

FY 2018 BUILD Application for LAKE TAHOE SR 28 CORRIDOR REVITALIZATION PROJECT PH 2

July 19, 2018



Tahoe Transportation
DISTRICT

Submitted by Tahoe Transportation District





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1. DESCRIPTION OF PROJECT

1.1 The Project

The Lake Tahoe State Route 28 Corridor Revitalization Project Phase 2

This five-mile section of State Route 28 (SR 28) along the east shore of Lake Tahoe, Nevada, spans from Spooner State Park north to the United States Forest Service (USFS) Chimney Beach parking area. This is a critical phase of the overall SR 28 Corridor Revitalization Project (Project) as it hosts the majority of the recreation sites, has the least amount of paved off-highway parking, and has the portion of Incline Village General Improvement District’s (IVGID) aging sewer effluent line that has caused the most issues to the highway with major leaks. All of the corridor phases are important to realizing the full benefits of a well-connected corridor; however, Phase 1 (under construction), and Phase 2 (funding request) will account for more than ninety percent of those benefits once complete.

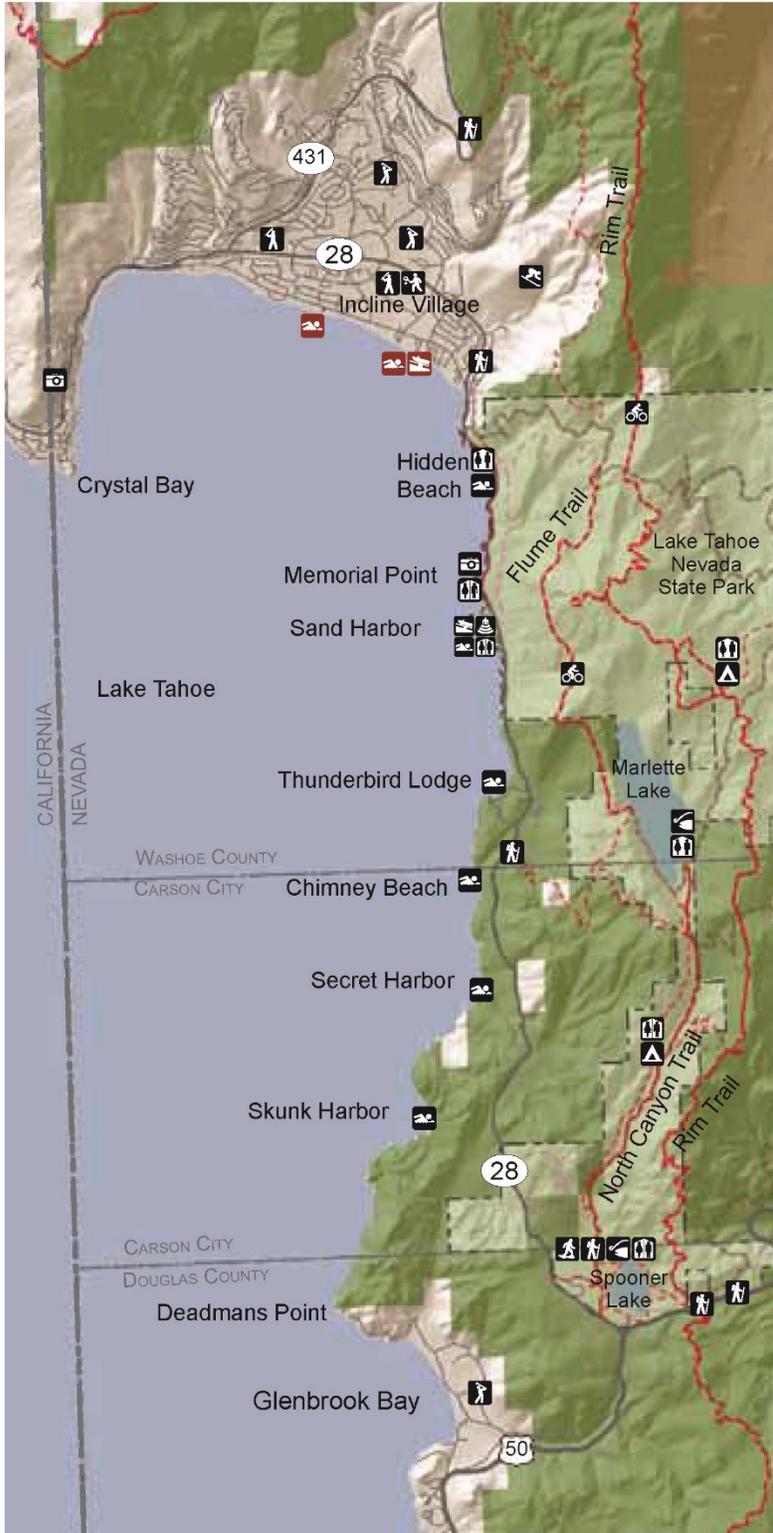
The Project takes an integrated approach to improving safety, mobility, water quality, and recreational access, as well as infrastructure preservation within the SR 28 Corridor. The Project will also support commerce and economic growth by improving electrical reliability and providing broadband in an unserved area of Nevada. Project components include:

- ◆ Approximately 4.5 miles shared-use path
- ◆ Off-highway parking
- ◆ Transit stops
- ◆ Safety and evacuation improvements
- ◆ Replacing and undergrounding aging utilities and co-locating broadband conduit under the shared-use path
- ◆ Water quality improvements

1.2 Project Background and History

The SR 28 Corridor is located along the east shore of Lake Tahoe, Nevada extending south of Incline Village. A narrow two lane highway, this 11-mile stretch of SR 28 provides access to Tahoe’s longest stretch of undeveloped public land, comprised of 12,000 acres of world renowned recreation managed by the United States Forest Service (USFS) and Nevada Division of State Parks (NDSP).





LEGEND

- Viewpoint
- Sports Fields
- Downhill Skiing
- Tennis
- Golf Course
- Fishing
- Snowshoe
- Trailhead
- Private Beach Access
- Public Beach Access
- Mountain Biking
- Amphitheater
- Private Boat Launch
- Public Boat Launch
- Camping
- Rim Trail, Flume Trail, North Canyon Trail, Marlette Trail
- Dirt roads/ OHV trails
- Existing and proposed hiking/ biking trails

*Recreation Areas
& Major Trails*



The SR 28 Corridor Facts:

- ◆ **2.6 million vehicles** travel SR 28 annually (new cellular data available from AirSage Analytics¹ shows this to be as high as over four million vehicles)
- ◆ Over **one million visitors** recreate in the corridor annually (AirSage Analytics data shows this to be as high as over three million visitors)
- ◆ Eleven miles of recreation sites located along the highway's steep slopes with limited to no parking available

Lake Tahoe Facts:

- ◆ Lake Tahoe is **79% federally owned** land
- ◆ Over 24 million visitors annually
- ◆ Per the 2010 census information, Tahoe is considered a rural area, with limited funding for transportation

In 2012, thirteen agencies including the Tahoe Transportation District (TTD), Tahoe Regional Planning Agency (TRPA), USFS, Federal Highway Administration (FHWA), Nevada Department of Transportation (NDOT), NDSP, Nevada Division of State Lands (NDSL), Nevada Highway Patrol (NHP), Washoe County, Carson City, Douglas County, IVGID, and the Washoe Tribe of Nevada and California formed a partnership and commitment through the SR 28 Corridor Management Plan (CMP) to address the access, safety, and environmental issues impacting the corridor. A full copy of the SR 28 CMP can be found at <http://tahoetransportation.org/sr28>. Implementation of the SR 28 CMP has been titled the “SR 28 Corridor Revitalization Project.” Due to the extent of the corridor, a phasing plan was developed:

Phase 1 (north end of corridor – currently under construction): Incline Village to Sand Harbor – This three-mile segment includes an off-highway shared use path, with a tunnel under SR 28 for safe bike/pedestrian crossing; approximately 100 off-highway parking space node in Incline Village; transit stop improvements; safety and scenic improvements; and water quality improvements. Phase 1 is fully funded and began **construction** in 2016 and is **expected to be substantially completed in 2018** (*construction photos below*).



¹ AirSage Analytics is a company that collects and analyzes mobile signaling data about population mobility through the study area. Additional information can be found in the Linking Tahoe: Corridor Connection Plan, August 2017. The Plan can be viewed here - <http://tahoetransportation.org/doing-business/meetings>

Phase 2 (south end of corridor – BUILD funding request): **Spooner State Park to USFS Chimney Beach** parking area – The plan for this five-mile segment includes an off-highway shared use path; expansion of two existing USFS off-highway parking areas; a new park and ride lot near Spooner State Park; transit stop improvements; safety and scenic improvements, including undergrounding of electrical lines and broadband for reliable ITS and fire hydrants to minimize risk of wildfire along a primary evacuation route; and water quality improvements. This section is primarily USFS land, containing the majority of the SR 28 recreation areas and will include the bulk of the parking and access improvements. The **environmental document** is underway for this phase, **expected to be completed in this year**. Construction is anticipated to begin in 2020 (pending funding availability). **Phase 2 is the focus of this BUILD request with a significant local match.**



Phase 3 (Future phase): **Sand Harbor State Park to USFS Chimney Beach** – The final three-mile segment will connect the book end sections with an off-highway shared use path, undergrounding of utilities, and water quality improvements. Although just as important in terms of safety, economic vitality, access, communications, and environmental improvements, there is less demand for recreational access in this section and it primarily serves to connect the full corridor.

1.3 Transportation Challenges

SR 28, the two-lane mountainside road, is the only access route for nearly three million recreationists and four million-plus vehicles per year (TTD [Linking Tahoe Corridor Connection Plan 2017](#)). Through the use of cellular data from AirSage Analytics, it was also found that there are 9.5 million person trips made annually within the corridor. With no bike/pedestrian facilities available and limited transit service, the majority of the trips are personal vehicular trips. Use along the corridor continues to grow, with shoulder-parking projected to double in the next 20 years. SR 28 does not have sidewalks, bike paths, bike lanes, transit stops, or adequate areas for safe parking. Bikes and pedestrians share the narrow highway space with vehicles, which has led to a high rate of bike and pedestrian fatalities.

Lack of parking: Recreation demand is double the existing parking capacity (1,175 vehicles looking for parking at the overall peak time and only 582 paved spaces). The majority of off-highway parking serves Sand Harbor (530 spaces), with only 52 spaces for the rest of the corridor. This results in a multitude of challenges. Perhaps the biggest is shoulder-parking. The areas are narrow, often at the edge of steep inclines with limited sight distance. Safety and erosion are important concerns. The number of vehicles parked along the shoulder has grown every year – almost 170% between 2000 and 2011 – and is projected to double by 2038.

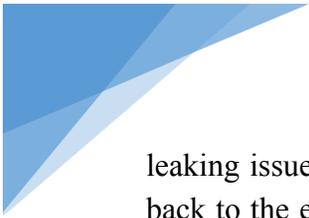
No bike and pedestrian facilities; major safety issues: The vehicles lining the shoulders creating serious safety issues and force over 2,000 bikes and pedestrians trying to access the public lands into the travel lanes, turning SR 28 into a dangerous sidewalk. With no safe crossings, pedestrians are forced to run across the highway with their family and beach gear when parked on the mountainside of the highway. Cars continually cross the centerline to dodge pedestrian and bicyclist traffic on the highway.



Highway Congestion: SR 28 sees over 40 days of congestion in summer months, which causes backups over two-miles long and over two-hour delays in the northern portion of the corridor within the high demand recreational areas. Over the past ten years, shoulder parking has continually increased at a rate of 22 additional cars per year.



Environmental and infrastructure issues: Shoulder parking leads to erosion issues, as well as promoting unauthorized and unmanaged social trails that can impact historical resources and sensitive habitats. The aging sewer effluent export line managed by IVGID under SR 28 has



leaking issues, which leads to highway damage and road closures. Overhead powerlines, dating back to the early 1900's, create a huge fire risk for thousands of acres of world class recreation on public lands; and fiber optics for critical communications and ITS are non-existent in the corridor. Fire suppressant infrastructure is lacking along this primary evacuation route. Most communities in the Tahoe Basin are in the wildland-urban interface and are considered to be a "Community At Risk." Communities At Risk is an official designation by the National Fire Plan, indicating a community that is within the wildland-urban interface, and is within the vicinity of federal lands.

1.4 Transportation Solution – SR 28 Corridor Revitalization Phase 2 Improvements

The SR 28 Corridor Revitalization Project improvements described below will drastically improve access and safety within the corridor for over three million visitors, as well as help protect the natural environment and water quality of Lake Tahoe.

Project Improvements and Solutions to the Challenges:

New and expanded off-highway parking areas – expansion of two existing USFS lots at Chimney Beach and Secret Harbor, the addition of a new parking area at Skunk Harbor and a park and ride lot near Spooner State Park, all including transit stops to provide improved access along the corridor.

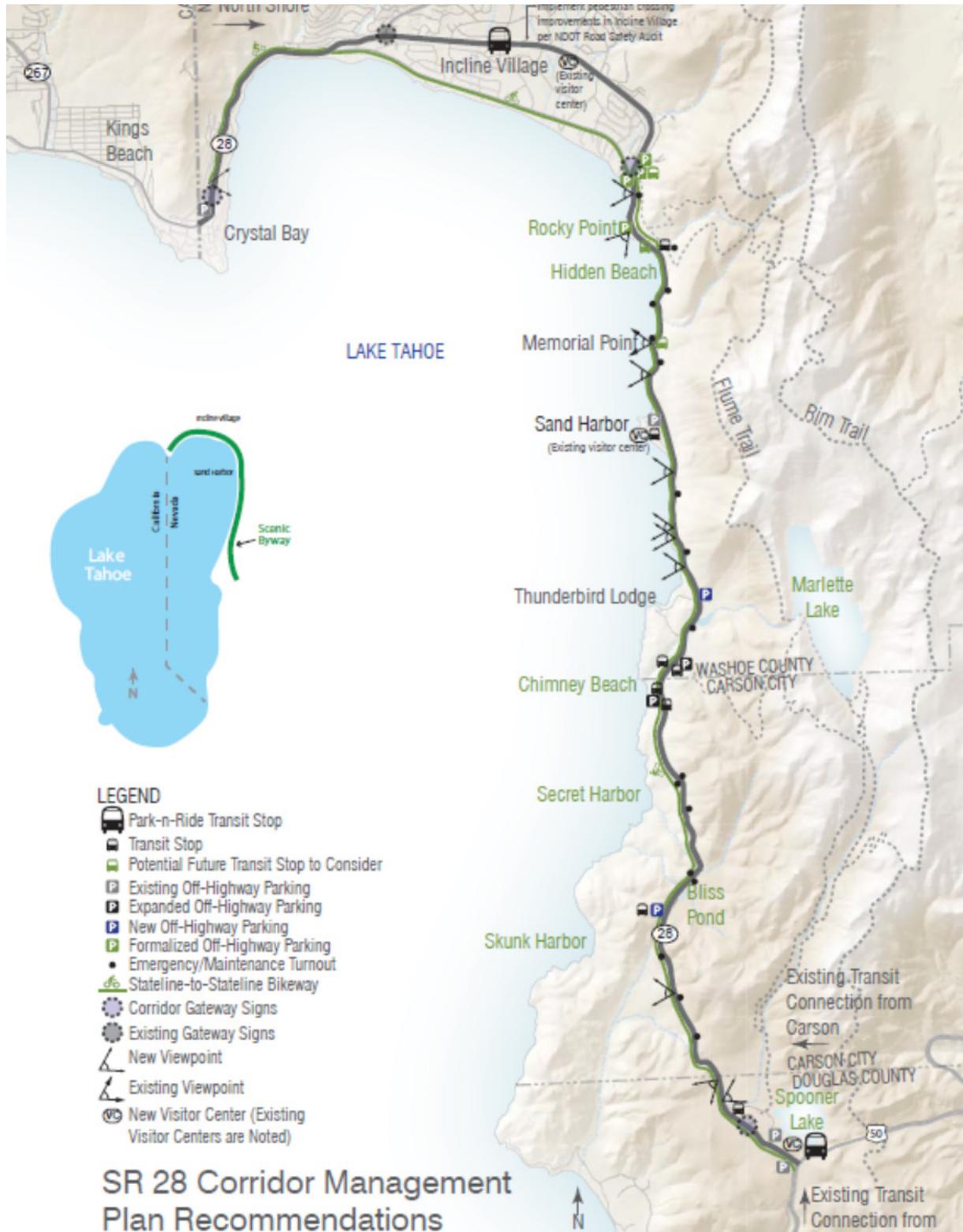
Five miles of off-highway shared use path – safely connect parking areas and recreation destinations with a 10-foot-wide shared use path promoting multi-modal options for the corridor and relocating bicyclists and pedestrians out of the travel lanes and narrow shoulders of SR 28.

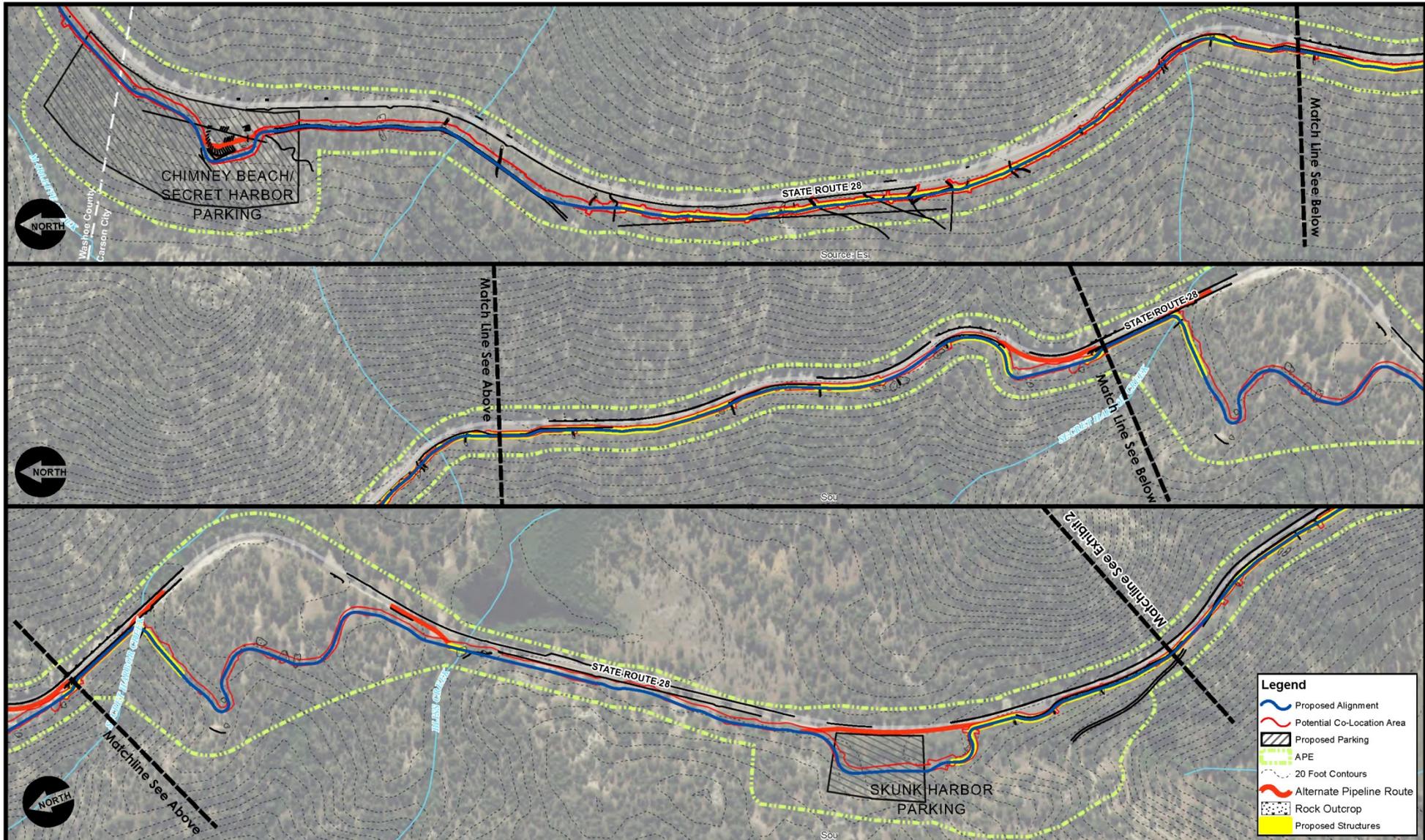
Add emergency pullouts and vista points – Allows vehicles needing to stop for emergencies or to enjoy the breathtaking views of Lake Tahoe to safely get out of travel lanes and avoid impeding through traffic.

Utility relocation – Co-locate a new sewer effluent export line underneath the shared use path, which will also serve as the access road for utility work. This will eliminate traffic congestions and road closures to access utilities. Fire hydrants will also be installed, for use in the event of a forest fire, providing huge public and environmental safety benefits along one of the primary evacuation routes of Lake Tahoe. Co-location of the overhead power lines under the shared use path also will eliminate the scenic impact and potential fire risk. Fiber optic conduit will be added to improve technology for transportation and the communities of the Tahoe Basin overall.

The Nevada
Stateline to
Stateline
Bikeway
Demand Model
indicates the SR
28 section of
shared use path
will generate
approximately
**230,000 bike
and pedestrian
trips annually.**

*Alta Planning +
Design - 2009*



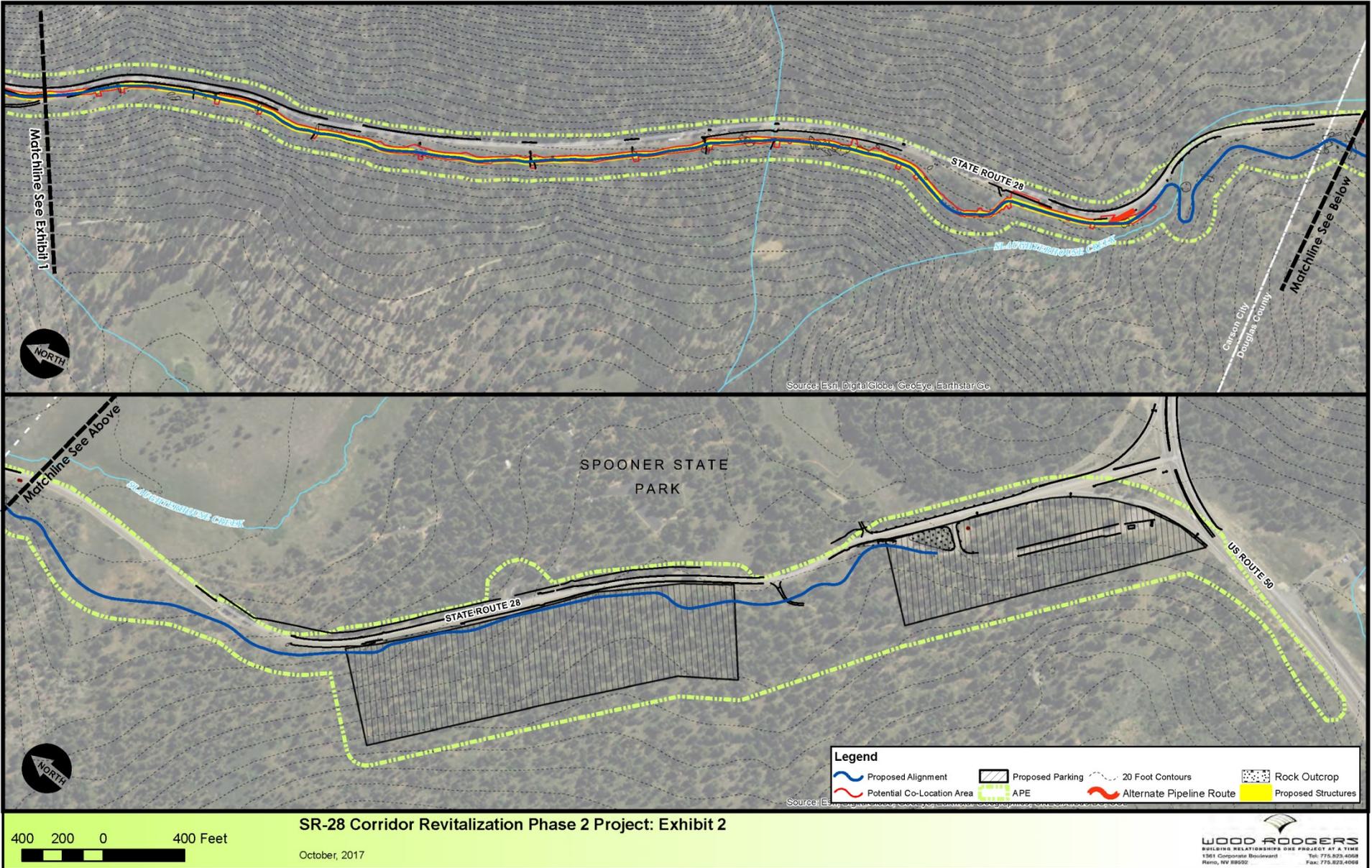


SR-28 Corridor Revitalization Phase 2 Project: Exhibit 1

October, 2017

- Legend**
- Proposed Alignment
 - Potential Co-Location Area
 - Proposed Parking
 - APE
 - 20 Foot Contours
 - Alternate Pipeline Route
 - Rock Outcrop
 - Proposed Structures

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1.5 Rural Community Benefits

The Project and BUILD funds will support a rural area by providing much needed safety improvements for SR 28, the only access to Tahoe's east shore. The Project will improve access for millions of visitors annually, as well as provide benefits for emergency responders and residents of Incline Village who also utilize SR 28 as access to and from their community. This Project also includes improving utilities, infrastructure that supports Incline Village, and the recreation areas along SR 28.

Per the 2010 census information, Tahoe is considered a rural area, minimizing the necessary funding to support the local communities and recreation providers that, with visitation, have a transportation demand that revivals some of those in urban communities and some of the most highly visited National Parks. Tahoe, at 79% federal land, relies on grants, such as BUILD, to address these large-scale problems that come with high visitation numbers in a rural area.

2. PROJECT LOCATION

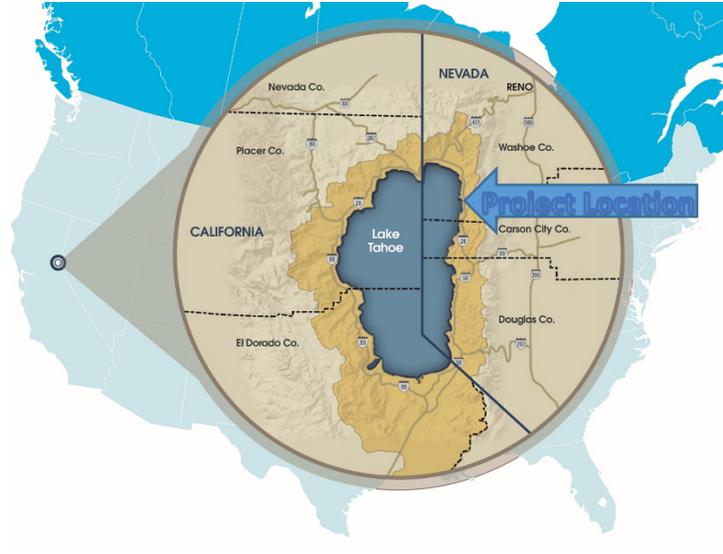
2.1 Detailed Geographic Location Description

The SR 28 Corridor Revitalization Project is located at the northeast section of Lake Tahoe, on the Nevada side of the lake, extending from Incline Village south to the SR 28/US 50 Spooner junction near Spooner State Park. Phase 2 of the Project, this BUILD request, is within the southern section of the SR 28 Corridor from Chimney Beach/Secret Harbor, extending south to the SR 28/US 50 junction. Section 2.2 identifies a series of maps providing context for Lake Tahoe and the SR 28 Corridor, as well as the Project Area.

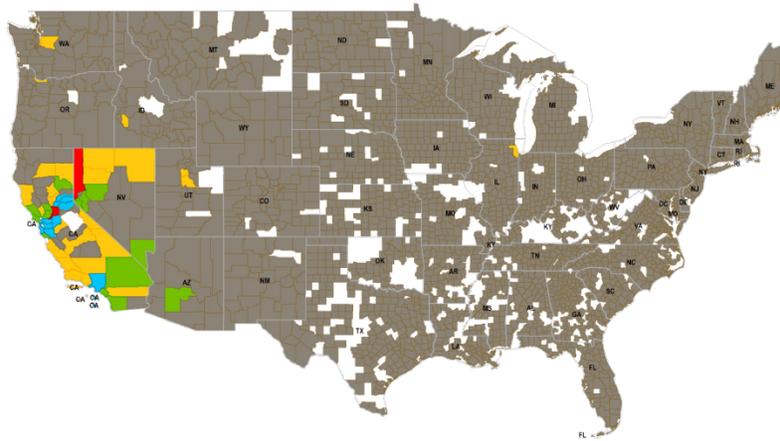
2.2 Project Location Map

As depicted in the maps below, Tahoe is the backyard for millions of visitors annually, who travel from all over the United States to visit and recreate. Utilizing AirSage Analytics cellular device data, TTD was able to develop an estimated annual visitation to Lake Tahoe at approximately 24 million visitors. With rural funding levels, providing transportation to meet this visitation demand is nearly impossible.

Destination

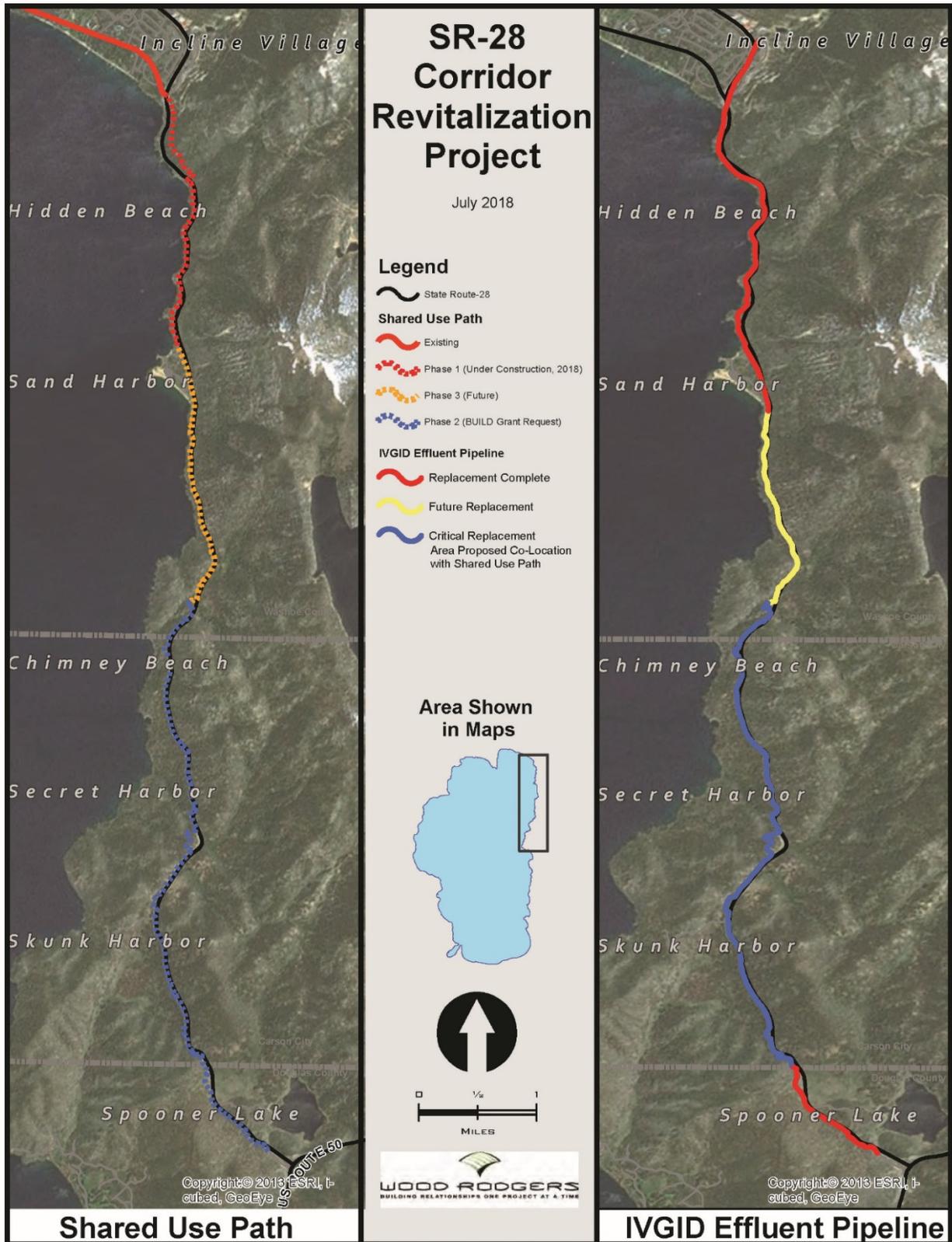


Visitor Home Locations



- Less than 1,500
- Medium (5,000 - 10,000)
- High (Greater than 35,000)

2.3 Project Connectivity to Existing Infrastructure Map



3. PROJECT PARTIES

Project Sponsor and Grant Recipient	
Name	Tahoe Transportation District (TTD)
Organization Type	Special Transportation District, created by Article 9 of the Tahoe Bi-state Compact ratified by Congress
Address	PO Box 499, Zephyr Cove NV 89448
District Manager	Carl Hasty
Contact Person	Danielle Hughes
Key Project Partners (Phase 2)	
Incline Village General Improvement District (IVGID)	Brad Johnson, Director Asset Management
Nevada Department of Transportation (NDOT)	Rudy Malfabon, Director
Nevada Division of State Parks (NDSP)	Eric Johnson, Director
Tahoe Regional Planning Agency (TRPA)	Joanne Marchetta, Director
United State Forest Service – Lake Tahoe Basin Management Unit (USFS)	Jeff Marsolais, Forest Supervisor
Washoe County	Dave Salero, Community Development Director
Carson City	Lucia Maloney, Transportation Manager
Douglas County	Scott Morgan, Community Services Director

Commitment

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

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



Tahoe Transportation District

Carl Hasty

Carl Hasty, District Manager



Tahoe Regional Planning Agency

Joanne Marchetta

Joanne Marchetta, Executive Director



Federal Highway Administration

Sue Klekar

Sue Klekar, Division Administrator

Tim Carlson

Tim Carlson, Presidential Appointee



Nevada Department of Transportation

Rudy Malfabon

Rudy Malfabon, P.E., Director



U.S. Forest Service

Nancy J. Gibson

Nancy J. Gibson, Forest Supervisor
Lake Tahoe Basin Management Unit



Nevada Highway Patrol

Randy Jackson

Sergeant Randy Jackson
Incline Village/Lake Tahoe



Nevada Division of State Parks

Dave Morrow

Dave Morrow, Administrator



Carson City Regional Transportation Commission

John McKenna

John McKenna, Chair



State of Nevada, Division of State Lands

James R. Lawrence

James R. Lawrence, Administrator and
State Land Registrar



County of Washoe

John Berkich

John Berkich, Interim County Manager



County of Douglas

Steve Mokrohisky

Steve Mokrohisky, County Manager



Washoe Tribe of Nevada and California

Darrel Cruz

Darrel Cruz, Washoe Cultural Resource
Department-Director, Tribal Historic
Preservation Officer



Incline Village General Improvement District

William B. Horn

William B. Horn, General Manager

13 agencies, one effort

4. GRANT FUNDS, SOURCES AND USES OF ALL PROJECT FUNDING

Project Funds	Fund Amount	% of Project
IVGID Local Funds	\$8,000,000	
Private Donations	\$1,000,000	
State of Nevada Environmental Improvement Program Funds	\$3,000,000	
State of Nevada Question 1 Funds	\$1,500,000	
Total Local/State Funding	\$13,500,000	38%
Other Federal Funds (HSIP)	\$1,000,000	3%
FY18 BUILD Grant Fund Request	\$20,950,000	59%
Total Project Cost	\$35,450,000	100%

Cost Category	Cost	Local & State Funds (Non-Federal)	Non-Federal %	Other Federal Funds	Other Federal Funds %	BUILD Grant	BUILD %
Final Design	\$3,000,000	\$1,000,000	33%	\$0	33%	\$2,000,000	67%
Construction Costs							
Shared Use Path	\$15,000,000	\$3,000,000	20%	\$0	0%	\$12,000,000	80%
Parking Lots/ Transit Stops	\$3,000,000	\$1,000,000	33%	\$0	0%	\$2,000,000	67%
Utility co-location under Shared Use Path	\$7,500,000	\$7,500,000	100%	\$0	0%	\$0	0%
Roadway Safety Improvements	\$1,000,000	\$0	0%	\$1,000,000	100%	\$0	0%
Water Quality Improvements	\$1,000,000	\$1,000,000	100%	\$0	0%	\$0	0%
Subtotal Construction	\$27,500,000	\$12,500,000	45%	\$1,000,000	4%	\$14,000,000	51%
Construction Management (8% of construction)	\$2,200,000	\$0	0%	\$0	0%	\$2,200,000	100%
Contingency (10% of construction)	\$2,750,000	\$0	0%	\$0	0%	\$2,750,000	100%
TOTAL Project	\$35,450,000	\$13,500,000	38%	\$1,000,000	3%	\$20,950,000	59.1%

Please note: The Budget Information form (SF424C) does not allow for the correct percentage to calculate the budget accurately as shown in the above budget.

5. MERIT CRITERIA

5.1 Safety

The dueling needs for recreation access and through traffic have created major safety issues and an increasing fatality rate within the SR 28 Corridor as is evident in the data below. A video of the current SR 28 conditions and safety challenges can be found at: www.tahoetransportation.org/sr28. The overall injury crash rate of 0.54 per million vehicle miles is 180% higher than the statewide average of 0.30 according to NDOT.

Below is crash data as outlined in the SR 28 CMP for the time period between 2006 and 2013:

- ◆ **469 total incidents** (vehicular, pedestrian and bike)
- ◆ 5 fatal incidents, resulting in **8 fatalities** (vehicular, pedestrian and bike)
 - Half of the fatalities were located in the Phase 2 segment
- ◆ 176 injury incidents, resulting in **250 injuries** (vehicular, pedestrian and bike)
- ◆ 288 property damage only incidents

The Phase 2 segment has the least amount of paved off-highway parking, and as a result has the most shoulder parking. The shoulder parking on a narrow highway is the leading cause of a majority of the crashes.

The Project includes a *multi-prong approach to improving safety*:

1) Relocate dangerous shoulder parking to safe off-highway parking locations:

The Project includes adding over 200 off-highway parking spaces by expanding two existing USFS lots, building a new parking lot at Skunk Harbor, and building a new park and ride lot at the south end of the corridor near Spooner State Park.

2) Construct a ten-foot wide paved off-highway shared use path:

The shared use path will safely connect the parking nodes with the recreation destinations, getting the bicyclists and pedestrians out of the travel lanes.

3) Increase transit service and stops:

Transit stops will be included at the proposed parking areas, as well as the park and ride lot at the south end of the corridor. This will enable TTD to expand the East Shore Express transit service (currently serving Incline Village to Sand Harbor) to provide service through the full 11-mile corridor. Transit and the shared use path provide alternative, safe access for visitors when the internal parking areas are full and eliminates unsafe shoulder parking.

4) Replacement of aging infrastructure:

Replacing and relocating IVGID's export line out of the highway and under the shared use path will drastically improve safety on the highway. A leaking pipe under the highway creates significant damage to the roadway with not much warning for drivers, especially at

night. Undergrounding communications infrastructure and electrical lines will improve reliability and reduce wildfire risks along this critical evacuation route.

Utilizing FHWA’s Office of Safety Proven Safety Counter Measures website, <https://safety.fhwa.dot.gov/provencountermeasures/#> and the Crash Modification Factors Clearing House, <http://www.cmfclearinghouse.org/results.cfm>, the project has the following quantified safety benefits:

Project Component	Existing Relative Crash Data (2006-2013)	Crash Reduction Factor	Severity of Crash Addressed
Shared Use Path	182	89%	Injury/Fatal
Removal of roadside parking	182	80%	Injury/Fatal
Removal of roadside parking	288	65%	Property Damage Only
Corridor Access Management	469	23%	All Crashes

The combination of the shared use path and off-highway parking will drastically reduce the amount of crashes, especially in the categories of Injury/Fatality.

5.2 State of Good Repair

Existing SR 28 Corridor Condition: Two-lane highway with over four million vehicles traveling through annually, at speeds around 45-mph and also functioning as a parking lot for millions of vehicles annually.

- **Unsafe shoulder parking leads to erosion of highway shoulders and fill slopes, creating maintenance issues.**

Very little shoulder exists along the highway with steep embankments on the lake side. Vehicles parking along the dirt shoulder and visitors walking down the embankments headed to the recreation areas below create erosion issues, impact sensitive habitat, and cause long term maintenance issues of the highway.

Proposed Project Improvement: Off-highway parking areas connected with the shared use path will keep vehicles from parking in environmentally constrained areas and preserve the structural integrity of the highway, while providing a safety benefit. Added water quality improvements and decommission of social trails will address existing erosion issues.

- **Aging power lines create wildfire risks and effluent export lines cause damage to the highway.**

The export line is currently under the fog line and shoulder of SR 28. The pipe has met its useful life. The damage to the highway creates expensive emergency road closures and repairs that ultimately lead to higher ongoing maintenance costs, creates safety issues for traffic, and, while treated, the effluent has the potential to harm the lake's water quality. Overhead powerlines, dating back to the early 1900's, create a huge fire risk along a primary evacuation route for the Lake Tahoe Basin.

Proposed Project Improvement: Co-locate a new sewer effluent export line, power, and fiber conduit under the shared use path and abandon the old lines. This will eliminate the need to have years of ongoing lane closures if the pipe was to be replaced under the highway, will greatly reduce the cost of reconstructing the highway and the pipeline, will provide IVGID access to the pipeline without closing the highway, and will eliminate the risk of the pipe failing and damaging the highway. Fire hydrants will be added to the pipe for emergency fire suppression, and fiber conduit and power lines will be undergrounded, improving overall long-term corridor safety and communications reliability in the event of a catastrophic event.

- **The highway was not designed for bike, pedestrian, or transit use.**

The highway is narrow and meant for through traffic. With over 12,000 acres of public recreation opportunities, the highway does not function properly when bike and pedestrians take to the travel lanes to access their destination. Not only is this unsafe, but it creates blockages for through traffic, including emergency vehicles and highway maintenance workers. Signage is inadequate for wayfinding and no parking signs are littered throughout the corridor. Emergency pullouts and areas for vehicles to safely pull over to view the lake are far and few between, creating congestion and safety issues.

Proposed Project Improvement: The proposed parking areas will relocate the shoulder parking off the highway and will include improved ingress/egress, as well as proper signage informing the public of safe parking options. The shared use path will get bikes and pedestrians off the highway. With the parked vehicles and bikes and pedestrians off the highway, functionality and level of service will improve and allow for more efficient maintenance of the highway. Improved wayfinding and parking signage will assist visitors in traveling safely. The additions of emergency pullouts and scenic vistas will allow visitors an opportunity to get out of the highway travel lanes safely, reducing congestion.

The creation of a resilient corridor that accommodates all modes of transportation and accelerates modal shift, while addressing infrastructure and utility needs addresses the issues of today, while adding flexibility for generations to come. Phase 2 of the SR 28 Corridor houses a



significant amount of recreation sites and numerous access points to Lake Tahoe. Phase 2 also holds the largest potential risks with aging infrastructure that causes the highway to fail and the potential for powerlines to create a catastrophic forest fire in an area without critical and resilient communications infrastructure.

This corridor project is key to the successful long-term operations and maintenance (O&M) of the corridor, and will help reduce costs for all agencies. The public demand for these improvements continues and it is the commitment of the partner agencies and grant opportunities, such as this BUILD request, that will improve and protect the resilience, recreation opportunities, and natural resources of the SR 28 Corridor and Lake Tahoe for generations to come.

5.3 Economic Competitiveness

The connection between corridor improvements and economic vitality, especially in areas such as Tahoe, may be demonstrated as agencies find opportunities to create synergies between projects to maximize funding sources, accelerate project delivery, and leverage resources for ongoing O&M. This Project, along with all the projects in the Basin, looks at access holistically for all modes of transportation, as well as the infrastructure the local communities rely on for quality of life, goods movement, and commerce. Providing fiber communications to an area that is underserved and undergrounding these utilities as part of the project improves reliability of communications during critical times of need or an emergency. Tahoe continues to grow as a recreation and tourism based industry, with the SR 28 Corridor as one of the largest recreation areas in the Basin. The neighboring communities and millions of visitors rely on this corridor for access and recreation. These improvements are key to the economic competitiveness and sustainability of the local communities who serve the visitors that use these recreation areas. The partner agencies have been successful at leveraging private, local, state, and federal funding for corridor wide improvements in Phase 1 of the project, reducing implementation cost and time. Phase 2 is no different, and the agencies have developed a funding plan in this area with a 38% local and state match. The BUILD request will significantly improve safety in the corridor, while helping provide an economic benefit to the surrounding communities.

Through the shared use path and off-highway parking nodes, the Project will directly decrease transportation costs and improve access to local communities and recreation areas by reducing highway congestion and improving safety. The Project will also reduce highway maintenance costs by moving the aging infrastructure from within the roadway, which also provides improved access to that infrastructure for the local communities.

Co-locating the new export line under the new shared use path allows the project to leverage resources for design and construction, reducing overall Project costs, construction impacts to the

highway, and ultimately, long term maintenance costs. The shared use path benefits as well, through the leveraging of funding sources to make the Project possible.

All the elements of this project will help create job growth at recreation sites and the surrounding communities. In addition to private business benefits, public agencies who will maintain the path have also started gearing up to hire new employees for the operation and maintenance activities for the improvements, including the parking management systems.

5.4 Environmental Protection

Under the Tahoe Regional Planning Compact, which was ratified by the US Congress, specific environmental thresholds were established to protect Lake Tahoe. The corridor improvements proposed with this Project are part of the larger Lake Tahoe Environmental Improvement Program and are anticipated to provide the following benefits:

TRPA Threshold	Environmental Benefit
Air Quality	<ul style="list-style-type: none"> ✓ Reduced congestion from vehicles searching for parking ✓ Reduced VMT as use shifts to transit and bicycling
Water Quality	<ul style="list-style-type: none"> ✓ Reduced erosion from shoulder parking and unauthorized trails ✓ Reduced water quality risk from a leaking effluent line
Scenic Resources	<ul style="list-style-type: none"> ✓ Improved visual quality from both roadway and Lake Tahoe with relocated shoulder parking to off-highway parking areas ✓ Improved visual quality with enhanced roadway aesthetics and undergrounding of powerlines
Vegetation Preservation	<ul style="list-style-type: none"> ✓ Reduced wildfire risk with undergrounding of powerlines and the addition of fire hydrants with the new effluent export line
Recreation	<ul style="list-style-type: none"> ✓ Improved access to recreation sites ✓ Recreation experience is improved with new safe recreation opportunities, including the Class I shared-use path

5.5 Quality of Life

Millions of visitor’s head to Tahoe’s east shore annually seeking the high quality recreation the Lake and mountains have to offer. SR 28 is the access for the recreation seekers, as well as the residents in the nearby communities. Limited parking, lack of bike and pedestrian facilities, and limited transit lead to long wait times on the highway and less time at the beach. The proposed project improvements not only will improve the access and provide safe alternative mode choices, but will drastically improve the visitor experience and quality of life.



5.6 Innovation

TTD brings an innovative approach to corridor implementation through extensive partnerships and collaboration, as well as leveraging resources, including funding sources. The SR 28 CMP is a showcase for areas around the country on how to deal with complex transportation issues with limited resources. This is evident in the first phase currently under construction and Phase 2, in moving through the environmental process in partnership with the USFS. In addition to leveraging resources and building partnerships, TTD has also utilized innovative delivery methods, such as Construction Management-at-Risk (CMAR), helping minimize risks that arise, and improving budget and schedule efficiencies.

Technology is an important element of the transportation network and provides important economic advantages for rural communities. Intelligent Transportation Systems (ITS) are important for high demand recreation areas, such as Tahoe, to notify visitors well in advance so they can make choices to use alternative modes or change destinations prior to becoming part of the congestion problem. The Project includes the following technology:

Value Pricing Pilot Program – Demand pricing through an electronic parking management system installed at parking areas and used to shift peak demand, as well as promote the use of alternative transportation.

Installation of Fiber Optic Conduit – Connect rural communities, urban communities, and transportation.

Use of Cell Phone Applications - Push traveler information to visitors regarding roadway conditions, parking availability, and recreation area capacity.

5.7 Partnership

Reference Section 3 – Project Parties for details regarding Project partnerships. This Project is a true collaboration to address corridor wide issues, leverage non-federal resources, and save a significant amount of money by partnering with multiple agencies to address multiple infrastructure issues simultaneously.

5.8 Non-Federal Revenue for Transportation Infrastructure Investment

The parking management system currently being developed with FHWA through the VPPP program will generate revenue as the parking areas included in the Project will be outfitted with parking kiosks and mobile payment systems. Revenue generated at the parking areas will be used to offset O&M costs of the new infrastructure and help fund future transit operations.

6. PROJECT READINESS

6.1 Technical Feasibility

In 2011, a feasibility study was completed for the Shared Use Path portion of the project, and in 2012, the CMP was adopted by the partner agencies. The environmental document for Phase 1 was completed in 2014 and is now more than halfway through construction of the three-mile segment.

Phase 2 has 30% design completed and the environmental process well underway, with a draft Environmental Analysis (EA) expected December 2018. Costs for this Project have been validated based on 30% design estimates, current costs from Phase 1, and previous costs for shared use paths completed in 2015 in South Lake Tahoe. TTD also plans to utilize the CMAR process for project delivery to minimize risk in design, costs, and schedule.

6.2 Project Schedule

Project Milestones	Start	Finish
NEPA/TRPA joint EA and record of decision	August 2017	December 2018
BUILD Grant Announced (Estimate)	April 2018	July 2018
Solicitation for Construction Manager at Risk	October 2018	January 2019
Final Design	January 2019	November 2019
CMAR Pre-Construction permits, utility coordination	December 2019	March 2020
CMAR Construction*	April 2020	September 2022

** Due to mountainous winter weather conditions, Tahoe's construction season is limited from May to October. Certain activities can start as early as April and extend into November, weather permitting.*

Task Schedule	2018	2019	2020	2021	2022
NEPA/TRPA draft & final document					
CMAR process & final design					
Preconstruction					
Construction of 2 miles shared use path/utility co-location/staging areas					
Construction of 2.5 miles shared use path/utility co-location/ parking lots					
Vegetation monitoring, project closeout					

6.3 Required Approvals

Environmental Permits:

- NEPA(USFS)/TRPA Joint Environmental Assessment – USFS is in the process of preparing the EA, anticipated to be completed winter of 2018 with a Finding of No Significant Impact. NDOT is also a partner in the Project and will be a reviewing agency. Public engagement will continue throughout this process.
- TRPA Permit – TRPA will issue a conditional permit as part of the EA and will sign off on final plans once all conditions have been met.
- The EA for Phase 1 was completed in 2014 and a FONSI issued. A robust public outreach effort was conducted at that time.

State and Local Approvals: NDOT will be a reviewing agency, as well as NDSP. Both agencies have been and continue to be partners in Project implementation. Governor Sandoval has also been a big supporter of the Project. TRPA will provide local approval as stated above.

Federal Transportation Requirements: The FHWA Nevada Division is a partner in the Project and has been involved in all planning and initial environmental stages of the project, as well as the current construction of Phase 1. They are supportive of the full corridor improvements.

6.4 Assessment of Project Risks and Mitigation Strategies

TTD and the Project Partners have extensive experience delivering major corridor projects in Tahoe. Although TTD and the Project Partners feel the risks below are minimal, they are noted with mitigation measures already in place:

- **Environmental Process** – TTD and USFS are partnered to complete the environmental process by December 2018. The Phase 1 environmental document was approved and Phase 2 is similar in nature. TTD and the USFS continually meet with the Partner Agencies and reviewing agencies to ensure the environmental process schedule is met.
- **Final Design** – 30% plans have been completed as part of the environmental process. Much was learned in regards to design with Phase 1 that will carry forward to Phase 2 to help reduce costs and lower the unknowns in the design process. TTD is also planning to bring on the CMAR, upon completion of the environmental process before final design begins. Having the CMAR on early will help reduce design errors that may cost time and money later on in the process.
- **Construction in steep terrain with environmental constraints** – As stated in Final Design, TTD plans to bring the CMAR on early in the design process to ensure the design team and contractor can work together to minimize risks during construction. The design team also includes the permitting agencies, so their concerns can be addressed prior to the start of construction and planned for accordingly. This also will help expedite

the permitting process. With what has been learned with Phase 1 currently under construction, TTD and partners will be able to reduce any possible risk and real-world mitigation measures in Phase 2.

7. RESULTS of BENEFIT COST ANALYSIS

New Economics performed a Benefit Cost Analysis for the SR 28 Corridor for TTD’s 2017 TIGER grant application. No changes from the previous submittal are proposed. New Economics has found overall the Project will provide substantial economic benefits to the surrounding area, including safety benefits, reduced vehicle emissions, reduced vehicle operating costs, improved mobility, recreation, and health and other benefits. In summary, the magnitude of the economic benefits provided by the Project are greater than the costs the Project requires over the long-term. The complete corridor will need to be completed in order to see the benefits. When comparing the overall benefits to the overall costs for these projects, the combined total benefit-to cost ratio is 1.4 using a 7% discount rate, or 2.4 using a 3% discount rate, as shown in the figure on the right. The BCA is included as an appendix to the narrative.

Benefit / Cost Ratio Summary – 2016 \$

Item	TTD SR 28 Corridor Improvements
Net Present Value at 7%	
Total Project Benefits	\$95,089,000
Total Project Costs	\$67,398,000
Benefit-Cost Ratio	1.4
Net Present Value at 3%	
Total Project Benefits	\$163,599,000
Total Project Costs	\$68,207,000
Benefit-Cost Ratio	2.4

Prepared by New Economics & Advisory, October 2017.



July 6, 2018

The Honorable Elaine Chao
United States Department of Transportation
1200 New Jersey Avenue SE
Washington DC, 20590

RE: SR-28 Shared Use Pathway 2018 BUILD Grant Letter of Support

Dear Ms. Chao,

The Incline Village General Improvement District (IVGID) appreciates and supports the Tahoe Transportation District's (TTD) BUILD grant application for the next phase of the State Route 28 Shared Use Pathway. We are a rural area that relies upon this critical infrastructure and we are consistently challenged with safety issues and congestion along the State Route 28 corridor of the Lake Tahoe Basin. This is a narrow two-lane highway with steep topography and traffic at peak season can be delayed for hours impeding commuters, visitors, and emergency response vehicles. Working together, the project partners set the goal of this multi-phased project to clear congestion, provide safe multi-modal access to Lake Tahoe's east shore, provide road safety improvements, underground and replace 40-80+ year old utility infrastructure, and to control erosion along the highway shoulder in order to protect the highway and Lake Tahoe's water quality.

Within this corridor, IVGID operates and maintains approximately 11.5 miles of underground pipeline that carries treated wastewater effluent out of the Tahoe Basin. This pipeline, originally constructed in 1970, is approaching the end of its service life. IVGID has replaced 5.5-miles of the pipeline to date and condition assessment activities have identified an additional 3.75-miles that must be replaced in the near future. Additional condition assessment of the final 2.25-miles is scheduled for the fall of 2018.

It is IVGID's desire to relocate the replacement sections of pipeline to within the Shared Use Pathway as much as physically possible within the project area. As one of 13 project partners, IVGID is providing \$300,000 in funding, via a January 2013 Interlocal Agreement with TTD (amended October 2014), for the current Environmental Analysis which is on track to be completed this year.

The entire length of the 3.75-miles of pipeline identified for near term replacement is located within the alignment of the proposed next phase of the SR-28 Shared Use Pathway. IVGID believes there is a tremendous opportunity to relocate the pipeline out of the narrow highway footprint and into the pathway alignment. Doing so eliminates future traffic congestion during normal pipeline maintenance, substantially reduces pipeline construction costs, and halves the duration of traffic impacting construction. Additionally, co-location would allow the installation of fire hydrants on the replacement pipeline to support the firefighting activities in the event of a wildland fire along the eastern shore of Lake Tahoe. IVGID has \$7.5 million dollars available as a match for this BUILD grant to allow co-location and construction of the replacement 3.75-mile pipeline segment.

As you are aware, our small rural communities need assistance in replacing aging infrastructure. But just as important, this National Scenic Byway deserves our attention in providing the over 2.6 million motorists in this stretch a safe driving experience, the over one million visitors safe multi modal access to their public lands, and to protect the water clarity of this national treasure, Lake Tahoe.

Sincerely,

A handwritten signature in blue ink that reads "Kendra Wong". The signature is fluid and cursive, with a large, stylized "W" at the end.

Kendra Wong
Chairwoman
Board of Trustees
Incline Village General Improvement District



STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
1263 S. Stewart Street
Carson City, Nevada 89712

BRIAN SANDOVAL
Governor

RUDY MALFABON, P.E., *Director*

In Reply, Refer to: July 9, 2018

The Honorable Elaine Chao
Secretary of Transportation
U.S. Department of Transportation
1200 New Jersey Avenue, SE
Washington, D.C. 20590

RE: 2018 BUILD Federal Grant APPLICATION – TAHOE TRANSPORTATION DISTRICT (TTD) ROUTE 28

Dear Secretary Chao:

The Nevada Department of Transportation (NDOT) strongly supports the Tahoe Transportation District's (TTD) application for a BUILD grant on behalf of all 13 project partners. The Lake Tahoe Region is a popular recreation area with over 20 million visitors annually that has critical infrastructure needs. Travelers along the SR 28 corridor face safety and congestion issues that can be addressed by the proposed improvements. The transportation systems, utility infrastructure and digital delivery system are critical to the economic growth, the safety of our community and to the environment of this national treasure, Lake Tahoe.

As you know, under NDOT Project Management leadership in partnership with TTD, the first phase of the state route (SR) 28 Corridor Revitalization Project is underway with construction scheduled to be completed in 2018. This first phase included a separated multi-use path as well as water quality improvements along the corridor. NDOT not only is leading the construction effort, but also committed state funding to complete the Project. This was one, if not the largest, collaborative efforts to seek solutions to our aging infrastructure here in the Tahoe Basin. The current project demonstrated how collaboration works through innovative project delivery. NDOT remains committed to partnering with TTD and the other agencies to ensure that the overall SR 28 Corridor Revitalization Project is completed to address the safety needs within the SR 28 corridor.

This TTD grant application is seeking funding to complete the second phase of the SR 28 Corridor Revitalization Project which will extend the Multi-Use path from its current terminus at Sand Harbor State Park to the junction of SR 28 and US 50 west. A federal grant would also provide the opportunity to extend the fiber optic conduit within the SR 28 corridor to Hwy 50. This is an incredible opportunity to provide connectivity and redundancy for digital delivery in the Tahoe Basin.

NDOT understands how vital this Project--and the BUILD funding--is to meet the needs of Tahoe's rural communities. The SR 28 National Scenic Byway deserves our attention in providing over 4 million motorists in this corridor a safe driving experience. The project would also provide he over 3 million visitors to the corridor safe multi modal access to their public lands, and would protect the water clarity of this national treasure, Lake Tahoe.

Sincerely,

Rudy Malfabon, P.E.
Director



DIRECTOR: Scott Morgan

▲ Parks
1319 Waterloo Lane
Gardnerville, NV 89410
(775) 782-9835
FAX: (775) 782-5799

▲ Recreation/Douglas County
Community & Senior Center
1329 Waterloo Lane
Gardnerville, NV 89410
(775) 782-5500 EXT: 1
FAX: (775) 782-9844

▲ Lake Tahoe
Kahle Community Center
236 Kingsbury Grade
Stateline, NV 89449
(775) 586-7271
FAX: (775) 586-7273

MAIL: P.O. Box 218, Minden, NV 89423

The Honorable Elaine Chao
United States Department of Transportation
1200 New Jersey Avenue SE
Washington DC, 20590

July 16, 2018

Re: Support for Tahoe Transportation District BUILD grant

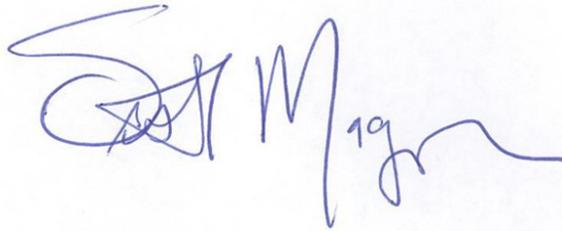
Dear Honorable Elaine Chao,

Douglas County is pleased to support the Tahoe Transportation District (TTD) submittal for the BUILD grant on behalf of those agencies who support this project. As you know, the shared-use path alignment crosses through approximately 2 miles of Douglas County in this 5+ mile segment along Lake Tahoe's SR 28. This path is a critical piece of connectivity to recreation destinations and to transit for our residents and visitors. There are over 2.6 million vehicles traveling this rural corridor along with over one million people recreating along this portion of Lake Tahoe. If we are to tackle the traffic congestion and safety along State Route 28's narrow winding two lane highway with its steep topography we must provide reasonable parking locations and connect people with a shared-use path and transit.

Our partnership with TTD and the U.S. Forest Service built the South Demonstration Project, a part of this overall NV Stateline to Stateline Shared-Use Path. It included 2.5 miles of path which Douglas County now maintains. It has been a tremendous success with 10,000-12,000 people per month using the path to link to their recreation destination which reduces the number of vehicles on our congested highways at Lake Tahoe. This portion of the SR 28 corridor, from Chimney Beach to Hwy 50, is experiencing tremendous growth in the amount of shoulder parking on any given summer day. This contributes to highway safety issues as people troll for parking and make unsafe u-turns. In addition, there are nearly 1,000 people daily in the summer forced to walk in travel

lanes and crawl over the guardrail to get to their recreation destination. This leads to traffic congestion and erosion along the highway shoulder. Working together the project partners sought solutions and set the goals of this multi-phased project to clear this congestion, provide safe multi-modal access, provide road safety improvements, underground and replacing 50-80+ year old utility infrastructure and to control erosion along the highway shoulder protecting the highway and Lake Tahoe's water quality. Nevada's rural highway, SR 28, needs our attention in providing a safe driving experience, a separated shared-use path, appropriate off-highway parking and transit access. These improvements will clear congestion and provide the safe access that the public deserves. It will provide stabilization and erosion control which will protect the water clarity of this national treasure, Lake Tahoe.

Sincerely,

A handwritten signature in blue ink, appearing to read "Scott Morgan", with a date "19" visible at the end of the signature.

Scott Morgan
Community Services/Parks & Recreation Director

Cc: Carl Hasty, District Manager, Tahoe Transportation District
Larry Werner, County Manager
Jennifer Davidson, Assistant County Manager



File Code: 7700
Date: JUL 13 2018

The Honorable Elaine Chao
United States Department of Transportation
1200 New Jersey Avenue SE
Washington DC, 20590

Dear Honorable Elaine Chao

The U.S. Forest Service Lake Tahoe Basin Management Unit (LTBMU) is pleased to support the Tahoe Transportation District (TTD) submittal for the 2018 BUILD program on behalf of all 13 project partners. As you know, the U.S. Forest Service is the major landowner along this segment of Lake Tahoe's SR 28. This is a narrow two-lane highway with steep and challenging topography. There are over 2.6 million vehicles traveling this rural corridor along with over one million people recreating along this portion of Lake Tahoe.

This portion of the SR 28 corridor, from Chimney Beach to Hwy 50, is experiencing critical infrastructure failures, highway safety issues, and congestion. The traffic during peak season can be delayed for hours, impeding emergency response vehicles. Working together the project partners set a goal for a multi-phased project to clear congestion, provide safe multi-modal access and road safety improvements, replace and underground 50-80+ year old utility infrastructure, and to control erosion along the highway shoulder, thus protecting the highway and Lake Tahoe's water quality.

The LTBMU is the lead agency currently working on the Environmental Analysis (EA) for this 8+ mile segment, listed in this grant, of the SR 28 corridor. The EA is scheduled to be complete in 2018.

Nevada's rural highway, SR 28, needs our attention in providing a safe driving experience, a separated shared-use path, appropriate off-highway parking, and transit access. These improvements will clear congestion and provide the safe access to our public lands that the public deserves, and provide stabilization and erosion control which will protect the water clarity of the national treasure that is Lake Tahoe.

Sincerely,

 JEFF MARSOLAIS
Forest Supervisor

cc: Carl Hasty

