



**STATE ROUTE 28  
PARKING  
MANAGEMENT  
PROGRAM PILOT**

Monitoring Report 2020

**PREPARED FOR:**

TAHOE TRANSPORTATION DISTRICT BOARD  
OF DIRECTORS AND CARL HASTY, DISTRICT  
MANAGER

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## Executive Summary

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This report provides an analysis of the data collected, a review of preliminary findings, and recommendations for additional monitoring of the State Route (SR 28) Corridor which was developed under the Value Pricing Pilot Program (VPPP) The VPPP Project is a rural, resort-destination market- pricing parking project serving the SR-28 corridor in Lake Tahoe.

Two studies, the SR 28 Corridor Management Plan (CMP) and the SR 28 Parking Management Plan (Parking Plan) have proven to be invaluable in analyzing safety and congestion management infrastructure improvements with a parking management system based on demand pricing. The demonstration projects included safety improvements on SR 28, no parking zones on the highway, the Tahoe East Shore Trail, transit, and a parking management program that are providing positive effects on the SR 28 Corridor. The Park Tahoe pilot project demonstrates the value of demand-based pricing to assist in distributing the resources on this highly congested recreation corridor that can positively impact the Tahoe Basin and balance community and visitor needs.

The Parking Plan, as part of the VPPP grant funded pilot project for congestion pricing, presented an overview of the parking pricing scenarios, outreach, and staffing. The Parking Plan was presented to the TTD Board at their December 2018 meeting and parking pricing scenarios were approved by the Board of Directors at the April 2019 meeting.

This monitoring report for the SR 28 Safety Improvements, Tahoe East Shore Trail and the Park Tahoe Parking Program has developed:

- initial methodologies to develop a number of trend analyses;
- lessons learned from the program of projects; and
- informed TTD of the need for capital projects and adaptive improvement projects critical for success; and
- strengthened the continued collaboration of the CMT and their efforts on SR 28 which can provide a well-defined path for successful implementation around the Tahoe basin to address a multi-prong approach to congestion management through multi-modal solutions and partnerships.

Overall, the success of the program of projects along the SR 28 Corridor is due in large part to the SR 28 ongoing Corridor Management Team (CMT) bi-monthly meetings. This team is comprised of the 13 partnering agencies in the corridor. Their continued willingness to tackle challenging policies, adaptively managing operational issues through corrective actions, and the development of a long-term action plan will further enhance these demonstration projects and allow for successful expansion.

**The Board is encouraged to focus on the methodology to establish a number of trend analyses within the corridor, instead of the data conclusions. The CMT, as it collects**

**additional data and refines the monitoring metrics over the next several years, can further explore adaptive management solutions.**

Each of the 13 partnering agencies that make up the CMT have their individual agency priorities for monitoring metrics; for example, safety, crash reduction, greenhouse gasses, vehicle miles traveled (VMT), recreation capacity, natural and operational resource capacities, and other priorities that are likely to shift over time. The challenge will be, for the CMT over the next several years, to refine a monitoring program in a way that allows for efficient and effective metrics that are easy to collect and to evaluate adaptive needs with annual budget requests and as the CMT funding priorities allows to assure a positive community experience as build out continues.

The report provides a summary of easily repeatable and adaptable datasets in the form of graphs, surveys and from on-the-ground experience of staff. The CMT is attempting to blend sources rather than focus on one set of data, provide context through developing baseline information, identify trends and outliers, and adjust when appropriate. Some data points may need further analysis to confirm data accuracy (i.e., capturing patterns of visitation) and variability (seasonal peak period), and should be considered along with other relevant datasets. The CMT helped to determine what is missing and what data is really needed to understand the unique elements of the SR 28 corridor in order to make informed decisions. Today's datasets will evolve in the future as information technology improves and the trend analysis is built. As more information is collected, infrastructure is expanded, and visitor patterns shift, it will lead to an adaptive management approach.

The CMT recognizes that no one agency can do it alone, that there is a need to leverage both human resources and financial resources in these multi-jurisdictional corridor solutions.

This year, 2020, has had the challenges of not only having a warm winter and early spring, but also the COVID-19 pandemic, which placed greater pressure on the Tahoe East Shore Trail, the parking facilities and the SR 28 corridor as a whole. As is often the case, demand and pressures on the system highlight the need for continued adaptation to manage the multi-modal transportation system. CMT recommendations associated with this report are highlighted as follows:

### SR 28 Infrastructure Improvements:

- Support and encourage obligation of Nevada Transportation Alternatives Program (TAP) and Surface Transportation Block Program (STBG) awards to TTD and NV TAP application 2020 as critical steps in managing parking and the congestion on SR 28, encouraging work to be done at same time as the SR 28 overlay project, to include:
  - Rocky Pt. parking pullout – four to six spaces
  - Organization/construction of the parking spaces from Sweetwater Road to Country Club Drive

- Formalizing the southbound transit stop at Lakeshore Blvd. and SR 28.
- Support and encourage TTD’s application for the 2020 Nationally Significant Federal Lands and Tribal Projects (NSFLTP) Program Grant to construct two sections of the trail and parking on SR 28 Corridor, including the entry point improvements at Sand Harbor and assist in seeking additional match funds.
- Support and encourage TTD to work with the University of Nevada, Reno to submit a National Science Foundation Smart and Connected Cities Grant application to implement additional data collection and analysis on bike, pedestrian, and public safety along the corridor.
- Meet and discuss findings, funding, and implementation strategies with the entire CMT and consider expanding the SR 28 Operation and Maintenance Interlocal Agreement to include U.S. Highway 50, as that corridor trail system is planned. The South Demonstration Project is operational and a parking management pilot should be considered, thus providing consistency and one meeting group for the entire East Shore operations.
- Support Nevada Department of Transportation’s (NDOT) request for Interim Approval to utilize red paint markings on transit pullouts to mitigate illegal parking, unloading, and traffic impacts.
- Encourage NDOT to add additional signs to existing signposts indicating Bike Lane (no parking) in the area from Lakeshore Blvd. to Sweetwater Road on the Ponderosa side of the road.
- Explore painting the curb red 100 feet on both sides of the pedestrian crossing at Lakeshore Blvd. to re-enforce No Parking with NDOT.
- Add bike and pedestrian counters at Rocky Point access, Sand Harbor trail entrance near the boat ramp, and potentially at the Hidden Beach access points.

#### Parking Management:

- Explore the potential to add Park Tahoe parking kiosks at Memorial Point with Nevada Division of State Parks (NDSP).
- Encourage lowering the afternoon parking rates during peak and shoulder seasons to see if it encourages flattening of the curve. Also, round the few rates that are at 50 cents to whole numbers to address visitor’s complaints that it was inconsequential to revenue collection.
- Encourage the Board to adopt a winter rate structure that is similar to or slightly less than the spring/fall rate schedule and expand the fall schedule through November.
- Recommend that TTD staff pursue a Non-Compliance Program using a software vendor, with the noticing and collections program to start in spring 2021; and the TTD Board adopting potential non-compliance fees of:
  - \$30 if paid at the meter or on TTD’s website within 15 days
  - \$50 first notice by vendor; violator has 30 days to pay

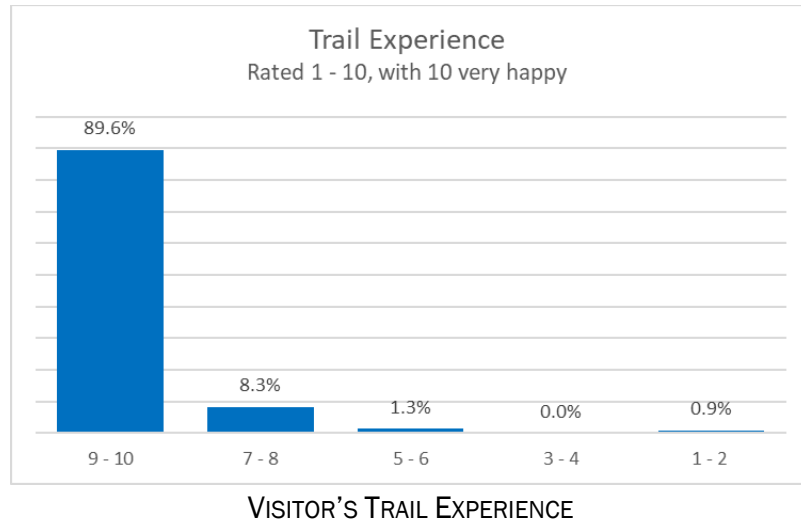
- \$75 second notice by vendor; violator has an additional 30 days to pay or notice will be turned over to collection agency.
- Third notice by vendor that the violator is non-compliant and has been turned over to a collection agency.
- Consider the potential to have automated camera ticketing at transit pullouts and other areas.



PHOTOS OF VEHICLES PARKED AT TRANSIT PULL-OUT – OCTOBER 2020

#### Public Outreach:

- Continue the public outreach message “Come Early, Come Late, Pay a Lower Rate,” with additional messaging to encourage coming later in the day to see if the curve can be flattened even further. Target websites and social media to get the messages out.
- Continue positive reinforcement that funds stay in the Basin to maintain the corridor. It was found visitors really liked the message and it made them feel good about their payment.
- Provide messaging to visitors to remind them that parking kiosks require credit cards, they need to enter their license plate number into the system, and specific parking spot information is not required. Prepare public launch of the Park Tahoe mobile payment option. This will help mitigate some frustration by visitors who are not familiar with the parking management system.
- Pursue working with Tahoe Fund on public messaging on bike safety: keep right, keep it slow and let other know you are approaching (suggestion is something similar to Renown’s pedestrian crossing ad). Place messaging on website and social media.



#### Data Collection:

- Work with TRPA on the dataset analysis of pedestrian and bike counters and the need to have charts useful to agencies.
- Work on ways to separate out the parking transactions to the recreation destination i.e., Flume Trails, Tahoe Trail, restaurant, etc.
- Work to automate parking reporting systems through TTD.
- Work with the CMT to determine what monitoring metrics should be included, how often they should be done and how are they funded, if data cannot be obtained by current meters or counters (vehicle, bike, pedestrian).

#### Transit:

- Establish 2021 transit headways for the East Shore Express in partnership with NDSP strategies on addressing the visitor desired density on beaches at Sand Harbor and Hidden Beach to optimize multi-modal access along the corridor.
- Work with transit managers (ESE, TART) on how to gain information electronically or survey visitors on their destination when dropped off, i.e., which beach, Flume Trail, Tahoe East Shore Trail, etc.

The following report provides an overview of the goals for the SR 28 Corridor along with the strategies and performance of the parking management system implemented on the SR 28 corridor in its first year of operations. It provides a synopsis of findings with comparative analysis when possible and provides recommendation for next steps.





## SR 28 Congestion Management Project Overview

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SR 28 is a two-lane, mountainside road and is the only access route for over one million recreating visitors and 2.6 million-plus vehicles per year. The area's sensitive resources have suffered due to a lack of coordinated solutions for safer, adequate access to a variety of recreation experiences. In response, the Tahoe Transportation District (TTD) partnered with 12 agencies in 2013 to develop the State Route 28 National Scenic Byway Corridor Management Plan<sup>1</sup> (CMP). See Figure 1 of the CMP Recommendations below.

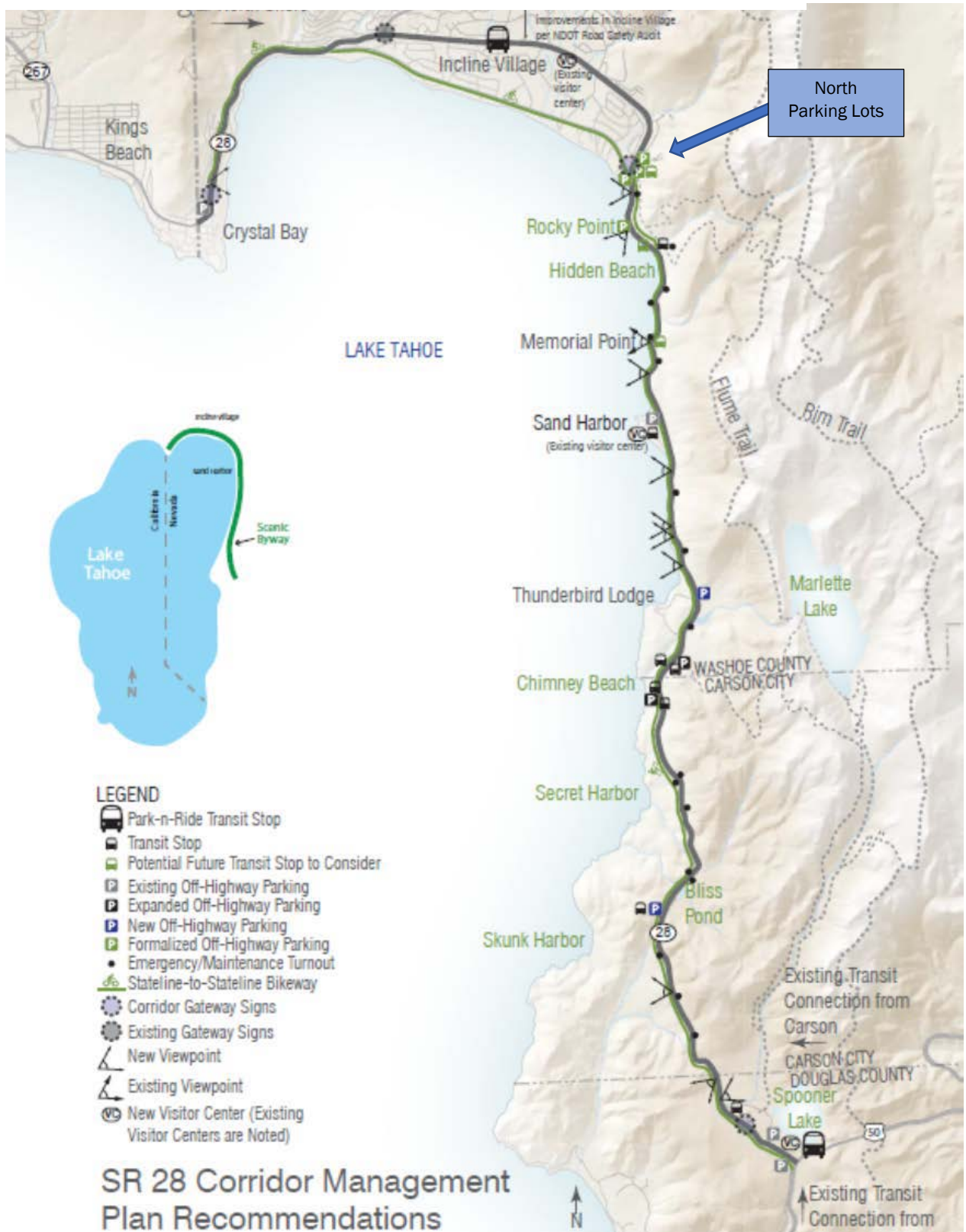
The goals of the CMP are:

- *Improve safety* by designing for fewer motor vehicle accidents, by providing alternative pedestrian and bicyclist access.
- *Expand transportation choices* by encouraging transit, walking, bicycling and connecting parking to both transit and trails. Providing park-n-ride lots with transit (East Shore Express and Tahoe Area Rapid Transit) to trails and recreation destination connections.
- *Enhance the visitor experience* while managing capacity and enhancing recreation alternatives through multi-modal solutions.
- *Protect the lake* by reducing erosion with appropriate parking, trails and access. Ensure water quality and habitat protection by reducing fine sediments that reach the lake and providing well defined trail and signage information.
- *Promote economic vitality* by encouraging collaboration, broadband, and establishing private public partnerships.

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<sup>1</sup> <https://www.tahoetransportation.org/wp-content/uploads/2019/12/sr-28-cmp-for-web-131004.pdf>

Figure 1



Building on the CMP, the TTD developed the SR 28 Corridor Parking Management Plan<sup>2</sup> (Parking Plan) under the Value Pricing Pilot Program (VPPP) grant. The VPPP is intended to demonstrate whether, and to what extent, roadway congestion may be reduced through application of congestion pricing strategies, and the magnitude of the impact of such strategies on driver behavior, traffic volumes, transit ridership, air quality and availability of funds for transportation programs. Value Pricing projects are required to demonstrate the technical feasibility of pricing and monitor the changes in travel

The adopted Parking Plan provides a demand-based pricing strategy (with higher prices during busier periods and lower prices during non-peak periods) to facilitate visitor access to the SR 28 corridor and its recreation destinations to a variety of users, to change travel choices, increase parking turnover to increase access, to provide long-term maintenance and operations of efficient integrated corridor improvements, such as the Tahoe East Shore Trail, parking, and transit connections. The Parking Plan has three distinct goals:

- Manage parking to reduce congestion, provide safe parking and encourage use of other travel modes.
- Create an integrated parking system that is adaptable and financially sustainable.
- Improve the user experience and enhance access.

From these goals, strategies were developed to guide management of the system, for example:

- Provide a parking management system that is uniform and integrated for SR 28 with revenues covering the cost of managing the parking system.
- Use technology whenever feasible to support integration of the parking and transportation system to reduce operational cost, gain efficiencies, reduce congestion, and improve the user experience.
- Encourage project partners to develop common branding and messaging for the parking system.
- Use parking pricing to manage parking demand, reduce congestion, change behavior, and encourage travel by other modes.
- The parking management system should minimize the effect of spillover parking on private property that may require additional management.
- Any program revenues that exceed the costs to manage the program should support the mobility investments, i.e., the Tahoe East Shore Trail, parking lots, and transit.

To further the development of the goals and strategies, a number of initial performance measures were developed to use as tools to improve parking management along SR 28 and to measure success and provide the SR 28 ongoing Corridor Management Team<sup>3</sup> (CMT) with

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<sup>2</sup> <https://www.tahoetransportation.org/wp-content/uploads/2020/11/2019-Mar-SR-28-Corridor-Parking-Mgt-Plan-Adopted-4-2019.pdf>

<sup>3</sup> The Corridor Management Team is comprised of the 13 partnering agencies in the corridor.

data for adaptive management. The CMT recognizes that each of these measures can impact recreation facility capacity and require continuous adaptive management solutions.

Some examples are:

- Occupancy: generally measured hourly helps to understand peak demand daily, weekly or seasonally, Targeting the reduction of peak congestion by moving visitors to outside of the peak hours from 10:00 a.m. to 3:00 p.m. helps to reduce congestion and greenhouse gasses from visitors searching for parking.
- Turnover and duration of stay: targeting two to three times per day turnover to optimize capacity and reduce traffic congestion with users searching for on-highway parking. It enhances the user experience.
- Encouraging carpooling: reduces the number of cars arriving at a particular trailhead thus reducing congestion. Peak pricing encourages carpooling during peak times.
- Transit Ridership: data indicates visitor use levels for access to trails or to recreation destinations with the target of increasing this mode share without exceeding recreation facility capacities.
- Provide an affordable, quality visitor experience: by targeting a high level of Very Good to Excellent visitor response in survey data.

*This kiosk system provides crucial data for monitoring visitor patterns, provides for data-based decisions, and is leading the project partners to an adaptive approach to operations with real time parking management data.*

### SR28 North Demonstration (Incline Village to Sand Harbor) Park Tahoe Pilot Program

A parking meter/kiosk system of four linked payment kiosks was installed for the pilot, serving 90 spaces at three lots located near Ponderosa Ranch Road and SR 28. This approximately three-mile segment of the SR 28 Corridor is linked with the Tahoe East Shore Trail, Flume Trail, Incline Flume Trail, Tahoe Area Rapid Transit (TART), and the East Shore Express (ESE) transit.

The adopted rate structure for these parking lots provides a demand-based pricing strategy with higher prices during busier periods and lower prices during non-peak periods to facilitate access to a variety of users, change behavior, create turnover, maintain corridor improvements and the parking management system. It is intended that ongoing monitoring of the pilot program will occur on a regular basis as budgets allow, to provide information on user behaviors, program success, and expansion opportunity.

In 2020, the SR 28 corridor was heavily impacted by several challenges. A warm winter and early spring, along with the COVID-19 pandemic caused operational changes and intensified the drive-up market visitation. Data collection, baseline data trends and outcomes of this monitoring report were likely impacted by those challenges; along with the associated changes in travel and social behavior, where more people sought the open outdoor

experience for exercise and regenerating their spirits and the warm winter and lack of snow keeping the trail essentially open all year.

The popularity of the trail and the shoreline led to the Tahoe East Shore Trail having approximately 430,000 bike and pedestrian trips (i.e., one trip out plus one return trip) last year (July 1, 2019 through June 30, 2020), with 30% of the trips on bicycles and 70% from pedestrians. This was the first full year of bike and pedestrian counter data but it was noted that during a couple of months in the spring and early summer of 2020 there was an uptick in visitor use from the prior year due to the pandemic. Paid parking began July 20, 2020. Again, it will take several years to establish a trend analysis.

This report summarizes the findings for the first year in modified operations using data from the parking kiosks, a visitor exit survey, bicycle and pedestrian counters, and observations from State Parks and Washoe County staff, TTD staff, and the consultant. The report focuses on the following:

- Value Pricing Pilot Program goals
  - Flatten Peak Hour Demand
  - Turnover Rate
  - Duration
  - Carpooling
  - Transit to Trails
  - Affordable, Quality Visitor Experience
    - Rate Structure Review
- Ambassador Program
- Hardware and Software Review
- Policies and Non-Compliance Program
- Revenue and Expense Baseline Data
  - Testing the interface of Parking Management System with Recreation Site Capacity or Desired User Density.

The measures below were selected to develop an approach to trend analysis and to look at gaps in information needed for the CMT to make decisions and provide adaptive solutions to safety, access, and congestion within the SR 28 Corridor with the limited financial and operational resources available.

As a point of reference, as part of the CMP development process, it was determined that in this segment of the corridor, the daily average peak demand of 252 shoulder parked cars near Sand Harbor's entrance were to be relocated to transit and another 200 shoulder parked cars north of Sand Harbor to Incline Village were to be relocated to off-highway or to legal organized parking zones. Since the approval of the CMP, the new Incline Flume Trail was authorized and there has been some expansion of local business to serve the trails and not all proposed parking improvements have been completed. The CMP also notes 1,538



people were walking on the highway daily on average peak demand days, a result of the shoulder parking in this segment.

## Value Pricing Pilot Program Goals

### *Flatten Peak Hour Demand*

To address congestion and optimize parking management during the peak hours of visitor use (between 10:00a.m. and 3:00p.m.), TTD developed a robust outreach program with the tag line “Come Early, Come Late, Pay a Lower Rate.” This messaging appeared to be successful in flattening the peak demand as 57% of the visitors surveyed said they had heard the message. TTD found that visitors are getting their information primarily from social media (35%) and websites (48%), This is important for targeting future messages regarding parking in the SR 28 Corridor.

Differences in the method of gathering parking data over the past several years makes it difficult to compare data collected as part of the planning process; however, the percentage of shoulder parked cars counted during previous surveys can be compared to the percent of parking transactions during similar time periods.

Parking transaction data from an average July week in 2020 shows 36% parking before 10:00 a.m., 44% parking during peak hours, and 20% parking after 3:00 p.m. In a 2016 memo regarding shoulder parking by LSC Transportation Consultants, shoulder parked car counts on a peak weekend Saturday in 2016 found 31% were parked between 10:00 and 11:00 a.m., 87% between 11:00 to 3:00 p.m., and 72% between 3:00 and 5:00 p.m. This comparison shows a move towards non-peak period visitation

With 2020 visitor survey results finding 54% of the visitors are repeat visitors and the majority of visitors coming from California and Nevada, messaging should be targeted towards specific zip codes. Repeat visitors are expected to become more accustomed to the hourly rate structure which may encourage them to choose visiting during lower hourly rate periods.

It is noted that during the shoulder season of September through early November, the parking lots continued to remain full to nearly full on the weekends.

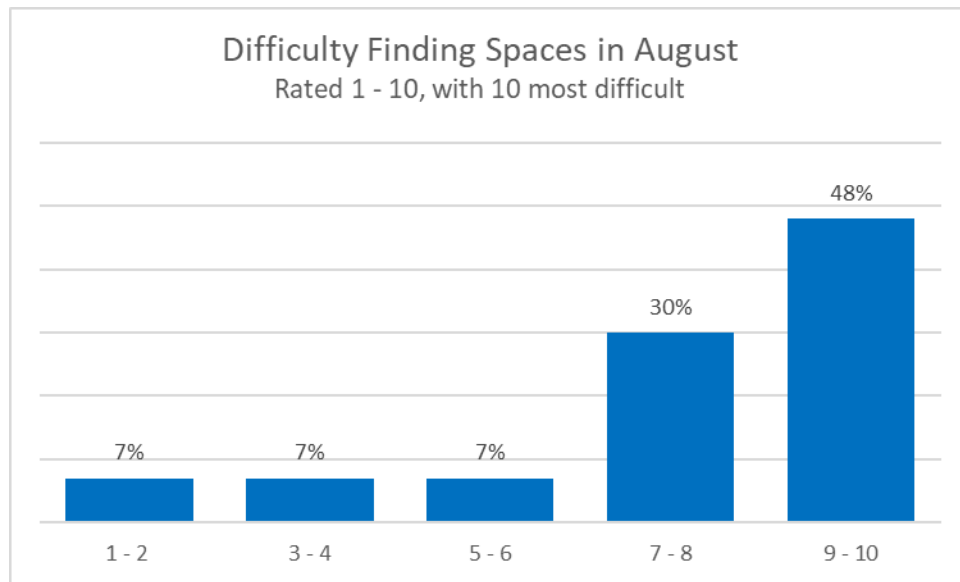
### *Turnover Rate*

Parking turnover represents the number of times a parking space is used daily. For example, if one car is parked in a space for the entire day, the turnover rate is one. If two cars parked in that space during the entire day, that turnover rate is two. To reduce congestion on SR 28 and optimize the limited available off-highway parking facilities, the current target is a two to three times turnover per space. Efficiencies with the parking system should further improve, as additional facilities are developed as planned in the CMP, transit is fully optimized, and no parking zones are further expanded. Thus, the visitor experience will be enhanced

through an understanding of where and when parking can occur and how to access the recreation areas through a multi-modal transportation system.

Prior to the off-highway parking spaces being built, the on-highway shoulder turnover rate was 1.3. After implementation of the Park Tahoe Pilot Program, the off-highway parking turnover rate in July ranged from 2.69 to 3.2, weekday and weekends respectively.

Visitor surveys indicate more needs to be done in regard to organized parking, transit alternatives and messaging when parking is at capacity, in that 48% of visitors still are finding it very difficult on summer peak days to find open parking spaces at the lot.



#### *Duration*

Although more visitor information is needed, the Tahoe East Shore Trail accessibility creates an exceptional visitor experience to enjoy the shoreline views or to get outdoors for some exercise. Surveys indicate that visitors are staying for shorter periods than when unsafe shoulder parking was the only option for accessing the corridor, with 21% of visitors staying one hour or less in 2014 compared to 33% staying less than an hour in 2020.

#### *Carpooling*

Carpooling can reduce the number of cars arriving to a trailhead. In the 2011 memo regarding shoulder parking by LSC Transportation Consultants, survey data indicated SR 28 shoulder parked cars averaged 2.9 persons per vehicle for the 200 cars shoulder parked from approximately Memorial Point north to Incline Village. TTD visitor surveys indicated three per car in 2020. Additional survey work is need on number of people per car as field observations noted that the 2020 information was gathered via an exit survey where families were not inclined to stop on their way back to their cars. The parking kiosks could be programed to ask this information; however, it may lead to more visitor frustration when having to enter additional information while paying for parking.

### Recommendations or Considerations:

- The CMT and TTD should consider ways quantify the use from the Flume trails and restaurant parking demand versus the Tahoe East Shore Trail and look for improved messaging opportunities to these groups.
- TTD should explore software customization and new technologies to quantify weekend versus weekday visitation demand and the ability to collapse parking transaction data which may skew the turnover rate downward.
- The CMT and TTD should consider ways to more accurately collect carpooling data, especially during peak periods.
- CMT should work to develop additional messaging to come later in the day, while continuing the Come Early, Come Late, Pay a Lower Rate. This outreach should be placed on websites and social media.

*Prior to the start of the ESE, on peak summer days, there was a daily average of 254 on-highway shoulder parked cars at Sand Harbor's entry area, with an average of 3.8 persons per car that were removed once transit began operations.*

### *Transit to Trails*

TTD's ESE transit service from the park-n-ride lot in Incline Village to the beaches and trailhead did not operate in summer 2020 at the request of the Nevada Division of State Parks, in response to the Governor's orders to limit park access to 50%. In 2019, ESE ridership was approximately 40,000. The parking lot management began July 20, 2020 when transit was not operating due to the pandemic. It will take several years of data to ascertain actual numbers and a trend analysis to understand the change in visitor behaviors. The full infrastructure vision will be required to distribute the visitor demand on both transit and the trail as envisioned in the CMP.

TART which services the north shore with transit continued to operate with Transit service to the East Shore trailhead. Visitor demand and access by transit needs further analysis and data collection refinement.

With the East Shore Express not operating in the SR 28 corridor in 2020, visitors ignored highway signage and used the transit pullouts as unloading zones or for photo opportunities. This negatively impacted beach capacity, created a public safety hazard, and redirected law enforcement resources.

### Recommendations or Considerations:

- Support a request to NDOT for interim approval to paint transit stops and lanes red.
- ESE & TART visitor surveys for this location should include, among other questions a question on where the rider is going (i.e., Flume Trail, Tahoe East Shore Trail, Hidden Beach, Sand Harbor, etc.) so that transit ridership can be applied to adjust potential headways based on capacity at recreation destinations.
- Consider technology improvements to understand transit visitor demand and distribution.
- Although additional years of data will better inform capacity issues at Hidden Beach, headway should be reviewed for 2021 operations.

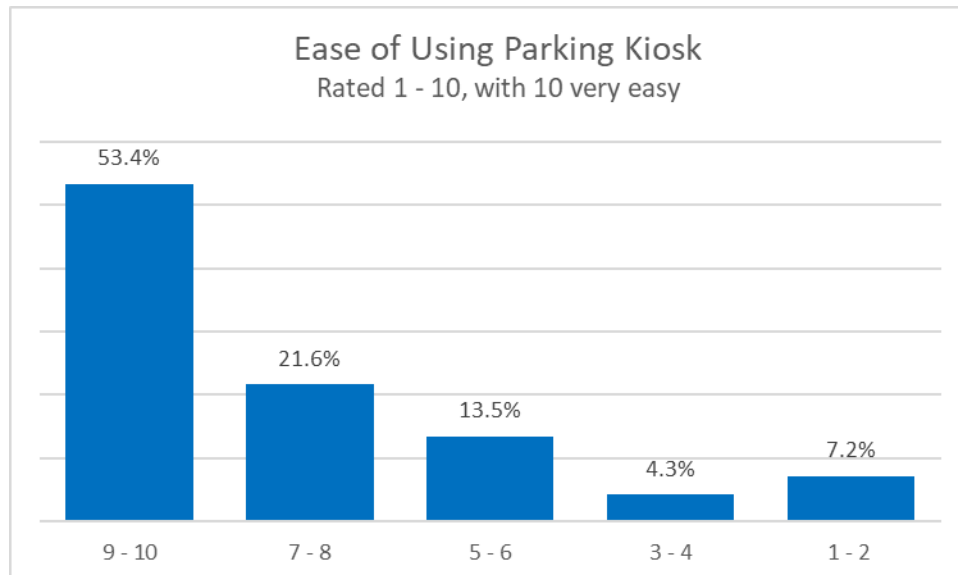


*Affordable, Quality Visitor Experience*

In 2014, Washoe County completed a study on the visitor’s willingness to pay for parking. The study found that visitors were willing to pay \$10 for safe access to their recreation destination. Parking kiosk data indicates that during August 2020, the average transaction was \$11.07. This equate to an average per person cost of \$3.69, based on three people per car. Those coming early or late pay as low as \$1 or less. In August 2020, 4% parked for free and another 27% paid rates lower than peak. In the shoulder season of September, October and November, the average transaction was \$7.65, \$6.33 and \$5.92 respectively.

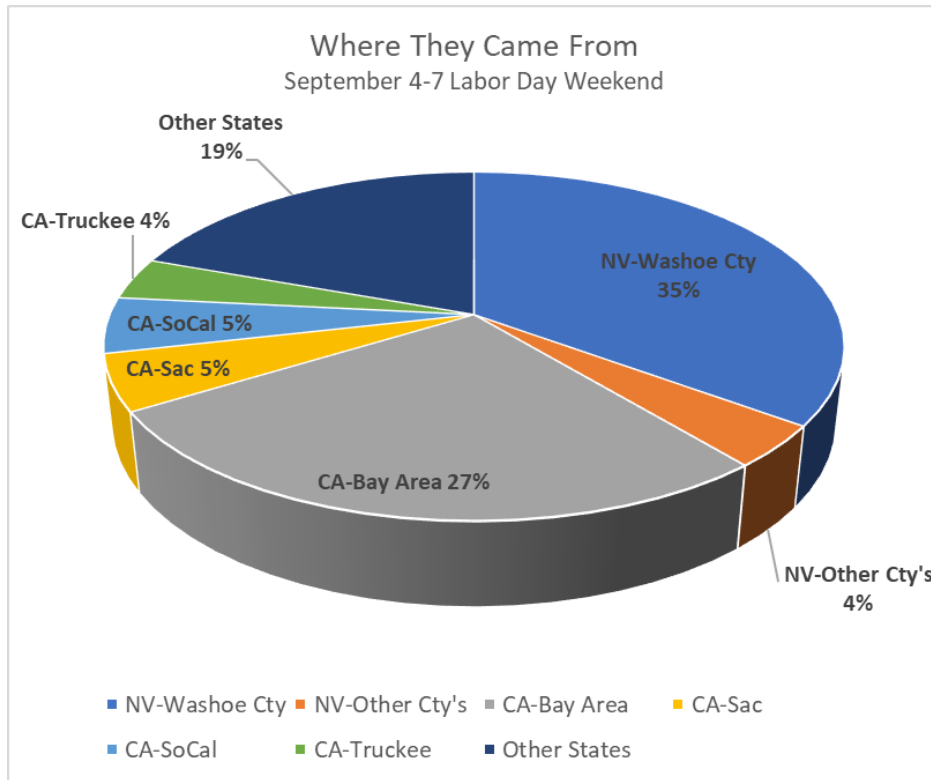
The early or late rates have had a positive impact on local residents who generally want to recreate outside of peak hours and it also provides an affordable rate consistent with the previous 2014 survey in today’s dollars. During normal transit operations years, transit also provides affordable access to recreation destinations. Additional off-highway parking, trail, technology, and transit connectors as proposed in the CMP should continue to be supported by the CMT to provide effective, efficient, safe, environmentally responsible visitor demand management through a multi-modal system.

New parking systems take some time to become accustomed to; however, with a 54% return rate, visitors’ ease of use of the kiosks should increase. Consistency in technology, signage, and messaging will be important to visitors as the system expands. TTD tested the visitors experience and ease of using the parking management system and found that 53% (9-10) said it was Very Easy to use with another 22% saying it was Easy (7-8). There were 14% who were Neutral (5-6), 4% (3-4) Not Easy and 7% (1-2) said the parking management system was Hard to use.



The kiosk system is programed to require license plates numbers. TTD can use this data to determine general visitor origin and repeat transactions to support public outreach

messaging to the largest market share for specific peak periods, such as holiday weekends to try to influence visitor behavior to use transit or come outside of peak times.



#### Recommendations or Considerations:

TTD should test shifting visitor behavior by adjusting rates:

- Adjust peak summer and other summer rates downward by \$1.00 for the 3:00 to 5:00 p.m. period to try and shift visitation to later in the day
- Adjust spring/fall rates weekend rate downward in the 9:00 to 10:00 a.m. and 3:00 to 5:00 p.m. periods by \$.50, to see if it will encourage visitors to Come Early or Late.
- The weekday 12:00 to 3:00 p.m. period during the summer peak season should increase by \$.50 from \$2.50 to \$3.00.
- TTD should also consider lengthening the shoulder season rates through November.
- TTD should provide additional messaging to encourage coming after 3:00 p.m. to help flatten the curve.
- TTD should survey visitors from CA and other states to see if they have a second home at the Lake.

#### Ambassador Program

A parking ambassador program was initially developed to launch the parking program and proved be invaluable with:

- assisting visitors with parking management system operations and reminders to have your credit card and license plate available
- reinforcing the messages of Come Early, Come Late, Pay a Lower Rate and that the money stays in the corridor to help with maintenance
- collecting survey data for monitoring purposes
- testing non-compliance
- providing feedback on operational issues

The Ambassador was hired to be on-site during peak mostly weekend hours. It is likely that non-compliance is higher when the Ambassador is not available. The Ambassador provided field information and noted that visitors really like the fact that the parking revenues will be used to operate and maintain the facilities. The Ambassador also assisted TTD staff in troubleshooting this first year's operational issues with the parking management system, operations, signage and visitor questions.

#### Recommendations or Considerations:

- Visitors do not always notice the parking kiosk signage, indicating additional signage is needed at the entrance to each parking node stating, "Paid Parking Area - License Plate and Credit Card Required."
- Need 'Paid Parking - License Plate and Credit Card Required' sign under Handicap Parking Sign to reinforce that payment required.
- TTD staff to work with kiosk vendor to address the timing of the kiosks' sleep mode and screen clarifications.
- Highlight with arrow or on the first kiosk screen that meter operation instructions are posted on the right on the kiosk.
- Provide further clarification of the credit card and license plate requirements at the kiosks, with parking area signage, and outreach as described above.
- TTD to work with vendor to add mobile payment option.
- Determine a shaded location for the Ambassador station.
- Consider relocating dumpsters and discuss winter operations of parking lots and meters.
- Monitor the restrooms cleanliness and capacity during peak season, especially holiday periods.

#### Hardware and Software Review

The VPPP project has provided the opportunity to test parking management tools in a remote recreation destination location. With parking management and paid parking new to the region and to TTD, developing the pricing system and the approach to software development and compliance continues to evolve as additional information is gathered. Having the parking ambassador on-site during peak periods was essential to the identification and understanding of software and hardware issues thus far. Providing that

personal assistance to the user allowed identification of programming issues and adjustments to the user interface, backend software, and signage that were critical to success and adaptation. Programming for the demand-based pricing included rates that adjusted both throughout the day and with seasonal demand. This type of program set up is relatively complex compared to an urban setting that has more constant rate of use, and therefore, a constant rate structure. The hourly demand-based adjustments created a coding issue in the system where a user could not add additional hours to their parking. This programming has been corrected through adjustments to both the backend system and the user interface.

Additionally, the system was intended to allow visitors who come before 7:00 a.m. to park for free and if they want to stay past 7 a.m. they could prepay. The system programming backend required adjustment post implementation.

Modem connectivity and cellular capacity were identified as issues early in the planning phase. Adjustments were requested to address the connectivity issues seen during peak demand to allow a more seamless user experience and lessen frustrations at the kiosk. Additionally, visitors regularly requested a mobile payment option to add hours to their parking stay from remote locations. TTD is working with the developer to create a Park Tahoe mobile payment system. The system has been tested and there are minor areas of where the mobile system will not connect. Implementation will require additional outreach, signage, and development of cellular network with public and private partners to assure a successful role out.

TTD developed a parking page on the TTD website (survey indicates 48% of visitors go to a website for information) which provides rate information, frequently asked questions, automated forms for parking refunds, and other information that is regularly updated. As parking data is collected and evaluated, we continue to look for opportunities to customize reports for further analysis, improve technology interoperability of the multi-modal system, and provide additional or modified information to the end user.

#### Recommendations or Considerations:

- TTD to address the modem connectivity issue to the extent possible; however, this will continue to be a challenge as the program is expanded. TTD staff to work with the USFS, Tahoe Prosperity Center, and providers to address communication issues in the corridor and throughout the basin.
- TTD to work with developer on further reporting automation to assist TTD staff and the CMT in on-going monitoring and real-time information sharing.
- Encourage submittals to NSF Smart and Connected Cities and the Advanced Transportation and Congestion Management Technologies Deployment Grant Program applications for technology improvements.
- Address backend and front-end issues including the following:

- Because the kiosks are solar powered, they turn off between transactions. To turn on the kiosk screen, users do not understand that the screen needs to be touched first. TTD staff will work with vendor to address.
- Green button with check mark says “print” which is confusing to people. TTD staff to work with vendor for clarification on screen.
- Visitors do not always read the signage explaining the rates and how to use the kiosks. TTD staff to work with vendor to clarify steps on screen.
- Highlight with arrow or on first screen that kiosk operation instructions are posted on the right side of the kiosk.
- Visitors do not always realize a credit card is required, that their license plate number tracks the time, and it is not tied to a number on a parking space. Provide further clarification at the kiosks, with parking area signage, and outreach as described above.
- TTD to work with vendor to add mobile payment option.
- Request visitor’s home zip code during the payment process for additional analysis
- Address issues with adding hours.

### Policies and Non-Compliance Program

With project partners and legal counsel, TTD has reviewed and evaluated options for non-compliance of parking, including review of existing statutes and codes crossing multiple jurisdictions, potential partnerships, vendors, software systems, and processes. Strategies have been developed to address near term needs and steps forward to setup the non-compliance system that can rollout and cover future parking facilities across jurisdictional lines.

TTD, under the Compact’s Article IX, is allowed to operate parking lots and to collect revenues. While it could be implied, it is silent regarding non-compliance of payment of these revenues. In consultation with TTD’s legal counsel, staff, in partnership with the CMT, evaluated three approaches regarding non-compliance: 1) Collection Agency Approach, 2) Civil Enforcement Approach, and 3) Criminal Enforcement Approach. The latter two, although effective in developing a multi-jurisdictional parking compliance system, require legislative changes and the hiring of enforcement officers. The Collection Agency Approach is often used by private parking facilities whereby non-payment notices are sent to violators and bills not paid after approximately 90 days are sent to a collection agency. This approach can be done via a parking ambassador, a software vendor, and automation of the process. The industry average shows that of the five to nine percent of violators that most pay their bill and less than one percent of the violators are sent to collections. The parking lots saw a higher rate of non-compliance (10 to 20%) in the fall, likely due to repeat visitors hearing there is no non-compliance program. The CMT will be making a recommendation to the TTD Board of Director to begin the non-compliance phase in spring 2021 with a Collection Agency Approach.

### Recommendations or Considerations:

- Recommend to the TTD Board the adoption of a non-compliance program to begin spring 2021.

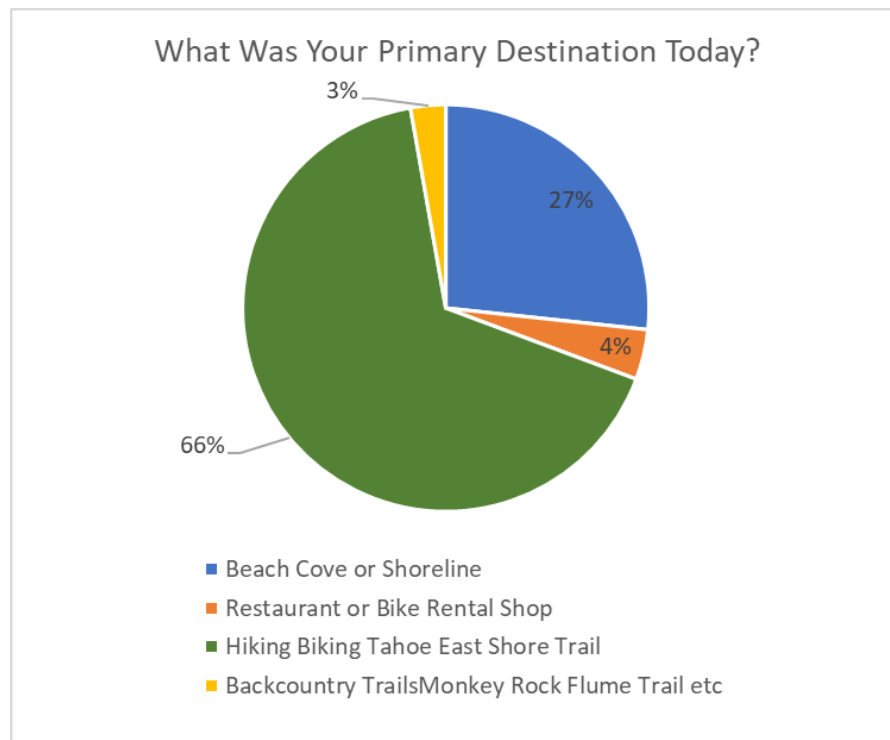
- Develop a signage plan for non-compliance.

### Revenue and Expense Baseline Data

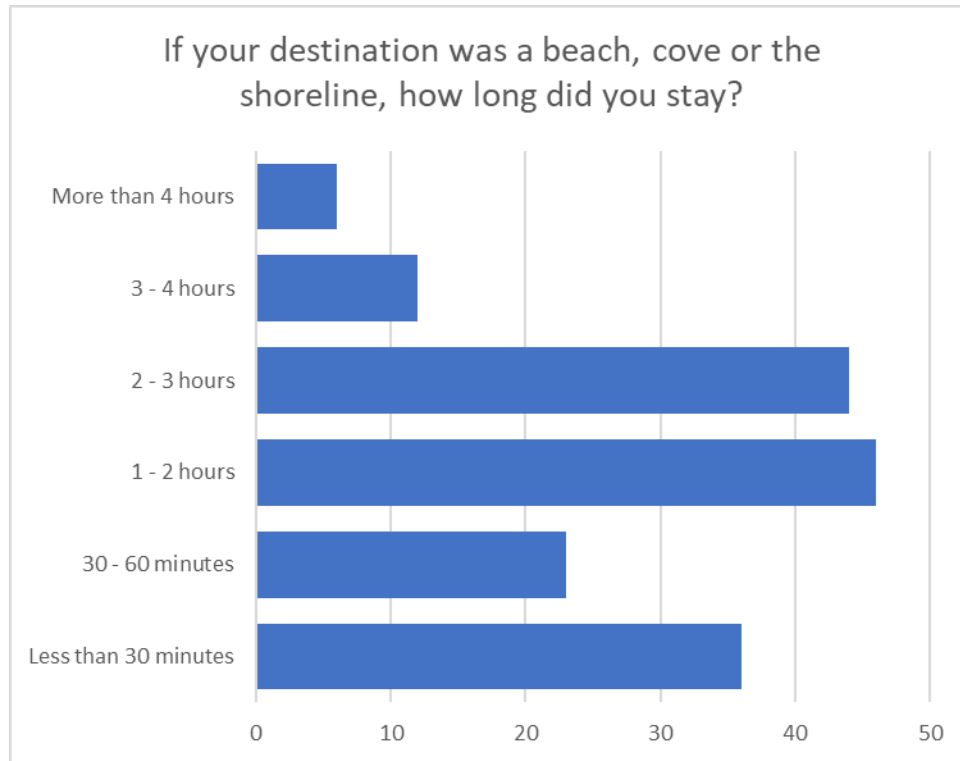
Beyond the goal to improve the safety of SR 28 and distribute demand, the project partners sought to demonstrate that in a high use recreation destination, parking revenue could potentially assist local and state agencies in maintaining multi-modal corridor improvements, such as the Tahoe East Shore trail, parking lots, transit connections, and maintain the parking management system.

Parking meter revenue collection began late July 2020. Revenues collected through November 2020 are \$185,028. Revenue was then conservatively estimated for the remainder of the year to be \$375,000 - \$400,000. Annual expenses for personnel, services, and supplies to operate the parking system is estimated to be \$126,000. The non-compliance costs are to be covered by the non-compliance rate structure. The annual operations and maintenance of trail and parking areas for trash collection, litter patrol, portable restrooms, etc. is approximately \$42,000 per year, resulting in approximately \$207,000 of net annual revenue. These net annual funds are held in a restricted fund for on-going operations and maintenance, including capital repairs of the parking areas and the Tahoe East Shore Trail.

### Testing the Interface of Parking Management Systems with Recreation Site Capacity or Desired User Density:



\* This information was received through the exit survey at the North Parking Lots and did not capture all backcountry use.



Parking management data, pedestrian and bike counters, transit ridership and visitor survey data can assist the CMT in understanding recreation demand, beach congestion, and resource issues. This review looks at both 2019 and 2020 data for correlations to potentially establish a methodology to evaluate ongoing capacity issues with a robust year-round dataset, and eventually, establish baseline values when there is assurance that methods have captured the majority of visitation. By dialing in to details of high recreation use areas through more robust data sets, visitor numbers can be correlated based on the percentage of time and specific hours a vehicle has parked, the general occupancy number of vehicles, along with transit and trail information. This information can then be correlated with capacity to try and balance demand on these recreation resources. **It should be stressed that this analysis is looking at the distancing of people, one measurement of capacity, to maintain a good visitor experience. It is a tool in the toolbox that can complement other technologies and data sources. It does not look at natural resource or operating capacity such as NDSP staffing.**



### *Hidden Beach Assessment*

Hidden Beach is the northern most beach along SR 28 within Lake Tahoe Nevada State Park, Sand Harbor Management Area. During the 2014 Environment Analysis (EA) for SR 28 Safety Improvements and Shared-Use Path, land managers had concerns that beach capacity would be exceeded, with the potential of greater degradation of the natural resources and the visitor experience at the beach, due to improvements associated with the North Demonstration Project. So, with the CMP's recommendations and construction of the Tahoe East Shore Trail, no parking zone signage, transit emergency pullouts only signage, and barriers were installed along this area. Hidden Beach and the shoreline are now accessed primarily from the shared-use Tahoe East Shore Trail to the native soil Shoreline Trail system. With ESE not operating this past summer, the transit pullout at this location became an unauthorized parking and unloading zone for beach goers, which overloaded the beach area.

Hidden Beach is a popular sand beach strewn with boulders. During high water years, the beach is restricted to an area of approximately 41,500 sq. ft. When Lake levels are low, the available beach expands to approximately 79,400 sq. ft. The average available beach is 60,471 sq. ft. As noted in the EA, the desired density for a dispersed beach, such as Hidden Beach, ranges from 150 to 323 square feet per person. Based on this desired density range, during average lake level conditions, the desired capacity of the beach would range from 187 to 403 sq. ft. per person at a given time.

The EA's prior conditions analysis noted that Hidden Beach was supporting 372 persons, with a density of approximately 162 square feet per person. Therefore, under 2014 existing conditions during the summer peak period (June, July and August), Hidden Beach met TRPA's desired density standard, but exceeded the desired standard developed by NDSP. NDSP, at that time, indicated the beach had approximately 72,600 visitors, with an average of 680 visitors per day, during the same summer period. This data was derived from monthly visual vehicle count estimates by NDSP staff.

LSC Transportation Consultants, through a windshield survey of shoulder parked cars, found that, on average, 2.9 persons per car parked on the shoulder of SR 28 to access beaches, coves and the shoreline and the Flume Trail. The CMP identified 200 cars approximately from Memorial Point back to Incline Village on the shoulder of SR 28 during summer average peak daily demand. With each car having 2.9 people per car represents a daily overall summer average peak demand of 580 visitors in this segment.

*To our knowledge, combining parking management data with transportation and recreation data to establish capacities for multi-modal transportation has not been done in the Tahoe Basin. It is assumed it will take several years of data collection, additional technology and analysis, as well as the multi-jurisdictional infrastructure and operational improvements needed to establish a well-balanced visitor experience managed through a multi-modal system.*



With the construction of the Tahoe East Shore Trail North Demonstration Project, pedestrian and bike counters were installed before and after Hidden Beach to capture those going the first one mile to the Hidden Beach area. The number of bike and pedestrian users from the trail counters in 2020 for the peak summer period is 65,711 trips (counting out and back) or 32,856 visitors going one mile to the Hidden Beach area.

To effectively use this information to look at density desired at Hidden Beach it needs to be coupled with transit ridership, visitor surveys indicating the percentage who actually go down to the beach and how long they are at the beach, parking meter transactions data including hourly transaction percentages, and Rocky Point pedestrian data at that access point, to provide reasonable trends on beach density.

*The data currently being collected on actual bike and pedestrian use to the Hidden Beach area, coupled with visitor surveys at Hidden Beach next summer, transit ridership and parking lot information will help verify the visitor use trend to better understand desired density and capacity issues of Hidden Beach.*

To ascertain what methodology should be considered, the CMT looked at a number of data sets and provided the following findings:

- ✓ In August and September of 2020, a visitor exit survey was conducted at the trailhead to determine the primary destination of visitors. Due to COVID-19 surveys were limited to the latter part of the summer with 120 surveys collected mostly during weekends when the parking ambassador was scheduled (additional fall surveys now available). Results indicated on weekend days approximately 30% of visitor's primary destination was the beach, cove or shoreline for the purposes of this analysis. This is one data set to consider but if used it would presume that all 30% were going to Hidden Beach, it will be necessary to survey visitors at Hidden Beach to not only get to a percentage but to also look at how long they are staying (i.e., is it to take a picture or touch the water and leave or are they staying for 3-4 hours).
- ✓ In addition, some trail users have used the Tahoe East Shore Trail to Hidden Beach area then went north back to Rocky Point's cove or shoreline, that information remains unknown; however, it is likely minimal in the bigger picture of trend analysis. We do know that some Hidden Beach use comes from the unorganized shoulder parking in Rocky Point subdivision at the north boundary of the Park. We have used the LSC average weekday/weekend data (18 cars) and applied a 1.3 turnover rate to determine approximately 24 cars per day park at this location and have applied that to our analysis to look at desired density.
- ✓ Field observations led to the CMT to conclude that transit stops used as unauthorized unloading zones need to be controlled as this can directly impact beach capacity, impact transit operations, and create a public safety hazard and queuing onto SR 28. During modified operations related to COVID-19 Sand Harbor's beach was closed to trail users and the East Shore Express did not connect to the

beaches. This created pressure on the trail and it led to visitors using the transit stop at Hidden Beach as an unloading zone. NDSP rangers estimated that there were 50-150 cars daily on weekdays and weekends respectively during summer peak using the transit stop for unloading even though it is signed No Parking. We then applied 2.9 people per vehicle to these cars and looked at the affect to desired capacity which indicated this access puts the beach over desired density. It was clear that this use was an illegal use of the transit stop and the CMT recommends that a red curb or marking of all transit stops be installed to further indicate No Parking. The CMT working with TTD may explore additional measures if this does not produce desired results like additional transit lane striping, candle sticks, or other enforcement technology to prevent the unauthorized unloading.

- ✓ Based on parking transactions, it is known, during summer peak that the transactions percentages based on hours of the day were:
  - 36% 6:00-10:00 a.m.
  - 44% 10:00-3:00p.m.
  - 19% 3:00-6:00p.m.

The parking data gives us a total percent of visitors for both the Tahoe Trail and the Flume Trail during this time frame versus actual Hidden Beach goers and could be considered the high end or most impact on desired beach density. The visitor survey data noting 30% of visitors are going to beach can be used in conjunction with meter percentage to refine what portions of the day are exceeding desired density so that management can seek to push that demand to alternate days or times. It is recommended that a visitor survey be developed this winter and administered next summer for not only Hidden Beach, but the Shoreline access points, Flume trails and Sand Harbor to further define the actual use at Hidden Beach.

Utilizing the summer peak season bike and pedestrian count number of 32,856 visitors divided by the 92-day season, shows an average of 357 visitors per day. This number does not tell the real story of weekends versus weekdays or holiday weekends; nor does it look at the distribution of visitors over the day. We then set out to test the actual daily counts for August and September along with the 4<sup>th</sup> of July weekend. To establish a framework for future analysis we applied percentages based on hours people parked which assumes all people on the trail are going down to the beach, which is not accurate, but provides the opportunity to explore baseline information development and future methodologies. When the Hidden Beach survey is completed next summer, the actual percentage of visitors going down to the beach based on weekend, weekday and holiday can be applied for more accuracy. This survey should also ask how long visitors are staying at the beach or shoreline. Although the impact of the unauthorized unloading at the transit stop is shown at the bottom of each chart below, unauthorized access should be discontinued as it creates a dangerous queuing on to SR 28. The analysis included a calculation of the Rocky Point area, based on vehicles parked there and recommends this area be organized for four to six parking spaces and a bike and pedestrian counter installed. These future details would provide the CMT a

more refined approach and begin a trend analysis to determine what adaptive management strategies may need to be implemented based on almost real time data.

### Hidden Beach Desired Density Trend Analysis TRPA 150 sq. ft./person; NDSP 323 sq. ft. per person.

This analysis is using the 2020 highwater mark and the percentages of meter transactions by timeframe.

#### July 4th Weekend

Capacity By Time Frame		6-10am	Highwater	10-3pm	Highwater	3-6pm	Highwater
<b>Daily Total</b>		<b>0.36</b>	<b>41,500</b>	<b>0.44</b>	<b>41,500</b>	<b>0.19</b>	<b>41,500</b>
3-Jul	<b>406.5</b>	146.34	284	178.86	232	77.24	537
<b>4-Jul</b>	<b>268.5</b>	96.66	429	118.14	351	51.02	813
5-Jul	<b>393</b>	141.48	293	172.92	240	74.67	556
6-Jul	<b>280</b>	100.8	412	123.2	337	53.20	780
W/Transit Stop	<b>772</b>	277.92	149.32	339.68	122.17	146.68	282.93

\*Note that 'with transit stop' is indicating the estimated number of drop-offs; drop-offs to be eliminated in 2021.

#### August Weekends

Capacity By Time Frame		6-10am	Highwater	10-3pm	Highwater	3-6pm	Highwater
<b>Daily Total</b>		<b>0.36</b>	<b>41,500</b>	<b>0.44</b>	<b>41,500</b>	<b>0.19</b>	<b>41,500</b>
<b>1</b>	<b>421.5</b>	151.74	273.49	185.46	223.77	80.09	518.20
<b>2</b>	<b>426</b>	153.36	270.61	187.44	221.40	80.94	512.73
<b>8</b>	<b>423.5</b>	152.46	272.20	186.34	222.71	80.47	515.75
<b>9</b>	<b>442.5</b>	159.3	260.51	194.70	213.15	84.08	493.61
<b>15</b>	<b>384.5</b>	138.42	299.81	169.18	245.30	73.06	568.07
<b>16</b>	<b>466</b>	167.76	247.38	205.04	202.40	88.54	468.71
<b>22</b>	<b>302.5</b>	108.9	381.08	133.10	311.80	57.48	722.05
<b>23</b>	<b>401</b>	144.36	287.48	176.44	235.21	76.19	544.69
<b>29</b>	<b>406</b>	146.16	283.94	178.64	232.31	77.14	537.98
<b>30</b>	<b>292</b>	105.12	394.79	128.48	323.01	55.48	748.02
<b>Avg Wkend</b>	<b>396.55</b>	<b>142.758</b>	<b>290.70</b>	<b>174.48</b>	<b>237.85</b>	<b>75.34</b>	<b>550.80</b>
W/Transit Stop	<b>831.55</b>	<b>299.358</b>	<b>138.630002</b>	<b>365.88</b>	<b>113.42</b>	<b>157.99</b>	<b>262.67</b>

#### August Weekday

Capacity By Time Frame		6-10am	Highwater	10-3pm	Highwater	3-6pm	Highwater
<b>Daily Total</b>		<b>0.36</b>	<b>41,500</b>	<b>0.44</b>	<b>41,500</b>	<b>0.19</b>	<b>41,500</b>
<b>5</b>	<b>328.5</b>	118.26	350.92	144.54	287.12	62.42	664.90
<b>12</b>	<b>298</b>	107.28	386.84	131.12	316.50	56.62	732.96
<b>19</b>	<b>209.5</b>	75.42	550.25	92.18	450.21	39.81	1042.58
<b>26</b>	<b>194.5</b>	70.02	592.69	85.58	484.93	36.96	1122.99
<b>Avg Wkday</b>	<b>257.63</b>	<b>92.75</b>	<b>447.45</b>	<b>113.36</b>	<b>366.10</b>	<b>48.95</b>	<b>847.81</b>
W/Transit Stop	<b>402.63</b>	<b>144.95</b>	<b>286.31</b>	<b>177.16</b>	<b>234.26</b>	<b>76.50</b>	<b>542.49</b>

### September Weekends

Capacity By Time Frame		6-10am	Highwater	10-3pm	Highwater	3-6pm	Highwater
	Daily Total	0.36	41,500	0.44	41,500	0.19	41,500
Holiday 5	464	167.04	248.44	204.16	203.27	88.16	470.74
Holiday 6	512	184.32	225.15	225.28	184.22	97.28	426.60
12	352	126.72	327.49	154.88	267.95	66.88	620.51
13	257.5	92.7	447.68	113.3	366.28	48.93	848.24
19	265.5	95.58	434.19	116.82	355.25	50.45	822.68
20	282	101.52	408.79	124.08	334.46	53.58	774.54
26	313.5	112.86	367.71	137.94	300.86	59.57	696.72
27	319.5	115.02	360.81	140.58	295.21	60.71	683.63
<b>Avg Wkend</b>	<b>345.75</b>	<b>124.47</b>	<b>333.41</b>	<b>152.13</b>	<b>272.79</b>	<b>65.69</b>	<b>631.73</b>
W/Transit Stop	<b>780.75</b>	<b>281.07</b>	<b>147.65</b>	<b>343.53</b>	<b>120.80</b>	<b>148.34</b>	<b>279.76</b>

### September Weekday

Capacity By Time Frame		6-10am	Highwater	10-3pm	Highwater	3-6pm	Highwater
	Daily Total	0.36	41,500	0.44	41,500	0.19	41,500
2	170	61.2	678.10	74.8	554.81	32.30	1284.83
9	170	61.2	678.10	74.8	554.81	32.30	1284.83
16	94.5	34.02	1219.87	41.58	998.08	17.96	2311.33
23	119.5	43.02	964.67	52.58	789.27	22.71	1827.79
30	98.5	35.46	1170.33	43.34	957.54	18.72	2217.47
<b>Avg Wkday</b>	<b>130.5</b>	<b>46.98</b>	<b>883.35</b>	<b>57.42</b>	<b>722.74</b>	<b>24.80</b>	<b>1673.72</b>
W/Transit Stop	<b>275.50</b>	<b>99.18</b>	<b>418.43</b>	<b>121.22</b>	<b>342.35</b>	<b>52.35</b>	<b>792.82</b>

### Recommendations or Considerations:

- Monitoring the trends at Hidden Beach should continue and include beach visitor surveys, along with parking surveys. Much like today's data, prior data has assumed everyone was going to Hidden Beach. It is now known that visitor use is more dispersed, however, it will take some additional survey data to refine the percentage of visitors going to Hidden Beach proper. The CMT should explore placing pedestrian counters at the Rocky Point parking access, Sand Harbor trail entry and, potentially, at Hidden Beach shoreline access points. There would still be the need to do visitor surveys on occasion to determine the length of beach stay.
- Prohibit unloading at the transit stop prior to 2021 summer season and continue monitoring to remain within desired user density.
- The COVID pandemic may have influenced behavior with visitors seeking to distance by family groups, which then facilitated the disbursement of large groups and helped to maintain the desired capacity and provide a good visitor experience. It is unclear if visitors will continue the behavior, but public outreach could encourage a 'give

yourself some distance for a better experience' type of message. It is suggested that the CMT work with the Tahoe Fund on actual messaging.

- Request that TRPA pedestrian and bike trail counter data be formatted for easier use in assessing visitor use trends by:
  - Having monthly totals of the data
  - Having a grand total of the data
  - Defining the margin of error
  - Request specific recommendations for the Incline Village counter and Hidden Beach Counter numbers and have a column on the excel spreadsheet to show Hidden Beach use (IV-HB= Hidden Beach Area Use)
  - Provide accessible second sheet of splits for bikes and pedestrians counts to preempt having to call staff for data
  - With the understanding there are staff limitations and cellular connectivity issues, consider the automation of data for expedited recovery, so in the future agencies can respond in a more real time manner to peak capacity issues.
  - Data is available to the general public which is a community benefit, but the data pages should have definitions and, in particular of transportation language, such as trips versus number of visitors, etc.
  - Additionally, on the TRPA site map location page when clicking on the counter icon, the corresponding detail (yellow bar) should pop up for easier access to detailed information, as opposed to scrolling down to find it.
- The visitor exit surveys should be separated by those who went one mile to Hidden Beach area versus those who went beyond so that visitors to Hidden Beach area can have targeted messaging.
- The CMT should watch the e-bike rental market and its impact on trail use and Hidden Beach and evaluate policy and permitting considerations. A surge in August was noted by TTD with Bay City Bike rentals.
- The CMT should consider counters on the path at Lakeshore Blvd. and SR 28 to capture the trail traffic from Lakeshore versus the parking areas and shoulder parking toward Country Club.
- The CMT should assist FHWA/ NDOT Interim Approval to red line the Transit stops north bound and southbound at Hidden Beach to help enforce the No Parking – unloading that is occurring at this stop. This uncontrolled use impacts capacity and should be corrected.
- The CMT should work with TTD on the headway for 2021 season potentially moving it to hourly.
- To reduce congestion and improve safety the CMT should encourage the formalization/construction of the Rocky Point pullout on the northern property line of Lake Tahoe Nevada State Park, consider trail counters, parking meters and mark the area No Drop Offs to control number of visitors.

## CMT Adaptation Monitoring

As budgets allow and technology and infrastructure improvements are expanded, the CMT will continue to refine data collection, methodologies and metrics used to assess the average peak demand and corridor improvement priorities to meet the CMT needs in addressing the challenges and provide adaptive solutions. Lessons learned from staff in the field will always be valued in addressing SR 28 Corridor issues. The CMT's continued interest in partnering to find solutions has played and will continue to play a major role in addressing congestion and safety on the SR 28 Corridor.

### **CMT Additional General Recommendations and Considerations:**

- Construct organized parking from Sweetwater Road toward Country Club Drive to, at minimum, meet the original CMP parking figures, plus the added demand of access to the Flume trails.
- Continue to seek grants with the project partners to continue the development of the Tahoe East Shore Trail, parking, and expansion of the transit program for the whole of SR 28.
- Work with the partner agency PIOs to develop shared know before you go message approaches to discourage illegal parking on the highway and in the communities, come early come late, and other important messages for visitors.
- Evaluate new Smart Cities technologies for wayfinding and multi-modal interoperability to include collection of crash data and bike/pedestrian interactions.
- CMT should monitor and consider additional No Parking Signs or red curb, if NDOT allows, in the areas north and south of pedestrian crossing at Lakeshore Blvd. and SR 28.
- Request the Tahoe Fund produce a social media clip and website banner regarding bicyclist and pedestrians being considerate of each other, the need to stay to the right, and speed limit for bikes.
- Provide additional Tahoe East Shore Trail logos at the beginning of the trail and one for photography options.