



REGIONAL TRANSPORTATION COMMISSION
of Washoe County, Nevada

REGIONAL FREIGHT PLAN





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1 | Introduction

1.1 PROJECT PURPOSE

This Regional Freight Plan identifies the transportation needs and priorities that will support a thriving regional economy through efficient freight and goods movement as well as workforce access. The Regional Transportation Commission of Washoe County (RTC) initiated the Regional Freight Plan in recognition of the importance of transportation infrastructure and services on the safety and efficiency of the freight movement that supports the Northern Nevada economy. While the RTC’s Regional Transportation Plan has incorporated freight transportation for many years, this plan is the first extensive analysis of freight trends and needs for Washoe County. While the plan focuses primarily on Washoe County, the planning area for RTC, it is recognized that freight and its associated economic impacts expand across multiple county and jurisdictional boundaries in Northern Nevada and Northern California. This plan therefore considers needs and opportunities in surrounding counties in addition to the Truckee Meadows.

1.2 VISION AND GOALS

A vision statement was established for this plan in partnership with the Stakeholder Working Group, a group of local agency representatives that provided guidance throughout plan development. The vision for this plan is to:

Foster a thriving and diverse economy in Northern Nevada through safe and efficient freight transportation infrastructure.

The Stakeholder Working Group also helped shape a series of goals for the Regional Freight Plan, which is used to align recommended improvements to

transportation infrastructure and services. The goals include the following:

- » **Improve safety:** Transportation safety is a guiding principle for RTC, and providing for the safety of freight movement on Washoe County roadways is an important element of this plan.
- » **Improve multimodal integration and rail access:** About a quarter of freight activity in Northern Nevada transfers between multiple modes, which could include truck, rail, and/or aviation. Providing for efficient connections between modes is essential. Maintaining rail access to existing industrial properties helps ensure the seamless movement of goods and supports industrial operations. Because rail service is difficult to restore once lost, this plan identifies preservation of rail access as a key priority.
- » **Improve efficiency of freight movement:** Reducing travel delays and improving travel time reliability is important for freight movement, just as it is for all types of transportation in the region.
- » **Provide for equity and sustainability in freight movement:** Freight may have impacts on neighborhoods and the environment that are different from other types of transportation. Potential impacts resulting from noise, air quality, and safety are of particular concern in traditionally underserved areas.
- » **Improve truck parking:** The limited availability of truck parking is one of the most significant and challenging issues facing Northern Nevada. With periodic winter closures on I-80 over the Sierra Nevada, this is a concern that impacts Washoe County in addition to communities along I-80 across Nevada and beyond.

1.3 PLANNING PROCESS

This plan was developed based on technical analysis as well as input from the Stakeholder Working Group and a series of one-on-one meetings with regional specialists in various aspects of freight and economic development. The plan builds upon the foundation of the [2022 Nevada Freight Plan](#), which included analysis of truck movements on all roads in Northern Nevada. Key areas of analysis for freight and goods movement included existing infrastructure and its condition, previously adopted plans, federally available datasets about goods movement, and regional travel demand based on the RTC model.

The initial step was to identify the vision and goals for freight and goods movement. This informed a stakeholder-driven development of a Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis for Northern Nevada freight.

The technical analysis identified needs or gaps in the transportation system serving freight. Within the framework of the freight goals, specific project and program investments were recommended to address these needs. It is anticipated that recommendations will be incorporated into the upcoming RTC Regional Transportation Plan update.



Stakeholder meeting



Railroad crossing on Glendale Avenue

2 | Community Engagement

Effective community engagement is a priority for any RTC initiative. This planning process incorporated a variety of strategies to seek and incorporate input from the general public, partner agencies, and experts in freight and economic development across the region.

2.1 STAKEHOLDER WORKSHOPS

The stakeholder group provided a forum for collaboration of partner agencies and industry representatives. This group met at strategic points during the planning process, as listed below:

- » **Kickoff (November 2023):** Reviewed findings of the existing conditions analysis, identified the freight transportation vision and goals, discussed land use and economic development priorities, and identified additional stakeholders.
- » **Performance analysis (January 2024):** Reviewed the analyses of freight operations and performance and conducted a facilitated discussion to support the SWOT analysis.
- » **Recommendations (May 2024):** Reviewed and discussed project and policy draft recommendations.
- » **Plan review (June 2024):** Reviewed draft Regional Freight Plan and provided comments.

Agencies represented on the stakeholder group include the following:

- » Truckee Meadows Regional Planning Agency
- » City of Reno
- » City of Sparks
- » Washoe County
- » Reno-Tahoe International Airport
- » Nevada Department of Transportation

- » Governor's Office of Economic Development (GOED)
- » Economic Development Authority of Western Nevada (EDAWN)
- » The Chamber
- » Commercial Real Estate Development Association (NAIOP)
- » Nevada Trucking Association

STRENGTHS, WEAKNESSES, OPPORTUNITIES, AND THREATS

During the January 2024 Stakeholder Workshop, a facilitated discussion was held to identify the SWOT to freight mobility in the region. Strengths and weaknesses tend to be internal factors that regional public agencies and private industry can control, while opportunities and threats tend to be external influences that cannot be controlled, but with foresight and planning can be used to the region's advantage or protected against. This is an important exercise to focus the study analysis and inform the recommendations. Table 1 summarizes the key points which are organized by category.



Table 1: Strengths, Weaknesses, Opportunities, and Threats (SWOT) to Freight Mobility in the Region

Category	Strengths	Weaknesses	Opportunities	Threats
Location / Area	<ul style="list-style-type: none"> Available industrial zoned land (North Virginia Street, North Valleys, Cold Springs) 	<ul style="list-style-type: none"> Not enough industrial zoned land over the long term 	<ul style="list-style-type: none"> Proximity to major markets (especially California) 	<ul style="list-style-type: none"> Dependency on California
Multimodal Access	<ul style="list-style-type: none"> Multimodal access via I-80, Union Pacific Railroad (UPRR), Reno-Tahoe International Airport (RNO) 	<ul style="list-style-type: none"> Limited capacity on/ at I-80, UPRR, RNO Lack of rail access and rail-served properties Lack of truck parking No tolling authority 	<ul style="list-style-type: none"> Dependency on California Preserve existing rail spur access 	<ul style="list-style-type: none"> Limited number of rail providers Limited rail or highway crossroads
Regulatory	<ul style="list-style-type: none"> Favorable tax and regulatory environment 	<ul style="list-style-type: none"> Zoning conflicts 	<ul style="list-style-type: none"> Integrate truck parking into zoning requirements 	<ul style="list-style-type: none"> If the region were to fall into air quality non-attainment status, more strict federal regulations could be implemented on transportation construction.
Economic	<ul style="list-style-type: none"> Growing logistics sector (North Valleys, Sparks, south of RNO, Cold Springs) Strong agency partnerships within the Truckee Meadows Lower cost of living compared to California 	<ul style="list-style-type: none"> Subject to national and California economic trend 	<ul style="list-style-type: none"> Growing manufacturing base Development-friendly zoning policies at local jurisdictions, which allow promotion of workforce housing 	<ul style="list-style-type: none"> Supply chain and economic fluctuations

Category	Strengths	Weaknesses	Opportunities	Threats
Natural Resources	<ul style="list-style-type: none"> Abundant renewable energy resources (solar and geothermal) 	<ul style="list-style-type: none"> 80% of our fuel comes from California California makes it difficult/expensive to produce fuel Strong competition and wage pressure for workforce, due to low unemployment rates 	<ul style="list-style-type: none"> Natural resource availability, including mineral resources such as lithium. 	<ul style="list-style-type: none"> Risk of flooding and weather-related road closures Lack of water in surrounding areas
Workforce	<ul style="list-style-type: none"> Workforce development programs through Nevada System of Higher Education institutions and the Washoe County School District 	<ul style="list-style-type: none"> Challenge for workforce development providers to keep pace with growing employment needs in key industries Workforce access 	<ul style="list-style-type: none"> Lower cost of living than California Mild weather 	<ul style="list-style-type: none"> High cost of living relative to wages

2.2 PARTNER AGENCY ENGAGEMENT

A series of individual or small group meetings were held to seek input from surrounding jurisdictions and other representatives of private industry that are impacted by freight and goods movement. These meetings were held using a combination of in-person and virtual formats.

- » **Economic Development Authority of Western Nevada (EDAWN)** (9/20/2023)
- » **Nevada Department of Transportation (NDOT)** (1/11/2024)
- » **Reno-Tahoe International Airport** (1/31/2024)
- » **Storey County** (1/22/2024)
- » **City of Fernley** (1/26/2024)
- » **Manufacture Nevada** (2/20/2024)

» Carson Area Metropolitan Planning Organization (CAMPO)

– CAMPO provided information about freight needs through email.

RTC conducted additional coordination meetings with interested agencies upon request, speaking with representatives from the City of Sparks on June, 20, 2024, and City of Reno on July 24, 2024

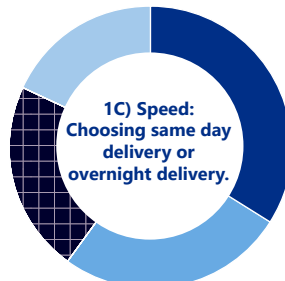
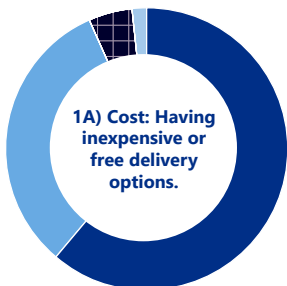
2.3 RTC WEBSITE AND COMMUNITY SURVEY

Information about the Regional Freight Plan was posted to the RTC website, providing the general public with a summary of the planning process and activities. A survey for the general public about their perceptions about freight transportation and ways in which it impacts their daily lives was also provided on the website. There were 62 responses to survey. When asked about their experiences of shopping online, the respondents said that having inexpensive or free delivery options and their delivery be on time were the most important to them. When asked about their opinions on trucking in Northern Nevada, the overwhelming majority said that they understand the importance of trucking in providing stores with

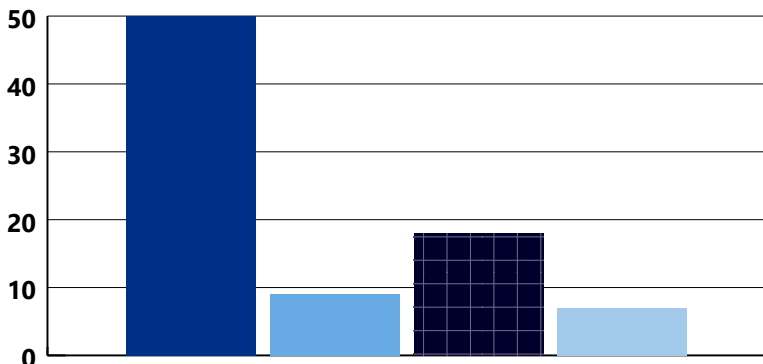
goods. When asked how the RTC should prioritize their limited budget for freight investment to deliver packages and products, the top three responses were that the most important investments should be the safety for all travelers and freight, followed by infrastructure maintenance and mobility.

The last question from the survey asked respondents to provide their thoughts on any freight-related concerns. Major themes from these responses are the concern of safety for all people on the road, including truck drivers, car occupants, and pedestrians. The speed of trucks on the road was mentioned several times in these responses. Keeping freight trucks away from residential areas was a common preference.

1) When you shop online, what are your expectations for receiving packages and products? Please rank from most important (1) to least important (4)

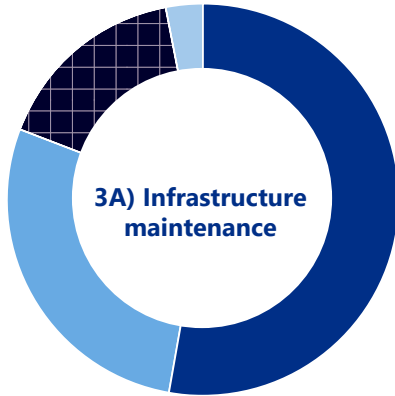


2) What do you think about trucks in Northern Nevada?

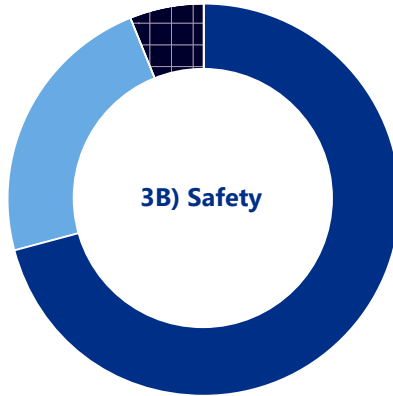


- I know trucks are important to filling store shelves ; delivering packages.
- I think truck traffic is a major problem.
- I think trucks sometimes cause traffic problems.
- I don't often think about what trucks are carrying a where they might be going.

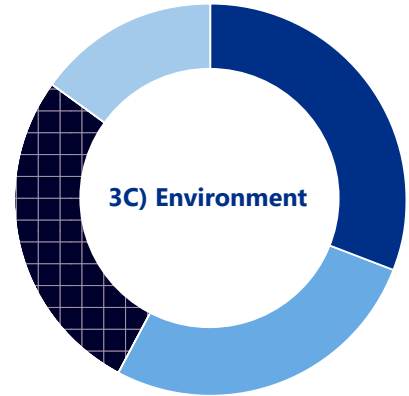
3) How should Washoe RTC prioritize limited transportation dollars to make it easier for freight (truck, plane,rail) to deliver products and packages? Please rank from most important (1) to least important (4)



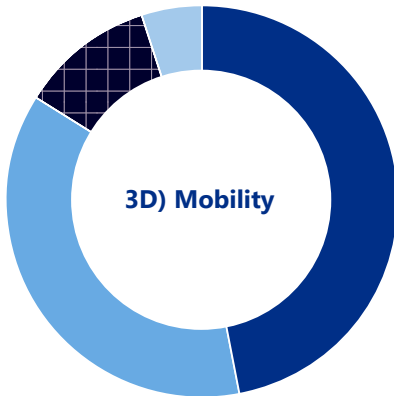
53% ● 1 - Most Important
 28% ● 2
 16% ● 3
 3% ● 4 - Least Important



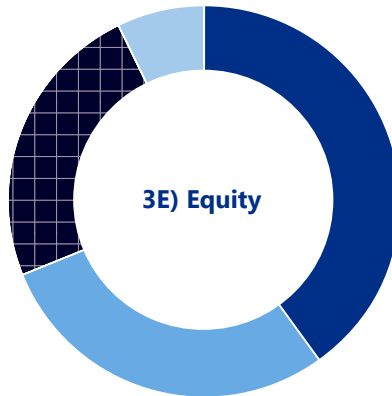
71% ● 1 - Most Important
 23% ● 2
 6% ● 3
 0% ● 4 - Least Important



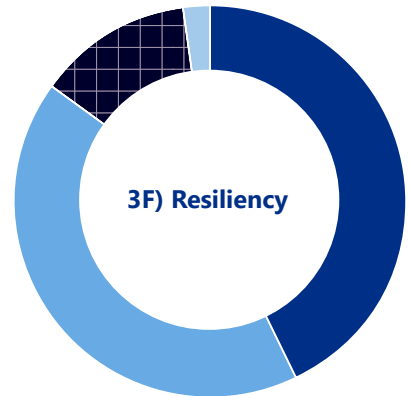
31% ● 1 - Most Important
 27% ● 2
 27% ● 3
 15% ● 4 - Least Important



47% ● 1 - Most Important
 37% ● 2
 11% ● 3
 5% ● 4 - Least Important



40% ● 1 - Most Important
 29% ● 2
 24% ● 3
 7% ● 4 - Least Important



43% ● 1 - Most Important
 42% ● 2
 13% ● 3
 2% ● 4 - Least Important

2.4 ADVISORY COMMITTEE MEETINGS

The RTC Citizens Multimodal Advisory Committee (CMAC) and Technical Advisory Committees (TAC) provided opportunities for input on the Regional Freight Plan from both the local resident and partner agency perspectives. During the presentation to CMAC on March 6, 2024, input from committee members included the following:

- » Consider alternatives to expanding highways and trucking to improve sustainability, such as increased use of rail.
- » Separate truck routes from bicycle routes.
- » The construction of an alternative route from South Meadows to the Tahoe-Reno Industrial (TRI) Center is important for the region.
- » Increasing bus and rail options to expand workforce access is important.

The Regional Freight Plan was presented to the TAC on March 7, 2024. Comments from the TAC included the following:

- » A significant proportion of freight is considered intermodal. Improving intermodal freight facilities is important to the region.
- » Maintaining existing rail access for industrial land uses is important for the long-term economic health of the region.



Coordination meeting with RNO

3 | Planning Context

This plan is built upon the foundation of previously adopted transportation plans and considers the land use planning decisions that have led to the industrial land uses served by freight. It incorporates information about publicly and privately operated transit options for industrial employment access.

3.1 ADOPTED PLANS

A summary of relevant plans is provided in this section, along with links to additional information.

2050 REGIONAL TRANSPORTATION PLAN

The [2050 Regional Transportation Plan](#) (RTP) recognizes the importance of freight movement for the economic competitiveness of Northern Nevada. In compliance with federal requirements, the RTP promotes coordination with local governments and freight transportation providers and identifies a series of freight performance measures. RTC highlights truck parking shortages as a concern that needs to be addressed as Washoe County has a deficit of truck parking spaces. The RTP is currently in the process of being updated. It is anticipated that the results of this Regional Freight Plan will be incorporated into the upcoming RTP.

VERDI AREA MULTIMODAL TRANSPORTATION STUDY

The [Verdi Area Multimodal Transportation Study](#) is a multimodal plan that identified truck parking and freight movement needs as a key concern. The Verdi Gold Ranch interchange on I-80 serves as a closure point during some winter weather events. Due to a lack of formal truck parking, semi-trucks are often observed parking along I-80, 3rd Street, and other local roads in the Verdi area. Residents expressed concerns about truck idling, emissions, and noise

pollution, as well as unsafe parking configurations. The study recommended that NDOT continue developing and implementing additional truck parking east of Verdi and in Reno.

MCCARRAN BOULEVARD CORRIDOR STUDY

The [McCarran Boulevard Corridor Study](#) identified an area containing primarily industrial land uses from I-80 to Longley Lane as having high truck volumes to accommodate freight traffic exiting I-80. The segment of McCarran Boulevard just north of I-80 extending to Prater Way also sees higher truck traffic volumes (4.8% of total traffic volume) serving the adjacent commercial land uses. The areas just north and south of I-80 on the east side of McCarran Boulevard were also identified as high crash areas. An intersection improvement was recommended at McCarran Boulevard and Prater Way.

RENO-TAHOE INTERNATIONAL AIRPORT MASTER PLAN

The 2017 [Reno-Tahoe International Airport \(RNO\) Master Plan](#) presents the strategy for long term growth at RNO. The air cargo volume at RNO has increased by 31% in the past 10 years and is expected to continue to increase. The plan identifies air cargo growth and the need to expand capacity and modernize air cargo facilities. The existing air cargo facilities are near capacity for normal operations and over capacity during peak times. Future expansion of the current cargo facilities is constrained and its current location limits passenger terminal expansion. The need for additional land dedicated to non-belly freight cargo, plus terminal expansion, necessitates the relocation of RNO air cargo facilities. The plan identifies the Southwest Quadrant, an approximately 100-acre parcel on the southwest portion of the RNO airfield, as the preferred site for the development

of new air cargo facilities. Ground access to the Southwest Quadrant is via Moana Lane and Airway Drive.

ONE NEVADA TRANSPORTATION PLAN

The [One Nevada Transportation Plan](#) is the state’s long-range transportation plan, which equips NDOT and its partners with the strategic direction and essential actions to meet Nevada’s current and future transportation needs. The ongoing One Nevada planning process identifies and funds the projects that best achieve NDOT’s six goal areas in a data-driven and transparent manner. The One Nevada goals form the basis for decision-making and investment decisions for all modes of transportation.

Freight projects must meet several of the One Nevada goal areas to be competitive for statewide funding.

NEVADA FREIGHT PLAN

The [Nevada Freight Plan](#) provides a strategic framework for enhancing freight transportation safety, mobility, and sustainability as part of broader efforts to support the economic vitality of freight-related sectors in Nevada. The Nevada Freight Plan also makes specific recommendations on improving the state’s freight infrastructure to strengthen and diversify Nevada’s economy. The vision of the Nevada Freight Plan is to strengthen Nevada’s competitive advantage by creating a multimodal system of superior safety, condition, and performance.

NEVADA STATE RAIL PLAN

NDOT completed the most recent update of the [Nevada State Rail Plan](#) in 2021. The major focus areas for the plan include the following challenges:

- » Funding for rail infrastructure.
- » Organizational structure.
- » Regional marketplace dynamics that hinder rail expansion.

The plan outlined the following key opportunities for Northern Nevada:

- » Aggregate shipper needs into a viable redevelopment strategy for the Nevada Northern Railway.
- » Create a corridor-wide, rail-based land development strategy for I-80 communities, establish freight rail connections with California market and ports, and expand Amtrak services.
- » Support private-sector freight-rail served developments, including investment in an integrated multimodal cargo transfer facility in the Fernley area, and establish public transportation service between Reno, Sparks, and the TRI Center.
- » Focus on connecting existing truckload shippers to rail service.



NDOT One Nevada Goals

NEVADA TRUCK PARKING IMPLEMENTATION PLAN

The [Nevada Truck Parking Implementation Plan](#) was completed in 2019. This plan provides an overview of issues related to statewide truck parking, urban truck parking, technology and data, and special cases. The plan concludes with an overview of the options available to fund or finance plan recommendations. The Federal Highway Administration (FHWA) supported the development of the plan by facilitating truck parking workshops for local agencies and other stakeholders in both Northern and Southern Nevada.

NDOT conducted this study to develop a plan for expanding, improving, and integrating freight truck parking and truck parking communications systems in response to rising demand, changing hours of service requirements, and safety standards. This plan identified the locations where there are no truck parking facilities with amenities within a 2-hour drive, including US 95 between Tonopah and Fernley. It also identified a deficit of more than 250 truck parking spaces in Washoe County. This plan identified Donner Pass on I-80 as lacking emergency parking, especially during winter weather closures.

The following recommendations were made for long-haul (statewide) truck parking needs:

- » Expand and/or enhance existing public truck parking facilities at several rest stops and turnout areas.
- » Add truck parking at new weigh stations.
- » Allow parking at chain-up/brake check/inspection site areas during non-winter months.
- » Convert closed NDOT or Nevada Highway Patrol facilities to truck parking.
- » Add truck parking during highway improvements.
- » Improve multi-state coordination.
- » Develop a public private partnership (P3) model

and a competitive grant or loan program.

The following recommendations were made for urban truck parking needs. These recommendations focus on how NDOT can assist with education and support local efforts.

- » Support efforts to change zoning.
- » Develop a P3 model and a competitive grant or loan program.
- » Evaluate available land for truck parking.

Plan recommendations centered around two main areas:

- » Deploying a statewide truck parking availability system (TPAS).
- » Enhancing truck stop electrification (TSE) levels.

Truck Parking Availability System (TPAS)

A Truck Parking Availability System (TPAS) is a dynamic signage system that shows upcoming available parking sites, distances, and the number of currently available spots at each site along highways. The TPAS contains sensors at parking facilities that detect and report parking space availability. The truck parking information is then displayed on preinstalled digital signs in real time. The real-time truck parking information allows drivers to make better decisions and improve the efficiency on roadways.

NDOT is leading the effort to install detection at truck parking sites within the I-15 and I-80 rights-of-way (ROWs) and corresponding signage along I-15 and I-80 in Nevada.

Source: I-15 Freight Mobility Enhancement Plan; Nevada Truck Parking



The Funding and Financing Options section of the plan described various funding sources available to implement proposed recommendations, including federal funding and grants, state and local funding, direct user fees, P3 models, design-build-finance-operate-maintain structures, sponsorships, and tax incentives.

I-80 MULTISTATE CORRIDOR OPERATIONS AND MANAGEMENT PROGRAM

The I-80 Winter Operations Coalition is a multistate partnership that has brought together state transportation department maintenance, traffic operations and freight planning from five western states. This effort was led by NDOT and includes California, Utah, Wyoming, and Nebraska. The coalition was initiated in 2010 to improve the corridor's safety, mobility, consistency of travel, and the movement of freight along I-80 during the winter months. This program builds on the concept of multistate coordination, expanding it to general road condition information, road closure updates, traffic management strategies, maintenance operations, and consistent traveler information. As part of this coordination effort, a Freight Action Plan was developed by the Freight Strategy Group to ensure these perspectives are integrated with future freight focused activities. The I-80 Winter Operations Coalition successfully secured a federal grant through the Multistate Corridor Operations and Management (MCOM) program, which is funding the current program initiatives.

3.2 AVAILABLE DATA SOURCES

The Regional Freight Plan is built upon a foundation of comprehensive data analysis. A diverse array of data sources have been utilized to construct a holistic understanding of the region's transportation landscape, addressing various elements such as safety, freight mobility, traffic volumes, socioeconomic data, and others.

The 2016–2020 crash data from NDOT was used for safety analysis, which identifies the crash locations, contributing factors, and whether a semitruck was involved. Understanding the flow of goods and services across the region necessitates an examination of truck volumes along key roadways. This information was derived from the 2019 Highway Performance Monitoring System (HPMS) data. The results were cross-referenced and compared with the insights derived from the truck GPS data analysis from the Nevada Freight Plan. NDOT utilized 2021 truck GPS data from the American Transportation Research Institute (ATRI) to compile a list of critical freight corridors within the state of Nevada. This analysis complemented the HPMS data to provide insights into the truck routes within the region, aiding in the identification of key transportation arteries crucial for supporting efficient freight movement.

Ensuring efficient travel time reliability is paramount for enhancing the overall transportation experience. To this end, the plan incorporates 2022 INRIX speed data analysis, offering insights into the congestion hotspots within the region. Population and employment projections, vital for anticipating future transportation needs, are sourced from the RTC travel demand model. Furthermore, FHWA's Freight Analysis Framework (FAF) data were used to provide an overview of commodity flows, aiding in the development of strategies to optimize freight movement and enhance economic competitiveness.

3.3 FREIGHT INFRASTRUCTURE

ROADS

The RTC planning area includes roadways that are owned and operated by NDOT and the jurisdictions of Reno, Sparks, and Washoe County. RTC does not own roadways but is responsible for major capital improvements on regional roads, including capacity expansions, pavement preservation and reconstruction, and multimodal improvements.

RTC also coordinates the regional intelligent transportation system (ITS) network in partnership with other agencies in the region.

Roadways with the greatest freight volumes are generally NDOT facilities, including I-80, I-580, and US 395. Many state highways also experience high truck volumes, such as McCarran Boulevard, Glendale Avenue, and Pyramid Highway.

Regional roads are defined as arterials providing direct connections between freeways and arterials, collectors with average daily traffic of at least 5,000, industrial roadways with freight movement, and roads with transit routes.

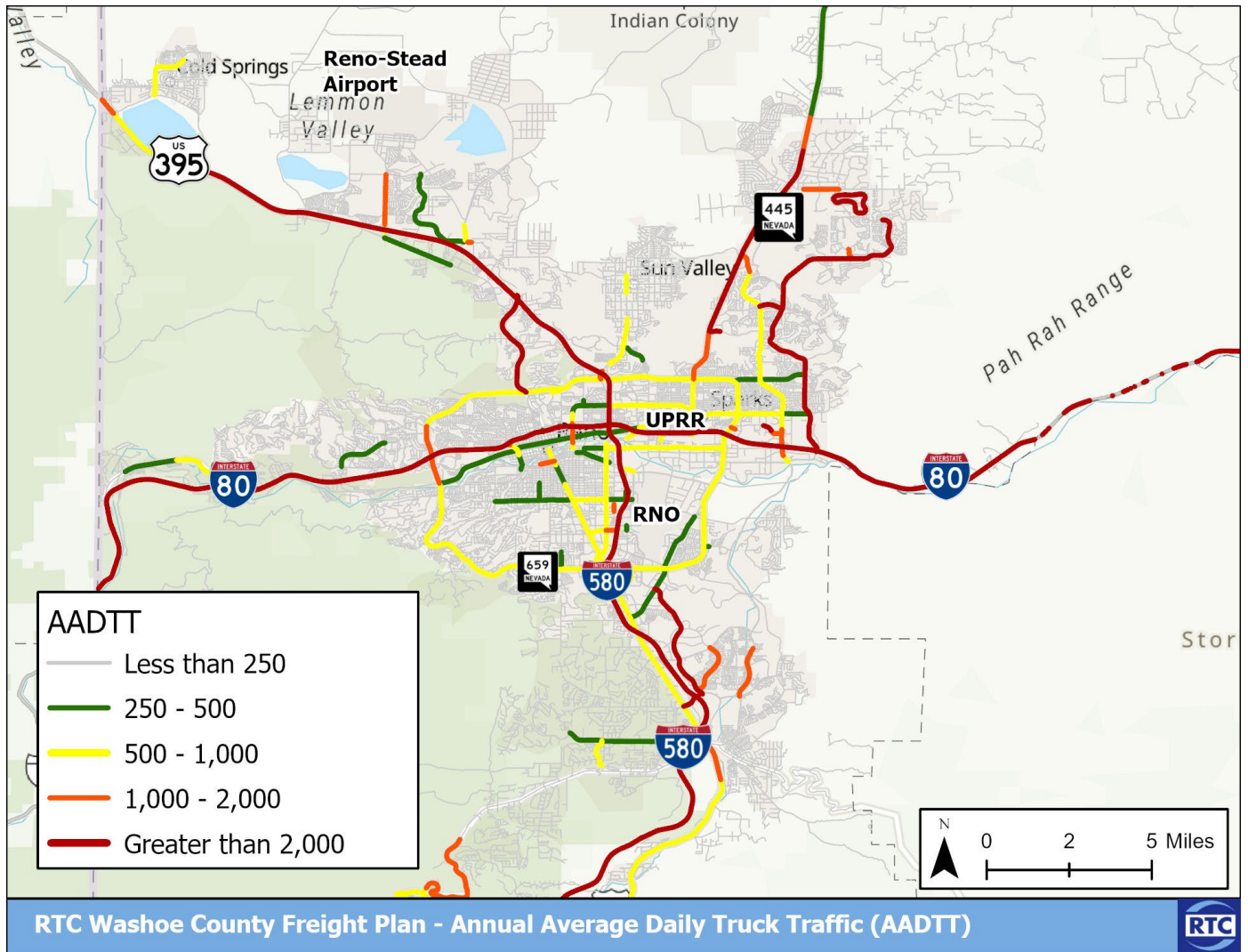
The National Highway Freight Network, as defined by NDOT in coordination with RTC, is shown in Figure 1. Truck volumes by roadway as identified in the HPMS are shown in Figure 2.

Figure 1: National Highway Freight Network



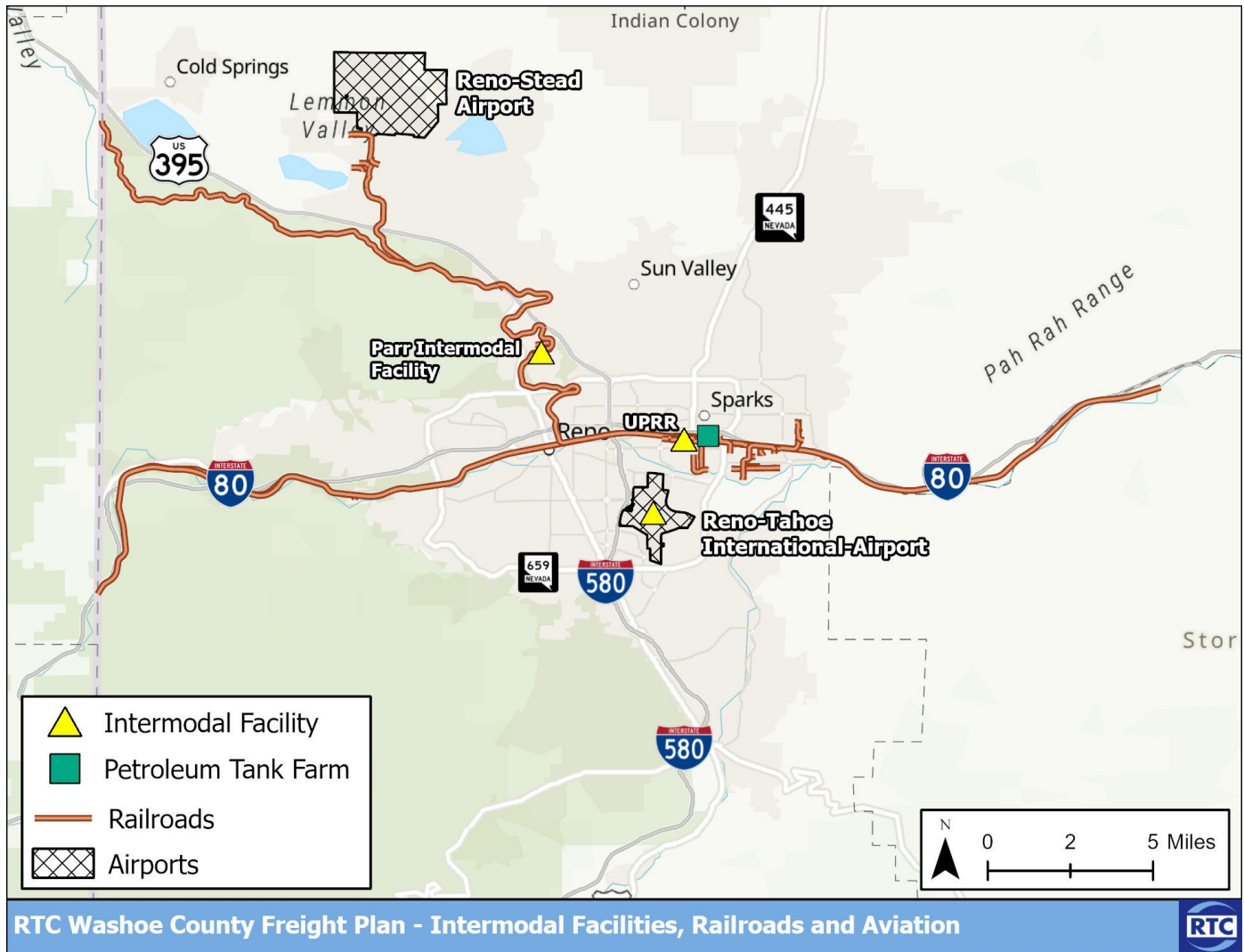
Source: NDOT

Figure 2: Annual Average Daily Truck Traffic



Source: NDOT

Figure 3: Rail Network and Intermodal Facilities in the Region



RTC Washoe County Freight Plan - Intermodal Facilities, Railroads and Aviation

Source: NDOT

RAILROADS

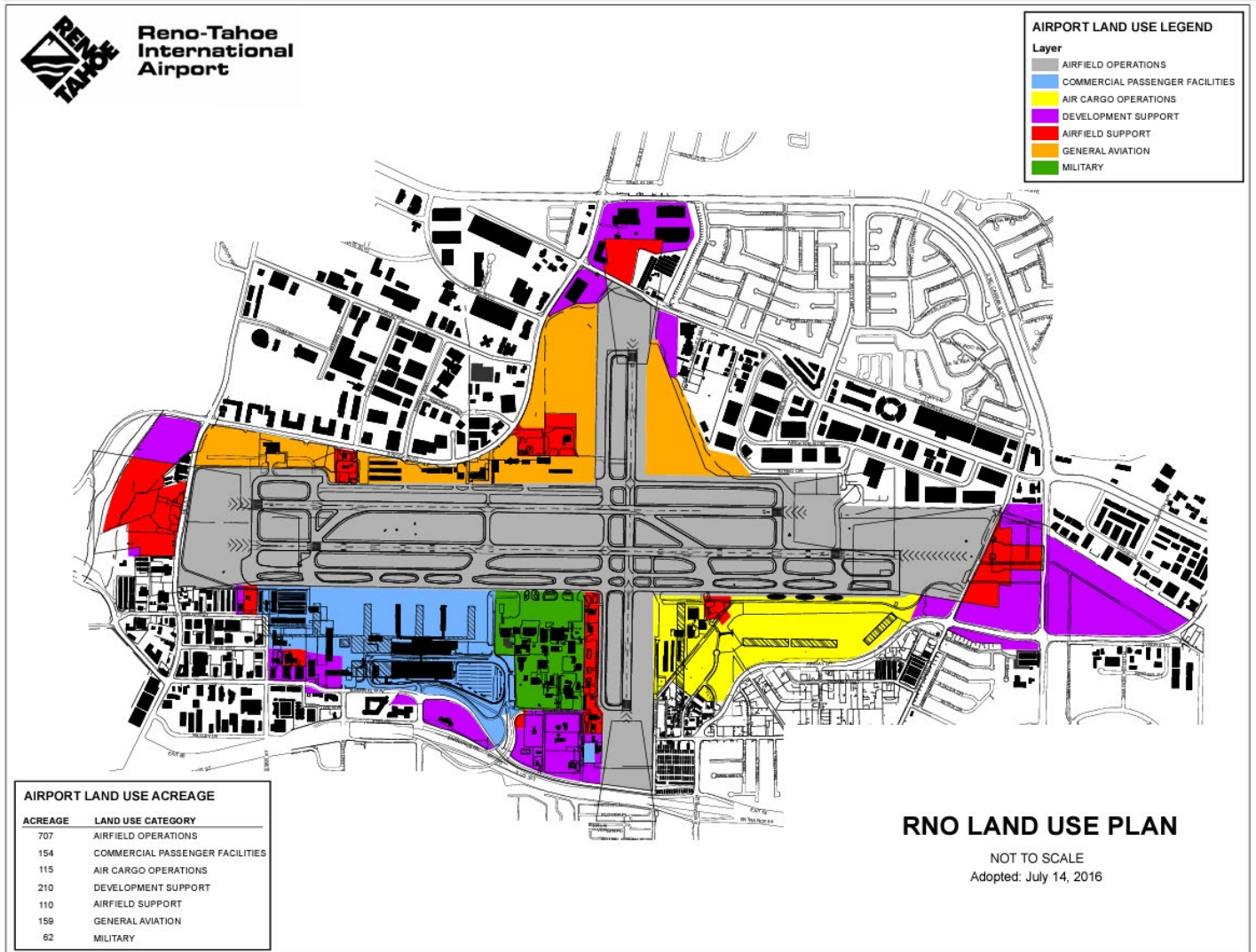
Railroads have been pivotal in the development of Northern Nevada. The Sparks Intermodal Terminal was built in 1904 and has continued to be a major hub. The Union Pacific Railroad (UPRR) is a heavily used freight corridor connecting Reno/Sparks to the Port of Oakland as well as to trading partners in Utah and eastward to Chicago. This route connects in Roseville, California, to UPRR’s I-5 corridor with service along the west coast of the U.S. The Burlington Northern Santa Fe (BNSF) Railway operates on nearly three-quarters of the UPRR railways in Nevada. As shown in Figure 3, there is also a spur line connecting to

the North Valleys and rail service to industrial land uses in Sparks. It is important to maintain these rail connections for future industrial development needs.

AIRPORTS

RNO provides passenger and air cargo services. Air freight service tends to serve high-value, lighter weight, time-sensitive, and refrigerated cargo. RNO is not a hub for a domestic all-cargo airline and relies on service to local industry to generate freight demand.

Figure 4: RNO Land Use Plan



RNO’s annual tonnage increased by 10,000 metric tons between 2000 and 2015. The Los Angeles International Airport (LAX) dominates the local air cargo market with a total air cargo tonnage of almost 2,000 in 2015, compared to 511 at the next highest in the western U.S. in Oakland and 63 at RNO. FedEx (61%) and UPS (33%) are the primary cargo carriers at RNO, with smaller shares going to DHL (3%) and passenger carriers such as belly cargo. RNO’s air cargo serves the domestic market, with international demand served by trucking to LAX and San Francisco International Airport (SFO). The RNO Master Plan assumes a 2.2% annual growth rate for air cargo. This anticipates an increase in air cargo activity from 71,000 metric tons in 2016 to

110,000 metric tons in 2036. The current location of air cargo facilities, as well as future development sites surrounding the airport, are shown in Figure 4.

In addition to RNO, the Reno-Stead Airport (RTS) is strategically developing into a significant economic hub in the North Valleys. This transformation includes the establishment of an airport business park, designed to cater to industries such as aerospace, advanced manufacturing, and logistics. Recognized by the Truckee Meadows Regional Planning Agency as a future regional jobs center, the business park at RTS represents a substantial portion of the region’s industrial capacity. Situated approximately 15 miles

north of Reno, it accounts for 60% of the vacant industrial land within the City of Reno and 37% of the vacant industrial land in Washoe County. This development not only underscores the airport's potential to drive economic growth but also highlights its pivotal role in meeting the region's future employment and industrial needs.

INTERMODAL CONNECTIONS

According to the NDOT Freight Plan, the Reno-Sparks metropolitan area includes three multimodal facilities: the Sparks and Parr intermodal yards, and the RNO Air Cargo Center. The Sparks Intermodal Terminal is home to a host of manufacturing, trucking, warehousing, and construction companies, as well as the petroleum products tank farm. With its close proximity to RNO, it combines rail, truck, air, and pipeline in a single location. These intermodal facilities are crucial for the regional and national economy. They attract diverse businesses, boost local employment, and enhance transportation efficiency by integrating rail, truck, air, and pipeline modes.

The Port of Nevada is a new inland port being developed in Fernley. It offers a full intermodal and rail facility with direct access to the Port of Oakland and future rail service to the Ports of Los Angeles/Long Beach. It is served by UPRR and BNSF and handles bulk rail cars and export containers with no weight limits.

3.4 REGIONAL DEVELOPMENT PATTERNS

Northern Nevada has experienced strong growth in advanced manufacturing and logistics industries since 2010. State and regional efforts championing the diversification of the economy have succeeded in bringing new industries and strong employment growth to Northern Nevada. As a result, an expansion of industrial and warehouse development has occurred across the region.

The historic industrial core for the region includes industrial Sparks. Anchored by freight rail service and

the Sparks Intermodal Terminal, this area supports about 25,000 jobs. Many of these early industrial properties were developed with rail spur access. Key industrial corridors include Greg Street, Glendale Avenue, Rock Boulevard, McCarran Boulevard, and Vista Boulevard. Due to proximity to the Truckee River, many of these properties are located in the floodplain and require retrofits to guard against potential flood damage.

The purpose of the [Truckee River Flood Management Project](#) is to create a more resilient community and reduce impacts from major flood events. Implementation of this project will benefit the core industrial employment center in Sparks in addition to safeguarding public health and improving water quality for the larger region.

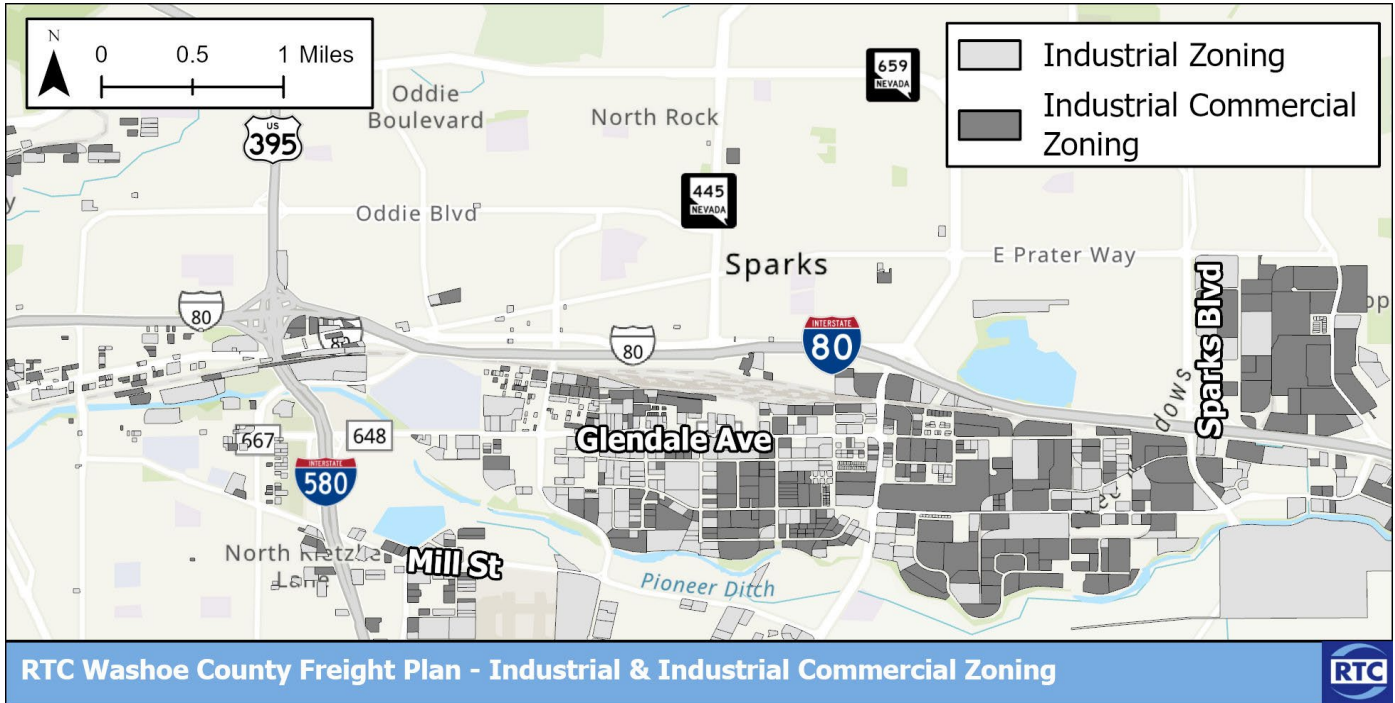


Industrial development in South Reno

The 2050 RTP developed in 2021 included a Sparks Industrial Study (2050 RTP, Appendix H), which identified needs for accessible sidewalk connectivity to bus stops and bicycle connectivity, noting that many people employed in the area rely on transit, walking, and bicycling to get to work. Improvements recommended in the McCarran Boulevard Safety Management Plan are also included in the Sparks Industrial Study.

The City of Sparks has made recent land use planning changes within the Pioneer Meadows and Kiley Ranch developments, which will allow for future warehousing and logistics center development in these areas of northern Sparks.

Figure 5: Industrial and Warehouse Land Use



Development at Longley Lane and McCarran Boulevard, adjacent to RNO Airport

The air cargo market has exhibited strong growth in recent decades as a result of continued expansion of industrial activity in the region. The increased demand has facilitated development of a major distribution hub immediately south of the airport at McCarran Boulevard and Longley Lane.

The region contains multiple third party logistics companies, which are major contributors to the area’s economy and freight traffic.

The South Meadows area developed with major planned unit developments (PUDs) that house industrial and warehouse uses. Located primarily north of South Meadows Parkway and east of I-580, this district houses major logistics centers. More recent industrial and logistics development in South Meadows has spanned both sides of I-580, with a concentration in the area south of Damonte Ranch Parkway.

Over more recent decades, industrial growth has expanded in the North Valleys and Spanish Springs areas. RTC’s 2017 North Valleys Multimodal Transportation Study documented the increase in industrial development and employment in this area, including major logistics centers. Stead Airport, managed by the Reno-Tahoe Airport Authority, is located in the North Valleys and has attracted nearby industrial land uses. A master



Development on McCarran Boulevard

plan for future redevelopment in and around Stead Airport has been developed. The RTC North Valleys Multimodal Transportation Study recommended many improvements that have been implemented or are currently underway, including widening Lemmon Drive and improving its interchange with US 395.

The TRI Center, known as the largest industrial park in the world, is located in Storey County east of Sparks. I-80 provides the only access from Washoe County to this 107,000-acre manufacturing, technology, and logistics hub. TRI Center is home to many major employers, including Tesla, Panasonic, Blockchains, Walmart, Switch, and many others.

The City of Fernley is a growing urban area near I-80 east of Storey County. Fernley received a \$25 million RAISE grant from the U.S. Department of Transportation for the Nevada Pacific Parkway project that will connect I-80 to US 50. This will support development of the Victory Logistics Center, a 4,300-acre industrial park with on-site freight rail service.

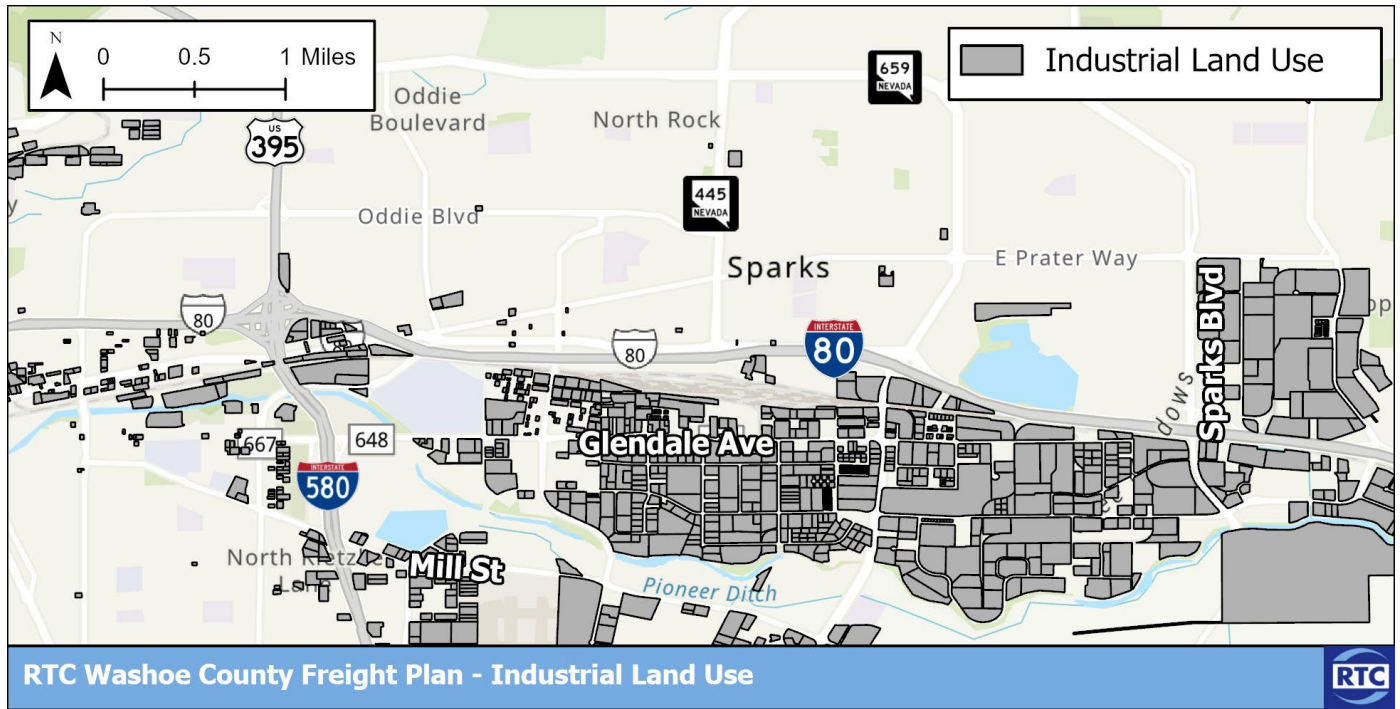
EDAWN prepared the Northern Nevada Lands Study in 2021 to estimate the available supply of vacant land for residential and commercial use and determine if a potential scarcity exists. For Washoe, Storey, and Lyon Counties, the study estimated that



USA Parkway in Storey County

over 25,000 developable parcels of at least 20 acres in size were available. The greatest number of parcels are 20 to 60 acres, with a more limited number of larger parcels over 100 acres in size. Within Washoe County, the majority of developable vacant land is located in the North Valleys and Spanish Springs areas. Larger portions of vacant land are available in the Fernley area. The study projected that the land supply for industrial uses would be extremely limited by 2041 and recommended Congressional action to make additional public lands available for development.

Figure 6: Industrial and Warehouse Land Use – Sparks Industrial



ZONING AND LAND USE

Industrial land uses are primarily concentrated in the Sparks Industrial Area, North Valleys, and South Meadows. The Sparks Intermodal Terminal and surrounding locality south of I-80 contain much of the industrial zoned areas in the region. There is also a significant amount of industrial zoned lands near RTS. Industrial commercial zoning, which may include factories and warehouses, can be found around RNO.

3.5 WORKFORCE ACCESS

Workforce access to employment centers continues to be a priority, both within the Washoe County urbanized area and extending to the greater Northern Nevada region.

RTC is the regional transit service provider and operates both fixed route bus and microtransit service. RTC serves over 20,000 trips a day with 27 fixed routes. Industrial employment in Sparks and the North Valleys continues to attract strong transit ridership, including the Lincoln Line bus rapid transit

(BRT) service and Glendale/Greg (Route 18), Stead (Route 7), and East Mill (Route 14). RTC has also launched on-demand RTC FlexRIDE service that provides curb-to-curb service within specific zones, including Sparks/Spanish Springs and North Valleys. A new FlexRIDE zone in South Meadows launched in May of 2024.



Bus stop near industrial employment



The RTC Vanpool service is among the most successful in the nation. Over 300 vanpools to, from, or within Washoe County served over 1,600 commuters in 2022, with the TRI Center being a major vanpool destination.

Vanpools allow 5–14 people to commute together at substantially reduced costs compared to driving alone. Vanpooling also helps reduce vehicle miles of travel and associated environmental impacts. The van is driven by one of the members and passengers are picked up at prearranged locations. Expenses for the vehicle and fuel are shared by the riders and subsidized by RTC. Employers have the opportunity to further subsidize the vanpool cost. RTC has partnered with Commute with Enterprise, an organization that supplies the vehicles and provides maintenance and insurance. Vanpools are well suited to long commuting distances, such as between the Reno/Sparks metro area and TRI Center.

[My Ride to Work](#) is privately operated transit that provides commuter service to major employers at the TRI Center. My Ride to Work has 17,486 weekly boardings, making it a major contributor to mobility in Northern Nevada. Their buses pick up and drop off at various regional locations, including at RTC transit stations.

An improved bike and pedestrian network can also foster a more inclusive and environmentally friendly approach to workforce access in the region. By providing safe routes for cyclists and pedestrians, these networks offer accessible transportation options, reduce reliance on cars, alleviate congestion, and promote healthier commuting choices. This not

only enhances inclusivity but also contributes to environmental sustainability by reducing carbon emissions and improving air quality.

Access to industrial areas in the Reno/Sparks area and the greater Northern Nevada region is facilitated by an extensive network of major arterials and highways. An efficient network of arterials and collectors has the potential to enhance workforce access. Optimizing connectivity between industrial areas and residential neighborhoods and reducing travel times and congestion supports economic growth by facilitating the movement of goods and services and benefits employees by providing more efficient transportation options. Additionally, a well-designed network of arterials and collectors enhances overall mobility, contributing to the region’s attractiveness for businesses and residents alike.

4 | Existing Conditions and Trends

This section describes existing conditions and trends, including safety, truck parking, and commodity flow analysis.

4.1 SAFETY

The data set used for this analysis comes from NDOT and includes vehicle crashes from 2016 through 2020. In Washoe County during this period, there were 35,655 vehicle crashes. Of these, 630 (1.8%) involved a semitruck. These truck-involved crashes resulted in two fatalities and six serious injuries. The majority of truck-involved collisions were angle (32%) or side-swipe crashes (26%) while 20% were noncollisions (where another vehicle was not struck), 18% were rear-end crashes, 3% were backing crashes, and 1% were head-on crashes.

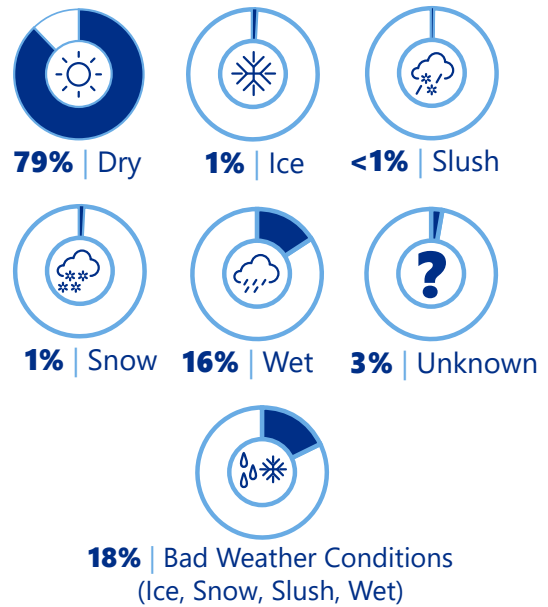
Table 2: Washoe County Crashes, 2016–2020

	Total	Fatal Crashes	Serious Injury Crashes
Total Crashes	35,655	206	572
Semitruck Involved Crashes	630 (1.8%)	2 (<1%)	6 (<1%)

Source: NDOT

The semitruck involved vehicle crashes during this period occurred during a variety of weather conditions. The majority (79%) occurred during dry roadway conditions. Winter weather conditions that could include ice, snow, or slush were present for 18% of crashes and road conditions were wet during 16% of crashes.

Figure 7: Roadway Conditions During Freight Crashes



Washoe County Crashes 2016-2020

Source: NDOT

The majority of these crashes occurred along and near I-80, particularly on the section between the US 395 interchange and Sparks Boulevard. The highest concentration of truck-involved crashes is in the vicinity of the I-80 interchange at McCarran Boulevard in Sparks.

Figure 8: Crash Types

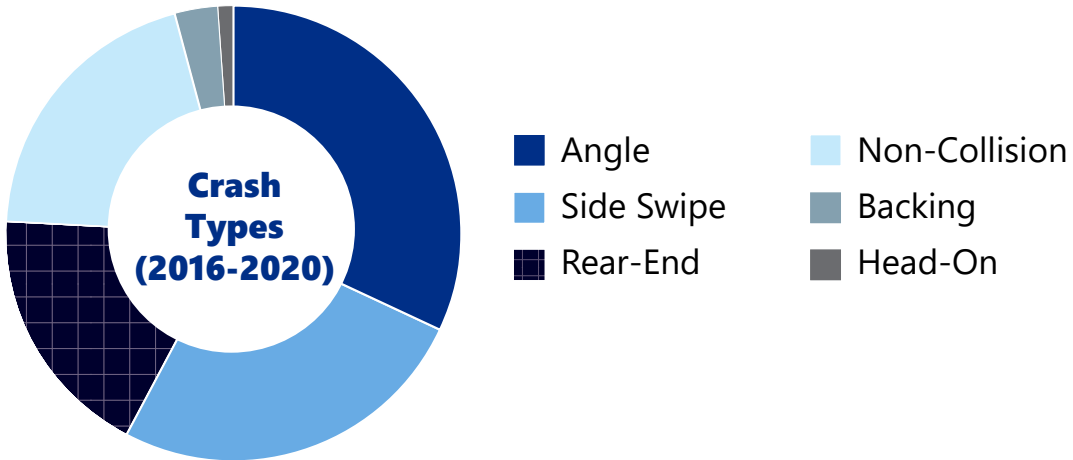


Figure 9: Truck-Involved Crashes in Northern Nevada

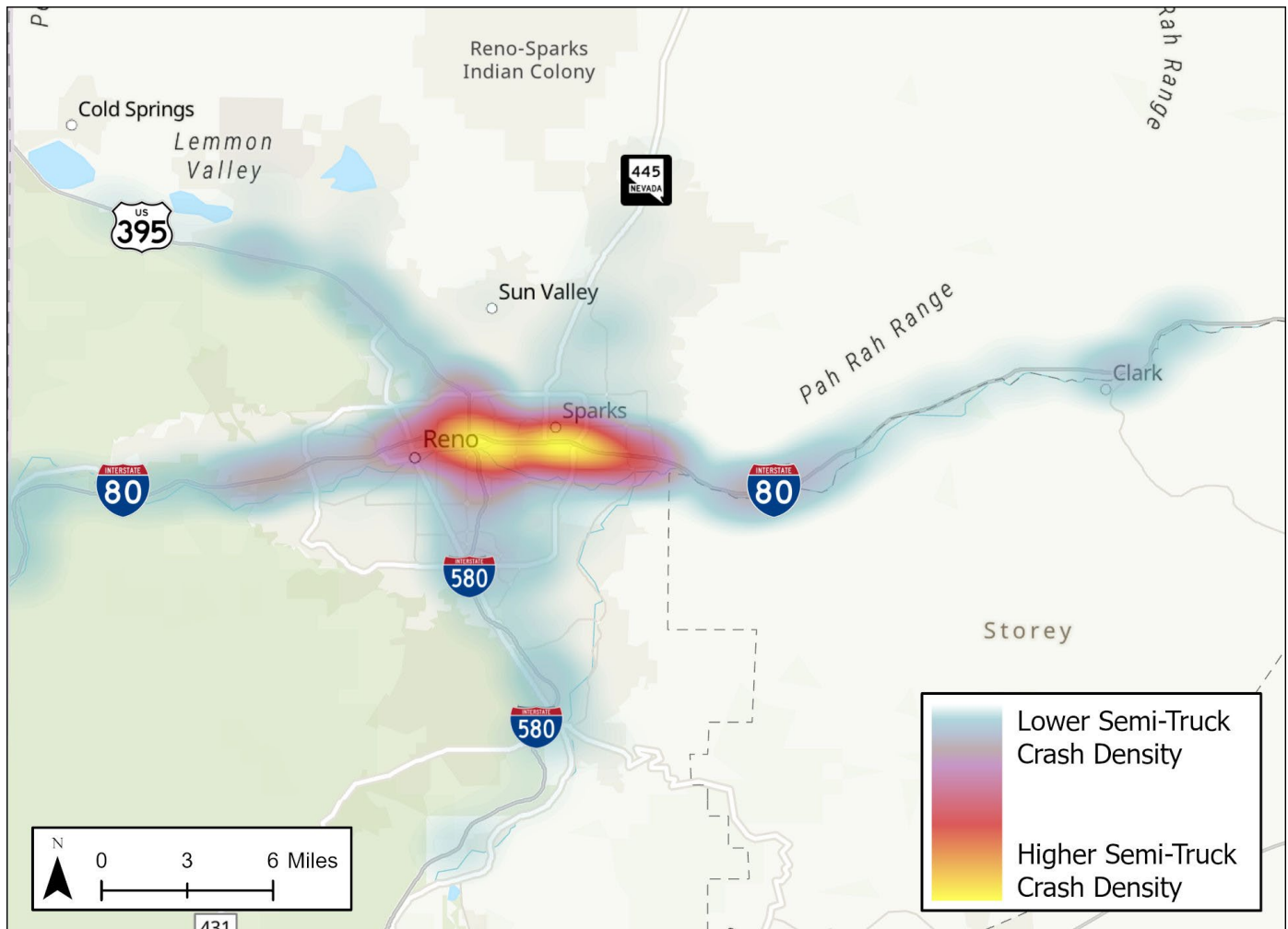
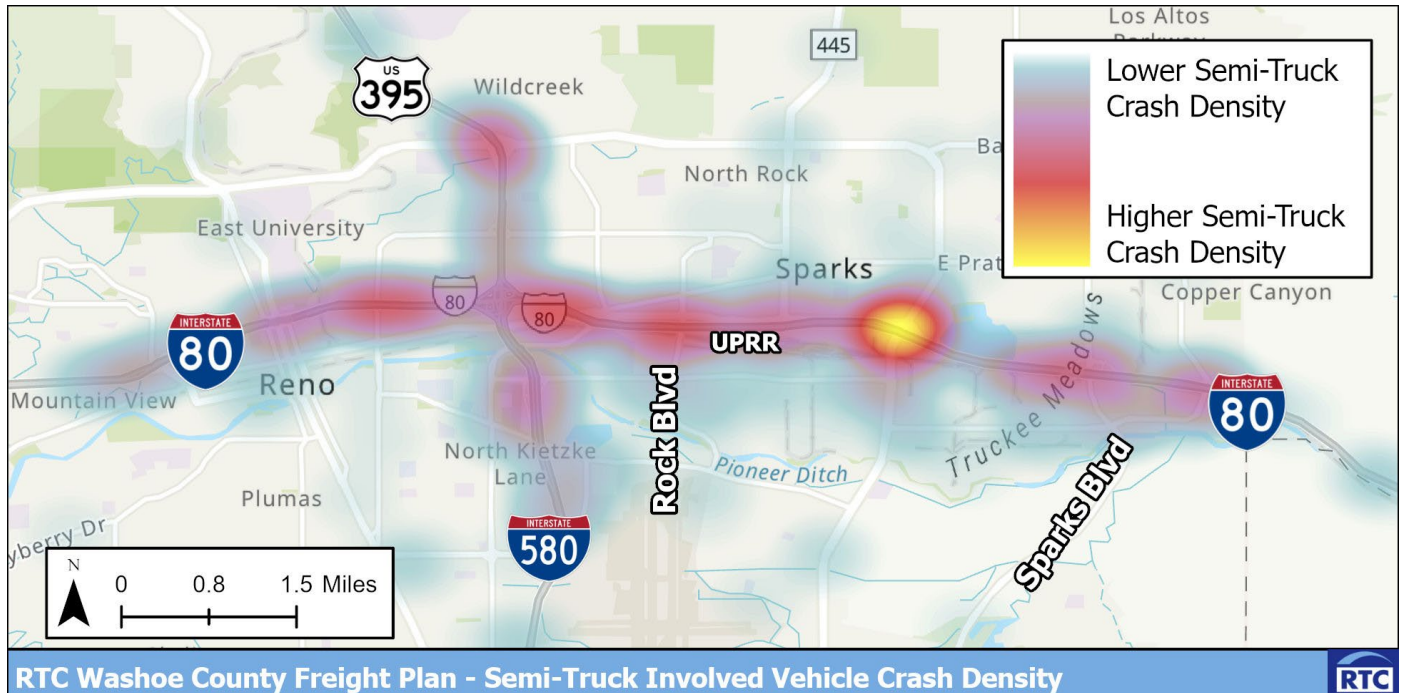


Figure 10: Truck-Involved Crashes in Central Reno and Sparks



4.2 MULTIMODAL INTEGRATION

Analysis of multimodal integration includes commodity flow, the efficiency of freight movement, travel time reliability, pavement condition, as well as equity and sustainability.

COMMODITY FLOW ANALYSIS

This study utilized the Freight Analysis Framework (FAF) data from the Bureau of Transportation Statistics (BTS) to analyze freight movements across states and metropolitan areas, covering all transportation modes and various commodities by tonnage and value. FAF (Version 5) data for 2022, 2030, and 2050 were disaggregated to the county level and analyzed for directional flows, modal split, and top commodities over these years. Directional flow analysis categorized movements into internal (origins and destinations within Washoe County), inbound (to Washoe County), and outbound flows (from Washoe County) based on origins and destinations of commodity. The modal

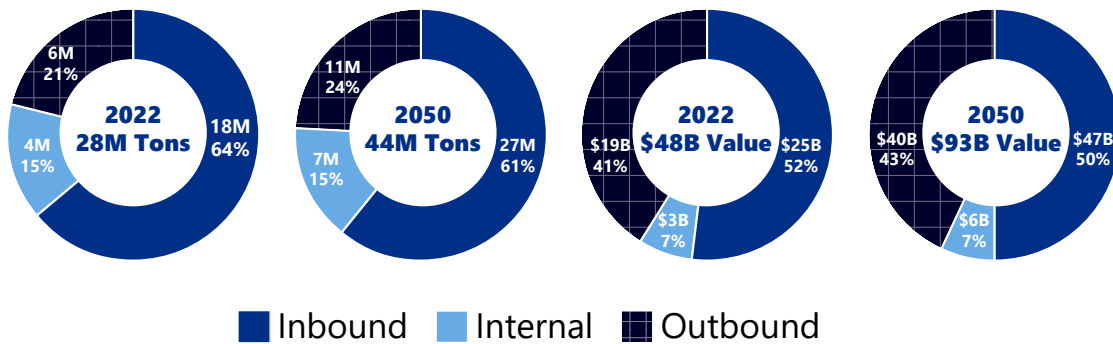
split analysis examined commodity flows across different transportation modes. Top commodities were identified based on tonnage and value using the Standard Classification of Transported Goods (SCTG). More details on the data utilized, analysis methodology, and commodity flow analysis results are provided in the appendix.

Figure 12 shows commodity flows by tonnage and value while Figure 13 shows commodity flows by mode. Trucks dominate in tonnage and value, comprising 91% of tonnage and 69% of value in 2022. Rail follows in tonnage but contributes only 1% to the value due to moving heavier, lower-value goods like coal. Multiple modes and mail as well as air also play significant roles. The 0.02 million tons of goods (less than 1% of total freight tonnage) transported by air accounted for \$3 billion in value (5%). From 2020 to 2050, trucks, multiple modes and mail, and rail maintain their positions in tonnage; while trucks, multiple modes and mail, and air lead in value.

Figure 11: Phase 4 Map: Complete Network [2035-2040], Figure 7 in the National Zero-Emission Freight Corridor Strategy, 2024

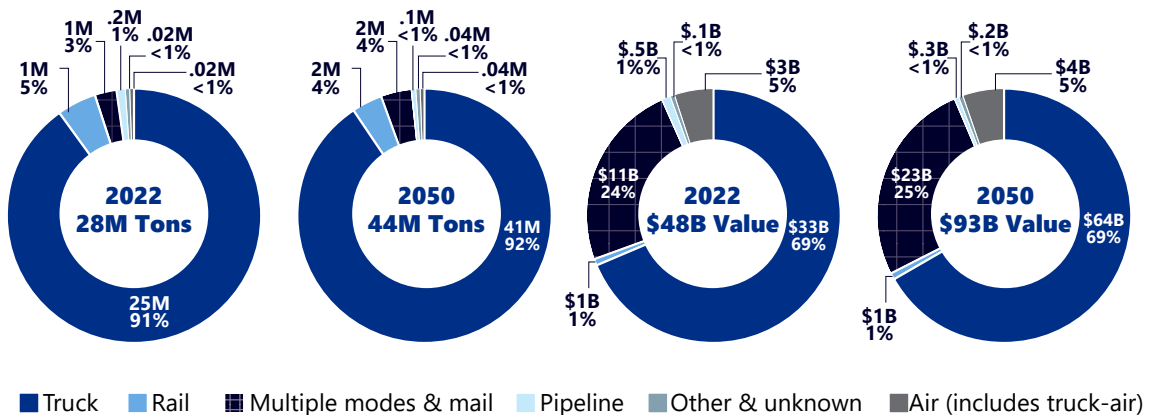


Figure 12: Commodity Flow by Direction in 2022 and 2050 by Value and Tonnage



Source: Freight Analysis Framework 5.4.1, disaggregated by Cambridge Systematics Inc. 2023

Figure 13: Commodity Flow Modal Split in 2022 and 2050 by Tonnage and Value



Source: Freight Analysis Framework 5.4.1, disaggregated by Cambridge Systematics Inc. 2023

The purpose of the top commodity analysis is to understand trade patterns and enhance freight planning by identifying key goods that drive trade flows and their impact on the region’s economy. Table 3 and Table 4 detail the top commodities by tonnage and value in 2022 and 2050. In both years, gravel ranks first by tonnage at 5 million and 8 million tons, respectively, followed by nonmetallic

mineral products and natural sands. In 2022 and 2050, electronic and miscellaneous manufactured products lead by value, with miscellaneous manufactured products doubling in value by 2050 to \$15 billion. The top three commodities by tonnage and value are expected to remain unchanged by 2050.

Table 3: Top Commodities by Tonnage and Value in 2022

Top Commodities by Tonnage (Tons)		Top Commodities by Value (USD)	
Gravel	5M	Electronics	\$7B
Nonmetallic Mineral Products	5M	Miscellaneous Manufactured Products	\$7B
Natural Sands	2M	Textiles/Leather	\$4B
Waste/Scrap	2M	Machinery	\$3B
Coal - not elsewhere classified (n.e.c.)	1M	Mixed Freight	\$3B
Top 5 Total	15M	Top 5 Total	\$24B
All Commodities Total	28M	All Commodities Total	\$48B

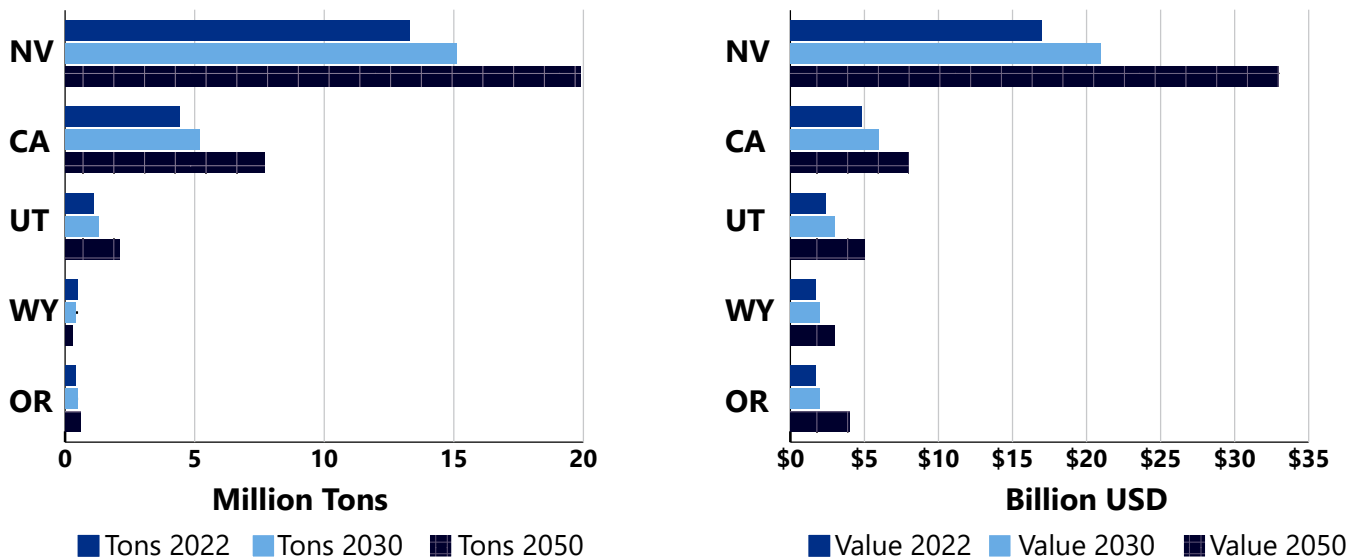
Source: Freight Analysis Framework 5.4.1, disaggregated by Cambridge Systematics Inc. 2023

Table 4: Top Commodities by Tonnage and Value in 2050

Top Commodities by Tonnage (Tons)		Top Commodities by Value (USD)	
Gravel	8M	Miscellaneous Manufactured Products	\$15B
Nonmetallic Mineral Products	8M	Electronics	\$13B
Natural Sands	3M	Textiles/Leather	\$9B
Basic chemicals	3M	Pharmaceuticals	\$6B
Waste/Scrap	2M	Machinery	\$6B
Top 5 Total	24M	Top 5 Total	\$49B
All Commodities Total	44M	All Commodities Total	\$93B

Source: Freight Analysis Framework 5.4.1, disaggregated by Cambridge Systematics Inc. 2023

Figure 14: Top Domestic Trading Partners by Tonnage and Value



The purpose of analyzing the top trading partners is to evaluate trade dynamics, assess economic competitiveness, and inform freight policy decisions by examining the distribution and characteristics of goods exchanged with other regions. Figure 14 shows the top trading partners by tonnage and value (including both inbound and outbound flows). Nevada, California, Utah, Wyoming, and Oregon are the top partners by tonnage, with Texas projected to reach the fourth by 2050. Wyoming’s rank dropped out of the top five by 2050. By value, Nevada, California, Utah, Washington, and Texas are the top partners, with Texas expected to surpass Washington by 2050. More than 55% of California’s trade by value is with Northern California.⁶ The proximity to Northern California provides significant opportunities for economic growth in the Reno-Sparks area.

In Washoe County, inbound flows dominate with the largest proportion of tonnage and value, although the commodity value of inbound flows tends to be

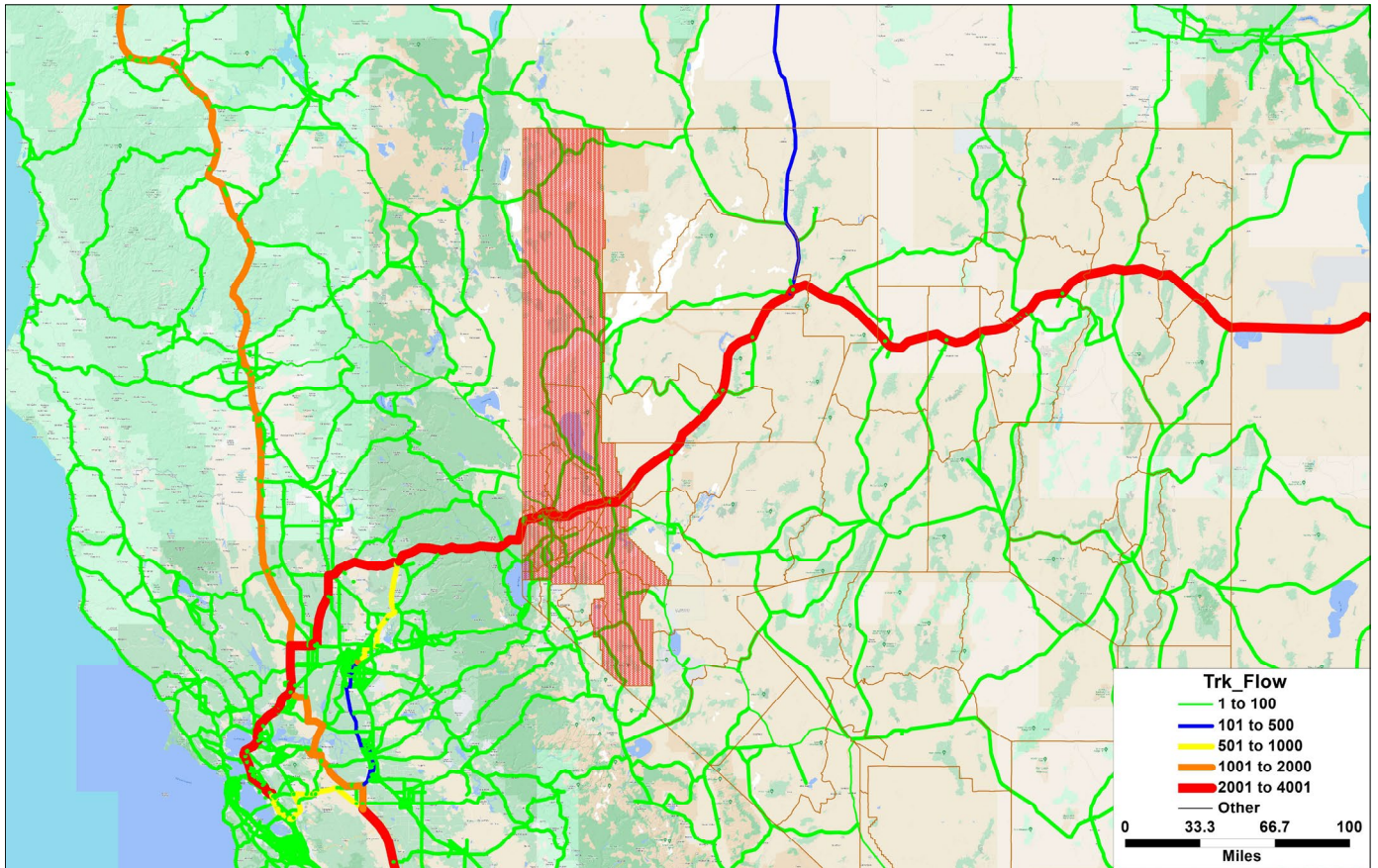
lower compared to other directions. Trucking is the primary mode for freight flows, with multiple modes and mail accounting for 24% of total freight flows by value. The leading commodities transported into, from, and within Washoe County are primary materials like gravel, nonmetallic mineral products, and natural sands, which typically carry lower unit values. Major trading domestic partners include Nevada, California, Utah, Washington, Oregon, and Texas. The appendix offers more in-depth and comprehensive results and findings derived from the commodity flow analysis.

PASS-THROUGH ANALYSIS

A process was used to estimate pass-through truck movements by overlaying FAF origin-destination data onto the FAF network. Figure 15 shows a regional picture of pass-through flows. Based on the pass-through results, there are between 2,000 and 4,000 truck trips passing through the region on an average day on the I-80 Corridor.

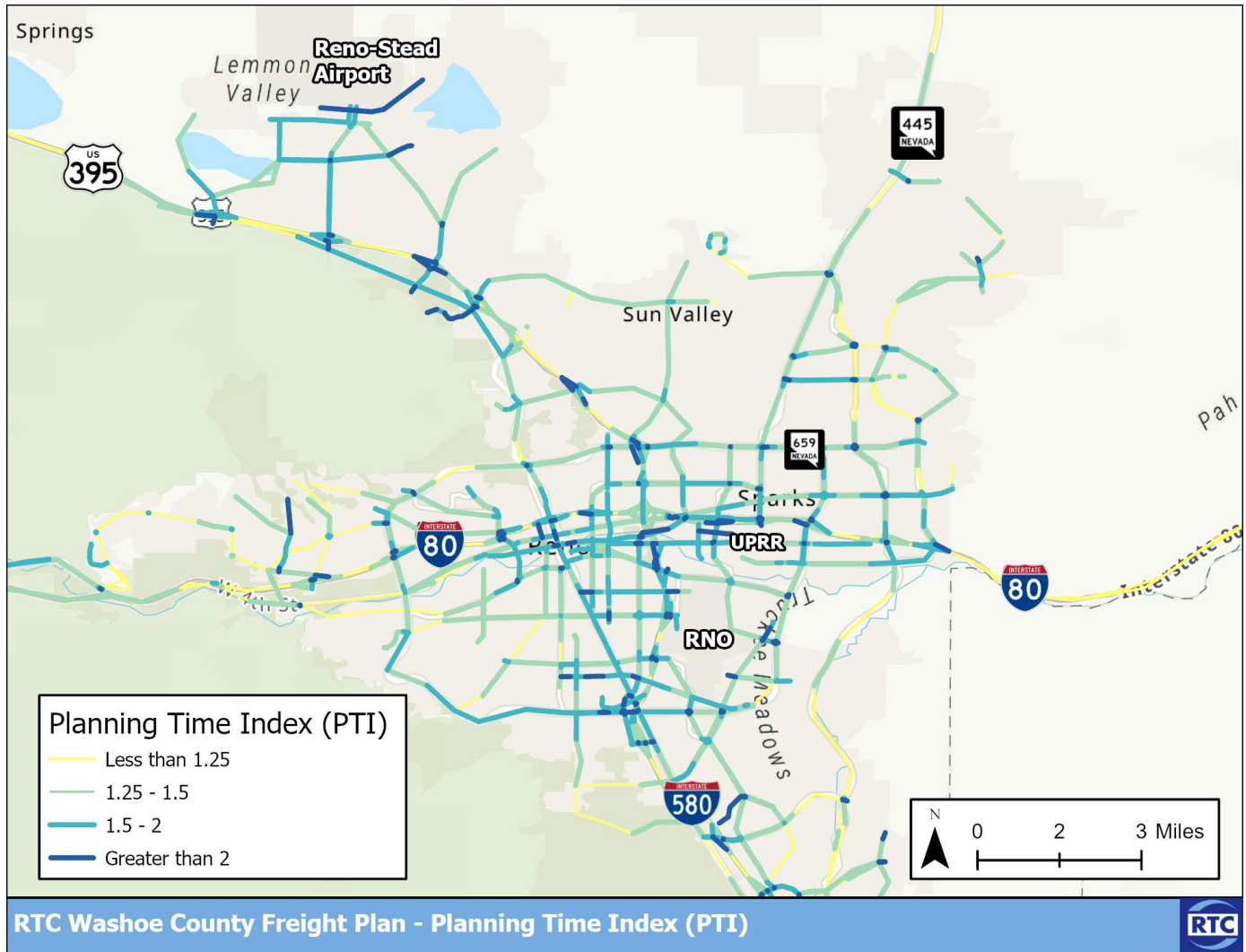
⁶ Northern California refers to Sacramento-Roseville, San Jose-San Francisco-Oakland, and Fresno-Madera. Remainder of California refers to regions other than Sacramento-Roseville, San Jose-San Francisco-Oakland, and Fresno-Madera.

Figure 15: Pass-Through Truck Flows, Average Daily Trucks



Freight Analysis Framework 5.4.1, disaggregated by Cambridge Systematics Inc. 2023

Figure 16: Planning Time Index



4.3 EFFICIENCY OF FREIGHT MOVEMENT

Some of the operational considerations important for moving goods are highway system performance, pavement condition, bridge height and condition, and last-mile delivery, described below.

HIGHWAY SYSTEM PERFORMANCE

Planning travel time index (PTI) and travel time reliability (TTR) are two important metrics for transportation planning, providing insights into congestion levels, route efficiency, and the consistency of travel times. PTI is defined as the

ratio of the 95th percentile of peak period travel time over free flow travel time. In simpler terms, it represents the additional time required to ensure on-time arrival for a certain percentage of trips, relative to the free flow travel time. For example, a PTI of 1.5 means that for a 30-minute trip on a free flow traffic condition, the total time that should be planned for the trip is 45 minutes (i.e., $1.5 \times 30 \text{ minutes} = 45 \text{ minutes}$). Figure 16 shows the PTI in the study region. Intersections and highway interchanges throughout the study region generally show higher PTIs (greater than 2), which can be caused by either traffic signal wait times or traffic slowdowns at intersection approaches. Most of the region has PTI between 1.25 to 1.5, suggesting mild congestion conditions

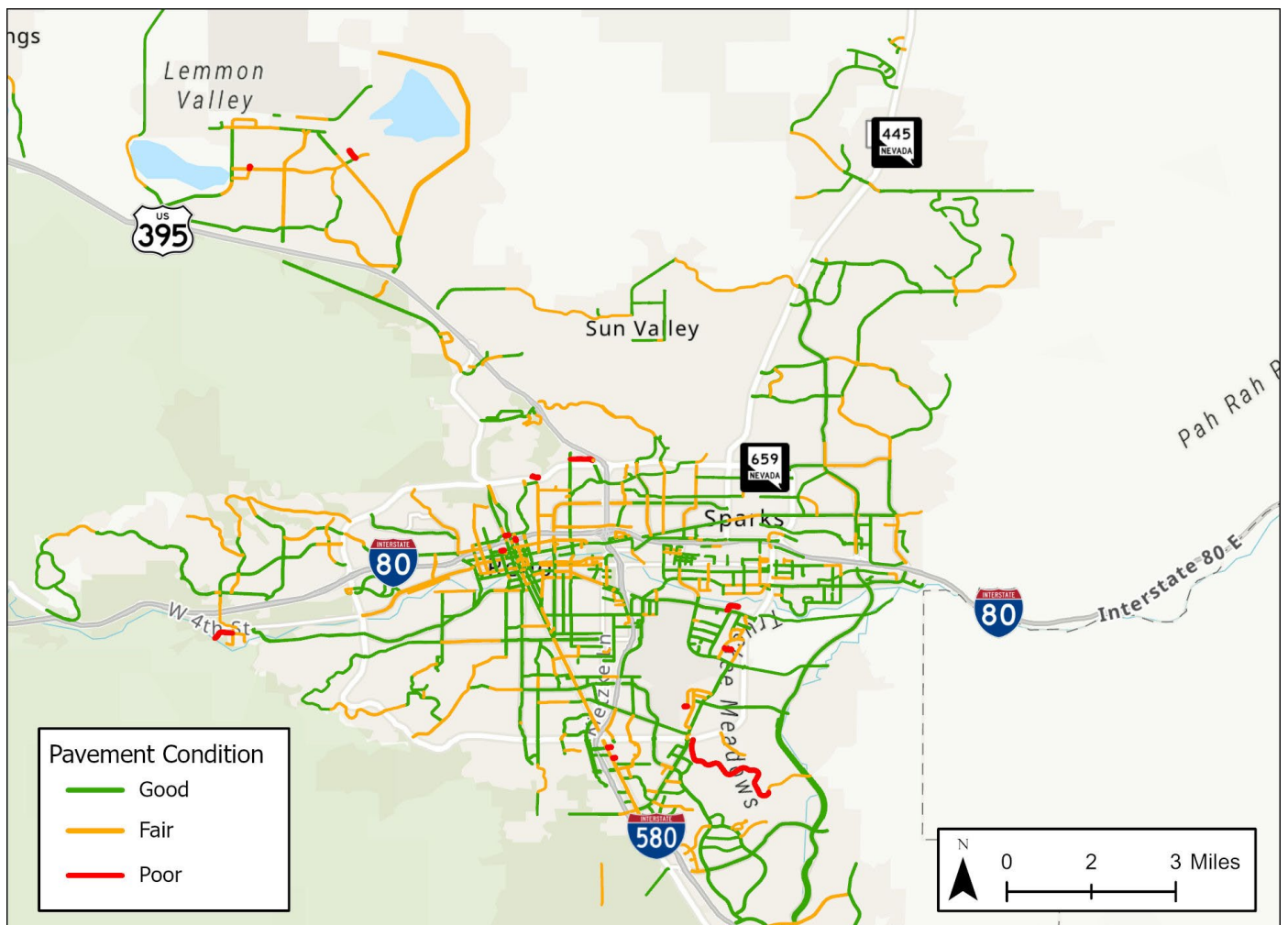
across the region. I-80 Corridor through the study region has the highest portion of roadway segments with significant delays (greater than 2) while it has relatively less congestion outside the urban area.

Truck travel time reliability (TTTR) index, a required RTP performance measure, calculates the average truck travel time relative to the free flow truck travel time for each highway segment. For interstates within the study region, the TTTR is 1.45 in 2023 as derived from INRIX. This is a higher level of service than the RTC's 2020 performance target of 1.5. According to the NDOT 2023 Performance Management Report, the statewide target for TTTR is 1.25 or less. The current statewide average TTTR is 1.32.

PAVEMENT CONDITION

Transportation surface condition plays a significant role in traffic safety, operation, and planning. Trucks move a significant amount of commodities on the road every year and can degrade roadway systems and bridges. Pavement condition refers to the overall state of a road surface, typically evaluated based on factors such as distresses, ride quality, and structural integrity. Figure 17 shows pavement conditions in the study region, which is measured on a scale of good, fair, and poor. The figure highlights that the majority of roadways in the region are rated as either good or fair.

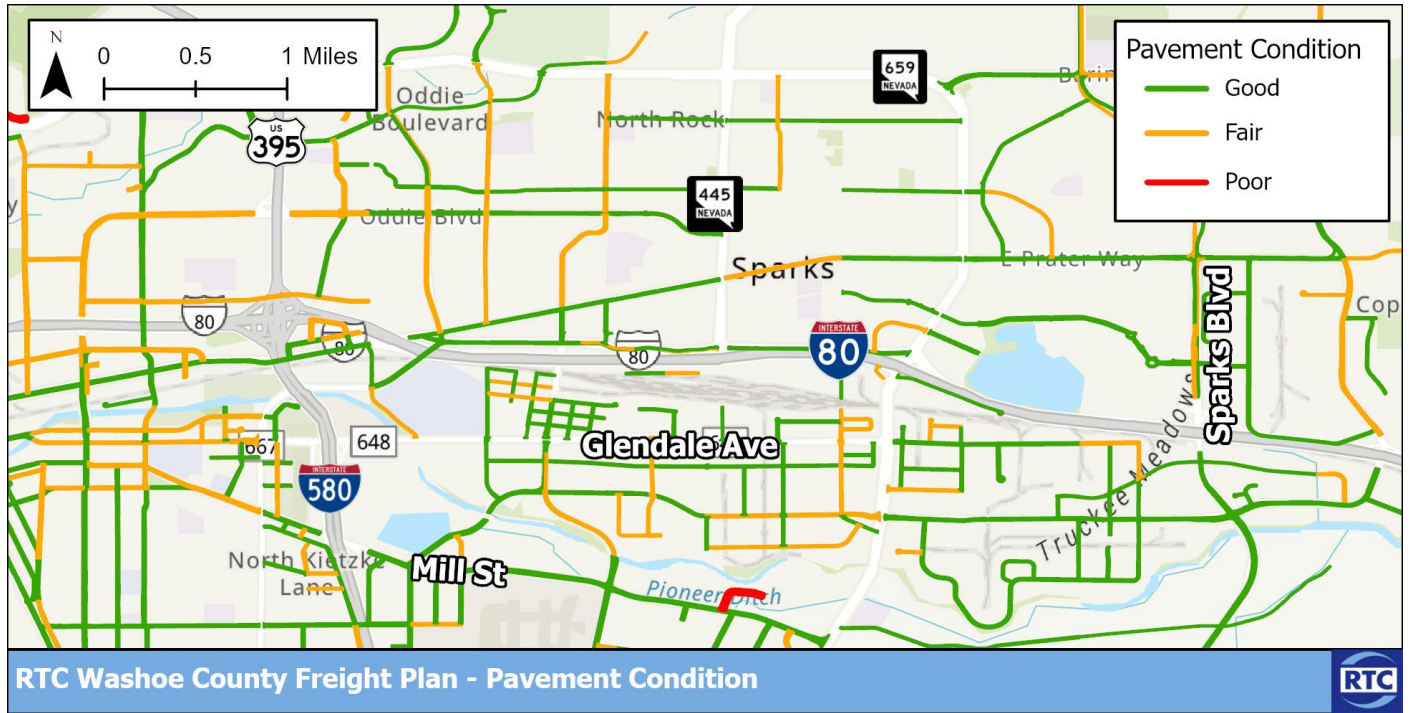
Figure 17: Pavement Condition



RTC Washoe County Freight Plan - Pavement Condition

Source: RTC 2024 Pavement Condition Index Data

Figure 18: Pavement Condition – Sparks Industrial



Source: RTC 2024 Pavement Condition Index Data

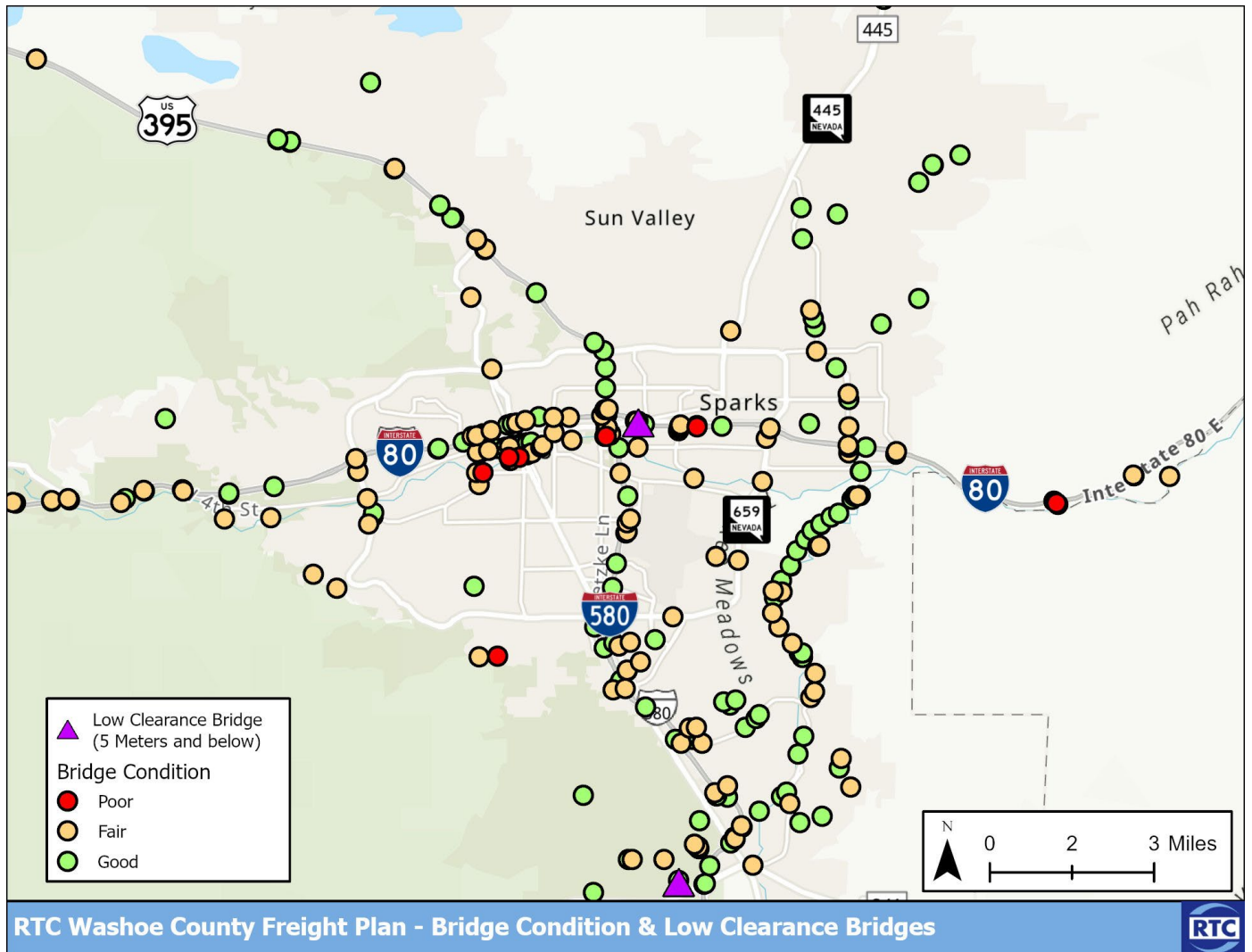
BRIDGE HEIGHT AND CONDITION

Bridge height and condition is another important metric for freight transportation surface condition – it offers insights of bridge conditions from perspectives of weight capacity and vertical clearance. The bridge condition is measured on a scale of good, fair, and poor. Figure 19 shows the bridge conditions in the study region. While most of the bridges are rated as fair or good, there are several bridges in the region rated as poor, including the Truckee River bridges at Keystone Avenue, Arlington Avenue, Sierra Street, and Kietzke Lane, as well as the I-80 Bridge over Victorian Plaza Circle (north of the Nugget Casino).

Bridge height is particularly important for oversize and overweight loads, as insufficient clearance can necessitate long detours around low structures, significantly impacting logistics efficiency and cost. For instance, the I-80 Bridge over Battle Born Way, with a clearance below 16.5 feet, poses a challenge for such loads, underlining the need for careful consideration of bridge heights in freight planning and infrastructure improvements.

As of the publishing of this report, design for the replacement of the Keystone, Arlington, and Sierra Bridges is underway by RTC.

Figure 19: Study Region Bridge Condition and Low Clearance



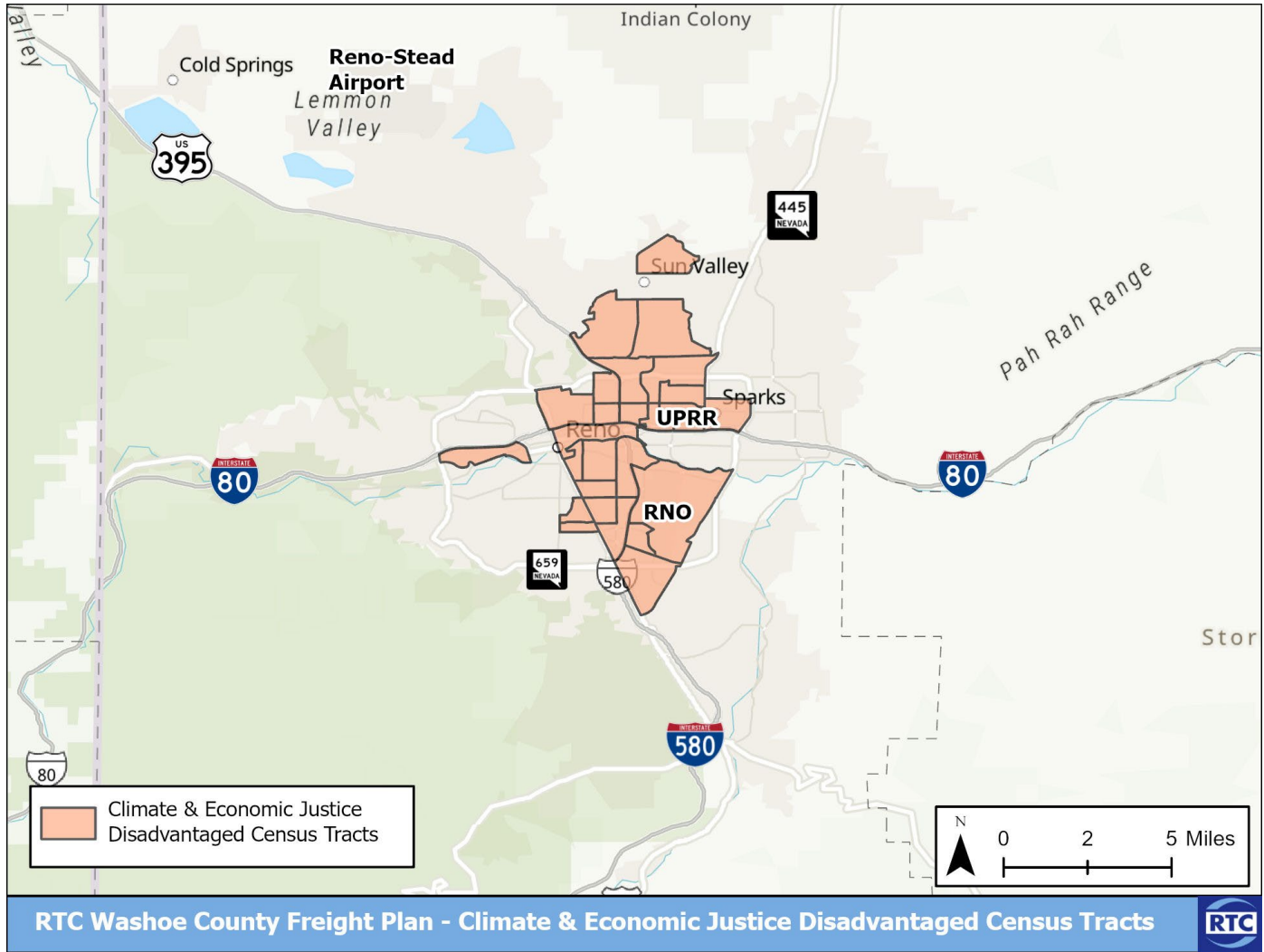
4.4 FREIGHT EQUITY

Equity and sustainability are key federal priorities related to freight movement. Lower income communities have historically experienced disproportionate adverse impacts from noise, pollution, and truck traffic at ports, intermodal facilities, and other industrial areas.

The Climate and Economic Justice Screening Tool (CEJST) was developed for use by federal agencies in addressing the Justice40 Initiative, implemented by Executive Order 14008 in 2021. This tool identified areas that have experienced burdens in the areas of climate change, energy, health, housing, legacy

pollution, transportation, water and wastewater, and workforce development. For the Truckee Meadows, CEJST identifies burdened communities as those in central Reno and Sparks as well as Sun Valley.

Figure 20: Burdened Communities as Identified by CEJST



4.5 SUSTAINABILITY AND ALTERNATIVE FUELS

The National Electric Highway Coalition (NEHC) is working to create a network of direct current fast (DC fast) charging stations connecting major highway systems across the U.S. NEHC utility members agree to ensure efficient and effective fast charging deployment plans that enable long distance electric vehicle (EV) travel, avoiding duplication among coalition utilities, and complement existing corridor DC fast charging sites.

The Nevada Electric Highway (NEH) began as a partnership between the Governor's Office

of Energy (GOE), NV Energy, and Valley Electric Association. NEH Phase I was initiated in 2015 to electrify Nevada's highways between Las Vegas and Reno. The five initial sites are along US 95 at Fallon, Hawthorne, Tonopah, Beatty, and Indian Springs. Phase I stations include two Level 2 chargers and one DC fast charger, along with providing free charging. NEH Phase II began in 2017 with the installation of charging stations along US 93. Phase II installations have a minimum of two chargers and require that they be DC fast chargers. As a result of the NEH program, Nevada is one of the leading voices in the intermountain west for transportation electrification and the Regional Electric Vehicle Plan for the West (REV West) partnership.

Between 2017 to 2021, FHWA solicited nominations from state and local officials to designate Alternative Fuel Corridors (AFCs) to help create a national network of plug-in EV charging and hydrogen, propane, and natural gas fueling infrastructure along national highway system corridors. The designations have resulted in 125 nominations, including segments of 134 interstates along with 125 US highways/state roads. The FHWA designates nominated highway corridors as either corridor-ready or corridor-pending. Corridor-ready segments contain a sufficient number of fueling facilities to allow for corridor travel with the designated alternative fuel. Corridors that do not have sufficient alternative fuel facilities to support alternative fuel vehicle travel are designated as corridor-pending. During Rounds 1 to 5 of AFC nominations, FHWA designated Interstates 15, 80, 11 and 580, U.S. highways 50, 93, 95, 395, and state routes 28 and 215 as corridor-ready or corridor-pending AFCs. The complete and updated list of AFCs can be found on FHWA's website⁷.

Beginning in 2022, the nomination process of AFCs is tied to funding provisions under the Bipartisan Infrastructure Law (BIL). The BIL establishes the National Electric Vehicle Infrastructure Formula Program, and a Discretionary Grant Program for Charging and Fueling Infrastructure. In this respect, FHWA established an AFC grant program and released the Round 6 Request for Nomination in February 2022 for designating Electric Vehicle corridors focusing on interstate corridors. During the designation process, FHWA identifies charging and fueling infrastructure, analyzes standardization needs for fuel providers and purchasers, and reestablishes the goal of achieving strategic deployment of fueling infrastructure in the designated corridors.

These initiatives can provide substantial financial incentives and regulatory support for alternative fuel infrastructure. This support encourages freight companies to invest in electric and alternative fuel

vehicles, knowing that the necessary infrastructure will be in place. With strategic deployment of charging infrastructure, freight operators can plan routes more efficiently, avoiding unnecessary detours to find charging stations. This not only reduces operational costs but also improves delivery times and overall logistics efficiency. The transition of freight fleets to electric vehicles will promote sustainability, reduce greenhouse gas emissions, and improve air quality, helping the freight industry comply with increasingly stringent environmental regulations while contributing to broader sustainability goals.

4.6 TRUCK PARKING

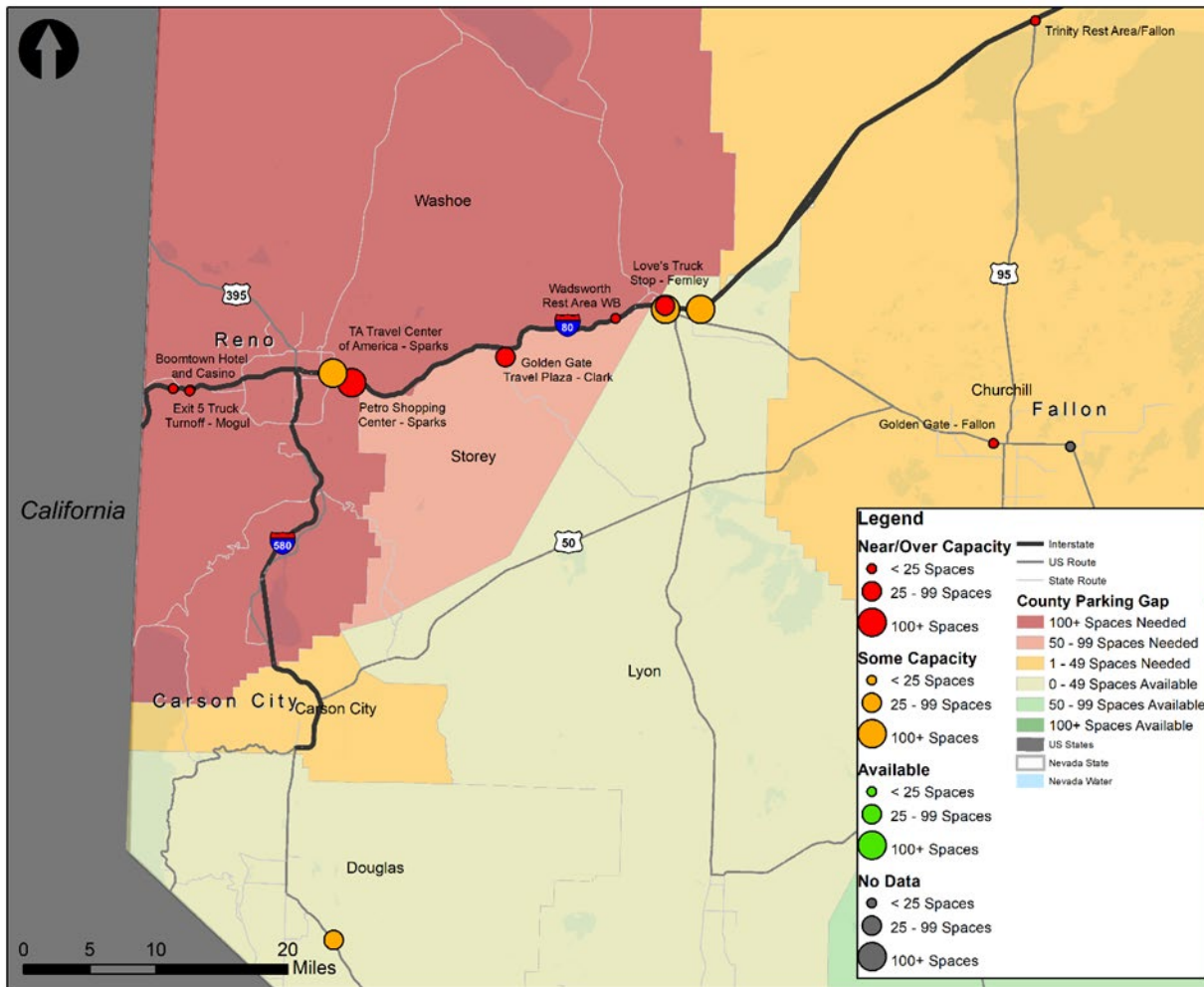
Truck parking is a vital part of supporting safe and efficient freight movement in Washoe County. Truck drivers need safe, secure places to park and take the mandatory rest breaks they require. The Federal Motor Carrier Safety Administration requires truck drivers follow hours of service regulations and mandate stops and parking for different hours driven. Without adequate supply of designated truck parking, tired drivers may be forced to park in unsafe locations or even continue driving while fatigued, significantly increasing the risk of crashes. The National Highway Traffic Safety Administration (NHTSA) estimates that 91,000 police-reported crashes involved drowsy and fatigued drivers in 2017. In addition, parked trucks in unwanted areas can impede other vehicle movements and interrupt the intended use of public space. Washoe County faces a significant shortage of truck parking facilities. Existing spaces are already strained, with many operating at or exceeding capacity.

PEAK HOUR PARKING DEMAND

Peak hour parking demand refers to times when there is the highest demand for commercial vehicle parking, reducing the availability of spaces. This typically happens during the overnight hours between midnight and 2 a.m. Larger trucks are

⁷ https://www.fhwa.dot.gov/environment/alternative_fuel_corridors/all_corridors/

Figure 21: Truck Parking Gap by County and Composite Availability at Authorized Parking Sites- Northwest Nevada



Source, Nevada Statewide Truck Parking Demand and Gap Analysis 2019, NDOT 2029



Winter closure on I-80

particularly challenged due to an especially low supply of parking with sufficient space. Figure 21 shows truck parking facilities that are near/over capacity during the peak hour, have some capacity, or have availability. Short-term staging parking demand is different from long-haul demand in that trucks are parked while waiting to make a pickup or delivery instead of resting for a long period.⁸

8 Federal Highway Administration. 2002. Commercial Truck Parking Demand - Study of Adequacy of Commercial Truck Parking Facilities. <https://www.fhwa.dot.gov/publications/research/safety/01158/01158.pdf>

I-80 TRUCK PARKING

The main truck route in Washoe county is along I-80, which connects northern California, including the Port of Oakland, with the eastern states. In 2022, Caltrans identified priority areas for increasing truck parking across the state. Caltrans District 3 priority areas include the I-80 corridor from Sacramento to Truckee (Figure 22), a key route for trucks traveling east to Nevada. The area closest to the border has a deficit of 165 truck parking spots, with a deficit of 2 parking spots per mile, the third highest deficit reported in California.

The plan listed several strategies to address parking shortages in this area, including:

- » Expand safety roadside rest areas (SRRAs).
- » Build dedicated truck parking facilities within highway right-of-way.
- » Partner with the private sector.
- » Develop a TPAS.
- » Allow emergency truck parking at large parking lots when not in use.

The gap in truck parking along I-80 extends into Nevada. NDOT's 2019 Truck Parking Implementation Plan identified an existing and growing gap in truck parking capacity in Washoe county. The greatest need is in the Verdi area, and this need is only exacerbated by emergency truck parking needs along Donner pass when it is closed for inclement weather.

EMERGENCY PARKING AND DONNER PASS

Donner Pass is a crucial transportation corridor along I-80 in the Sierra Nevada with no viable alternative truck routes close by. During the winter months, severe weather conditions often force authorities to close the pass for safety concerns.⁹^[1] This closure

can strand hundreds of trucks traveling the route, creating a major bottleneck for freight movement throughout the region.

When the pass closes, truck drivers have fewer options where they can pull over safely and wait for the pass to reopen. This leads to dangerous situations on the shoulder or nearby roads, causing traffic congestion and potential crashes.¹⁰ It can also prevent the road from reopening when trucks are stuck on the roadway preventing snowplows from operating efficiently.

In March 2024, a severe winter storm caused a multiday closure of Donner Pass along I-80. This closure stranded hundreds of trucks traveling the crucial transportation corridor. The storm presented challenges for rescue efforts, as first responders tried to intervene with extreme snow and wind conditions. These closures demonstrated a recurring problem. There is a need for designated pull-off areas along Donner Pass with sufficient space for trucks. During severe weather, emergency services are already stretched thin and stranded trucks divert resources away from other emergencies.

Truck parking, emergency management, and resiliency strategies can work together to find solutions to alleviate the impact of extreme weather conditions on the roads (congestion or lane closures) and redirect emergency services and other preventative services.

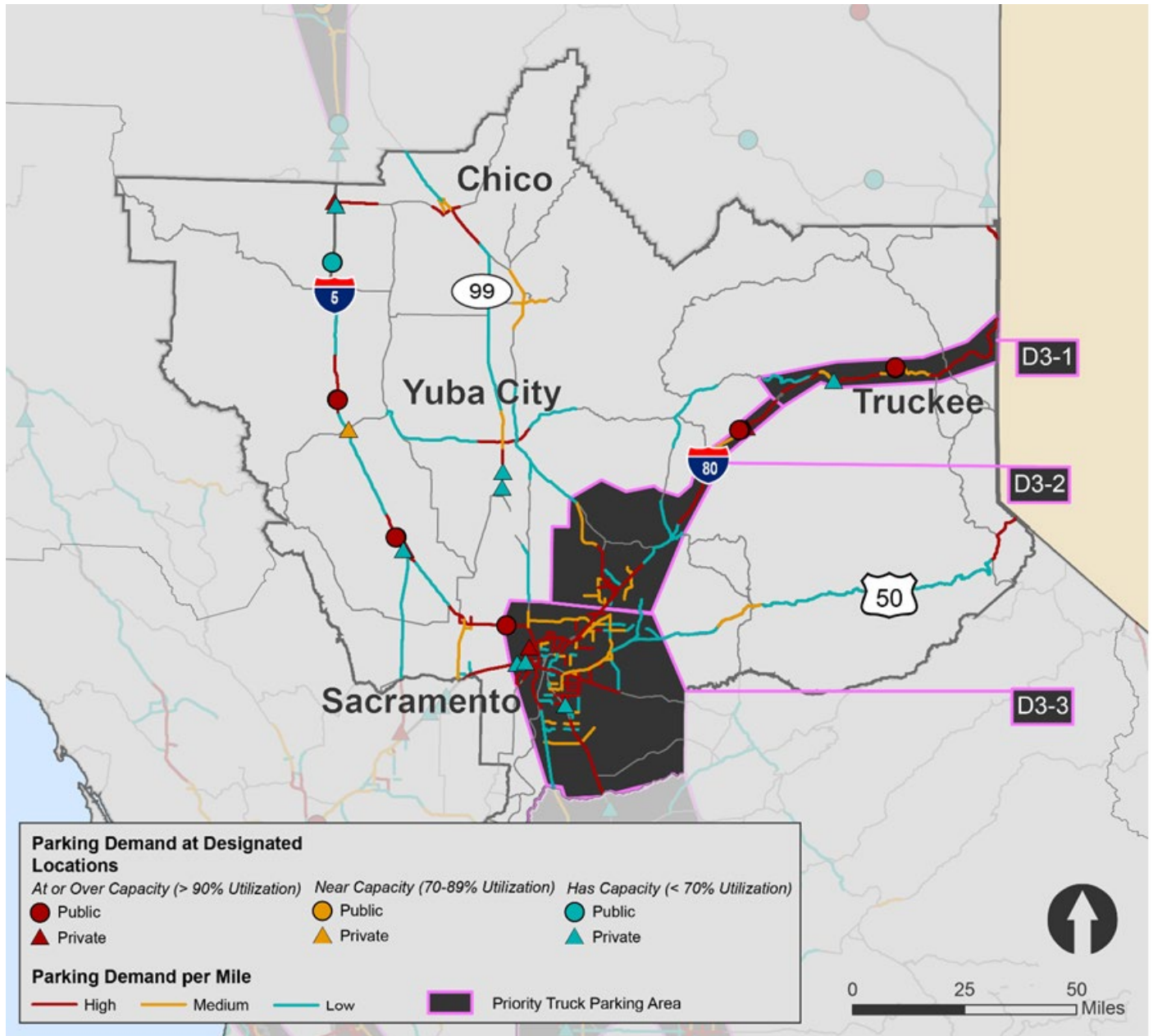
ZERO-EMISSION FUELING AND PARKING

In March of 2024, the Joint Office of Energy and Transportation released the National Zero-Emission Freight Corridor Strategy that prioritizes investment, planning, and deployment for medium- and heavy-duty vehicle fueling infrastructure. Sections of I-80 in Washoe County are identified for truck parking

⁹ Sonner, S., & Dazio, S. March 1, 2024. Blizzard slams California's Sierra Nevada, stretch of I-80 shut down [News article]. Associated Press. Retrieved from <https://apnews.com/article/california-nevada-pacific-storm-blizzard-warning-7f8892b9f253848b47fa15b8a135b569>

¹⁰ MyNews4. March 4, 2024. How supply chain is disrupted when Interstate 80 is closed during severe winter storms [News article]. Retrieved from <https://mynews4.com/news/local/how-supply-chain-is-disrupted-when-interstate-80-is-closed-during-severe-winter-storms-reno-sparks-lake-tahoe-truckee-nevada-california>

Figure 22: Caltrans District 3 Truck Parking Priority Regions and Corridors from Caltrans Truck Parking Study, 2022



infrastructure and intermodal facilities. The plan starts by envisioning battery electric vehicles and then shifts to hydrogen infrastructure. Due to the nature of battery electric charging, where vehicles may need to be parked for extended periods of time to refuel, pairing truck parking and driver facilities (like restaurants, showers, and other vending) with charging infrastructure is a natural fit. The plan outlines connecting California and Utah via I-80

with supporting zero-emission fueling infrastructure in the 2027–2030 timeframe and fully building out supporting infrastructure by 2040. Siting new parking facilities in Washoe County should be coordinated with local utility providers to ensure charging needs can be met.

The areas with the highest levels of long-haul parking demand are mainly in and around the urban



centers, including Washoe and Storey Counties. These counties are also the primary generators of short-term staging parking demand due to higher concentrations of industrial/warehousing/commercial property, higher residential populations, and the higher cost of land, which limits space to develop parking (either on-site or in nearby parking facilities). In addition to long-haul parking needs, stakeholders noted issues with short-term staging and parking.

URBAN TRUCK PARKING AND WAREHOUSE DISTRICTS

Sufficient truck parking in warehouse districts can alleviate bottlenecks, reduce congestion, and improve safety.¹¹ Driving is the primary mode of transportation in Washoe County, which can cause roadway congestion that delays trucks at different

times of the day, particularly during peak hours. Ideally, truck parking facilities should be situated in close proximity to warehousing districts. Designated truck parking areas near warehouses allow trucks to wait for loading or unloading without parking on local roads.

When trucks cannot find designated parking where it is needed, they may resort to parking in unsafe locations on the shoulder or nearby streets. Truck parking facilities should prioritize both safety and efficiency concerns. Well-lit, designated truck parking areas are needed with ample space for maneuvering and overnight stays. Additionally, these facilities should allow for pull-through parking that can improve traffic flow and safety when exiting.¹²

11 Federal Highway Administration. 2024. Truck Parking Development Handbook [PDF]. Retrieved from https://ops.fhwa.dot.gov/freight/infrastructure/truck_parking/docs/Truck_Parking_Development_Handbook.pdf

12 Truck parking plays a crucial role in reducing congestion (see, e.g., Federal Highway Administration [FHWA], 2024)

5 | Future of Freight

Technology plays a pivotal role in shaping freight mobility and economic activities in the region. The freight industry in Northern Nevada serves as a significant market impacting various business sectors, presenting ample opportunities for technology investments. Embracing technological innovations is essential as they drive transformations in the logistics industry. The freight transportation system in Northern Nevada is undergoing significant evolution due to factors such as population growth, rising demand for goods, limited industrial warehousing space, increased travel needs, and advancements like larger container ships. Various technological advancements, including alternative fuel usage, emissions reductions, efficiency improvements, and safety enhancements, are being explored or are in the early stages of adoption.

RTC developed an [Electric Vehicle and Alternative Fuel Infrastructure and Advanced Mobility Plan](#) in 2022 that addressed electric vehicle charging infrastructure, connected vehicles, and the various mobility services that rely on technology.

5.1 ALTERNATIVE FUELS

With a growing emphasis on sustainability and environmental responsibility, the integration of electric trucks, hydrogen-powered vehicles, and other alternative fuel technologies is poised to revolutionize the freight industry. These cleaner fuel options offer not only reduced emissions but also greater energy efficiency, contributing to improved air quality and reduced carbon footprint. The diversification of fuel sources enhances energy security and resilience in the freight transportation sector. As Northern Nevada seeks to provide for equity and sustainability in freight movement, the widespread adoption of alternative fuels represents a crucial step towards achieving these goals.

Through strategic investments in infrastructure and supportive policies, the region can unlock the full potential of alternative fuels to drive economic growth, enhance freight mobility, and create a more sustainable future for generations to come. The growing use of renewable energy production in Nevada further reduces the emissions of electric vehicles.

While the benefits of alternative fuels are promising, careful planning and agency coordination will be essential. One key consideration is the need for significant infrastructure investment to support widespread adoption, including the development of charging and refueling stations. Additionally, there may be concerns regarding the availability and reliability of alternative fuel sources, particularly in remote areas. Another challenge is the need for financial incentives or subsidies to incentivize adoption, especially for small businesses and independent operators. Finally, there may be regulatory and policy barriers that need to be addressed to ensure a smooth transition and equitable access to alternative fuel options.

5.2 AUTONOMOUS AND CONNECTED VEHICLES

Nevada has been a pioneer in recognizing the role of autonomous vehicles (AVs) in future transportation endeavors. In 2011, Nevada made history as the first state in the U.S. to authorize the operation of autonomous vehicles through the passage of Assembly Bill 511. Subsequently, in 2017, Assembly Bill 69 further solidified Nevada's commitment to AVs by allowing testing and operation of AVs and driver-assistive platooning technology, where a group of vehicles travel closely together to reduce aerodynamic drag and improve fuel efficiency, contingent upon meeting stringent safety requirements. This legislative support underscores Nevada's proactive

stance in embracing AV technologies to enhance freight mobility and transportation efficiency in the region.

By leveraging AV and CV technologies on both highways and local streets, Northern Nevada is poised to usher in a new era of freight transportation characterized by enhanced safety, efficiency, and environmental responsibility. The emerging trends in AVs and connected vehicle (CV) technologies are reshaping the landscape of freight mobility, as the freight industry embraces low-level AV technologies, such as truck platooning and automated assistance systems, and operational efficiency is expected to improve. Local streets are poised to benefit from advancements aimed at improving safety, efficiency, and connectivity for human drivers and AVs.

5.3 LAST-MILE DELIVERY SOLUTIONS

Last-mile delivery solutions are undergoing a transformative shift driven by innovative technologies such as delivery drones or unmanned aerial vehicles (UAVs). Major retail and logistics players worldwide are embracing drone delivery systems to address the challenges of “last-mile” deliveries, enhancing customer experiences and optimizing supply chain operations. Industry giants like Amazon, UPS, and Walmart are actively developing prototype models that could revolutionize e-commerce deliveries, offering faster and more efficient distribution channels. Drones/UAVs and automated ground vehicles (AGVs) have emerged as innovative solutions for last-mile deliveries, offering distinct benefits and facing unique challenges in the freight mobility landscape.

With advancements in drone technology, including autonomous flight capabilities, the feasibility of drone delivery services is increasingly evident. Drones, characterized by their ability to navigate swiftly through the air, provide unparalleled speed and efficiency in delivering parcels directly to customers’ doorsteps. However, the implementation of drone

delivery services is subject to stringent regulations governed by the Federal Aviation Administration (FAA), ensuring air safety and compliance with established protocols. The FAA is carefully crafting rules for both commercial and noncommercial UAVs, navigating challenges such as airspace congestion and safety concerns.

AGVs offer a versatile solution for last-mile deliveries, leveraging autonomous technology to navigate roadways and deliver parcels directly to customers’ homes or businesses. AGVs can operate in various weather conditions and terrain types, providing delivery services across urban and suburban environments. AGVs can carry larger payloads compared to drones, making them suitable for delivering bulky or heavy items. However, AGVs face challenges related to infrastructure compatibility, pedestrian safety, and public acceptance. Developing robust navigation systems, integrating AGVs with existing transportation networks, and addressing concerns about liability and regulatory compliance are critical steps towards realizing the full potential of AGVs in last-mile delivery operations.

5.4 URBAN CONSOLIDATION CENTERS

Urban consolidation centers (UCCs) serve as pivotal solutions for enhancing freight mobility in densely populated urban areas. These centers function as shared truck parking and staging areas strategically positioned in proximity to urban zones, facilitating the consolidation of inbound freight flows and minimizing the circulation of freight traffic within urban environments. By consolidating cargo at a terminal, UCCs enable carriers to transfer their loads to a neutral entity, which then orchestrates the last leg of deliveries. This approach not only reduces the number of individual carrier trips to urban areas but also optimizes load factors, enhancing the efficiency of last-mile delivery operations.

While UCCs offer compelling environmental and social benefits, including improved air quality and

reduced traffic congestion, their implementation may encounter challenges such as high setup costs and potential monopolistic tendencies, which could lead to increased operational costs and legal complexities. Nonetheless, as urban areas continue to grapple with the complexities of freight mobility, UCCs emerge as indispensable tools for fostering sustainable and efficient urban logistics systems.

5.5 DIGITAL TRANSFORMATION

From big data analytics to artificial intelligence (AI) and the Internet of Things (IoT), freight mobility encompasses a diverse array of technologies that promise to reshape the future of freight transportation. Through the deployment of IoT devices and AI-driven analytics, supply chain management is undergoing a paradigm shift, providing stakeholders with unprecedented visibility into warehouses, distribution centers, and in-transit assets. With real-time monitoring of environmental factors such as temperature and humidity, logistics providers can ensure that goods are stored and transported under optimal conditions, mitigating the risk of spoilage or damage.

Collaboration and information exchange among industry players are essential for effective freight mobility. Cloud computing solutions offer scalability and reliability, enabling seamless communication and coordination across the supply chain. As the freight industry embraces digital transformation, freight mobility stands poised to drive innovation, efficiency, and sustainability in the movement of goods across the globe.

6 | Priority Corridors and Investment Needs

An important component of the Regional Freight Plan is defining the priority corridors and investment needs.

6.1 CRITICAL URBAN AND RURAL FREIGHT CORRIDORS IN THE REGION

The National Highway Freight Program (NHFP) under the BIL is focused on improving the condition and performance of the NHFP. The NHFN defined by FHWA and NDOT includes the following designations:

Primary Highway Freight System (PHFS), other interstate portions not on the PHFS, Critical Urban Freight Corridors (CUFC), and Critical Rural Freight Corridors (CRFC). The BIL determines the state's mileage allocation of CRFCs and CUFCs based on factors such as population density and PHFS mileage. State transportation agencies, in coordination with metropolitan planning organizations (MPOs), are responsible for defining the CRFCs and CUFCs, based on a statewide mileage cap. The Nevada Freight Plan designated 600 miles of CRFCs and 150 miles of CUFCs to complement the PHFS and the

Figure 23: National Highway Freight Network



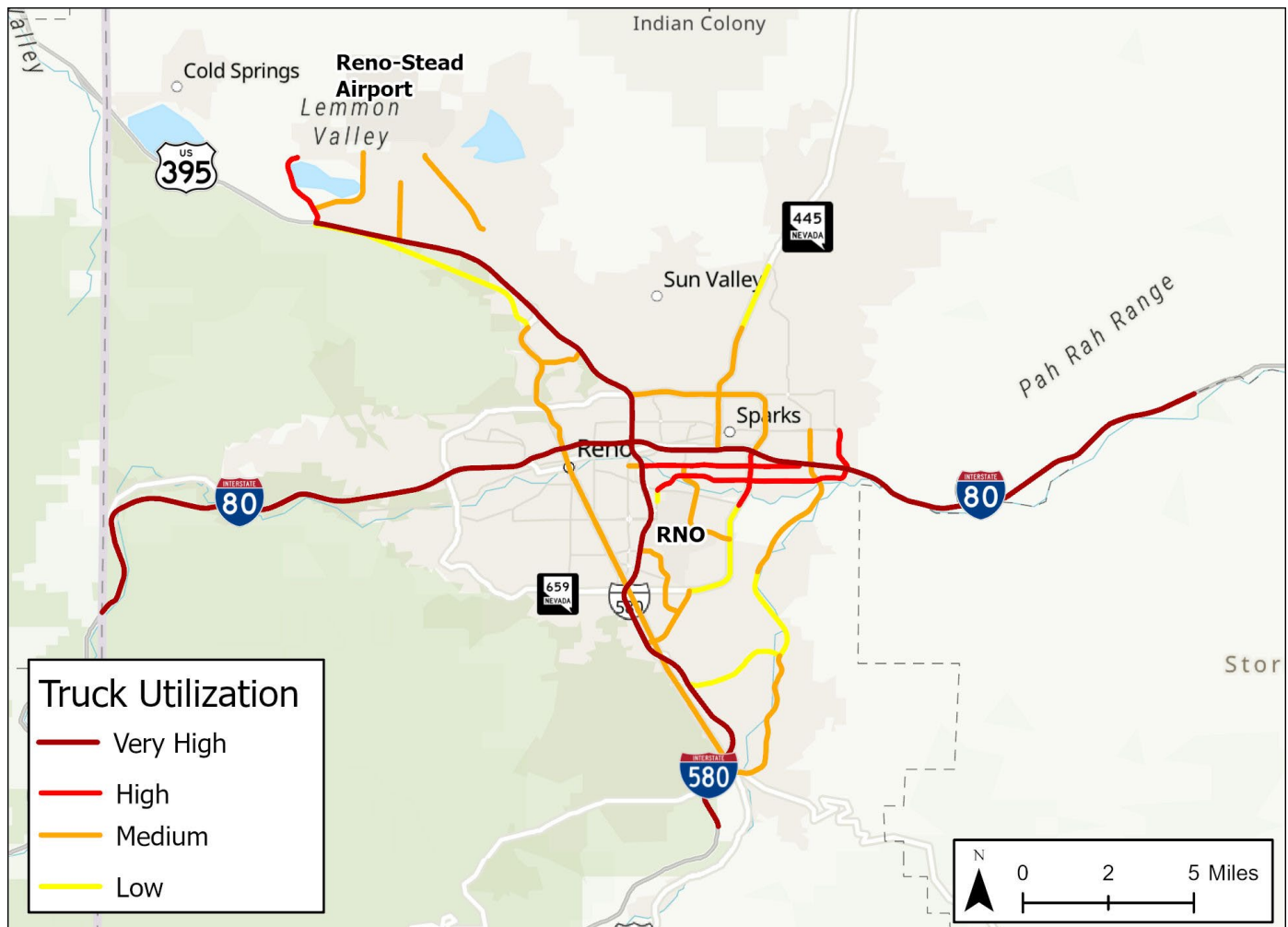
Interstate Highway System to comprise the NHFN. In Washoe County, the NHFN includes I-80, I-580 and approximately 50 miles of CUFCs.

6.2 PRIORITY CORRIDOR NEEDS AND GAP ANALYSIS

Freight priority corridors in urban areas are strategic routes crucial for the efficient movement of goods within and through urban environments. The identification of these corridors requires a comprehensive assessment of various factors, including but not limited to truck utilization, safety, travel time reliability, and pavement conditions.

Safety considerations are paramount in the identification of freight priority corridors. Corridors with lower crash rates and fewer incidents are preferable for facilitating seamless freight flow while minimizing risks to both motorists and cargo. Prioritizing corridors with higher crash records can mitigate the potential for crashes, particularly truck involved crashes, and disruptions to freight operations, thereby enhancing overall transportation network reliability and resilience. Also, truck utilization plays a pivotal role in determining the significance of specific corridors for freight movement. High levels of truck traffic indicate the importance of certain routes as primary arteries for freight transportation. These corridors often

Figure 24: Truck Utilization



serve as vital links connecting industrial centers, distribution hubs, and consumer markets, facilitating the movement of goods throughout urban areas.

Further, travel time reliability emerges as a factor in the designation of freight priority corridors. Corridors characterized by consistent travel times are deemed essential for ensuring timely deliveries and reducing supply chain disruptions. Reliable travel times are especially crucial for time-sensitive freight shipments, such as perishable goods or just-in-time inventory, as any delays can have significant implications for businesses and consumers alike. Pavement conditions also impact freight mobility within urban areas. Well-maintained roads offer smoother and more efficient travel routes for trucks, reducing wear and tear on vehicles and enhancing overall operational efficiency. Additionally, investments in pavement rehabilitation and maintenance contribute to the longevity and resilience of the transportation infrastructure, supporting the continued flow of goods throughout urban areas.

By prioritizing corridors with higher truck utilizations and higher safety, reliability, and pavement needs, the RTC can better enhance the safety, efficiency and predictability of freight movement within the region. For this purpose, the data provided in Chapter 4 (Existing Conditions and Trends) was used to identify such corridors. The list of freight priority corridors includes the designated CUFCs approved by FHWA, and other regional corridors important for freight mobility.

Table 6 provides a list of priority freight corridors in the region including the CUFCs approved by FHWA and other regional corridors deemed essential for freight mobility and enhancing overall transportation network performance. Through targeted investments in these priority corridors, the RTC aims to optimize freight movement, minimize disruptions, and promote economic vitality across the region.

Table 5: Priority Freight Corridors

Corridor	From	To	CUFC	Freight Related Issues	Priority	Programmed Projects
E Parr Boulevard	N Virginia Street	US 395	No		Low	Parr Bridge at US 395 replaced
Greg Street	Mill Street	Vista Boulevard	Yes	High truck volumes and PTI between McCarran & Vista	Low	Greg Street Sidewalks and Bike Lanes
N McCarran Boulevard	US-395	I-80	Yes	Truck involved crashes	Low	McCarran Boulevard widen 4 to 6 lanes
Red Rock Road	Osage Road	US 395	Yes		Low	Red Rock Road widen 2 to 4 lanes
South Meadows Parkway	I-580	Veterans Parkway	No		Low	South Meadows Parkway bike lanes

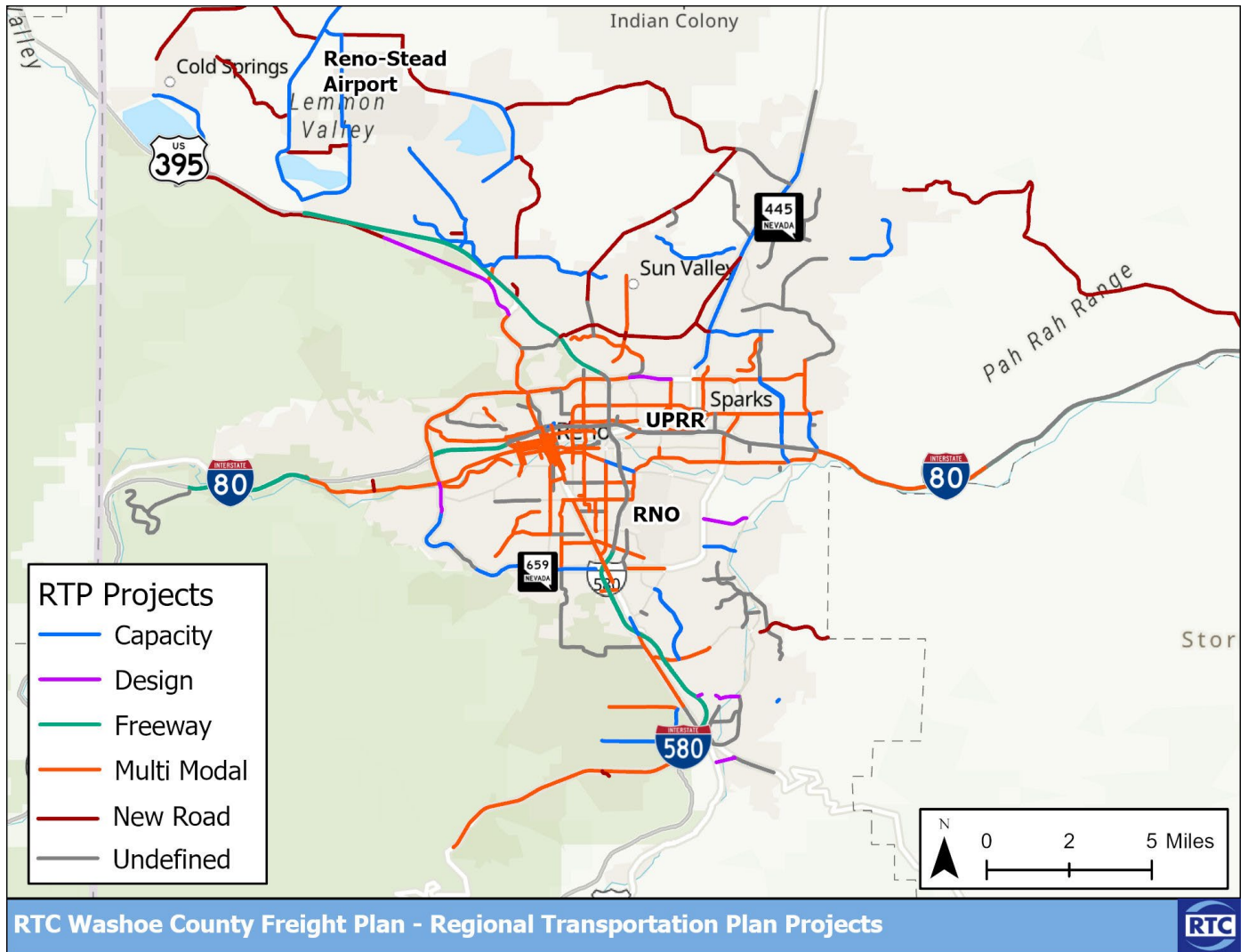
Corridor	From	To	CUFC	Freight Related Issues	Priority	Programmed Projects
Sparks Boulevard	Greg Street	I-80	No	High PTI near I-80	Low	Sparks Boulevard multimodal improvements and widen 4 to 6 lanes, Sparks Boulevard Greg Street to north side of Baring Boulevard
Sparks Boulevard	I-80	Prater Way	Yes	High PTI near I-80	Low	Sparks Boulevard multimodal improvements and widen 4 to 6 lanes, Sparks Boulevard Greg Street to north side of Baring Boulevard
Stead Boulevard	Lear Boulevard	US 395	No	Due to the presence of the O'Brien Middle School zone near the Stead/US 395 interchange, it is preferred that trucks use alternate routes	Low	N/A
Vista Boulevard	Greg Street	E Prater Way	Yes	High PTI near I-80	Low	Widen 4 to 6 lanes, Greg Street sidewalks and bike lanes
Glendale Avenue	Kietzke Lane	US 395	No	High Planning travel time index (PTI) near Kietzke Lane	Medium	N/A
Glendale Avenue	US 395	S McCarran Boulevard	No		Medium	N/A

Corridor	From	To	CUFC	Freight Related Issues	Priority	Programmed Projects
Glendale Avenue	S McCarran Boulevard	Franklin Way	No	High PTI; Railroad crossings; Poor pavement condition near Franklin Way	Medium	N/A
Lemmon Drive	Bravo Avenue	US-395	Yes	Future freight demand expected in the area	Medium	Lemmon Drive A. Widen 4 to 6 lanes; Lemmon Drive Segment 2 Traffic improvements/ Reconstruct; Lemmon Drive - Extension
Military Road	Echo Avenue	Lemmon Drive	Yes	Future freight demand expected in the area	Medium	Military Road Widen 2 to 4 lanes
Moya Boulevard	Echo Avenue	Red Rock Road	Yes	Future freight demand expected in the area	Medium	Moya Boulevard widen 2 to 4 lanes
N Virginia Street	Stead Boulevard	Panther Drive	Yes	High PTI near Stead	Medium	N Virginia Street widening
Pyramid Way	Sparks Boulevard	Los Altos Parkway	Yes		Medium	Pyramid Hwy widen, Pyramid Way Phase 5 widen 2 to 4 lanes

Corridor	From	To	CUFC	Freight Related Issues	Priority	Programmed Projects
US-395	Red Rock Road	I-80	Yes	High PTI near I-80	Medium	US 395 Widening - Design and ROW (Stead to Red Rock Rd), US 395 Additional lane in each direction (Golden Valley to Stead Boulevard), US 395 Add SB Lane - Aux lanes - NB and SB (N McCarran to Lemmon Drive), US395/I-580/I-80 Capacity Expansion at Spaghetti Bowl
Veterans Parkway	South Meadows Parkway	Mira Loma Drive	No		Medium	New facility opened in 2018
Airway Drive	Longley Lane	I-580	No	Future freight demand expected in the area	High	N/A
Longley Lane	I-580	McCarran Boulevard	No	Future freight demand expected in the area; High PTI near Rock & S Virginia Street	High	N/A
Pyramid Way	Los Altos Parkway	N McCarran Boulevard	Yes		High	Queen Way to Pyramid Hwy (Phase 1) - Widen and safety improvements,
Pyramid Way	N McCarran Boulevard	I-80	Yes	High PTI near I-80; Truck involved crashes	High	This segment to be included in future RTC neighborhood network plan

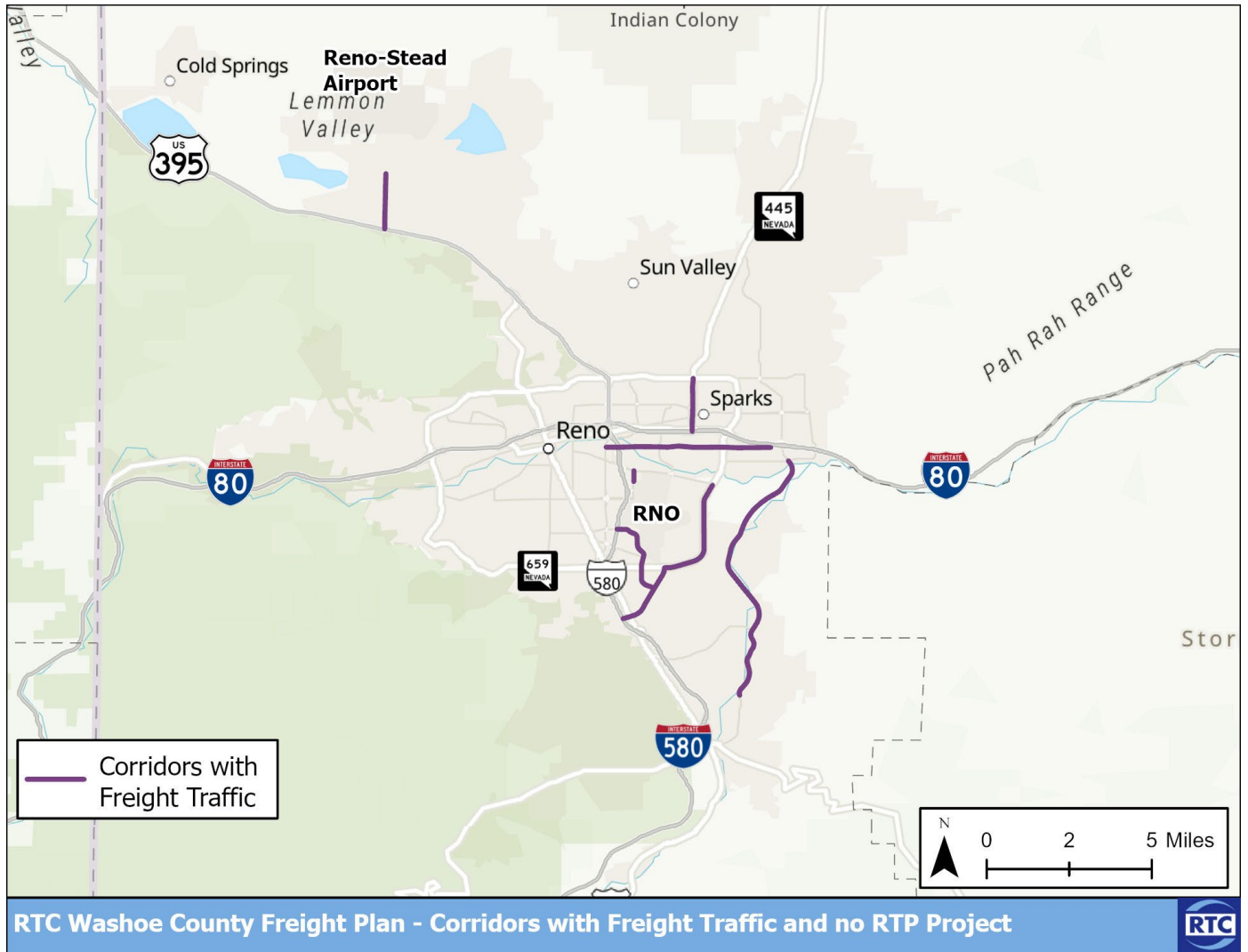
Corridor	From	To	CUFC	Freight Related Issues	Priority	Programmed Projects
S McCarran Boulevard	I-80	Mill Street	Yes	High PTI near I-80	High	McCarran Boulevard sidewalks and bike lanes
S McCarran Boulevard	Longley Lane	Mill Street	No		High	N/A
S Rock Boulevard	McCarran Boulevard	Glendale Avenue	No	Future freight demand expected in the area; High PTI near Longley	High	N/A
Terminal Way	Vassar Street	Greg Street	Yes		High	Mill St/Terminal Way multimodal improvements and widening
US 395/ I-580	I-80	S Virginia Street	Interstate		High	Spaghetti Bowl Phase 2, Spaghetti Bowl Phases 3-5, US 395/I-580/I-80 capacity expansion at Spaghetti Bowl, I-580 widening
Veterans Parkway	Steamboat Parkway	South Meadows Parkway	No	Mira Loma Drive, which connects to Veterans Parkway, is not a truck route due to adjacent residential development and high levels of pedestrian activity	High	Intersection improvement at Damonte Ranch under development
Veterans Parkway	Mira Loma Drive	Greg Street	No		High	N/A

Figure 25: Regional Transportation Plan Projects



RTC Washoe County Freight Plan - Regional Transportation Plan Projects

Figure 26: Highly Used Freight Corridors with No RTP Project



RTC Washoe County Freight Plan - Corridors with Freight Traffic and no RTP Project

2050 RTP

The 2050 RTP identifies transportation investment priorities for the region over the long term. Figure 25 depicts the project included the plan. Figure 26 shows the priority freight corridors that are not presently included that are not currently included in the RTP for transportation improvements. It is notable that the majority of the corridors identified in this gap analysis have either had recent major construction completed, such as Glendale Avenue and Veterans Parkway, or are not well suited for truck-focused improvements due to high levels of pedestrian activity and other land use conflicts, such as Stead Boulevard and Pyramid Way. Additional analysis is recommended for Longley Lane and East McCarran Boulevard to address freight mobility and safety needs.

I-80

NDOT has major projects under development in the critical I-80 corridor. Phase 1 of improvements to the Spaghetti Bowl have been completed and Phase 2 includes the widening of the segment eastward to McCarran Boulevard. However, the segment from McCarran Boulevard to Vista Boulevard is not included in this project.

NDOT is also planning for the widening of I-80 east of Sparks to USA Parkway to better accommodate truck and commuter traffic.

US 395/I-580

NDOT and RTC have been successful in obtaining discretionary grant funding for improvements on US 395 North. Completed improvements include the reconstruction of the Parr Boulevard bridge over US 395 and improvements to the US 395/Lemmon Drive interchange.

Future phases include:

- » Widening US 395 between North McCarran and Golden Valley Road, and

- » Widening US 395 between Golden Valley Road and Stead Boulevard.

NORTH VALLEYS

The [North Valleys Regional Transportation Study](#) identified short- and long-term projects to address the rapid growth in the North Valleys. The study noted the increase in industrial and warehouse/distribution land uses in the area. The interchange improvement at Lemmon Drive was recently completed, along with the widening of Lemmon Drive. Other major projects in the plan include widening Military Road, Moya Boulevard, and Red Rock Road.

Complete street and intersection improvements on North Virginia Street are also recommended in the plan.



Lemmon Drive Improvements

SPARKS INDUSTRIAL

As described in the 2050 RTP, the Sparks Industrial area is a major employment center and historic core of the region's manufacturing base. NDOT reconstructed Glendale Avenue and installed Americans with Disabilities Act (ADA) accessible sidewalks. Future improvements are planned on Greg Street and McCarran Boulevard. Roadway widenings on Sparks Boulevard and Vista Boulevard are currently under development.



SOUTH MEADOWS

The [South Meadows Multimodal Transportation Study](#) identified recommended transportation improvements to address safety and mobility needs. NDOT is currently studying the feasibility of extending South Meadows Parkway to USA Parkway in Storey County to improve regional mobility and safety.

6.3. INVESTMENTS IN PROGRAM IMPLEMENTATION TO IMPROVE FREIGHT MOBILITY

Ensuring that freight mobility is a core component of regional transportation planning is essential. This involves coordinating with local governments, state agencies, and private sector stakeholders to align efforts and investments. Regional freight strategic investments and initiatives can be consolidated under a potential "Freight Program" managed by the RTC, to address key challenges related to freight mobility for further study and implementation. Creating a specialized freight program (and potentially a rail program) within RTC would ensure focused attention on the unique needs of freight transportation. This program could oversee the integration of freight considerations into broader transportation planning, advocate for necessary infrastructure improvements, and foster collaboration with key stakeholders such as rail operators and freight companies.

7 | Recommendations

RTC is focused on enhancing interregional collaboration on safety, truck parking, intermodal connectivity, and workforce access to address freight mobility needs comprehensively. By working closely with NDOT, other state agencies, local jurisdictions, RNO, and local businesses, RTC aims to create a cohesive strategy that anticipates and addresses the challenges of population growth and increased congestion. This collaborative approach ensures that transportation improvements are not only effective in meeting current freight demands but are also sustainable and adaptable to future needs.

This section details recommendations to address freight mobility needs, such as improving safety measures and expanding truck parking facilities. These recommendations are designed to not only improve the efficiency and reliability of freight transportation, but also to support broader goals of economic development, environmental sustainability, and quality of life for residents.

7.1 IMPROVE SAFETY

I-80 SPAGHETTI BOWL PROJECT

I-80 through downtown Reno and Sparks contains the highest concentrations of truck-involved crashes in the region. NDOT's planned I-80 improvements as part of the Spaghetti Bowl Project are a high priority for improving safety. The first phase of improvements included the Spaghetti Bowl Express, which added a lane to the eastbound existing from I-80 to I/580/US395 southbound. Other operational improvements on I-580 between I-80 and Villanova Drive were completed as part of this early phase.

Future phases, as identified in the project's [environmental impact statement](#) include the following:

Phase 2 (2028-2032): Construct east leg (1015 property acquisitions) from area around the Spaghetti Bowl to McCarran Boulevard, the east limit.

Phase 3 (2032-2038): Construct north leg (200210 property acquisitions) from area around the Spaghetti Bowl to Parr/Dandini Boulevards, the north limit.

Phase 4 (2038-2041): Construct remaining south leg not completed in Phase 1 (5-10 property acquisitions) down to Meadowood Mall Way, the south limit.

Phase 5 (2041-2043): Construct remaining Spaghetti Bowl ramps and west leg (90-100 property acquisitions) to Keystone Avenue, the west limit.

Because the McCarran Boulevard interchange with I-80 in Sparks is a high crash location, it is recommended that safety improvements at this location be included in Phase 2 of the Spaghetti Bowl project or developed a separate project. It is also recommended that a study of I-80 between McCarran Boulevard and Vista Boulevard be conducted to identify safety and operational improvements.

US 395 IMPROVEMENTS

NDOT is improving U.S. 395 from North McCarran Boulevard and Golden Valley Road. This project includes adding a southbound lane, constructing additional merging lanes, and ramp improvements that enhance safety and traffic flow. Future phases of this project will include improvements to the Golden Valley and Stead Boulevard interchanges. These roadway and interchange improvements are recommended as a high priority for enhancing safety.

EAST MCCARRAN BOULEVARD

East McCarran Boulevard from Nugget Avenue to Prater Way is a highly utilized freight corridor and experiences both safety and operational challenges. Proposed improvements recommended in the 2017 NDOT Safety Management Plan for this segment include the following:

- » Implement access management improvements.
- » Construct dedicated right turn lane on southbound McCarran Boulevard at Glendale Avenue.
- » Improve right turn lanes along southbound McCarran Boulevard at Greg Street.
- » Convert existing I-80 interchange to a diverging diamond configuration.
- » Construct a dedicated right turn lane for the westbound I-80 on-ramp.
- » Construct a continuous flow intersection at Glendale Avenue.
- » Extend the multi-use path on the west side of McCarran Boulevard.
- » Provide sidewalks on the east side of McCarran Boulevard between Greg Street and Glendale Avenue.

It is recommended that these previous recommendations be reviewed based on current traffic data and the planned I-80 improvements.

OTHER CORRIDOR IMPROVEMENTS

Safety improvements are also a priority on Greg Street, which has high levels of freight activity in addition to transit service (RTC Route 18) and pedestrian activity. The programmed improvements along Greg Street are focused on active transportation in support of workforce access and safety. Operational improvements that address peak period congestion between McCarran Boulevard and Vista Boulevard are also recommended.

7.2 IMPROVE MULTIMODAL INTEGRATION AND RAIL ACCESS

Multimodal integration is a critical component of the region's transportation strategy, enhancing connectivity and efficiency across various modes of transport. Maintaining rail spur access for businesses ensures seamless movement of goods and supports industrial operations. Airport connectivity to the regional road system also enhances the flow of passengers and freight, linking air travel with surface transportation networks.

Coordinating with land use planners optimizes space for transportation infrastructure, promoting balanced development. For example, the planned Victory Logistics Center in Fernley exemplifies multimodal integration by offering Class A industrial facilities with excellent access to I-80, US 50, and the future I-11 Interstate Highway. These developments will benefit from connectivity to the rail lines and a planned transload facility, supporting the growing needs for manufacturing, distribution, and logistics in Northern Nevada.

7.3 IMPROVE EFFICIENCY OF FREIGHT MOVEMENT

Corridor Improvements are planned in various areas including:

- » Vista Boulevard
- » Pyramid Highway
- » Greg Street
- » North Virginia Street
- » Red Rock Road
- » Moya Boulevard
- » US 395
 - US 395/Stead Interchange
 - US 395/Red Rock Interchange



Existing rail spur crossing Glendale Avenue

SPARKS INDUSTRIAL FREIGHT MOBILITY

The Sparks Industrial area faces significant challenges related to moving freight across the UPRR and I-80. Over the past decade, businesses have relocated from this area due to the difficulty of moving goods in and out of the area efficiently. As a major regional freight district and employment center, additional corridor/area studies and investments along Glendale Avenue, Greg Street, Rock Boulevard, East McCarran Boulevard, and Sparks Boulevard are recommended. Targeted investments along these corridors will enhance the efficiency and safety of the regional freight movement. Additionally enhanced access will support smoother movement of goods in and out of the Sparks Industrial area and benefit overall regional freight flow. There are also a number of investments that are not directly focused on freight but aim to enhance overall efficiency of the transportation system in the region. These initiatives can significantly improve freight mobility. For instance, developing a traffic management center (TMC) would benefit all road users by providing real-time traffic monitoring and incident management, thereby reducing congestion and improving travel times for freight operators.

Similarly, implementing an AI-driven data collection and analysis strategy would offer comprehensive insights into mobility patterns, allowing for optimized routing and better anticipation of traffic disruptions. These improvements not only facilitate more efficient freight movement but also contribute to broader regional goals such as safety, emission reduction, and supporting economic growth. Further, by enhancing transit connectivity between residential areas and employment centers, RTC can ensure reliable and efficient workforce access to industrial areas. Integrating these management practices and initiatives can create a more resilient and responsive transportation network that benefits both freight and general transportation needs.

SOUTH MEADOWS EXTENSION

The proposed South Meadows Connector has the potential to impact freight mobility in the region by providing a new alignment that connects South Meadows Parkway in Southeast Reno to USA Parkway. NDOT is currently conducting a feasibility and alignment study to explore viable alignment alternatives. NDOT is also considering pavement improvements on older segments of USA Parkway.

LA POSADA EXTENSION

An extension of La Posada Drive to USA Parkway is included in the 2050 RTP. This corridor would connect Sparks to USA Parkway in Storey County to the north of I-80. The proposed corridor would provide an alternate route to employment centers and support increased industrial development.

I-80 WIDENING EAST OF SPARKS

As documented by NDOT through the I-80 East Study, the traffic on I-80 has increased by 61% over the past ten years. Between 2023 and 2050 traffic volumes are expected to increase by nearly 30%, with approximately 20% of this traffic being freight.

NDOT is studying the potential to widen I-80 between Vista Boulevard and USA Parkway, including

additional travel lanes and wider shoulders. The proposed improvements will add 25-50 new truck parking stalls within the corridor.

These improvements are recommended to improve safety, traffic operations, and improve workforce access.

REGIONAL FREIGHT ADVISORY COMMITTEE

To further improve coordination on freight planning and other initiatives, it is recommended that RTC consider the creation of a Regional Freight Advisory Committee. This committee would include a combination of public and private sector agencies and organizations with an interest in freight and goods movement. The committee would be used to foster collaboration and information sharing among stakeholders and to guide implementation of the Regional Freight Plan.

7.5 PROVIDE FOR EQUITY AND SUSTAINABILITY IN FREIGHT AND GOODS MOVEMENT

LAST-MILE CONSIDERATIONS

Expanding the options for last-mile deliveries can also improve roadway conditions in Washoe County by reducing truck travel. Last-mile delivery services often use smaller vehicles, such as vans or cargo bikes, that can make more targeted deliveries within specific areas. This reduces the overall number of heavy-duty trucks on the road, leading to smoother traffic flow. These vehicles also make less noise than large trucks and can emit less pollution, making them more neighborhood friendly.

Exploring options to optimize last-mile delivery routes can improve congestion, safety, and efficiency in Washoe County by incorporating multiple delivery mechanisms (owned or controlled by the retailer) such as cargo bikes, air/ground drones, package lockers, and autonomous vehicles. For Washoe

County, future trends indicate a shift from traditional retail to door-to-door consumer services.

WORKFORCE ACCESS

Workforce access is an important aspect of planning for freight and industrial development. While many industrial corridors were initially designed for trucks, many people walk, bicycle, and use transit to access employment opportunities. To support workforce access, industrial corridors are recommended to accommodate safe bicycle and pedestrian connectivity. This may include wider sidewalks and bicycle facilities. Corridors with fixed-route bus service should be considered for bus stop improvements.

7.6 EXPAND TRUCK PARKING

Summarized below are impactful strategies for reducing undesignated truck parking (trucks parked in vacant lots, freeway ramps, and roadside) in the region.



Winter closure on I-80

BUILD OR EXPAND PUBLICLY OWNED FACILITIES

The NDOT Truck Parking Implementation Plan did not identify any locations in Washoe County for building or expanding truck parking facilities; however, three

sites east of the county were recommended:

- » Closed Mustang Check Station Conversion: Convert and expand to include 50 truck parking spaces eastbound and westbound. Restripe existing westbound paved areas to create 10 spaces, as a no- or low-cost early action item.
- » Wadsworth Rest Area Expansion: Up to 50 spaces could be added.
- » Trinity/Fallon Rest Area Expansion: 50–100 spaces could be added.

In addition, the City of Fernley is interested in partnering with NDOT and/or private developers to add truck parking to a proposed industrial park.

ENCOURAGE ON-SITE TRUCK PARKING AT NEW AND EXISTING SHIPPER/RECEIVER DEVELOPMENTS

Local ordinances routinely set employee and customer parking requirements for developments; however, on-site truck parking and staging areas are rarely required. Proactively integrating truck parking needs into the planning process will help meet the parking demand while also helping to spread the costs of providing truck parking. Some options for permitting agencies to encourage shippers and receivers to provide truck parking are noted below.

- » **Ask:** Some agencies have found it successful to merely ask the developer to include parking. Educating developers on the need may be sufficient.
- » **Require Truck Parking be Provided:** In 2017, the Township of Upper Macungie, Pennsylvania, passed a new zoning requirement that requires one off-street truck parking space for every loading dock at a new warehouse or distribution facility.
- » **Require Incorporation of Truck Parking into Traffic Impact Assessments (TIAs):** Public agencies not willing or ready to require inclusion of truck parking may want to start by requiring that truck parking needs be assessed in TIAs

already being conducted. This will bring the need to the attention of the developer. Additionally, the developer could be allowed to address the need as they deem appropriate. It may not be enough, but it is a start.

The [FHWA Truck Parking Development Handbook](#) provides guidance for encouraging on-site truck parking at new and existing shipper/receiver developments.



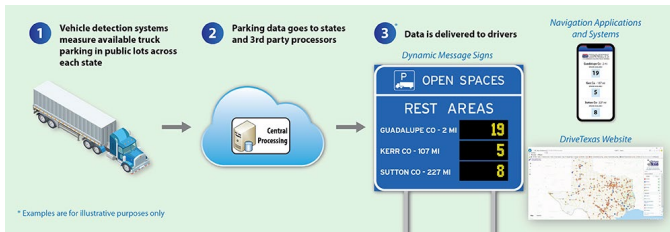
Trucks parked on street

TRUCK PARKING AVAILABILITY SYSTEM

TPAS are a type of ITS application to assist truck drivers in locating available parking spaces in real-time so they can make informed decisions about their parking needs. The TPAS strategy includes monitoring real-time parking availability at strategic statewide public truck parking areas and publishing parking availability data for freight industry use. Data is usually shared on roadside signs prior to the parking area allowing drivers to see available truck parking in the region. Data availability on a website or mobile application usually complements the information on the sign and can provide a lot of detail at a fairly low cost.

NDOT is implementing a TPAS pilot program at several NDOT truck parking facilities on I-80 and I-15

including the facility on I-80 between exits four and seven.



Source: *I-10 Connects, I-10 Corridor Coalition, 2024*

ALLOW EMERGENCY TRUCK PARKING AT LARGE PARKING LOTS WHEN NOT IN USE

Extreme weather conditions, hazardous spills, and other unplanned events can close roads temporarily, creating a large demand for truck parking until the road reopens. Building truck parking lots solely for the purpose of accommodating this large but infrequent demand is not a practical use of limited transportation funding. Many large parking facilities such as sports venues and fairgrounds have large parking areas, are easily accessible from the road, and would provide safe emergency parking for trucks if they are allowed to park there. These types of locations have schedules that are known far in advance, often have significant downtime, and are used to accommodate large numbers of vehicles and people in a condensed period. An example of the application of this policy can be found on I-80 on the western slope of Donner Pass. At one time in the past, Caltrans had an arrangement with the Gold Country Fairgrounds & Event Center in Auburn (Figure 3.3), and with the Boreal Ski Resort after 11:00 p.m., to allow trucks to park in their lots during winter closures of I-80.

This concept could be expanded to year-round use of a portion of a large parking lot that is routinely underutilized. For example, [Realize](#), a provider of secure truck parking for a fee, in 2023 established a parking facility on an underutilized paved lot owned by the Las Vegas Speedway that was at near capacity within 3 months of the grand opening.



Truck parked on neighborhood street

OWNER-OPERATOR PARKING

Owner-operators are private contractors who own their vehicle and are not affiliated with a large company fleet. When at home, these drivers need a place to park their truck for a day or more, which is not allowed by major truck stops. Unlike drivers for large trucking companies, they typically don't have access to designated company parking facilities. They rely on finding parking at public rest stops, truck stops, or independent lots. This increases the overall demand for available truck parking spaces. The Owner-Operator Independent Drivers Association (OOIDA) is a trade association that represents independent owner-operator truck drivers.¹ Additional truck parking in these areas would benefit owner-operator independent drivers and other truck drivers.

¹ Owner-Operator Independent Drivers Association. n.d. About Us. <https://www.ooida.com/who-we-are/about-ooida/>

Figure 27: Gold Country Fairgrounds and Event Center Parking Lot



Source: Google Map

CURBSIDE TRUCK PARKING

While local regulations often discourage on-street truck parking, it could be safely accommodated in the right context, such as locations with sufficiently wide streets, industrial or commercial land uses, lack of bicycle and pedestrian traffic, and distance from sensitive land uses such as schools. Smart urban parking zones could be used to designate multiple purposes over the course of the day for curb areas and other applicable parking locations. With use of a mobile app, drivers could locate parking, reserve a spot for a specific time window, and facilitate payment (if applicable). This strategy targets short-term (less than 4 hours) staging when the driver stays with the truck, and long-term parking for owner-operators who leave their truck unattended when home on breaks.

Recognizing the need to help owner-operators who live in the city, the City of Auburn, Washington, designated four areas inside industrial zones where truck parking is acceptable, and issues parking permits to truck drivers who are residents of the city. The designated curbs are appropriately signed, and trucks are allowed to park there for a maximum of 72 hours without any occupants. This has helped to remove parked trucks from residential areas where drivers typically park when home. See [the City's website](#) for more information.

ZERO-EMISSION FUELING AND PARKING

In March of 2024, the Joint Office of Energy and Transportation released the National Zero-Emission Freight Corridor Strategy that prioritizes investment, planning, and deployment for medium- and heavy-duty vehicle fueling infrastructure. Sections of I-80 in Washoe County are identified for truck parking infrastructure and intermodal facilities. The plan starts by envisioning battery electric vehicles and then shifts to hydrogen infrastructure. Due to the nature of battery electric charging, where vehicles may need to be parked for extended periods of time to refuel, pairing truck parking and driver facilities (like restaurants, showers, and other vending) with charging infrastructure is a natural fit. The plan outlines connecting California and Utah via I-80 with supporting zero-emission fueling infrastructure in the 2027–2030 timeframe and fully building out supporting infrastructure by 2040. Siting new parking facilities in Washoe County should be coordinated with local utility providers to ensure charging needs can be met.