% Mode		Achiev	able			
Class	Number	Average Rides/hour		vice Freque		Peak trips per day	Annual Rides	Annual Revenue	Annual Operating	Annual Revenue		e Requirer	
			Peak	Off Peak	Evening			Hours	Cost (\$m)	(\$m)	Peak	Spare T	otal
North Sho		10.0			6.0					0.0000	10		
FTN	F1	16.8	15	30	60	36	359,700	21,400	2.247	0.8992	12	2	14
Local	E	15.9	30	30	60	28	212,000	13,300	1.397	0.424	4	1	5
Local	F	15.2	30	30	60	28	173,300	11,400	1.197	0.3466	3	3	6
Local	G	9.4	20	30	60	28	160,800	17,100	1.793	0.402	6	2	8
Seasonal	S1	14.9	20	30	60	28	33,000	2,400	0.252	0.066	3	1	4
Regional	R3	12.0	60	60	60	10	109,500	9,100	0.958	0.876	3	3	6
Community Ferry	W1	10.0	45	45	45	15	178,100	14,800	1.484	0.4453	15	2	17
Rail	RR1	Reflects 2	12 rides/h	, 5 trips/da	ay, at \$105	/hour	92,000	7,700	0.805	1.380	-	-	-
Sub Tota		13.6				173	1,318,400	97,200	\$ 10.13	\$ 4.84	46	14	60
South Sho	re												
FTN	F2	30.5	15	15	15	72	679,000	22,300	2.338	1.358	4	5	9
Local	B2	14.7	20	20	30	38	138,000	9,400	0.983	0.276	3	1	4
Local	D	27.3	30	30	30	32	202,800	7,800	0.818	0.406	2	1	3
Local	53	15.2	30	30	60	34	106,200	7,300	0.766	0.212	2	1	3
Seasonal	S2	14.8	30	30	30	30	69,700	4,700	0.495	0.140	4	1	5
Community	A	12.5	30	60	60	19	63,200	5,100	0.532	0.127	2	1	3
Community	С	18.3	20	30	30	38	390,300	21,300	2.241	0.781	8	1	9
Community	Н	17.5	20	30	30	45	52,300	3,100	0.330	0.105	1	2	3
Community	J	13.0	15	30	30	44	61,800	4,700	0.498	0.124	2	1	3
Regional	R1	10.0	60	60	60	10	127,800	12,800	1.341	0.511	7	2	9
Regional	R2	10.0	60	60	60	8	58,400	5,800	0.613	0.234	2	1	3
Trans-Sierra	TS1	18.0	60	60	60	8	197,100	11,000	1.150	1.971	8	2	10
Trans-Sierra	TS2	15.0	60	60	60	4	109,500	7,300	0.767	1.643	5	1	6
Local Ferry	Ferry	46.7	45	45	45	15	226,700	4,900	0.729	0.907	4	1	5
Community Ferry	W2	10.0	45	45	45	15	153,800	12,800	1.282	0.385	13	2	15
Sub Tota		18.8	45	45	45	412	2,636,600	140,300	\$ 14.88	\$ 9.18	13 67	23	90
Total		16.7				585	3,955,000	237,500		\$ 14.01	113	37	150
10001		1017				303	3,333,300	207,000	+ L010L	+ 1.01	110		100

TABLE 13: Easily Achievable Scenario (5% Mode Share): Long Term Transit Performance Summary



Scenario 2: Progressive (10% Mode Share)

To achieve this scenario, a doubling of ridership from approximately 4 to 8 million passengers is required. This is achieved by a combination of ridership increases as well as service frequencies. In this regard, the following assumptions can be noted (see Table 14):

- The two Frequent Transit routes see a significant increase in ridership in comparison to service increases
- Both the local and community ferry services see a major increase in ridership as well as service headways
- Service increases focus on improving peak service periods e.g. morning and afternoon peak service periods; summer and winter seasons; and

length of service day

- In this scenario, Regional and Trans-Sierra services remain unchanged in terms of frequency and rides
- Rail ridership remains unchanged (reflecting approximately 12 rides per hour)

Key observations:

- Doubled ridership (8 million)
- Approximately 50% increase in revenue hours (increase by 100,000 hours)
- Significant increase in average rides per hour to 25.8 from 17.8
- Cost recovery increase to 65% from 54%
- Peak vehicle requirement increases from 125 to 183

Route	9				Moc	de Sha	are Targ (10% Mode		gressiv	'e			
Class	Number	Average Rides/hour	Sei Peak	rvice Freque Off Peak		Peak trips per day	Annual Rides	Annual Revenue Hours	Annual Operating Cost (\$m)	Annual Revenue (\$m)	Vehicle Peak	Requirer Spare T	
North Shor	e												
FTN	F1	30.0	15	20	60	59	1,764,600	58,857	6.180	4.411	12	16	28
Local	Е	22.7	15	30	60	37	535,600	23,633	2.481	1.071	7	3	10
Local	F	19.1	15	30	60	37	387,400	20,259	2.127	0.775	6	4	10
Local	G	21.4	15	30	60	37	434,200	20,277	2.129	1.086	8	2	10
Seasonal	S1	20.3	15	30	60	36	58,200	2,868	0.301	0.116	4	1	5
Regional	R3	12.0	60	60	60	10	109,500	9,125	0.958	0.876	3	3	6
Community Ferry	W1	45.0	30	30	30	22	1,001,900	22,264	2.226	1.87	22	2	24
Rail	RR1	-	-	-	-	-	80,500 -			-	-	-	-
Sub Total		27.8				238	4,371,900	157,284	\$ 16.40	\$ 10.21	62	31	93
South Shor	e												
FTN	F2	34.5	15	15	15	72	659,900	19,100	2.006	1.320	4	4	8
Local	B2	19.4	15	30	30	43	246,700	12,700	1.333	0.493	4	1	5
Local	D	30.0	15	30	30	40	299,100	10,000	1.047	0.598	4	1	5
Local	53	20.4	15	15	30	34	174,900	8,600	0.902	0.350	4	1	5
Seasonal	S2	18.8	15	30	60	36	107,900	5,700	0.602	0.216	8	2	10
Community	А	12.5	30	30	60	19	63,200	5,100	0.532	0.126	2	1	3
Community	С	18.3	20	30	30	38	390,300	21,300	2.241	0.781	8	2	10
Community	Н	17.5	20	20	30	45	52,300	2,988	0.314	0.075	1	1	2
Community	J	13.0	15	30	30	44	61,800	4,700	0.485	0.124	2	1	3
Regional	R1	10.0	60	60	60	10	127,800	12,800	1.341	0.511	4	5	9
Regional	R2	10.0	60	60	60	8	58,400	5,800	0.613	0.234	2	1	3
Trans-Sierra	TS1	18.0	60	60	60	4	197,100	11,000	1.150	1.071	5	3	8
Trans-Sierra	TS2	15.0	60	60	60	4	109,500	7,300	0.767	1.643	3	3	6
Local Ferry	Ferry	53.0	30	30	30	22	496,100	9,400	1.405	2.470	6	1	7
Community Ferry	W2	35.0	30	30	30	22	673,000	19,200	1.923	1.254	19	3	22
Sub Total		23.9				441	3,718,000	155,688	\$ 16.66	\$ 11.27	76	30	106
Total		25.8				679	8,089,900	312,972	\$ 33.06	\$ 21.47	138	61	199
Change from 5% Mo estimate	ode Share	55.2%					104.5%	31.8%	32.2%	53.2%			32.7%

TABLE 14: Progressive Scenario (10% Mode Share): Long Term Transit Performance Summary



Based on an average automobile occupancy of 2.14 (see p.127), this scenario is projected to remove the net equivalent of 3.28 million private vehicles from the road network.

Scenario 3: Aggressive (20% Mode Share)

A 20% transit mode share is achieved by aggressive ridership increases – especially on the ferry and Frequent Transit Network services – supplemented by service increases not only in peak periods but also in off peak periods, and shoulder and off peak seasons. In addition, regional transit services are also increased in terms of service levels and ridership. Increases in rail ridership equate to 18 rides per hour. Key observations of this scenario include (see Table 15):

- In comparison to the 10% mode share scenario, ridership doubles from 8 to 16 million
- Approximately a 50% increase in revenue hours (increase by 200,000 hours)
- Significant increase in average rides per hour to 30.1 from 25.8
- Ridership increases on ferries and regional services increases the cost recovery from 65% to 76%

Based on an average automobile occupancy of 2.14 (see p.127), this scenario is projected to remove the net equivalent of 7.03 million private vehicles from the road network.

TABLE 15: Aggressive Scenario (20% Mode Share): Long Term Transit Performance Summary

Route	e				Мос	de Sha	are Targ (20% Mode		gressiv	е			
Class	Number	Average Rides/hour	Ser Peak	vice Frequ Off Peak	ency Evening	Peak trips per day	Annual Rides	Annual Revenue Hours	Annual Operating Cost (\$m)	Annual Revenue (\$m)	Vehicle Peak	e Requirer Spare 1	
North Shor	re				Ŭ								
FTN	F1	43.4	8	10	15	120	4,879,100	112,400	11.799	12.198	23	30	53
Local	E	22.3	10	15	20	78	1,024,500	46,000	4.834	2.049	11	8	19
Local	F	18.6	10	15	20	76	719,300	38,700	4.061	1.439	9	10	19
Local	G	21.1	10	15	20	79	1,044,600	49,600	5.21	2.611	9	13	22
Seasonal	S1	19.7	15	20	30	43	71,300	3,600	0.38	0.143	4	1	5
Regional	R3	14.0	40	40	40	15	191,600	13,700	1.437	1.533	4	4	8
Community Ferry	W1	63.0	30	30	30	22	1,402,600	22,300	2.226	2.805	22	3	25
Rail	RR1	-	-	-	-		179,800			-	-	-	
Sub Total		33.2				433	9,512,800	286,300	\$ 29.95	\$ 22.78	82	69	151
South Shor	re												
FTN	F2	41.5	8	10	15	120	1,449,900	34,900	3.668	2.900	8	7	15
Local	B2	19.1	10	15	20	82	511,100	26,800	2.817	1.022	6	5	11
Local	D	29.7	10	15	20	78	710,100	23,900	2.510	1.420	6	4	10
Local	53	20.1	10	15	20	79	514,100	25,600	2.690	1.028	6	4	10
Seasonal	S2	22.9	15	20	30	43	154,700	6,800	0.710	0.309	8	2	10
Community	A	14.6	20	30	30	32	128,100	8,800	0.920	0.256	2	2	4
Community	С	17.3	20	30	30	95	510,500	29,500	3.098	1.021	8	4	12
Community	Н	15.0	20	20	20	48	55,500	3,700	0.387	0.083	1	1	2
Community	J	14.9	15	30	30	40	92,300	6,200	0.652	0.185	2	2	4
Regional	R1	12.0	60	60	60	15	230,000	19,200	2.012	0.920	5	8	13
Regional	R2	12.0	60	60	60	10	84,100	7,000	0.736	0.336	2	1	3
Trans-Sierra	TS1	18.0	60	60	60	6	295,700	16,400	1.725	2.957	8	4	12
Trans-Sierra	TS2	18.0	60	60	60	6	197,100	11,000	1.150	2.957	5	4	9
Local Ferry	Ferry	66.5	30	30	30	22	732,800	11,000	1.652	2.931	6	1	7
Community Ferry	W2	49.0	30	30	30	22	942,200	19,200	1.923	1.884	19	3	22
Sub Total		26.4				698	6,608,200	250,000			92	52	144
Total		30.1				1,131	16,121,000	536,300	\$ 56.60	\$ 42.99	174	121	295
Change from 10% N Share estimate	lode	16.3%					99.3%	71.4%	71.2%	100.2%			48.2%



Transit Impact

In the Corridor section of this report a summary of the impact of transit is provided for each of the corridors in the study area. This summary demonstrates the impact if each corridor is individually developed to its full transit potential in accordance with the Aggressive mode share (20%) scenario. Each of these summaries reflect all routes that operate within each corridor or connect to that corridor. The intent of the impact assessment is also to identify the estimate of the number of private vehicle trips that would be removed from the road network for each individual corridor due to these trips switching mode from the automobile to transit.

TABLE 16: Vehicle Occupancy Rate Assumptions

Vehicle Occupancy Rates

Persons per vehicle (PPV) rates in Tahoe Basin:

Customer Category	E
Visitors	2.6
Residents	1.8
Commuters	1.1

Translating Transit Trips to Automobile Trip reduction using PPV rates:

Customer Category	Local Transit Services	Frequent Transit Services	Average (A&B)	PPV Weighted Average
	Α	В	С	(C * E)
Visitors	70%	50%	60%	1.56
Residents	20%	20%	20%	0.36
Commuters	10%	30%	20%	0.22
TOTAL	100%	100%	100%	2.14

The overall impact of private vehicle reduction for each scenario is summarized in Table 7 (p.128). Table 16 provides details on the assumptions relating to automobile occupancy rates in order to derive an estimation of the reduction in private automobiles from the road network.

Summary

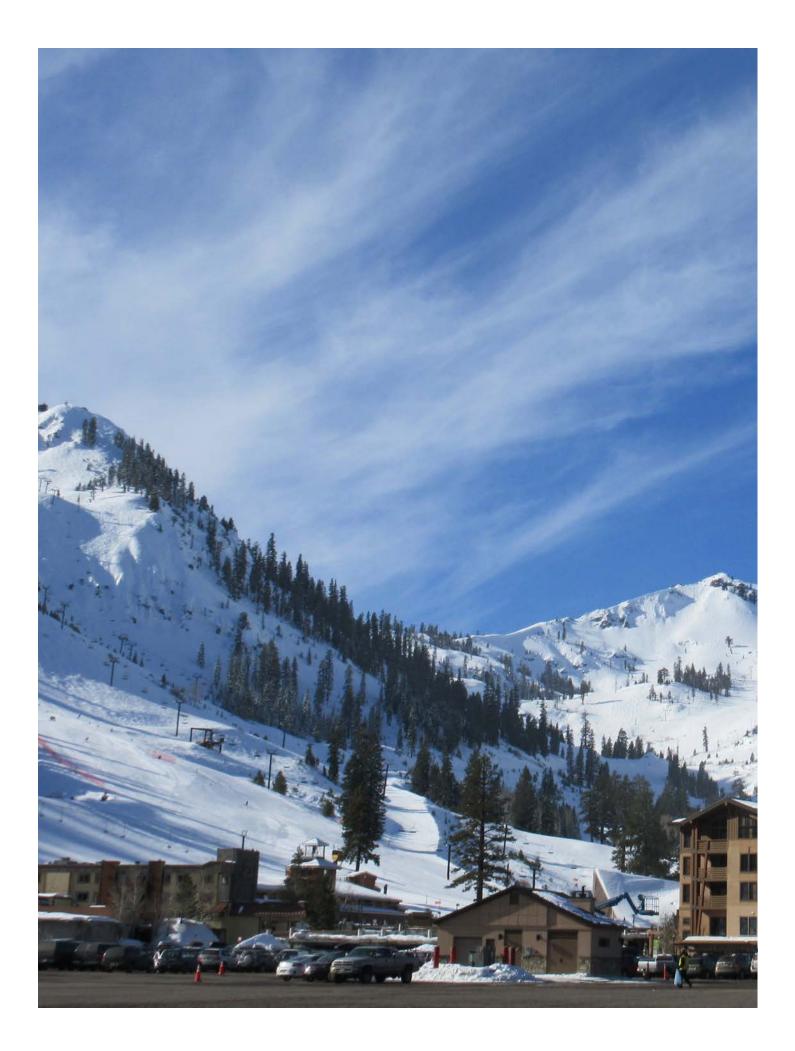
The transit system structure is designed to easily achieve a 5% transit mode split with conservative estimates for ridership. Most systems take several years after implementation to establish and build up the ridership, particularly in a region where the private vehicle has been the mode choice for decades. Ridership, indicative of the effectiveness of the system, is forecast to be a moderate average of 17.8 passengers per hour.

This base network has been designed to allow for increases in service frequency in response to increases in demand within seasons, thus the network that achieves 5% can achieve 10% with an increase in service hours and trips that can accommodate significant increases in passengers without requiring structural adjustments. A 20% mode split is more challenging to meet because it requires a very large investment in transit over time but the reward is a system that removes 16 million trips per year out of the private vehicle mode which is better for the Tahoe Basin.



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TAHOE TRANSIT MASTER PLAN DETAILED ROUTE SUMMARIES

The Fernal

in Meyers will assist in encouraging transit use and improve accessibility to the rest of the Tahoe transit network:

- Mobility Hub (MH8)
- Transit Center (TC6)

Implementation of this new route is planned for the long term.

APPENDIX A Proposed North Shore Route Details

Summary

Currently, the north shore transit network offers the following services:

- 3 annual routes (1, 2 & 3)
- 3 winter shuttles (between Tahoe City and Hyatt Regent, Squaw Valley and Homewood)
- 1 summer shuttle (route 28) to Sand Harbor
- 3 night routes (N1, N2 & N3)
- A few local private routes provided by ski resorts

There are no public transit connections to the south shore and regional connections are privately operated.

As the south shore, the proposed network aims to maximize transit access to the major origins and destination in the area in order to reduce the impact of private automobile use (congestion, parking, etc.) and increase the transit mode share. While ensuring to serve destinations in the north shore of the Tahoe Basin, it will allow for good connections to the south shore as well as regional connections to Reno and Sacramento.

The routes in the north shore area have been classified based on route function, as follows:

- One FTN route (Route F1) serving Truckee, Tahoe City and Crystal Bay using highways 28 and 89
- Three local routes (Routes E, F and G)
- One summer-only service (S1)
- One regional bus service (R3)
- A regional rail service (RR1) that will initially be operated as a coach service
- One gondola (G1)
- A ferry service between Tahoe City and South Lake Tahoe
- A summer ferry Shuttle (W1) serving communities between Sand Harbor in the east and Homewood in the west

There are no winter seasonal services planned other than adjusting seasonal frequencies on year-round routes based on the seasonality of demand.

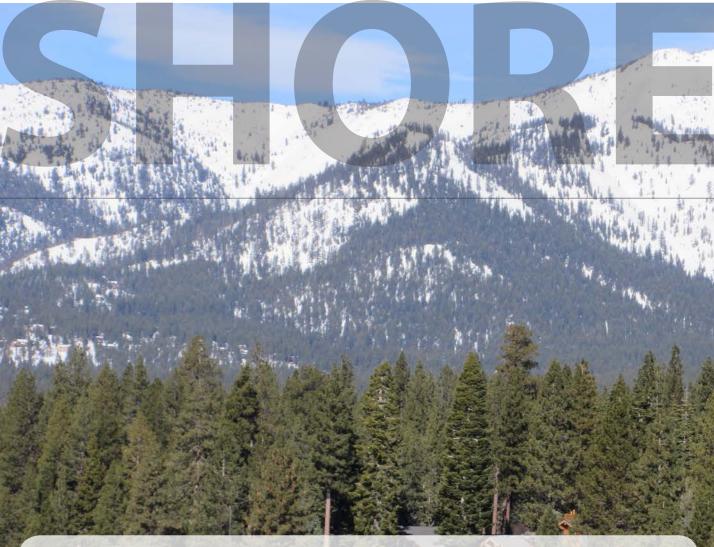
One summer-only service is proposed on the East Shore of Lake Tahoe. Other summer seasonal demands are addressed through schedule changes on year-round routes.

The connection with the south shore will primarily be made by:

- A ferry service between Tahoe City and South Lake Tahoe
- Connection between southern and northern routes at Tahoma Transit Center (TC8) on the







West Shore

To support the transit network, it is proposed to improve several of the current transit facilities as well as add new facilities to the network to increase transit accessibility and facilitate transit operation.

The future network will offer the following facilities:

- 2 new or upgraded parking facilities to offer improved access to the transit network
- 5 new or upgraded Transit Centers to provide improved customer facilities, transfers between routes and overall bus operations
- 5 mobility hubs to facilitate transfer between other mode and the transit network, as well as to provide customer amenities for resident and visitors of the Tahoe Basin
- New ferry docks and moorage facilities to accommodate the new Ferry and ferry Shuttle services

The following section describes the proposed routes and associated facilities in more detail.



Routes are listed based on their function, i.e.:

- Local services (frequent, local, community and • seasonal routes)
- Ferry services .
- **Regional services**

The proposed route and infrastructure proposals are summarized in a tabular format at the end of this section.

Route F1- Frequent

Establishing a Frequent Transit Network route extending from Truckee to Incline Village via

Tahoe City, Kings Beach and Chrystal Bay (Routes 89 and 28)

This route will expand the major access into the Tahoe Basin from the north (Truckee) by consolidating portions of

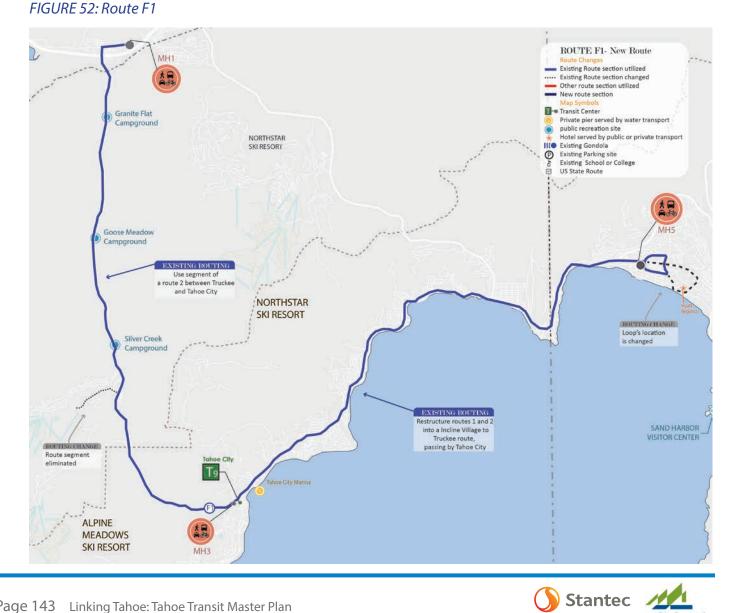


existing services (Routes 1&2) to promote the ability to use transit to reach major destinations This service is geared towards providing both

visitors and residents year-round transit services to reach local destinations

Improvements to the following facilities are proposed to support the transit service:

- Existing Tahoe City Transit Center (TC9)
- Existing Truckee Mobility Hub (MH1)



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- Proposed Tahoe City Mobility Hub (MH3)
- Proposed Incline Village Transit Center and Mobility Hub (MH5)

Implementation: Proposed to implement this route in the short term and providing frequency increases together with seasonal and service day improvements in the medium and long term.

Route E - Local

A year-round service connecting the Northstar Resort in the west to Diamond Peak Resort in the east via Crystal Bay, Kings Beach and Incline Village

- This route represents an extension of the current Summer shuttle that provides service between North Star and Chrystal Bay
- In addition to this route providing year-round access to recreation areas, it also provides transit

access to local residential areas to the commercial destinations in Incline Village

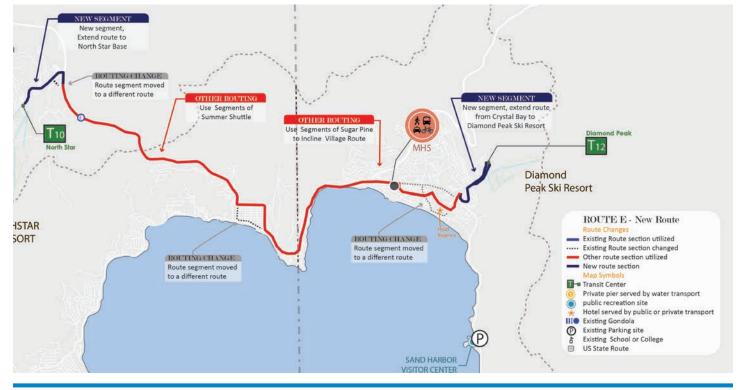
 It should be noted that connections to recreational destinations is subject to



accessibility to transit turnaround locations

This service will be supported by the North Star and Diamond Peak Transit Centers (TC10 & TC12).

FIGURE 53: Route E





Implementation:

- Consists of the combination of 3 services and adds connections to Diamond Peak ski resort and North Star base
- Proposed to be implemented in the short term with frequency increases and seasonal and service day improvements in the medium and long term

Route F - Local

Year-round service between Sugar Pine, Tahoe **City, and Squaw Valley**

Expand and improve transit by incorporating existing service along two current key routes

(Tahoe City to Squaw and Sugar Pine to Incline Village) that already carry a significant portion of the TART ridership. This service will mirror both the summer evening and the ski shuttle service.



- This service will provide connection to the FTN route F1 in Tahoe City and extend to connect with Squaw Valley
- Will also connect three of the major ski resorts on • the west shore (Squaw Valley, Alpine Meadows, and Homewood ski resorts)
- Will provide a connection to the south shore along the western side of the lake

This route is served by the following existing



facilities:

- Tahoma and Tahoe City Transit Centers (TC8 & TC9)
- Tahoe City Mobility Hub (MH3)

Two new transit related facilities are proposed:

- Squaw Valley Transit Center (TC11)
- Squaw Valley Parking (P4)

Implementation in the short term, with frequency increases and seasonal and service day improvements in the medium and long term.

Route G - Local

An improved year-round connection between Truckee that extends to Incline Village via Hwy 267

• Maintains and improves current service that

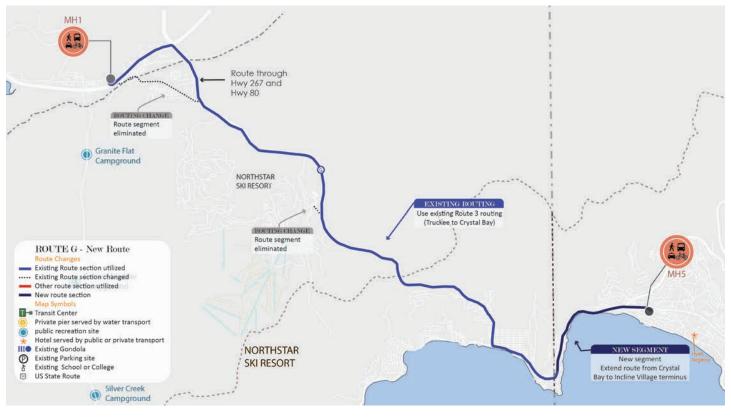
is well used on a year-round basis

By extending the service beyond the Nevada borders to Incline Village will provide access to both visitors and



local residents with improved access to more destinations. Currently, the route does not cross the Nevada border due to existing funding restrictions and operational specifications. This routing will require a change to those restrictions to allow the natural extension to Incline Village

FIGURE 55: Route G



In so doing, it will increase transfer opportunities to local and other regional services

This service will be supported by improvements to the Truckee Mobility Hub (MH1) facility as well as the proposed Incline Village Transit Center and Mobility hub (MH5).

Implementation is proposed in the short term with frequency increases and seasonal and service day improvements in the medium and long term.

Route S1 -Seasonal

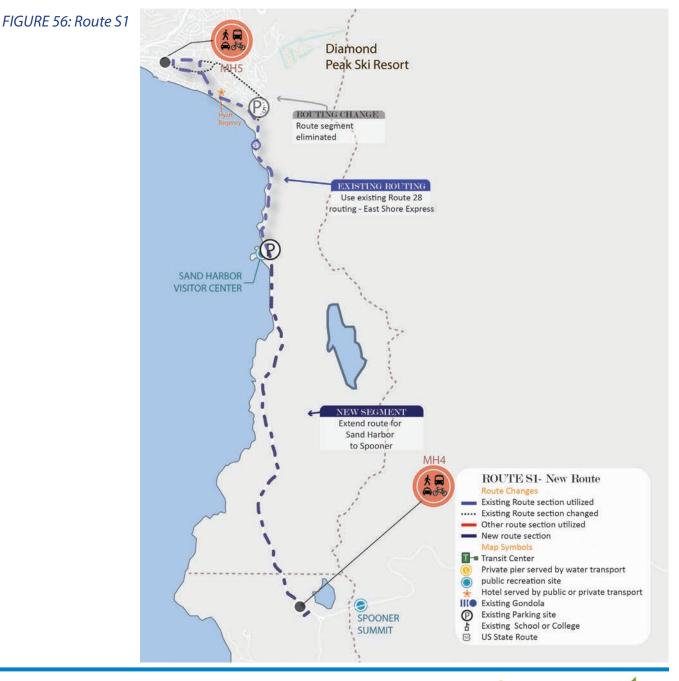


Stantec 1

Expanding the summer route

between Incline Village and Sand Harbor to the Spooner Summit are on the east shore.

Improve current service and extend service from Sand Harbor Visitor Center to Spooner to improve access the beach destinations and contribute to



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reducing the demand for parking along the highway in this area.

This route will be served by the following two proposed facilities:

- Incline Village Parking (P5)
- Spooner Lake mobility hub (MH4) Implementation:

The extension of existing seasonal route to Spooner is due for implementation in the short term, with frequency, seasonal and service day increases in the medium term.

FERRY

Establishing a direct ferry service between Tahoe City and South Lake Tahoe.

This service description is duplicated for completeness and is identical as what has been described in the south





FIGURE 57: FERRY Route



shore section of this report.

The goal is to provide an alternative travel option to rapidly connect to the south shore from the north. This service is not intended as a year-round service but focuses on peak Summer seasonal service with a reduced level of service in the Summer shoulder season.

Implementation of this new route is proposed for the short term subject to the availability of mooring and docking facilities.

In the medium term increased service frequencies are proposed subject to demand.

FERRY SHUTTLE (W1)



A local summer ferry Shuttle

service to offer an alternative transportation option to travel between communities along the north shore

NORTHSTAR SKI RESORT Θ (P)SAND HARBOR VISITOR CENTER NEW SEGMENT Create Ferry Shuttle service in summer FERRY SHUTTLE - NORTH New Route Existing Route section utilized Existing Route section changed Other route section utilized New route section Т Transit Center 0 Private pier served by water transport public recreation site Hotel served by public or private transport Existing Gondola Existing Parking site 0 Existing School or College US State Route

FIGURE 58: Ferry SHUTTLE (W1)

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 This service is designed to provide connections between the local communities of Sand Harbor, Incline Village, Kings Beach, Carnelia Way, Ridgewood, Dollar Point, Tahoe City North, Tahoe City, Tahoe Pines and Homewood along the north and west shores of Lake Tahoe
 It is proposed that this service is operated with ferry boats with a capacity of approximately 12 persons



FIGURE 59: Gondola **Squaw Valley** SOUAW VALLEY SKI RESORT NEW SEGMENT Create a new gondola **GONDOLA** - New Route **Route Changes** Existing Route section utilized ALPINE - Existing Route section changed Other route section utilized **MEADOWS** New route section **SKI RESORT** Map Symbols Transit Center Private pier served by water transport public recreation site Hotel served by public or private transport III Existing Gondola P Existing Parking site Existing School or College 4 53 US State Route



The New route is slated for implementation in the summer season in the medium term and is subject to the availability of docking and mooring facilities. Based on demand, frequency improvements can be considered in the longer term.

GONDOLA

A gondola service between Squaw Valley Resort and Alpine Meadows Resort is proposed for implementation in the medium term The impact of this service in terms of ridership and cost has been excluded from this transit master plan.



Route R3 - Regional NV

Regional connection between Incline Village and Reno via Mt. Rose.

• Purpose is to establish a travel option for visitors and commuters to the Basin area without

FIGURE 60: Route R3





requiring a private vehicle

- This service will also provide access to the Mt. Rose area from the Tahoe Basin for recreational opportunities
- This service is proposed for implementation in the medium term
- The increase in number of trips per day can be considered in the long term based on demand
- To support this service, a Mobility Hub at Mount Rose (MH2) is proposed in the same time period of implementation

Further service improvement based on demand may be warranted in the longer term based on demand.



Route RR1 - Regional Rail

Regional rail connection between Truckee and Sacramento

 In the long term this will offer a rapid and efficient option to reach the Tahoe Basin from a major hub and beyond, outside the Tahoe Basin



FIGURE 63: Regional Rail Service





FIGURE 61: Regional Coach Service

Rodes

North Shore: Route Proposals	Route Prope	osals									
ates change in routing	Existing Route	Corridor	Vision Type Route Type	Type	Route Description Highlight	Immediate	Short Term	Medium Term Long Term	Long Term	Route Associated With	Additional Comments
Immediate Short Medium Long Term Term Term Term	North Shore -Routes										
	Tahoe City - Truckee	SR28/Hwy 28 NV SR28	FI	z	Truckee - Tahoe City - Incline Route change	Frequency	Change Route	Seasonal Frequency	Frequency	۳	MMEDIATE TERM: Additequency on current routes SHORT TERM: Festinculue Table Toules to acted a new service and extend to Incline Village MEDIAM Festive Addit formodi frequency in peak seasons CONG FERM: Add annud frequency
	Tahoe City - Crystal Bay	SR28/Hwy 28 NV SR28	E	z	Truckee - Tahoe City - Incline	Frequency	Change Route	Seasonal Frequency	Frequency	Ľ	IMMEDIATE TERM: Add frequency on current routes SIADITTERM: Extracture Train toudes to create new service MEDIANT TERM: Add trequency in peak secons LONG TERM: Add annual frequency
	Crystal Bay - Incline Village	SR28/Hwy 28 NV SR28	<u>ع</u> ۳	Local	Diamond Peak - Incline - Kings Beach - Northstar	Frequency	Extend Roule Seasonal Frequenc	Seasonal Frequency	Frequency		MARDATE TRAM. Sadd requency on current routes SHORT TRAM. Extern And requencion on current routes Research of the model hermined of North Sid MEDUM Effect. And embranch in predict seasons LONG TRAM. Add embranch in predict seasons
	West Shore	SR28/Hwy 28	<u>م</u>	Local	Sugar Prine - Tahoe City - Squaw Valley	Frequency	Extend route Seasonal Frequenc	>	Frequency	E	MMEDIATE TRAM. Add frequency on current routes SHORT TRAM. Change Aff routes to crede new service and extend service to main status viding base MEDIANI status viding to the secons LONG TERM. Add anyoti frequency.
	Truckee - Crystal Bay	SR28/Hwy 28 NV SR29	ة م	Local	Truckee - Crystal Bay - Incline	Frequency	Change Route	Seasonal Frequency	Frequency	Н	IMMEDIATE TERM: Add frequency on current routes SHORT TERM: Add frequency inon Cystal Bay to Incline Village MEDIUM TERM: Add requency in peak secons LONG TERM: Add amoud frequency
	East Shore Express	NV SR28 US 50 East	S1	mmer	Incline - Sand Harbor - Spooner		Extend Route Seasonal Frequenc	Seasonal Frequency			IMMEDIATE TERM: N/A SHORT TERM: Even Roule from Sand Harbor to Spooner Surrinit MEDIAN TERM: Add frequency in Peak Secons LONG TERM: N/A
	NEW	NV SR28	R3	sgional Bus	Regional Bus Incline Village - Mt. Rose - Reno			Add Roufe	Frequency		IMMEDIATE TERM: N/A SHORTTERM: N/A MEDIATTERM: N/A MEDIATTERM: Add seasonal frequency
	NEW	SR28/Hwy 28 NV SR28	W1	Ferry Shuttle	Sand Harbor - Homewood			Add Route	Seasonal Frequency		MukeDate TRAN N/A SHORT TRAN IN/A MEDUM TRAN Introduce fany shufte service in summer DONG TRAN. Increase frequency based on demand and length of summer season
	NEW	SR28/ Hwy 28 US 50 South	Ferry	Ferry	Tahoe City - South Lake Tahoe			Add Route	Seasonal Frequency		MueDiaf E Rew. IVIA SHOAT TRAM: Finduce fany service MEDIUM TRAM: VIA MEDIUM TRAM: VIA Dosed on demond
/ 9	NEW	SR28/Hwy 28	<u>ö</u> 5	Gondola	Squaw Valley Resort - Alpine Meadows Resort			Add Route			IIMMEDIATE TERM: N/A SHORTTERM: N/A MEDIATTERM: Add new Gondola as part of the transit system LONG TERM: N/A
	Amtrak	SR28/ Hwy 28	RR1	egional Rail	Regional Rail Sacramento - Reno Frequency			Create Temp. Add Rail Bus Route Service	Add Rail Service	FI, G	MMEDIATE TEMA. N/A SHORT TEMA: N/A MEDIUM TEMA: Create regional bus service to Sacramento as pravy for rail MEDIUM TEMA: Create regional bus services to service to create LONG TEMA: Requires arrangement for frack use plus services to create



North Shore: Infrastructure Proposals

)	5		Corridor) } }	Type	Route Description	Immediate Short Term	Medium Term Lond Term	Route Associated With	Additional Comments
Tem		Term Term	North Shore Infrastructure Truckee Rail Station	SR28/Hwy 28	UHW	Mobility Hub Truckee		Upgrade facility	Upgrade Facility	F1, Regional Rail,	
	_	a ba								Regional Coach	
T 2			Tahoe City Transit Center	SR28/Hwy 28	TC9 MH3	Transit Center Tahoe City	Oty		Upgrade Facility	F, S2	IMMEDIATE TERM: improve signage and visibility MAPDIAT TERM: Make any upgrades necessary to market as Mability Hub MEDUM TERM: VIA LONG TERM: VIA
	T 2		NEW	NV SR28	TC12	Iransit Center Diamond Peak/ Incline Village	id Peak/ Incline Village	Upgrade tacility		ш	Numbara TERM: IV/A SHORT TERM: IV/A clientifie TERM: IV/A closes in summer and shoulder seasons, therefore an clientifie TERM: IV/A MEDIUM TERM: IV/A
			NEW	NV SR28	MH5	Transit Center Incline Village & Mobility Hub	village	New Facility		F1, G, E, S1, R3	Mumbalat Team N/A SHORT TERM: UNA Incline Vitage that serves as a new transit center Incline Vitage that serves as a new transit center MaDUM TERM: N/A
			NEW	US 50 East	MH4	Mobility Hub Spooner Summit area	r Summit area	New Facility	Upgrade Facility	SI	Mumbate Team. NA SHORT TEAM. Coadie no wa parking facility with bus tumaround in lands coposite Spooner Lake parking entrance MEDIM TEAM. NA
			NEW	NV SR28	MH2	Mobility Hub Mt. Rose	Mi. Rose, Incline Village		New Facility		Numbara Teah. NA SHORT TERN: NA MEDUM TERN: Create summer season bus tumaround and parking zones for MEDUM FLA. Create summer season bus tumaround and parking zones for Nobarity Hub. Zould include cycle parking
	(NEW	28	Ferry	Ferry Dock				5	Numediate Team. NA SHORT TEAM. Planning and implementation of a dedicated ferry dock required prior to the start of service MoDUME TEAM. NA
	•		NEW	NV SR28	PS	Parking Incline Village	vilage	New Facility		S	Numbart Team. I/A SHORT TERM. Cearly not are and the south end of Incline Village to help with the sand Harbor Indific & parking challenges MoDUM TERM. I/A
	T 2		NEW	-8	TC 10	Transit Center North Star	đ	New Facility		ш	IMMEDIATE TEMR: N/A SHORT TEMP: N/A MEDIUM TEMM: N/A MEDIUM TEMM: N/A
	12	٩	NEW		1C1.	Transit Center Squaw Valley & P.4	Valley	New Facility	Upgrade Facility	Ľ	MMEDIAT FRAM: NIA SHORT FRAM: NIA main side prove terminus from Square Ridge Rd to Square Valley Rd and main side pase. Create stops and furnaround area main side pase. Create stops and furnaround area main side particular create seponturally to add parking in summer season DONG FRAM: NIA.
	T ₂		Tahoma Transit Center	SR28/ Hwy 28	TC 8	Transit Center Tahoma				F, S2	IMMEDATE TEM: N/A SHORT TEM: N/A MEDIUM TEM: N/A LONG TEM: N/A
		H	NEW	SR28/ Hwy 28		Ferry Dock Tahoe City	vic		New Facility		Numediate Team NIA SHORT TERK: VIA MEDIUM TERK: VIA owness for use owness for use IONG TERK: Review locations for usage



ROUTE	F1 (Truckee to	Incline Villa	ge)	
Authority		TART		
Classification:		Frequent Tr	ansit Network	Frequent
Phasing Priority		Short Term		
	D	escription		
Existing	Truckee to Tah	oe City via R	t89	
	Tahoe City to C	hrystal Bay v	ria Rt 89	
		provements		
Immediate Term	N/A			
Short Term	Consolidate an		· ·	
		•	at old Elementar	,
Med Term			nal frequency (s	ummer)
Long Term	Increase year r	ound freque	ncy	
	Cha	racteristics		
		Google	Google	Recommen-
		Earth	Maps	dation
Route Length (mi)		33	37	33
Trip Time (min)		60	67	
Speed (mph)		33	30	33
Transit Service Specs				
Time		75		
One way Trip (80%) (I	minj	75	84	80

149

180

31

66

17%

168

180

13

7%

74





					_
Existing Ro	ute Characteris	tics (Truckee H	lwy 89 and 1	/2 of North Shore)	
		Hwy 89	1/2 of North	Shore	
10.7	r/h	10.7	24.9	11.5 $ar{x}$	
8000	hrs	8000	5800	13800	
86100	rides	86100	72500	158600	

\$2.50 \$ 394,200 29%





Schedu	le Details
SHORT	TERM

Round Trip (min)

Cycle time (min)

Recovery (min) Recovery (%)

Distance Round Trip (mi)

SHORT TERM										Forecast Ri	dership
Period: Year round				Days	365						
			٦	Time							
Period	Service frequency	Start	End	Duration (hrs)	Decimal Time	Trips	Revenue hours	Peak vehicles	Revenue miles	Rides per hour	Ride
AM peak	60	6:00	7:00	1:00	1.0	1	3	3	66	12	
PM peak	60	17:00	18:00	1:00	1.0	1	3	3	66	12	
Off peak	60	7:00	17:00	10:00	10.0	10	30	3	660	12	3
Evening	0			0:00	-	-	0	0	0	0	
Daily	0			0:00	-	-	0	0	0	0	
Late night	0			0:00	-	-	0	0	0	0	-
Weekend/holidays	0			0:00	-	-	0	0	0	0	
Daily Total						12	36	3	792		4
Annual Total							13,140		289,080		157,6
ANNUAL TOTAL							13,140		289,080		157,6
	quirement Guidel	ine calculati	on:								
	Hours	2 500	Annual R	evenue hours	norbuc				-		
	nours	2,500	Alling	evenue nours	s per bus				5		
	Distance		Annual Re	evenue miles	per bus	nt			6		
Spare ratio		47,000	Annual Re	evenue miles		nt			6 6 0.90		

180

31

66

Total Operating Cost per Hour (labor, fuel, maintenance, repairs, fixed, insurance, marketing, training) Revenue (based on average cash fare) Cost Recovery (Revenue as a % of total Operating Cost)



Period: Fall Winter Sp				Days	273						
			Ti	me	2,5						
eriod	Service	Start	End	Duration	Decimal	Trips	Revenue	Peak vehicles	Revenue	Rides per	Rid
	frequency			(hrs)	Time		hours		miles	hour	
M peak	60	6:00	7:00	1:00	1.0	1	3	3	66	12	
M peak)ff peak	60 60	17:00 7:00	18:00 17:00	1:00 10:00	1.0 10.0	1 10	30	3	66 660	12	:
vening	0	7.00	17.00	0:00	- 10.0	- 10	0	0	000	0	-
aily	0			0:00			0	0	0	0	
ate night	0			0:00			0	0	0	0	
/eekend/holidays	0			0:00	-	-	0	0	0	0	
aily Total						12	36	3	792	-	2
nnual Total							9,828		216,216		117,9
eriod: Summer (July	1 - Sept 31)			Days	92						
	Service		Ti	me Duration	Decimal		Revenue		Revenue	Rides per	
eriod	frequency	Start	End	(hrs)	Time	Trips	hours	Peak vehicles	miles	hour	Ride
M peak	30	6:00	8:00	2:00	2.0	4	12	6	264	15	1
M peak	30	17:00	19:00	2:00	2.0	4	12	6	264	15	1
iff peak	30	8:00	17:00	9:00	9.0	18	54	6	1188	15	8
vening	60	19:00	21:00	2:00	2.0	2	6	3	132	15	
aily	0			0:00	-	· -	0	0	0	0	
ate night	0			0:00	-	-	0	0	0	0	
Veekend/holidays	0			0:00	-	-	0	0	0	0	
aily Total						28	84	6	1848		1,2
nnual Total							7,728		170,016		115,9
NNUAL TOTAL							17,556		386,232		233,8
eet Requirement OSTING otal Operating Cost p		15 p	Recommer		ak requirem		ing)	Rate \$105 \$2.50	8 8 1.20 10.0 \$ 1,843,380 \$ 584,640		
pare ratio leet Requirement COSTING Total Operating Cost p levenue (based on av iost Recovery (Reven	per Hour (labor, f erage cash fare)	F 15 p uel, maintena	Recommer percent ance, repa	ndation/ Pea	ak requirem		ing)	\$105	8 1.20 10.0		
leet Requirement COSTING Total Operating Cost p tevenue (based on av cost Recovery (Reven ONG TERM (Year rou	per Hour (labor, f erage cash fare) ue as a % of tota Ind frequency ind	F 15 g uel, maintena	Recommer percent ance, repa	idation/ Pea	surance, ma		ing)	\$105	8 1.20 10.0 \$ 1,843,380 \$ 584,640	Forecast Ri	dership
eet Requirement OSTING otal Operating Cost p evenue (based on av ost Recovery (Reven ONG TERM (Year rou	per Hour (labor, f erage cash fare) ue as a % of tota Ind frequency ind	F 15 g uel, maintena	Recommer percent ance, repai	ndation/ Pea	ak requirem		ing)	\$105	8 1.20 10.0 \$ 1,843,380 \$ 584,640	Forecast Ri	dership
leet Requirement OSTING otal Operating Cost p evenue (based on av ost Recovery (Reven	per Hour (labor, f erage cash fare) ue as a % of tota Ind frequency ind	F 15 g uel, maintena	Recommer percent ance, repai	ndation/ Pea	surance, ma		ing) Revenue hours	\$105	8 1.20 10.0 \$ 1,843,380 \$ 584,640	Forecast Ri Rides per hour	
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47,000 Annual Revenue miles per bus

15 percent

Total Operating Cost per Hour (labor, fuel, maintenance, repairs, fixed, insurance, marketing, training)

Recommendation/ Peak requirement

Spare ratio

COSTING

Fleet Requirement

Revenue (based on average cash fare)

Distance

Cost Recovery (Revenue as a % of total Operating Cost)

10

12 1.80

14.0

40%

\$105 \$2,247,210 \$2.50 \$ 899,175

Rate

ROUTE	E (Diamond Peak, Incline Village to Northstar Base)	Diamond Peak to North Star
Authority	TART	
Classification:	Local (year round)	Local
Phasing Priority	Short Term	
	Description	- AN ASSA
Existing	TART Summer Shuttle (Chrystal Bay to Northstar)	TIO
	Improvements	Horth Star
Immediate Term	N/A	
Short Term	Extend to Incline Village, Diamond Peak	\sim
	Reroute through Kings Beach	
	Extend to northstar Base (to meet Northstar Routes),	NORTHSTAR
	Operate year round	
Med Term	Increase seasonal frequency (peak seasons)	
Long Term	Increase year round frequency	

365

1.0

1.0

10.0

Trips

1

1

10

12

Decimal

Time

Revenue

hours

1.75

17.5

0

0

0

0

21

7.665

7.665

Peak

vehicles

1.75

1.75

1.75

0

0

0

0

2

Revenue

miles

3

34

340

0

0

(

408

0.60

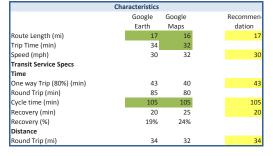
5.0

19%

153,300

148.920

148,920



Start

6:00

17:00

7:00

Service

frequency

60

60

60

0

0

0

0

Schedule Details

eriod: Year rou

SHORT TERM

Period

AM peak

. PM peak Off peak

. Evening

Late night

Daily Total

Annual Total

ANNUAL TOTAI

Weekend/holidays

Daily





T12

DA SR28

Forecast Ridership

10

10

10

0

0

0

0

Rides

Rides per

hour





In-service Vehicle Requirement Guideline calculation: Hours 2,500 Annual Revenue hours per bus Distance 47,000 Annual Revenue miles per bus Recommendation/ Peak requirement Spare ratio 15 percent Fleet Requirement

Time

End

7:00

18:00

17:00

Duration

(hrs)

1:00

1:00

10:00

0:00

0:00

0:00

0:00

COSTING \$105 \$ 804,825 Total Operating Cost per Hour (labor, fuel, maintenance, repairs, fixed, insurance, marketing, training) Revenue (based on average cash fare) \$2.00 \$ Cost Recovery (Revenue as a % of total Operating Cost)

MEDIUM TERM (Summer/Winter frequency increase) eriod: Shoulde Time Service Duration Decimal Revenue Peak Revenue Period Start End Trips vehicles frequency (hrs) Time miles hours AM peak . 60 6:00 7:00 1:00 1.0 1 2 2 3 PM peak Off peak 60 17:00 18:00 1:00 1.0 1 2 34 2 340 60 7:00 17:00 10:00 10.0 10 18 2 Evening 0 0:00 0 0 0 Daily 0 0:00 0 0 0 Late night 0 0:00 0 0 0 Weekend/holidays 0 0:00 0 0 Daily Total 12 21 408 Annual Total 3927 76296 Period: Winter (Nov 25 - Mar 31) and Summer (Jul 1 - Sept15) 178 Days Time Service Duration Decimal Revenue Peak Revenue Period Start End Trips frequency miles (hrs) Time hours vehicles AM peak 30 6:00 8:00 2:00 2.0 4 7 4 136 136 PM peak 30 17:00 19:00 2:00 2.0 4 7 Δ Off peak 60 8:00 17:00 9:00 9.0 9 16 306 2 68 Evening 60 19:00 21:00 2:00 2.0 2 4 Daily 0 0:00 0 0 0 Late night 0 0:00 0 0 0 Weekend/holidays 0:00 0 0 Daily Total 19 33 646 Annual Total 5.919 114.988 ANNUAL TOTAL 191,284 9,846

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	E
Distan	
Rides	S
21	R
21	
210	
-	
-	
-	
-	
252	
,	
Rides	
105	
42	
-	
	Rides 21 210 - - 252 47,124 Rides 105 105 105

0

0

xisting Route Characteristics: No Data ystem Ave Guideline 13.5 r/h , ecommendation: 10 yr round r/h

441

78.498

125,622



Page 157 Linking Tahoe: Tahoe Transit Master Plan

In-service Vehicle R	equirement Guidel	ine calculati	on:	
	Hours	2,500	Annual Revenue hours per bus	4
	Distance	47,000	Annual Revenue miles per bus	4
			Recommendation/ Peak requirement	4
Spare ratio		15	percent	0.60
Fleet Requirement				5.0

COSTING	Rate		1
Total Operating Cost per Hour (labor, fuel, maintenance, repairs, fixed, insurance, marketing, training)	\$105	\$ 1,033,778	
Revenue (based on average cash fare)	\$2.00	\$ 251,244	L
Cost Recovery (Revenue as a % of total Operating Cost)		24%	L

LONG TERM (Year round frequency increase)

Period: Shoulder				Days	187				
			Т	ïme					
Period	Service frequency	Start	End	Duration (hrs)	Decimal Time	Trips	Revenue hours	Peak vehicles	Revenue miles
AM peak	30	6:00	7:00	1:00	1.0	2	4	3.5	68
PM peak	30	17:00	18:00	1:00	1.0	2	3.5	3.5	68
Off peak	60	7:00	17:00	10:00	10.0	10	17.5	1.75	340
Evening	0			0:00	-	-	0	0	0
Daily	0			0:00	-	-	0	0	0
Late night	0			0:00	-	-	0	0	0
Weekend/holidays	0			0:00	-	-	0	0	0
Daily Total						14	25	4	476
Annual Total							4,582		89,012

178

Days

Period: Winter (Nov 25 - Mar 31) Summer (Jul 1 - Sept15)

			Ti	me					
Period	Service frequency	Start	End	Duration (hrs)	Decimal Time	Trips	Revenue hours	Peak vehicles	Revenue miles
AM peak	30	6:00	8:00	2:00	2.0	4	7	3.5	136
PM peak	30	17:00	19:00	2:00	2.0	4	7	3.5	136
Off peak	30	8:00	17:00	9:00	9.0	18	31.5	3.5	612
Evening	60	19:00	21:00	2:00	2.0	2	3.5	1.75	68
Daily	0			0:00	-	-	0	0	0
Late night	0			0:00	-	-	0	0	0
Weekend/holidays	0			0:00	-	-	0	0	0
Daily Total						28	49	4	952
Annual Total							8,722		169,456
ANNUAL TOTAL							13,304		258,468

	Hours	2,500	Annual Revenue hours per bus		
	Distance	47,000	Annual Revenue miles per bus		
			Recommendation/ Peak requirement		
Spare ratio		15	percent		0.
Fleet Requireme	nt				6
Fleet Requireme	nt				
COSTING				Rate	
Total Operating (Cost per Hour (labor	fuel mainte	nance, repairs, fixed, insurance, marketing, training)	\$105	\$ 1,396,86

hour		
	15	53
	15	53
	15	263
	0	-
	0	-
	0	-
	0	-
		368
		68,723
ides pe hour	er	Rides

Forecast Ridership

Rides

Rides per

Rides per	Rides
hour	
20	140
20	140
15	473
15	53
0	-
0	-
0	-
0	805
	143,290
	212,013



Revenue (based on average cash fare)

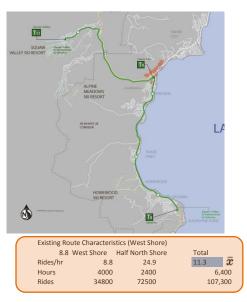
Cost Recovery (Revenue as a % of total Operating Cost)

\$2.00 \$ 424,025

30%

ROUTE	F (Sugar Pine, Tahoe City, Squaw Valley)
Authority	TART
Classification:	Local
Phasing Priority	Short Term
	Description
Existing (2 routes)	West Shore night service
	Sugar Pine to Incline village
	Improvements
Immediate Term	N/A
Short Term	Combine routes and extend to Squaw resort
	Remove service to Granibakken Rd in Tahoe City
Med Term	Implement Increased seasonal frequency (summer/winter)
Long Term	Increase year round frequency

	Google Earth	Google Maps	Recommen- dation
Route Length (mi)	17.4	16.7	18
Trip Time (min)	31	30	
Speed (mph)	33	35	33
Transit Service Specs			
Time			
One way Trip (80%) (min)	39	38	39
Round Trip (min)	78	75	
Cycle time (min)	90	90	60
Recovery (min)	12	15	12
Recovery (%)	13%	17%	
Distance			
Round Trip (mi)	34.8	33.4	35







Schedule Details

Period: Year r Days 365 Tin Service Duration Decimal Revenue Revenue Period Start End Trips Peak vehicles frequency (hrs) Time hours miles AM peak 60 6:00 7:00 1:00 1.0 1 2 1.5 31 PM peak 60 17:00 18:00 1:00 1.0 1 1.5 1.5 34.8 . Off peak 60 7:00 17:00 10:00 10.0 10 15 1.5 348 . Evening 0 0:00 0 0 Daily 0 0:00 0 0 0:00 0:00 Late night 0 -0 0 Weekend/holidays 0 0 0 Daily Total 12 18 2 417.8 Annual Total 6,570 152,497 6,570 152,497 ANNUAL TOTAL

Forecast Ridership						
Rides per	Rides					
hour	Nues					
11	17					
11	17					
11	165					
0	-					
0	-					
0	-					
0	-					
	198					
	72,270					
	72,270					

361,350 52%

ate

-service Vehicle Req	uirement Guideli	ne calculatio	n:	
	Hours	2,500	Annual Revenue hours per bus	3
	Distance	47,000	Annual Revenue miles per bus	9
			Recommendation/ Peak requirement	4
oare ratio		15	percent	0.60
eet Requirement				5.0
		15	percent	

COSTING

\$105 \$ 689,850 Total Operating Cost per Hour (labor, fuel, maintenance, repairs, fixed, insurance, marketing, training) Revenue (based on average cash fare) Cost Recovery (Revenue as a % of total Operating Cost) \$5.00 \$

Period: Shoulder				Days	187				
			Tir	ne					
Period	Service frequency	Start	End	Duration (hrs)	Decimal Time	Trips	Revenue hours	Peak vehicles	Revenue miles
AM peak	60	6:00	7:00	1:00	1.0	1	2	1.5	35
PM peak	60	17:00	18:00	1:00	1.0	1	1.5	1.5	34.8
Off peak	60	7:00	17:00	10:00	10.0	10	15	1.5	348
Evening	0			0:00	-	-	0	0	0
Daily	0			0:00	-	-	0	0	0
Late night	0			0:00	-	-	0	0	0
Weekend/holidays	0			0:00	-	-	0	0	0
Daily Total						12	18	2	417.8
Annual Total							3,366		78,129
Period: Winter (Nov 2	25 - Mar 31) Sum	mer (Jul 1 - Se			178	Days			
			Tir	ne					
Period	Service frequency	Start	Tir End	me Duration (hrs)	Decimal Time	Trips	Revenue hours	Peak vehicles	Revenue miles
		Start 6:00		Duration		Trips 4		Peak vehicles	miles
AM peak	frequency		End	Duration (hrs)	Time		hours		
AM peak PM peak	frequency 30	6:00	End 8:00	Duration (hrs) 2:00	Time 2.0	4	hours 6	3	miles 140
AM peak PM peak Off peak	frequency 30 30	6:00 17:00	End 8:00 19:00	Duration (hrs) 2:00 2:00	Time 2.0 2.0	4	hours 6 6	3	miles 140 139 313
AM peak PM peak Off peak Evening	frequency 30 30 60	6:00 17:00 8:00	End 8:00 19:00 17:00	Duration (hrs) 2:00 2:00 9:00	Time 2.0 2.0 9.0	4 4 9	hours 6 6 13.5	3 3 1.5	miles 140 139
AM peak PM peak Off peak Evening Daily	frequency 30 30 60 60	6:00 17:00 8:00	End 8:00 19:00 17:00	Duration (hrs) 2:00 2:00 9:00 2:00	Time 2.0 2.0 9.0 2.0	4 4 9 2	hours 6 13.5 3	3 3 1.5 1.5	miles 140 139 313 70 0
AM peak PM peak Off peak Evening Daily Late night	frequency 30 30 60 60 0	6:00 17:00 8:00	End 8:00 19:00 17:00	Duration (hrs) 2:00 2:00 9:00 2:00 0:00	Time 2.0 2.0 9.0 2.0	4 4 9 2	hours 6 13.5 3 0 0 0 0	3 3 1.5 1.5 0 0 0	miles 140 139 313 70 0 0 0 0
Period AM peak PM peak Off peak Evening Daily Late night Weekend/holidays Daily Total	frequency 30 30 60 60 0 0	6:00 17:00 8:00	End 8:00 19:00 17:00	Duration (hrs) 2:00 2:00 9:00 2:00 0:00 0:00	Time 2.0 2.0 9.0 2.0 -	4 4 9 2	hours 6 6 13.5 3 0 0	3 3 1.5 1.5 0 0	miles 140 139 313 70 0 0 0 0
AM peak PM peak Off peak Evening Daily Late night Weekend/holidays	frequency 30 30 60 60 0 0	6:00 17:00 8:00	End 8:00 19:00 17:00	Duration (hrs) 2:00 2:00 9:00 2:00 0:00 0:00	Time 2.0 2.0 9.0 2.0 -	4 4 9 2 -	hours 6 13.5 3 0 0 0 0	3 3 1.5 1.5 0 0 0	miles 140 139 313 70 0 0 0 0

Rides p	er	Rides
hour		Rides
	12	18
	12	18
	12	180
	0	-
	0	-
	0	-
	0	-
		216
		40,392
Rides po hour	er	Rides
nour	15	90
	15	90
	12	162
	12	36
		50
		-
	0	-
		378
		67,284

Forecast Ridership





In-service Vehicle R	Hours		Annual Revenue hours per bus	3
	Distance	47,000	Annual Revenue miles per bus	4
			Recommendation/ Peak requirement	4
Spare ratio		15	percent	0.60
Fleet Requirement				5.0

COSTING	Rate	
Total Operating Cost per Hour (labor, fuel, maintenance, repairs, fixed, insurance, marketing, training)	\$105	\$ 886,095
Revenue (based on average cash fare)	\$2.00	\$ 215,352
Cost Recovery (Revenue as a % of total Operating Cost)		24%

LONG TERM (Year round frequency increase)

Period: Shoulder				Days	187				
			T	ime					
Period	Service frequency	Start	End	Duration (hrs)	Decimal Time	Trips	Revenue hours	Peak vehicles	Revenue miles
AM peak	30	6:00	7:00	1:00	1.0	2	3	3	70
PM peak	30	17:00	18:00	1:00	1.0	2	3	3	69.6
Off peak	60	7:00	17:00	10:00	10.0	10	15	1.5	348
Evening	0			0:00	-	-	0	0	0
Daily	0			0:00	-	-	0	0	0
Late night	0			0:00	-	-	0	0	0
Weekend/holidays	0			0:00	-	-	0	0	0
Daily Total						14	21	3	488
Annual Total							3,927		91,181

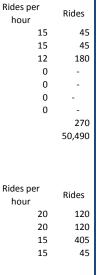
Days

Period: Winter (Nov 25 - Mar 31) Summer (Jul 1 - Sept15) 178

			Tir	ne					
Period	Service frequency	Start	End	Duration (hrs)	Decimal Time	Trips	Revenue hours	Peak vehicles	Revenue miles
AM peak	30	6:00	8:00	2:00	2.0	4	6	3	140
PM peak	30	17:00	19:00	2:00	2.0	4	6	3	139
Off peak	30	8:00	17:00	9:00	9.0	18	27	3	626
Evening	60	19:00	21:00	2:00	2.0	2	3	1.5	70
Daily	0			0:00	-	-	0	0	0
Late night	0			0:00	-	-	0	0	0
Weekend/holidays	0			0:00	-	-	0	0	0
Daily Total						28	42	3	975
Annual Total							7,476		173586
ANNUAL TOTAL							11,403		264,767

In-service Vehicle	e Requirement Guidel	ine calculatio	n:				
	Hours	2,500	Annual Revenue hours per bus		5		
	Distance	47,000	Annual Revenue miles per bus		6		
			Recommendation/ Peak requirement		6		
Spare ratio		15	percent		0.90		
Fleet Requireme	nt				7.0		
COSTING				Rate			
Total Operating (\$105	\$ 1,197,315					
Revenue (based on average cash fare) \$2.00 \$							

Cost Recovery (Revenue as a % of total Operating Cost)



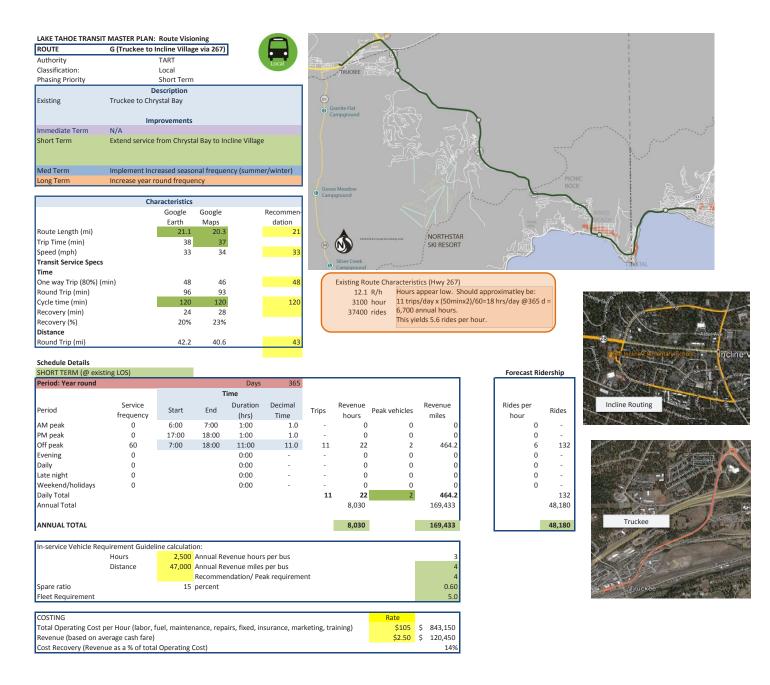
Forecast Ridership

Rides per	Rides
hour	Nices
20	120
20	120
15	405
15	45
-	-
0	-
	690
	122,820

173,310

29%





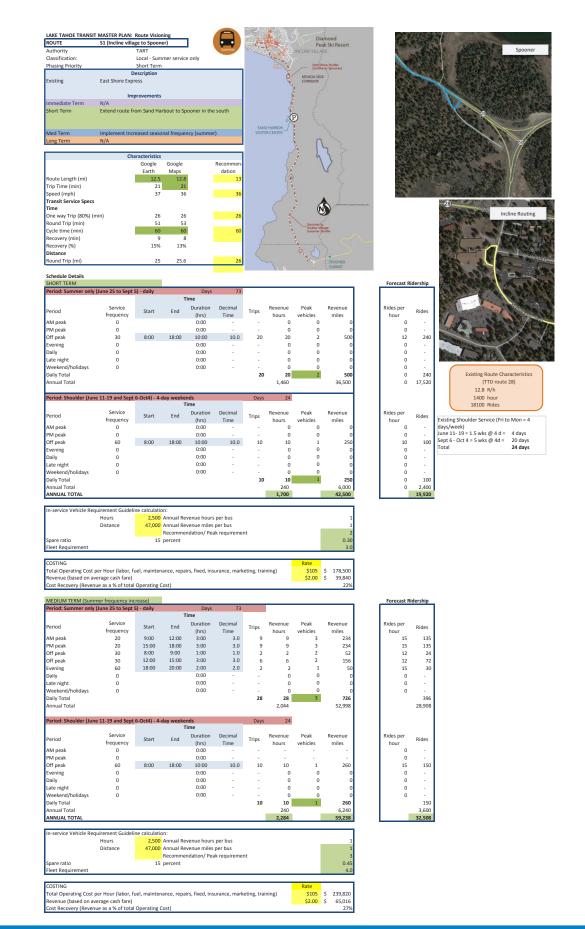
		uency increas	e)							Forecast Rid
Period: Shoulder				Days	187					
			Tir							
Period	Service	Start	End	Duration	Decimal	Trips	Revenue	Peak vehicles	Revenue	Rides per
	frequency			(hrs)	Time		hours		miles	hour
M peak	0	6:00	8:00	2:00	2.0	-	0	0	0	
PM peak	0	17:00	19:00	2:00	2.0	-	0	0	0	
Off peak	60	7:00	18:00	11:00	11.0	11	22	2	464.2	6
Evening	0			0:00	-	-	0	0	0	
Daily	0			0:00	-	-	0	0	0	0
.ate night	0			0:00	-	-	0	0	0	0
Weekend/holidays	0			0:00	-	-	0	0	0	0
Daily Total						11	22	2	464.2	
Annual Total							4,114		86,805	
Period: Winter (Nov 2	25 - Mar 31) Sum	mer (Jul 1 - S			178	Days				
			Tir							
Period	Service	Start	End	Duration	Decimal	Trips	Revenue	Peak vehicles	Revenue	Rides per
	frequency			(hrs)	Time		hours		miles	hour
AM peak	30	6:00	8:00	2:00	2.0	4	8	4	172	8
PM peak	30	17:00	19:00	2:00	2.0	4	8	4	168.8	8
Off peak	60	7:00	17:00	10:00	10.0	10	20	2	422	6
Evening	60	19:00	21:00	2:00	2.0	2	4	2	84.4	6
Daily	0			0:00	-		0	0	0	0
Late night	0			0:00	-	-	0	0	0	0
Weekend/holidays	0			0:00	-	-	0	0	0	0
Daily Total	5			2.00		20	40	4	847.2	0
Annual Total						20	40 7,120	4	150,802	
ANNUAL TOTAL							11,234		237,607	
ANNUAL TUTAL							11,254		237,007	
n-service Vehicle Rec	wirement Guidel	ine calculatio	n:							
in Service Venicle Rec	Hours			enue hours	nor hus				4	
									-	
	Distance			enue miles	•				5	
				dation/ Pea	ak requirem	ent			5	
Spare ratio		15	percent						0.75	
									6.0	
COSTING Fotal Operating Cost p Revenue (based on av	verage cash fare)			rs, fixed, ins	surance, ma	rketing, tra	aining)	Rate \$105 \$2.50	\$1,179,570 \$182,750	
Fleet Requirement COSTING Total Operating Cost µ Revenue (based on av Cost Recovery (Reven	verage cash fare) ue as a % of tota	l Operating C		rs, fixed, ins	surance, ma	rketing, tra	aining)	\$105		
COSTING Fotal Operating Cost p Revenue (based on av Cost Recovery (Reven CONG TERM (Year rou	verage cash fare) ue as a % of tota	l Operating C					aining)	\$105	\$ 182,750	Forecast Rid
COSTING Fotal Operating Cost p Revenue (based on av Cost Recovery (Reven CONG TERM (Year rou	verage cash fare) ue as a % of tota	l Operating C		Days	surance, ma		aining)	\$105	\$ 182,750	Forecast Rid
COSTING Total Operating Cost I Revenue (based on av Cost Recovery (Reven CONG TERM (Year rou Period: Shoulder	verage cash fare) ue as a % of tota	Operating C	ost) Tir	Days			aining) Revenue	\$105 \$2.50	\$ 182,750	Forecast Rid
COSTING Total Operating Cost I Revenue (based on av Cost Recovery (Reven CONG TERM (Year rou Period: Shoulder	verage cash fare) ue as a % of tota and frequency inc	l Operating C	ost)	Days	187			\$105	\$ 182,750 15%	
COSTING Total Operating Cost I Revenue (based on av Cost Recovery (Reven ONG TERM (Year rou Period: Shoulder Period	verage cash fare) ue as a % of tota and frequency inco Service	Operating C	ost) Tir	Days ne Duration	187 Decimal		Revenue	\$105 \$2.50	\$ 182,750 15% Revenue	Rides per
COSTING Total Operating Cost I Revenue (based on av Cost Recovery (Reven LONG TERM (Year rou Period: Shoulder Period AM peak	verage cash fare) ue as a % of tota and frequency inc Service frequency	Operating C crease) Start	ost) Tir End	Days ne Duration (hrs)	187 Decimal Time	Trips	Revenue hours	\$105 \$2.50 Peak vehicles	\$ 182,750 15% Revenue miles	Rides per hour
COSTING Total Operating Cost J Revenue (based on av Cost Recovery (Reven LONG TERM (Year rou Period: Shoulder Period AM peak PM peak	verage cash fare) ue as a % of tota und frequency inc Service frequency 30 30	I Operating C crease) Start 6:00 17:00	ost) Tir End 8:00 19:00	Days ne Duration (hrs) 2:00 2:00	187 Decimal Time 2.0 2.0	Trips 4 4	Revenue hours 8 8	\$105 \$2.50 Peak vehicles 4 4	\$ 182,750 15% Revenue miles 172 168.8	Rides per hour 8 8
COSTING Total Operating Cost I Revenue (based on av Cost Recovery (Reven LONG TERM (Year rou Period Shoulder Period AM peak PM peak	verage cash fare) ue as a % of tota und frequency ind Service frequency 30 30 60	Start 6:00 17:00 8:00	ost) Tir End 8:00 19:00 17:00	Days ne Duration (hrs) 2:00 2:00 9:00	187 Decimal Time 2.0 2.0 9.0	Trips 4	Revenue hours 8	\$105 \$2.50 Peak vehicles 4 4 2	\$ 182,750 15% Revenue miles 172 168.8 379.8	Rides per hour 8 8 8
COSTING Total Operating Cost I Revenue (based on av Cost Recovery (Reven CONG TERM (Year rou Period: Shoulder Period AM peak PM peak DM peak Evening	rerage cash fare) ue as a % of tota und frequency ind Service frequency 30 30 60 60	I Operating C crease) Start 6:00 17:00	ost) Tir End 8:00 19:00	Days ne Duration (hrs) 2:00 2:00 9:00 2:00	187 Decimal Time 2.0 2.0	Trips 4 4 9	Revenue hours 8 18 4	\$105 \$2.50 Peak vehicles 4 4 2 2	\$ 182,750 15% Revenue miles 172 168.8 379.8 84.4	Rides per hour 8 8 8 8 8
COSTING Total Operating Cost I Revenue (based on av Cost Recovery (Reven LONG TERM (Year rou Period: Shoulder Period AM peak PM peak Off peak Evening Daily	rerage cash fare) ue as a % of tota und frequency ind Service frequency 30 30 60 60 60 0	I Operating C crease) Start 6:00 17:00 8:00	ost) Tir End 8:00 19:00 17:00	Days me Duration (hrs) 2:00 2:00 9:00 2:00 0:00	187 Decimal Time 2.0 2.0 9.0	Trips 4 4 9	Revenue hours 8 8 18 4 0	\$105 \$2.50 Peak vehicles 4 4 2 2 0	\$ 182,750 15% Revenue miles 172 168.8 379.8 84.4 0	Rides per hour 8 8 8 8 8 8 0
COSTING Total Operating Cost I Revenue (based on av Cost Recovery (Reven LONG TERM (Year rou Period: Shoulder Period AM peak PM peak PM peak Evening Daily Late night	verage cash fare) ue as a % of tota and frequency ind Service frequency 30 30 60 60 0 0	I Operating C crease) Start 6:00 17:00 8:00	ost) Tir End 8:00 19:00 17:00	Days ne Duration (hrs) 2:00 2:00 9:00 2:00 0:00 0:00	187 Decimal Time 2.0 2.0 9.0	Trips 4 4 9	Revenue hours 8 18 4 0 0	\$105 \$2.50 Peak vehicles 4 4 2 2 0 0 0 0	\$ 182,750 15% Revenue miles 172 168.8 379.8 84.4 0 0 0	Rides per hour 8 8 8 8 0 0 0
COSTING Total Operating Cost I Revenue (based on av Cost Recovery (Reven LONG TERM (Year rou Period AM peak Period AM peak PM peak Evening Daily Late night Weekend/holidays	rerage cash fare) ue as a % of tota und frequency ind Service frequency 30 30 60 60 60 0	I Operating C crease) Start 6:00 17:00 8:00	ost) Tir End 8:00 19:00 17:00	Days me Duration (hrs) 2:00 2:00 9:00 2:00 0:00	187 Decimal Time 2.0 2.0 9.0	Trips 4 9 2 - -	Revenue hours 8 18 4 0 0 0 0 0 0	\$105 \$2.50 Peak vehicles 4 4 2 2 2 0 0 0 0 0 0	\$ 182,750 15% Revenue miles 172 168.8 379.8 84.4 0 0 0 0 0	Rides per hour 8 8 8 8 8 8 0
COSTING Total Operating Cost I Revenue (based on av Cost Recovery (Reven UNG TERM (Year rou Period: Shoulder Period AM peak PM peak PM peak Dff peak Evening Daily Late night Weekend/holidays Daily Total	verage cash fare) ue as a % of tota and frequency ind Service frequency 30 30 60 60 0 0	I Operating C crease) Start 6:00 17:00 8:00	ost) Tir End 8:00 19:00 17:00	Days ne Duration (hrs) 2:00 2:00 9:00 2:00 0:00 0:00	187 Decimal Time 2.0 2.0 9.0	Trips 4 4 9	Revenue hours 8 18 4 0 0 0 38	\$105 \$2.50 Peak vehicles 4 4 2 2 0 0 0 0	\$ 182,750 15% Revenue miles 172 168.8 379.8 84.4 0 0 0 0 805	Rides per hour 8 8 8 8 0 0 0
COSTING Total Operating Cost I Revenue (based on av Cost Recovery (Reven CONG TERM (Year rou Period: Shoulder Period AM peak PM peak PM peak Df peak Evening Daily Late night Weekend/holidays Daily Total	verage cash fare) ue as a % of tota and frequency ind Service frequency 30 30 60 60 0 0	I Operating C crease) Start 6:00 17:00 8:00	ost) Tir End 8:00 19:00 17:00	Days ne Duration (hrs) 2:00 2:00 9:00 2:00 0:00 0:00	187 Decimal Time 2.0 2.0 9.0	Trips 4 9 2 - -	Revenue hours 8 18 4 0 0 0 0 0 0	\$105 \$2.50 Peak vehicles 4 4 2 2 2 0 0 0 0 0 0	\$ 182,750 15% Revenue miles 172 168.8 379.8 84.4 0 0 0 0 0	Rides per hour 8 8 8 8 0 0 0
COSTING Total Operating Cost I Revenue (based on av Cost Recovery (Reven CONG TERM (Year rou Period: Shoulder Period AM peak Period AM peak Period AM peak Veneing Daily Late night Neekend/holidays Daily Total Annual Total	verage cash fare) ue as a % of tota and frequency inc Service frequency 30 30 60 60 0 0 0	Crease) Start 6:00 17:00 8:00 19:00	ost) Tir End 8:00 19:00 17:00 21:00	Days ne Duration (hrs) 2:00 9:00 2:00 0:00 0:00 0:00	187 Decimal Time 2.0 2.0 9.0	Trips 4 9 2 - - 19	Revenue hours 8 8 18 4 0 0 0 0 38 7,106	\$105 \$2.50 Peak vehicles 4 4 2 2 2 0 0 0 0 0 0	\$ 182,750 15% Revenue miles 172 168.8 379.8 84.4 0 0 0 0 805	Rides per hour 8 8 8 8 0 0 0
COSTING Total Operating Cost i kevenue (based on av Cost Recovery (Reven ONG TERM (Year rou Period: Shoulder Period Mi peak Mi peak Mi peak Mi peak Vening Daily ate night Veekend/holidays Daily Total Nonual Total Period: Winter (Nov 2)	rerage cash fare) ue as a % of tota und frequency inc Service frequency 30 30 60 60 60 0 0 0 0 25 - Mar 31) Sum	Crease) Start 6:00 17:00 8:00 19:00	ost) Tir End 8:00 19:00 17:00 21:00	Days ne Duration (hrs) 2:00 9:00 2:00 0:00 0:00 0:00 0:00	187 Decimal Time 2.0 9.0 9.0 2.0 - - - - 178	Trips 4 9 2 - - 19 Days	Revenue hours 8 18 4 0 0 0 38 7,106	\$105 \$2.50 Peak vehicles 4 4 2 2 0 0 0 0 0 0 4	\$ 182,750 15% Revenue miles 172 168.8 379.8 84.4 0 0 0 0 805 150,535	Rides per hour 8 8 8 8 8 0 0 0 0 0
COSTING Total Operating Cost I Revenue (based on av Cost Recovery (Reven CONG TERM (Year rou Period: Shoulder Period MM peak MM peak MM peak MM peak Weak MM peak Weak MM peak Weak MM peak MM pe	rerage cash fare) ue as a % of tota und frequency ind Service frequency 30 30 60 60 60 0 0 0 0 25 - Mar 31) Sum Service	Crease) Start 6:00 17:00 8:00 19:00	ost) Tir End 8:00 19:00 17:00 21:00	Days ne Duration (hrs) 2:00 2:00 9:00 2:00 0:00 0:00 0:00 0:00	1877 Decimal Time 2.0 9.0 9.0 2.0 - - - - 178 178 Decimal	Trips 4 9 2 - - 19	Revenue hours 8 8 18 4 0 0 0 38 7,106 Revenue	\$105 \$2.50 Peak vehicles 4 4 2 2 2 0 0 0 0 0 0	\$ 182,750 15% Revenue miles 172 168.8 379.8 84.4 0 0 0 0 805 150,535	Rides per hour 8 8 8 8 0 0 0 0 0 8 7 8 8 8 0 0 0 8 8 8 8
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-48,416 73,100

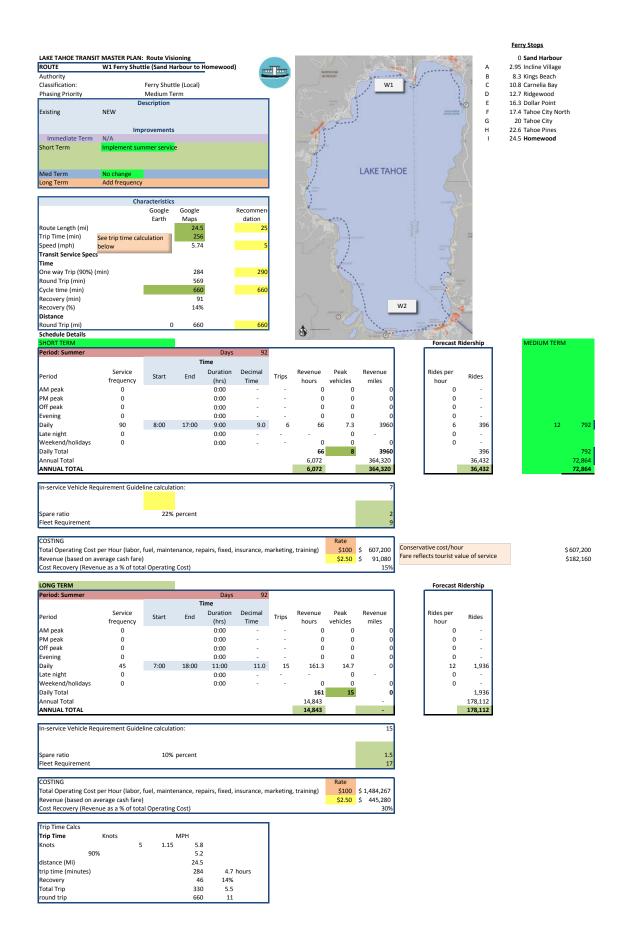
-103,952 **160,800**

-56,848



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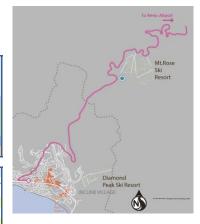






LAKE TAHOE TRANS	IT MASTER PLAN: Route Visioning	
ROUTE	R3 (Incline Village to Reno)	
Authority	Private Service	Regional
Classification:	Regional Service	Regional
Phasing Priority	Medium term	
	Description	
Existing	NEW route (Incline to Reno Inter	rnational via Mt Rose)
	Improvements	
Immediate Term	N/A	
Short Term	N/A	
Med Term	Implement regional service	
Long Term	Added frequency	
	Characteristics	
	Google Go	ogle Recommen
	Farth M	ans dation

	Earth	Maps	dation
Route Length (mi)	35.3	34.1	35
Trip Time (min)	47	45	
Speed (mph)	45	47	46
Transit Service Specs			
Time			
One way Trip (80%) (min)	58	56	58
Round Trip (min)	116	113	
Cycle time (min)	150	150	150
Recovery (min)	34	38	34
Recovery (%)	22%	25%	
Distance			
Round Trip (mi)	70.6	68.2	70

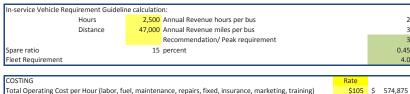






Schedule Details

Period: Year round				Days	365				
renou. rear rounu			_		505				
			1	ime					
Period	Service	Start	End	Duration	Decimal	Taina	Revenue	Peak	Revenue
renou	frequency	Jtart	LIIU	(hrs)	Time	Trips	hours	vehicles	miles
AM peak	0			0:00	-	-	0	0	(
PM peak	0			0:00	-	-	0	0	(
Off peak	60	9:00	15:00	6:00	6.0	6	15	2.5	423.6
Evening	0			0:00	-	-	0	0	(
Daily	0			0:00	-	-	0	0	(
Late night	0			0:00	-	-	0	0	(
Weekend/holidays	0			0:00	-	-	0	0	(
Daily Total						6	15	3	423.6
Annual Total							5,475		154,614
ANNUAL TOTAL							5,475		154,614



Total Operating Cost per Hour (labor, fuel, maintenance, repairs, fixed, insurance, marketing, training)	\$105	\$ 574,875
Revenue (based on average cash fare)	\$5.00	\$ 328,500
Cost Recovery (Revenue as a % of total Operating Cost)		57%

LONG TERM Period: Year round Time Service Duration Decimal Revenue Peak Revenue Period Start End Trips frequency (hrs) Time hours vehicles miles AM peak 0 0:00 0 0 PM peak 0:00 0 0 0 . Off peak 60 7:00 17:00 10:00 10.0 10 25 2.5 706 Evening 0 0:00 0 0 С Daily 0 0:00 0 0 Late night 0 0:00 0 0 C Weekend/holidays 0 0:00 0 0 C Daily Total 10 25 3 706 Annual Total 9,125 257,690 ANNUAL TOTAL 9,125 257,690 In-service Vehicle Requirement Guideline calculation: Hours 2,500 Annual Revenue hours per bus Distance 47,000 Annual Revenue miles per bus Recommendation/ Peak requirement 15 percent 0.75 Spare ratio Fleet Requirement 6.0

COSTING	Rate	
Total Operating Cost per Hour (labor, fuel, maintenance, repairs, fixed, insurance, marketing, training)	\$105	\$ 958,125
Revenue (based on average cash fare)	\$8.00	\$ 876,000
Cost Recovery (Revenue as a % of total Operating Cost)		91%

Forecast Ridership		
	Rides per hour	Rides
	0	
	0	-
	12	300
	0	-
	0	-
	0	-
	0	-
		300
		109,500
		109,500

57%

Forecast Ridership

Rides

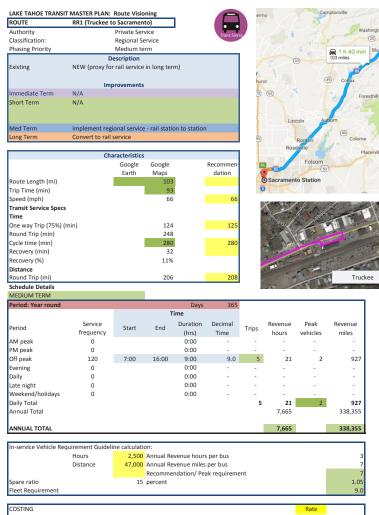
180

Rides per

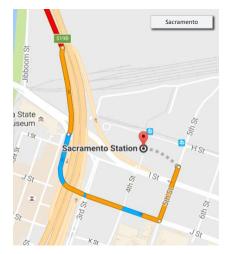












Rides per hour 0 -0 -10 2-0 -0 -0 -210 76,650

Forecast Ridership

69

.

OTruckee

City



APPENDIX B Proposed South Shore Route Details

This section summarizes the changes in each phase of the plan for routes and infrastructure in the south shore.

AREAS OF IMPLEMENTATION

Currently, transit services in the south shore transit network consist of:

- 2 annual routes
- 7 winter shuttles
- 1 summer shuttle (Emerald Bay Trolley)
- 2 regional express routes that are privately operated to Carson City and Minden/Gardnerville
- A number of privately operated routes to ski areas and resorts

There are no public transit connections with the north shore of the Basin.

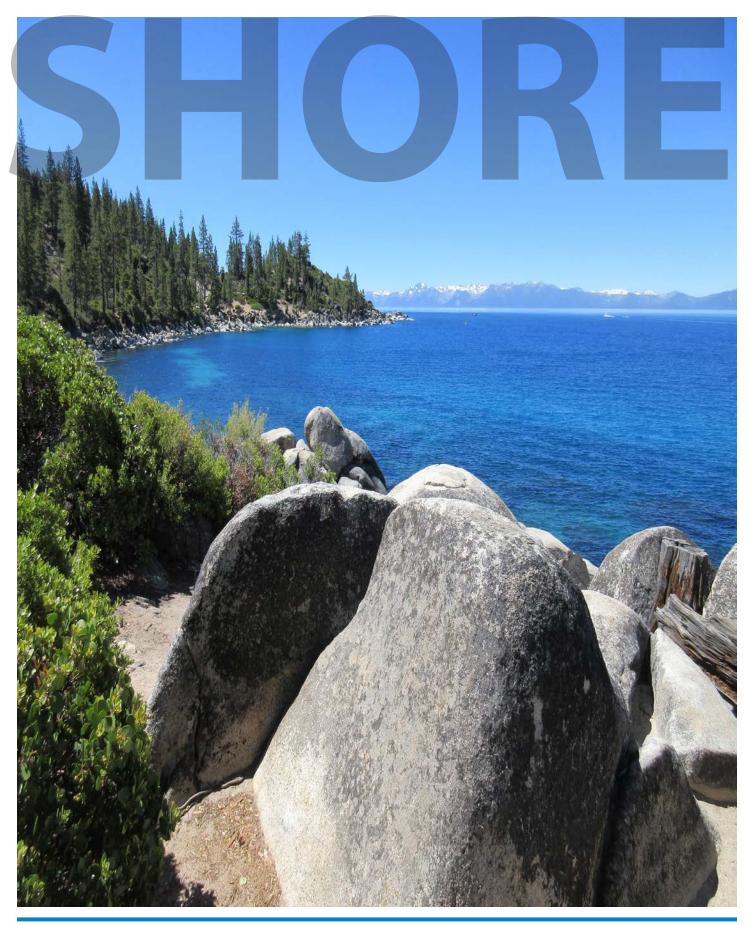
The proposed transit network has been developed to address the travel demand to the basin in an effort to increase the overall transit mode share as a tool to reduce the use of the private vehicle on congested roadways and transportation facilities at destinations in this area.

The goal is to maximize access to all significant destinations taking into travel demand as it relates to:

- Local service (residential, shopping, employment, education, etc.)
- Connections between the southern and the northern areas of the basin
- Regional connections (Carson City, Reno, Minden, Gardnerville)
- Trans-Sierra connections (Stockton, Sacramento)

The routes in the south shore area have been designated using a layered approach to transit provision based on the primary function of the route:







Route F2 - Frequent

Direct and frequent service between Stateline and Meyers via US50

- Offers a frequent service along the corridor with the highest demand in south shore area along route US50
- Serves major commercial activities and tourist accommodations
- Facilitates regional connections by linking Meyers' Mobility Hub (MH8) to Downtown South Lake Tahoe. Visitors could either enter the Tahoe Basin using new Trans-Sierra services (TS1 & TS2) or transfer from other modes at the Meyers Mobility Hub

Incorporates the following improved facilities:

Stateline and South Y Mobility Hubs (MH6 & MH7)

- Stateline, Ski run and South Y Transit Centers (TC3, TC4 & TC5)
- Stateline Parking (P3)

Serves the following new facilities:

- Meyers Transit Center (TC6)
- Harrison Ave. Parking (P2)

Implementation:

- Comprises the combination of portion of route 53, the South Shore Winter Shuttle and incorporated and extends proposed new route K which is due for implementation in the Immediate term
- F2 is proposed to be implemented in the short term with service frequency improvements as well as improvements relating to length of service day and season in the medium and long term



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Route B - Local

Establishes a connection between Meyers and Lake Tahoe Community College (LTCC)

Route extends to service the Harrison Ave. residential area in the medium term. Service is proposed along Pioneer Trail to provide transit service access to this residential area.

Service will be supported by the proposed Meyers Transit Center and Mobility Hub (TC6 and MH8) as well as the Harrison Ave. Parking and Mobility Hub (P2 and MH9) to accommodate transfers.



Implementation:

This new route is proposed for implementation in the immediate term with route extension and frequency increases in the short, medium, and long term.

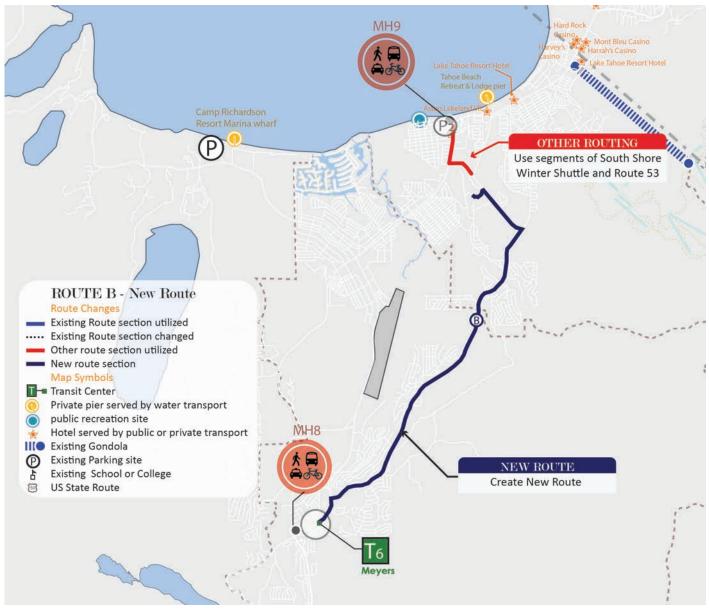


FIGURE 63: Route B



Route D - Local

Creates a year-round service connecting South Lake Tahoe and Stateline to the Heavenly Ski Resort and the Heavenly California Lodge recreational destinations.

- Offers an extended service all year to respond to demand especially in summer
- Minimize transfers and facilitate transit usage by combining multiple routes into one route

Route is supported by the following improved facilities:

- Stateline Mobility Hub (MH6)
- California Lodge, Stateline and Ski run Transit

Centers (TC3, TC4 &TC7) Stateline Parking (P3) and Heavenly Parking (P1)



A new transit center (Heavenly Transit Center (TC2) is proposed adjacent to Highway 207 to facilitate transfers to the local shuttle service the Heavenly Ski Resort.

Implementation: This route comprises the combination of portions of Route 23 and winter routes 12 and 15. Implementation is proposed in the immediate term with frequency improvements in



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the medium term.

Route 53

Establishing a local connection between Stateline and Lake Tahoe Community College

• Provides access to the College from Stateline while extending the coverage of transit in the heavily populated area

This route will be supported by improvements to the following improved existing facilities:

- Stateline Mobility Hub (MH6)
- Stateline Transit Center (TC3)

FIGURE 65: Route 53

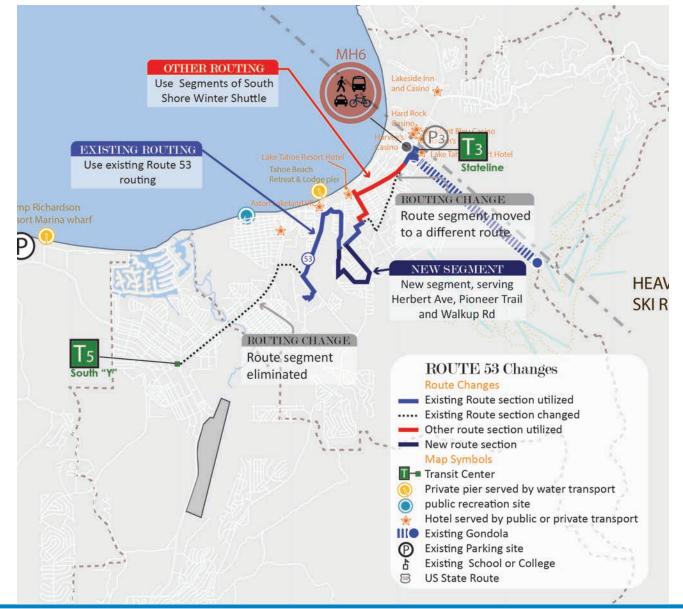
Stateline Parking (P3)

Implementation:

This route is based on the modification of portions of



Route 53 with improved access to residential neighborhoods Implementation is proposed in the immediate term with frequency improvements and





increased length of service day in the medium term.

Route A - Community

A new service between South Y and Meyers Y running along N Upper Truckee Road, the Mountain View Estates area, and Lake Tahoe Boulevard (section west of US50)

This is a future area of residential development and this route will provide it with a level of transit service in the longer term.

This service will be supported by the following improved facilities:

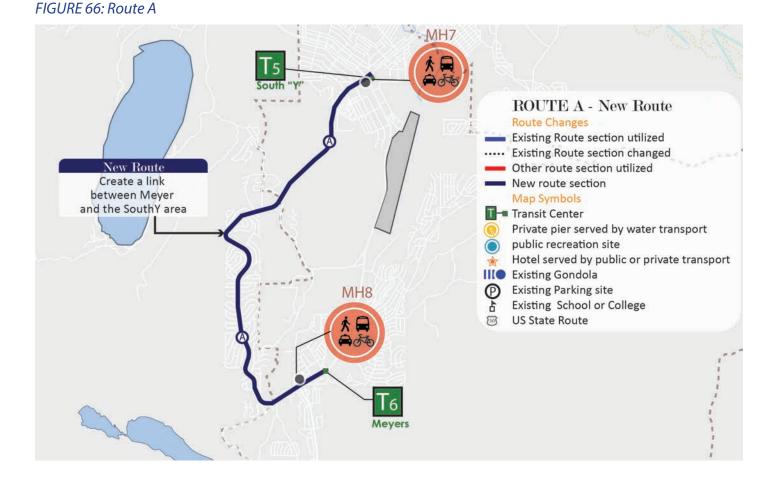
- Meyers Mobility Hub (MH8)
- South Y Mobility Hub (MH7)
- South Y Transit Center (TC5)

A new transit center (TC6) is proposed in Meyers.



Implementation:

This new route is envisaged to be implemented in the long term once the development of this areas





has commenced.

Route C - Community

Establish a year-round connection between South Y, Stateline and extends to Zephyr Cove

- A new route service multiple neighborhoods adjacent to Route US50 proving access to multiple destinations along this corridor
- Offer an alternative transportation option to access the recreational area of Zephyr Cove from South Lake Tahoe to assist in alleviating parking issues
- Providing connection to shopping and other facilities from the Zephyr Cove Resort

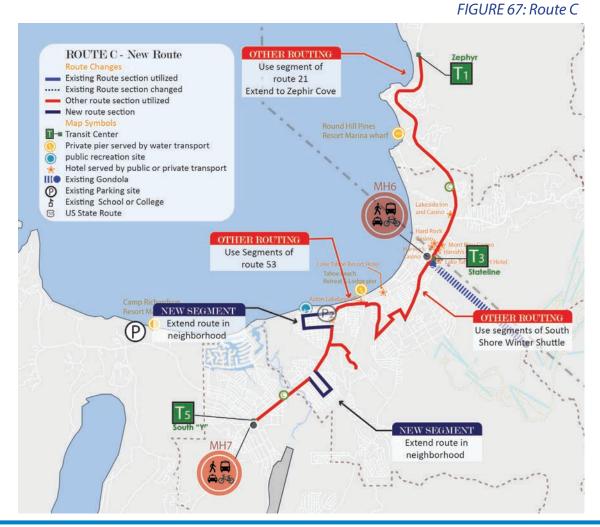
This route is served by the following improved facilities:

South Y and Stateline Mobility Hubs (MH6 & MH7)

- South Y and Stateline Transit Centers (TC3 & TC5) Further facility improvements in this area include:
- Zephyr Cove Transit Center (TC1)
- Harrison Ave. Parking (P2)

Implementation:

- This route comprises portions of route 21, route 53 and the South Shore Winter shuttle and will incorporate service to neighborhoods not currently served by transit
- Implementation is planned for the short term







with frequency and seasonal improvements in the medium and long term

Route H - Community

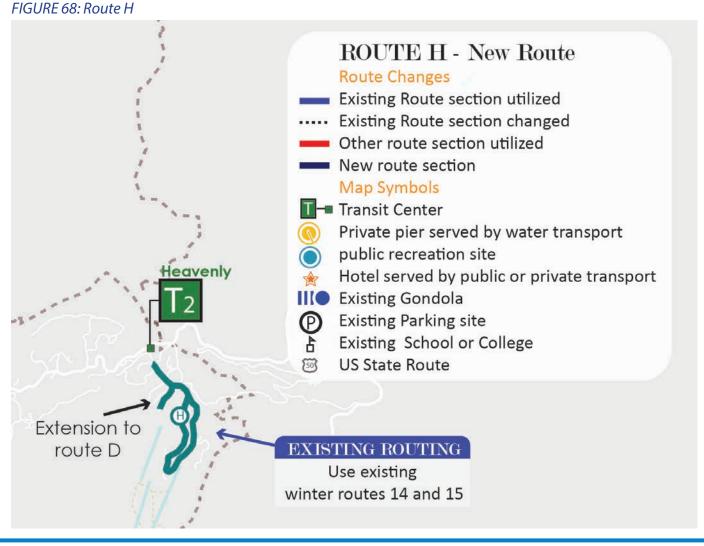
The Heavenly Community Shuttle is a year-round link between the Transit Center on Route 207 connecting to the Stagecoach Lodge base and the Boulder Lodge, serving South Benjamin Drive, Tramway Drive, and Quaking Aspen Lane.

- This route will operate in association with Route D providing access to this destination from South Lake Tahoe and Stateline
- It increases the opportunity to adjust frequencies on this route without affecting the frequency and performance of Route D

Transfer activities will occur at the new Heavenly Transit Center (TC2) on Route 207. Implementation:



It consists of the combination of portions of winter routes 14 and 15 as well as private services provided by Ridge resorts. Implementation is proposed in the



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with frequency improvements in the medium term.

Route J - Community

A year-round connection between Stateline to Lake Tahoe Community College and Harrison Ave.

- Offers transit service along Pioneer Trail and Al Tahoe Blvd in response to potential latent demand
- Provides appropriate transfer opportunities to the frequent transit route (F2) on US50 to allow for efficient connection to South Y and Meyers

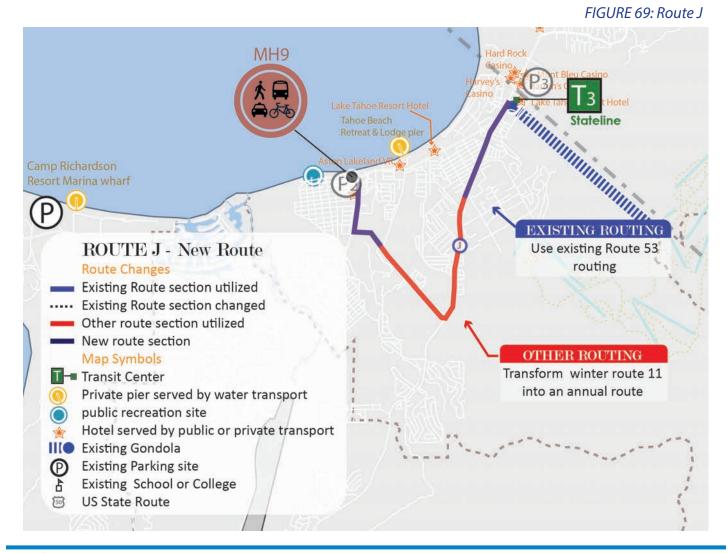
Proposed improved facilities service along this route include:

- Stateline Mobility Hub (MH5)
- Stateline Transit Center (TC3)
- Stateline Parking (P3)

A new parking facility and Mobility Hub is proposed in Harrison Ave. (P2 and MH9)

Implementation:

- This route is based on transforming a current winter route (11 California) into an annual route
- Implementation is slated for the medium term







with frequency and seasonal improvements in the long term

Route K - Community

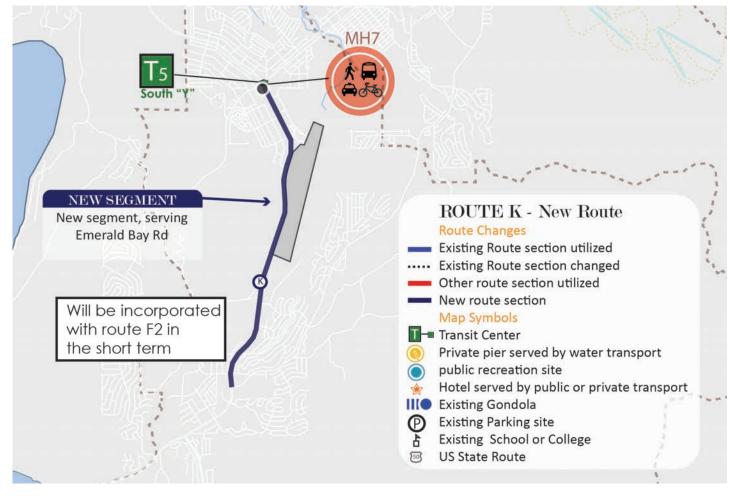
This route will establish an initial connection between Meyers and South Lake Tahoe.

- This route is the predecessor to the Frequent Transit Network Route (F2) and will initially provide a community route level of service between Meyers and South Lake Tahoe
- This route is served the Mobility Hub (MH7) and Transit Center (TC5) facilities in South Y

This new route will be established in the immediate term and incorporated in the implementation of



FIGURE 70: Route K







the FTN route in the short term which will link these communities extending from Myers in the south to Stateline in the east.

Route S2 - Seasonal

Standardize the Summer service between South Y and Tahoma (Emerald Bay Trolley)

• Create a more consistent connection between South Y and Tahoma in terms of service days

in peak periods and during shoulder seasons

 It is proposed that this service will terminate at the Sugar Pine Transit Center in Tahoma



This route is served by the following improved facilities:

- South Y Mobility Hub (MH7)
- South Y and Tahoma Transit Centers (TC5 & TC8)
- 2 parking facilities along US89

Implementation:



FIGURE 71: Seasonal Route S2



Route is based on the Emerald Bay Trolley (Route 30) and slated for implementation in the short term with service frequency improvements and seasonal and length of service day extensions in the medium and longer term

Ferry A scheduled ferry service linking South Lake Tahoe and Tahoe City in the north

Offers an alternative transportation option to rapidly reach the north shore.

Service is proposed for the summer peak season with limited service in the shoulder periods.

Infrastructure: This service with be supported by the existing Ski run Transit Center (TC4) in South Lake Tahoe



to facilitate transfers between transit and the ferry service. Additional infrastructure in the form of dock/moorage facilities will be required before this service will be able to start up.



FIGURE 72: FERRY Route

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Implementation:

This new route is planned for implementation is the short term with seasonal improvements based on demand.

W2 Ferry shuttle A more localized ferry shuttle service to offer an

A more localized ferry shuttle service to offer an alternative travel options between communities along the south shore

It is proposed that this local service will provide service between the communities of Zephyr

Cove, Round Hill Resort, Stateline, Tahoe Beach Resort, South Lake Tahoe, Camp Richardson, Meeks and Tahoma



- Ferry boats with a capacity of approximately 12 passengers
- are proposed for this service Arrangements with dock owners or additional infrastructure in the form of docks and moorage facilities will be required before this service will be able to commence

FIGURE 73: Ferry SHUTTLE





It is proposed that this new route will start to operate in the medium term with proposed frequency improvements in the longer term based on demand.

Route R1 - Regional

Improved Regional connection between Stateline and Carson City/Reno

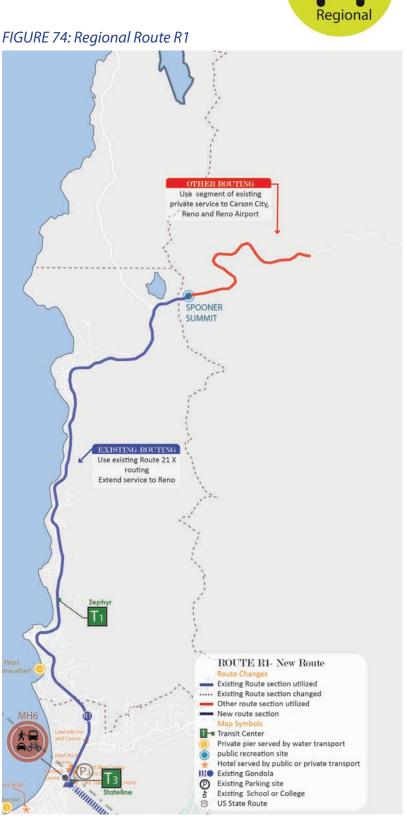
- Currently this service is operated by a by TTD to Carson City and by private contractor into Reno
- It is proposed to integrate this route into the overall transit network in the short term
- Based on potential demand, it is proposed to extend the route from Carson City to Reno (International Airport) in the medium term to improve access to the Tahoe Basin from Nevada

To facilitate transfers and increase access to the rest of the transit system, the following facilities are proposed to be established and improved:

- Stateline Mobility Hub (MH6)
- Zephyr Cove and Stateline Transit Centers (TC1 & TC3)
- Stateline Parking (P3)

Implementation:

• Add service to existing route in the short term



Stantec 1



- Integrate route into the transit system, add service and extend route to Reno
- Further service improvement based on demand

Route R2 - Regional

Improved regional connection between Stateline, Minden and Gardnerville

- Currently this service is operated by a TTD contractor
- It is proposed to integrate this route into the transit network in the short term

To facilitate transfers and improve access to the rest of the transit system, the following facilities are proposed to be improved:



- Stateline Mobility Hub (MH6)
- Stateline and Heavenly Transit Centers (TC3 & TC2)
- Stateline Parking (P3)

FIGURE 75: Regional Route R2





Implementation:

Add service to existing route in the short term; integrate route into the transit system; add further service based on demand.

Route TS1 - Regional CA Establish a new regional connection from Meyers

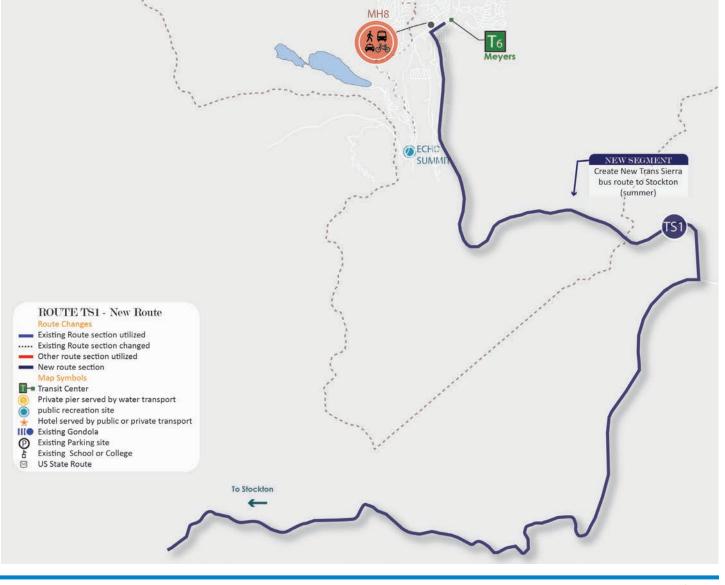
Establish a new regional connection from Meyers Y to Stockton via Sutter Creek

Purpose is to improve accessibility to this regional destination using transit.

The following new transit facilities in Meyers will assist in encouraging transit use and







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improve accessibility to the rest of the transit network in the Tahoe Basin:

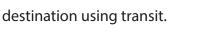
- Mobility Hub (MH8)
- Transit Center (TC6)

Implementation of this new route is planned for the long term.

Route TS2 - Regional CA

Establish a new inter-regional connection from Meyers Y to Sacramento

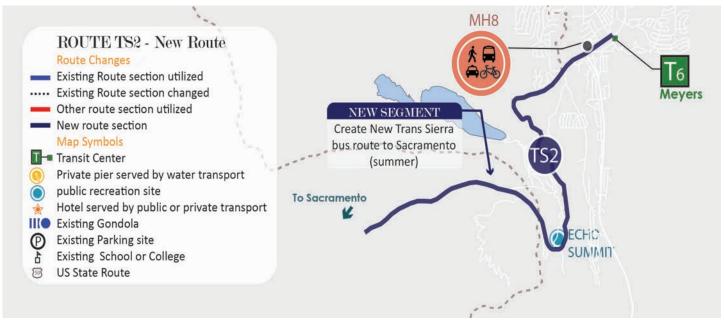
Purpose is to improve accessibility to this regional



The following new transit facilities









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Sou	lth 0	Shore:	Pro	South Shore: Proposed Routes											
Symbol ind	dicates cho			Existing Route	Corridor 1	TMP Route Type		Route Description	Highlight Ir	Immediate Sho	Short Term Med	Medium Term Long Term		te Associated With	Route Associated Additional Comments With
Immediate	te Short Term	Immediate Short Medium Term Term	Long Term S	South Shore - Routes											
V. Garantin				EW	Meyers Y	•	Community	Meyers Y - South Y	New Route			Adi	add Route		MMEDATETEM: VIA skont tem. VIA Babani tem. And DANG Tem. Carlo and a stradby Meyes residents to connect into Meyes and the South Y area DANG Tem. Carlo and and a stradby Meyes residents to connect into Meyes and the South Y area
				NEW	Meyers Y US 50 South	<u> </u>	Local	Meyers Y - Ponderosa via Al Tahoe Bivd	New Route C	Create Route Frequency		Extend Route Sec Fre-	Seasonal Frequency	-	IMMEDIATETEM: Clede New Route that connects Meyers with take tarbae Community College [81] SMOTTEM: acad frequency are propried Constituted. Science 1 and to Pronderson (R2) CONSTEM: Add Science Interpancy
				Meyers Y UIS 50 South Lake Tahoe Bivd winter shuffle UIS 50 East	Meyers Y US 50 South US 50 East	υ	Community	South Y - Stateline - Zephyr Cove	Route Extension	Ŭ₽¥Ă	Combine Add Routes and Freq Add New Areas	Add Summer Frei Frequency	guency		MMEDIATE TRAN. MA BADIT TRAN. MA PADIT TRAN. Binindes secondroules and combine for annual route with Route SG. Zechyr Core could hane rescue servicen han stronder second BADIM IRTEM. And counter service of anythor for second services.
			_	Route 23, Ski Run winter shuttle, Nevada Winter Shuttle	US 50 South	٩	Local	Heavenly California Lodge Base - Heavenly Transit Center	Route Change	Combine Route and Create Annual Service	Sea: Freq	Seasonal Frequency		т	IMMEDIATETERM: Careford amount service base with second increases by combining routes. New Numaround of Territom 22 second service base with second and H second TERM: VM actionate terms of additional summer service LONG TERM: VM
	_			Nevada, Upper Nevada Winter Shuttle	US 50 East	I	Community	Heavenly Boulder Lodge Base Roule Change - Heavenly Stagecoach Lodge Base - Highmay 207 trader point		Create Route	Sect Freq	Seasonal Frequency		۵	In Immediant Eterns. Create community route and determine desire of the Ridge Report to participate rather than un tractionersatting. NA sector machine: NA automit Teaming and the cuendes
				Californía Winter Shuttle		_ _	Community	Stateline to Ponderosa via Al New Raule Tarhoe Blvd	New Route		Add	Add Route Sec	Seasonal Frequency	8	AMARIARE FRAM.NA 19401 TTARN INA MEDIM TRAM.Clade new, annual route dang Ploneen Trai that connects Stateline with South Late Tahoe and Late Toreas Communy Postere (ICC) an annual route CMOR TRAM, Add Summer Requerty
				NEW	US 50 South	<u>×</u>	Community	Meyes Y - South Y	New Route	Create Route					IMMEDIATE TERM: Create new route from South Y to Meyers to exitability or connection to LICC via Route B SHORTTERM: Eleverational act a New Route R2 IMME TERM: VIA
	(III)			Route 50 & K	Meyers Y US 50 South	<u>в</u>	N	φ.	Route Extension & Frequency	A O	Extend Route Sea and Add Freq Frequency	Seasonal Fre Frequency	frequency	¥	IMMEDIATETEME. N/A SMORTEME. Read could to Neyers. Add frequency annually and seasonally. IMMETEME. Add cadditional seasonal service and introduce seasonal frank! Priority measures LONG TEME. Add frequency
				Emerald Bay Trolley	SR89	S2	Summer	South Y - Sugar Pine Transit	Service Upgrade	55 S.G.	Standardize Exte Service and Freq	Extend Season Extr and Add and Frequency Fre	Extend Season and Add Frequency		IMMEDIATETEME. N/A SMORTTEME. Condered service in terms of dors of the week MEMORTTEME. Service and and the approxy. LONG TEME Element search and add frequency based an demand
				Route 21X, private service	US 50 South	R	Regional Bus	South Lake Tahoe - Reno	Route Extension	A		Extend Route Ad	Add Trips		IMMEDIATE FEAR. VIA SMORT FEAR Sind fracts a susting Roude 21X FEAR - FEAR Stand startion for a combine with privide services LONG FEAR Add ridstriph increase and frequency (frigs per day)
				Route 20X	US 50 East	R2	čegional Bus	South Lake Tahoe - Minden - I Garaherville	Frequency	¥	Add Trips Add	Add Trips			MUNITARIATE TRANSA MUNITARIATE TRANSA MUNITARIA Cada Regional service administration of demand warrants MEDIM TERA. Acada Regional service by integrating private service and expand https://or.midday.arveeteends/f Comman warrants
				NEW	Meyers Y	TS1	Irans Sierra Bus	Meyers Y - Sutter Creek - Stockton	New Route			Υφ.	Add Route		IIIMEDIATE TERke. N/A SEGORT TERke: N/A MEDIATERke: N/A LONG TERke: Create new route to Stockton via righmay 88 based on searand demand using highmay coaches
				NEW	Meyers Y	TS2	Trans Sierra Bus	Meyers Y - Placerville - Sacramento	New Route			Adi	Add Route		IMMEDIATETEME.IVA SAORTEREN: VA IMME TIRE: VA IMME TIRE: VIA LONG TERME Crede new route lo Sacartento via US 50 based on second demand using highwory coaches
				NEW	US 50 South	Ferry	Ferry	Tahoe City - South Lake Tahoe		Ξ \$	Introduce Service	ē	Frequency		IMMEDIATETEME: VIA SBORTERME: innicouce feny service IMMEDIATEME: INEME: VIA LONG TEME: Add seasonal copacity in summer and inclease frequency based on demand
				NEW	sR89/ US 50 South/ US 50 East	W2	Ferry Shuttle	Tahoma - South Lake Tahoe - Zephyr Cove			Introduc Service	e.	frequency		IMMEDIATE FEMA: N.A. SHORT FEMA: N.A. Hemoduce feary sturite services in summer LONG FEMA: Increase frequency based on demand and balentially extend summer season
				Route 53		23	Local			Route Change	Freq	Frequency			IMMEDIATETERME Charge routing to lemrinate at LICC 1900/07 TERME / A LICE TERME routing the sequency







South Shore: Proposed Infrastructure

Immediate Short Medium Long	mmediate Short Medium Long		Paf Tuna		Porte Description	Hichlicht	Immadiate Chai	Short Tarm Mardi	Madium Tarm long Tarm	E	Route Associated And Alimments
Term	stm South Shore - Infrastructure									11	
•	Heavenly California Lodge	Us 50 South	P1 Par	Parking 8	Heavenly California Lodge 8ase - Feiry Pier - Heavenly 207 Transfer	New Parking	New for S Park	New facility for Summer Parking			About TERME Landone anangement with rescrit to uitize partiting to serve Route D SHORT TERME VIA MEDIANT TERME VIA
()	NEW		P2 & Mo MH9		Ponderosa		Part sea:	Parking for Upgrade seasonal use Facility	e A	F2, B, C	IMMEDIATETEME.N/A C SEONTERME.Create second parking opportunities MEDIMITEME.V.C. Create second parking conducting LONG TERME.N/A
T2	South Y Transit Center	us 50 south	T5 & Ind MH7	Transit Center R & Mability Hub	Routes A. C. F2 turnaround		Imp exis faci	Improve Upgrade existing facility facility	ade Y	F2, A, S2, C	AutoDate Teaker, tot, 1940 TEAK, and he increased in tise or is il and acceded? Automative, additional and would be increased to create particing and cycling foosither Looks TEAK, additional and would be increased to create particip and cycling foosither
T 2	NEW	US 50 East	L		Zephyr Cove			New facility Add P	Add Parking	C, R1	
T 2	NEW	us so south	1 2	ransit Center H	Heavenly	ż	lew facility			D, H	MARIANE TERM. Create a new terminal for transit off State Route 207 (kingubury Grade Ro) and South Benjamin Dive SWORT TERM. VIA. MEDUM TERM. VIA.
	Stateline Transit Center	us 50 South	P3, T3, & MH6	ansit Center R	Routes B. F.2. R1. R.2 turmaround Statetine area		Parts S Parts	Parking for Upgrade Seasonal Use Facility	e A	F2, D, C, J, R1, R2	IMMEDIATE TERM: VIA. IMMEDIATE TERM: VIA. IMMEDIATE TERM: VIA. IMMEDIATE TERM: VIA. IMMEDIATE TO A TRANSMERSION AND
T ₂	Ski Run Transit Turnaround	Us 50 South	14	and Center St	Ski Run ferry access for Route D and F2 in South Lake Tahoe		C Ge turn P atis	Create turmaround In existing parking lot		F2, D	MANDALETERM. N.N. MANDALETERM. And a character of changes to the protocols for accessing the parking lot and ensuing a cear path for the busit of dow yet round access MOUNT EMA. V/A MOUNT EMA. V/A
T2	Kingsbury Transit Center	Us 50 South	Tr	ransil Center SI	Stateline		<u>E</u>	Eliminate			IMMEDATE TERM: VIV. SHOTT TERM: Lapitative changes should allow for a removed of this facility. Potenia to loop Route C it required to even a case. Resum TERM: VIV.
T2	NEW	Meyers Y	T6 &MH8	Aobility Hub R	Routes A, B, F2, 151, 152 turnaround in Meyers Y area		Ider crec faci	Identify and Ugrad create bus facility	Ugrade Facility	F2, A, B, TS1, TS2	Netton Fitters (No. 1) IN CONTRACT And Inverse mediative has location on but ferminal initially IN CONTRACT And Inverse mediative has with fork & Ridle, cycle connections, regional bus parting (Desir Fitters, Prove into a Mobility Hub with Fork & Ridle, cycle connections, regional bus parting
T2	Heavenly California Lodge	US 50 South	Ta 17	ansil Center R	Route D tumaround	25.2	Upgrade Facility for Summer Use			•	MEDIATE TERM: As upper for care potential; be adored in summer, agreement is required to pooling an alternate transit turnound and positing in the lower tot and/or use of the upper tot for Stateline employee poteng State TERM: VIA. RESUM: TERM: VIA.
	Emerald Bay Trolley	SR89 Recreation Contdor	MH10 - En Alton - En Alton - Hu Stor MH11 - Hc Ress	Mobility Hub Si - Emeraid Bay C State Park) - Homewood Ski Resport	south Y - Sugar Pine Transit Center		(mp exis facil	improve exisiing facility			NEDATE TERM, N.N., Unites notables diregit at fingel Leving Kingale Leving Leving Termany and Terminites to establish sector that and the sector of the s
	Ski Run Ferry Terminal	us 50 South	ē	erry Dock			Se Z	New Facility			IMMEDIATE TEAM: IVIA SMOT TEAM: Planming and implementation of the dedicated leny dock required prior to he start of service MEDUATERM: VIA LONG TEAM: VIA
	NEW	sR89/ US 50 South/ US 50 East	<u></u>	erry Dock					New Facility		IMMEDIATE TEME NIA SPORT TEME. NIA BROUNT TEME. And and obta or more arrangements with axising dock owness for use LONG TEME Review locations for usage
er Plan		SRB97 US 50 South/ US 50	2	ransil Priority		_	Intra	Introduce Transit Priority	Extend priority	iority	Investors the Part International and implementation of transit priority options along US 50 SHORT TERM: Phanning and implementation of transit priority options along US 50
Page 186											





Period: Year round (F	all, Winter, Sprin	g)		Days	243						
			T	ïme							
Period	Service frequency	Start	End	Duration (hrs)	Decimal Time	Trips	Revenue hours	Peak vehicles	Revenue miles	Rides per hour	Rides
AM peak	15	6:00	9:00	3:00	3.0	12	12	4	240	28	336
PM peak	15	15:00	18:00	3:00	3.0	12	12	4	240	28	336
Off peak	30	9:00	15:00	6:00	6.0	12	12	2	240	25	300
Evening	30	18:00	22:00	4:00	4.0	8	8	2	160	20	160
Daily	0			0:00	-	-	-	-	-	0	-
Late night	0			0:00	-	-	-	-	-	0	-
Weekend/holidays	0			0:00	-	-	-	-	-	0	-
Daily Total						44	44	4	880		1,132
Annual Total							10,692		213,840		275,076
ANNUAL TOTAL							18,008		360,159		496,202

In-service Vehicle R	equirement Guidel	ine calculati	on:	
	Hours	2,500	Annual Revenue hours per bus	7
	Distance	47,000	Annual Revenue miles per bus	8
			Recommendation/ Peak requirement	8
Spare ratio		15	percent	1.20
Fleet Requirement				10.0
COSTING			Rate	

COSTING

COSTING	Rate	
Total Operating Cost per Hour (labor, fuel, maintenance, repairs, fixed, insurance, marketing, training)	\$105	\$ 1,890,833
Revenue (based on average cash fare)	\$2.00	\$ 992,404
Cost Recovery (Revenue as a % of total Operating Cost)		52%

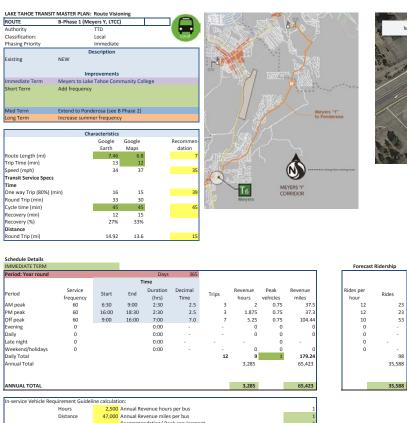
LONG TERM										Forecast	Ridership
Period: Summer (July	1 to Sept 30)			Days	92						
			٦	Time							
Period	Service	Start	End	Duration	Decimal	Trips	Revenue	Peak	Revenue	Rides per	Rides
renou	frequency	Jtart	LIIU	(hrs)	Time	mps	hours	vehicles	miles	hour	Rides
AM peak	15	6:00	8:30	2:30	2.5	10	10	4	200	40	400
PM peak	15	16:00	18:30	2:30	2.5	10	10	4	200	40	400
Off peak	15	8:30	16:00	7:30	7.5	30	30	4	600	35	1,050
Evening	15	18:30	23:59	5:29	5.5	22	22	4	439	30	658
Daily	0			0:00	-	-	-	-	-	0	-
Late night	0			0:00	-	-	-	-	-	0	
Weekend/holidays	0			0:00	-	-	-	-	-	0	
Daily Total						72	72	4	1,439		2,508
Annual Total							6,618		132,357		230,736

Period: Summer Exter	nsion (June 15-30) and Oct 1-	15	Days	30						
			٦	Time							
Devied	Service	Chart	End	Duration	Decimal	Tuine	Revenue	Peak	Revenue	Rides per	Rides
Period	frequency	Start	End	(hrs)	Time	Trips	hours	vehicles	miles	hour	Rides
AM peak	15	6:00	9:00	3:00	3.0	12	12	4	240	35	420
PM peak	15	15:00	18:00	3:00	3.0	12	12	4	240	35	420
Off peak	15	9:00	15:00	6:00	6.0	24	24	4	480	30	720
Evening	30	18:00	23:59	5:59	6.0	12	12	2	239	25	299
Daily	0			0:00	-	-	-	-	-	0	-
Late night	0			0:00	-	-	-	-	-	0	-
Weekend/holidays	0			0:00	-	-	-	-	-	0	-
Daily Total						60	60	4	1,199		1,859
Annual Total							1,799		35,980		55,775

Period: Year round (F	all, Winter, Sprin	g)		Days	243						
			r	ïme							
Period	Service frequency	Start	End	Duration (hrs)	Decimal Time	Trips	Revenue hours	Peak vehicles	Revenue miles	Rides per hour	Rides
AM peak	15	6:00	8:30	2:30	2.5	10	10	4	200	30	300
PM peak	15	16:00	18:30	2:30	2.5	10	10	4	200	30	300
Off peak	15	8:30	16:00	7:30	7.5	30	30	4	600	28	840
Evening	30	18:30	22:00	3:30	3.5	7	7	2	140	25	175
Daily	0			0:00	-	-	-	-	-	0	-
Late night	0			0:00	-	-	-	-	-	0	-
Weekend/holidays	0			0:00	-	-	-	-	-	0	-
Daily Total						57	57	4	1,140		1,615
Annual Total							13,851		277,020		392,445
ANNUAL TOTAL							22,268		445,357		678,956

	Hours	2,500	Annual Revenue hours per bus		9
	Distance	47,000	Annual Revenue miles per bus		9
			Recommendation/ Peak requirement		9
Spare ratio		15	percent		1.35
Fleet Requireme	nt				11.0
COSTING				Rate	
	Cost per Hour (labor,	fuel, mainter	nance, repairs, fixed, insurance, marketing, training)	\$105	\$ 2,338,126
Total Operating				ća 00	¢ 1 257 012
	on average cash fare)			\$2.00	\$ 1,357,912







Meyers

23 23 53



Period: Year round				Days	365				
			1	ime					
Period	Service	Start	End	Duration	Decimal	Talaa	Revenue	Peak	Revenue
renou	frequency	Stdit	Enu	(hrs)	Time	Trips	hours	vehicles	miles
AM peak	60	6:30	9:00	2:30	2.5	3	2	0.75	37.5
PM peak	60	16:00	18:30	2:30	2.5	3	1.875	0.75	37.3
Off peak	60	9:00	16:00	7:00	7.0	7	5.25	0.75	104.44
Evening	0			0:00		-	0	0	(
Daily	0			0:00		-	0	0	(
Late night	0			0:00	-	-		0	-
Weekend/holidays	0			0:00		-	0	0	(
Daily Total						12	9	1	179.24
Annual Total							3,285		65,423
ANNUAL TOTAL							3,285		65,423

In-service Vehicle Requirement Guidel	ine calculati	on:
Hours	2,500	Annual Revenue hours per bus
Distance	47,000	Annual Revenue miles per bus
		Recommendation/ Peak requirement
Spare ratio	15	percent
Fleet Requirement		

COSTING Total Operating Cost per Hour (labor, fuel, maintenance, repairs, fixed, insurance, marketing, training) Revenue (based on average cash fare) Cost Recovery (Revenue as a % of total Operating Cost) \$105 \$ 344,925 \$2.00 \$ 71,175 21%

Period: Year round				Days	365				
			۱	ime					
Period	Service	Start	End	Duration	Decimal		Revenue	Peak	Revenue
Period	frequency	Start	End	(hrs)	Time	Trips	hours	vehicles	miles
AM peak	30	6:30	9:00	2:30	2.5	5	4	1.5	75
PM peak	30	16:00	18:30	2:30	2.5	5	3.75	1.5	74.6
Off peak	60	9:00	16:00	7:00	7.0	7	5.25	0.75	104.44
Evening	0			0:00			0	0	(
Daily	0			0:00	-		0	0	(
Late night	0			0:00	-	-	0	0	C
Weekend/holidays	0			0:00	-	-	0	0	C
Daily Total						17	13	2	254.04
Annual Total							4,654		92,725
ANNUAL TOTAL							4,654		92,725

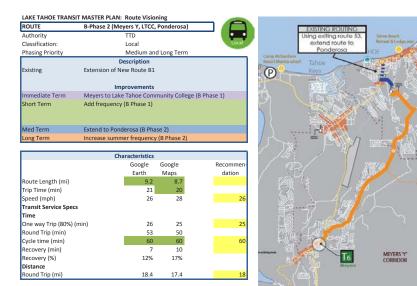
Rides per hour	Rides	
15		56
15		56
12		63
0	-	
0	-	
0	-	
0	-	
		76
	64,0	58
	64,0	58

Forecast Ridership

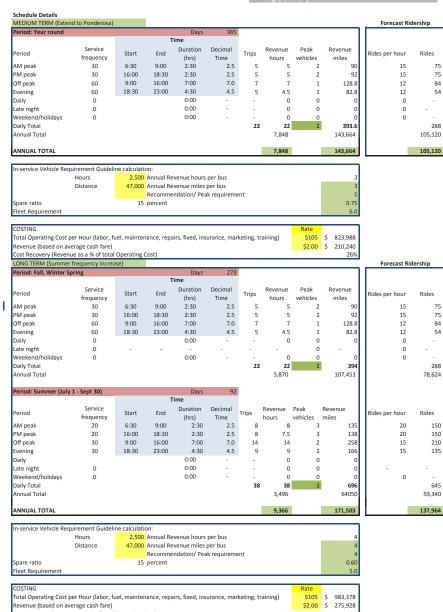
0.1

Distance 47,000 Annual Revenue miles per bus							
	Recommendation/ Peak requirement						
Spare ratio		15	percent			0.30	
Fleet Requirement						3.0	
COSTING				Rate			
Total Operating Cost per Hour (labor, fuel, maintenance, repairs, fixed, insurance, marketing, training) \$105							
Total Operating Cost pr	er Hour (labor, f	uel, mainte	nance, repairs, fixed, insurance, marketing, training)	\$105	\$	488,644	
Total Operating Cost pe Revenue (based on ave	,	uel, mainte	nance, repairs, fixed, insurance, marketing, training)	\$105 \$2.00	\$ \$	488,644 128,115	









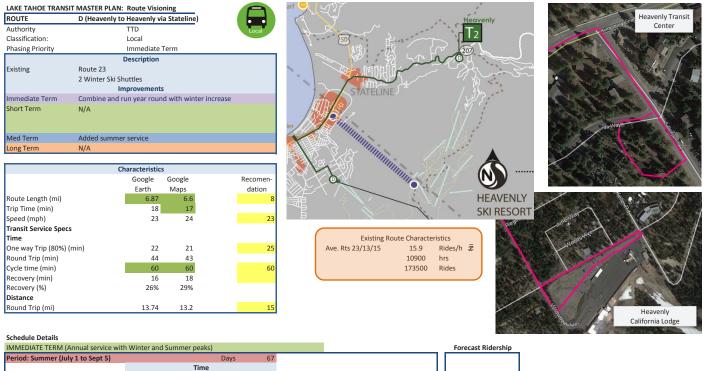


Lake Tahoe



Cost Recovery (Revenue as a % of total Operating Cost)

289



Period: Summer (July	1 to Sept 5)			Days	67						
				Time							
Period	Service frequency	Start	End	Duration (hrs)	Decimal Time	Trips	Revenue hours	Peak vehicles	Revenue miles	Rides per hour	Rides
AM peak	30	6:00	8:00	2:00	2.0	4	4	2	60	30	120
PM peak	30	16:00	18:00	2:00	2.0	4	4	2	60	30	120
Off peak	60	8:00	16:00	8:00	8.0	8	8	1	120	25	200
Evening	60	18:00	22:00	4:00	4.0	4	4	1	60	25	100
Daily	0			0:00	-	-	0	0	0	0	-
Late night	0			0:00	-	-	0	0	0	0	-
Weekend/holidays	0			0:00	-	-	0	0	0	0	-
Daily Total					-	20	20	2	300		540
Annual Total							1,340		20,100		36,180

Period: Winter (Nov 2	25 to March 31)			Days	126						
				Time							
Period	Service	Start	End	Duration	Decimal	Trips	Revenue	Peak	Revenue	Rides per	Rides
	frequency			(hrs)	Time		hours	vehicles	miles	hour	
AM peak	30	6:00	8:00	2:00	2.0	4	4	2	60	30	120
PM peak	30	16:00	18:00	2:00	2.0	4	4	2	60	30	120
Off peak	60	8:00	16:00	8:00	8.0	8	8	1	120	25	200
Evening	60	18:00	22:00	4:00	4.0	4	4	1	60	25	100
Daily	0			0:00	-	-	0	0	0	0	-
Late night	0			0:00	-	-	0	0	0	0	-
Weekend/holidays	0			0:00	-	-	0	0	0	0	-
Daily Total					-	2	0 20	2	300	1	540
Annual Total							2,520		37,800		68,040

Period: Shoulders				Days	172						
				Time							
Period	Service frequency	Start	End	Duration (hrs)	Decimal Time	Trips	Revenue hours	Peak vehicles	Revenue miles	Rides per hour	Rides
AM peak	30	6:00	8:00	2:00	2.0	4	4	2	60	30	120
PM peak	30	16:00	18:00	2:00	2.0	4	4	2	60	30	120
Off peak	60	8:00	16:00	8:00	8.0	8	8	1	120	20	160
Evening	0			0:00	-	-	0	0	0	0	-
Daily	0			0:00	-	-	0	0	0	0	-
Late night	0			0:00	-	-	0	0	0	0	-
Weekend/holidays	0			0:00	-	-	0	0	0	0	-
Daily Total						16	16	2	240		400
Annual Total							2,752		41,280		68,800
ANNUAL TOTAL							6,612		99,180		173,020

	e Requirement Guidel Hours		Annual Revenue hours per bus			-		
			1					
			Recommendation/ Peak requirement			3		
Spare ratio 15 percent								
Fleet Requireme	nt					4.0		
				Rate				
COSTING								
	Cost per Hour (labor, t	fuel, mainter	nance, repairs, fixed, insurance, marketing, training)	\$105	\$	694,260		
1 0	Cost per Hour (labor, i on average cash fare)		nance, repairs, fixed, insurance, marketing, training)	\$105 \$2.00	\$ \$	694,260 346,040		



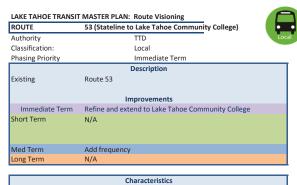
MEDIUM TERM - Add	ded summer servio	ce								Forecast I	Ridership
Period: Summer (Jul	y 1 to Sept 5)			Days	67						
				Time							
Period	Service	Chart	End	Duration	Decimal	Taina	Revenue	Peak	Revenue	Rides per	Distan
Period	frequency	Start	End	(hrs)	Time	Trips	hours	vehicles	miles	hour	Rides
AM peak	30	6:00	8:00	2:00	2.0	4	4	2	60	30	120
PM peak	30	16:00	18:00	2:00	2.0	4	4	2	60	30	120
Off peak	30	8:00	16:00	8:00	8.0	16	16	2	240	25	400
Evening	30	18:00	22:00	4:00	4.0	8	8	2	120	25	200
Daily	0			0:00	-	-	0	0	0	0	-
Late night	0			0:00	-	-	0	0	0	0	-
Weekend/holidays	0			0:00	-	-	0	0	0	0	-
Daily Total					-	32	32	2	480		840
Annual Total							2,144		32,160		56,280

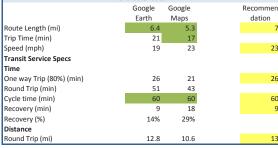
Period: Winter (Nov 2	25 to March 31)			Days	126						
				Time							
Deried	Service	Ctout	Food	Duration	Decimal	Tuine	Revenue	Peak	Revenue	Rides per	Distant
Period	frequency	Start	End	(hrs)	Time	Trips	hours	vehicles	miles	hour	Rides
AM peak	30	6:00	8:00	2:00	2.0	4	4	2	60	30	120
PM peak	30	16:00	18:00	2:00	2.0	4	4	2	60	30	120
Off peak	60	8:00	16:00	8:00	8.0	8	8	1	120	25	200
Evening	60	18:00	22:00	4:00	4.0	4	4	1	60	25	100
Daily	0			0:00	-	-	0	0	0	0	-
Late night	0			0:00	-	-	0	0	0	0	-
Weekend/holidays	0			0:00	-	-	0	0	0	0	-
Daily Total					-	2	0 20	2	300		540
Annual Total							2,520		37,800		68,040

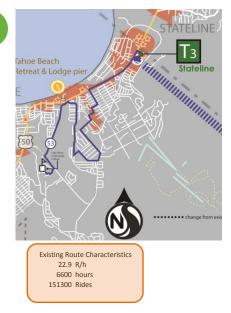
Period: Shoulders				Days	172						
				Time							
Period	Service frequency	Start	End	Duration (hrs)	Decimal Time	Trips	Revenue hours	Peak vehicles	Revenue miles	Rides per hour	Rides
AM peak	30	6:00	8:00	2:00	2.0	4	4	2	60	30	120
PM peak	30	16:00	18:00	2:00	2.0	4	4	2	60	30	120
Off peak	60	8:00	16:00	8:00	8.0	8	8	1	120	20	160
Evening	0			0:00	-	-	0	0	0	0	-
Daily	0			0:00	-	-	0	0	0	0	-
Late night	0			0:00	-	-	0	0	0	0	-
Weekend/holidays	0			0:00	-	-	0	0	0	0	-
Daily Total						16	16	2	240		400
Annual Total							2,752		41,280		68,800
ANNUAL TOTAL							7,416		111,240		193,120

In-service Vehicle	e Requirement Guidel	ine calculati	on:					
	Hours	2,500	Annual Revenue hours per bus			3		
	Distance	47,000	Annual Revenue miles per bus			2		
			Recommendation/ Peak requirement			3		
Spare ratio		15	percent			0.45		
Fleet Requireme	nt					4.0		
COSTING				Rate				
Total Operating (Cost per Hour (labor, f	uel, mainter	nance, repairs, fixed, insurance, marketing, training)	\$105	\$	778,680		
Revenue (based on average cash fare) \$2.00 \$ 3								
Cost Recovery (Revenue as a % of total Operating Cost)								













So	:h	ed	ul	e C)et	ails	

IMMEDIATE TERM										Forecast F	Ridership
Period: Fall, Winter,	Spring			Days	273						
				Time							
Period	Service	Start	End	Duration	Decimal	Talaa	Revenue	Peak	Revenue	Rides per	Distant
Period	frequency	Stdrt	Ena	(hrs)	Time	Trips	hours	vehicles	miles	hour	Rides
AM peak	0			0:00	-	-	0	0	0	0	-
PM peak	0			0:00	-	-	0	0	0	0	-
Off peak	60	6:00	20:00	14:00	14.0	14	14	1	182	12	168
Evening	0			0:00	-	-	0	0	0		-
Daily	0			0:00	-	-	0	0	0	0	-
Late night	0			0:00	-	-	0	0	0	0	-
Weekend/holidays	0			0:00	-	-	0	0	0	0	-
Daily Total					-	14	14	1	182		168
Annual Total							3,822		49,686		45,864

Period: Summer July	1 to Sept 5			Days	92						
				Time							
Period	Service frequency	Start	End	Duration (hrs)	Decimal Time	Trips	Revenue hours	Peak vehicles	Revenue miles	Rides per hour	Rides
AM peak	0			0:00	-	-	0	0	0	0	-
PM peak	0			0:00	-	-	0	0	0	0	-
Off peak	60	6:00	22:00	16:00	16.0	16	16	1	208	20	320
Evening	0			0:00	-	-	0	0	0	0	-
Daily	0			0:00	-	-	0	0	0	0	-
Late night	0			0:00	-	-	0	0	0	0	-
Weekend/holidays	0			0:00	-	-	0	0	0	0	-
Daily Total						16	16	1	208		320
Annual Total							1,472		19,136		29,440
ANNUAL TOTAL							5,294		68,822		75,304

In-service Vehicl	le Requirement Guide	ine calculati	on:						
	Hours	2,500	Annual Revenue hours per bus			2			
	Distance 47,000 Annual Revenue miles per bus								
			Recommendation/ Peak requirement			2			
Spare ratio		15	percent			0.30			
Fleet Requireme	leet Requirement								
COSTING				Rate					
Total Operating	Cost per Hour (labor,	fuel, maintei	nance, repairs, fixed, insurance, marketing, training)	\$105	\$	555,870			
	evenue (based on average cash fare) \$2.00								
Revenue (based	on average cash fare)			\$2.00	Ş	150,608			



MEDIUM TERM - Add	led frequency									Forecast F	Ridership
Period: Fall, Winter,	Spring		Days 273								
				Time							
Period	Service	Start	End	Duration	Decimal	Trips	Revenue	Peak	Revenue	Rides per	Rides
	frequency	Sidfi	Enu	(hrs)	Time	mps	hours	vehicles	miles	hour	Rides
AM peak	0			0:00	-	-	0	0	0	0	-
PM peak	0			0:00	-	-	0	0	0	0	-
Off peak	60	6:00	20:00	14:00	14.0	14	14	1	182	12	168
Evening	0			0:00	-	-	0	0	0	0	-
Daily	0			0:00	-	-	0	0	0	0	-
Late night	0			0:00	-	-	0	0	0	0	-
Weekend/holidays	0			0:00	-	-	0	0	0	0	-
Daily Total					-	14	14	1	182		168
Annual Total							3,822		49,686		45,864

Period: Summer late	night			Days	92						
			-	Time							
Period	Service frequency	Start	End	Duration (hrs)	Decimal Time	Trips	Revenue hours	Peak vehicles	Revenue miles	Rides per hour	Rides
AM peak	0			0:00	-	-	0	0	0	0	-
PM peak	0			0:00	-	-	0	0	0	0	-
Off peak	30	6:00	22:00	16:00	16.0	32	32	2	416	18	576
Evening	0			0:00	-	-	0	0	0	0	-
Daily	0			0:00	-	-	0	0	0	0	-
Late night	60	22:00	12:00	2:00	2.0	2	2	1	26	12	24
Weekend/holidays	0			0:00	-	-	0	0	0	0	-
Daily Total						34	34	2	442		600
Annual Total							3,128		40,664		55,200
ANNUAL TOTAL							6,950		90,350		101,064

In-service Vehicle	Requirement Guideli	ne calculati	on:								
Hours 2,500 Annual Revenue hours per bus											
	Distance 47,000 Annual Revenue miles per bus										
Recommendation/ Peak requirement											
Spare ratio		15	percent				0.45				
Fleet Requirement											
COSTING					Rate						
Total Operating C	ost per Hour (labor, f	uel, mainter	nance, repairs, fixed, insurance, marketing, training)		\$105	\$	729,750				
Revenue (based o	Revenue (based on average cash fare) \$2.00										
Cost Recovery (Revenue as a % of total Operating Cost)											
ANNUAL TOTAL 6,950											



. . .

ROUTE	A (Meyers Y to South Y)	• •
Authority	TTD	Community
Classification:	Community Route	
Phasing Priority	Long Term	
	Description	
Existing	NEW	
	N/A	
	Improvements	
Immediate Term	N/A	
Short Term	N/A	
Med Term	N/A	
Long Term	New route if required	

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		South "Y		
0	diarge han estating of			T6 Meyers
3 Ead	Meyers	0		
		9	50	



	Characteristics		
	Google	Google	Recommen-
	Earth	Maps	dation
Route Length (mi)	7.1	7	8
Trip Time (min)	13	13	
Speed (mph)	32	33	33
Transit Service Specs			
Time			
One way Trip (80%) (min)	16	16	18
Round Trip (min)	33	33	
Cycle time (min)	45	45	45
Recovery (min)	12	13	
Recovery (%)	27%	28%	
Distance			
Round Trip (mi)	14.2	14	16



Schedule	Details

LONG TERM										Forecast F	Ridership
Period: Year round				Days	365						
			1	īme							
Period	Service frequency	Start	End	Duration (hrs)	Decimal Time	Trips	Revenue hours	Peak vehicles	Revenue miles	Rides per hour	Rides
AM peak	30	6:30	8:00	1:30	1.5	3	2	2	48	15	34
PM peak	30	16:00	17:30	1:30	1.5	3	2	2	43	15	34
Off peak	60	8:00	16:00	8:00	8.0	8	6	0.8	114	12	72
Evening	60	17:30	22:00	4:30	4.5	5	3	1	64	10	34
Daily	0			0:00		-	0	0	0	0	-
Late night	0			0:00	-	-	-	0	-	0	-
Weekend/holidays	0			0:00	-	-	0	0	0	0	-
Daily Total						19	14	2	268.1		173
Annual Total							5,064		97,857		63,236
ANNUAL TOTAL							5,064	_	97,857		63,236

In-service Vehicle	e Reguirement Guideli	ne calculatio	on:					
	Hours	2,500	Annual Revenue hours per bus			2		
	Distance	47,000	Annual Revenue miles per bus			2		
			Recommendation/ Peak requirement			2		
Spare ratio 15 percent								
Fleet Requirement								
COSTING				Rate				
Total Operating O	Cost per Hour (labor, f	uel, mainter	nance, repairs, fixed, insurance, marketing, training)	\$105	\$	531,759		
Revenue (based on average cash fare) \$2.00								
Cost Recovery (Revenue as a % of total Operating Cost)								



ROUTE	C (South - Stateline - Zephyr)
Authority	TTD Community
Classification:	Community Route
Phasing Priority	Medium and Long Term
	Description
Existing	Seasonal route
	Route 53
	Improvements
Immediate Term	N/A
Short Term	Combine and extend into neighborhoods, Comm College and extend to Zephyr
	Reduce Zephyr servce in shoulder seasons
Med Term	Added summer service
Long Term	Increase frequency
	Existing Route Characteristics 22.9 Rides/hr

6,600 Hours 151,300 Rides

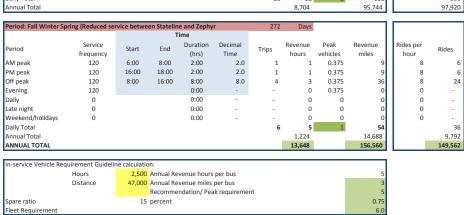




Cha	aracteristics - to Ze	phyr		T5	iii .	The second	
	Google	Google	Recomen-	South N		SAR .	(N)
	Earth	Maps	dation		Nell A/7	tonton ATIS	
Route Length (mi)	15.5	15.3					
Trip Time (min)	48	47		South	Y to Sateline	Satelin	e to Zepyr
Speed (mph)	20	20	20	Length	11	4.	5
Transit Service Specs				Speed	20	3	D
Time				Time	34	14	4
One way Trip (80%) (min)	60	59	25	Transit (80%)	42	1	7
Round Trip (min)	119	118		Round Trip	84	3	5
Cycle time (min)	150	150	150	Cycle	120	4!	5
Recovery (min)	31	33		Rec	36	10	D
Recovery (%)	21%	22%			30%	239	6
Distance							
Round Trip (mi)	31	30.6	31	Round trip Time	22		9
Schedule Details							

SHORT TERM										Forecast	Ridership
Period: Summer				Days	93						
			T	ime							
Period	Service	Start	End	Duration	Decimal	Trips	Revenue	Peak	Revenue	Rides per	Rides
Periou	frequency	Stdit	Ellu	(hrs)	Time	inps	hours	vehicles	miles	hour	Rides
AM peak	60	6:00	8:00	2:00	2.0	2	5	2.5	62	15	75
PM peak	60	16:00	18:00	2:00	2.0	2	5	2.5	62	15	75
Off peak	60	8:00	16:00	8:00	8.0	8	20	2.5	248	10	200
Evening	60	18:00	22:00	4:00	4.0	4	10	2.5	124	10	100
Daily	0			0:00	-	-	0	0	0	0	-
Late night	0			0:00	-	-	-	0	-	0	-
Weekend/holidays	0			0:00	-	-	0	0	0	0	-
Daily Total						16	40	3	496		450
Annual Total							3,720		46,128		41,850

Period: Fall Winter Sp	oring (Y to Statelin	ne)		Days	272						
			T	ime							
Period	Service	Start	End	Duration	Decimal	Trips	Revenue	Peak	Revenue	Rides per	Rides
Periou	frequency	Stdit	Enu	(hrs)	Time	mps	hours	vehicles	miles	hour	Rides
AM peak	60	6:00	8:00	2:00	2.0	2	4	2	44	15	60
PM peak	60	16:00	18:00	2:00	2.0	2	4	2	44	15	60
Off peak	60	8:00	16:00	8:00	8.0	8	16	2	176	10	160
Evening	60	18:00	22:00	4:00	4.0	4	8	2	88	10	80
Daily	0			0:00	-	-	0	0	0	0	-
Late night	0			0:00	-	-	-	0	-	0	-
Weekend/holidays	0			0:00	-	-	0	0	0	0	-
Daily Total						16	32	2	352		360
							0 704		05 744		07.000







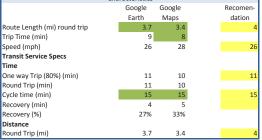
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Vernoo fr AM peak PM peak Off peak Evening Daily Late night Weekend/holidays Daily Total Annual Total Period Fall Winter Spring to Period fr AM peak Off peak Evening Daily Late night Weekend/holidays Daily Total Annual Total Period fr AM peak Period fr AM peak Period fr AM peak Period fr AM peak Period fr	equency 30 6 30 11 60 8 60 11 0 0 0 0 5 5 5 5 5 5 5 5 5 5 5 5 5		Duration (hrs) 2:00 8:00 0:00 0:00 0:00 0:00 0:00 0:00	Decimal Time 2.0 2.0 8.0 4.0 - - - - 272 Decimal Time 2.0	Trips 4 4 - - 20 Trips	Revenue hours 10 20 10 0 0 50 4,650	Peak vehicles 5 2.5 2.5 0 0 0 0 5	Revenue miles 124 124 248 124 0 - 0 <b>620</b> 57,660	Rides per hour 20 15 15 0 0 0	Rides 21 31 - - 8 79,0
AM peak AM peak AM peak AM peak AM peak Evening Daily Daily Annual Total Annual Total AM peak	equency 30 6 30 11 60 8 60 11 0 0 0 0 5 5 5 5 5 5 5 5 5 5 5 5 5	6:00 8:00 6:00 18:00 8:00 16:00 8:00 22:00 5:00 22:00 5:00 16:00 8:00 16:00	2:00 2:00 8:00 4:00 0:00 0:00 0:00 Time Duration (hrs) 2:00 2:00	2.0 2.0 8.0 - - - 272 Decimal Time	4 4 8 4 - - <b>20</b>	10 10 20 10 0 0 50 4,650	5 5 2.5 2.5 0 0 0 5	124 124 248 124 0 - 0 <b>620</b>	20 20 15 15 0 0	2 2 3 1 - - 8
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Annual Total  Period: Fall Winter Spring to Period fr M peak M peak M peak Verining	Service equency S 60 6 60 11 60 8 60 11 0 0 0	1 Start End 6:00 8:00 6:00 18:00 8:00 16:00	Time Duration (hrs) 2:00 2:00	Decimal Time		4,650				
Period: Fall Winter Spring to Period for My peak My peak Off peak Vening Jaily Jaily Total Venual Total Period for My peak My peak My peak	Service equency S 60 6 60 11 60 8 60 11 0 0 0	1 Start End 6:00 8:00 6:00 18:00 8:00 16:00	Time Duration (hrs) 2:00 2:00	Decimal Time	Trips			57,660		79,0
Period fr AM peak M peak Off peak verning Daily ate night Keekend/holidays Daily Total Annual Total Period fr M peak M peak M peak	Service equency S 60 6 60 11 60 8 60 11 0 0 0	1 Start End 6:00 8:00 6:00 18:00 8:00 16:00	Time Duration (hrs) 2:00 2:00	Decimal Time	Trips	Revenue	_			
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ate night Weekend/holidays aduly Total Annual Total Period: Fall Winter Spring: S Period fr MM peak MM peak MM peak	0 0		4:00	4.0	4	8	2	88	10	
Weekend/holidays Daily Total Annual Total Period: Fall Winter Spring S Period fr Mpeak PM peak PM peak Df peak	0		0:00		-	0	0	0	0	
baily Total Annual Total Period: Fall Winter Spring S Period fr MM peak MM peak Mf peak			0:00		-	0	0	-	0	
venual Total Period: Fall Winter Spring S Period fr MM peak MM peak Dff peak	ateline to Zenh		0:00	-	-	0	0	0	0	
Period: Fall Winter Spring S Period fr AM peak M peak 901 peak 911 peak	lateline to Zerb				16	32 8,704	2	<b>352</b> 95,744		97,
teriod fr M peak M peak M peak Jff peak	tateline to Zenh									
eriod fr M peak M peak Iff peak	Lande to Leph		Days Time	272						
fr M peak M peak Off peak	Service S	Start End	Duration	Decimal	Trips	Revenue	Peak	Revenue	Rides per	Ride
PM peak Off peak	equency		(hrs)	Time			vehicles	miles	hour	mae
Off peak		6:00 8:00	2:00	2.0	1	1	0.375	9	8	
		6:00 18:00	2:00	2.0	1	1	0.375	9	8	
		8:00 16:00	8:00	8.0	4	3	0.375	36	8	
vening	0		0:00	-	-	0	0	0	0	
Daily	0		0:00	-	-	0	0	0	0	
Late night	0		0:00	-	-	0	0	0	0	-
Weekend/holidays	0		0:00	-	•	0	0	0	0	
Daily Total					6	1 224	1	14 699	1	
Annual Total ANNUAL TOTAL					1	1,224 14,578		14,688 168,092		23, 200,
n-service Vehicle Requirem Hou		alculation: 2,500 Annual Re	evenue hours	per bus				6		
Dist		47,000 Annual Re	evenue miles j	per bus				4		
spare ratio		Recomme 15 percent	endation/ Pea	⊾ requiremen	ι			6 0.90		
leet Requirement								7.0		
ONG TERM - Increased Fre eriod: Summer			Days Time	93					Forecast R	
Period	Service	Start End	Duration	Decimal	Trips	Revenue	Peak	Revenue	Rides per	Ride
fr	equency		(hrs)	Time			vehicles	miles	hour	
AM peak		6:00 8:00	2:00	2.0	6	15	7.5	186	25	
PM peak		6:00 18:00	2:00	2.0	6	15	7.5	186	25	-
Off peak Evening		8:00 16:00 8:00 23:00	8:00 5:00	8.0 5.0	16 10	40 25	5 5	496 310	20 20	1
Daily	0	8.00 23.00	0:00	5.0	10	23	0	0	20	-
Late night	0		0:00			0	0	0	0	
Weekend/holidays	0		0:00			0	0	0	0	
Daily Total	0		0.00		38	95	8	1178	Ů	2,0
Annual Total					50	8,835	0	109,554		190,
Period: Fall Winter Spring to	o Stateline only		Days	272						
	Service	1	Time			Bougers	Deal	Rever	Ridor	
	service S equency	Start End	Duration (hrs)	Decimal Time	Trips	Revenue hours	Peak vehicles	Revenue miles	Rides per hour	Ride
AM peak		6:00 8:00	2:00	2.0	4	8	4	88	20	
PM peak		6:00 18:00	2:00	2.0	4	8	4	88	20	
Off peak		8:00 16:00	8:00	8.0	8	16	2	176	15	
Evening		.8:00 22:00	4:00	4.0	4	8	2	88	15	
Daily	0		0:00		-	0	0	0	0	
ate night	0		0:00	-	-	0	0	0	0	
Weekend/holidays	0		0:00	-	-	0	0	0	0	
Daily Total Annual Total					20	40 10,880	4	440 119,680	1	184,
	tatalicat	we rod				,500		,000		_0.4,
eriod: Fall Winter Spring S			Days Time	272						
Period	Service S	Start End	Duration	Decimal	Trips	Revenue	Peak	Revenue	Rides per	Ride
fr	equency		(hrs)	Time			vehicles	miles	hour	
AM peak PM peak		6:00 8:00 .6:00 18:00	2:00 2:00	2.0 2.0	2	2	0.8 0.8	18 18	10 10	
		8:00 18:00	2:00	2.0	2	2	0.8	18 36	10	
	0		0:00	-	-	3 0	0.4	30	0	
Off peak	0		0:00			0	0	0	0	
Off peak evening			0:00		-	0	0	. 1	0	
Off peak Evening Daily	0		0:00		-	0	0	0	0	
Off peak Evening Daily ate night	0		-		8	6	1	72		
Off peak Evening Daily Late night Veekend/holidays						1,632		19,584	I -	14, <b>390,</b>
Off peak Evening Jaily .ate night .ate night .weekend/holidays Jaily Total Annual Total								240 040		
Dff peak Evening Daily Late night Neekend/holidays Daily Total Annual Total ANNUAL TOTAL	0					21,347		248,818		330,
Dff peak Evening Jaily Late night Weekend/holidays Jaily Total Annual Total ANNUAL TOTAL n-service Vehicle Requirem	0 ent Guideline ca		avenue hours	ner hus						330,
Off peak Evening Jally Late night Weekend/holidays Daily Total Annual Total ANNUAL TOTAL In-service Vehicle Requirem Hou	0 ent Guideline ca rs	2,500 Annual Re					_	9		330,1
Dff peak Evening Jaily Late night Weekend/holidays Jaily Total Annual Total ANNUAL TOTAL n-service Vehicle Requirem	0 ent Guideline ca rs	2,500 Annual Re 47,000 Annual Re	evenue miles p	per bus			_	9		330,
fff peak ivening Jaliy ate night Weekend/holidays Jaliy Total INNUAL TOTAL INNUAL TOTAL Hou Hou	0 ent Guideline ca rs	2,500 Annual Re 47,000 Annual Re Recomme		per bus	t			9 5 9		330,
Jff pak vening Jaly Jaly Veckend/holidays Jaly Total Venual Total NRIVALT TOTAL NRIVALT TOTAL Hou Dist	0 ent Guideline ca rs	2,500 Annual Re 47,000 Annual Re	evenue miles p	per bus	ıt			9		330,
fff pak vening alaly ate night Veckend/holidays alaly Total unnual Total unnuAL Total service Vehicle Requirem Hou Dist pare ratio	0 ent Guideline ca rs	2,500 Annual Re 47,000 Annual Re Recomme	evenue miles p	per bus	ıt		Rate	9 5 9 1.35		330,











Existing Route Characteristics 19.8 R/h 1900 Hours 37100 Rides

#### Schedule Details

INVINIEDIATE TERINI										FUIELdSL	Nuersnip
Period: Summer (July	y 1 to Sept 5)			Days	67						
			T	'ime							
Period	Service	Start	End	Duration	Decimal	Trips	Revenue	Peak	Revenue	Rides per	Rides
Periou	frequency	Start	Enu	(hrs)	Time	mps	hours	vehicles	miles	hour	Niues
AM peak	30	6:00	9:00	3:00	3.0	6	2	0.5	24	20	30
PM peak	30	16:00	19:00	3:00	3.0	6	1.5	0.5	24	20	30
Off peak	30	9:00	16:00	7:00	7.0	14	3.5	0.5	56	18	63
Evening	30	19:00	22:00	3:00	3.0	6	1.5	0.5	24	15	23
Daily	0			0:00	-	-	0	0	0	0	-
Late night	0			0:00	-	-	0	0	0	0	-
Weekend/holidays	0			0:00	-	-	0	0	0	0	-
Daily Total					-	32	8	1	128		146
Annual Total							536		8,576	1	9,749

Period: Winter (Nov	25 to March 31)			Days	126						
			۱	'ime							
Period	Service	Start	End	Duration	Decimal	Trips	Revenue	Peak	Revenue	Rides per	Rides
Period	frequency	Start	End	(hrs)	Time	inps	hours	vehicles	miles	hour	Rides
AM peak	30	6:00	9:00	3:00	3.0	6	2	0.5	24	20	30
PM peak	30	16:00	19:00	3:00	3.0	6	1.5	0.5	24	20	30
Off peak	30	9:00	16:00	7:00	7.0	14	3.5	0.5	56	18	63
Evening	30	19:00	22:00	3:00	3.0	6	1.5	0.5	24	15	23
Daily	0			0:00	-	-	0	0	0	0	-
Late night	0			0:00	-	-	0	0	0	0	-
Weekend/holidays	0			0:00	-	-	0	0	0	0	-
Daily Total					-	32	8	1	128		146
Annual Total							1,008		16,128		18,333

Period: Shoulders				Days	172						
			T	Гime							
Period	Service frequency	Start	End	Duration (hrs)	Decimal Time	Trips	Revenue hours	Peak vehicles	Revenue miles	Rides per hour	Rides
AM peak	30	6:00	9:00	3:00	3.0	6	2	0.5	24	12	18
PM peak	30	16:00	19:00	3:00	3.0	6	2	0.5	24	12	18
Off peak	60	9:00	16:00	7:00	7.0	7	2	0.3	28	12	21
Evening	0			0:00	-	-	0	0	0	0	-
Daily	0			0:00	-	-	0	0	0	0	-
Late night	0			0:00	-	-	0	0	0	0	-
Weekend/holidays	0			0:00	-	-	0	0	0	0	-
Daily Total						19	5	1	76		57
Annual Total							817		13,072		9,804
ANNUAL TOTAL							2,361		37,776		37,886

In-service Vehicle	e Requirement Guide							
	Hours	2,500	Annual Revenue hours per bus					
	Distance	47,000	Annual Revenue miles per bus					
			Recommendation/ Peak requirement					
Spare ratio		15	percent			0.1		
Fleet Requirement								
COSTING				Rate				
Total Operating O	Cost per Hour (labor, i	fuel, maintei	nance, repairs, fixed, insurance, marketing, training)	\$105	\$	247,905		
Revenue (based on average cash fare) \$1.50								
Cost Recovery (Revenue as a % of total Operating Cost)								



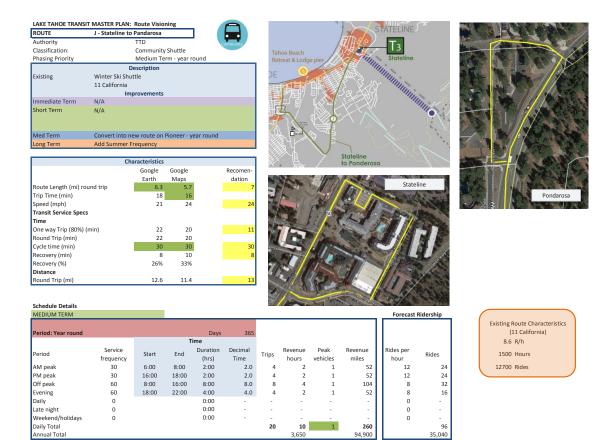
MEDIUM TERM - Add	ded frequency									Forecast	Ridership
Period: Summer (Jul	y 1 to Sept 5)			Days	67						
			Т	ime							
Period	Service	Start	End	Duration	Decimal	Trips	Revenue	Peak	Revenue	Rides per	Rides
Periou	frequency	Start	Ellu	(hrs)	Time	mps	hours	vehicles	miles	hour	Rides
AM peak	20	6:00	9:00	3:00	3.0	9	2	0.8	36	20	45
PM peak	20	16:00	19:00	3:00	3.0	9	2.25	0.8	36	20	45
Off peak	20	9:00	16:00	7:00	7.0	21	5.25	0.8	84	18	95
Evening	30	19:00	22:00	3:00	3.0	6	1.5	0.5	24	15	23
Daily	0			0:00	-	-	0	0	0	0	-
Late night	0			0:00	-	-	0	0	0	0	-
Weekend/holidays	0			0:00	-	-	0	0	0	0	-
Daily Total					-	45	11	1	180		207
Annual Total							754		12,060		13,869

Period: Winter (Nov 2	25 to March 31)			Days	126						
			٦	lime 🛛							
Period	Service frequency	Start	End	Duration (hrs)	Decimal Time	Trips	Revenue hours	Peak vehicles	Revenue miles	Rides per hour	Rides
AM peak	20	6:00	9:00	3:00	3.0	9	2	0.8	36	20	45
PM peak	20	16:00	19:00	3:00	3.0	9	2.25	0.8	36	20	45
Off peak	20	9:00	16:00	7:00	7.0	21	5.25	0.8	84	18	95
Evening	30	19:00	22:00	3:00	3.0	6	1.5	0.5	24	15	23
Daily	0			0:00	-	-	0	0	0	0	-
Late night	0			0:00	-	-	0	0	0	0	-
Weekend/holidays	0			0:00	-	-	0	0	0	0	-
Daily Total					-	45	11	1	180		207
Annual Total							1,418		22,680		26,082

Period: Shoulders				Days	172						
			٦	ime							
Period	Service frequency	Start	End	Duration (hrs)	Decimal Time	Trips	Revenue hours	Peak vehicles	Revenue miles	Rides per hour	Rides
AM peak	30	6:00	9:00	3:00	3.0	6	2	0.5	24	12	18
PM peak	30	16:00	19:00	3:00	3.0	6	2	0.5	24	12	18
Off peak	60	9:00	16:00	7:00	7.0	7	2	0.3	28	12	21
Evening	0			0:00	-	-	0	0	0	0	-
Daily	0			0:00	-	-	0	0	0	0	-
Late night	0			0:00	-	-	0	0	0	0	-
Weekend/holidays	0			0:00	-	-	0	0	0	0	-
Daily Total						19	) 5	1	76		57
Annual Total							817		13,072		9,804
ANNUAL TOTAL							2,988		47,812		49,755

In-service Vehicle	Requirement Guidel	ine calculati	on:					
	Hours	2,500	Annual Revenue hours per bus			1		
	Distance	47,000	Annual Revenue miles per bus			1		
			Recommendation/ Peak requirement			1		
Spare ratio		15	percent			0.15		
Fleet Requiremen	t					2.0		
COSTING				Rate				
Total Operating Co	ost per Hour (labor, f	uel, mainter	nance, repairs, fixed, insurance, marketing, training)	\$105	\$	313,766		
Revenue (based o	n average cash fare)			\$1.50	\$	74,633		
Cost Recovery (Revenue as a % of total Operating Cost)								





20

10 1

3.650

3,650

**260** 94,900

94,900

0.30 3.0

18%

\$105 \$ 383,250 \$2.00 \$ 70,080

96

35.040

35,040

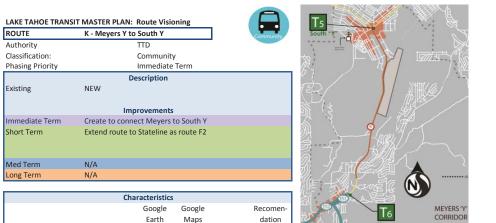
In-service Vehicle	Requirement Guideli	ine calculatio	on:
	Hours	2,500	Annual Revenue hours per bus
	Distance	47,000	Annual Revenue miles per bus
			Recommendation/ Peak requirement
Spare ratio		15	percent
Fleet Requirement	t		

COSTING Total Operating Cost per Hour (labor, fuel, maintenance, repairs, fixed, insurance, marketing, training) Revenue (based on average cash fare) Cost Recovery (Revenue as a % of total Operating Cost)

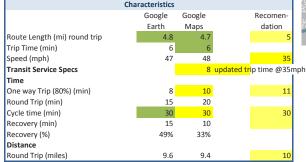
ANNUAL TOTAL

Period: Fall Winter Spr	ing										
				Days	273						
			т	ime							
Period	Service frequency	Start	End	Duration (hrs)	Decimal Time	Trips	Revenue hours	Peak vehicles	Revenue miles	Rides per hour	Rides
AM peak	30	6:00	8:00	2:00	2.0	4	2	1	52	12	1
PM peak	30	16:00	18:00	2:00	2.0	4	2	1	52	12	
Off peak	60	8:00	16:00	8:00	8.0	8	4	1	104	10	
Evening	60	18:00	22:00	4:00	4.0	4	2	1	52	10	
Daily	0			0:00		-	-	-		-	-
Late night	0			0:00	-	-	-	-		-	-
Weekend/holidays	0			0:00	-	-	-	-		-	-
Daily Total						20	10	1	260		10
Annual Total							2,730		70,980		29,48
Period: Summer (July 1	to Sept 5)			Days	92						
			т	ime .							
	Service	- · ·		Duration	Decimal		Revenue	Peak	Revenue	Rides per	
Period	frequency	Start	End	(hrs)	Time	Trips	hours	vehicles	miles	hour	Rides
AM peak	15	6:00	8:00	2:00	2.0	8	4	2	104	20	8
PM peak	15	16:00	18:00	2:00	2.0	8	4	2	104	20	8
Off peak	30	8:00	16:00	8:00	8.0	16	8	1	208	15	12
Evening	30	18:00	23:55	5:55	5.9	12	6	1	154	12	7
Daily	0			0:00		-	-	-		0	-
Late night	0			0:00	-	-	-	-		0	-
Weekend/holidays	0			0:00	-	-	-	-		0	-
Daily Total						44	22	2	570		35
Annual Total							2,016		52,425		32,29
ANNUAL TOTAL						_	4,746		123,405		61,77











#### Schedule Details

benedate betano											
IMMEDIATE TERM										Forecast F	lidership
Period: Year round				Days	365						
			I	ime							
Period	Service	Start	End	Duration	Decimal	Trips	Revenue	Peak	Revenue	Rides per	Rides
Period	frequency	Start	Enu	(hrs)	Time	inps	hours	vehicles	miles	hour	Rides
AM peak	30	6:00	8:30	2:30	2.5	5	3	1	50	12	31
PM peak	30	16:00	18:30	2:30	2.5	5	3	1	50	12	31
Off peak	60	8:30	16:00	7:30	7.5	8	4	1	75	10	76
Evening	60	18:30	20:00	1:30	1.5	2	1	1	15	10	16
Daily	0			0:00	-	-	-	-	-	0	-
Late night	0			0:00	-	-	-	-	-	0	-
Weekend/holidays	0			0:00	-	-	-	-	-	0	-
Daily Total						19	10	1	190		153
Annual Total							3,468		69,350		55,845
ANNUAL TOTAL							3,468		69,350		55,845

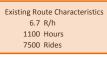
In-service Vehicle	e Requirement Guide	line calculati	on:		
	Hours	2,500	Annual Revenue hours per bus		1
	Distance	47,000	Annual Revenue miles per bus		1
			Recommendation/ Peak requirement		1
Spare ratio		15	percent		0.15
Fleet Requireme	nt				2.0
_					
COSTING				Rate	
Total Operating (	Cost per Hour (labor, 1	fuel, mainter	nance, repairs, fixed, insurance, marketing, training)	\$105	\$ 364,088
Revenue (based	on average cash fare)			\$2.00	\$ 111,690
Cost Recovery (R	evenue as a % of tota	Operating (	Cost)		31%



ROUTE	S2 -South Y to Sugar Pine Transit Center	
Authority	TTD	
Classification:	Summer Service	
Phasing Priority	Short Term	
	Description	
Existing	Emerald Bay Trolley	
	Improvements	
Immediate Term	N/A	
Short Term	Standardize service daily in summer	
Med Term	Add frequency / extend season	
Long Term	Expand season based on demand?	

Ch	aracteristics			
	Google	Google	Reco	omen-
	Earth	Maps	da	tion
Route Length (mi) round trip	18.5	18.2		5
Trip Time (min)	38	37		
Speed (mph)	30	30		30
Transit Service Specs				
Time				
One way Trip (80%) (min)	47	46		11
Round Trip (min)	94	93		
Cycle time (min)	120	120		120
Recovery (min)	26	28		
Recovery (%)	22%	23%		
Distance				
Round Trip (miles)	37	36.4		37









#### Schedule Details

SHORT TERM										Forecast Rid
Period: Summer @ e	existing LOS (June	25 to Sept 5	) - Daily		Days	73			See LOS Calc	
			т	ime						
Period	Service	Start	End	Duration	Decimal	Taina	Revenue	Peak	Revenue	Rides per
Periou	frequency	Start	Ellu	(hrs)	Time	Trips	hours	vehicles	miles	hour
AM peak	0			0:00	-	-	-	-	-	0
PM peak	0			0:00	-	-	-	-	-	0
Off peak	60	9:00	16:00	7:00	7.0	7	14	2	259	10
Evening	0			0:00	-	-	-	-	-	0
Daily	0			0:00	-	-	-	-	-	0
Late night	0			0:00	-	-	-	-	-	0
Weekend/holidays	0			0:00	-	-	-	-	-	0
Daily Total						7	14	2	259	
Annual Total							1,022		18,907	

ist F	Ridership				
		Existing LOS:	days		
		June 11 - 19: weekend service		4	
er	Rides	June 25 - Sept 5: daily			
	Rides			73	
0	-	Sept 6 - Oct 4: weekend service		10	
0	-	Total		87	
0	140				
0	-				
0	-				
0	-				

140 10,220

18%

Period: Summer Sho	ulder (June 11-24	and Sept 6 -	Oct 4) - w	eekends		Days	14		See LOS Calc		
			т	ime							
Period	Service	Start	End	Duration	Decimal	Tring	Revenue	Peak	Revenue	Rides per	Rides
renou	frequency	Start	LIIU	(hrs)	Time	Trips	hours	vehicles	miles	hour	Rides
AM peak	0			0:00	-	-	-	-	-	0	-
PM peak	0			0:00	-	-	-	-	-	0	-
Off peak	60	9:00	16:00	7:00	7.0	7	14	2	259	8	11
Evening	0			0:00	-	-	-	-	-	0	-
Daily	0			0:00	-	-	-	-	-	0	-
Late night	0			0:00	-	-	-	-	-	0	-
Weekend/holidays	0			0:00	-	-	-	-	-	0	-
Daily Total						7	14	2	259		11
Annual Total							196		3,626		1,56
ANNUAL TOTAL							1,218		22,533		11,78
ANNUAL TOTAL	uiromont Guidoli	no calculatio					1,218		22,533		11
in service venicie net	Hours			enue hours p	per hus				0.5		
	Distance			enue miles p					0.5		
	Distance			idation/ Peak		+			2		
Spare ratio			percent	iduction, i cui	requiremen				0.30		
Fleet Requirement		15	percent						3.0		
									5.0		

#### COSTING

\$105 \$ 127,890 \$2.00 \$ 23,576 Total Operating Cost per Hour (labor, fuel, maintenance, repairs, fixed, insurance, marketing, training) Revenue (based on average cash fare)

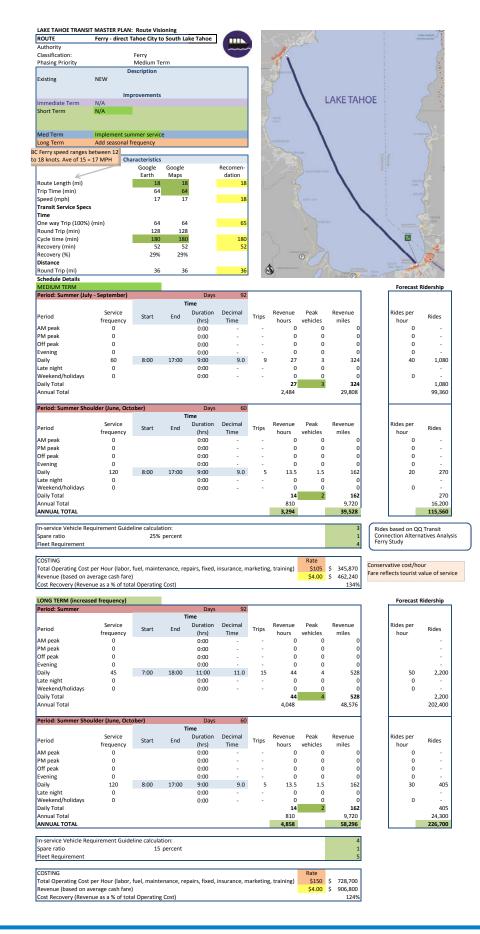
Cost Recovery (Revenue as a % of total Operating Cost)



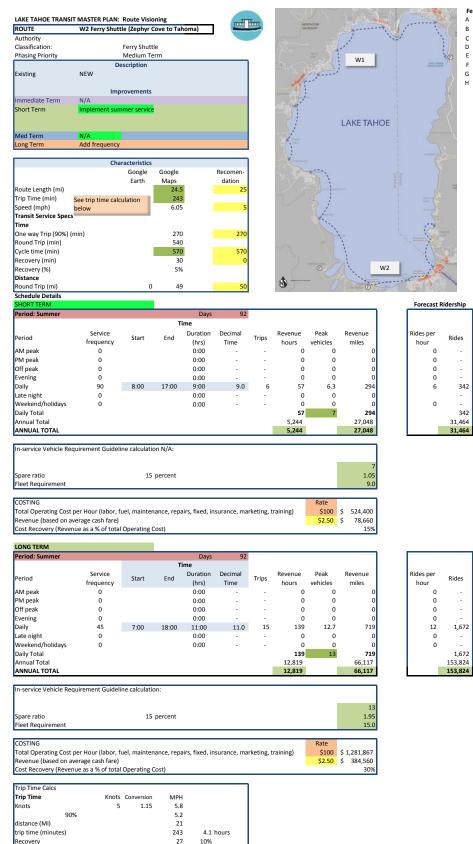
Annual Total     336     6,216     4,032       Period: Summer Joek (June 25 to Sept 25 model frequency frequency 0     Start     End     Duration     Decimal (hrs)     Trips     Revenue hours     Revenue vehicles     Revenue miles     Revenue miles     Revenue miles     Revenue miles     Revenue miles     Revenue hours     Revenue vehicles     Revenue miles     Revenue miles<	MEDIUM TERM - Add	frequency									Forecast F	Ridership		
Sector			Sept6 - Oct4)				18	Days						
control         find		Service		т		Docimal		Boyonuo	Dook	Povonuo	Ridor por			6 days
Add price       0       0.00       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1 <t< td=""><td>Period</td><td></td><td>Start</td><td>End</td><td></td><td></td><td>Trips</td><td></td><td></td><td></td><td></td><td>Rides</td><td>- <u>A</u> wks</td><td>12 days</td></t<>	Period		Start	End			Trips					Rides	- <u>A</u> wks	12 days
oppose       top       each       top       each       top       each       top       each       top       each       top       each       each <th< td=""><td>AM peak</td><td></td><td></td><td></td><td></td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td></td><td>-</td><td></td><td>18</td></th<>	AM peak					-	-	-	-	-		-		18
noning       0       0.00       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1	PM peak	0			0:00	-	-	-	-	-	0	-		
can we			9:00	16:00		7.0	7	14	2	259				
sint agent and the detail of all o						-	-	-	-	-				
Non-stand for the set of the set								-		-				
Data Total														
Advance with Junce 200 Ju		0			0.00		7	14	2	259	0			
Normal frequency in the control in the cont														
Notice (1)         Sati (1)         Io	Devied: Cummer need	/lune25 to Sout	T) deilu		Davis	70							-	
Rend       Frequency       Saft       Find       Prod       None	renou. Summer pear	(Junezs to Sept	5) - uany	т		75								
Image: constrained intermediation of the constrained intermediatintentermediation of the constrained intermediation of	Period	Service	Start	End	Duration		Trins	Revenue			Rides per	Rides	June 25 - Sept 5: daily	73
Min park       0       0       000       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0			Start	2.114		Time	mps	hours	vehicles	miles				
off peak       an       0.00       0.00       12.00       12.075         Daily       0.000       -       -       -       -       -       -       -       -       -       -       -       0.00       -       -       -       -       -       -       0.00       -       0.00       -       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td></td> <td></td> <td></td> <td></td>						-	-	-	-	-				
being         0         000         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1 </td <td></td> <td></td> <td>8.00</td> <td>20.00</td> <td></td> <td></td> <td>-</td> <td></td> <td>-</td> <td>-</td> <td></td> <td></td> <td></td> <td></td>			8.00	20.00			-		-	-				
bally       0       000       -       -       -       -       -       -       0       -       0       -       0       -       0       -       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0 </td <td></td> <td></td> <td>8.00</td> <td>20.00</td> <td></td> <td>12.0</td> <td>- 24</td> <td>40</td> <td>4</td> <td>000</td> <td></td> <td></td> <td></td> <td></td>			8.00	20.00		12.0	- 24	40	4	000				
Lake night 0       0.00       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -	-					-	_	_				_		
Weekendpointings       0       0.00       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -						-	-	-		-		-		
Daily Total       24       48       48       6,123       5,10       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       5,20       2,20       2,20       2,20						-	-	-	-	-		-		
ANNUAL TOTAL         1756         66368         44568           Inservice VMIde Requirement Guidelline culculation:							24	48	4	888		576		
Intrarvice Vehicle Requirement Guideline calculation:         Hums       2,000       Annual Revenue hours per bus Recommendation / Peak requirement       2         Spare ratio       13 percent       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000<											_			
1 but or 2,000 Annual Revence hours pro tos Decemmendation Peak requirement         c         c           Spare ratio         15 percent         0.000         5         94.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000	ANNUAL TOTAL							3,756		69,486		44,568	l	
1 but or 2,000 Annual Revence hours pro tos Decemmendation Peak requirement         c         c           Spare ratio         15 percent         0.000         5         94.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000         9.000	In-service Vehicle Rec	quirement Guidel	ine calculatio	n:						I				
Recommendation/Pack requirement         04 050           Sperical 3 2 pricent         05           COSTING Teach Requirement         10 pricent		Hours	2,500	Annual Rev	enue hours p	per bus				2				
Spare atto       1.5 percent       0.66         CSTNIA       Service		Distance	47,000	Annual Rev	venue miles p	oer bus				1				
Piete Requirement       500         COSTING Total Operating Cost per Hour (labor, fuel, maintenance, regains, fixed, insurance, marketing, training, insurance, marketing, traini, insurance, marketing, traini, insurance,				Recommer	ndation/ Peak	k requiremen	ıt							
Total Operating Cost per Hour (labor, fuel, maintenance, regains, fixed, insurance, marketing, training)         Name         So 393,380           Cost Recovery (Revenue as a % of total Operating Cost)         So 393,380           Cost Recovery (Revenue as a % of total Operating Cost)         So and a second second         So and a second secon			15	percent										
Total Operating Cost per Hour (bloor, fuel, mintrance, repairs, fixed, insurance, marketing, training)       \$105       \$ 3       \$ 39,36       \$ 39,36         Cost Recovery (Revenue as a % of total Operating Cost)        230       \$ 39,36       230       \$ 39,36       230       \$ 39,36       230       \$ 39,36       230       \$ 39,36       230       \$ 39,36       230       \$ 39,36       230       \$ 39,36       230       \$ 39,36       230       \$ 39,36       230       \$ 39,36       230       \$ 39,36       230       \$ 39,36       230       \$ 39,36       230       \$ 39,36       230       \$ 39,36       230       \$ 39,36       230       \$ 39,36       230       \$ 39,36       230       \$ 39,36       230       \$ 39,36       230       \$ 39,36       230       \$ 39,36       230       \$ 39,36       \$ 30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30	Fleet Requirement									5.0				
Total Operating Cost per Hour (bloor, fuel, mintrance, repairs, fixed, insurance, marketing, training)       \$105       \$ 3       \$ 39,36       \$ 39,36         Cost Recovery (Revenue as a % of total Operating Cost)        230       \$ 39,36       230       \$ 39,36       230       \$ 39,36       230       \$ 39,36       230       \$ 39,36       230       \$ 39,36       230       \$ 39,36       230       \$ 39,36       230       \$ 39,36       230       \$ 39,36       230       \$ 39,36       230       \$ 39,36       230       \$ 39,36       230       \$ 39,36       230       \$ 39,36       230       \$ 39,36       230       \$ 39,36       230       \$ 39,36       230       \$ 39,36       230       \$ 39,36       230       \$ 39,36       230       \$ 39,36       230       \$ 39,36       230       \$ 39,36       \$ 30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30       \$ 30,30	COSTING								Data					
Revenue Quard on average cash fare) Cost Recovery (Revenue as a 36 of total Operating Cost) Total Econ Period Service Period Service Period Service Service Cost Recovery (Revenue as a 36 of total Operating Cost) Service Period Service Period Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service		per Hour (labor f	uel mainten	ance renai	rs fixed insu	irance mark	oting tra	uining)		\$ 304 380				
Cost Recovery (Revenue às a void total Operating Cost)         Data         Service         Tore         Forest Heriod/Add frequency         Forest Heriod/Add frequency         Normality         Normality<			uei, mainten	ance, repai	13, 11xeu, 1113u	arance, mark	eting, tre	iiiiiig/						
OUNC TERM - steend Period/Add frequency         Period: Extended Summer shoulder (Jun 1 to 24 + Oct 4 to 31): weekend sorvice         Period: Extended Summer shoulder (Jun 1 to 24 + Oct 4 to 31): weekend sorvice         Period: Summer shoulder (Jun 1 to 24 + Oct 4 to 31): weekend sorvice         Period: Summer shoulder (Jun 1 to 24 + Oct 4 to 31): weekend sorvice         Period: Summer shoulder (Jun 1 to 24 + Oct 4 to 31): weekend sorvice (F-S-S)         U2 days           AM peak         0         0.000         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         12         30         0         -         0         -         12         13         4 w/s         32         24         0         -         12         12         13         0         -         12         12         13         0         -         12         12         13         0         -         12         12         13         0         -         0         -         12         12         13         0         12         12         12         12			Operating C	ost)					<i><b>Q</b>2.00</i>					
Period         Sart         End         Days         Tips         Revenue hour         Period         Revenue hour         Rides networks         Rides 0         Cr -         Cr														
Vertice         Vertice         Vertice         Vertice         Vertice         Vertice         Nervelue         Nervelue         Nume 1-24: 4 w/s         12 days           Period         Frequency         Start         Period         Period         Reverue         Period         Nume 1-24: 4 w/s         12 days           M peak         0         -         -         -         -         -         True         Nume 1-24: 4 w/s         12 days           M peak         0         -         -         -         -         -         -         True         True         True         Nume 1-24: 4 w/s         12 days           M peak         0         -         0         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         - <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>														
Period         Ferriod         Ferriod         Start         End         (hor, model)         Note         Note<			-	Oct 4 to 31	) - weekend	service		24	Davs		Forecast F	Ridership	Weekend Service (E-S-S)	
An peak         0         0.00         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -			-		-	service		24	Days		Forecast F	Ridership		12 days
PM peak       0       9:00       16:00       7:00       7       14       2       259       12       16:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00       7:00	Period: Extended Sun	nmer shoulder (J Service	un 1 to 24 + (	т	<b>ime</b> Duration	Decimal	Trips	Revenue	Peak		Rides per		June 1-24: 4 wks	
Off peak       60       9:00       16:00       7:00       7:0       14       2       2:59       12       16:6         Deily       0       0:00       -       -       -       -       0       -         Late right       0       0:00       -       -       -       -       0       -         Deily       0       0:00       -       -       -       -       0       -         Deily Total       0:00       -       -       -       -       -       0       -         Annual Total       -       -       -       -       -       -       -       0       -         Period:       Service       Frequents       Time       Times       Revenue       Peak       Revenue       Revenue       Revenue       Revenue       Revenue       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -	<b>Period: Extended Sun</b> Period	nmer shoulder (J Service frequency	un 1 to 24 + (	т	ime Duration (hrs)	Decimal	Trips	Revenue	Peak		Rides per hour	Rides	June 1-24: 4 wks Oct 4-31: 4 wks	12 days
Evening       0       0:00       -       -       -       -       -       -       -       -       -       -       -       -       0       -       -       0       -       0       -       0       -       0       -       0       -       0       -       0       -       0       -       0       -       0       -       0       -       0       -       0       -       0       -       0       -       0       -       0       -       0       -       0       -       0       -       0       -       0       -       0       -       0       -       0       -       0       -       0       -       0       -       0       -       0       -       0       -       0       -       0       -       0       -       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0	Period: Extended Sur Period AM peak	nmer shoulder (J Service frequency 0	un 1 to 24 + (	т	ime Duration (hrs) 0:00	Decimal	Trips -	Revenue	Peak		Rides per hour 0	Rides -	June 1-24: 4 wks Oct 4-31: 4 wks	12 days
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Daily Total     7     14     2     259     168       Annual Total     336     6,216     4,032       Period: Summer peak (June25 to Sept )     Time     Time     7     14     2     259     168       Am peak     0     7,00     9:00     2:00     2:0     -     -     -       AM peak     0     7:00     9:00     2:00     2:0     -     -     -       Period     16:00     18:00     2:00     2:0     -     -     -     -       Off peak     30     7:00     2:00     15:00     30     60     4     1,110     0     -       Daily     0     0:00     -     -     -     -     -     0     -       Daily     0     0:00     -     -     -     -     -     0     0     -       Annual Total     -     -     -     -     -     -     -     0     0     -       Annual Total     -     -     -     -     -     -     -     0     0     -       Annual Total     -     -     -     -     -     -     -     0     0       Annual T	Period: Extended Sun Period AM peak PM peak Off peak Evening	nmer shoulder (Ji Service frequency 0 0 60 0	un 1 to 24 + 0 Start	T End	ime Duration (hrs) 0:00 0:00 7:00 0:00	Decimal Time -	-	Revenue hours - -	Peak vehicles -	miles - -	Rides per hour 0 0 12 0	Rides -	June 1-24: 4 wks Oct 4-31: 4 wks	12 days
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Period         Time           Time           Time           Period         Service         Service         Rides per hour           AM peak         0         Rides per hour           AM peak         0         Revenue         Peak         Revenue         Rides per hour           Col 1         15:00         15:00         15:0         30         60         4         1,110         0         -         0         -         0         -         0         -         0         -         0         -         0         -         0         -         0         -         0	Period: Extended Sur Period AM peak PM peak Off peak Evening Daily Late night	nmer shoulder (J Service frequency 0 60 60 0 0 0 0	un 1 to 24 + 0 Start	T End	ime Duration (hrs) 0:00 0:00 7:00 0:00 0:00 0:00 0:00	Decimal Time -	-	Revenue hours - - 14 -	Peak vehicles -	miles - -	Rides per hour 0 0 12 0 0 0 0	Rides - - 168 - - -	June 1-24: 4 wks Oct 4-31: 4 wks	12 days
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Off peak       30       7:00       22:00       15:00       15.0       30       60       4       1,110       15       900         Evening       0       0:00       -       -       -       -       0       0       -         Daily       0       0:00       -       -       -       -       0       -         Late night       0       0:00       -       -       -       -       0       -         Daily       0:00       -       -       -       -       -       0       -         Late night       0       0:00       -       -       -       -       0       -         Daily Total       0:00       -       -       -       -       0       -         Annual Total       4,380       81,030       65,700       69,732       69,732       69,732         In-service Vehicle Requirement Guideline calculation:       2,500       Annual Revenue hours per bus       2,200       2,500       69,732         Spare ratio       15       percent       2,200       60,60       5.00       5         Fleet Requirement       15       percommedation/ Peak requirement       5,100 <td>Period: Extended Sur Period AM peak PM peak Off peak Evening Daily Late night Weekend/holidays Daily Total Annual Total Period: Summer peak</td> <td>nmer shoulder (J) Service frequency 0 0 60 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0</td> <td>un 1 to 24 + ( Start 9:00 5) Start</td> <td>T End 16:00 T End</td> <td>ime Duration (hrs) 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0:00 0</td> <td>Decimal Time - 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Hours Distance2,500 Annual Revenue hours per bus2Distance47,000 Annual Revenue miles per bus Recommendation/ Peak requirement3Spare ratio15Fleet Requirement0.60Spare ratioCOSTINGCOSTINGRevenue (based on average cash fare)Revenue (based on average cash fare)Spare ratio, fuel, maintenance, repairs, fixed, insurance, marketing, training)Spare ratio\$ 19,200Revenue (based on average cash fare)Spare ratioSpare ratio\$ 100Spare ratio\$ 100Revenue (based on average cash fare)Spare ratioSpare ratio\$ 100Spare ratio\$ 100Revenue (based on average cash fare)Spare ratioSpare ratio\$ 100Spare rat	Period: Extended Sur Period AM peak PM peak Off peak Evening Daily Late night Weekend/holidays Daily Total Period Amnual Total Period AM peak PM peak Off peak Evening Daily Late night Weekend/holidays Daily Total Annual Total	nmer shoulder () Service frequency 0 0 60 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	un 1 to 24 + 6 Start 9:00 5) Start 7:00 16:00	T End 16:00 T End 9:00 18:00	ime Uuration (hrs) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	Decimal Time - - - - - - - - - - - - - - - - - - -	- - - - 7 7 7 7	Revenue hours - - 14 - - - 14 336 - - - - - - - - - - - - - - - - - -	Peak vehicles - - - - - - - 2 Peak vehicles - - 4 - - 4 - -	miles - - 259 - - - 259 6,216 Revenue miles - - 1,110 - - - 1,110 81,030	Rides per hour 0 12 0 0 0 0 0 0 0 Rides per hour 0 15 0 0 0 0	Rides - - - - - - - - - - - - - - - - - - -	June 1-24: 4 wks Oct 4-31: 4 wks	12 days
Hours Distance2,500 Annual Revenue hours per bus2Distance47,000 Annual Revenue miles per bus Recommendation/ Peak requirement3Spare ratio15Fleet Requirement0.60Spare ratioCOSTINGCOSTINGRevenue (based on average cash fare)Revenue (based on average cash fare)Spare ratio, fuel, maintenance, repairs, fixed, insurance, marketing, training)Spare ratio\$ 19,200Revenue (based on average cash fare)Spare ratioSpare ratio\$ 100Spare ratio\$ 100Revenue (based on average cash fare)Spare ratioSpare ratio\$ 100Spare ratio\$ 100Revenue (based on average cash fare)Spare ratioSpare ratio\$ 100Spare rat	Period: Extended Sur Period AM peak PM peak Off peak Evening Daily Late night Weekend/holidays Daily Total Period Amnual Total Period AM peak PM peak Off peak Evening Daily Late night Weekend/holidays Daily Total Annual Total	nmer shoulder () Service frequency 0 0 60 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	un 1 to 24 + 6 Start 9:00 5) Start 7:00 16:00	T End 16:00 T End 9:00 18:00	ime Uuration (hrs) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	Decimal Time - - - - - - - - - - - - - - - - - - -	- - - - 7 7 7 7	Revenue hours - - 14 - - - 14 336 - - - - - - - - - - - - - - - - - -	Peak vehicles - - - - - - - 2 Peak vehicles - - 4 - - 4 - -	miles - - 259 - - - 259 6,216 Revenue miles - - 1,110 - - - 1,110 81,030	Rides per hour 0 12 0 0 0 0 0 0 0 Rides per hour 0 15 0 0 0 0	Rides - - - - - - - - - - - - - - - - - - -	June 1-24: 4 wks Oct 4-31: 4 wks	12 days
Distance     47,000 Recommendation/ Peak requirement     2       Spare ratio     15 percent     0.60       Fleet Requirement     50	Period: Extended Sur Period AM peak PM peak Compare Support Daily Late night Weekend/holidays Daily Total Annual Total Period AM peak PM peak Coff peak Evening Daily Late night Weekend/holidays Daily Total Annual Total	nmer shoulder () Service frequency 0 0 60 0 0 0 0 0 0 0 0 0 0 0 0 30 0 0 0	un 1 to 24 + 6 Start 9:00 5) Start 7:00 16:00 7:00	T End 16:00 T End 9:00 18:00 22:00	ime Uuration (hrs) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	Decimal Time - - - - - - - - - - - - - - - - - - -	- - - - 7 7 7 7	Revenue hours - - 14 - - - 14 336 - - - - - - - - - - - - - - - - - -	Peak vehicles - - - - - - - 2 Peak vehicles - - 4 - - 4 - -	miles - - 259 - - - 259 6,216 Revenue miles - - 1,110 - - - 1,110 81,030	Rides per hour 0 12 0 0 0 0 0 0 0 Rides per hour 0 15 0 0 0 0	Rides - - - - - - - - - - - - - - - - - - -	June 1-24: 4 wks Oct 4-31: 4 wks	12 days
Spare ratio     15 percent     0.60       Fleet Requirement     5.0	Period: Extended Sur Period AM peak PM peak Compare Support Daily Late night Weekend/holidays Daily Total Annual Total Period AM peak PM peak Coff peak Evening Daily Late night Weekend/holidays Daily Total Annual Total	nmer shoulder (J) Service frequency 0 0 60 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	un 1 to 24 + 6 Start 9:00 5) Start 7:00 16:00 7:00	T End 16:00 T End 9:00 18:00 22:00	ime	Decimal Time - - - - - - - - - - - - - - - - - - -	- - - - 7 7 7 7	Revenue hours - - 14 - - - 14 336 - - - - - - - - - - - - - - - - - -	Peak vehicles - - - - - - - 2 Peak vehicles - - 4 - - 4 - -	miles - - - - - - - 259 6,216 - - - - 1,110 - - - - 1,110 81,030 87,246	Rides per hour 0 12 0 0 0 0 0 0 0 Rides per hour 0 15 0 0 0 0	Rides - - - - - - - - - - - - - - - - - - -	June 1-24: 4 wks Oct 4-31: 4 wks	12 days
Fleet Requirement     5.0       COSTING     Rate       Total Operating Cost per Hour (labor, fuel, maintenance, repairs, fixed, insurance, marketing, training)     \$105       Revenue (based on average cash fare)     \$139,464	Period: Extended Sur Period AM peak PM peak Compare Support Daily Late night Weekend/holidays Daily Total Annual Total Period AM peak PM peak Coff peak Evening Daily Late night Weekend/holidays Daily Total Annual Total	nmer shoulder (J Service frequency 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	un 1 to 24 + 0 Start 9:00 5) 51 51 51 52 51 51 51 51 51 7:00 16:00 7:00 7:00	T End 16:00 T End 9:00 18:00 22:00	ime Uuration (hrs) 0:00 7:00 0:00 0:00 0:00 0:00 0:00 0:0	Decimal Time - - - - - - - - - - - - - - - - - - -	- - - - 7 7 7 7	Revenue hours - - 14 - - - 14 336 - - - - - - - - - - - - - - - - - -	Peak vehicles - - - - - - - 2 Peak vehicles - - 4 - - 4 - -	miles - - 259 - - - 259 6,216 - - 1,110 - - 1,110 81,030 87,246	Rides per hour 0 12 0 0 0 0 0 0 0 Rides per hour 0 15 0 0 0 0	Rides - - - - - - - - - - - - - - - - - - -	June 1-24: 4 wks Oct 4-31: 4 wks	12 days
COSTING       Rate         Total Operating Cost per Hour (labor, fuel, maintenance, repairs, fixed, insurance, marketing, training)       \$105       \$ 495,180         Revenue (based on average cash fare)       \$ 2.00       \$ 139,464	Period: Extended Sur Period AM peak PM peak Compare Support Daily Late night Weekend/holidays Daily Total Annual Total Period AM peak PM peak Coff peak Evening Daily Late night Weekend/holidays Daily Total Annual Total	nmer shoulder (J Service frequency 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	un 1 to 24 + 0 Start 9:00 5) 5 5 5 5 5 7:00 16:00 7:00 16:00 7:00 47,000	T End 16:00 T End 9:00 18:00 22:00	ime  Duration (hrs) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	Decimal Time - - - - - - - - - - - - - - - - - - -	- - - - - 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	Revenue hours - - 14 - - - 14 336 - - - - - - - - - - - - - - - - - -	Peak vehicles - - - - - - - 2 Peak vehicles - - 4 - - 4 - -	miles - - 259 - - - 259 6,216 - - - - 1,110 - - - - 1,110 81,030 87,246	Rides per hour 0 12 0 0 0 0 0 0 0 Rides per hour 0 15 0 0 0 0	Rides - - - - - - - - - - - - - - - - - - -	June 1-24: 4 wks Oct 4-31: 4 wks	12 days
Total Operating Cost per Hour (labor, fuel, maintenance, repairs, fixed, insurance, marketing, training)       \$105       \$ 495,180         Revenue (based on average cash fare)       \$ 2,000       \$ 139,464	Period: Extended Sur Period AM peak PM peak Off peak Evening Daily Late night Weekend/holidays Daily Total Annual Total Period AM peak PM peak Off peak Evening Daily Late night Weekend/holidays Daily Late night Weekend/holidays Daily Total Annual Total ANNUAL TOTAL In-service Vehicle Reco	nmer shoulder (J Service frequency 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	un 1 to 24 + 0 Start 9:00 5) Start 7:00 16:00 7:00 16:00 7:00	T End 16:00 T End 9:00 18:00 22:00 22:00	ime  Duration (hrs) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	Decimal Time - - - - - - - - - - - - - - - - - - -	- - - - - 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	Revenue hours - - 14 - - - 14 336 - - - - - - - - - - - - - - - - - -	Peak vehicles - - - - - - - 2 Peak vehicles - - 4 - - 4 - -	miles - - 259 - - - 259 6,216 - - - 1,259 6,216 - - - 1,110 81,030 81,030 87,246 2 2 2 4 0.60	Rides per hour 0 12 0 0 0 0 0 0 0 Rides per hour 0 15 0 0 0 0	Rides - - - - - - - - - - - - - - - - - - -	June 1-24: 4 wks Oct 4-31: 4 wks	12 days
Total Operating Cost per Hour (labor, fuel, maintenance, repairs, fixed, insurance, marketing, training) Revenue (based on average cash fare) \$2.00 \$ 139,464	Period: Extended Sur Period AM peak PM peak Off peak Evening Daily Late night Weekend/holidays Daily Total Annual Total Period AM peak PM peak Off peak Evening Daily Late night Weekend/holidays Daily Total Annual Total	nmer shoulder (J Service frequency 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	un 1 to 24 + 0 Start 9:00 5) Start 7:00 16:00 7:00 16:00 7:00	T End 16:00 T End 9:00 18:00 22:00 22:00	ime  Duration (hrs) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	Decimal Time - - - - - - - - - - - - - - - - - - -	- - - - - 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	Revenue hours - - 14 - - - 14 336 - - - - - - - - - - - - - - - - - -	Peak vehicles - - - - - - - 2 Peak vehicles - - 4 - - 4 - -	miles - - 259 - - - 259 6,216 - - - 1,259 6,216 - - - 1,110 81,030 81,030 87,246 2 2 2 4 0.60	Rides per hour 0 12 0 0 0 0 0 0 0 Rides per hour 0 15 0 0 0 0	Rides - - - - - - - - - - - - - - - - - - -	June 1-24: 4 wks Oct 4-31: 4 wks	12 days
Revenue (based on average cash fare) \$2.00 \$ 139,464	Period: Extended Sur Period AM peak PM peak Off peak Evening Daily Late night Weekend/holidays Daily Total Period: Summer peak Period AM peak PM peak Off peak Evening Daily Late night Weekend/holidays Daily Late night Weekend/holidays Daily Late night Neekend/holidays Daily Late night In-service Vehicle Reco Spare ratio Fleet Requirement	nmer shoulder (J Service frequency 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	un 1 to 24 + 0 Start 9:00 5) Start 7:00 16:00 7:00 16:00 7:00	T End 16:00 T End 9:00 18:00 22:00 22:00	ime  Duration (hrs) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	Decimal Time - - - - - - - - - - - - - - - - - - -	- - - - - 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	Revenue hours - - 14 - - - 14 336 - - - - - - - - - - - - - - - - - -	Peak vehicles - 2 - - 2 Peak vehicles - 4 - 4 - 4	miles - - 259 - - - 259 6,216 - - - 1,259 6,216 - - - 1,110 81,030 81,030 87,246 2 2 2 4 0.60	Rides per hour 0 12 0 0 0 0 0 0 0 Rides per hour 0 15 0 0 0 0	Rides - - - - - - - - - - - - - - - - - - -	June 1-24: 4 wks Oct 4-31: 4 wks	12 days
	Period: Extended Sur Period AM peak PM peak Off peak Evening Daily Late night Weekend/holidays Daily Total Annual Total Period AM peak PM peak Off peak Evening Daily Late night Weekend/holidays Daily Late night Weekend/holidays Daily Late night In-service Vehicle Reco Spare ratio Fleet Requirement COSTING	nmer shoulder () Service frequency 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	un 1 to 24 + 0 Start 9:00 5) Start 7:00 16:00 7:00 16:00 7:00 16:00 7:00	T End 16:00 T End 9:00 18:00 22:00 22:00	ime  Duration (hrs) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	Decimal Time - - - - - - - - - - - - - - - - - - -	- - 7 - - 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	Revenue hours - - 14 - - 14 336 - - - 60 - - - - 60 4,380 4,716	Peak vehicles - - 2 - 2 Peak vehicles - - 4 - - 4 - 4 - - 4 - - 4 - - 2	miles - - 259 - - - 229 6,216 - - - 1,110 - - - 1,110 - - - 1,110 81,030 87,246 - - 2 4 0.60 5.0	Rides per hour 0 12 0 0 0 0 0 0 0 Rides per hour 0 15 0 0 0 0	Rides - - - - - - - - - - - - - - - - - - -	June 1-24: 4 wks Oct 4-31: 4 wks	12 days
	Period: Extended Sur Period AM peak PM peak Company Period AM peak Evening Daily Late night Weekend/holidays Daily Total Annual Total Period AM peak PM peak Coff peak Evening Daily Late night Weekend/holidays Daily Late night Weekend/holidays Daily Late night Weekend/holidays Daily Total Annual Total Annual Total Annual Total Annual Total Costing Total Operating Cost	Amer shoulder (J) Service frequency 0 0 60 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	un 1 to 24 + 0 Start 9:00 5) Start 7:00 16:00 7:00 16:00 7:00 16:00 7:00	T End 16:00 T End 9:00 18:00 22:00 22:00	ime  Duration (hrs) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	Decimal Time - - - - - - - - - - - - - - - - - - -	- - 7 - - 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	Revenue hours - - 14 - - 14 336 - - - 60 - - - - 60 4,380 4,716	Peak vehicles - - 2 - - - 2 Peak vehicles - - 4 - - 4 - - 4 - - 4 - - 4 - - - 4 - - - - 2 - - - -	miles - - - - - - - - - - - - - - - - - - -	Rides per hour 0 12 0 0 0 0 0 0 0 Rides per hour 0 15 0 0 0 0	Rides - - - - - - - - - - - - - - - - - - -	June 1-24: 4 wks Oct 4-31: 4 wks	12 days
	Period: Extended Sur Period AM peak PM peak Off peak Evening Daily Late night Weekend/holidays Daily Total Annual Total Period AM peak PM peak Off peak Evening Daily Late night Weekend/holidays Daily Late night Weekend/holidays Daily Total Annual Total Annual Total Annual Total Annual Total Annual Total Annual Total Annual Total Annual Total Costing Total Operating Cost Revenue (based on an	Ammer shoulder (J) Service frequency 0 0 60 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	un 1 to 24 + 6 Start 9:00 5) 5) 5) 5) 5) 5) 5) 5) 5) 5) 5) 5) 5)	T End 16:00 T End 9:00 18:00 22:00 22:00	ime  Duration (hrs) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	Decimal Time - - - - - - - - - - - - - - - - - - -	- - 7 - - 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	Revenue hours - - 14 - - 14 336 - - - 60 - - - - 60 4,380 4,716	Peak vehicles - - 2 - - - 2 Peak vehicles - - 4 - - 4 - - 4 - - 4 - - 4 - - - 4 - - - - 2 - - - -	miles - - - - - - - - - - - - - - - - - - -	Rides per hour 0 12 0 0 0 0 0 0 0 Rides per hour 0 15 0 0 0 0	Rides - - - - - - - - - - - - - - - - - - -	June 1-24: 4 wks Oct 4-31: 4 wks	12 days











#### Ferry Stops 0 Zephyr Cove

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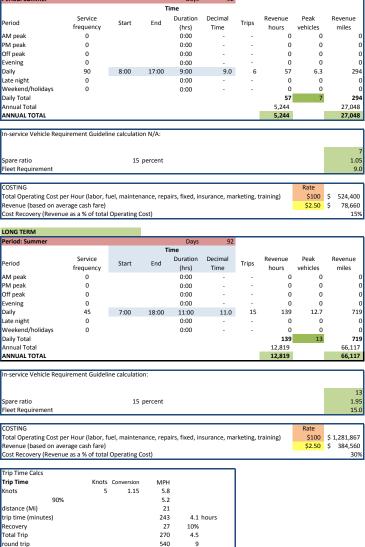
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- 1.9 Round Hill Resort 4.4 Stateline
- 5.5 Tahoe Beach Resort 6.75 South Lake Tahoe
- 9.6 Camp Richardson
- 16.8 Meeks G
  - 21 Tahoma



rship	Me	edium	Term
ides			
-			
-			
-			
-			
342	1	2	68
-			-
-			-
342			68
31,464			62,92
31,464			62,92

524,400

Rides per hour	Rides
0	-
0	-
0	-
0	-
12	1,672
0	
0	
	1,672
	153,824
	152 924



, Total Trip

ROUTE	R1 - Stateline to Carson City and Reno	• •	1	and the second second		Stateline
Authority	TTD	Regional			E Sold Manager	
Classification:	Regional			A CONTRACTOR		
Phasing Priority	Short Term				50 50	50 000 000 000 0000
	Description			Figay-Ave	Angay Avo	Aldan August 1 - Contract 1 - C
Existing	Route 21X Private service Stateline to Carson	n City				
	Improvements			lesi /	lest	
Immediate Term	N/A					
Short Term	Service to Carson city - add trips to existing	service (currently		11- 1115		
	6 round trips)			1. 18 C 1/23		
Med Term	Extend to Reno			13 -	S S S S S S S S S S S S S S S S S S S	A Street and the second s
Long Term	Increase Frequency			All Anna and a	and the second second second	and the second sec

Characteristics: To Carson City (Washington Plaza)											
	Google	Google		Recomen-							
	Earth	Maps		dation							
Route Length (mi) round trip	24.4	25.3		25							
Trip Time (min)	35	36									
Speed (mph)	42	41		40							
Transit Service Specs											
Time											
One way Trip (80%) (min)	43	45		45							
Round Trip (min)	87	90									
Cycle time (min)	120	120		120							
Recovery (min)	33	30									
Recovery (%)	28%	25%									
Distance											
Round Trip (miles)	48.8	50.6		55							

1			
		To Reno	
	Google Earth	Google Maps	Recomen- dation
	54.5	53.8	55
	75	74	
	44	44	44
	94	93	95
	187	185	
	240	210	210
	53	25	
	22%	12%	
	109	107.6	110



550 ·····	S	
Lincoln Hy		ହି016 Google ଫୁ

SHORT TERM (To Carson City)									Forecas	
Period: Year round (5	round trips per	day)	Days 365							
			1	Time						
Period	Service frequency	Start	End	Duration (hrs)	Decimal Time	Trips	Revenue hours	Peak vehicles	Revenue miles	Rides per hour
AM peak	0			0:00	-	-	-	-	-	0
PM peak	0			0:00	-	-	-	-	-	0
Off peak	60	10:00	16:00	6:00	6.0	6	12	2	330	6
Evening	0			0:00	-	-	-	-	-	0
Daily	0			0:00	-	-	-	-	-	0
Late night	0			0:00	-	-	-	-	-	0
Weekend/holidays	0			0:00	-	-	-	-	-	0
Daily Total						6	12	2	330	
Annual Total							4,380		120,450	
ANNUAL TOTAL							4,380		120,450	
ANNUAL TOTAL										
In-service Vehicle Rec	uirement Guidel	ine calculati	on:							
1	Hours	2,500	Annual Re	evenue hours	per bus				2	
	Distance	47,000	Annual Re	evenue miles	per bus				3	
			Decommo	ndation / Dog	k roguiropog				2	(

Distanc	47,000	O Annual Revenue miles per bus			3
		Recommendation/ Peak requirement			3
Spare ratio	1	5 percent			0.45
Fleet Requirement					4.0
COSTING			Rate		
Total Operating Cost per Hour (labor, fuel, maintenance, repairs, fixed, insurance, marketing, training) \$					
Revenue (based on average cas	fare)		\$4.00	\$	105,120
Cost Recovery (Revenue as a %	f total Operating	(Cost)			23%

Existing Rout	e Characteristics
6	R/h
4,400	hours
25,400	rides

Forecast Ridership

Rides

72

72 26,280 26,280



MEDIUM TERM - Sam	ie rrequeite), exc	cha noute to	neno inte	inational						Forecast	nuersnip
Period: Year round (8	B round trips per o	day)		Days	365						
			٦	Time							
Period	Service frequency	Start	End	Duration (hrs)	Decimal Time	Trips	Revenue hours	Peak vehicles	Revenue miles	Rides per hour	Rides
AM peak	0			0:00	-	-	-	-	-	0	-
PM peak	0			0:00	-	-	-	-	-	0	-
Off peak	60	9:00	17:00	8:00	8.0	8	28	4	880	8	224
Evening	0			0:00	-	-	-	-	-	0	-
Daily	0			0:00	-	-	-	-	-	0	-
Late night	0			0:00	-	-	-	-	-	0	-
Weekend/holidays	0			0:00	-	-	-	-	-	0	-
Daily Total						8	28	4	880		224
Annual Total							10,220		321,200		81,760
ANNUAL TOTAL							10,220		321,200		81,760
In-service Vehicle Ree											
	Hours			evenue hours					4		
	Distance	47,000	Annual Re	evenue miles	per bus				7		
			Recomme	endation/ Pea	ak requireme	nt			7		
Spare ratio		15	percent						1.05		
Fleet Requirement									9.0		



Rate \$105 \$ 1,073,100 \$4.00 \$ 327,040 30% Total Operating Cost per Hour (labor, fuel, maintenance, repairs, fixed, insurance, marketing, training) Revenue (based on average cash fare) Cost Recovery (Revenue as a % of total Operating Cost)

Period: Year round (1	0 round trips per	dav)		Davs	365						
			1	īme							
Period	Service frequency	Start	End	Duration (hrs)	Decimal Time	Trips	Revenue hours	Peak vehicles	Revenue miles	Rides per hour	Rides
AM peak	0			0:00	-	-	-	-	-	0	-
PM peak	0			0:00	-	-	-	-	-	0	-
Off peak	30	10:00	15:00	5:00	5.0	10	35	7	1,100	10	350
Evening	0			0:00	-	-	-	-	-	0	-
Daily	0			0:00	-	-	-	-	-	0	-
Late night	0			0:00	-	-	-	-	-	0	-
Weekend/holidays	0			0:00	-	-	-	-	-	0	-
Daily Total						10	35	7	1,100		350
Annual Total							12,775		401,500		127,750
ANNUAL TOTAL							12,775		401,500		127,750

	Hours 2,500 Annual Revenue hours per bus								
	Distance 47,000 Annual Revenue miles per bus								
			Recommendation/ Peak requirement		9				
Spare ratio	Spare ratio 15 percent								
Fleet Requirement	Fleet Requirement								
<u>.</u>									
COSTING				Rate					
Total Operating Co	Total Operating Cost per Hour (labor, fuel, maintenance, repairs, fixed, insurance, marketing, training) \$105								
Revenue (based on average cash fare) \$4.00									
Cost Recovery (Re	venue as a % of tota	Cost Recovery (Revenue as a % of total Operating Cost)							

# Stantec

ROUTE	R2 - Stateline to Minden/Gardnerville
Authority	TTD
Classification:	Regional
Phasing Priority	Medium Term
	Description
Existing	Route 20X - Private Service Mindon/Gardnerville
	Improvements
Immediate Term	N/A
Short Term	Service to Mindon - add trips to existing service (currently 5 round trips per day)
Med Term	Increase frequency
Long Term	N/A

Characteristics	o ounier mie	1-211.1000000	5/
	Google	Google	Recomen-
	Earth	Maps	dation
Route Length (mi) round trip	25.2	21.3	22
Trip Time (min)		34	
Speed (mph)		44	44
Transit Service Specs			
Time			
One way Trip (80%) (min)	0	43	45
Round Trip (min)	0	85	
Cycle time (min)	120	120	120
Recovery (min)	120	35	
Recovery (%)	100%	29%	
Distance			
Round Trip (miles)	50.4	42.6	45





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SHORT TERM									Forecast	Ridership	
Period: Year round (5 round trips per day)				Days	365						
			1	Time							
Period	Service frequency	Start	End	Duration (hrs)	Decimal Time	Trips	Revenue hours	Peak vehicles	Revenue miles	Rides per hour	Rides
AM peak	0			0:00	-	-	-	-	-	0	-
PM peak	0			0:00	-	-	-	-	-	0	-
Off peak	60	10:00	15:00	5:00	5.0	5	10	2	225	6	60
Evening	0			0:00	-	-	-	-	-	0	-
Daily	0			0:00	-	-	-	-	-	0	-
Late night	0			0:00	-	-	-	-	-	0	-
Weekend/holidays	0			0:00	-	-	-	-	-	0	-
Daily Total						5	10	2	225		60
Annual Total							3,650		82,125		21,900
ANNUAL TOTAL							3,650		82,125		21,900
In-service Vehicle Rec	uirement Guidel	ine calculati	on:								
	Hours	2,500	Annual Re	evenue hours	s per bus				1		
	Distance 47,000				per bus				2		

Distance	47,000 Annual Revenue miles per bus			2		
	Recommendation/ Peak requirement			2		
Spare ratio	15 percent			0.30		
Fleet Requirement				3.0		
·						
COSTING		Rate				
Total Operating Cost per Hour (labor, fuel, maintenance, repairs, fixed, insurance, marketing, training) \$105						
Revenue (based on average cash fare) \$4.00						
Cost Recovery (Revenue as a % of tota	l Operating Cost)			23%		

MEDIUM TERM Increa									Forecast Ridership		
Period: Year round (8	round trips per	day)		Days	365						
			Т	ïme							
Period	Service	Start	End	Duration	Decimal	<b>T</b>	Revenue	Peak	Revenue	Rides per	0.1
Periou	frequency	Start	Ellu	(hrs)	Time	Trips	hours	vehicles	miles	hour	Rides
AM peak	0			0:00	-	-	-	-	-	0	-
PM peak	0			0:00	-	-	-	-	-	0	-
Off peak	60	9:00	17:00	8:00	8.0	8	16	2	360	8	128
Evening	0			0:00	-	-	-	-	-	0	-
Daily	0			0:00	-	-	-	-	-	0	-
Late night	0			0:00	-	-	-	-	-	0	-
Weekend/holidays	0			0:00	-	-	-	-	-	0	-
Daily Total						8	16	2	360		128
Annual Total							5,840		131,400	1	46,720
ANNUAL TOTAL							5,840		131,400		46,720

In-service Vehicle	e Requirement Guide Hours		ion: Annual Revenue hours per bus				
	Distance		Annual Revenue miles per bus				
Recommendation/ Peak requirement							
Spare ratio 15 percent							
Fleet Requireme	nt					3.	
COSTING				Rate			
Total Operating (	Cost per Hour (labor,	fuel, mainte	nance, repairs, fixed, insurance, marketing, training)	\$105	\$	613,200	
Revenue (based on average cash fare) \$4.00							
Cost Recovery (Revenue as a % of total Operating Cost)							

Forecast Ridership								
des per	Rides							
hour	Rides							
0	-							
0	-							
8	128							
0	-							
0	-							
0	-							
0	-							
	128							
	46,720							





Existing Route Characteristics 4 R/h 3,800 hours 14,200 rides

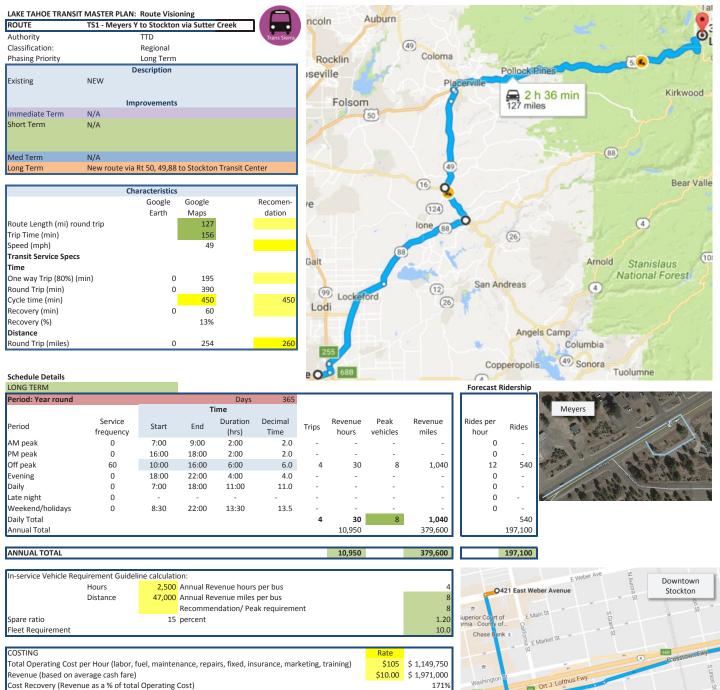


LONG TERM Increase	ONG TERM Increased Rides/hour									Forecast	Ridership
Period: Year round (1	eriod: Year round (12 round trips per day)			Days	365						
			I	īme							
Period	Service	Start	End	Duration	Decimal	Trinc	Revenue	Peak	Revenue	Rides per	Rides
Peniou	frequency	Start	Enu	(hrs)	Time	Trips	hours	vehicles	miles	hour	iour
AM peak	0			0:00	-	-	-	-	-	0	-
PM peak	0			0:00	-	-	-	-	-	0	-
Off peak	60	9:00	17:00	8:00	8.0	8	16	2	360	10	160
Evening	0			0:00	-	-	-	-	-	0	-
Daily	0			0:00	-	-	-	-	-	0	-
Late night	0			0:00	-	-	-	-	-	0	-
Weekend/holidays	0			0:00	-	-	-	-	-	0	-
Daily Total						8	16	2	360		160
Annual Total							5,840		131,400		58,400
ANNUAL TOTAL							5,840		131,400		58,400

per Rides ır 0 -0 10 160 0 -0 -0 -0 -160 58,400 58,400

In-service Vehicle Requirement Guideline calculation:										
Hours 2,500 Annual Revenue hours per bus										
	Distance	47,000	Annual Revenue miles per bus			3				
			Recommendation/ Peak requirement			3				
Spare ratio	Spare ratio 15 percent									
Fleet Requirement	Fleet Requirement									
COSTING				Rate						
Total Operating Co	Total Operating Cost per Hour (labor, fuel, maintenance, repairs, fixed, insurance, marketing, training) \$105									
Revenue (based on average cash fare) \$4.00										
Cost Recovery (Revenue as a % of total Operating Cost)										





Cost Recovery (Revenue as a % of total Operating Cost)

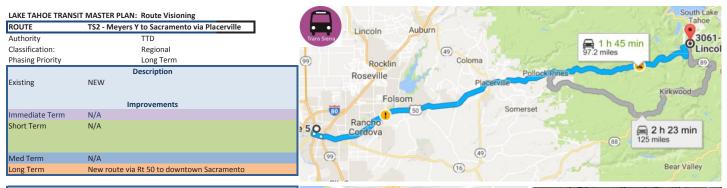


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#### Schedule Details

LONG TERM										Forecast F	Ridership
Period: Year round				Days	365						
			1	Гime							
Period	Service frequency	Start	End	Duration (hrs)	Decimal Time	Trips	Revenue hours	Peak vehicles	Revenue miles	Rides per hour	Rides
AM peak	0			0:00	-	-	-	-	-	0	-
PM peak	0			0:00	-	-	-	-	-	0	-
Off peak	60	10:00	16:00	6:00	6.0	4	20	5	800	10	300
Evening	0			0:00	-	-	-	-	-	0	-
Daily	0			0:00	-	-	-	-	-	0	-
Late night	0			0:00	-	-	-	-	-	0	-
Weekend/holidays	0			0:00	-	-	-	-	-	0	-
Daily Total						4	20	5	800		300
Annual Total							7,300		292,000		109,500
ANNUAL TOTAL							7,300		292,000		109,500
In-service Vehicle Reg	uirement Guideli	ine calculati	on:				7,300		252,000		109,50
	Hours			evenue hours	per bus				3		
	Distance			evenue miles					6		
			Recomme	endation/ Pea	ak requireme	ent			6		
Spare ratio		15	percent						0.90		
Fleet Requirement									7.0		

С	OSTING	Rate	
Т	otal Operating Cost per Hour (labor, fuel, maintenance, repairs, fixed, insurance, marketing, training)	\$105	\$ 766,500
R	evenue (based on average cash fare)	\$15.00	\$ 1,642,500
С	ost Recovery (Revenue as a % of total Operating Cost)		214%



