

VERDI AREA MULTIMODAL STUDY



PREPARED BY:



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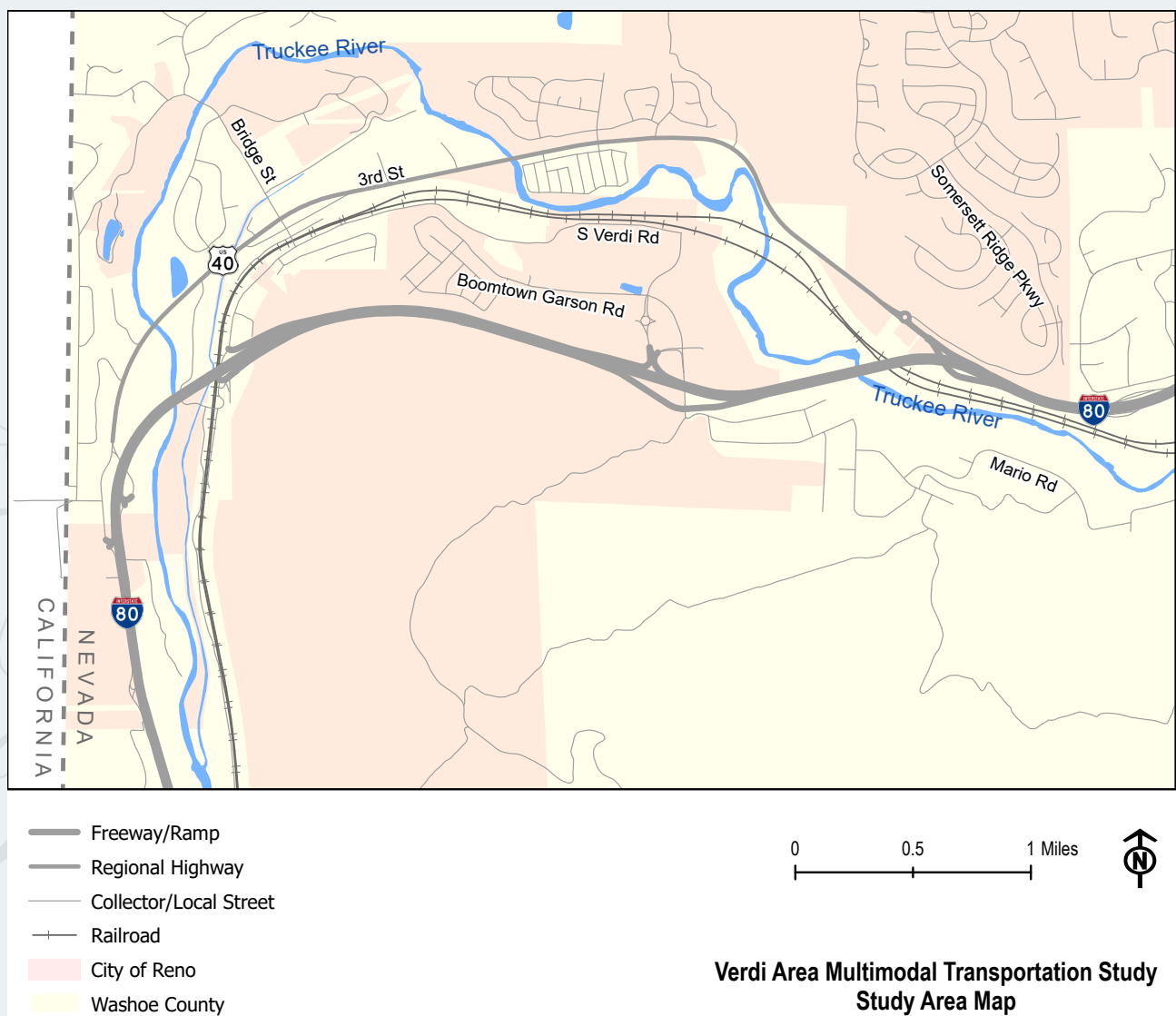
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INTRODUCTION

The Verdi Area Multimodal Study was led by the Regional Transportation Commission (RTC) of Washoe County in in close collaboration with Washoe County and the City of Reno. Project partners included the Nevada Department of Transportation (NDOT) and local Verdi community.

The Verdi area was once a rural suburb of the urbanized Reno area. As a result of the development and growth in the metro Reno area, Verdi has experienced residential and commercial growth and is now anticipating potential transportation concerns. In addition, Interstate 80 (I-80) and Union Pacific Railroad mainline, linking Reno to San Francisco, cut through the middle of the Verdi area, creating barriers for local north/south travel for all modes of travel.

This study looked at existing and future transportation issues and opportunities within the Verdi area. The existing conditions analysis considered traffic volumes, transportation safety, transit service, pedestrian and bicycle facilities, and land use. The study then identified different types of transportation needs based on technical analyses and community/stakeholder outreach. The resulting outcome is a set of recommendations for enhancing mobility and safety for all users within and through the Verdi area. This report outlines the process and its significant findings.





Understanding existing conditions in the Verdi study area was essential to identifying current concerns and future complications. The study team conducted extensive analysis of existing facilities and conditions, including safety, traffic congestion, land use, transit service, active transportation facilities (i.e., bicycles and pedestrians), and off-highway vehicle (OHV) usage.

SAFETY

Safety is always a primary concern for residents, agencies, and the study team. Crash data within the study area was collected from January 1, 2015, through December 31, 2019. Most of the crashes (86%) within the Verdi area were along the I-80 corridor. This is concerning because higher speeds typically result in higher injury severity crashes. All six fatal crashes within the area occurred along I-80 and resulted in seven fatalities. These fatalities included two motorcycle crashes. A primary concern along I-80 is the absence of a median barrier preventing vehicles from crossing over and resulting in head-on collisions (see [Figure 1](#)). Crash rates outside of the I-80 corridor were much less severe, and of the 48 crashes outside of I-80, 21 were along 3rd Street. The primary concern of these crashes were the three pedestrian incidents and one bicycle. There were not fatalities; however, any collision with a vulnerable user can easily

result in a high-severity crash or fatality.

The rural nature of Verdi and nearby forest create wildlife-vehicle conflict concerns. These collisions along low-speed roads typically result in property damage-only crashes. However, along high-speed I-80 they can quickly become high severity or fatal crashes. Thirty-two wildlife-vehicle crashes occurred during the five-year crash period. This area was identified as high-priority in NDOT's *2018 Wildlife-Vehicle Conflict Prioritization* report.

Speed is a common concern for residential areas, including for Verdi residents. As part of this study, the University of Nevada, Reno (UNR) Center for Advanced Transportation Education and Research utilized experimental data gathering by acquiring car data from newer cars (such as Teslas) to obtain vehicle speed data from March 9th through 11th, 2022, and on the weekend of March 13th and 14th, 2022. This data was collected in a manner that vehicles maintained autonomy. The data showed speeds exceeding the posted 65 miles per hour along I-80. However, local street speeds were more consistent with posted speed limits (see [Table 1](#)). While this data is only a small representation of daily traffic along these roadways, it demonstrates the rural nature and limited width roadways within Verdi tend to keep speeds closer to posted speed limits.

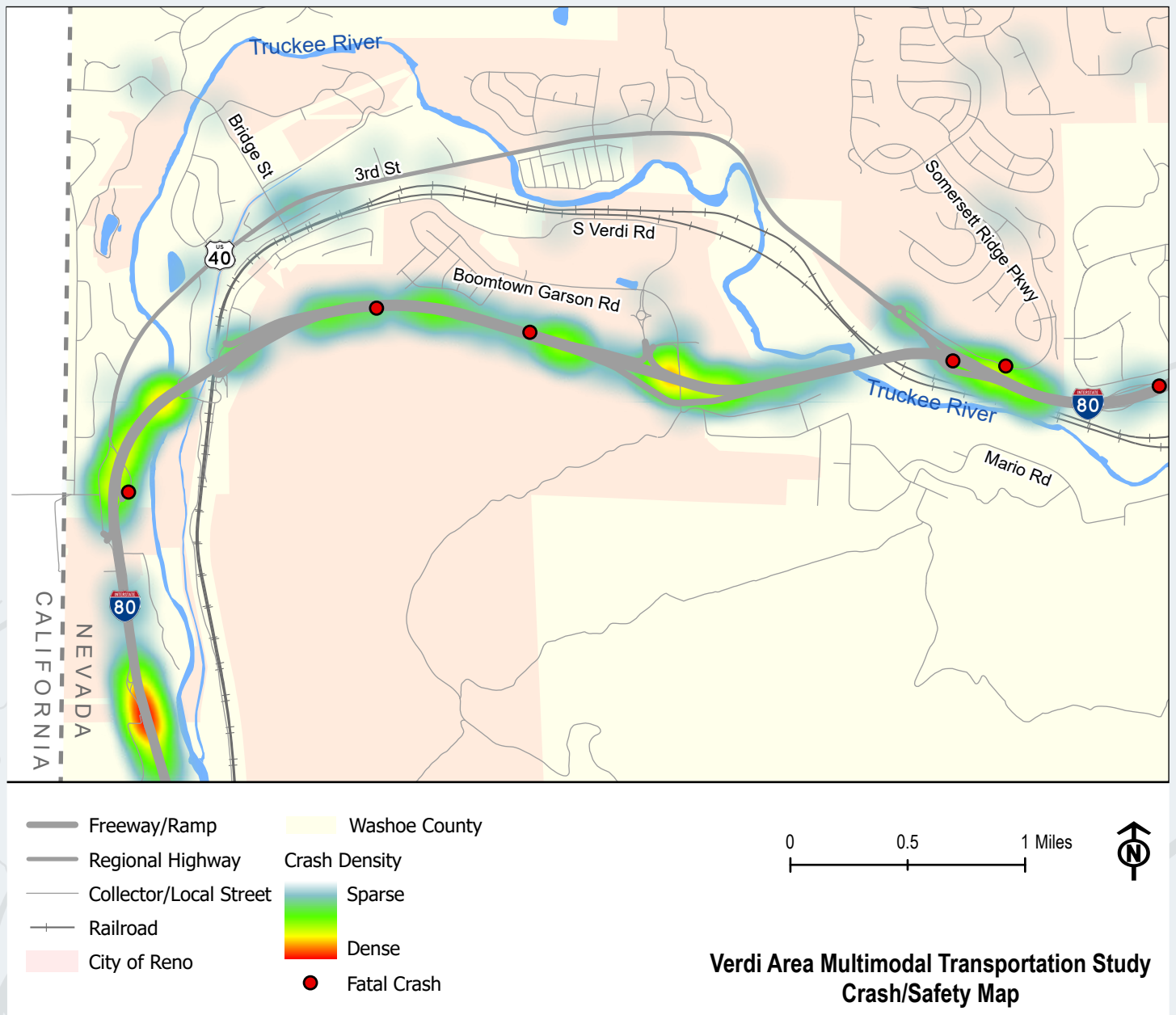
Table 1. 2022 Speed Data Collection

Route	Posted	Weekday	Weekend	Data Sets
US 40 East	45 mph*	37 mph	38 mph	210
US 40 West	45 mph*	37 mph	39 mph	74
I-80 East	65 mph	70 mph	70 mph	308
I-80 West	65 mph	70 mph	70 mph	474
Bridge St	25 mph	15 mph	18 mph	43
S. Verdi Rd	25 mph	28 mph	28 mph	23

*Data was taken east of Edinburgh Drive

Source: UNR Center for Advanced Transportation Education and Research, 2022.

Figure 1. Crash Data Map





TRAFFIC CONGESTION

As growth continues within the Verdi area, so will the concern for increased traffic congestion. There are no existing traffic signals within the corridor; however, the primary site of operational traffic concerns is access from I-80. Since I-80 is a controlled access facility, ingress and egress access are limited to interchanges at 4th Street, Garson/Boomtown Road, and Gold Ranch Road. These interchanges are older and not standard diamond, single-point diamond, or diverging diamond interchanges. They also primarily provide access to the north side of I-80 with non-typical access to the south side. Extenuating this concern are the proposed developments south of I-80 near the Garson/Boomtown interchange.

Another significant traffic concern for residents is freight and semi-truck traffic. Verdi is the gateway for westbound I-80 into the Sierra Nevadas and Donner Pass, which lead to Sacramento and the San Francisco Bay Area. As such, the Gold Ranch interchange often becomes a closure point for I-80 during inclement winter weather, and semi-trucks park along I-80, 3rd Street, and other local roads. Because of the cold weather, the parked trucks keep their engines running, creating additional emissions and noise pollution. Furthermore,

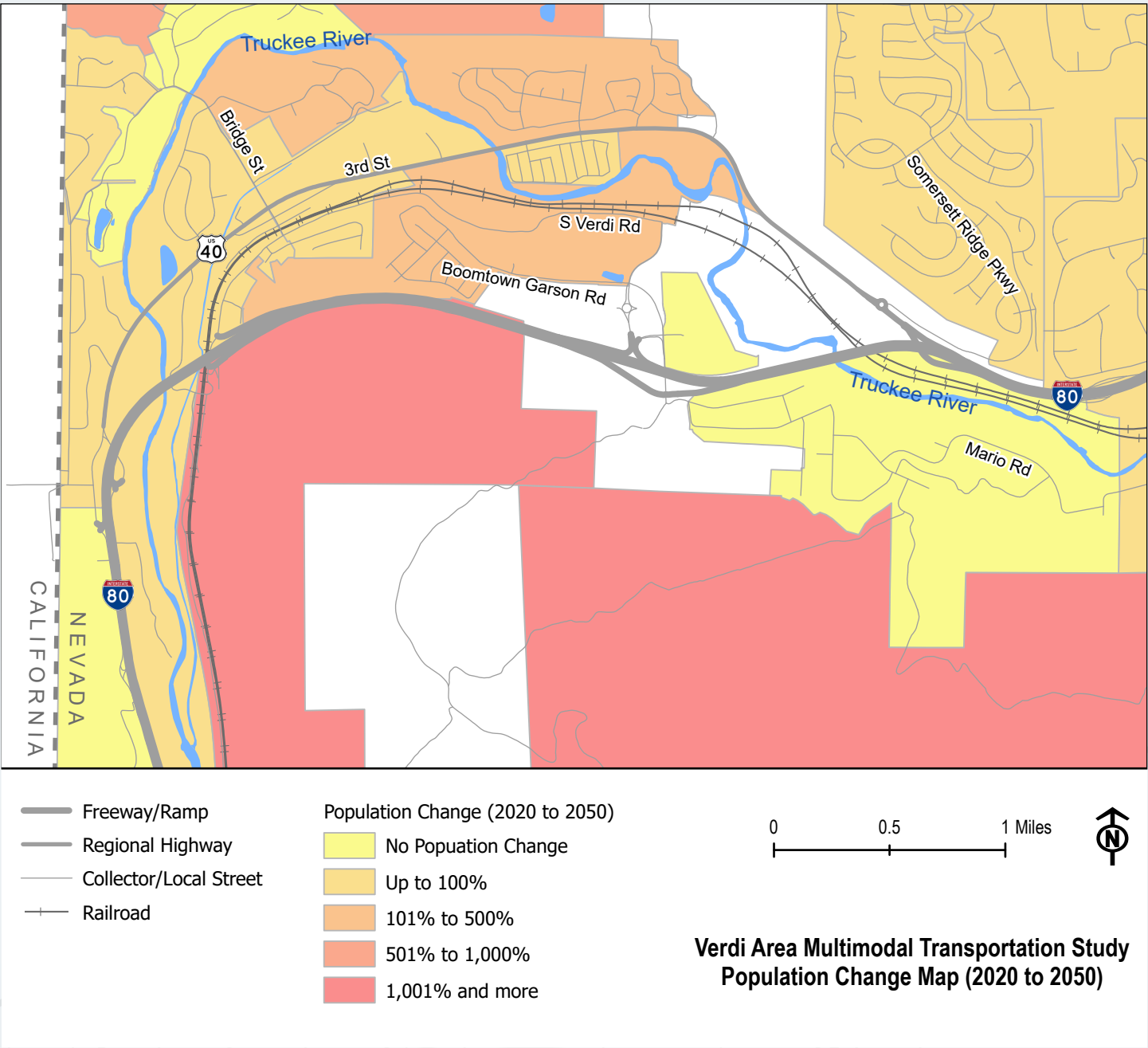
shoulder widths are not conducive to truck parking, so trucks often extend into existing travel lanes and create additional safety concerns.

LAND USE

Current Land Use. Verdi has historically been a rural residential area. The Truckee River runs through Verdi, which has led to the development of multiple parks in the area. However, zoning changes have resulted in additional residential and commercial development in the past fifteen years. Most recently, a higher-density residential area and a commercial distribution facility were developed near and adjacent to (respectively) the Garson/Boomtown Interchange.

Future Land Use. Several major developments are planned or in the early stages of development for the Verdi area. These developments include Mortensen Ranch, Meridian 120 South, and Santerra. Mortensen Ranch is anticipated to bring 676 homes to the area, while Santerra is planned to bring 1225 homes. **Figure 2** on the following page shows the anticipated growth in population from 2020 to 2050. While full build-out of these developments could take approximately five to ten years (or more), this increased development will likely require enhanced access to I-80.

Figure 2. Population Change



TRANSIT

Most of the study area, primarily north of I-80, is served by the RTC's FlexRide transit service. FlexRide provides a more customized approach to service as users book their rides through the smartphone app, on their computer, or by phone. An RTC shuttle van arrives at the specified time and pickup location, similar to other rideshares (e.g., Uber or Lyft). FlexRide is a newer form of transit for RTC and transit agencies nationwide. One concern presented through meetings and outreach is a lack of knowledge of the service and how to use it. During the second public meeting, the team demonstrated how to use FlexRide services; however, additional educational efforts will be necessary.



BICYCLE FACILITIES

Bicycle facilities in the existing Verdi area are relatively limited. Bicycle lanes only exist along 3rd and 4th Street and for a small portion of the Boomtown/Garson Road in new development areas. Despite limited facilities, the 3rd and 4th Street bike lanes are popular among local bicycle groups. One constraint of the existing bicycle lanes is that the termination through the Edinburgh roundabout creates confusion amongst drivers and bicyclists.

PEDESTRIAN FACILITIES

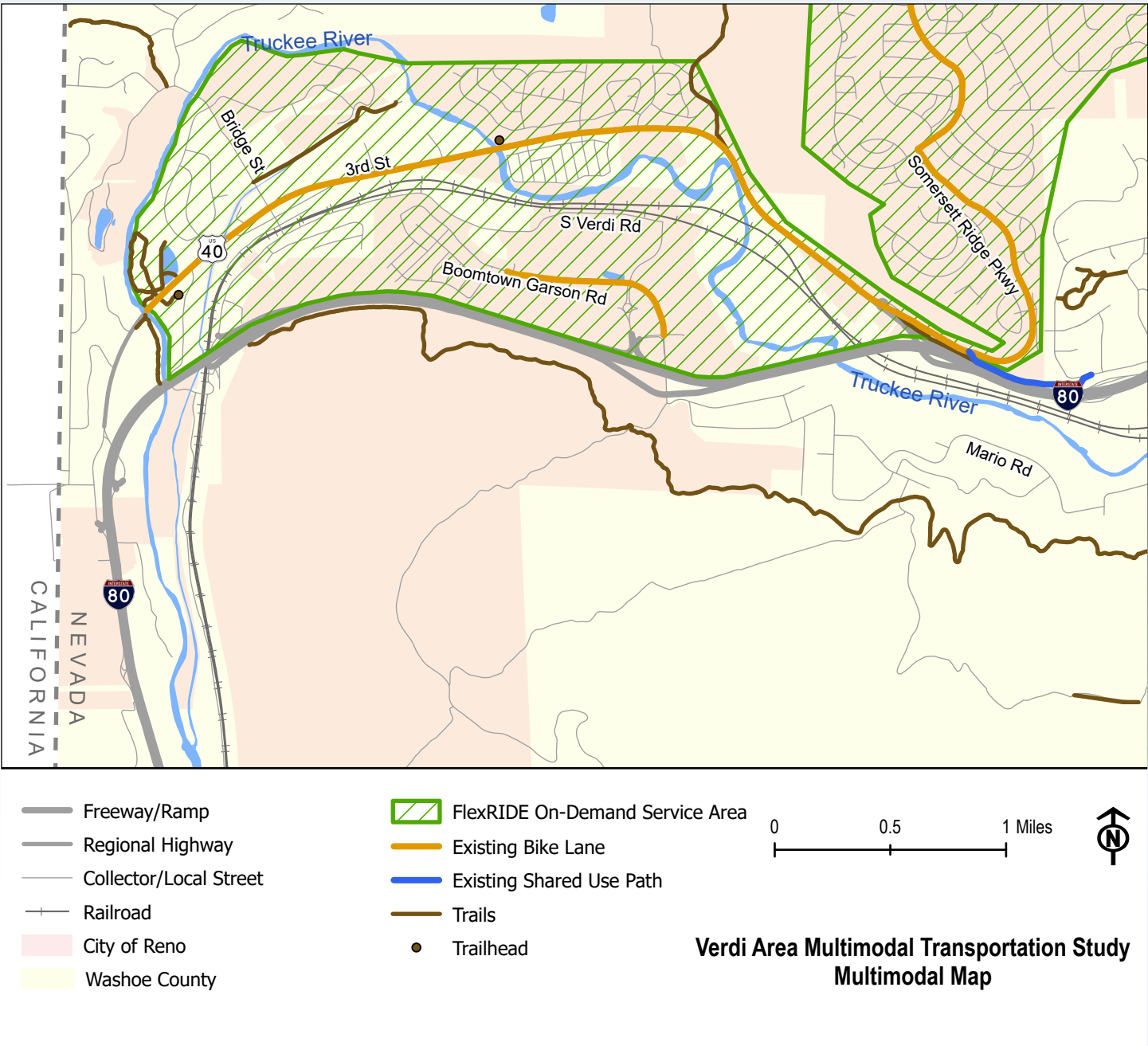
Similar to the limited bicycle facilities, there is a lack of sidewalks throughout the Verdi area. Sidewalks only exist in the newly developed areas near Boomtown/Garson Road. A trail was constructed as part of the Quest 2 development by Valley Homes, connecting the higher portion of Verdi near Boomtown/Garson Road to downtown Verdi with a connection to Verdi Road. Many roads within the Verdi area have posted speed limits of 35 miles per hour or lower, so many residents utilize the local paved roads as pedestrian users.

RECREATIONAL

The Verdi area is surrounded by National Forest and bisected by the Truckee River. These natural resources attract a wide variety of users looking for access through and within the Verdi area. Not only do bicyclists and pedestrians utilize the area, but so do OHV users. Within Washoe County, properly registered OHVs can legally use local roads under a 45-mile-per-hour posted speed limit or within two miles of an OHV trail. They must, however, follow all rules of the road as vehicles.

Figure 3 on the following page shows the various multimodal facilities within the Verdi area.

Figure 3. Multimodal Facilities



PUBLIC & STAKEHOLDER INVOLVEMENT

Public and stakeholder involvement has been a critical component of the development of this study.

The study team identified a Technical Advisory Committee (TAC) and presented information to the TAC throughout the project. This committee included staff from Washoe RTC, NDOT, Washoe County, the City of Reno, Washoe County School District, and the Truckee Meadows Regional Planning Agency (TMRPA). Meetings were conducted virtually to solicit stakeholder comments on the existing conditions analysis (meeting #1) as well as brainstorming and potential recommendations (meeting #2).

The study team also held a series of meetings with RTC and NDOT staff. The purpose of these meetings was to review feedback received during the virtual public meeting and public comment period and reach a consensus about the study direction. This direction helped inform the alternatives development and recommendations phases.

PUBLIC OUTREACH

Public outreach was conducted at two critical points during the planning process: during the existing conditions/visioning development and initial review of draft recommendations.

The first public information meeting was held on June 10th, 2022. The study team hosted "A Coffee with the RTC" at a local Verdi coffee shop and distributed a fact sheet and information regarding an online survey. The six-question survey solicited feedback about areas of concern and guidance on where additional multimodal facilities (such as bicycle and pedestrian facilities) would be preferred. The online survey was available for four weeks and received 273 responses. This initial feedback from the public outreach event assisted

the team with identifying areas of concern. A second public information meeting was held on May 30th, 2023, at the Verdi Public Library to provide a forum for the study team to present recommendations and solicit feedback.

In addition, the study team attended and provided presentations at multiple Citizen's Advisory Board meetings to discuss the study and share its findings.

IDENTIFIED ISSUES AND CONCERNS

Through the existing conditions evaluations and the first public meeting conducted, the project team identified several issues and opportunities for enhancement. In addition to analysis and public outreach, the study team toured the area with a Citizen Advisory Board (CAB) member to better understand local concerns. Primary concerns identified include:

- » Truck parking along I-80 and on local roadways during inclement winter weather.
- » South Verdi Road is the minimum allowable road width, with an embankment on the north side. When roads are wet or icy, this becomes a dangerous combination, as several cars have driven off the road.
- » The Boomtown/Garson Road Interchange's capacity and ability to accommodate future growth and development.
- » A need for enhanced pedestrian access.
- » A need for enhanced bicycle facilities along 3rd Street.
- » Improving the limited sight distance for pedestrians and bicyclists at the Truckee River Bridge on Crystal Park Road.

RECOMMENDED IMPROVEMENTS

This study evaluated and developed vehicular, pedestrian, bicycle, and transit concepts. Key factors considered as part of this screening included safety for all modes of transportation, vehicular access, future development, and public and stakeholder feedback. Various recommendations were developed to improve freeway access, mitigate safety concerns, and improve non-motorized facility conditions within the study area. Improvement concepts have been classified by mode and focused on areas where outstanding needs have been identified.

VEHICULAR IMPROVEMENTS - I-80

Driver safety was crucial for recommendations on I-80 through the study area, with traffic operations and congestion also considered. **Table**

2 summarizes issues and needs along I-80 and proposed improvements. The long-term needs of I-80 include projects with significant costs. NDOT maintains ownership of the I-80 corridor, and proposed improvements would need to be considered in their OneNevada plan for short-term and long-term planning. The improvements below do not require NDOT implementation but are presented for future consideration. NDOT plans to implement improvements I.1 and I.2 as part of Contract 3947 and will begin construction in Spring 2023. In addition, NDOT and RTC are in the early stages of coordinating the reconstruction of the Garson Road bridge structure to address concerns and provide forward compatibility for future needs.

Table 2. Corridor Needs and Proposed Improvements

Corridor Issue and Need	Proposed Improvements	Project ID
I-80 is identified as a high-priority area for wildlife-vehicle collisions.	Construct wildlife fencing along the I-80 corridor.	I.1
NDOT has received noise complaints for rumble strips along I-80.	Remove rumble strips within close proximity to residential areas.	I.2
Crash data identifies median crossovers result in severe or fatal crashes.	Install median barrier to separate eastbound and westbound I-80 traffic.	I.3
Future traffic demands south of I-80 will require better access and laneage.	Widen or reconstruct Garson Road Bridge/ Interchange and include pedestrian/bicycle facility	I.4
Current geometry of the Gold Ranch Interchange is non-typical and not operationally efficient. Eastbound on-ramp presents concerns for traffic entering I-80.	Reconfigure and reconstruct Gold Ranch Interchange and bridge	I.5
Projected 2050 traffic volumes will exceed current I-80 two lane capacity.	Widen I-80 to three lanes in each direction within the study area	I.6
Current I-80 bridges over the Truckee River limit the ability to modify Gold Ranch interchange and address local road sight distance concerns.	Widen I-80 bridges over Truckee River to accommodate potential Gold Ranch interchange enhancement and provide additional sight distance on Crystal Park Road.	I.7

VEHICULAR IMPROVEMENTS - REGIONAL ROADS

A primary concern expressed by many residents was the safety and efficacy of South Verdi Road. South Verdi Road is a twenty-two-foot wide roadway with a steepened cut slope on the south side and approximately 2:1 embankment fill on the north side. The road handles two-way traffic and poses safety concerns in the wintertime due to the grade of the road and the potential to slide off the road and down the embankment. There is no additional room provided for pedestrians or bicyclists. Due to the terrain adjacent to the roadway, widening the roadway will have a significant cost. The roadway currently handles approximately 420 cars daily, which will result in a low benefit/cost ratio for widening.

The study team identified two recommendations for South Verdi Road. The first recommendation is a short-term, cost-effective solution to alleviate safety concerns and provide enhanced bicycle/pedestrian access. The short-term option would be to eliminate one-way of travel, thus making the road a one-way road with a 10-foot travel lane to control speeds. The narrowed traffic lane would also allow for a guardrail to be installed on the north side and an eight-foot wide shared-use path to be striped for pedestrian and bicycle access.

The other recommendation is a long-term vehicular-only improvement that would widen the roadway to the south, resulting in an approximate five to eight-foot retaining wall being constructed on the south side. This would create enough width to construct a guardrail on the north side and provide an eleven-foot lane in each direction with two-foot buffers between the shoulder and a barrier on each side. Dedicated bicycle or

pedestrian facilities would not be included due to the significant additional costs for taller and additional retaining walls.

Additional options discussed by the Verdi community during the second public meeting included evaluating a full closure of Verdi Road, except for some residential accesses, and allowing only bicyclists and pedestrians. Another lower-cost option would be constructing retaining walls on the south side at the roadway curve locations to provide improved sight distance.

A survey was also conducted during the second public meeting to identify a preference between the various options. This survey resulted in a near tie in the community's preferences. As a South Verdi improvement project moves forward, additional outreach should be conducted to identify a community, City, and County preferred option.

One issue that will need to be considered in the development of either option is a majority of South Verdi Road is within Union Pacific Railroad (UPRR) and would require a diagnostic site visit and approval for any improvements. It is anticipated that the UPRR diagnostic site visit would require an upgrade to signal equipment at the signalized UPRR at-grade crossing at Bridge Street.





PEDESTRIAN AND BICYCLE IMPROVEMENTS

To accommodate pedestrians and bicyclists, improvements will enhance existing facilities and provide new facilities on the primary roads within the Verdi area. Because there is a designated bicycle lane on 3rd Street, several recommendations seek to enhance pedestrian and bicyclist access along this particular roadway. New facilities along Bridge Street are recommended to improve safety and access to the elementary school and library north of 3rd Street and over the canal parallel to 3rd Street. New pedestrian and bicycle facilities are recommended between 3rd Street and South Verdi Road to provide a safer facility for the UPRR crossing. It is also recommended that future developments provide pedestrian and bicycle access to the proposed facilities via local low-speed roadway or tie-in directly.

Table 3 summarizes these proposed bicycle and pedestrian facilities.

Table 3. Proposed Recommendations

Project ID	Proposed Recommendations
RM.1	Enhance the Edinburgh Roundabout. Add sidewalk bicycle ramps to allow bicyclists to safely exit the bike lane and use marked crosswalks to get through. Bicycle ramps on the exit side will enable bicyclists to enter the exiting bike lane safely.
RM.2	Provide a shared use path along 3rd Street for use by pedestrians and recreational bicyclists.
RM.3	Provide a shared use path along Crystal Park Drive under the east span of the I-80 bridge structure to avoid limited sight distance for pedestriand and bicyclists on Crystal Park Drive.
RM.4	Provide a shared use path on Bridge Street from 3rd Street to Verdi Elementary School.
RM.5	Provide a shared use path on Bridge Street from 3rd Street to South Verdi Road.
RM.6	Provide a shared use path bridge over the Truckee River along 3rd Street east of downtown Verdi.
RM.7	Provide a shared use path bridge over the Truckee River along 3rd Street west of downtown Verdi.
RM.8	Provide a shared use path bridge over the canal along 3rd Street east of downtown Verdi.

The study team also evaluated other concerns identified through the study process. The following are additional recommendations that should be considered.

FREIGHT

With I-80 running through the heart of the Verdi area, local residents routinely discussed several concerns. The primary concern was semi-trucks parking on local streets during closures of I-80. Truck parking is a concern throughout Nevada and has been evaluated statewide. The study team recommends NDOT continue developing and implementing additional truck parking as discussed as part of the Statewide Freight Plan. Through the development of truck parking east of Verdi and in Reno combined with advanced digital messaging boards, the intent would be to make an effort to encourage semi-trucks to park in those areas, instead of Verdi, during closure events.

The study team also discussed opportunities to identify potential park-and-ride areas that could double as truck parking during severe weather and I-80 closures to minimize truck parking on local streets. These park-and-ride opportunities and advanced parking developments should be considered in the upcoming RTC regional freight study to address freight movements through Washoe County on a larger regional scale and identify regional enhancements that would benefit the Verdi area.

PARK-AND-RIDES

A unique characteristic of the Verdi area is that most of the land use is residential. Limited local area employment areas will require most in-office workers to commute to Reno. The closest significant employment center is downtown Reno, approximately nine miles east of downtown Verdi.

These circumstances provide a great car-sharing opportunity, especially with the establishment of additional convenient and secure park-and-ride locations. For example, the reconstruction of the Gold Ranch interchange may provide an opportunity for a new park-and-ride location. Partnerships with local businesses such as Boomtown Casino may present win-win scenarios where the RTC can save on capital improvement and maintenance costs while the local business can benefit from park-and-rides users visiting their business before or after their trip. Private parcels that could be in desirable locations and considered for a willing buyer-willing seller acquisition may also become available. Successful park-and-rides may also present additional express transit alternatives to minimize future traffic congestion.

Furthermore, the City of Reno Zoning Code requires developers to work with the City of Reno and RTC to construct a park-and-ride facility south of I-80 near Garson Road. This includes constructing a temporary parking area near the fire station and a permanent area if warranted.

TRANSIT

As mentioned, the RTC FlexRide program is available in the Verdi area. Through public feedback, the study team learned that the local community did not know about/did not understand how to use the service. Although the team demonstrated how to use it, it is recommended that the RTC conduct a focused educational campaign within the Verdi area on what the system is and how to use it. With essential services, including medical and food, the FlexRide program has significant potential for increased ridership.

SPEED MANAGEMENT

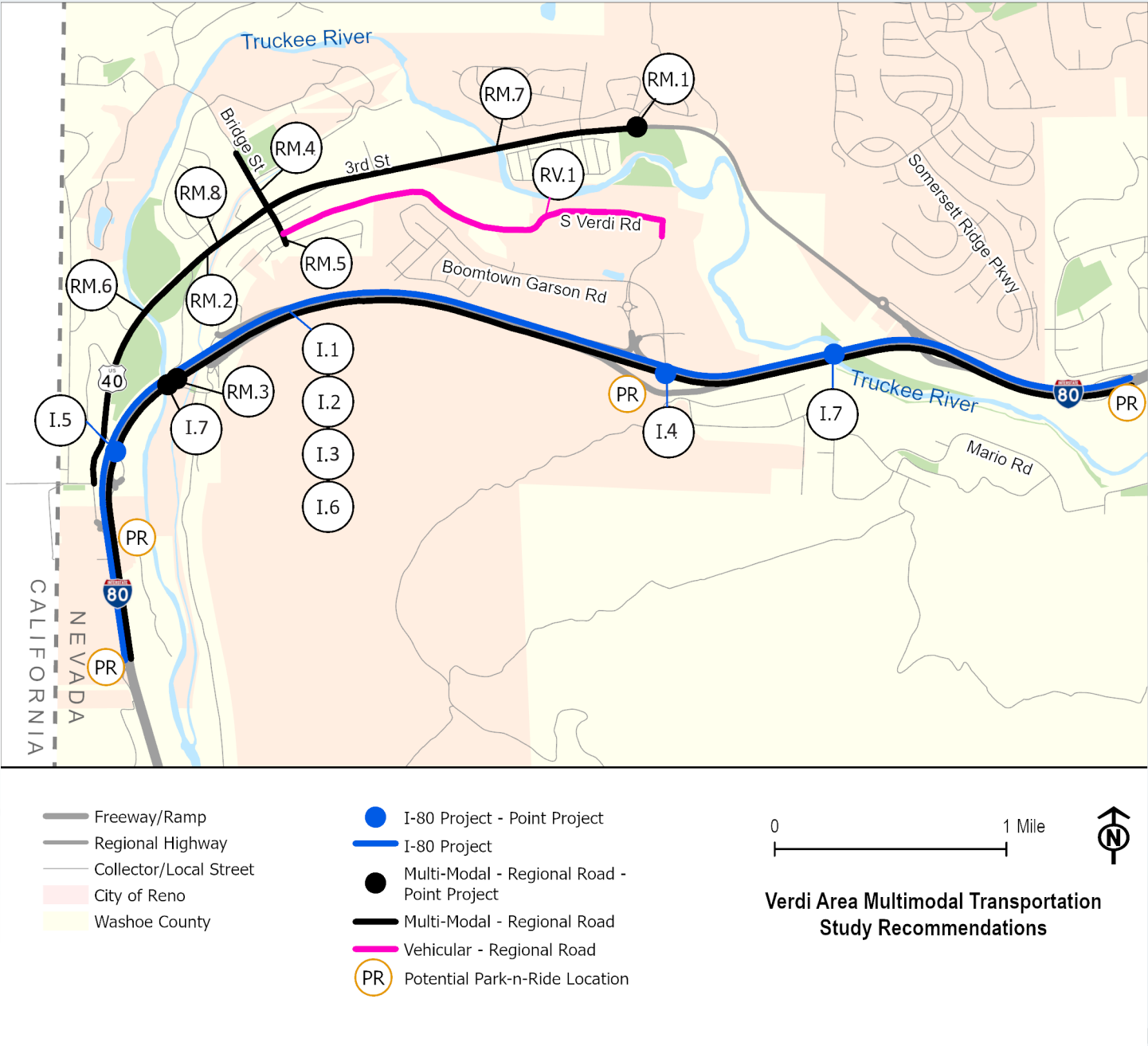
While initial data collection efforts did not show

significant speed concerns away from I-80, the data set was limited. The study team recommends speed management be implemented before speeding concerns increase. This recommendation is focused on reducing the travel lanes along 3rd Street from twelve feet to eleven feet.

RECOMMENDATION SUMMARY

The improvements identified in **Table 2** and recommendations identified in **Table 3** are illustrated below on **Figure 4**. These improvements will enhance the safety and travel of all users in the Verdi area. I-80 and 3rd Street are owned and maintained by NDOT. Partnerships between NDOT, RTC, the City of Reno, and Washoe County will be instrumental in delivering these improvements.

Figure 4 Recommendation Summary



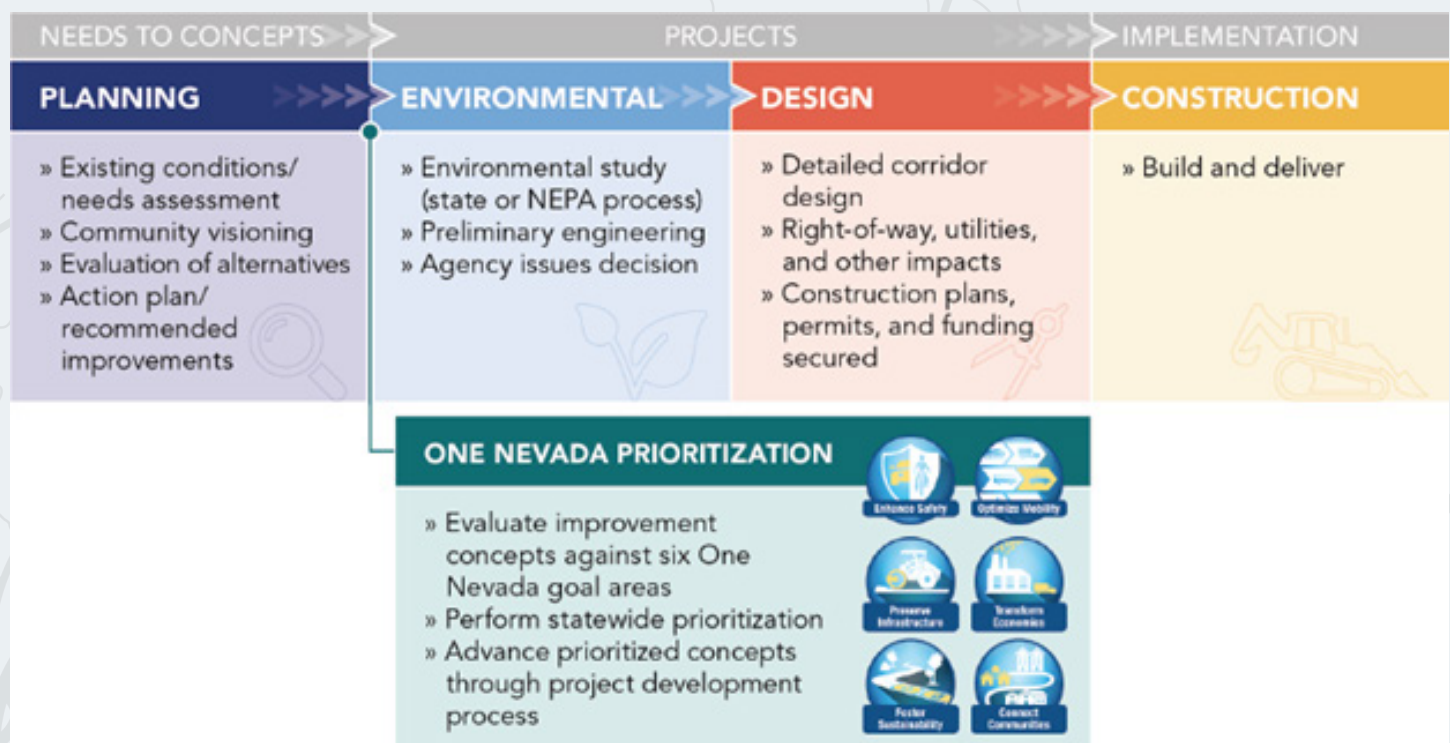
IMPLEMENTATION AND PRIORITIZATION

The next step in the study process is integrating corridor recommendations into RTC's Regional Transportation Plan (RTP). Federal regulations require that the long-range planning document be updated every four years. The RTP is RTC's long-range transportation plan as required under federal statute. It contains significant transportation projects and programs for Washoe County for all modes of travel and functions as a central tool for implementing long-range transportation planning. The RTP captures the community's vision of the transportation system and identifies the projects, programs, and services necessary to achieve that vision which the RTC, member entities, and NDOT may implement. The current 2050 RTP was adopted in 2021 and amended in 2023, with a wholesale update due in 2025.

Because I-80 and 3rd Street are NDOT-owned facilities, RTC will coordinate and partner with NDOT to deliver those roadway improvement projects, including integrating project recommendations

into NDOT's One Nevada transportation planning process. The One Nevada Transportation Plan is NDOT's state long-range transportation plan and is built on six critical goal areas that reflect the priorities of Nevada's public and transportation partners. The One Nevada planning process is a policy framework for project development that allows more informed, data-driven, transparent, and responsive transportation investment decisions.

Near-term opportunities for improvements along I-80 are already proceeding. Construction for NDOT's Contract 3947 began in Spring 2023 with the removal of rumble strips and installation of wildlife fencing. NDOT is also moving forward with planning and conceptual designs for the replacement of several bridges along I-80, including the Garson Road bridge. This will provide opportunities for future widenings while maintaining adequate bridge clearance and pedestrian/bicycle facilities.



Project ID	Description	Potential Implementation*	Planning Level Cost Range	Type of Improvement			Independent Project	Champion(s)
				Safety	Mobility	Multimodal		
I-80 Improvements (Vehicular)								
I.1	Install Wildlife Fencing	Near Term	Contract 3947	✓			Y	NDOT
I.2	Removal of I-80 Rumble Strips	Near Term	Contract 3947				N/A	NDOT
I.3	Median Cable or Barrier Rail	Near Term	\$10-12 mil	✓			Y	NDOT
I.4	Widen/Reconstruct Garson Road Bridge/Interchange	Mid Term	\$20-25 mil	✓	✓	✓	Y	NDOT/RTC
I.5	Reconfigure/Reconstruct Gold Ranch Interchange & Bridge	Mid Term	\$25-30 mil	✓	✓	✓	N	NDOT
I.6	Widen I-80 to three lanes (4th Street to Gold Ranch)	Long Term	\$60-70 mil	✓	✓		Y	NDOT
I.7	Widen I-80 Bridges over Truckee River to accomdate I.5	Mid Term	\$80-100 mil	✓	✓	✓	N	NDOT
Regional Roads (Pedestrians and Bikes)								
RM.1	Enhance Edinburgh Roundabout with Sidewalk Bike Ramps	Near Term	<\$500k	✓		✓	Y	RTC/COR
RM.2	Provide Shared Use Path on 3rd Street	Mid Term	\$1-2 mil	✓	✓	✓	Y	RTC
RM.3	Provide Shared Use Path - Crystal Peak Drive Under I-80 Bridge	Near Term	<\$500k	✓	✓	✓	Y	RTC
RM.4	Provide Shared Use Path on Bridge Street - 3rd Street to Verdi Elementary	Near Term	<\$500k	✓		✓	Y	RTC
RM.5	Provide Shared Use Path on Bridge Street - 3rd Street to Verdi Road	Mid Term	\$1-2 mil	✓	✓	✓	Y	RTC
RM.6	Provide Shared Use Path Bridge over Truckee (3rd Street East)	Long Term	\$2-3 mil	✓	✓	✓	Y	RTC
RM.7	Provide Shared Use Path Bridge over Truckee (3rd Street West)	Long Term	\$2-3 mil	✓	✓	✓	Y	RTC
RM.8	Provide Shared Use Path Bridge over Canal (3rd Street)	Long Term	\$1-2 mil	✓	✓	✓	Y	RTC
Regional Roads (Vehicular)								
RV.1	One Way Verdi Road - Bridge Street to Cabela Drive	Near Term	\$1-2 mil	✓		✓	Y	COR/WC/RTC
RV.1	Widen Verdi Road - Bridge Street to Cabela Drive	Long Term	\$8-10 mil	✓	✓		Y	COR/WC/RTC

* Final implmentation to be detemined by short and long-term planning documents and OneNevada for NDOT projects.

COR = City of Reno, WC = Washoe County

