

The background of the right half of the cover is a photograph of a park path. A person is walking away from the camera on the right, and a child is riding a bicycle towards the camera on the left. The path is paved and surrounded by trees and grass. The entire image is overlaid with a semi-transparent blue filter.

RTC Washoe Active Transportation Plan

PREPARED BY:

alta

WALK & ROLL TRUCKEE MEADOWS



EXECUTIVE SUMMARY

What is the Walk & Roll Truckee Meadows Plan?

This plan presents the vision and goals for active transportation throughout the Truckee Meadows and a focused planning process to apply regional analysis and roadway typologies within neighborhoods across the region. This plan establishes the Neighborhood Network Planning (NNP) process and applicable resources to support that process including regional findings from public engagement, regional data analysis results, and the RTC Street Typology guide which identifies suitable facilities for people walking, biking, and rolling across ten different regional roadway typologies (or types of roads). Going forward, this plan will serve as a guide for agency staff and community members while planning, designing, and implementing accommodations for people walking, biking, and using other active modes throughout the region.

What is in this Plan?

This plan includes the following chapters:

- **Chapter 1 – Introduction:** This chapter sets the context for the plan and identifies the planning approach taken during the development of this plan.
- **Chapter 2 – Where We Are Today:** This chapter provides an analysis of the existing facilities for people walking and biking as well as a review of the existing transit network, and equity considerations throughout the community.
- **Chapter 3 – Community Engagement:** This chapter summarizes the public and stakeholder engagement efforts which helped develop the plan.
- **Chapter 4 – Analyzing the Network:** This chapter presents in-depth analysis of the context and character of the existing facilities in combination with additional data sources such as outputs from the RTC Travel Demand Model.
- **Chapter 5 – Addressing the Issues:** This chapter details the NNP process and identifies the resources which will support that process going forward including the RTC Street Typology Guide which is included in *Appendix C* in its entirety.
- **Chapter 6 – Implementation, Funding, and Performance Metrics:** This chapter includes considerations for maintaining an enhanced active transportation network, identifies potential funding options for various active transportation needs, and establishes performance metrics to track implementation progress.

How was this Plan created?

This plan was created through engagement with partner agencies, stakeholders and community members. The RTC engaged directly with staff from partner agencies through the Agency Working Group and project Technical Advisory Group. The RTC also conducted an interactive engagement process to listen to the community and identify leading barriers to walking and biking as well as local preferences for using active transportation modes (walking, biking, scooting, and using mobility assistance devices). Engagement also focused on the needs of seniors, youth, and those with disabilities through targeted engagement events and outreach. In combination with the stakeholder and public engagement efforts which guided this plan, the project team conducted an in-depth analysis of the existing conditions of the active transportation network to assess the current comfort of the network for people walking, biking, and rolling throughout the community. The resulting NNP process builds off of established programs from peer communities and creates a process unique to the Truckee Meadows which will help guide active transportation improvements in the region going forward.

How will this Plan be implemented?

The primary method of implementation for this plan will be through the newly formed Active Transportation Program and managed by the RTC Active Transportation Manager and guided by the Active Transportation Technical Working Group (ATWG) which will include representatives from the City of Reno, City of Sparks, and Washoe County focused on planning, design, and construction of active transportation improvements. Progress towards implementation will be tracked annually using the performance metrics identified under each goal at the end of this plan (*Chapter 6*).

ACKNOWLEDGMENTS

The Walk & Roll Truckee Meadows Plan was developed through collaboration between the RTC Washoe and agency partners with the support of the project team. This plan would not have been possible without the extensive amount of time and effort expended all parties. Those listed below helped create and guide the development of this plan and will continue to support the implementation of the plan through their various roles at agencies and organizations throughout the community.

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Sparks
Welcome to Sparks Marina - 3

- Park Hours: 6:00am - 10:00pm
- Overnight Camping Prohibited
- Alcohol Prohibited Without A Permit
- Discharge Of Firearms Prohibited
- Unauthorized Motor Vehicles Prohibited
- Inflatables Prohibited On Public Property
- Metal Detectors Prohibited Without A Permit
- Smoking And Vaping Prohibited
- Dogs Must Be On A Leash - Except In Designated Areas
- Pick Up After Your Dog
- Dogs Prohibited On Beaches
- Gas Powered Grills Are Allowed - No Charcoal
- Glass Containers Prohibited
- All Path Users Stay To The Right Except When Right-Of-Way
- Swimming/Wading Is Only Allowed In The Designated Area When Lifeguards Are On Duty
- Feeding Of Animals, Birds And Waterfowl Is Prohibited
- Hunting Or Trapping Is Prohibited

FISHING RULES

- State Of Nevada Fishing Regulations Apply
- Fishing Allowed 1 Hour Before Sunrise to 1 Hour After Sunset
- Live Bait Or Fish Parts Are Prohibited - With The Exception Of Black Bass
- Daily Possession Limit Is 3 Game Fish, Other Than Black Bass
- Fish Must Be Cleaned At Home

Thank you for observing park rules. For more information, please visit www.sparksnevada.gov

Residents walking along the Sparks Marina.



Introduction

INTRODUCTION

Community Context

With a population nearing half a million¹, Washoe County hums with urban life in its incorporated cities: Reno and Sparks, while also being home to vibrant suburban neighborhoods and rural landscapes. Nestled along the Truckee River and Lake Tahoe's border, the county's diverse development landscape presents both opportunities and challenges for creating a flexible active transportation system that caters to a variety of needs and environments.

A New Path Forward

This Active Transportation Plan (Walk & Roll Truckee Meadows Plan) establishes a clear vision and goals for the future of active transportation in the Truckee Meadows and introduces a new

approach to active transportation planning and implementation in the region called Neighborhood Network Planning (NNP). This approach, detailed in [Chapter 5](#), will engage residents and stakeholders at the local level to tailor active transportation solutions that address the unique needs of each neighborhood. This process will allow for continued engagement between RTC staff and local residents and provide an opportunity for in-depth analysis of local issues as well as the application of regional datasets and the Regional Street Typology Guide to the local context. This innovative and interactive planning process will inform the creation of a comprehensive and connected active transportation network across the Truckee Meadows for all users.



Pedestrians crossing Keystone Avenue.

¹ 489,180 Population – Truckee Meadows Regional Planning Agency (TMRPA) (2022). Washoe County Consensus Forecast. Retrieved from TMRPA Washoe County Consensus Forecast Dashboard <https://tmrpa.app.box.com/v/WCCF-2022-Final-TMRPA>

Integrating with Regional Development: Contexts & Connection

The Walk & Roll Truckee Meadows Plan supports the regional efforts of partner agencies including the Truckee Meadows Regional Planning Agency (TMRPA). Through the [2019 Regional Plan](#), the TMRPA established regional land use tiers (Shown in [Figure 1.1](#)) to categorize areas based on their overall development patterns and context. In order to align with this regional plan, the RTC utilized the TMRPA Land Use Tiers in this plan to identify three Land Use Contexts (Urban, Suburban, and Rural) with similar characteristics. These areas will help guide implementation of active transportation facilities in a context sensitive manner and are described below.

RTC Walk & Roll Truckee Meadows Plan Land Use Contexts²:

- **Urban** – Defined as the Mixed-Use Core and Tier 1 Land as identified by TMRPA. These areas within the Truckee Meadows Service Area (TMSA) represent the most intense development and prioritize investment in walkable streetscapes, high to mid-rise buildings, and multi-modal connectivity.
- **Suburban** – Defined as Tier 2 Land as identified by TMRPA. These areas are characterized by a mix of residential and commercial development, with lower-density housing compared to urban areas.
- **Rural** – Defined as Tier 3 Land as identified by TMRPA. These areas are characterized by low-density development with a focus on agriculture, open space, and natural resource preservation.

Using this approach, the RTC developed 10 roadway typologies for regional roadways including



Bicyclists crossing 4th Street at Sutro Street.

suitable accommodations for people walking and biking on regional roads with similar characteristics within the Regional Street Typology Guide. This guide, included in [Chapter 5](#), establishes a starting point for accommodating active transportation on regional roads during planning and design.

Relation to Other Plans

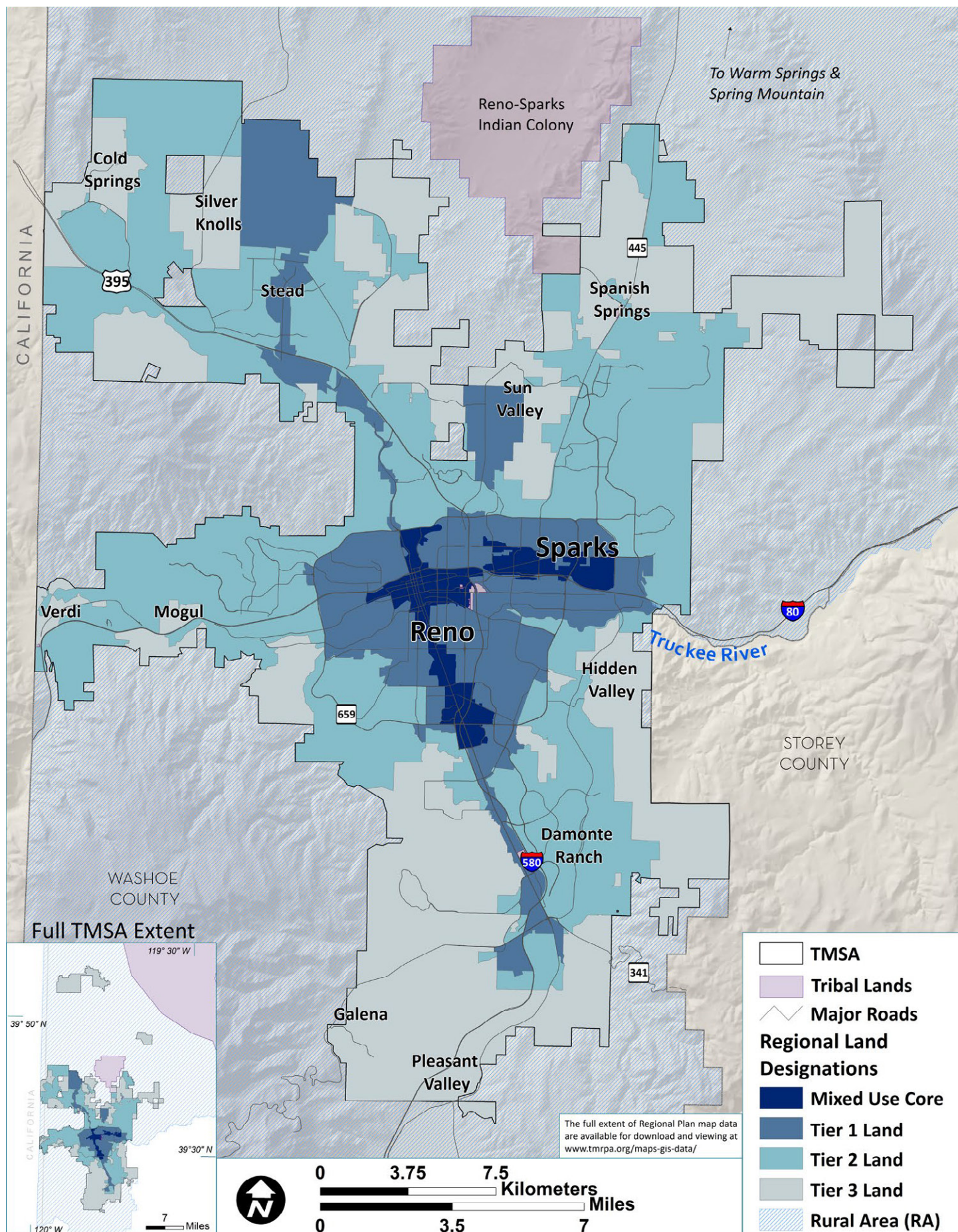
This plan builds on existing AT plans from the RTC and supersedes previous Bicycle & Pedestrian Master Plans. As such, the project team reviewed the following existing documents to help inform the development of this plan.

- Vision Zero Action Plan (2022)
- Transit Optimization Plan (2022)
- Regional Transportation Plan (2021)
- ADA Transition Plan (2020)
- Bicycle & Pedestrian Master Plan (2017)
- Complete Streets Master Plan (2016)
- City of Sparks Comprehensive Plan (2016)
- City of Reno Master Plan (ReImagine Reno) - 2017
- Washoe County Master Plan³ - 2020

² Areas identified by TMRPA with the Rural Area (RA) designation have the lowest development priority and limited public services. Accommodation of bicycle and pedestrian needs in these areas are intended to be addressed on a case-by-case basis through the application of rural design considerations from the FHWA Small Town and Rural Multi-modal Networks Guide and FHWA Bikeway Selection Guide.

³ Reviewed by project team. Future planning efforts will reference Envision Washoe 2040 (November 2023).

Figure 1.1 TMRPA Regional Plan (Map 2) - Adopted Dec. 14, 2023



What is Active Transportation?

Active transportation is a way of getting around that relies on human physical power. This includes walking, cycling, rolling (skateboarding, scooters), and using a wheelchair. It's a healthy, sustainable, and enjoyable way to travel, especially for shorter trips.

Active Transportation Is:



Human-powered transportation...



...that can engage people in healthy physical activity...



...and connects to key destinations and mass transit options.

Importance of Active Transportation in Washoe County

Promoting active transportation in Washoe County offers a multitude of benefits which align with and support the goals of the City of Reno, City of Sparks, and Washoe County:

- **Health and Wellness:** Encourages physical activity, contributing to a healthier and more vibrant community.
- **Environmental Sustainability:** Reduces reliance on cars, leading to cleaner air and a lower carbon footprint.
- **Economic Development:** Creates a more walkable and bikeable environment, attracting businesses and residents while supporting local shops and restaurants.

- **Safety:** Creates a safer environment for everyone using the roads with an emphasis on the most vulnerable road users.
- **Improved Quality of Life:** Provides a more enjoyable way to travel, promoting social interaction and a sense of community.

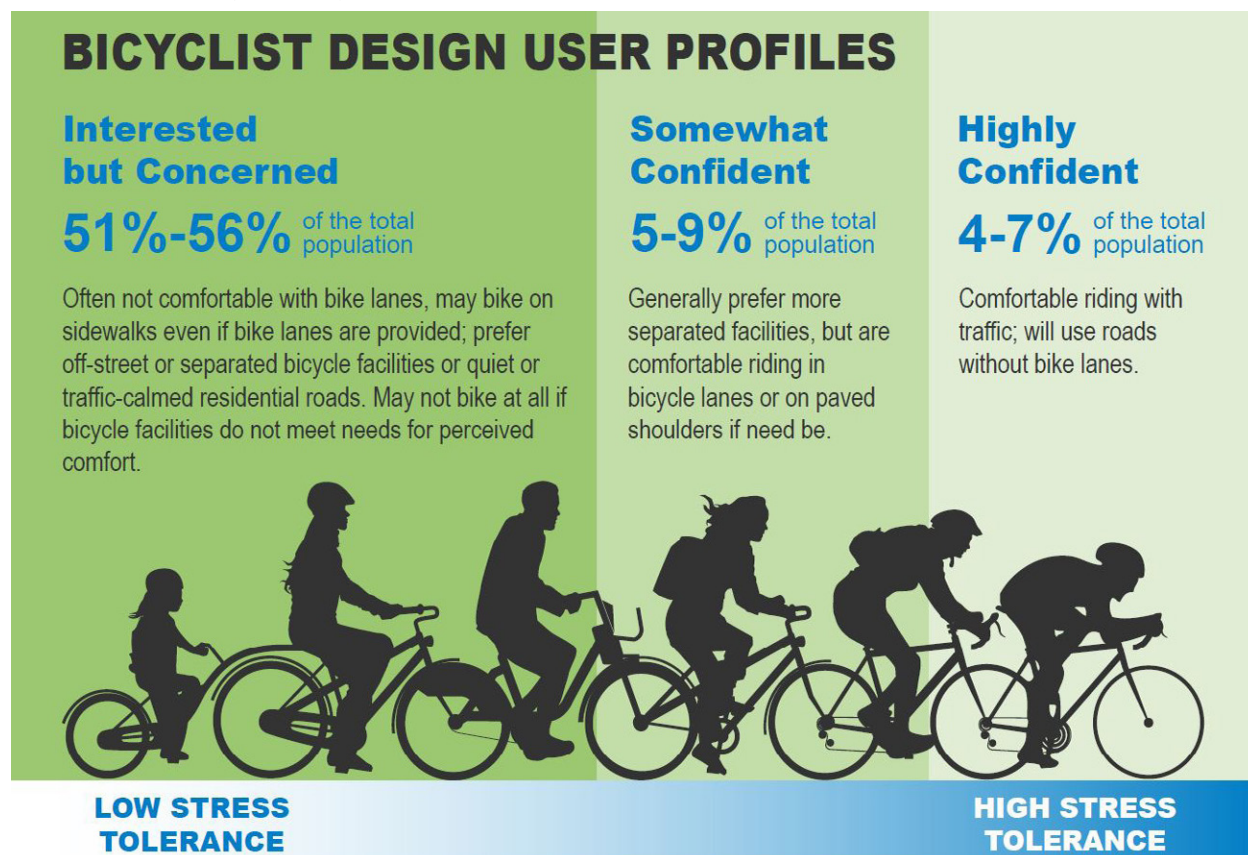
By investing in active transportation, the RTC and partner agencies can take direct steps to creating a healthier, more sustainable, and vibrant place to live, work, and play.

Different Types of Users: Keeping Everyone in Mind

Understanding the diverse needs of people who walk and bike is crucial for creating a safe and inclusive transportation network. This includes recognizing a spectrum of user types, with varying comfort levels, skills, ages, and trip purposes. In order to achieve growth in the number of people walking and biking it is important to design facilities which meet the needs of a broad spectrum of the population beyond those who are already using the existing network. To that end, this plan focuses on designing for users of all ages and abilities including children, seniors, people of color, low-income transit-riders, people with disabilities, people riding bike share / scooter share, as well as confident bicyclists and pedestrians who are already traveling along the existing network.

Planning and designing facilities for the most vulnerable roadway users will provide a system that accommodates people across all ages and abilities and allow for those who may be interested in walking or biking more, but have been concerned about their safety to use their mode of choice. In terms of bicycling, this represents the majority of the adult population with up to 56% of adults being categorized as “Interested but Concerned” bicyclists by the FHWA as shown in [Figure 1.2](#) on the following page.

Figure 1.2 FHWA Bicyclist Design User Profiles



Plan Vision & Goals: Shaping the Future of Active Transportation in Washoe County

The RTC collaborated with partner agencies and community stakeholders to develop a broad reaching vision for the future of active transportation within the Truckee Meadows. Through this process, the RTC established the following regional vision for active transportation:

Vision:

"We envision a connected network of comfortable, convenient, and consistent facilities for people of all ages and abilities walking, bicycling, and rolling on a mobility device which prioritizes accessibility to schools, jobs, shopping, neighborhoods, community facilities, parks, and regional trails within the Truckee Meadows."

This guiding vision helped lead the development of the overall Plan. This vision paints a picture of a future where active transportation is a seamless and accessible option for everyone in Truckee



Pedestrian escorting a family of ducks in a crosswalk across California Avenue.



Bicyclist using arm powered adaptive bicycle.

Meadows.

Goals:

Building on the established vision for active transportation and supporting broader RTC goals, the following project goals identify the four key areas of focus for active transportation for the RTC. These goals were developed and ranked through input from the public and the project Technical Advisory Committee (TAC) which was comprised of partner agency staff and technical experts. The RTC will use these goals as the guide for the development of Neighborhood Network Plans and utilize performance metrics under each goal to track progress towards each:

- **Improve Safety:** Create a safe environment for all users by reducing the risk of death or serious injury on the transportation network.
- **Expand Mode Share:** Increase the percentage of trips made by walking, cycling, and rolling, by making these modes a viable and attractive alternative to driving.
- **Maintain the System Sustainably:** Identify long-term maintenance and repair strategies to ensure the network remains functional and appealing for years to come.
- **Enhance the Community:** Foster a healthier, more sustainable, and more vibrant community by promoting active transportation as a way to connect with neighbors and enjoy the outdoors and integrate physical activity into daily life..

Plan Organization

The following chapters of this plan detail the planning process, analysis, and roadmap for enhancing active transportation infrastructure and improving the pedestrian experience. Here's an overview of each chapter:

Chapter 2: Where We Are Today?

This chapter provides an overview of the current state of active transportation infrastructure and programs. It includes an analysis of the roadway network, existing typologies, walking and biking networks, transit services, as well as program and policy networks. Additionally, it encompasses an equity and health analysis and summarizes safety issues.

Chapter 3: Community Engagement

Summarizing the community engagement process, this covers the outreach strategy, engagement phases, public and stakeholder activities, and key findings from engagement efforts for the Walk & Roll Truckee Meadows Plan.

Chapter 4: Analyzing the Network

Presenting the outcomes of network analysis, this chapter includes assessments of bicycle stress levels, pedestrian experience, areas with high potential for active trips, and regional active transportation network gaps.

Chapter 5: Addressing the Issues

Focused on addressing identified needs, this chapter discusses the Neighborhood Planning Framework, presents the Regional Street Typologies Guide, and recommends policies and programs for enhancing active transportation.

Chapter 6: Implementation, Funding, and Performance Measures

Covering implementation strategies, funding considerations, maintenance, scenario planning, available funding programs, and performance measures for monitoring progress.



A shared-use path running parallel to McCarran Boulevard.

2

Where We Are Today



WHERE WE ARE TODAY

The Regional Roadway Network

The initial phase of the Walk & Roll Truckee Meadows Plan development involved an existing conditions analysis of the regional roadway network within Washoe County. This analysis focused on the regional road system as defined by the RTC. The classification of these roads utilized the criteria outlined in [Appendix D](#) of the RTC Regional Transportation Plan (RTP). This system categorizes roads into four primary classifications:

- **Arterials:** These high-capacity roads provide the most direct connections between freeways and other major roads, facilitating long-distance travel within the region.
- **Collectors:** These mid-capacity roads typically carry an average daily traffic (ADT) of 5,000 vehicles and play a crucial role in the transportation network. They may cross significant barriers like the Truckee River or freeways or connect to major regional facilities.
- **Industrial Roads:** These roads are specifically designed to support the movement of freight within the region. Industrial roadways are considered by their functional classification within this plan.
- **Transit Routes:** These roads prioritize public transportation by incorporating established bus routes or other forms of mass transit. Transit Route roadways are considered by their functional classification within this plan.

Understanding these road classifications is essential for developing a comprehensive Walk & Roll Truckee Meadows Plan that considers the different needs of various road types and ensures a safe and efficient transportation system for all users. In this analysis of the roadway, the focus was on collector and arterial level roadways based on their functional classification. The total lane miles of each classification within each of land use context is highlighted below in [Table 2.1](#).

Table 2.1 Regional Roadway Mileage Breakdown

Roadway Type	Rural	Suburban	Urban	Grand Total
Arterial	91	113	166	370
Collector	10	25	25	61
Grand Total	101	139	191	431

Prioritizing Active Transportation in Washoe County: A Systematic Approach

Many streets in the Truckee Meadows serve diverse purposes, from high-volume freight corridors to minor collectors which connect to neighborhood streets. In order to provide a context sensitive approach across the wide variety of streets, this project used a typological approach by dividing the regional roadway network into 10 distinct Street Typologies.

What is a Typology?

Street typologies categorize streets based on similar characteristics like their functional classification, traffic volume, speed limits, street widths, and surrounding land uses. The Walk & Roll Truckee Meadows Plan identifies 10 different types of streets or “typologies” based on this information which address all the different contexts that may be found throughout the Truckee Meadows on regional roads. Typologies are summarized below based on their key characteristics and further analyzed in [Chapter 4](#). Suitable facilities for people walking and biking are presented for each typology within [Chapter 5](#) in the Regional Street Typology Guide. The facilities are intended to create a safer and more comfortable network for people walking and biking of all ages and abilities.



Bicyclist traveling along Booth Street in the rain.

TYPOLGY DESCRIPTIONS:

Arterials:

Urban Arterial Major - Largest urban roads for moving people efficiently surrounded by high/medium density uses (office, commercial, residential, industrial).

- Examples: N. Virginia St - 9th St to Liberty St

Urban Arterial Minor - Large urban roads for movement of people with high/medium densities of commercial, residential, and office uses.

- Examples: W. 2nd St - Keystone Ave to S Wells Ave

Suburban Arterial Major - Largest suburban roads with medium density commercial, residential, and auto-oriented land uses.

- Examples: South Meadows Pkwy - I-580 to Veteran Pkwy

Suburban Arterial Minor - Large suburban roads connecting primarily suburban residential areas with higher speed roadways.

- Examples: Sharlands Ave - Robb Dr to Mae Anne Ave

Rural Arterial - High speed roads connecting rural neighborhoods to outlying areas and suburban neighborhoods. Typically surrounded by low-density residential or industrial land uses.

- Examples: Geiger Grade - Toll Rd to Virginia City

Collectors:

Urban Collector Commercial - Connecting urban residential and high/medium density commercial areas with higher speed roads.

- Examples: Lake St - Mill St to 6th St

Urban Collector Residential - Small regional roads primarily with residential uses connecting to higher speed roads.

- Examples: Wedekind Rd - Sutro St to McCarran Blvd

Suburban Collector Major - Provides connection between suburban residential or low density commercial / office land uses with higher speed arterial roadways.

- Examples: Mira Loma Dr - Boynton Ln to Veterans Pkwy

Suburban Collector Minor - These small regional roads provide connections between suburban residential neighborhoods and higher speed roadways.

- Examples: Silver Lake Rd - Red Rock Rd to Stead Blvd

Rural Collector - Connecting rural neighborhoods with higher speed roadways like rural arterials. Typically surrounded by low-density residential land uses.

- Examples: W. Calle De La Plata - Pyramid Hwy to Eagle Canyon Dr

Map 2.1 on the following page shows the typology for each regional roadway as defined above. **Tables 2.2** and **2.3** present information about the five arterial typologies and five collector typologies in terms of their characteristics and existing infrastructure. It includes details such as the average right-of-way (ROW) width, typical number of lanes, average annual daily traffic (AADT) ranges, posted speed limits.

As shown in these tables, Major Urban Arterials typically have wider right-of-ways compared to rural or suburban roads, with a typical range of 129 to 88 feet. Arterials typically have posted speed limits between 35 – 45 miles per hours (mph); minor arterials in the urban environment generally have lower speed limits of 30 mph.

Table 2.2 Regional Roadway Typology Characteristics (Arterials)

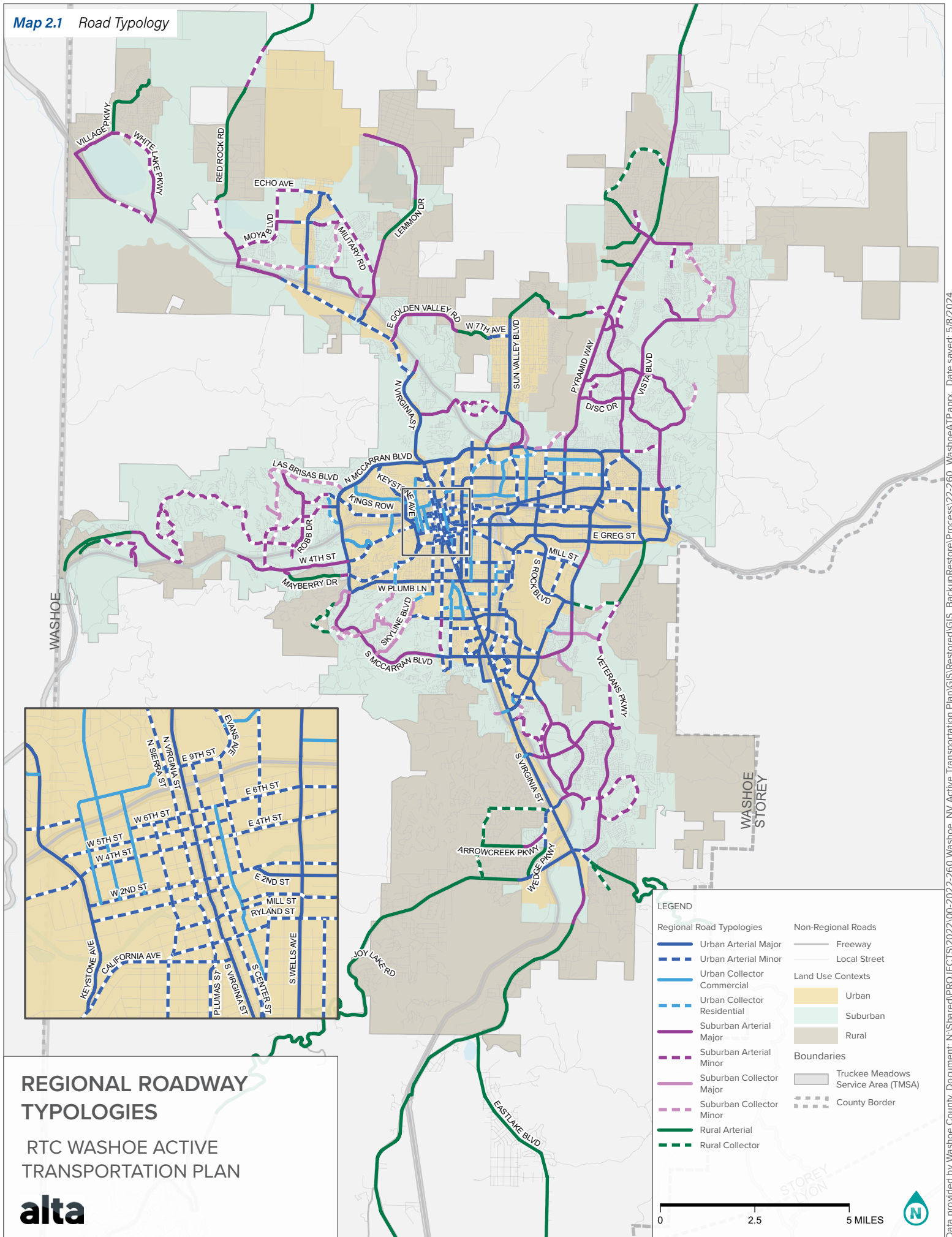
Regional Typology (Arterials)	Average Right of Way	Average of Posted Speed	Typical AADT Range (2019) ¹	Average Number of Road Lanes
Urban Arterial Major	129	35 - 45	18,000 - 31,500	4 - 6
Urban Arterial Minor	88	30	6,600 - 14,000	3 - 4
Suburban Arterial Major	135	40	15,500 - 50,000	4 - 5
Suburban Arterial Minor	71	35	6,750 - 13,350	3 - 4
Rural Arterial	115	40	7,000 - 18,750	2 - 4

Table 2.3 Regional Roadway Typology Characteristics (Collectors)

Regional Typology (Collectors)	Average Right of Way	Average of Posted Speed	Typical AADT Range (2019)	Average Number of Road Lanes
Urban Collector Commercial	88	25 - 30	4,000 - 7,500	2 - 3
Urban Collector Residential	65	25 - 30	4,000 - 7,000	2
Suburban Collector Major	100	30	6,500 - 20,500	2 - 3
Suburban Collector Minor	63	30	3,400 - 5,250	2
Rural Collector	78	30 - 35	3,875 - 5,900	2

¹ Data obtained from NDOT TRINA database.

Map 2.1 Road Typology



Walking & Rolling Network

Sidewalks and Crossings

The pedestrian network on regional roads is largely made up of sidewalks. The presence of a sidewalk can provide a safety benefit for pedestrians and access for those using a mobility scooter or similar device. The RTC acquired updated sidewalk location data using satellite imagery to identify the location and widths of sidewalks along regional roads and marked crossing locations. [Tables 2.4 and 2.5](#) highlight the results of this analysis. In the urban context, sidewalk coverage on both sides of the road may be intermittent as development occurs and fills in existing gaps in the sidewalk

network. Suburban arterials, both major and minor, typically have a sidewalk on one side of the street where rural arterials typically lack a fully connected sidewalk on either side of the street. Urban roads tend to have more frequent marked crossing opportunities as block lengths are typically shorter in denser areas like downtown Reno or Midtown. Suburban roadways typically have marked crosswalks every third to half of a mile. With a lower overall demand for pedestrian crossings in the rural context, marked crosswalks are less frequent than compared to the suburban and urban contexts.

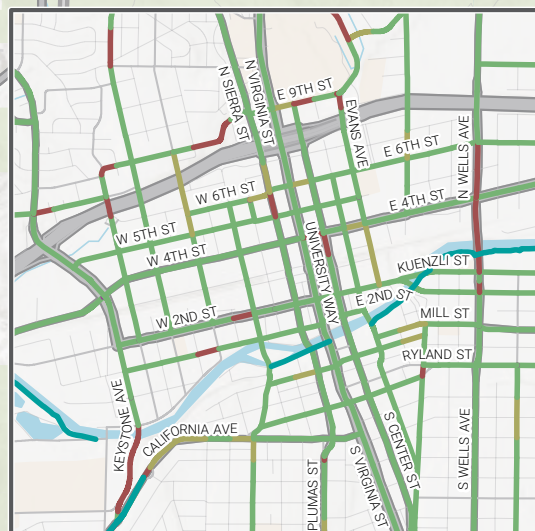
Table 2.4 Sidewalk Presence and Marked Crosswalks by Typology (Arterials)

Regional Typology (Arterials)	Average Number of Sidewalks along Roadway Segment	Average Distances Between Marked Crosswalks (Ft)	Average Distances Between Marked Crosswalks (Miles)
Urban Arterial Major	1.3	1,381	0.26
Urban Arterial Minor	1.6	935	0.18
Suburban Arterial Major	1.0	2,591	0.49
Suburban Arterial Minor	1.0	1,676	0.32
Rural Arterial	0.3	9,746	1.85

Table 2.5 Sidewalk Presence and Marked Crosswalks by Typology (Collectors)

Regional Typology (Arterials)	Average Number of Sidewalks along Roadway Segment	Average Distances Between Marked Crosswalks (Ft)	Average Distances Between Marked Crosswalks (Miles)
Urban Collector Commercial	1.8	770	0.15
Urban Collector Residential	1.4	984	0.19
Suburban Collector Major	1.3	1,598	0.30
Suburban Collector Minor	1.1	1,750	0.33
Rural Collector	0.8	4,104	0.78

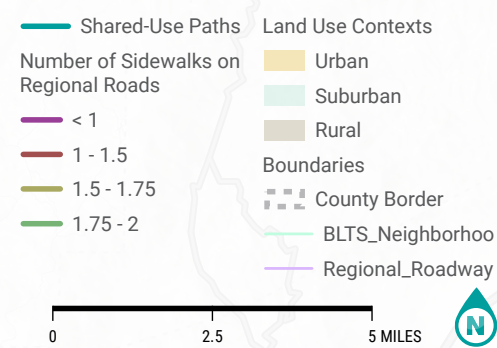
Map 2.2 Sidewalk Coverage



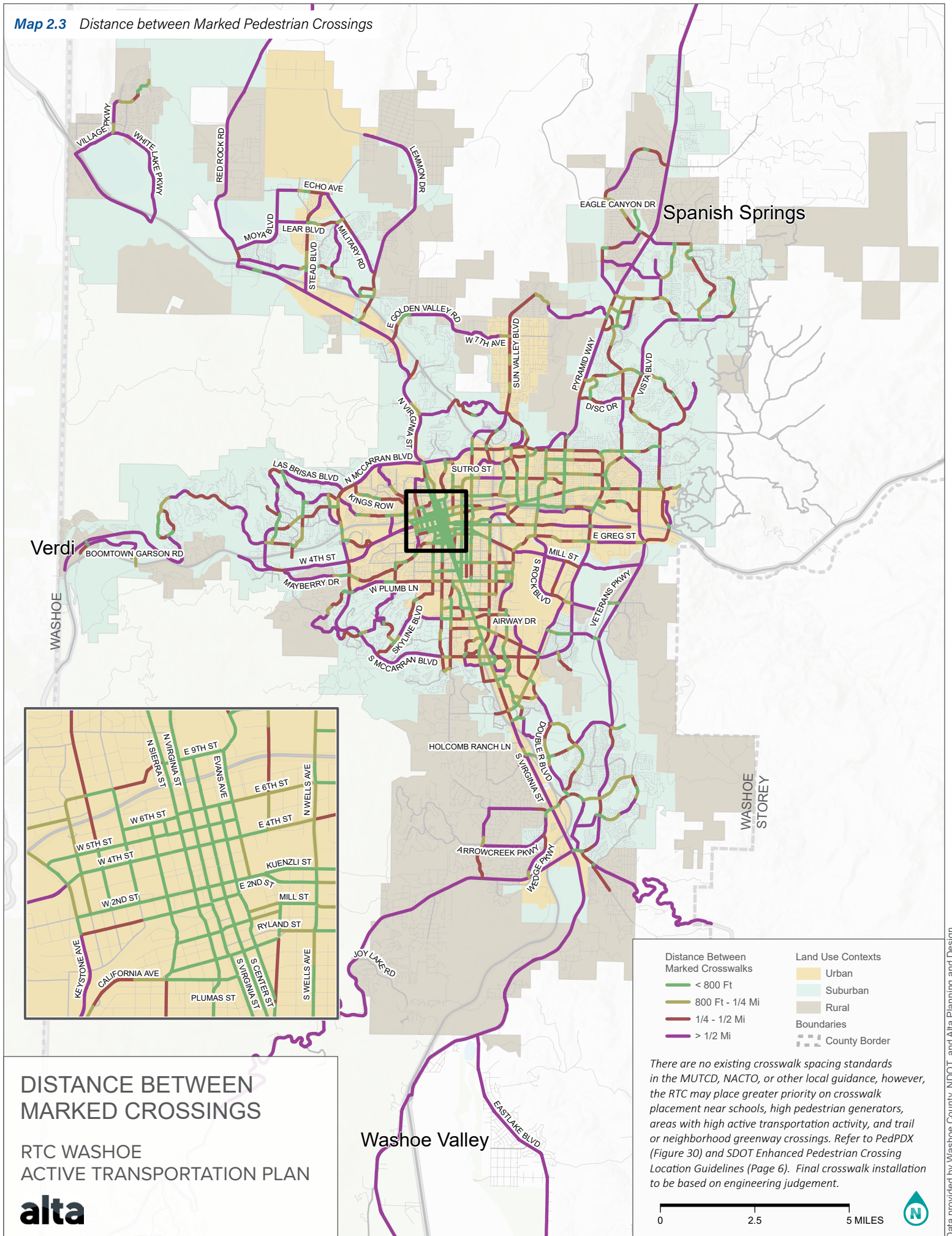
NUMBER OF SIDEWALKS ALONG ROADWAY SEGMENT

RTC WASHOE ACTIVE TRANSPORTATION PLAN

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Map 2.3 Distance between Marked Pedestrian Crossings



DISTANCE BETWEEN MARKED CROSSINGS

RTC WASHOE
ACTIVE TRANSPORTATION PLAN

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Bicycle Network

Bicycle Facilities

This review examines the current state of bicycle facilities across urban, suburban, and rural areas. It highlights key findings and connects them to the network analysis section (refer to [Chapter 4](#) Network Analysis section for details on high-stress areas divided by high-speed roadways). Urban and Suburban arterials tend to have a bicycle facility, which is typically a standard bicycle lane. In the rural area, arterials typically lack a bicycle facility compared to collectors which typically have a bicycle facility.

TYPES OF BICYCLE FACILITIES (DEFINITIONS):

- **Separated Bikeway:** A dedicated path for bicyclists, physically separated from traffic by a barrier. May also be referred to as cycle track or protected bike lane.
- **Shared-Use Path:** A pathway for pedestrians, bicyclists, and others, separate from motorized traffic including making connections outside of the right of way (example: the Truckee River Path).
- **Bike Lane:** A dedicated space for cyclists on the roadway, marked by pavement markings, which may be accompanied by additional signage. Bike lanes follow the same direction as motor vehicle traffic.

- **Shared Lane Markings:** Markings indicating shared-use of a lane by bicycles and motor vehicles including “sharrows”, signed bicycle routes, and bike / bus lanes. They improve cyclist visibility to varying degrees but do not provide dedicated space for bicyclists.

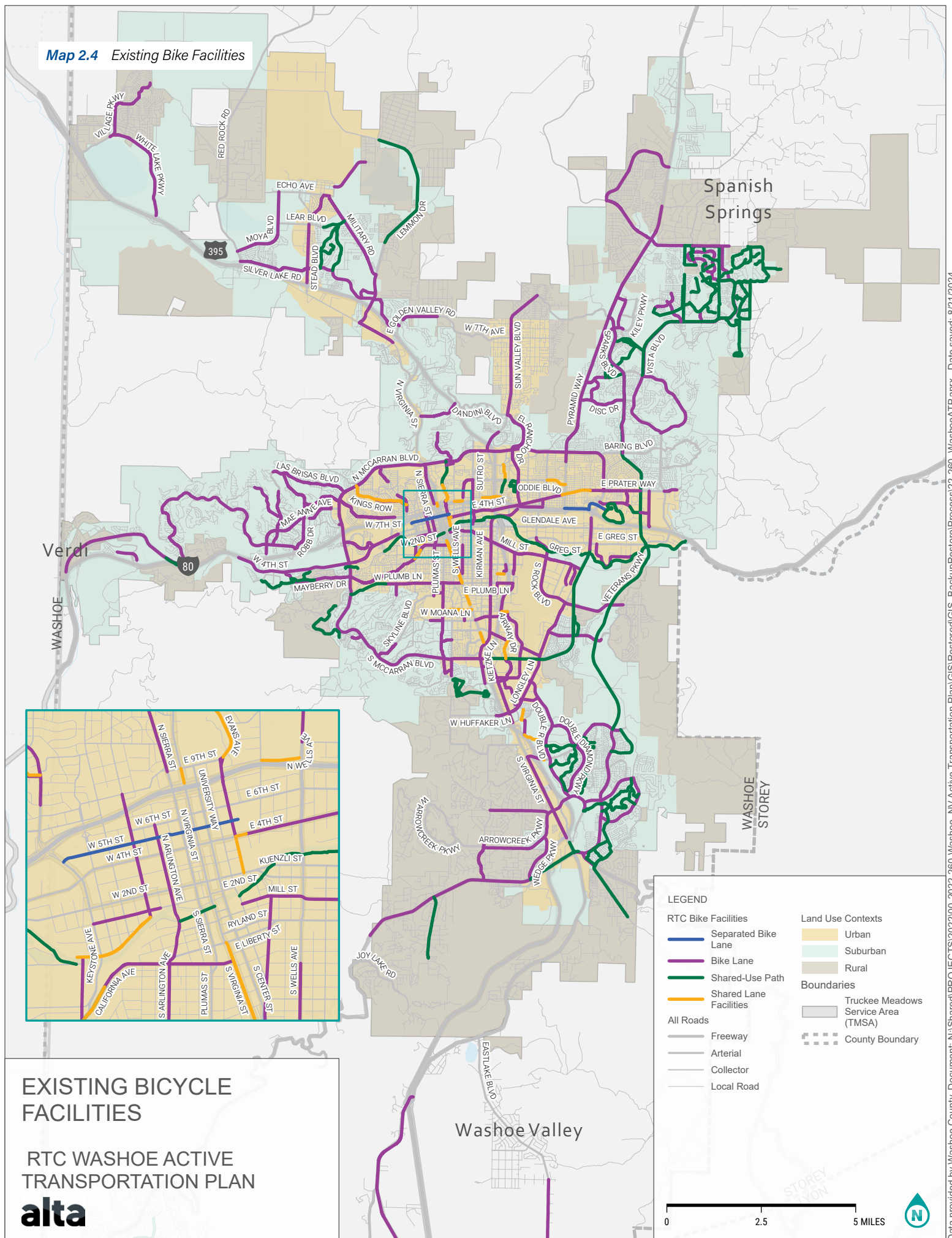
[Table 2.6](#) highlights the bicycle facilities on regional roads within each of land use context. As shown below, the significant majority (84%) of bicycle facilities on regional roadways are bike lanes with approximately 10% of the total facilities being either shared-use paths or separated bikeways.

The urban context has the largest percentage of the existing bicycle network with a total of 144 miles which includes 18 miles of shared-use paths and approximately 2 miles of separated bikeway. In the suburban area, there are a total of 110 miles of bicycle facilities which includes a total of seven miles of shared-use paths. The rural area includes a total of 63 miles of bicycle facilities with 59 miles of bike lanes and 4 miles of shared-use paths. Existing bicycle facilities are shown in [Map 2.4](#).

Table 2.6 Sidewalk Presence and Marked Crosswalks by Typology (Collectors)

Regional Typology (Arterials)	Bike Lane		Shared-Use Path		Separated Bikeway		Shared Lane Markings		Total By Land Use Context	
	Miles	% of total	Miles	% of total	Miles	% of total	Miles	% of total	Miles	% of total
Urban	106	33%	18	6%	2	1%	18	6%	144	45%
Suburban	101	32%	7	2%	0	0%	2	0%	110	35%
Rural	59	19%	4	1%	0	0%	0	0%	63	20%
Total by Facility Type	266	84%	29	9%	2	1%	20	6%	316	100%

Map 2.4 Existing Bike Facilities



Facility Coverage by Roadway Typology

Comparing the existing bicycle facility locations with the roadway typologies, highlights the total percentage of each roadway typology which includes a bicycle facility. [Table 2.7 and 2.8](#) highlight the typologies with the greatest percentage of bicycle facility coverage are the Urban Arterial Major and Rural Collectors. Outside of major urban arterials, no other typology within the urban context has a majority of lane miles which include a bicycle facility. In the suburban

context, major suburban arterials have the greatest coverage of bicycle facilities with two-thirds of lane miles including a bicycle facility; a small majority of suburban collector minor roadways also include a bicycle facility. While these typologies provide a bicycle facility, the facility provided is often a standard bicycle lane which does not provide the level of separation from vehicle traffic desired by the 'interested but concerned' portion of bicyclists.

Table 2.7 Regional Typology Bicycle Facility Coverage (Arterials)

Regional Typology (Arterials)	Average Bicycle Facility Coverage (0 - 100%)
Urban Arterial Major	67%
Urban Arterial Minor	39%
Suburban Arterial Major	66%
Suburban Arterial Minor	41%
Rural Arterial	41%

Table 2.8 Regional Typology Bicycle Facility Coverage (Collectors)

Regional Typology (Arterials)	Average Bicycle Facility Coverage (0 - 100%)
Urban Collector Commercial	36%
Urban Collector Residential	41%
Suburban Collector Major	48%
Suburban Collector Minor	55%
Rural Collector	73%



Bicyclist traveling in bike lane on S. McCarran Blvd.

Transit Network

This section provides an overview of the existing transit services offered by the Regional Transportation Commission (RTC) of Washoe County, with a focus on identifying opportunities to support transit service within increased bicycle and pedestrian accommodations. Currently, the RTC provides a range of transit services including fixed-route transit (RTC RIDE & RTC RAPID), FlexRide, Vanpool, and ADA services known as RTC ACCESS, shown in [Map 2.5](#).

SYSTEM STRUCTURE

RTC Fixed Routes (RIDE, RAPID, and Regional Connector):

The RTC Washoe operates a comprehensive fixed-route system consisting of:

- **RTC RIDE (22 Local Bus Routes):** These routes make up the RTC RIDE network and provide frequent service within urban and suburban areas.
- **RTC RAPID (2 Bus Rapid Transit (BRT) Routes):** The RTC RAPID routes include the Virginia Line and Lincoln Line which offer faster and more limited-stop service on high-demand corridors.
- **RTC Regional Connector (1 Regional Route):** The RTC Regional Connector links Washoe County with the state capitol, Carson City, to the south.

The system is anchored by major transit centers, including 4th Street Station, Centennial Plaza, and Meadowood Mall. These hubs facilitate transfers between routes and offer connections to other transportation options. Local bus routes typically operate on regular headways between 30 and 60 minutes, ensuring a predictable service frequency. All RTC RIDE, RAPID, and Regional Connector vehicles include bike racks on the front of the bus which can accommodate between two and three bicycles at a time.



RTC RIDE bus with double bicycle racks which enable linked bicycle and transit trips.

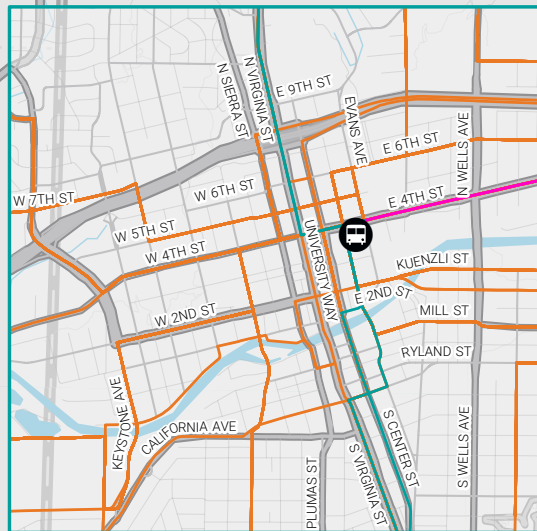
SERVICE RIDERSHIP AND TRENDS

Top Boarding Locations: Centennial Plaza, major retail centers, and grocery stores were the most frequent boarding locations, indicating a strong connection between transit use and daily errands.

Service Trends:

- **Fixed-Route Ridership:** Fixed-route ridership decreased by 3.9% between 2010 and 2019. Total weekday ridership from 2021 is shown in [Map 2.6](#).
- **Post-pandemic weekday ridership in 2021:** Larger afternoon peak compared to pre-pandemic, indicating a shift in travel patterns.
- **Strong Saturday and Sunday ridership:** Suggests the transit system is not solely focused on commuter trips.
- **Concentration in Urban Core:** Ridership on RTC Fixed-Routes is largely concentrated within the urban area which includes three major transit hubs (4th Street Station, Centennial Plaza, and Meadowood Mall Transfer Station) as well as major activity generators.

Map 2.5 RTC Transit Services



RTC TRANSIT SERVICES

RTC WASHOE ACTIVE TRANSPORTATION PLAN



LEGEND

Fixed Route Transit (2023)

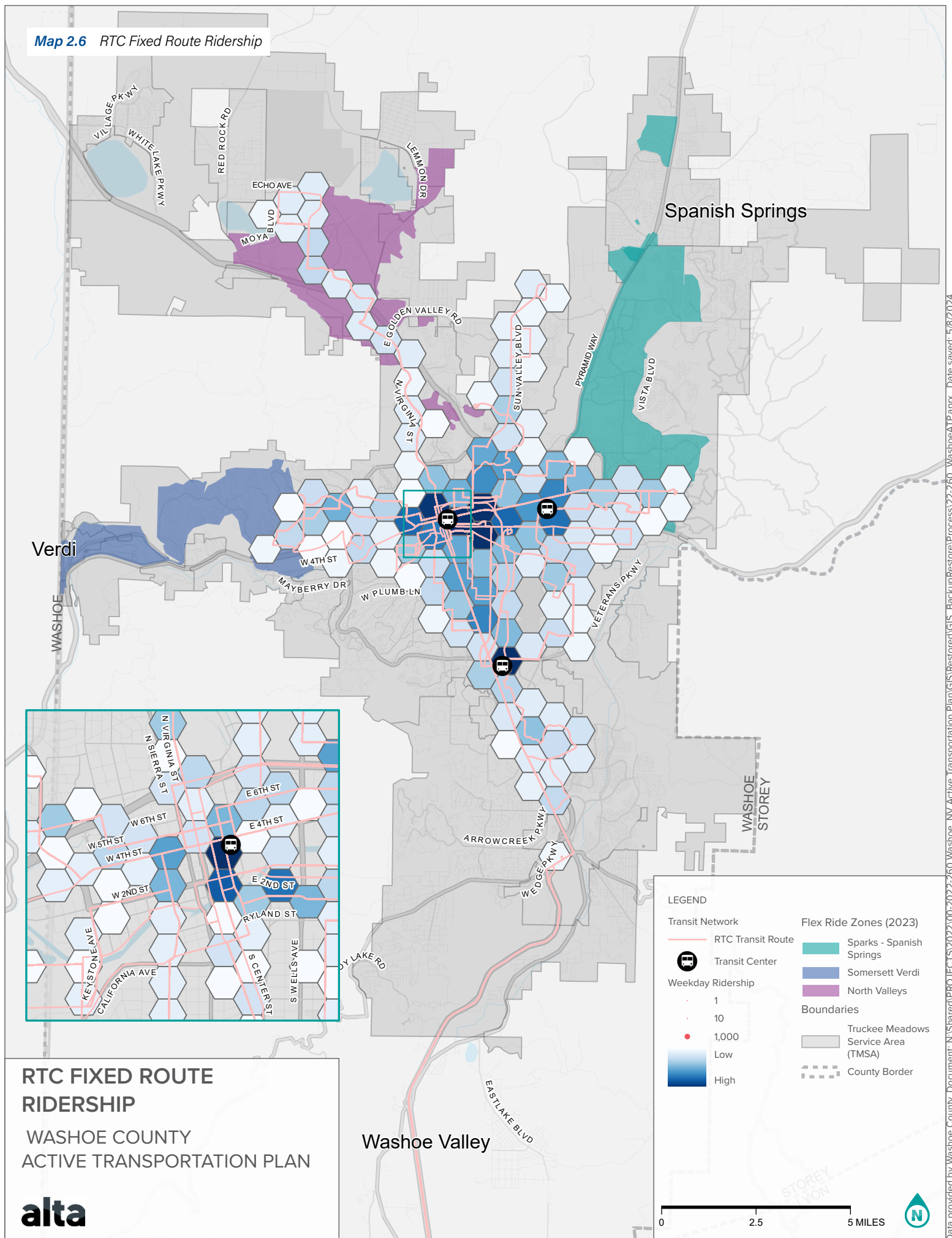
- RAPID Lincoln Line
- RAPID Virginia Line
- Fixed-Route Transit

Flex Ride Zones (2023)

- North Valleys
- Somerset Verdi
- Sparks - Spanish Springs
- Transit Center



Map 2.6 *RTC Fixed Route Ridership*



SPECIALIZED SERVICES

Beyond the core fixed-route system, the RTC offers additional transportation options:

RTC FlexRIDE Microtransit:

A demand-responsive service operating in designated zones, offering flexible point-to-point connections. While current ridership represents a small portion (1.4%) of total boardings, it provides an alternative for those with limited access to traditional fixed routes. In 2021, this service averaged 256 weekly boardings.

Geographic Distribution:

- Sparks/Spanish Springs Zone: This zone accounted for 53% of the total FlexRide boardings. This highlights the success of this zone which was the first to be implemented by the RTC.
- North Valleys Zone: This zone accounts for 46% of total FlexRide boardings, representing ridership in the northern suburbs.
- Verdi/Somerset Zone: This relatively new zone accounts for 2% of total FlexRide boardings which is expected to increase as the service becomes more familiar to residents in this area.

RTC ACCESS (ADA Paratransit):

ACCESS paratransit trips grew by 5.6% during the same period, suggesting an increased demand for services catering to individuals with disabilities and the aging population. Top boarding locations for paratransit riders include facilities for adult day health care, vocational services, and dialysis centers.

RTC Smart Trips Vanpool:

This program offers a vanpool option for commuters, experiencing significant growth (158%) between 2017 and 2021. Vanpools currently account for 9% of total boardings, highlighting their value as a cost-effective and convenient mode for reaching major employment centers.

CHALLENGES AND OPPORTUNITIES:

An analysis of ridership data reveals a significant concentration of service and ridership along urban arterial roadways. This is particularly evident on the Virginia Street corridor, accounting for 20% of total boardings. While the concentration of transit resources on urban arterials offers more efficient transit service, it's important to consider potential issues for active transportation such as limited sidewalk connections to bus stops, higher rates of crashes on arterial roadways, and a greater desire for separation between active modes and vehicles when making intermodal linkages (i.e. accessing transit with a bike or on foot). By providing sidewalk connections for pedestrians and more robust facilities with greater separation, the RTC may increase the potential for bicycle to bus trips for a greater portion of the population and enhance first / last mile connections for people walking or using a wheelchair.

Program & Policy Network

This section provides an overview of the existing programs and policies which are applicable within Washoe County and help to improve the walking and bicycling networks in the Truckee Meadows. This is not intended to be an exhaustive list of all bicycle and pedestrian supportive programs but a highlight of the major policies and available programs which the RTC may use or leverage to improve active transportation in the Truckee Meadows moving forward. This section is intended to provide a broad understanding of the program and policy landscape for active transportation planning and design within the Truckee Meadows. Links are provided to outside resources and programs where available.

Washoe County Safe Routes to School Program

This program aims to increase the number of students safely walking, biking, and using alternative transportation to school, while reducing car traffic around schools. A collaborative committee made up of representatives from various departments and organizations oversees the program. This includes city traffic engineers, planners, police departments, the school district, and even local bike advocacy groups. Overall, SRTS in Washoe County provides a framework and collaborative effort to create a safer and healthier way for students to get to school.

Bicycle, Pedestrian, and Wheelchair Data Collection Program

This program has been collecting bicycle, pedestrian, and wheelchair count data since 2013 to monitor changes in mode behavior at locations throughout the Truckee Meadows and along key corridors including South Virginia Street and the 4th / Prater corridor. This data collection method has evolved from manual video counts to using cutting-edge LiDAR² sensors in partnership with researchers at the University of Nevada, Reno. Going forward, the RTC will consider enhancements to the methods of collection and strategies to leverage the data to more directly inform planning and monitoring of trends in active transportation usage throughout the Truckee Meadows.

RTC Complete Streets Plan & Policy

RTC's Complete Streets Master Plan, adopted in 2016, aims to transform streets into inclusive spaces accessible to all community members. The plan, informed by community input, proposes various enhancements, including bike lanes, wider sidewalks, and improved transit options. This initiative builds on RTC's ongoing efforts since 2008 to create safer streets, with notable projects like the Virginia Street Corridor and the Southeast Connector contributing to improved safety and accessibility. The RTC Complete Street Policy contained in various sections of the plan may benefit from consolidation into a single policy document for clarity.

² Light Detection and Ranging (LiDAR)

City of Reno, Sparks, and Washoe County Traffic Calming Policies

The RTC does not maintain or provide funding for active transportation improvements on locally owned streets but has been supportive of traffic calming policies by the local jurisdictions. The City of Reno³, City of Sparks⁴, and Washoe County⁵ all have traffic calming policies provide local residents with a process to petition for an engineering study and traffic calming improvements if a need is identified and their neighbors are supportive. Despite slight variation between policies the underlying goal of providing responsive traffic engineering and traffic calming elements is the same across all three. These policies will provide an avenue for creating linkages to regional roadway improvements through local neighborhood streets during the NNP process.

NDOT Complete Streets Policy

The NDOT Complete Streets policy, established in 2017, serves as a guiding framework for the development and enhancement of transportation facilities across Nevada. It directs the integration of Complete Streets principles into the planning, design, construction, and operation of both new and existing transportation infrastructure. This policy underscores NDOT's commitment to promoting safety, accessibility, and mobility for all users, aligning with the evolving needs of communities and travelers since its implementation. This policy will be integral when working with NDOT on NDOT funded projects and those which are within or adjacent to NDOT rights of way.

Human Networks

Equity & Health Analysis

Transportation planning has historically prioritized project benefits without critically assessing their equitable distribution. A focus on equity aims to rectify this by ensuring transportation investments benefit all community members. This plan includes a transportation-focused equity analysis to measure equity through various data points encompassing metrics that are related to or impacted by active transportation usage such as health outcomes and socioeconomic factors like car ownership and environmental impact.

As shown in *Figure 2.1*, each variable was assigned a percentile rank relative to the entire study area, then multiplied by a predetermined weight to account for its relative importance. These weighted values are then summed to create a final composite index for the entire study area. This index is mapped in *Map 2.7* to highlight areas with the greatest transportation-equity needs.

The areas in the top 20% of rankings represent the highest equity need areas which include Downtown Reno, the area between Virginia Street and the Reno Tahoe Airport, Sun Valley, Central Sparks, and the area surrounding the Lemmon Drive and N Virginia Street intersection. These areas have a substantially higher level of need compared to Washoe County as a whole including:

Median Household Income:

- \$71,301 (Washoe County) vs \$38,319 (High Equity Need Areas)

People living at 200% the poverty level or below

- 30% (Washoe County) vs 57% (High Equity Need Areas)

³ City of Reno Traffic Calming Policy: <https://www.reno.gov/home/showpublisheddocument/28795/635198081788730000>

⁴ City of Sparks Traffic Calming Guidelines: https://www.cityofsparks.us/Document_Center/Department/Engineering%20Services/Transportation%20and%20Traffic%20Engineering/traffic-calming-guidelines.pdf

⁵ Washoe County Traffic Calming and Engineering Request Policy: https://www.washoecounty.gov/CABS/SS_CAB/2022/files/Washoe-County-Traffic-Calming-Traffic-Engineering-Request-Policy.pdf

Hispanic population

- 23% (Washoe County) vs 45% (High Equity Need Areas)

Housing Ownership vs. Renting

- 60% Owner vs 40% Renter (Washoe County)
- 28% Owner vs 72% Renter (High Equity Areas)

People reporting a 'Lack of physical activity'

- 21% (Washoe County) vs. 29% (High Equity Need Areas)

People lacking access to a vehicle

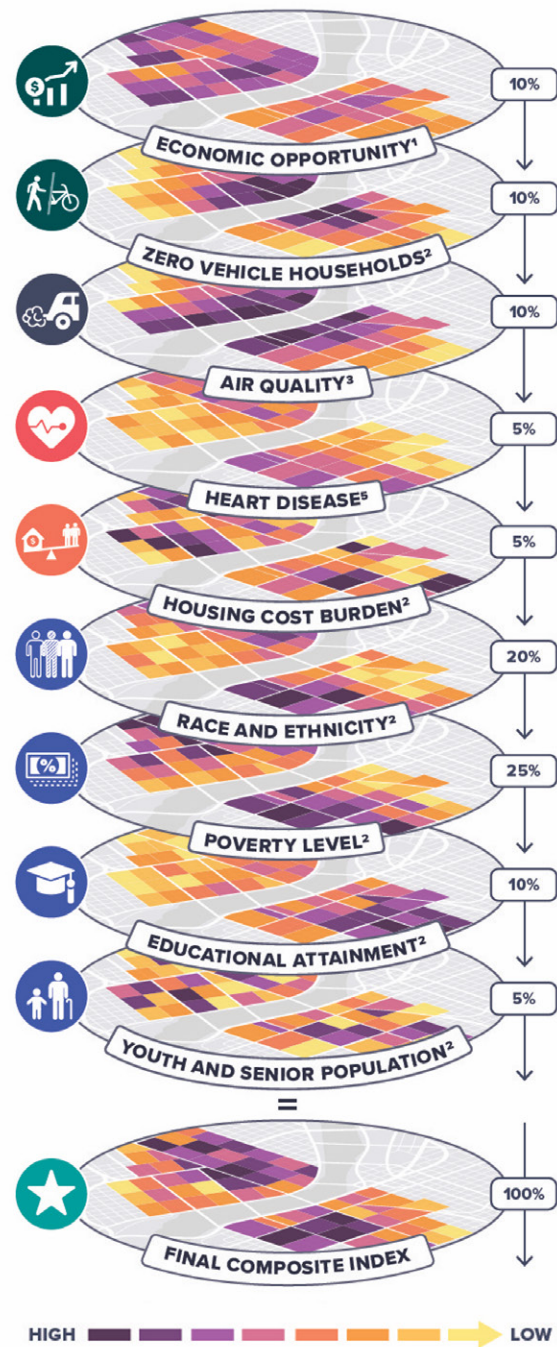
- 7% (Washoe County) vs 17% (High Equity Need Areas)

This data suggests that residents in these areas are more likely to be low-income, transit-dependent, and potentially experiencing health disparities due to limited mobility options. Limited access to transportation can further exacerbate these challenges by hindering access to jobs, healthcare, and education.

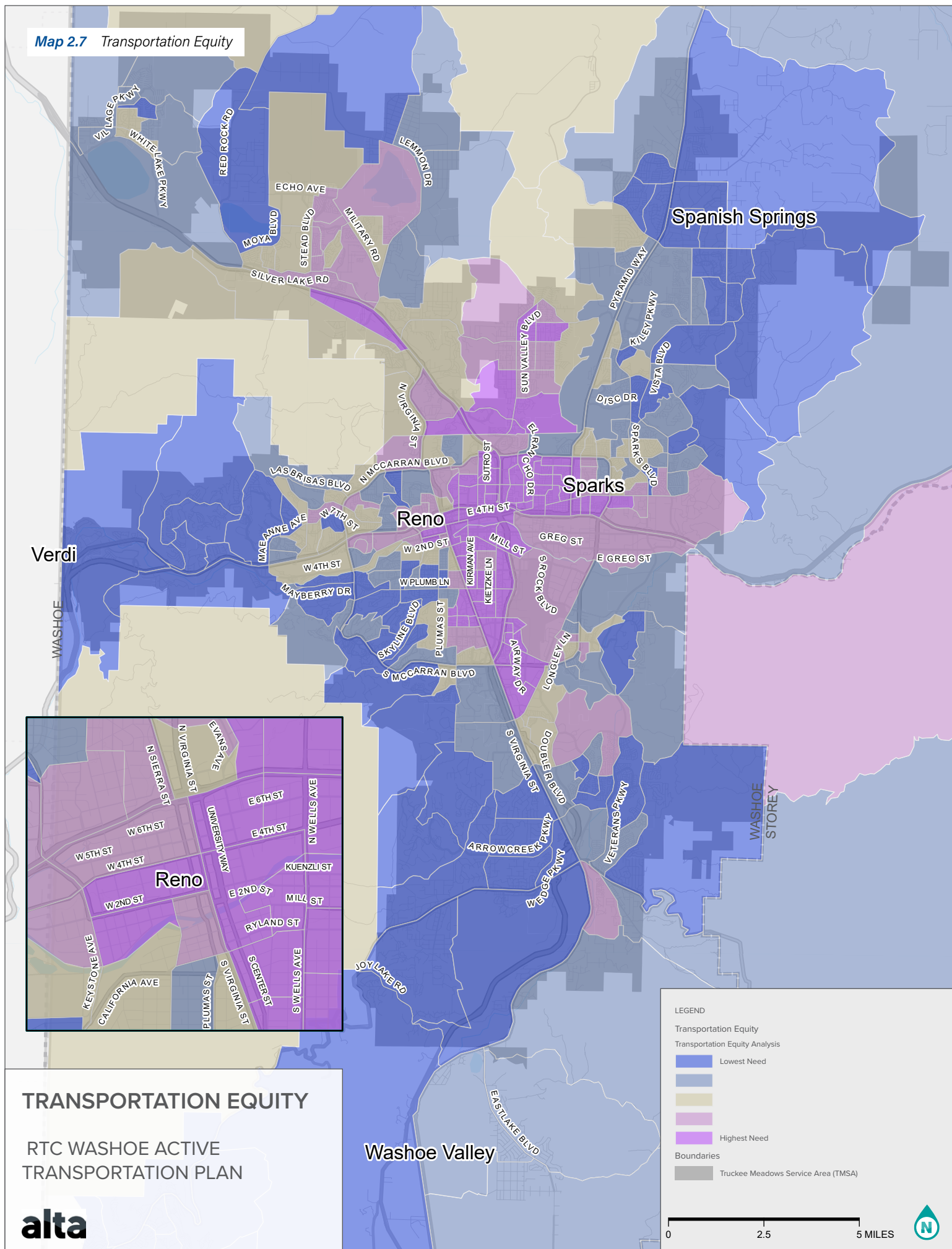
Beyond the active transportation equity analysis, this plan incorporates the latest federal-level equity analysis called "Justice 40". This tool, developed by the US Department of Transportation, prioritizes investments towards historically underserved communities based on a broader assortment of data metrics. The Justice 40 data will be an important factor in determining where federal transportation dollars are allocated going forward.

[Map 2.8](#) highlights the intersection between the Justice 40 identified areas and the previously identified high equity need areas. This reinforces the commitment to ensuring that transportation benefits reach all community members, not just those who have historically enjoyed them.

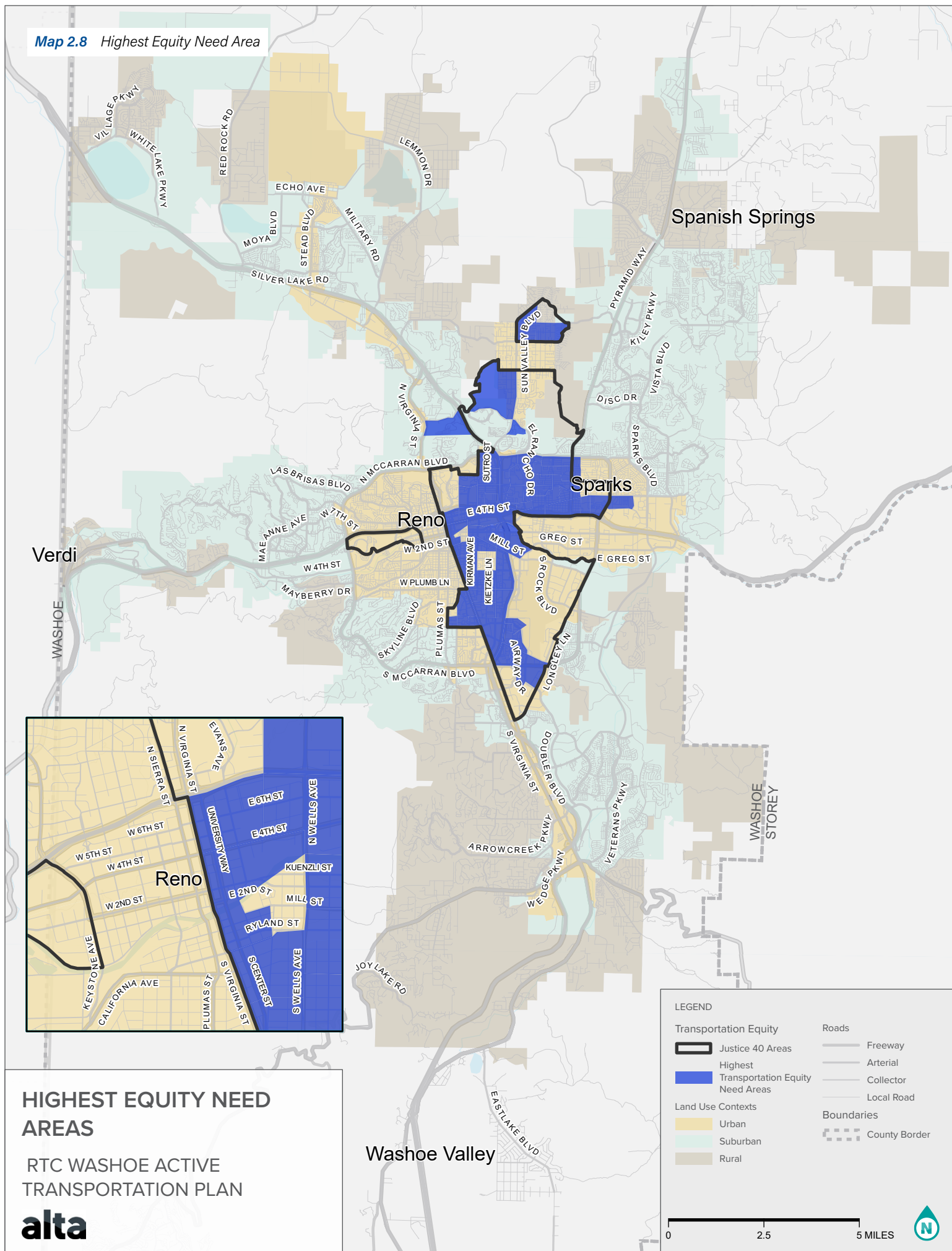
Figure 2.1 Equity Analysis Variables



Map 2.7 Transportation Equity



Map 2.8 *Highest Equity Need Area*



Safety

This study included an analysis of available crash data from 2016 – 2020. As traffic patterns are returning to pre-COVID levels, this analysis remains a key indication of where safety may be improved and helps identify overarching trends related to which types of roadways present the greatest safety risk for people walking, biking, and rolling. As shown in [Table 2.9](#) below, between 2016 and 2020, a total of 35,766 crashes occurred within Washoe County including 13,122 injury crashes and 205 fatal crashes. Pedestrians represent 1.44% of total crashes (516 crashes) but are over represented in the number of fatal crashes with 45 total fatalities which accounts for nearly 22% of all fatal crashes across the county during this time period. Over

the same period a total of 287 crashes involving bicyclists occurred with 257 of those resulting in an injury and 3 fatalities. The location of all pedestrian and bicycle crashes as well as their relationship to land use contexts (Urban, Suburban, and Rural) are shown in [Map 2.9](#) and [Map 2.10](#).

The urban context had the greatest portion of pedestrian and bicyclist involved crashes with 82% of pedestrian crashes and 80% of bicycle crashes occurring in the urban area (see [Tables 2.10](#) and [2.11](#) below). The suburban context accounted for nearly all of the remaining bicycle and pedestrian involved crashes where the rural environment accounted for between one and two percent of bicycle and

Table 2.9 Crash Severity Types and Totals

All Washoe County Crashes (2016 - 2020)		Pedestrian Crashes (2016 - 2020)		Bicyclist Crashes (2016 - 2020)	
Crash Severity	Total	Total	% All Crashes	Total	% All Crashes
Fatal Accident	205	45	21.95%	3	1.46%
Injury Accident	13,122	423	3.22%	257	1.96%
Property Damage Only	22,439	48	0.21%	27	0.12%
Total	35,766	516	1.44%	287	0.80%

Table 2.10 Pedestrian Crashes - Severity Types and Totals

	Fatal Crash	% of total	Injury Crash	% of total	Property Damage Only	% of total	Total	% of total
Urban	31	70%	353	84%	36	77%	420	82%
Suburban	10	23%	66	16%	7	15%	83	16%
Rural	3	7%	3	1%	4	9%	10	2%
Total	44	100%	422	100%	47	100%	513*	100%

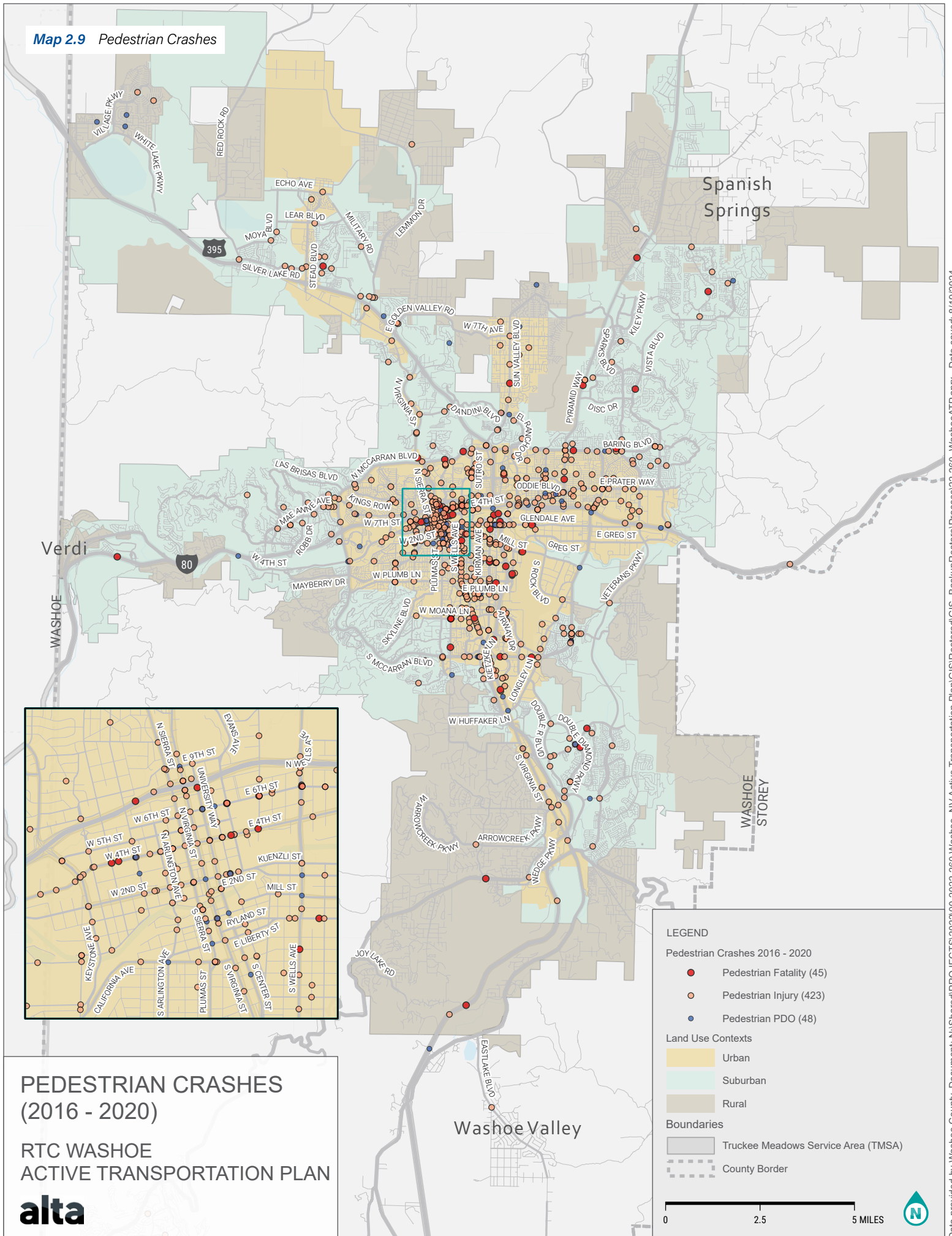
*Three pedestrian crashes occurred outside of the Truckee Meadows Service Area which is the area used for this analysis.

Table 2.11 Bicycle Crashes - Severity Types and Totals

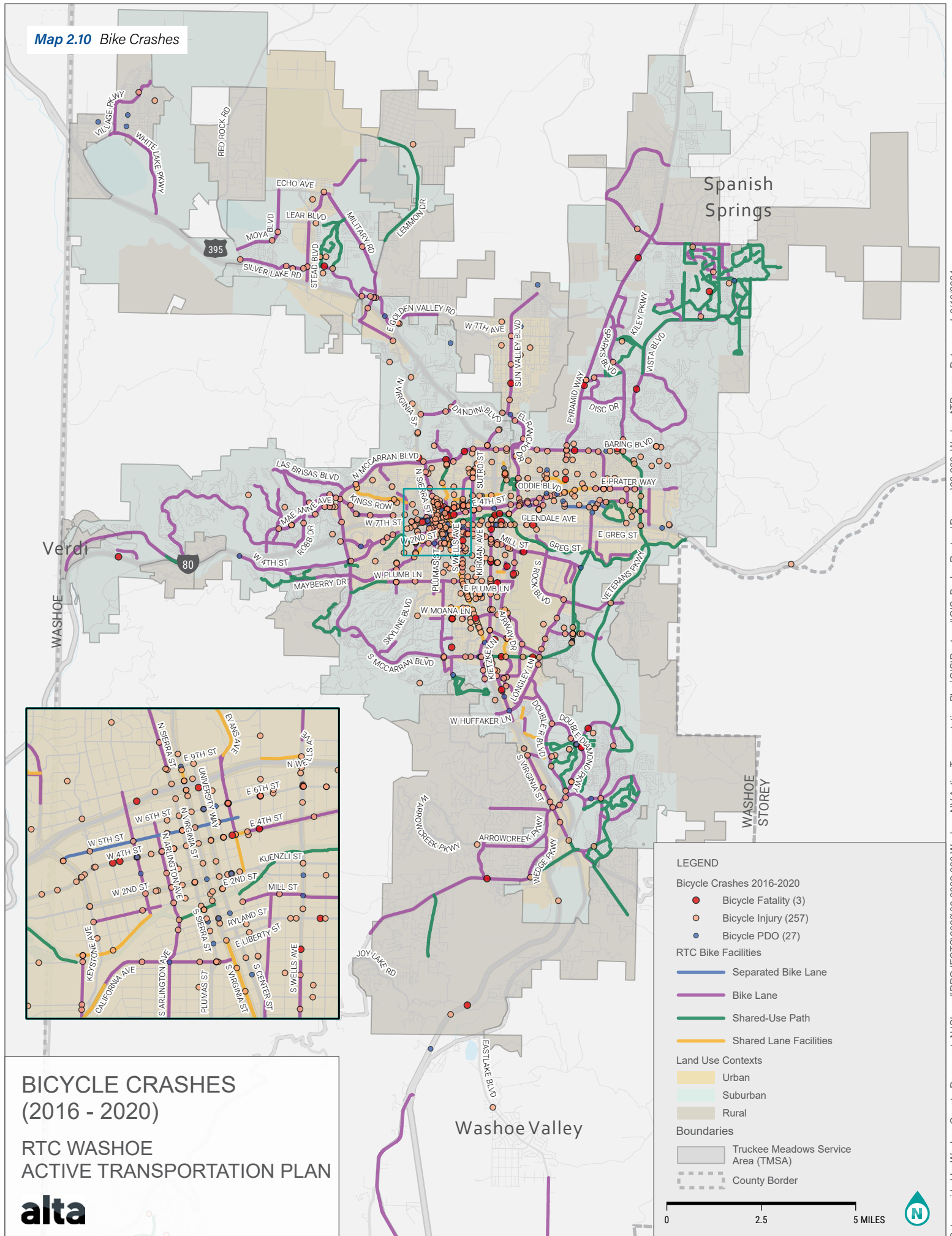
	Fatal Crash	% of total	Injury Crash	% of total	Property Damage Only	% of total	Total	% of total
Urban	2	67%	199	80%	22	81%	223	80%
Suburban	1	33%	48	19%	4	15%	53	19%
Rural	0	0%	3	1%	1	4%	4	1%
Total	3	100%	250	100%	27	100%	280*	100%

*Seven bicycle crashes occurred outside of the Truckee Meadows Service area which is the area used for this analysis.

Map 2.9 Pedestrian Crashes



Map 2.10 Bike Crashes



pedestrian crashes. This highlights the importance of focusing safety improvements for pedestrians and bicyclists within the urban environment in order to affect the greatest benefit to safety for active modes.

Analyzing the locations of crashes helps to get a better sense of areas for improvement within the roadway network. Based on the available data, arterial roadways accounted to 13% of the total roadway miles in Washoe County, however, 74% of bicycle crashes and 79% of pedestrian crashes occurred on arterial roads between 2016 and 2020. Half of the bicycle and pedestrian crashes during this time occurred within 250 feet of an intersection. The significant majority of crashes at intersections occurred at intersections with arterial roadways. A total of 77% of bicycle intersection crashes and 88% of pedestrian intersection crashes occurring at these locations. Roadway speed and volumes also played a role in the number of crashes for pedestrians and bicyclists. Medium-volume roadways which carry between 10,000 and 15,000 vehicles a day represent 2% of the total roadway network but accounted for 24% of bicycle crashes and 22% of pedestrian crashes between 2016 and 2020. Similarly, roadways with posted speed limits of 35 mph account for just 5% of the roadway network but have experienced 32% of all pedestrian crashes in Washoe County during the study period. Based on this analysis, arterial roadways and intersections, especially those with posted speeds of 35 mph and roadway volumes above 10,000 vehicles a day are leading areas of focus to improve safety for pedestrians and bicyclists across

the Truckee Meadows. Furthermore, bicycle and pedestrian crashes are concentrated in areas with high transportation equity needs. These areas, which represent approximately 34% of the the total population of Washoe County accounted for 54% of all pedestrian injury crashes (229 crashes) and 48% of all pedestrian fatalities (22 crashes) between 2016 and 2020. Across the same time period, 46% of all bicycle crashes occurred within these areas (133 crashes) including 45% of all bicycle injury crashes (117 crashes).

High Injury Network (HIN)

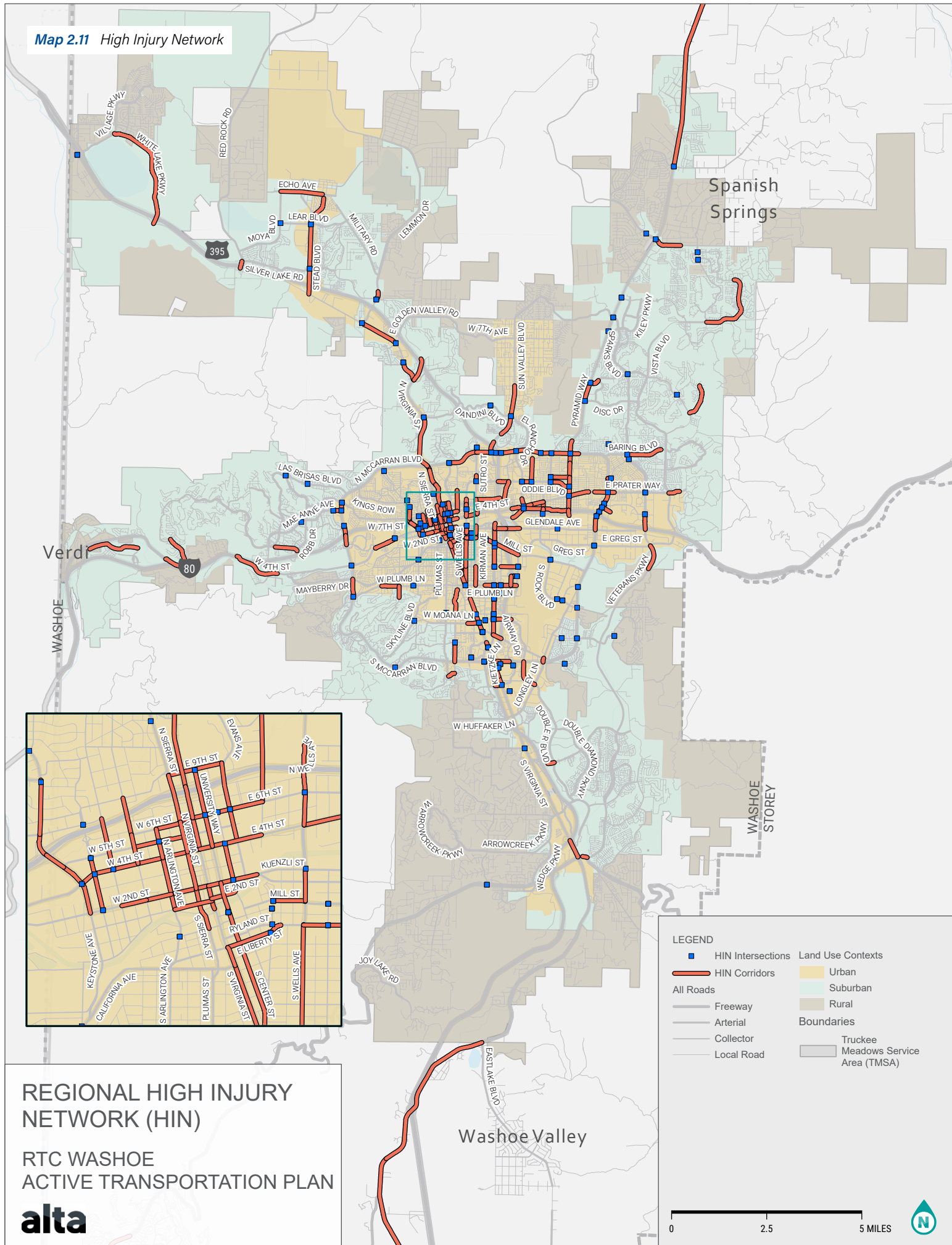
The RTC has conducted substantial analysis to identify roadways and intersections across the Truckee Meadows with the greatest safety needs as part of the 2022 Vision Zero Action Plan. Through this effort, the RTC developed a High-Injury Network (HIN) which identifies the top 25% of roadway corridors and intersections which have the highest crash rate, level of frequency, and crash severity across the county. This network, broken down in [Table 2.12](#) and shown in [Map 2.11](#), is largely concentrated within the urban context with 75% of the total HIN corridor miles and 72% of the HIN intersections . The suburban context accounted for 25% of HIN intersections and 30% of HIN corridors; the rural environment included 3% of HIN intersections.

The HIN network is largely concentrated within areas of high transportation equity with 45% of all HIN intersections and 64% of HIN corridors falling within these areas.

Table 2.12 HIN Intersections and Corridors by Land Use Tier

Land Use Context	HIN Intersections (Top 25%)	% of total	HIN Corridors (Top 25%)	% of total	HIN Corridor Miles	% of total
Urban	101	72%	43	70%	31.8	75%
Suburban	35	25%	18	30%	10.6	25%
Rural	4	3%	0	0%	0.0	0%
Total	140	100%	61	100%	42.4	100%

Map 2.11 *High Injury Network*



Summary of Where We Are Today

Arterial roadways and intersections present the greatest safety issue for pedestrians and bicyclists across the Truckee Meadows. These facilities include high levels of vehicle traffic moving at rates of speed often significantly above those of people walking and biking which creates a greater potential for severe injury and death when they experience a crash with a vehicle.

As shown in the data, urban arterials have accounted for the largest portion of pedestrian and bicycle crashes and also provide the greatest opportunity for improvements. Focusing investments in the areas identified with the highest equity needs will help target communities which have the greatest need for active transportation improvements, and include an over-representation of bicycle and pedestrian crashes and proportion of the HIN network.



Pedestrians and bicyclists across the spectrum of ages crossing in the crosswalk at Double Diamond Pkwy and South Meadows Pkwy.

3

Community Engagement



COMMUNITY ENGAGEMENT

This section details the comprehensive outreach strategy undertaken to actively engage the Truckee Meadows community in the development of the Walk & Roll Truckee Meadows Plan. The plan prioritized open communication and ensured diverse participation throughout the planning process through a multifaceted outreach approach including in-person and virtual meetings as well as resources available online throughout the life of the plan.

This section highlights the specific meeting locations, dates, and times and provides a summary of feedback gathered from across these efforts.

What We Heard

Residents in the Truckee Meadows are interested in walking and bicycling more often in their daily lives but have concerns about their safety while doing so on the existing facilities. From survey responses to individual feedback gathered during the community meetings, most residents have a difficult time when traveling between neighborhoods while walking or biking. This can be attributed to larger arterial level roadways which provide space for vehicles to travel quickly but can be stressful environments for people walking or biking.



Disability & Senior Focused in-person meeting at the Washoe County Senior Center.

Engagement Opportunities

The project team engaged with residents during this project to develop the plan vision, goals, and develop a regional understanding of active transportation needs and concerns of residents across the region. The first phase comprised the majority of direct engagement with residents who were instrumental in establishing the overarching vision for the plan and providing their experience and knowledge with the local active transportation network. The second phase of engagement provided the community an opportunity to review the draft plan and provide input on the new NNP process. During both phases of outreach the RTC provided project information and resources through the project webpage as well as social media outlets. Each phase and the feedback received are detailed in the following sections.

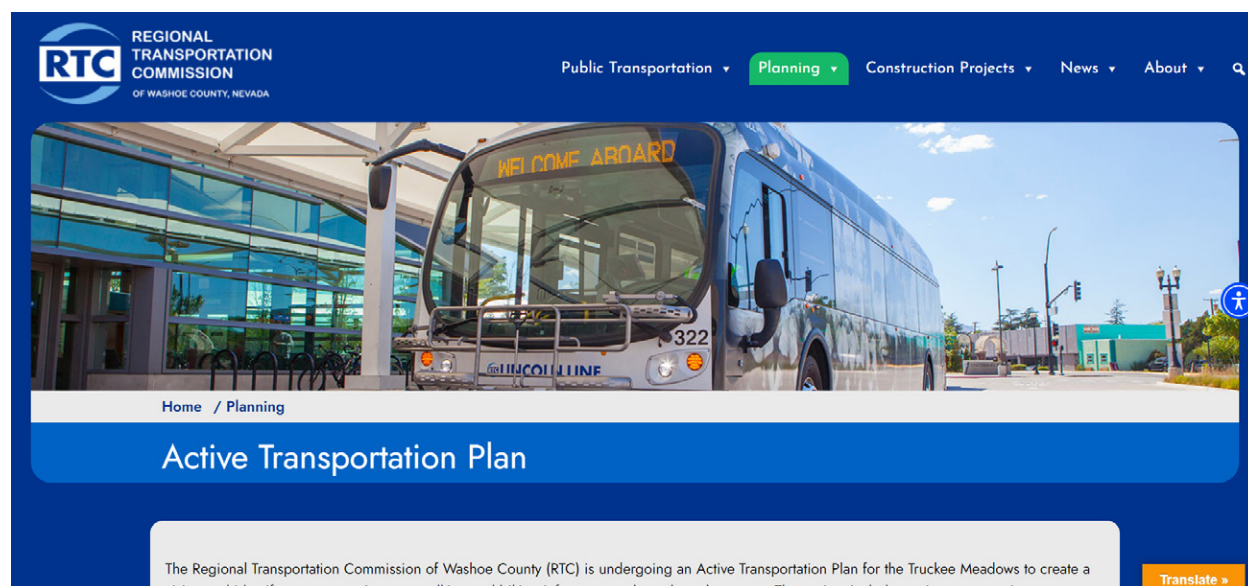
PROJECT WEBPAGE & TEAM EMAIL:

The RTC hosted a project webpage throughout the life of this project to provide key information and links to resources such as recorded public meetings and materials as well as the interactive online mapping tool and survey for specific input. Residents were able to view the recorded

community-wide public meeting in English and Spanish through the webpage and were also provided with the project team email address (WalkAndRoll@rtcwashoe.com) which notified all project team members and allowed for direct dialogue between the project team and community members. The project webpage, shown in [Figure 3.1](#), will continue to provide information on NNP efforts and can be accessed through the RTC Washoe webpage¹.

The major engagement effort for this plan occurred between May and August 2023 with a focus on listening to the community and soliciting feedback on existing conditions, key destinations, and community concerns. The RTC worked with members of the public as well as community and agency stakeholders to develop the vision and goals for this plan. During the second phase of engagement during spring of 2024, the project team presented the Neighborhood Network Area Planning framework and Regional Street Typologies Guide for feedback and input.

Figure 3.1 Project Webpage



¹ Active Transportation Plan Webpage: <https://rtcwashoe.com/planning/active-transportation-plan/>

PUBLIC ENGAGEMENT OPPORTUNITIES:

In this phase, the RTC provided the community with both virtual and in-person engagement opportunities:

Community Wide Active Transportation Survey - (May - June)

- The RTC provided the public with a community wide survey which included questions regarding their typical mode of travel, preferences for different facilities, as well as an interactive mapping component which allowed users to pinpoint locations where they had concerns as well as areas with preferred facilities. A total of 442 community wide surveys were submitted through this online survey. Findings from this survey are summarized in the section below.

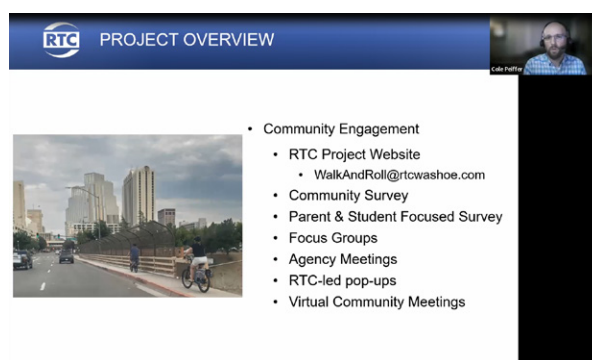
WCSD Focused Active Transportation Survey - (May - June)

- In collaboration with the Washoe County School District Safe Routes to School Program, the RTC provided a targeted survey to parents and faculty across the district as well as middle school and high school students. The purpose of the survey was to identify their primary concerns and issues related to walking and biking both in the community generally and to school specifically. A total of 788 survey responses were received including 585 parents, 162 faculty, and 20 students. Findings from this survey are summarized below. Results from this survey and the Community-Wide survey will help to inform the understanding of issues and concerns during Neighborhood Network Area Planning.

Community-Wide Virtual Public Meeting - May 24th, 2023

- The RTC provided a community-wide virtual meeting through Zoom (screenshot shown in [Figure 3.2](#)) which included a brief presentation about existing conditions and initial vision and goals of the plan. During this meeting, the project team engaged with residents through a visual preference exercise which asked participants to envision different types of roads with various speeds and select which type of facility they would feel most comfortable using as a pedestrian or bicyclist. This meeting also included an option for break out rooms to discuss specific issues in more detail. The meeting was provided in both English and Spanish with recorded versions and the meeting materials posted on the project website for those unable to attend.

Figure 3.2 Virtual Public Meeting



Focused Meetings

- In order to dive deeper into specific needs of some of the most vulnerable roadway users, the RTC conducted a youth-focused public meeting and a meeting focused on the needs of seniors and those with disabilities. The Youth-Focused meeting followed a similar format to the Community-Wide Virtual Public Meeting including the visual preference exercise to identify which facilities youth members of the community prefer. This meeting was held virtually through Zoom on June 13th, 2023. The following day, June 14th, 2023, the RTC hosted the Disability & Senior Focused in-person meeting at the Washoe County Senior Center on 9th Street in Reno which included a brief presentation and provided in-person versions of the virtual engagement resources including area maps to identify specific locations of concern and the visual preference exercise to select their preferred facility types on different roadways.

RTC Advisory Committees

- The RTC also presented information regarding the project to the RTC Advisory Committees which were an additional forum for public input and feedback for the Walk & Roll Truckee Meadows Plan. The project team presented an overview of the project and highlighted upcoming engagement opportunities at the RTC Technical Advisory Committee (TAC) and the Citizens Multimodal Advisory Committee meetings in May 2023. The project team returned to the TAC and CMAC in April 2024 to present an overview of the progress to date and highlight the Neighborhood Network Area Planning process and Regional Street Typology guide.
- RTC TAC Meetings
 - ◆ May 4th, 2023
 - ◆ April 4th, 2024
- RTC CMAC Meetings
 - ◆ May 3rd, 2023
 - ◆ April 3rd, 2024



Disability & Senior Focused in-person meeting at the Washoe County Senior Center.

WALK & ROLL TRUCKEE MEADOWS
RTC Active Transportation Plan

Biking in the Truckee Meadows

What do you see as the biggest challenge to more people BIKING?
Write your ideas in the space below.

While biking, which is the biggest challenge for you? Place a sticker in the space below.

- Gaps in the bicycle network (roadways without bicycle facilities).
- Existing bike networks are in poor conditions.
- Distances between locations.
- High-speed traffic feels too close when traveling in bike lanes.
- Difficult to find safe roadway crossings.
- Other (please specify).

How much time would you be willing to add to your bike journey to use a traffic-separated facility instead of mixed traffic? Place a sticker in the space below.

0 Minutes | 10 Minutes | 20 Minutes

Select which facility you would be most comfortable using as a person bicycling in each roadway context. Place a sticker in the space below.

	Separated Bikeway (curb-protected bike lane)	Buffered Bike Lane (with paint)	Shared-Use Path	Standard Bike Lane	Other (please specify)
A roadway with: • 50 mph speed limit • 4 lanes wide • No parking		●	●●	●	
A roadway with: • 35 mph speed limit • 4 lanes wide • No parking			●●	●	
A roadway with: • 35 mph speed limit • 3 lanes wide • On-street parking			●●	●	

Interactive engagement activity.

Draft Plan Public Information Presentation

The RTC presented the community with an opportunity to review and comment on the draft version of the Walk & Roll Truckee Meadows Plan during June 2024. This presentation included an overview of the work completed to develop the plan and future Neighborhood Network Area Planning process which will rely on continued engagement with the community.

RTC Attended Events

RTC Staff also attended community events during the summer and fall of 2023 to promote and discuss the Walk & Roll Truckee Meadows Plan and encourage residents to engage through the various opportunities listed above.



Disability & Senior Focused in-person meeting at the Washoe County Senior Center.

STAKEHOLDER ENGAGEMENT MEETINGS

The RTC convened community and agency stakeholders through the Project Technical Advisory Group and Agency Working Group at key points during this project. These groups provided important feedback regarding the plan Vision and Goals as well as the Regional Street Typologies and Neighborhood Network Area Planning process. The Project TAC and Agency Working Group included members from the following agencies:

- City of Reno – Public Works and Development Services
- City of Sparks – Engineering and Planning Departments
- Washoe County – Water Resources and Community Services Departments
- Washoe County School District – Safe Routes to School
- Reno Sparks Indian Colony
- Truckee Meadows Regional Planning Agency
- Northern Nevada Public Health

CONTINUING THE ENGAGEMENT THROUGH NEIGHBORHOOD NETWORK AREA PLANNING

Building upon the foundation established through the earlier outreach phases, the project will leverage Neighborhood Network Area Planning process to refine regionally identified community concerns at the local level. This process will leverage targeted engagement with residents within specific neighborhoods, enabling them to identify their unique needs and priorities for active transportation infrastructure and programs. The specific process for neighborhood network area planning and targeted engagement is included in [Chapter 5](#).

Public Engagement Results

COMMUNITY-WIDE SURVEY

The Community Wide survey focused on identifying top concerns and barriers for people walking and biking and also sought to evaluate community members existing desire to use active modes. The survey allowed respondents to self-identify based on their level of confidence as a bicyclist which helps to bring context into the needs of those who would like to walk or bicycle more but may be concerned to do so for safety reasons.

Barriers

Bicycling - Survey respondents identified the top two barriers for bicycling in the Truckee Meadows as a perceived lack of safety due to the presence of high speed or aggressive driving (27.5%) and the condition or lack of dedicated bicycle facilities (22%). [Figure 3.3](#) highlights the results of the survey which indicate parking concerns as well as distance and weather are not the leading barriers to bicycling for residents within the Truckee Meadows.

Walking & Rolling - When considering barriers to walking and rolling, survey respondents identified traffic and high speed vehicles (17%) and the lack of sidewalks (13%) as the leading environmental barriers to walking or rolling for a specific trip ([Figure 3.4](#)). Additionally, respondents also identified feeling unsafe while crossing roadways as a barrier to walking and rolling. Unlike with bicycling, the overall distance of a trip was identified as a leading barrier for respondents to select walking as their mode of choice. With the typical walking trip falling around 1 mile,² it is important to highlight that pedestrian needs are and barriers are typically more localized surrounding the origin of a trip such as an individual's home or place of work.

² 2017 National Household Travel Survey Estimated Person Trips (ORNL, n.d.)



Figure 3.3 Top Barriers for Bicycling

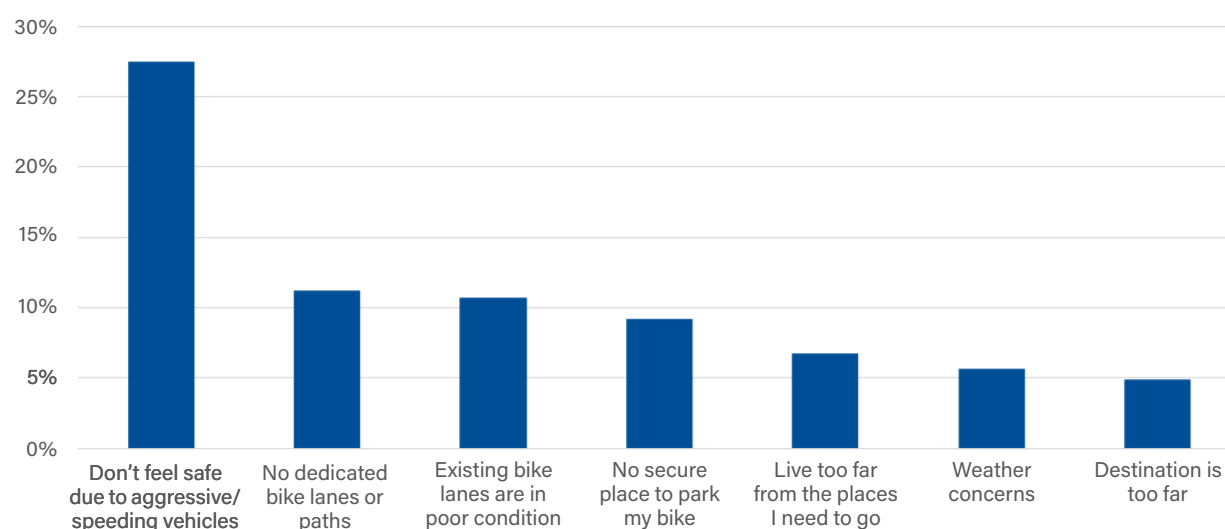
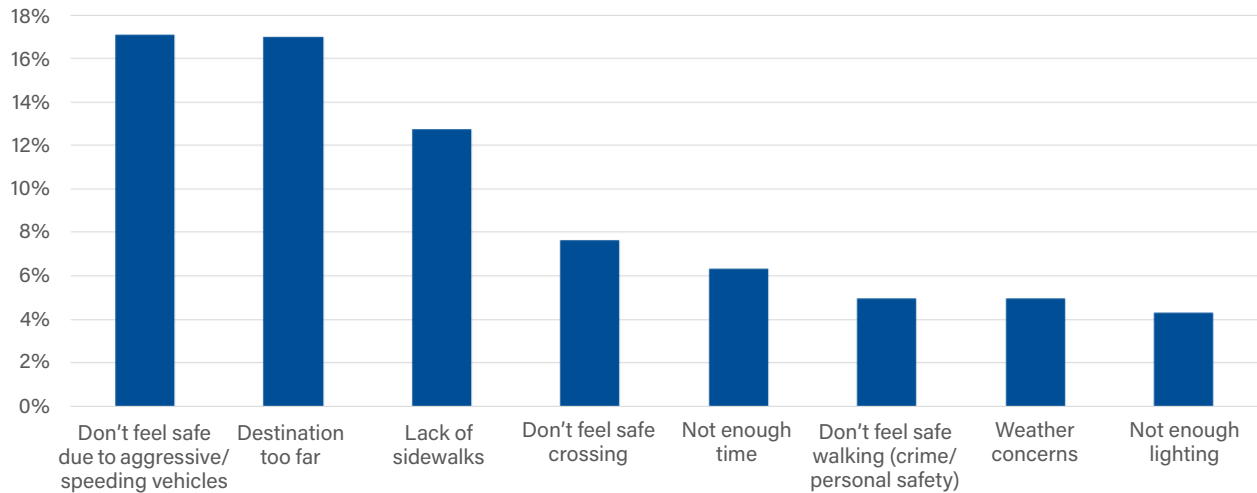




Figure 3.4 Top Barriers for Walking



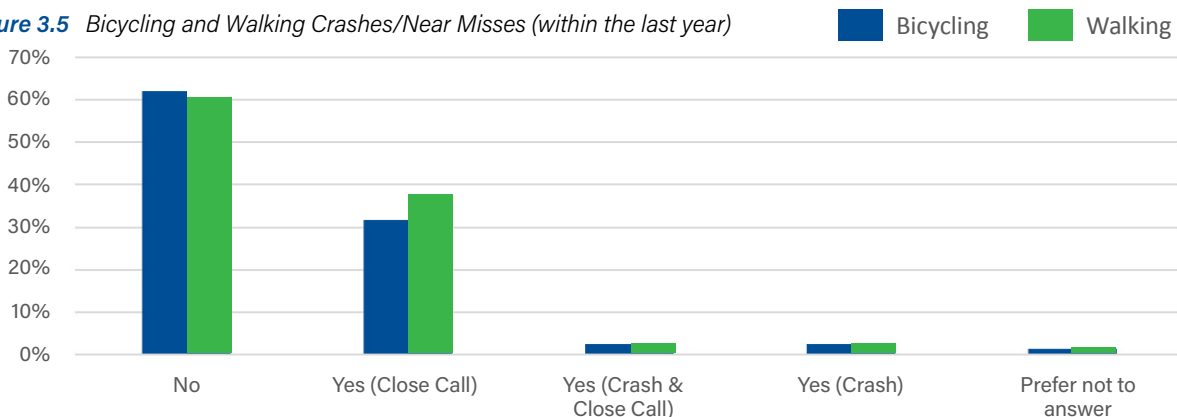
Near-Misses

Related to the level of perceived safety for people walking and biking in the Truckee Meadows, the survey asked respondents whether they had been involved in or nearly involved in a crash as a pedestrian or bicyclist in the last year. The determination of being 'nearly' involved in crash (or having a near-miss) is entirely subjective based on the survey respondents experience. As pedestrian and bicyclist involved crashes are often under-reported,³ this anecdotal evidence is helpful to contextualize the perceived level of safety for people walking and biking which has a significant impact on whether an individual selects walking or biking as their mode of choice.

Shown in [Figure 3.5](#), approximately one-third of all survey respondents (32% of bicyclists and 36% of pedestrians) indicated that they had been nearly involved in a crash as either a pedestrian or bicyclist in the past year. In comparison, a fraction of these respondents indicated they had been directly involved in a crash with 5% of bicyclists stating they had been in a crash and just over 3% of pedestrians indicating their had been in a crash over the last year. This result suggests that for each crash with an active mode there may be a significant number of highly uncomfortable experiences for pedestrians and bicyclists as they travel; this level of perceived safety risk can have a significant impact on mode selection.



Figure 3.5 Bicycling and Walking Crashes/Near Misses (within the last year)



³ Winters, Branion-Calles, *Cycling safety: Quantifying the under reporting of cycling incidents in Vancouver, British Columbia*, *Journal of Transport & Health*, Volume 7, Part A, 2017, 48-53
 Edwards, M., & Gutierrez, M. (2023). *The incidence burden of unreported pedestrian crashes in Illinois*. *Traffic Injury Prevention*, 24(1), 82-88.

Desired Levels of Walking and Biking

The RTC asked respondents whether they would like to walk or bike more frequently for different types of trips such as school / work trips as well as non-work/school related trips. Responses indicate that the majority of people under 34 years of age have an interest in walking more frequently for either work or school trips ([Figure 3.6](#)) and the majority of people under the age of 54 work like to bicycle more frequently for work/school related trips ([Figure 3.7](#)).

Across all different ages groups, survey respondents indicated a strong desire to walk and bike more frequently for non-work related trips such as access entertainment or social events ([Figure 3.8](#) and [3.9](#)).



Figure 3.6 People who would like to be able to walk more for school / work trips by age

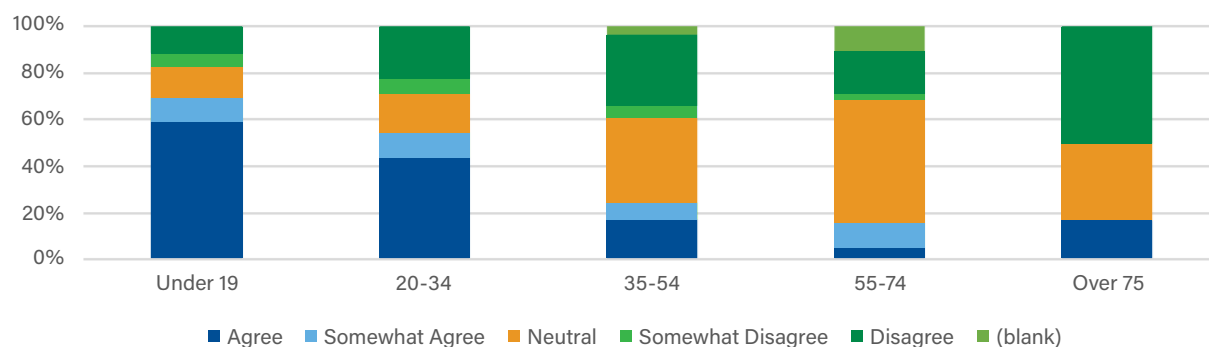


Figure 3.7 People who would like to be able to bike more for school / work trips by age

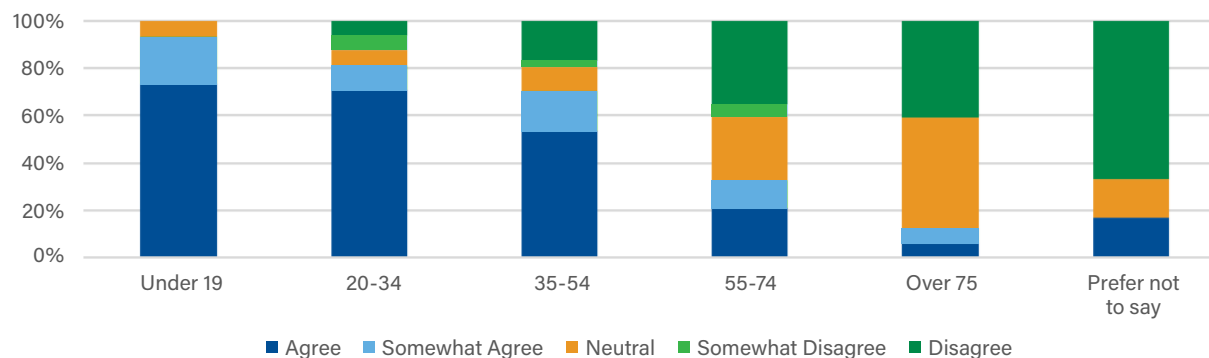




Figure 3.8 People who would like to be able to walk more for non-work trips by age

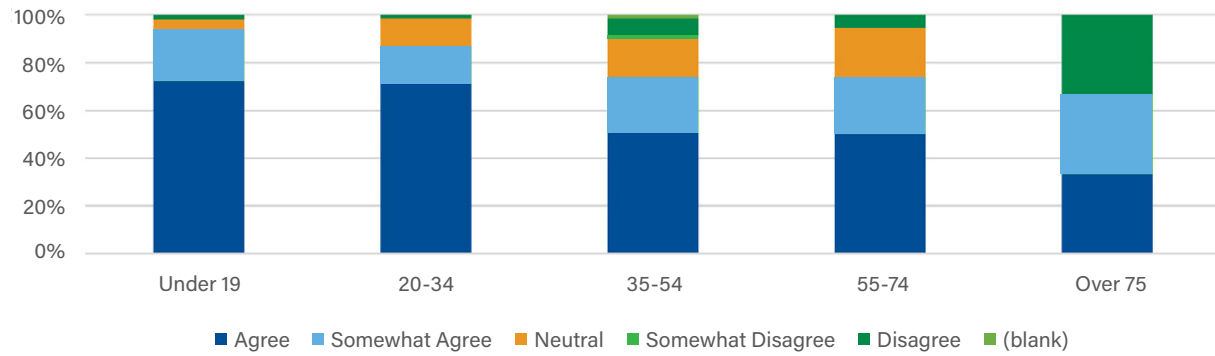
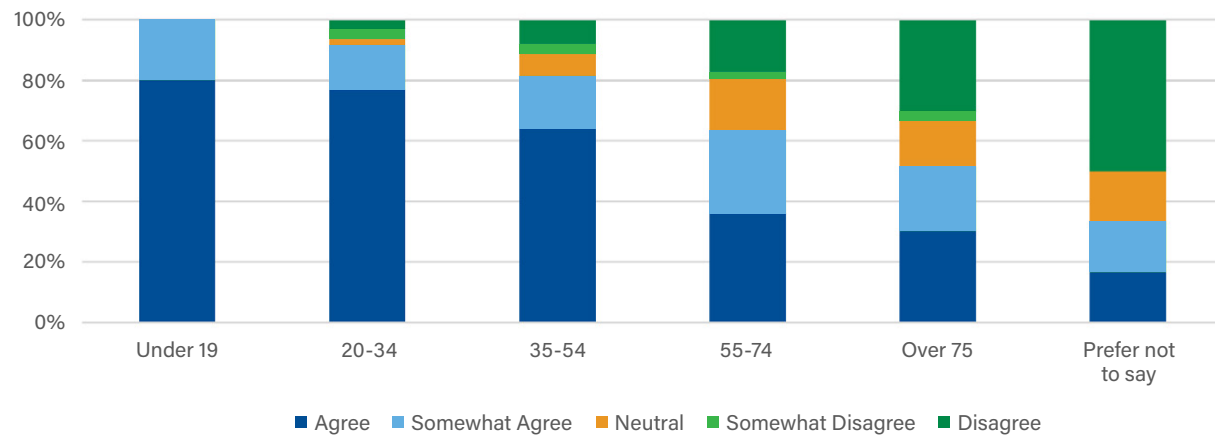


Figure 3.9 People who would like to be able to bike more for non-work trips by age



Traveling Within and Between Neighborhoods

The community survey asked respondents to rank how easily they are able to travel within their neighborhood and to adjoining neighborhoods with as a pedestrian or bicyclists. While traveling within a neighborhood as a pedestrian was identified as being a relatively easy task for the majority of respondents ([Figure 3.10](#)), the results appear quite different when considering traveling between neighborhoods ([Figure 3.11](#)). Across all respondents 77% stated that it was easy or moderately easy to walk within their neighborhood compared to just 42% of respondents stating it is easy or moderately easy to walk between neighborhoods.

Furthermore, respondents who identified as “Interested but Concerned” bicyclists, who are the largest group of the population according to the user type definitions from the FHWA (refer to [Figure 1.2](#)), indicate that traveling between neighborhoods on a bicycle is a relatively difficult task ([Figure 3.12](#)). Just 22% of this user group indicated that traveling between neighborhoods is either ‘Easy’ or ‘Very Easy’ with 52% indicating that it would be either moderately or very difficult to travel between neighborhoods by bike.



Figure 3.10 Level of Difficulty Walking within a Neighborhood

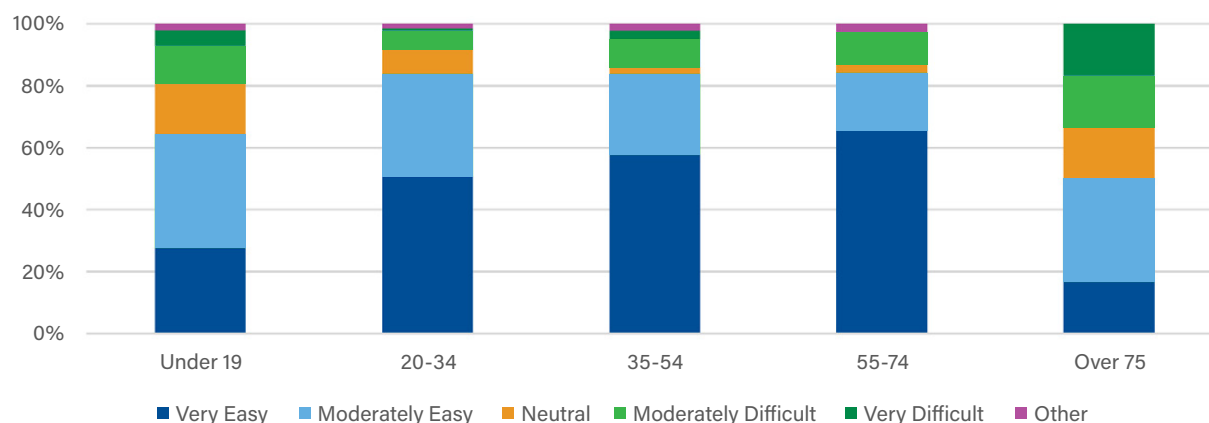


Figure 3.11 Level of Difficulty Walking To/From a Neighborhood

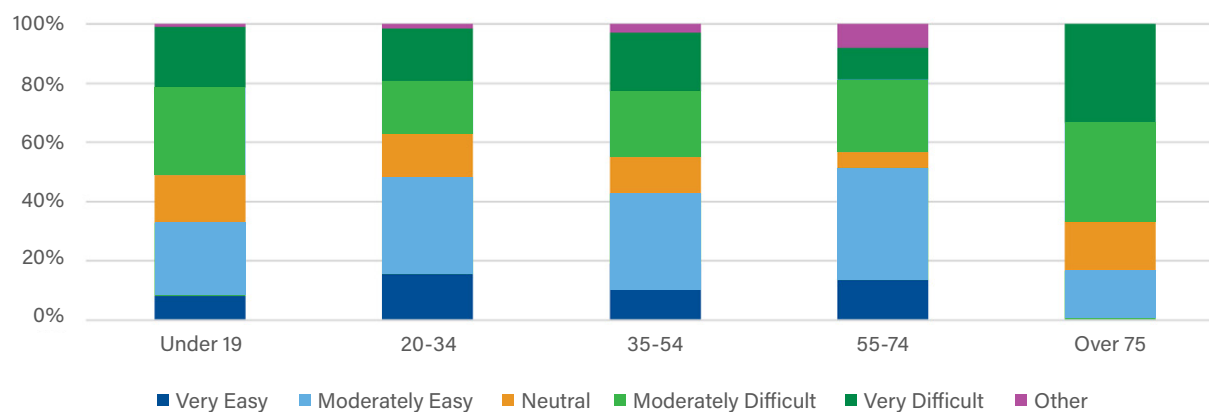
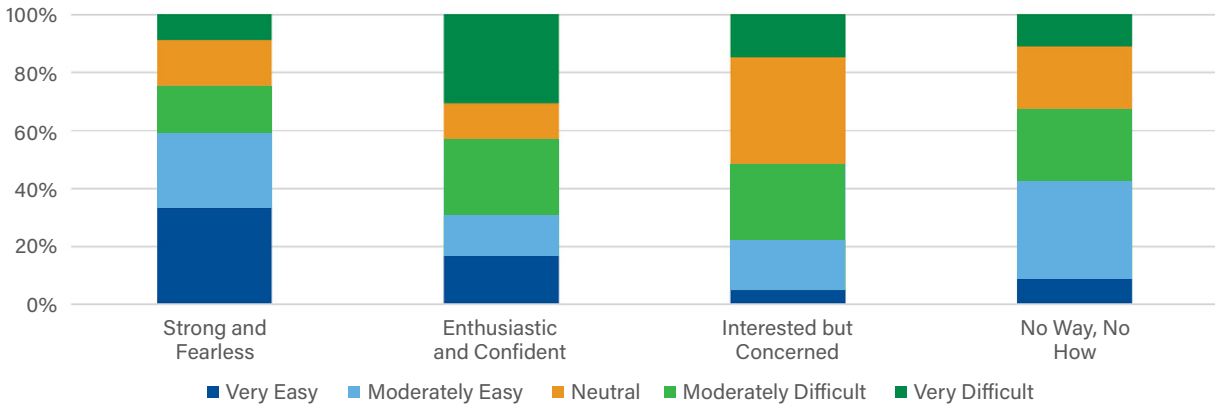




Figure 3.12 Level of Difficulty Biking To/From a Neighborhood based on User Type



WCSD PARENT, FACULTY, AND STUDENT SURVEY

Responses from the Parent, Faculty, and Student focused survey align with the results of the Community-Wide survey with safety being the leading barrier for walking and biking to school. A majority of respondents (52% walking and 50% biking)

identified feeling unsafe due to the presence of traffic and speeding vehicles as the leading barrier for using active modes to get to school ([Figure 3.13](#) and [3.14](#)).



Figure 3.13 Top Barriers for Walking to School

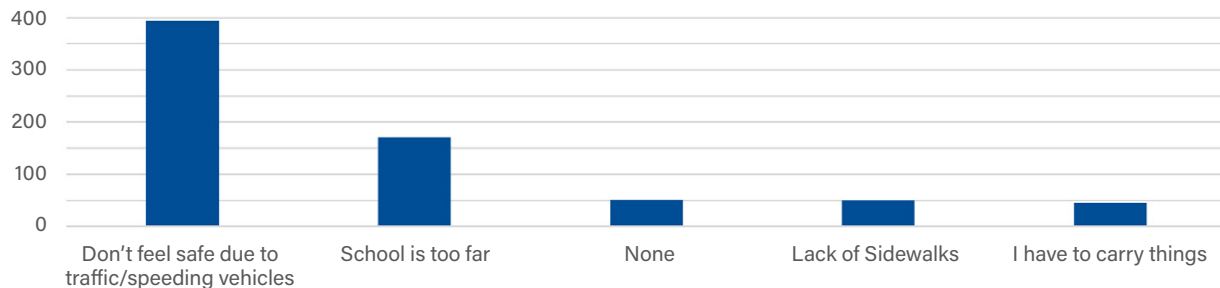
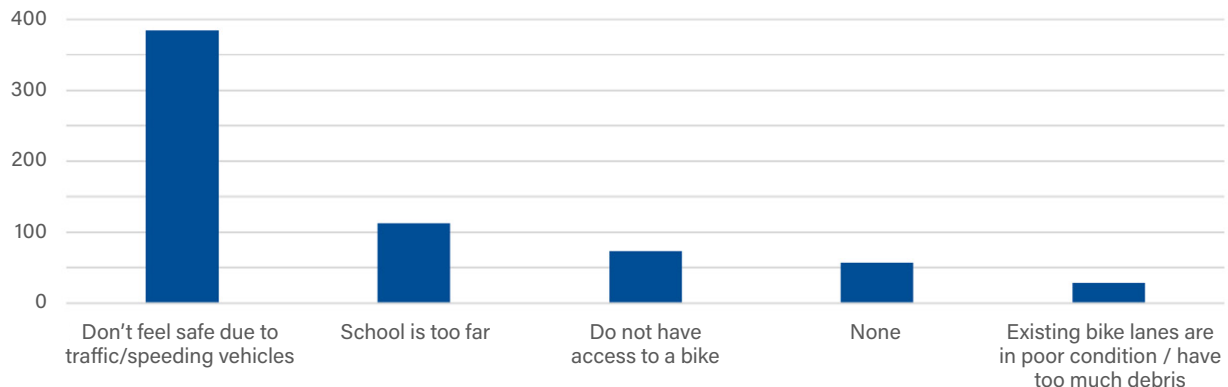


Figure 3.14 Top Barriers for Biking to School



Future School Focused Analysis

The results of this school focused survey will continue to help the RTC identify issues and concerns related to active transportation concerns, specifically related to school trips. Each survey response is categorized by school which will help focus on localized concerns and issues during future Neighborhood Network Area Planning efforts.

SURVEY FINDINGS SUMMARY

The results of the community-wide survey indicate that there is a strong desire to walk and bike more frequently for a variety of trips through out the community but that residents often do not feel comfortable or safe enough while walking or biking to destinations, especially those in adjoining neighborhoods, to select walking or biking as their mode of choice.

Interactive Map

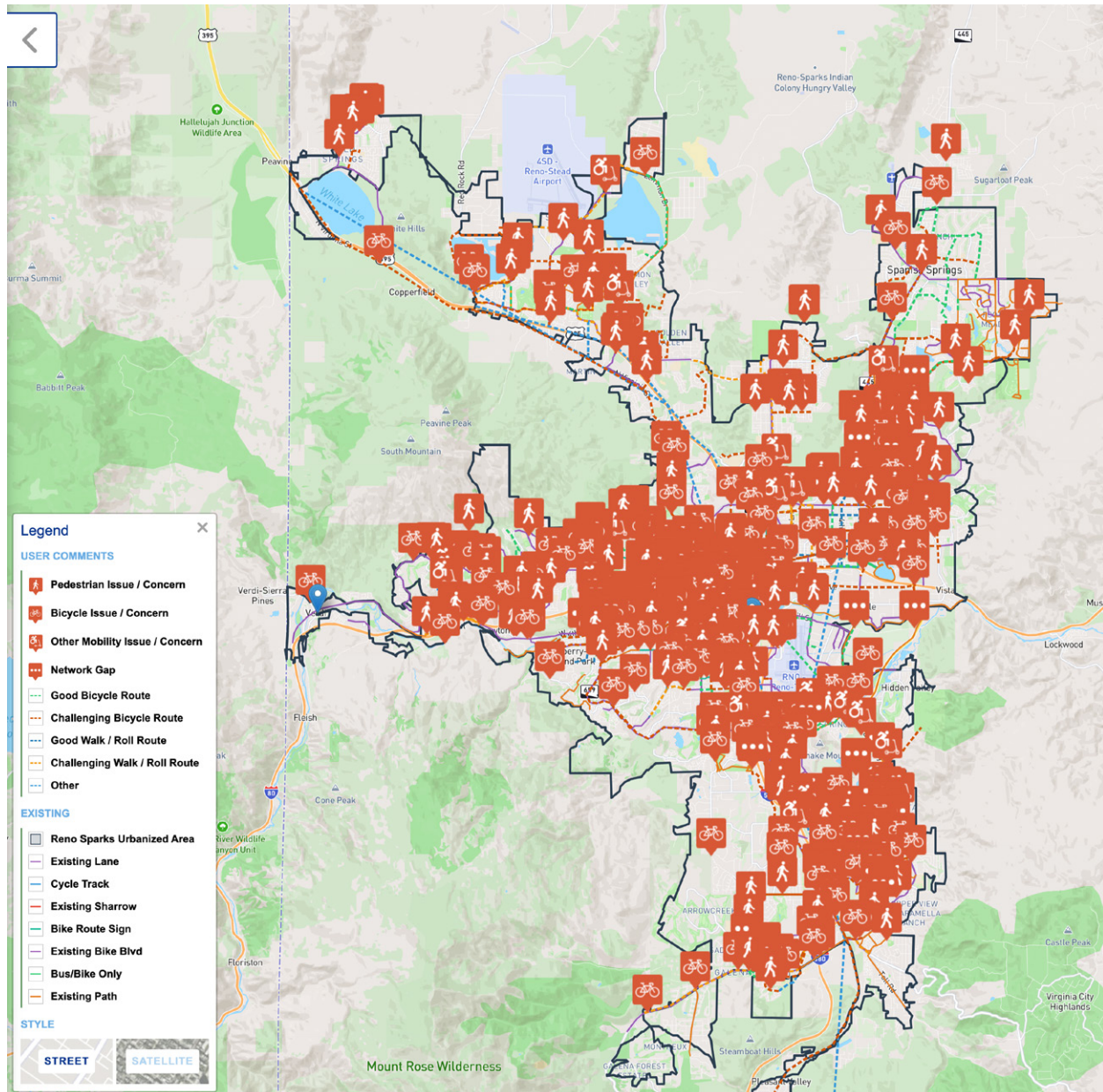
Following the survey, respondents were able to use an interactive map (Shown in [Figure 3.15](#)) to pinpoint specific locations which were either difficult or concerning as a bicyclist or pedestrian as well as those locations which currently have good or comfortable facilities. With 442 total interactions, the data revealed valuable insights:

- **Bicycle Issues & Concerns** - Residents identified 234 issues identified related to bicycling. Nearly half (111) were concentrated within the urban area. Issues identified were highly localized and included areas with debris, issues with signal timings, and suggested wayfinding signage. Respondents also identified 129 frequently used bike routes which were challenging.
- **Pedestrian Issues & Concerns** - Respondents identified 222 pedestrian issues which were spread throughout the urban and suburban areas. The issues identified focused on areas where walking felt unsafe due to high speed vehicles and locations where sidewalk is missing.



Adult and youth waiting to cross W. Plumb Lane.

Figure 3.15 Interactive Web Map



Public Meeting Findings

Public meeting attendees across the Community-wide and focus-group meetings provided feedback regarding their preferred facilities as a pedestrian or bicyclist traveling on different types of roadways with different number of lanes and posted speed limits. Meeting attendees were shown a picture of a representative street and listened to audio recorded on location to get a good sense of being out on the roadway. After studying the picture of the roadway and listening to the sounds of the road, respondents selected which facility type they would feel most comfortable using or having present as either a pedestrian or a bicyclist. Results

indicate that the desire for separation from vehicles for pedestrians and bicyclists increases as the posted speed limits increase ([Figure 3.16](#) and [3.17](#)). As shown below the preferred facility to improve pedestrian comfort was the presence of a sidewalk buffer. Bicyclists preferred a curb protected bike lane between 30 and 35 miles per hour with either a shared-use path or curb-protected bike lane being preferred on 45 mph roadways. This is consistent with findings in the FHWA bikeway selection guide which highlight a preference for increased separation with higher vehicle speeds and volumes.⁴



Figure 3.16 Facility Preference by Context for People Walking & Rolling

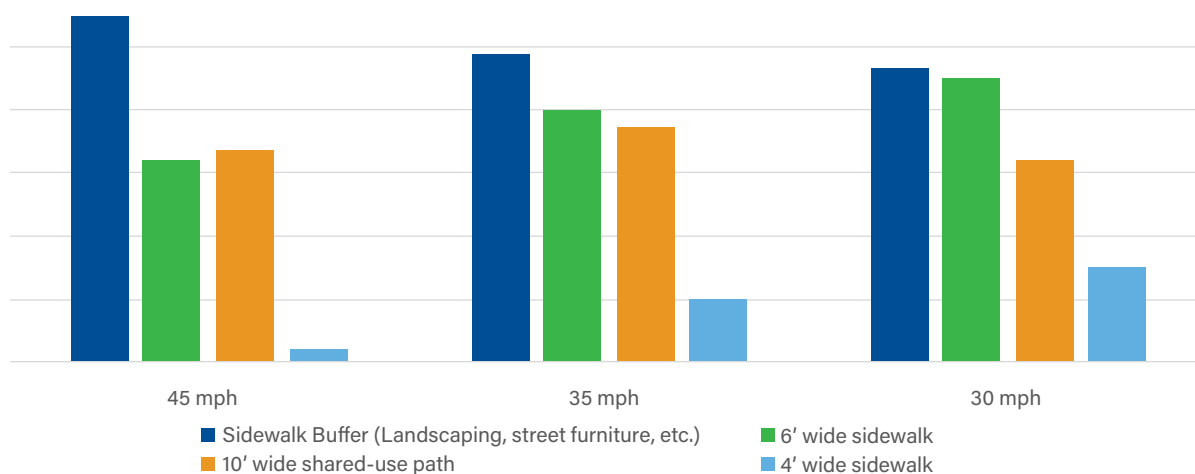
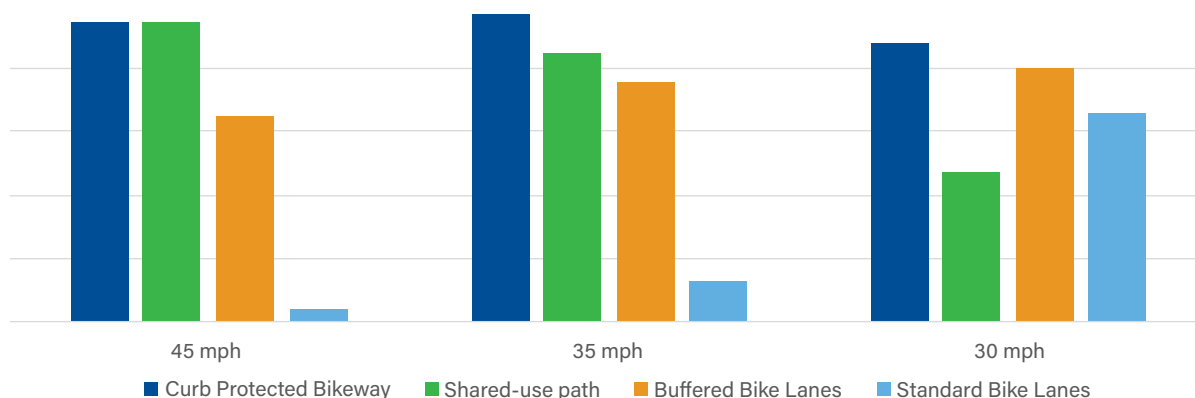


Figure 3.17 Facility Preference by Context for People Biking



⁴ Dill, D. and N. McNeil. *Revisiting the Four Types of Cyclists*. In *Transportation Research Record 2587*. TRB, National Research Council, Washington, DC, 2016.

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Analyzing the Network



ANALYZING THE NETWORK

The RTC conducted extensive analysis on the regional roadway network using the latest available data for sidewalks, bicycle facilities, regional travel demand model outputs, and roadway characteristics including posted speeds and number of lanes. This data was used to conduct focused analyses across the regional roadway network to assess which sections of road present the greatest challenges to people walking and biking and may act as barriers to active transportation within and between neighborhoods. These analyses include:

- Bicycle Level of Traffic Stress¹
- Pedestrian Experience Index
- Active Trip Potential

The results of these analyses were combined with the identified High-Injury Network and equity areas to identify primary active transportation network gaps across the Truckee Meadows. Primary network gaps and the results of completed analyses will help to inform NNPs going forward as well as enabling the RTC to conduct future scenario planning using custom GIS analysis tools.

This section summarizes the methodology and results of each unique analysis as well as the identified active transportation network gaps. This section highlights the future use of analysis results in NNPs and scenario planning.

Network Analyses

Bicycle Level of Traffic Stress (BLTS)

The bicycle level of traffic stress (BLTS) analysis estimates the level of comfort for people biking on a given roadway segment. The BLTS analysis identifies where “gaps” or deficiencies in a bike network exist, and provides a measure of how likely different types of riders, based on ability and comfort level, are to use the facility.

METHODOLOGY

The methodology used for this BLTS analysis was adapted from the 2012 Mineta Transportation Institute Report 11-19: Low-Stress Bicycling and Network Connectivity². BLTS is determined by characteristics of a given roadway segment that affect a bicyclist’s perception of safety and comfort, including posted speed limit, number of travel lanes, and the presence and character of bicycle lanes. The combination of this criteria classifies a road segment into one of four levels of traffic stress:

- BLTS 1 represents roadways where bicyclists of all ages and abilities would feel comfortable riding; separated shared-use paths and separated bike lanes for bicycles also fall into this category.
- BLTS 2 represents slightly less comfortable roadways, where most adults would feel comfortable riding.
- BLTS 3 represents moderately uncomfortable roadways, where most experienced bicyclists would feel comfortable riding.
- BLTS 4 represents high-stress roadways where only strong and fearless bicyclists would feel comfortable riding. These roadways are generally characterized by high volumes, high speeds, several travel lanes, and complex transitions approaching and crossing intersections.

¹ Analysis conducted by researchers at University of Nevada, Reno Mineta Institute. Mekuria M., Furth P., Nixon H. Low-Stress Bicycling and Network Connectivity. 2012. <https://transweb.sjsu.edu/research/>

² [Low-Stress-Bicycling-and-Network-Connectivity.](#)

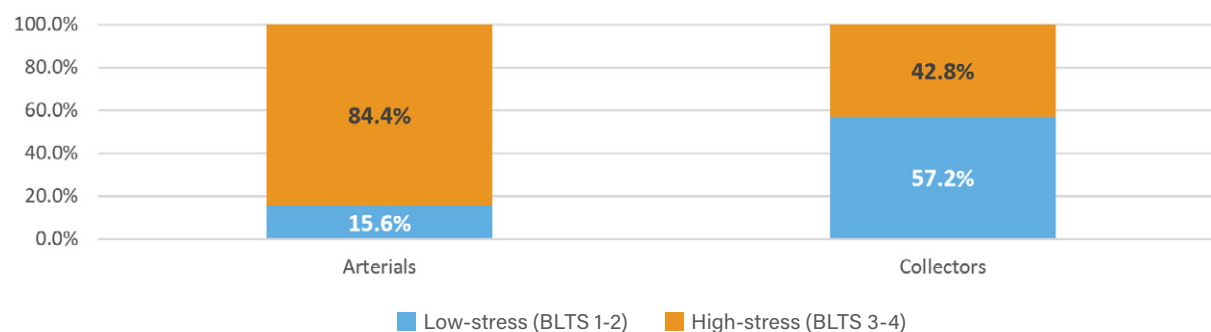
The results of the BLTS analysis identify existing areas that are low stress for many bicyclists, as well as the degree to which roadways must be improved in order to provide a comfortable experience for riders of all ages and abilities. The results of this analysis are summarized below and highlighted in [Map 4.1](#).

SUMMARY OF FINDINGS

The results of the BLTS analysis highlight that regional roadways with high vehicle speeds (above 35 mph) and high traffic volumes which either have no facility or provide a facility that does not fit the roadway context are stressful for the average

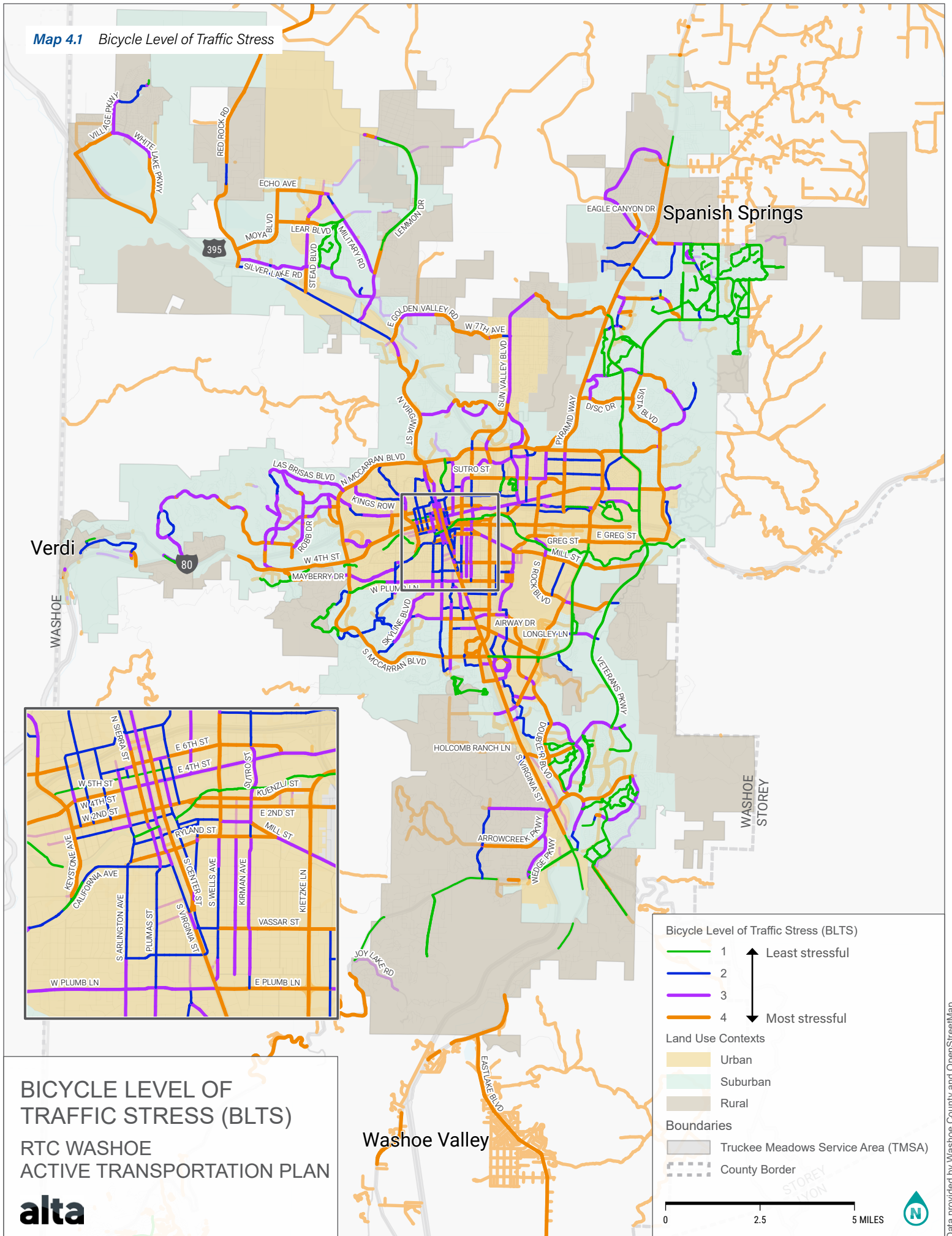
bicyclist. These roadways can act as barriers to people bicycling between neighborhoods if they do not feel comfortable riding along the roadway or crossing the roadway. Within neighborhoods there are often a large number of roadways that are 'low-stress' but often can act as islands without a strong low-stress connection to other neighborhoods. Focusing on the regional roadway network, a total of 341 miles are classified as being 'high-stress' or BLTS 3 or 4; this accounts for 78% of all regional roadways. Arterial roads have the largest portion of high-stress roads with a total of 84% of arterials (315 miles) being classified as high-stress roads; 42% of collectors were classified as high-stress.

Figure 4.1 Low vs High Stress Roadways By Classification (Regional Roads)



Shared-use paths such as the Truckee River Path provide low-stress connections for people of all ages and abilities.

Map 4.1 Bicycle Level of Traffic Stress



Bicycle Level of Traffic Stress by Land Use Context

Reviewing the BLTS results by land use context presents a strong picture of which areas have the greatest portion of high-stress roads. The section below reviews the BLTS results through the lense of the urban, suburban, and rural land use contexts. Results for arterials and collectors are presented separately due to their differing roadway contexts and needs.

Arterials – BLTS

Arterial roadways have the greatest proportion and number of lanes miles of ‘high-stress’ roads which are spread across the urban, suburban, and rural areas ([Figure 4.2](#)). The typical level of traffic stress for bicyclists within these contexts vary with the Urban context including the widest variety of levels of stress on arterials. Nearly one-quarter of arterial roadways within the urban context are classified as ‘low-stress’ with 37.7 miles of roads between BLTS 1 and 2. Conversely, 128 miles of arterials in the urban context are ‘high-stress’ roadways with a BLTS between 3 and 4. The suburban context has a slightly higher proportion of arterials which are ‘high-stress’ with nearly 88% being BLTS 3 or 4. Arterials in the rural context have a similar proportion with 86% being classified as ‘high-



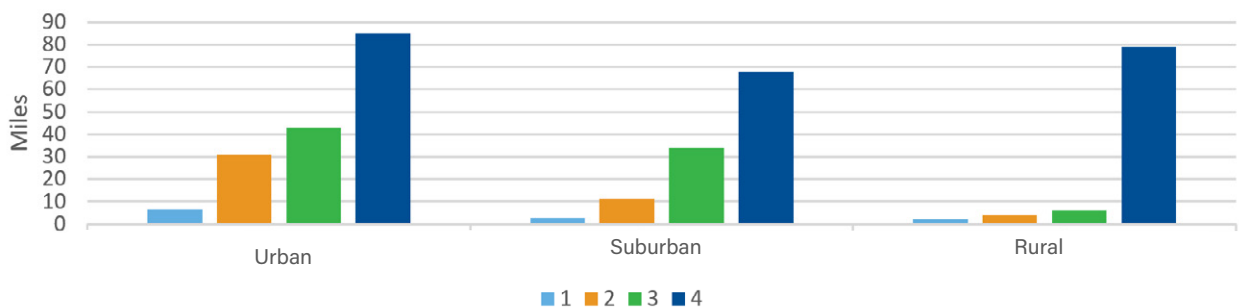
The Sparks Blvd shared-use path provides a low-stress environment for bicyclists traveling along this arterial roadway.

stress’. The average BLTS for each arterial typology is highlighted in [Table 4.1](#). This highlights that Major Arterials in the urban and suburban context as well as rural arterials typically high the highest levels of traffic stress for bicyclists.

Table 4.1 Regional Typology BLTS (Arterials)

Regional Typology (Arterials)	Average Bicycle Level of Traffic Stress (0.0 - 4.0)
Urban Arterial Major	3.6
Urban Arterial Minor	2.9
Suburban Arterial Major	3.4
Suburban Arterial Minor	3.0
Rural Arterial	3.5

Figure 4.2 BLTS on Arterials Roads by Land Use Context (Miles)



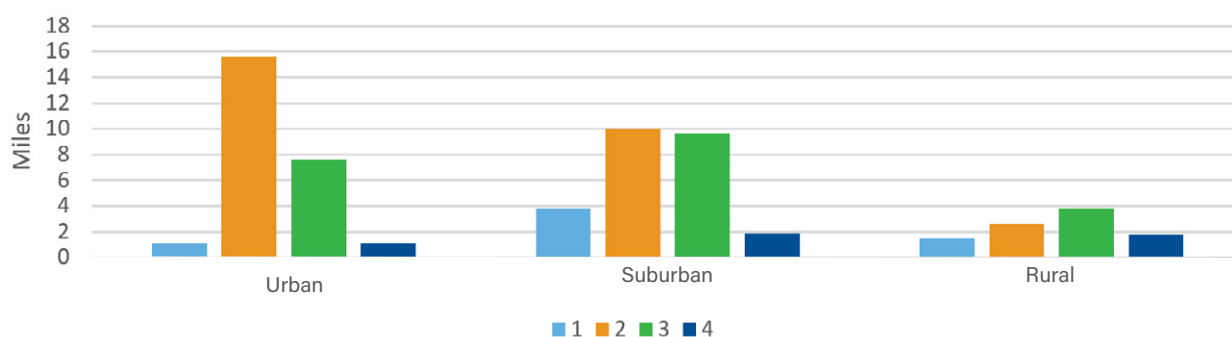
Collectors – BLTS

Collector roadways typically have a lower level of traffic stress for bicyclists due to lower speeds and a fewer number of lanes. This results in a higher proportion of collectors which are 'low-stress' roadways with BLTS between 1 and 2. In the urban and suburban context, the majority of regional roadways are low-stress (*Figure 4.3*). The majority of rural collectors are classified as high-stress with approximately 57% being BLTS 3 or 4. As shown in *Table 4.2*, the average level of stress for bicyclists on collector typologies falls between BLTS 2 and 3.

Table 4.2 Regional Typology BLTS (Collectors)

Regional Typology (Collectors)	Average Bicycle Level of Traffic Stress (0.0 - 4.0)
Urban Collector Commercial	2.3
Urban Collector Residential	2.3
Suburban Collector Major	2.4
Suburban Collector Minor	2.3
Rural Collector	2.8

Figure 4.3 BLTS on Collector Roads by Land Use Tier (Miles)



Providing greater separation for bicyclists at intersections helps bicyclists navigate through these junctions.

PEDESTRIAN EXPERIENCE INDEX (PEI)

The RTC Washoe collaborated with researchers from UNR to develop a robust analysis of the Pedestrian Experience throughout the Truckee Meadows. The full analysis database includes information regarding key aspects of the roadway and pedestrian environment that can impact the overall experience and comfort for people walking or rolling along the road. The analysis framework is intended to provide a planning level understanding of the existing experience for pedestrians and to help identify areas for improvements.



The greatest pedestrian experience occurs with separation from vehicle traffic such as on shared-use paths.

Methodology

Pedestrian Experience scores represent how comfortable a typical pedestrian would be when traveling along the roadway based on the presence of a sidewalk and associated width, existing buffer from moving vehicles (i.e. landscaping or on-street parking), the posted roadway speed, and number of vehicle lanes. This analysis, conducted by UNR, assigns a score between 0 and 85 to each side of the roadway based on those variety of factors³. For the purpose of this analysis, PEI scores should be interpreted in the following ranges:

- PEI 0 – 20: Sidewalks may not be present, buffers between vehicles and pedestrians are not provided⁴, and roadways are high-speed with multiple vehicle lanes
- PEI 21 – 40: Sidewalks when present are between 4 – 6 feet and may be intermittent, buffers between vehicles and pedestrians are not typical, and roadways high multiple vehicle lanes of high-speed traffic
- PEI 41 – 60: Sidewalks are typically 5-6 feet wide and present on one or both sides, buffers between vehicles and pedestrians may be intermittent or speeds and number of lanes may be higher
- PEI 60 – 85: Sidewalks are typically 5-6 feet wide and present on both sides with buffers (landscaping or on-street parking) between people walking and high-speed vehicles or a low posted speed

The RTC used an updated sidewalk database developed through high-quality satellite imagery to verify the inputs and final results of the PEI dataset. This section highlights the results of the pedestrian experience index for each roadway typology with arterials and collectors reported separately due to their different contexts and needs.

³Total Infrastructure Score was used for regional analysis in lieu of regionally complete data for attributes which comprise the UNR defined Pedestrian Experience Index.

⁴It is important to note that on-street parking is prohibited on arterials which limits potential buffers to landscaping strips alone.

Summary of Findings

As shown in [Table 4.3](#), the typical level of PEI on arterials varies between the urban, suburban, and rural contexts. Arterials in the urban context range between PEI 11 and 71 with minor arterials typically having a higher PEI due to lower roadway speeds and fewer number of lanes. The highest ranked urban arterials provide a comfortable pedestrian experience however, on average major urban arterials may benefit from increased buffers between vehicles and pedestrians and sidewalk gap closure when gaps are present. In the suburban and rural contexts, arterials range from

0 to 76 with an average PEI between 33 and 38. This highlights a potential need for greater buffers between vehicles and pedestrians as well as filling sidewalk gaps when present. Collector roadways typically provide a more comfortable experience for people walking due to lower vehicle speeds, fewer lanes, and a greater presence of on-street parking which acts as a buffer between pedestrians and vehicles ([Table 4.4](#)). Regional PEI results are displayed in [Map 4.2](#).

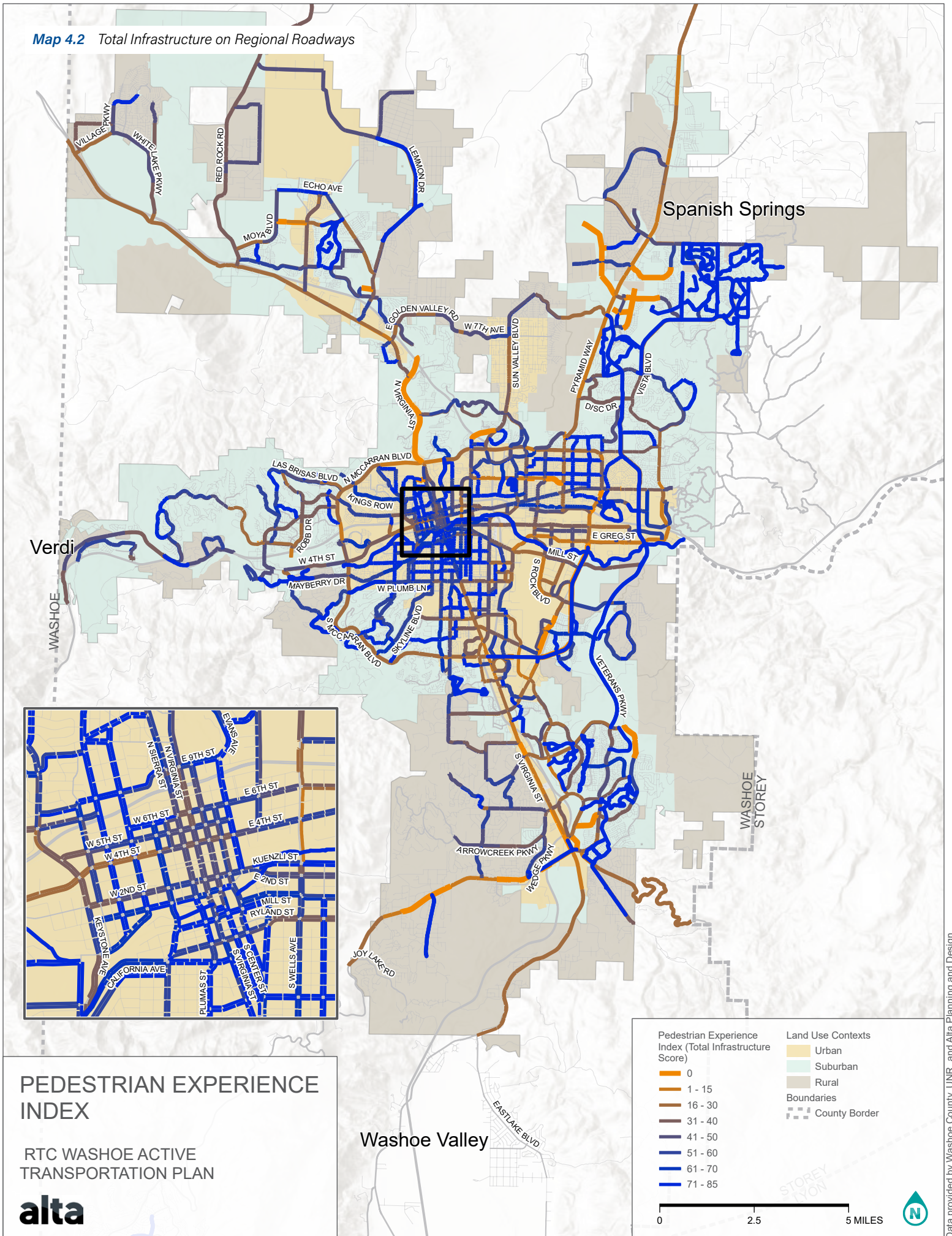
Table 4.3 Regional Typology Pedestrian Experience Index (PEI) (Arterials)

Regional Typology (Arterials)	Lowest Pedestrian Experience Score (0 - 100)	Average Pedestrian Experience Score (0 - 100)	Highest Pedestrian Experience Score (0 - 100)
Urban Arterial Major	11	36	65
Urban Arterial Minor	11	50	71
Suburban Arterial Major	0	33	60
Suburban Arterial Minor	0	38	76
Rural Arterial	0	33	60

Table 4.4 Regional Typology Pedestrian Experience Index (PEI) (Collectors)

Regional Typology (Arterials)	Lowest Pedestrian Experience Score (0 - 100)	Average Pedestrian Experience Score (0 - 100)	Highest Pedestrian Experience Score (0 - 100)
Urban Collector Commercial	23	53	69
Urban Collector Residential	50	57	70
Suburban Collector Major	32	45	62
Suburban Collector Minor	35	59	75
Rural Collector	26	42	62

Map 4.2 Total Infrastructure on Regional Roadways



ACTIVE TRIP POTENTIAL

Active modes often fill first- and last-mile gaps for transit trips and on their own may provide more flexibility for short trips that are not well-served by transit. Understanding demand for active transportation can help Washoe County guide growth and development to support sustainable transportation in two ways:

- Identifying areas where latent demand for active transportation exists, and supportive infrastructure could encourage more people to convert motor vehicle trips to active trips; and
- Identifying areas where many active trips are already made, and more development around those areas could build on existing strengths in the transportation network.

Not all locations can support active transportation modes easily because of unsupportive infrastructure or long distances from key destinations. While emerging technologies such as e-bikes and e-scooters provide new options, ranges, and convenience, their ability to affect change is still dependent on the surrounding land use and transportation context.

The RTC conducted an active trip potential analysis to identify areas of Washoe County where people make a high level of short vehicle trips and there is strongest potential to see a reduction of these trips if supportive infrastructure were available for people to choose active modes of travel.



Bicyclist waiting for green light at McCarran Blvd / Kietzke Ave intersection.

Methodology

This analysis used travel demand data from Washoe RTC travel demand model including :

- Average distances between each Traffic Analysis Zone (TAZ);
- Trips taken between each TAZ

This data was filtered for private vehicle trips within the Truckee Meadows modeled area and aggregated based on the TAZ-level geometries. The two data sources from Washoe RTC were joined so that the final data contained the origin TAZ, the destination TAZ, the average distance, and the number of auto trips.

Figure 4.4 on the following page illustrates the philosophy behind the classifications of trips, where trip distance is an indicator of the suitability for various mode shifts. Each pair was assigned an active trip mode based on the distance field:

- Trips less than 1 mile: Potential Walking Trips
- Trips 1 to 3 miles: Potential Biking Trips
- Trips 3 to 6 miles: Potential E-Bike Trips
- Trips over 6 miles: Not Suitable for Active Mode

The number and percent of trips for each TAZ was identified by mode shift suitability category. This helps to understand the starting and ending points of vehicle trips which may be accomplished with various active modes. The results of this analysis are presented [online](#) for dynamic visualization of origin-destination pairs and trip volumes. The results for each mode shift suitability category help provide a better understanding of the potential for active trips of any mode. Overall, the project team focused on the results of trips which are three miles or less which are highlighted in [Map 4.3](#). Detailed maps of the active trip potential across the Truckee Meadows are included in [Appendix A](#).

Summary of Findings

The results of this analysis highlight areas which have the greatest potential for capturing a high percentage of vehicle trips with active modes with supportive infrastructure investments. These results highlight the areas which have the greatest potential to shift vehicle trips to active modes helping to reduce vehicle emissions and providing a higher level of congestion relief on regional roadways.



Areas with short trip distances and dense destinations are prime locations for active transportation trips.

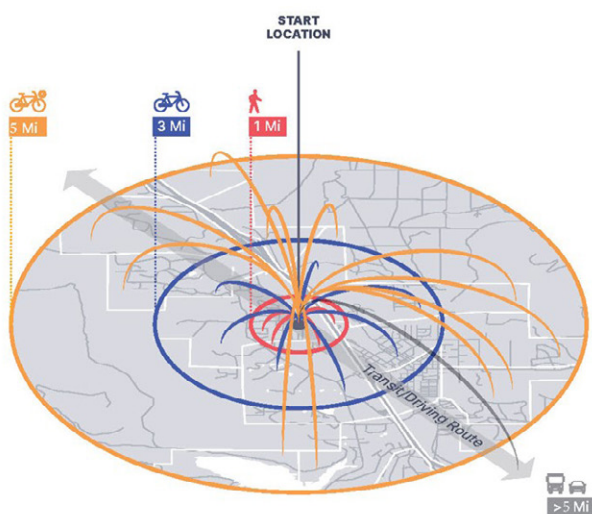
Walking - Active Trip Potential (ATP)

When considering areas with a high potential for walking trips, Central Reno, Central Sparks, West Reno, South Reno, and Sun Valley all have high proportions of trips which are under 1 mile which is within an achievable distance for people walking. The areas with the highest overall level of walking trip potential (trips 1 mile and under) are between the University of Nevada, Reno, downtown Reno, and Midtown. The area between Plumb Lane and Moana Lane and surrounding Meadowood Mall also have strong potential for converting short vehicle trips to walking trips.

Biking - Active Trip Potential (ATP)

A large proportion of trips within the Truckee Meadows that are currently completed with a vehicle fall between 1 and 3 miles which highlights the significant potential for shifting vehicle trips to this mode. The areas with the greatest bike potential are between South Reno and Central Reno and between the Grand Sierra Resort, Renown Medical, and downtown Reno. Additionally, the areas of higher density surrounding S. Virginia Street also have relatively large proportions of vehicle trips between 1 and 3 miles.

Figure 4.4 Active Trip Potential Concept Explainer

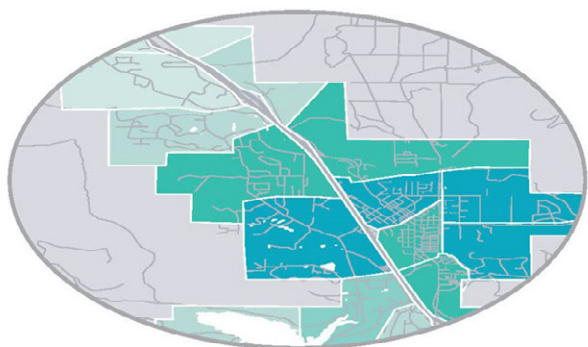
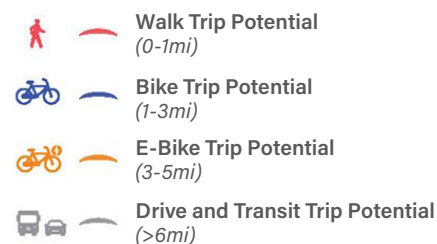


Active Trip Potential (ATP)

Identifies trips whose distances are short enough to be accommodated by walking or biking.

Our evaluation of ATP includes looking at the number of trips less than 3 miles.

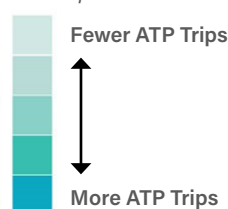
Different modes are suitable for different trips based on the transportation options that support them.



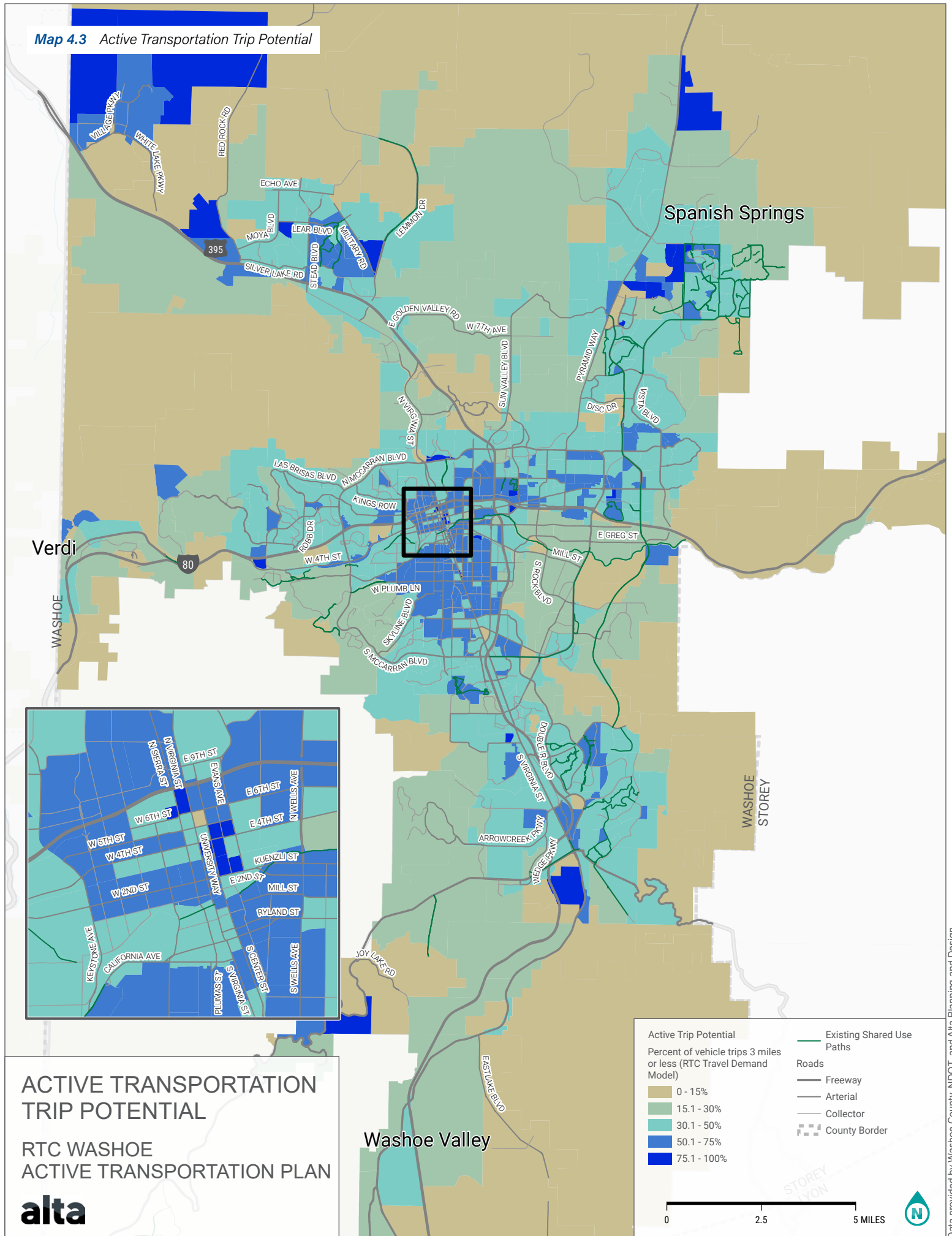
ATP Zonal Summary

When we look at all the activity occurring within a zone, we scrutinize both the estimated number of trips in the zone and their lengths. Locations with high rates short trips are potential candidates for active transportation investments.

ATP TRIPS
% of Trips less than or equal to 3mi



Map 4.3 *Active Transportation Trip Potential*



REGIONAL ACTIVE TRANSPORTATION GAPS

The RTC combine the results of each analysis above with the safety and equity needs identified in [Chapter 2](#) to create an overall understanding of where gaps within the active transportation network are within the Truckee Meadows. For the purposes of this analysis, the term “gap” represents a roadway section that acts as a barrier to active transportation in the region and has the potential to address equity needs and significant potential to support shifting vehicle trips to active modes with investments in supportive infrastructure through sidewalks, greater pedestrian buffer space, and low-stress bicycle facilities.

To identify gaps, the RTC combined the results of each analysis using the following methodology ([Table 4.5](#)). After assigning a score for each data metric, the roadway segments which scored within the highest 20% of all regional roadways were identified as Active Transportation Network Gaps with roadways with the top 5% of roadways acting as the most significant barriers in the Truckee Meadows. Gaps are highlighted on [Map 4.4](#) with the top 5% highlighted in red and those in the top 5 – 20% highlighted in orange.

These gaps will help inform the development of recommendations during NNP as key areas of focus. The RTC and stakeholders will work with the Active Transportation Technical Working Group to identify potential solutions for these identified gaps and other issues which may come to light during the neighborhood focus process.

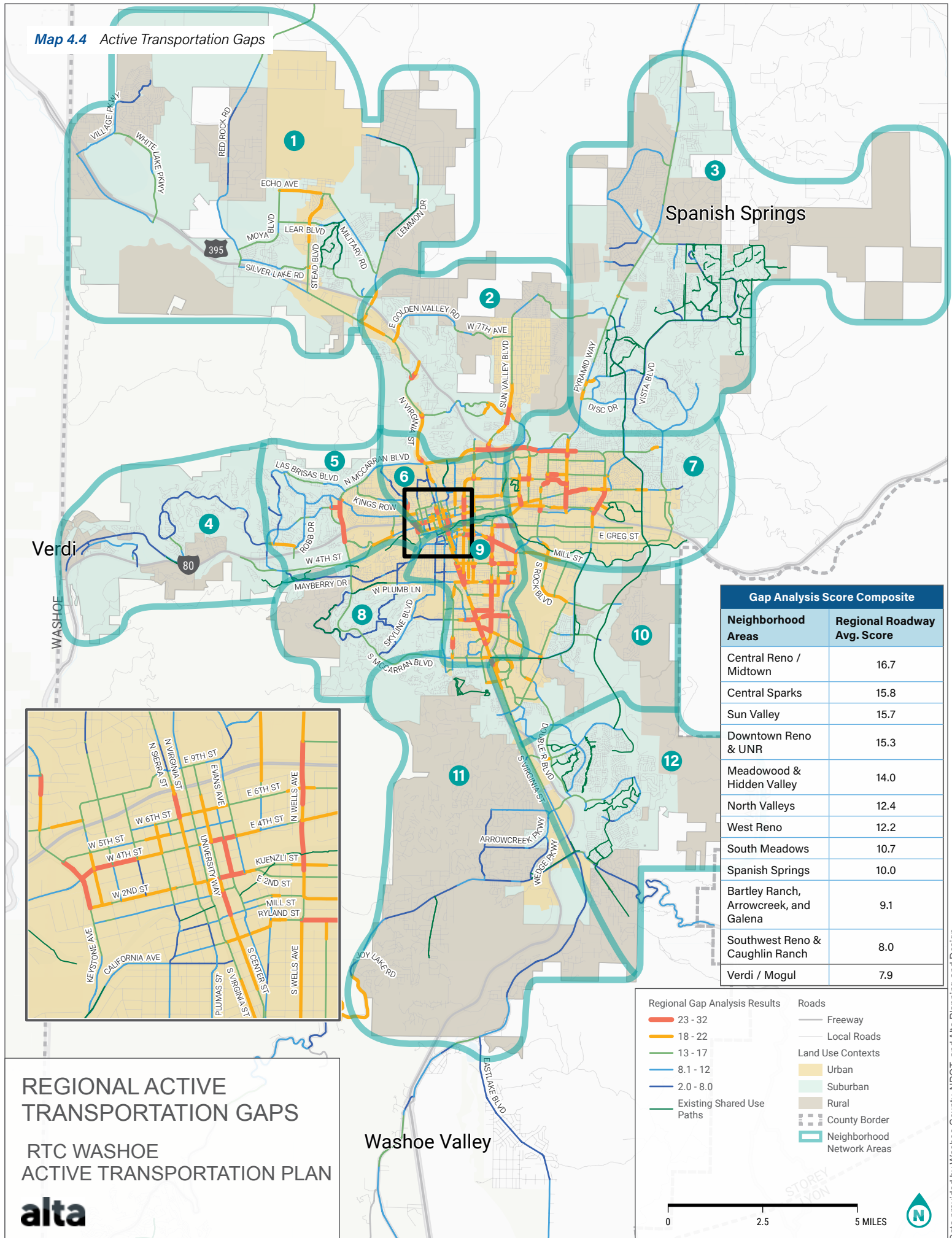


Gaps in the active transportation network can act as barriers to people walking, biking, and rolling.

Table 4.5 Regional Active Transportation Gap Scoring Methodology

Analysis Focus	Metric	Criteria	Max Points	
Safety	High Injury Network (roads)	If segment is on the HIN	5	10
	High Injury Network (intersections)	If segment has HIN intersection(s)	5	
Active Transportation Experience	Bicycle Level of Traffic Stress	BLTS Score	5	10
	Pedestrian Experience Index	Pedestrian Experience Index (Total Infrastructure Score)	5	
Equity	Equity Analysis	High Equity Need	10	10
Active Transportation Potential	Active Trip Potential Analysis	High Active Trip Potential in TAZ (average of those it touches)	10	10

Map 4.4 Active Transportation Gaps



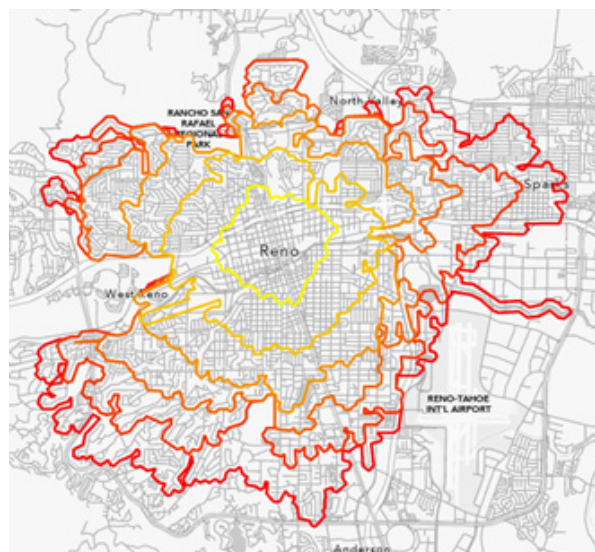
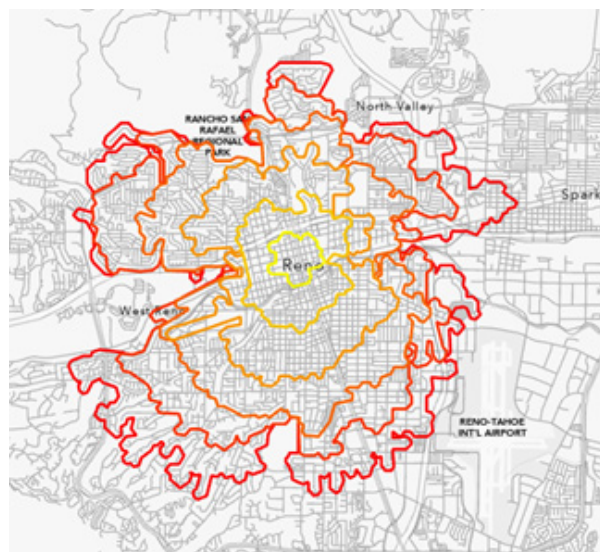
SCENARIO PLANNING

The RTC and project team collaborated to develop a custom GIS analysis toolbox which allows for scenario planning to identify the potential benefits to vehicle miles traveled, greenhouse gas emissions, and new bicycling trips from projects which enhance the bicycle level of traffic stress. By comparing the current levels of traffic stress on the network with the proposed or planned levels of traffic stress, the toolbox runs a comparative analysis to quantify potential benefits. This toolbox will allow the RTC to understand the larger benefits of linking projects together and assess the potential increases in access through low-stress bicycle facilities to key destinations such as schools, parks, government resources, and other community destinations. By leveraging the BLTS analysis results, the RTC can maintain an accurate baseline of the current network as projects come on line and continue to assess the future benefits of projects individually and compared to each other. This analysis toolbox will allow the RTC to focus resources in areas which provide the greatest benefit to active transportation across the network.

Furthermore, this toolbox will allow the RTC to assess how the low-stress network is growing within NNP areas and track performance metrics related to accessibility to key destinations through a low-stress network.

A representation of the outputs generated through this toolbox are highlighted in [Figure 4.5](#) below. The picture to the left highlights the potential distance traveled by a bicyclist from the center of Reno using the existing networks in five minute increments (bicycle access-sheds). This is compared with a scenario that envisions a network of low-stress bicycle facilities throughout downtown Reno. As shown, the potential increase in the distance traveled is significant including extending the furthest access-shed to South McCarran, South East McCarran, and into central Sparks. The results shown here highlight the potential benefits for a single location based on improvements to the network. When conducting full-scale scenario planning, the benefits across the Truckee Meadows are aggregated together to assess the holistic benefit across the network.

Figure 4.5 Bicycle Access-sheds (Before (left)/After (right))





Addressing the Issues



ADDRESSING THE ISSUES

This chapter presents the process that the RTC will apply throughout the Truckee Meadows to enhance the existing active transportation network and address issues identified through the existing conditions analysis ([Chapter 2](#)), public engagement process ([Chapter 3](#)), and in-depth network analysis ([Chapter 4](#)). What we heard through the public engagement process and what we see based on the multiple layers of data analysis can be summarized in the following points:

1. Residents within Washoe County are interested in walking and biking for a greater number of trips throughout their daily lives but generally do not feel comfortable traveling across major and minor arterials which are located between neighborhoods.
2. Arterial roadways throughout the urban, suburban, and rural contexts are uncomfortable for the average person walking and biking based on the lack of a connected network of bicycle and pedestrian facilities which include sufficient separation between high-volumes of automobile traveling at comparatively high-speeds and people walking or biking.
3. Addressing active transportation challenges within areas that have a history of safety issues, represent high levels of equity needs, and include a large proportion of short-vehicle trips present the greatest opportunities for enhancing the active transportation network and providing the greatest levels of benefits to the community in terms of increased access for people walking and biking.

In addition to the NNP Framework, this chapter presents recommended policies and programs which help to facilitate collaborative planning with local agency partners and provide supportive resources for people walking and biking. These recommendations will be further refined prior to implementation by the RTC based on collaboration with stakeholders and identification of potential funding streams.



Most bicyclists desire increased separation from vehicles on high-speed roads such as Airport Road.

NNP Framework

Introduction

Recognizing the unique transportation demands of individual neighborhoods, the NNP approach aims to create neighborhood-scaled bike and pedestrian plans. Each plan will assess existing conditions, identify transportation needs, and incorporate public input to establish a list of transportation improvement projects.

Key outcomes of the Neighborhood Active Transportation planning process include:

Active Transportation Network Recommendations:

- Comprehensive proposals for enhancing and developing the active transportation network infrastructure, encompassing bike lanes, pedestrian pathways, and other modes of non-motorized transport.

Project-Specific Cost Projections:

- An estimation of the financial resources required for the implementation of specific projects within the Active Transportation Plan, helping in budgetary planning and allocation.

Prioritized Neighborhood Projects:

- A ranked list of projects based on predetermined criteria, ensuring that the most critical or impactful initiatives are addressed first, aligning with the overall goals of the neighborhood and the regional plan.

Identified Quick-Build Opportunities:

- Recognizing and highlighting projects that can be rapidly implemented with relatively low resources, facilitating quick improvements to the active transportation infrastructure, and addressing immediate community needs.

Localized initiatives for education and encouragement:

- Each plan will identify strategies for the RTC to engage the public including education campaigns and encouragement events based on the localized needs of the neighborhood.

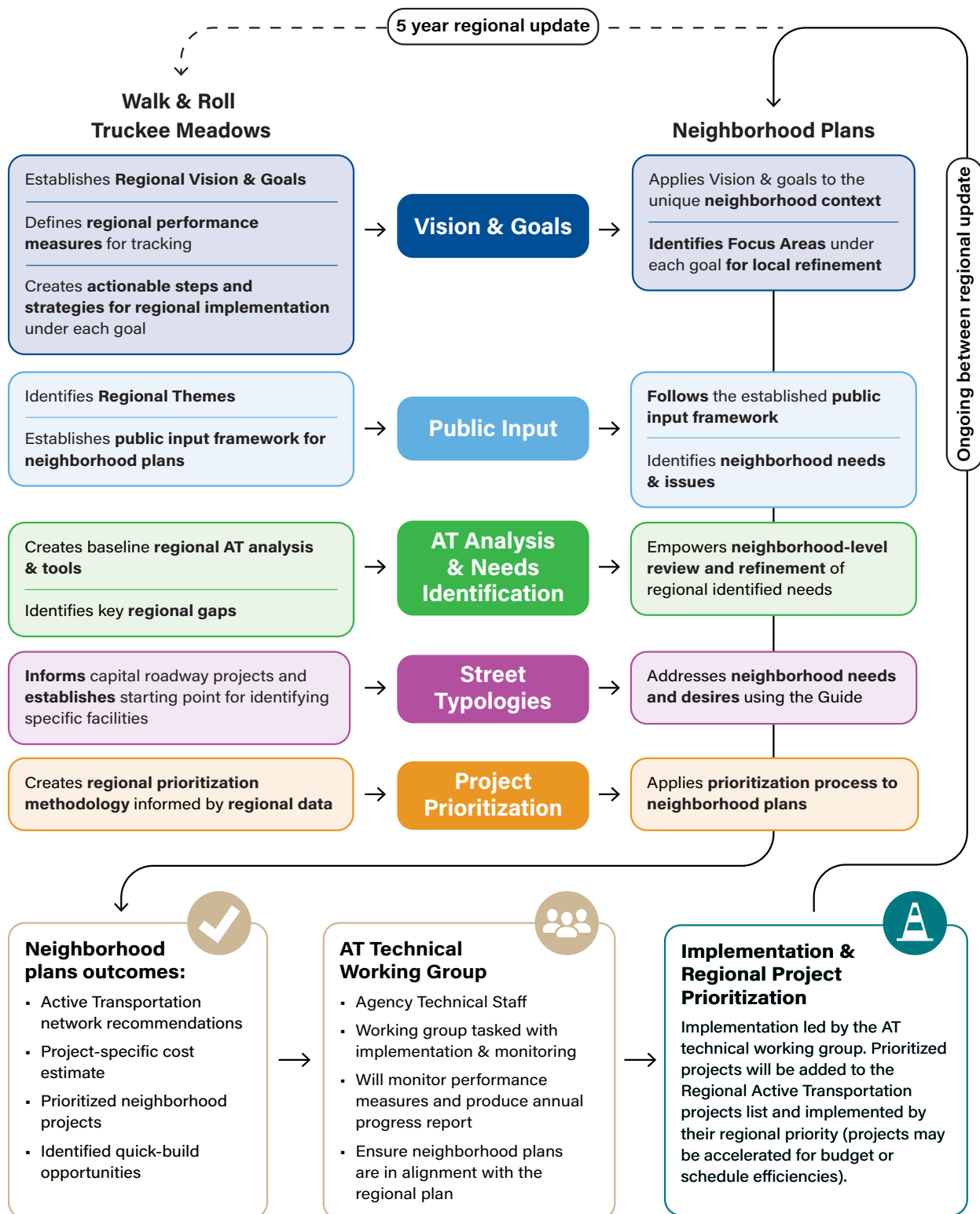
RELATIONSHIP WITH THE REGIONAL ATP

The Regional ATP establishes vision and goals and defines regional measures for tracking performance. The Regional ATP will inform Neighborhood Plans through the development of region-wide analysis data layers and the creation of a scenario testing tool to gauge benefits to accessibility and mode shift potential based on improvements to the bicycle network. The Neighborhood Plans will apply the regional vision, goals, prioritization, and street typology guide developed through the Regional ATP to the neighborhood context to identify the specific recommendations that will address neighborhood needs. The Regional ATP will establish the framework for conducting Neighborhood Plans including the process for reviewing existing conditions, engaging with the community, developing recommendations, and applying the regional prioritization to identified neighborhood projects. This process will mirror itself across each of the twelve distinct neighborhoods outlined in this plan. This approach aims to both identify opportunities for collaboration and synergy within each neighborhood and guarantee regional connectivity by coordinating with other Neighborhood Plans at a network level.

PEER-CITY EXAMPLES OF NNP:

- Boise, ID - The Ada County Highway District (ACHD) conducts neighborhood planning and results from each plan are included in their Integrated Five-Year Work Plan (IFYWP).
- Denver, CO - Denver's Community Transportation Networks initiative identifies three areas for focused engagement to facilitate community collaboration in planning active transportation networks.

Walk & Roll Neighborhood Planning Process



IMPORTANCE OF EQUITABLE PLANNING

Each of the twelve identified neighborhoods has unique needs and desires regarding active transportation as well as different needs for engagement. To create a deeper understanding of needs across the community, the RTC will tailor engagement strategies and methods to the needs of each neighborhood including providing language-specific outreach materials and staff at engagement events as needed from neighborhood to neighborhood.

NNP AREAS

To facilitate targeted engagement and analysis within focused areas, the Truckee Meadows region has been subdivided into twelve generalized NNP Areas. Each area will be the focus of a targeted Neighborhood Plan which follows the framework laid out in this section. Neighborhood Plan areas were selected based on the existing areas of high active trip potential, geographic distance, and typical distribution of short trips as well as existing geographic boundaries and political borders. Boundaries of neighborhood plans are intended to be flexible to allow RTC to proactively plan connections to nearby destinations or incorporate other planned improvements within a short distance of the NNP Area boundary. [Figure 5.1](#) - NNP Area Boundary Selection visually shows how various datasets are considered to formulate the planning areas. The twelve NNP Areas listed to the right and shown in [Map 5.1](#) - NNP Areas. These areas are subject to change or be combined for planning efficiencies when necessary or advantageous as determined by the RTC Washoe.

Neighborhood Plan Areas:

1. North Valleys
2. Sun Valley & Panther Valley
3. Spanish Springs
4. Verdi / Mogul
5. West Reno
6. Downtown Reno & UNR
7. Central Sparks
8. Southwest Reno & Caughlin Ranch
9. Central Reno / Midtown
10. Meadowood & Hidden Valley
11. Bartley Ranch, Arrowcreek, and Galena
12. South Meadows



Neighborhood Network Plans will help create connections within and between neighborhoods for people walking, biking, and scooting.

Neighborhood Planning Areas in Truckee Meadows Delineation Process

The Truckee Meadows Region has been divided into twelve focused Neighborhood Planning Areas for analysis, engagement, and development of recommendations:

- High-need equity zones: Health, socioeconomic, and environmental data inform transportation decision-making in these areas to address inequalities.
- School zones to align with existing boundaries for school-related transportation trips.
- Existing active trip demand: these include areas with frequent walking, biking, and local travel to encourage sustainable transport options.
- Municipal boundaries

Boundaries can be subject to adjustments/changes to plan connections and incorporate nearby improvements for optimal connectivity.

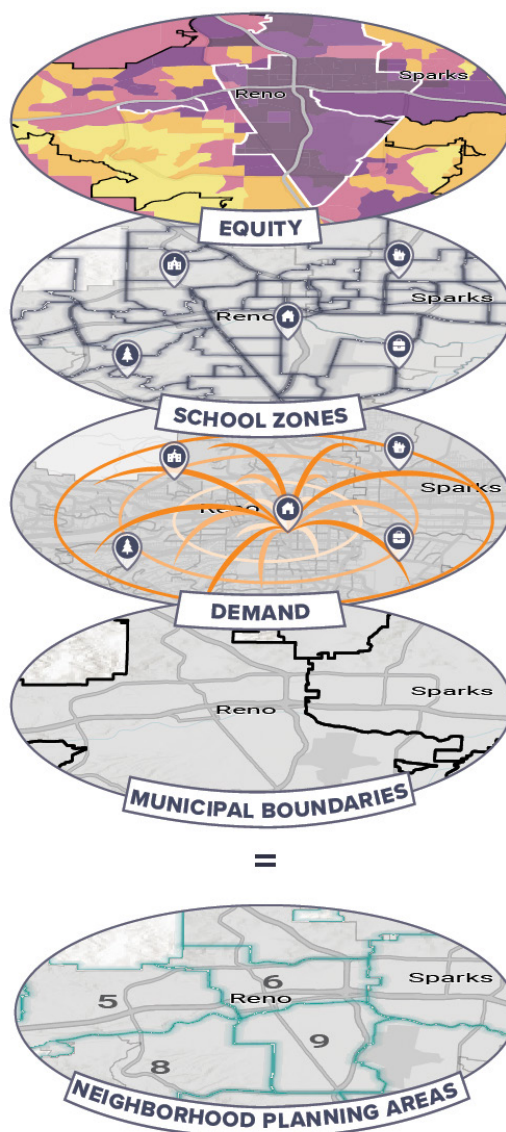
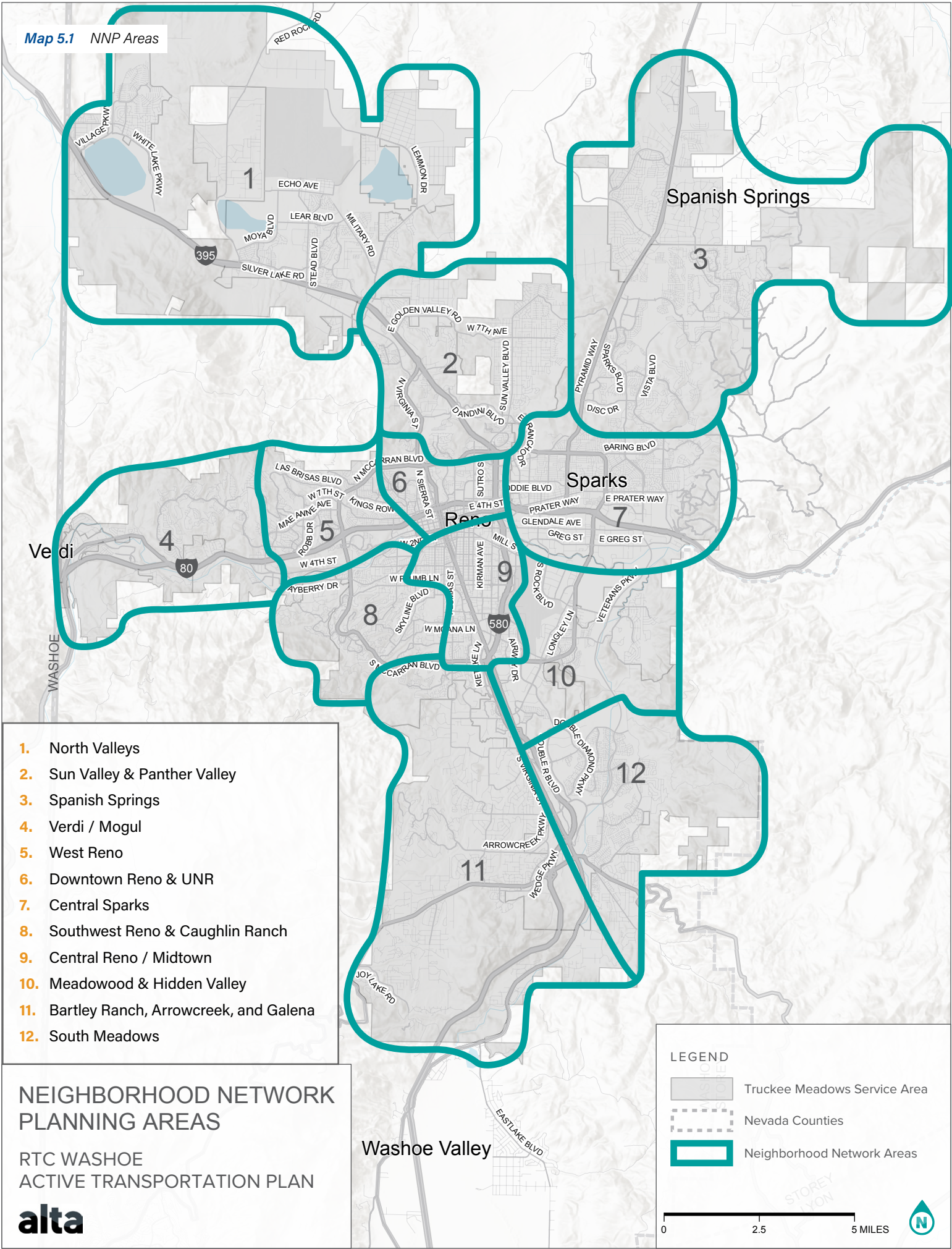


Figure 5.1 NNP Area Delineation

Map 5.1 NNP Areas



NNP Process

Interpretation of Regional Vision & Goals

Neighborhood plans will adapt the regional vision and goals to the local context while aligning with overall objectives. The Vision and Goals identified in the Walk & Roll Truckee Meadows Plan represent the goals for active transportation across the Truckee Meadows region, however, the interpretation of the regional vision and goals is intended to be applied through the unique lens of each neighborhood. While the overarching vision and goals for the Walk & Roll Truckee Meadows plan will inform the Neighborhood Plans, each neighborhood may choose to emphasize certain goals based on the unique context and values of the respective neighborhood. This flexibility allows neighborhood-level customization while aligning with the overall regional goals of the Walk & Roll Truckee Meadows Plan. This process will help guide the development of recommendations and their implementation when considering neighborhood projects at a regional level.

PUBLIC INPUT

Utilizing Regional Public Input Framework

Neighborhood plans are intended to be mini-active transportation plans conducted within the small neighborhood area which brings neighbors together to identify issues and solutions to improving the streets and trails they know intimately. To empower strong collaboration with members of the community, the RTC will follow a typical outreach framework including virtual and in-person engagement options used during the regional ATP and multiple touchpoints throughout the neighborhood plan process. Each Neighborhood Plan will follow a similar framework to provide a consistent approach to engagement

across the Truckee Meadows. This will ensure that each Neighborhood Plan includes the following baseline elements for engagement during a Neighborhood Plan:

- **Public Engagement Plan** - Prior to undertaking a Neighborhood Plan, the RTC should develop a public engagement plan specific to the neighborhood. This outline for public engagement should specify the specific stakeholders, organizations, touch points, and outreach methods that will be most effective for reaching and engaging the public.
- **Public workshops**
 - ◆ **Listening Workshop** - The development of each neighborhood plan will include a public workshop at the beginning of the plan intended to gather direct feedback and assess the needs from local neighborhood residents. This will include an opportunity to review regionally identified needs and provide comments or identify potential solutions.
 - ◆ **Solutions Workshop** - Following the identification of neighborhood needs and review of regional data by neighborhood residents, the RTC will conduct another public workshop to collaborate with the public to address identified needs starting with concepts included in the Regional Streets Typology Guide.
- **Online/social media** - The RTC will use social media to help advertise and promote in-person and online outreach efforts for each Neighborhood Plan.

- **Neighborhood Plan Webpage** – All information and materials for each Neighborhood Plan will be hosted on the RTC website with a dedicated webpage for each Neighborhood Plan. The RTC will develop each webpage in concert with the development of the Neighborhood Plan. Once the plan is completed, the RTC will continue to maintain the page with relevant information and a copy of the completed plan.
- **Survey and Interactive Comment Map** – To augment the public workshops, the RTC will provide an online interactive map for identifying specific needs and issues throughout the neighborhood. This information will provide context for network planning during the recommendations phase of the neighborhood plan.

Identification of Neighborhood-Specific Engagement Methods

The specific methods used within each neighborhood may vary based on the needs of the community including providing language-specific outreach or a greater reliance on in-person or paper-based outreach for seniors. While the general approach to engagement will follow the Public Input Framework identified in the Regional ATP, each Neighborhood Plan may involve a different blend of engagement offerings based on the needs of the community. Before the kick-off of each Neighborhood Plan, the RTC will conduct a high-level review of socioeconomic data to gauge the level of need for unique or tailored outreach strategies or materials and create a custom Neighborhood Engagement Plan to guide the outreach for the Neighborhood Plan, such strategies may include the following:

- Focus groups with specific target groups to assess needs and issues (ex. Seniors, Youth, Latinx community).
- Postcard mailers in English and Spanish sent to all residents in the neighborhood with a link and QR code to the project webpage.
- Yard Signs provided for visibility including project webpage link and QR code.
- Additional public workshops as needed for consideration of issues or potential solutions.
- Intercept surveys
- Compensation for public participation in areas with equity concerns

ACTIVE TRANSPORTATION ANALYSIS

The Regional ATP represents a comprehensive approach to walking and bicycling infrastructure and programs across Truckee Meadows. Regional networks link communities and connect to local networks to support shorter trips for both pedestrians and bicyclists.

The Regional Active Transportation Plan provides a comprehensive baseline analysis of active transportation networks and needs across the Truckee Meadows region to help inform decision-making during Neighborhood Plans. This analysis is summarized below and described in detail within [Chapters 3 and 4](#). The baseline analysis includes the following datasets:

- **Bicycle Level of Traffic Stress (BLTS)** – Scores level of comfort for streets for cyclists, considering factors like traffic speed, volume, and infrastructure (bike lanes, etc.).
- **Pedestrian Experience Index** – Similar to BLTS, this evaluates the level of comfort for streets and areas, considering factors like sidewalk quality, safety crossings, and access to amenities.
- **Transportation Equity Analysis** – Examines level of equity based on composite scores of opportunities + accessibility, affordability, vulnerability, engagement, health + safety, and environmental justice.
- **Active Trip Potential** – Identifies trips whose distances are short enough to be accommodated by walking or biking.
- **Regional High Injury Network (Intersections & Road Segments)** - Identifies intersections and road segments with high rates of crashes and injuries, focusing on specific regions.
- **Regional Gap Analysis** – This summary layer combines the five metrics above into a single analysis layer which identifies the regional roadways which act as the greatest barriers to active transportation in the region.

These datasets will help to inform the needs identification and network planning process of the Neighborhood Plans. Additionally, the Regional Active Transportation Plan included the creation of a scenario testing tool that allows the RTC to evaluate before and after enhancements in accessibility and modal shifts from improvements to the bicycle network. Using this tool, the RTC

will be able to conduct scenario testing which may combine projects linking neighborhoods and those across multiple neighborhoods to assess the benefit to the larger community.

Neighborhood-Specific AT Analysis

Neighborhood plans will use the regional-level data layers to help identify existing neighborhood needs and desires for active transportation. This process will include working with the neighborhood community to identify key connections and consider existing concerns or gaps within the network that may present opportunities for improvement. This process will help to contextualize the regional-level analysis and identify the most pressing need for those living within each neighborhood.

BASIS FOR RECOMMENDATIONS

Street Typology Guide Application

The NNP process will focus on regionally identified needs within the transportation network and help facilitate a discussion between RTC staff and local residents to identify the best options for addressing those needs while fitting within the neighborhood context. This discussion will be informed by the Street Typology Guide ([Appendix C](#)) which identifies generally suitable facilities for pedestrians and bicyclists on regional roadways of various sizes (Arterial/Collector, Major/Minor) in different development contexts (urban / suburban / rural); this provides a starting point for identifying planning-level corridor improvements on regional roadways. While the typology guide identifies appropriate active transportation elements for a given roadway, it is also intended to allow flexibility to respond to unique corridor characteristics such as ROW widths, the presence of transit, or other unique characteristics. This process will help to select facility recommendations which fit within the neighborhood context as determined by local neighborhood residents¹.

Quick-Build Opportunities Identification

During the development of project recommendations, the RTC will collaborate with neighborhood residents and stakeholders to identify opportunities to install quick-build style improvements to provide rapid response to identified needs. Quick-build style improvements use low-cost materials to reformat roadway space into more designs which are more accommodating for pedestrians and bicyclists while not requiring significant investments of capital through extensive construction efforts. Quick-build projects provide a strong opportunity to test community generated recommendations and adjust the design prior to constructing long-term improvements. This is a strong option for projects which have a high estimated cost and a high identified regional priority. Installing a quick-build style improvement of the identified recommendation will allow the RTC and community to recognize immediate benefits while designing and allocating funding for a more long-term improvement. These improvements can also build momentum and trust in the planning process.

Cost Projections for Recommended Improvements

Projects recommended within each Neighborhood Plan will include a planning-level cost estimate to identify a high-level cost for developing the improvement. This information will be based on the latest available information and will be a key input for guiding the implementation of the recommendation. The RTC will use the estimate cost to help inform funding and implementation decisions including the consideration of quick-build style improvements and the most appropriate source of funding.

Consideration of Funding Sources

Projects identified through the NNP process may be eligible for different sets of funding based on their location, identified needs, conceptual design, and overall complexity. Each Neighborhood Plan will identify potential funding sources for each identified project which will be used by the Active Transportation Technical Working Group (ATWG) to apply appropriate funding to different projects.

Neighborhood Project Prioritization Process

The prioritization process identified under the Walk & Roll Truckee Meadows Plan represents the regional transportation priorities for implementing improvements for people walking and rolling in the community. Each neighborhood plan will apply the regional prioritization process to the identified recommendations to highlight the projects of the greatest need within the community.

Local Community-Driven Projects

Though the NNP process is intended to identify improvements on regional roads, this process may identify projects which require adjustments to local or private roads. Projects such as these will be an opportunity to coordination with local agency partners at the City or County to communicate the identified need and create options for addressing it.



The 5th Street project is an example of local quick-build project implementation.

¹ Final recommendations will be approved based on engineering judgement and best practices. The RTC will provide design guidance and direction to identify feasible recommendations which support the project goals to the extent practicable.

Final Neighborhood Plan

Once completed, a Neighborhood Plan will include the following items to inform active transportation projects going forward:

Community Vision and Priorities

- This will include summaries of key goals and aspirations for the neighborhood's active transportation network, aligning with the goals of the Regional Walk & Roll Truckee Meadows Plan.
- May include highlighting recurring themes and suggestions gathered through public engagement, highlighting neighborhood-specific community participation.

Regional Connections

- Neighborhood plans should consider regional connections and adjacent neighborhoods to foster seamless travel, expand access to destinations across the region, and contribute to a more vibrant and interconnected community.
- This collaborative approach ensures broader impact and informs the development of subsequent plans, maximizing their effectiveness.

Prioritized Neighborhood-Project List

- Each plan will provide a ranked list of specific projects deemed critical for achieving the neighborhood's key goals based on the regional prioritization process.

Neighborhood Quick-Build Opportunities

- Identified projects that can be implemented swiftly and economically, generating early wins and encouraging further investment.
 - ◆ Examples: Crosswalk enhancements, temporary protected bike lanes, and neighborhood traffic calming elements.

Implementation Strategies

- An outline of the steps and resources needed to bring priority projects to fruition.
 - ◆ These may consider partnerships with local organizations, funding opportunities, identifying construction timelines that align with ongoing development, etc.

Neighborhood-Specific Education and Encouragement Activities

- Neighborhood plans will highlight existing education and encouragement activities and identify potential new initiatives within the community based on local community input and needs.

These outputs will be carried forward to the Active Transportation Technical Working Group for consideration and potential allocation of funding for identified projects. The AT Technical Working Group is described in further detail below.

AT Technical Working Group & Regional Prioritization

AT TECHNICAL WORKING GROUP COMPOSITION & ROLE

The Active Transportation Technical Working Group (ATWG) is intended to be an interagency group responsible for prioritizing the active transportation projects identified in Neighborhood Plans at a regional level. The group is based on similar regional implementation groups such as the Pavement Preservation Committee and its composition ensures representation for each city and the county for diverse perspectives and expertise when allocating funding and resources.

The ATWG will be comprised of planning, engineering, and maintenance staff from the Regional Transportation Commission, City of Reno, City of Sparks, Washoe County, and the Nevada Department of Transportation as appropriate. Additional members may include planning staff from the Washoe County School District, Reno-Sparks Indian Colony, or others as deemed necessary by the RTC.

NNP Involvement

The ATWG will support project prioritization and oversight of active transportation projects across the region and provide high-level oversight of the NNP process. This group will support NNP by providing feedback on draft plans and providing technical guidance and support as needed related to facility selection and design. Furthermore, this group will provide input on the sequencing of neighborhood plans with an emphasis on areas with the greatest equity needs, issues of pedestrian and bicycle safety, potential for active transportation trips, and identified gaps in the active transportation network.

REGIONAL PRIORITIZATION FRAMEWORK

Projects identified through Neighborhood Network Plans will be addressed in a variety of ways based on their overall complexity, existing projects, and funding availability. Projects identified by the ATWG as standalone Active Transportation projects (i.e. requiring RTIP programming or discretionary grant funding) will be prioritized on a regional basis to ensure the RTC focuses funds on those projects which provide the greatest benefits to the active transportation network based on a data-driven approach ([Table 5.1](#)). This prioritization process is based on the community and stakeholder identified goals in this plan and help support the on-going performance measures for active transportation highlighted in [Chapter 6](#).

MONITORING AND ADAPTATION

Performance Metrics

The ATWG plays a crucial role in guaranteeing the impact of this plan aligns with its intended goals. By conducting in-depth analyses of connectivity, safety, and usage data, the ATWG will use the performance metrics in this plan (see [Chapter 6](#)) to assess the effectiveness of each initiative. This data-driven approach will not only reveal opportunities for improvement but also ensure transparency to the public regarding the actionability and real-world impact of these plans.

In essence, these plans will embrace an adaptable approach. Real-world data and resident feedback serve as constant sources of improvement, informing ongoing revisions to the plan. The ATWG acts as a dedicated monitoring body at the heart of this process.

Table 5.1 Project Prioritization Framework

Type	Question	Pts by Type	Percent of Total
Safety	Is the project include improvements on a High Injury Network roadway?	15	30%
	How many miles of the HIN will this project address?		
	Does this project include improvements at High Injury Network intersections? If so, how many?		
	If so, how many?		
Equity	Is the project in a federally defined Justice 40 zone?	10	20%
	Is the project in an Equity Priority Zone (Alta identified disadvantaged area)?		
Network Enhancement	What is the estimated improvement in the level of bicycle stress from this project?	10	20%
	Does this project address an existing sidewalk gap?		
Regional Network Gaps	Does the project address existing regional gaps in the active transportation network?	5	10%
Transit Connections	Is the project on an existing fixed route transit line?	5	10%
	If so, does the route have higher than average ridership?		
	Are there ADA deficient Bus Stops along the corridor within the project limits? (If so, how many?)		
	1 - 2		
	3 - 5		
	6+		
Community Connections	Is the project within 1,000 feet of essential services including governmental services, affordable housing, medical services, educational services, or other?	5	10%
	Is the project within 1,000 feet of a Washoe County School District school?		
	Additional points for each school within 1,000 feet of the project (up to 2 additional points)		

Annual Progress Reports

The ATWG will oversee development of an annual progress report summarizing progress completed in the previous year on active transportation planning and implementation over the previous year. The progress report will be available to stakeholders, community organizations, elected officials, and the general public in order to enhance transparency and accountability. These reports will serve as a clear and concise snapshot of the community's progress towards enhancing the active transportation network. By presenting a comprehensive annual progress report, the aim is to foster trust and collaboration with stakeholders, ensuring the plan remains accountable and responsive to the needs of the community. Reports will include updated tracking of performance metrics and an overview of recently completed projects and plans over the past calendar year. For example, Blueprint Denver produces an annual progress report in the form of a storymap available in an accessible web format for Denver residents.

Neighborhood Network Plan Updates

Neighborhood Network Plans are intended to be living documents updated on a semi-regular basis or approximately every 5 years between updates to the regional active transportation plan to reflect changing needs and circumstances. Updating Neighborhood Network Plans may involve completing a new plan or reviewing and updating the previous plan based on changing needs and circumstances within each neighborhood area and at the discretion of the RTC.

A light revision might be sufficient for addressing minor changes or incorporating new information. However, comprehensive updates or even entirely new plans may be necessary for neighborhoods experiencing significant transformations, such as rapid growth, major infrastructure projects, or identified equity concerns.

Neighborhood Network Plan Updates may be prioritized based on several key factors such as:

- **Equity:** Ensuring underserved areas receive timely attention to address historical inequities.
- **Safety:** Focusing on neighborhoods with high accident rates or lacking safe infrastructure.
- **Growth:** Prioritizing areas experiencing rapid development or population increases.
- **Capital Projects:** Aligning plan updates with major infrastructure projects for optimal synergy.

By adopting a flexible and data-driven approach to updates and prioritization, RTC can ensure that each neighborhood has a plan that effectively reflects its unique needs and aspirations.

NNP Framework Summary

The NNP Framework and implementation outlined above represent steps to create a more connected active transportation network through community-driven action and vision. The new Active Transportation program managed by the ATWG will oversee planning and implementation throughout the region moving forward which will result in a more streamlined and efficient process for planning and constructing active transportation improvements within neighborhoods across the Truckee Meadows. Through collaborative efforts, strategic partnerships, and ongoing monitoring, the NNP process will ensure that active transportation planning meets the various active transportation needs of the Truckee Meadow's diverse neighborhoods while aligning with regional goals and priorities.

Regional Street Typology Guide

The RTC Street Typology Guide, included in [Appendix C](#), represents a systematic approach to prioritizing the safety and comfort of pedestrians and cyclists on regional roads in Washoe County. The guide is a starting point to inform design decisions and support a collaborative planning process during Neighborhood Network Plans.

The guide illustrates practical examples of strategies to accommodate active transportation across all ten regional roadway typologies. The guide describes the preferred strategy for separating modes on regional roads based on the land use context. Additionally, the guide notes the preferred facility type as well as the preferred widths for each facility and any required buffers; minimum widths are also noted for constrained locations. In order to support quick-build project implementation, the guide highlights potential treatments and strategies for using quick-build materials.

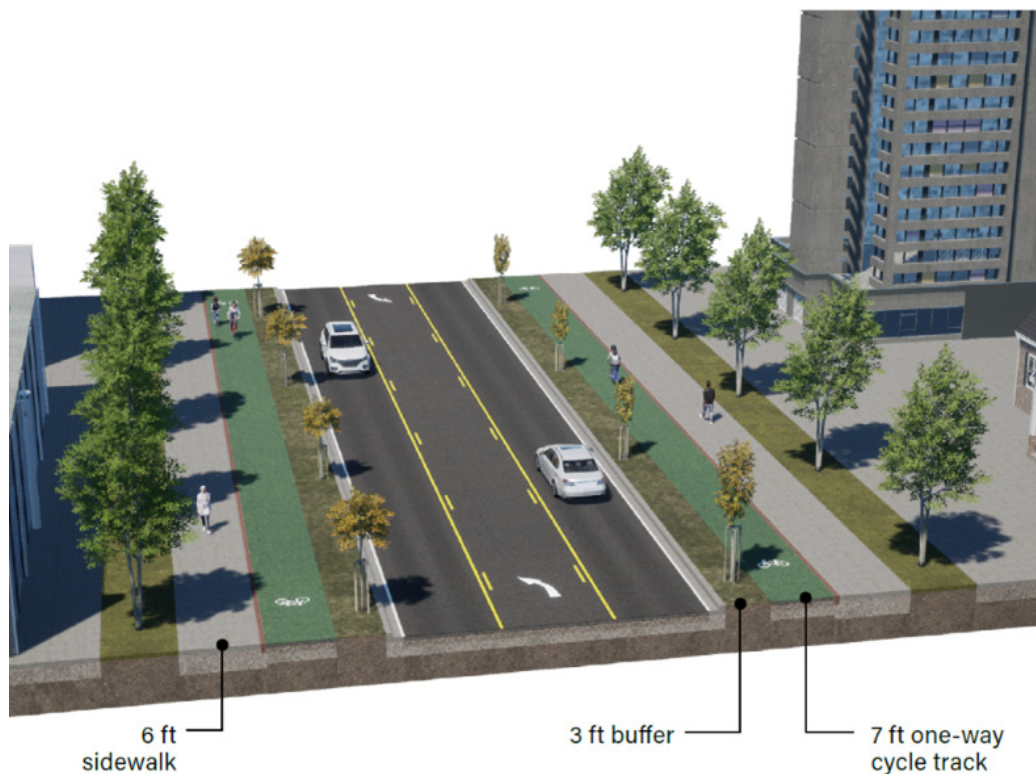


Figure 5.2 Preferred separation style example included in RTC Street Typology Guide.

Recommended Policies & Programs

Complete Streets Policy

The RTC Washoe adopted the Complete Streets Master Plan in July 2016 which includes the definition of, vision for, and general approach to implementation of Complete Streets within the Truckee Meadows. While this plan includes many of the ten elements of a comprehensive Complete Streets Policy, these are spread throughout the document and not contained within a single cohesive statement of policy. It is recommended that the RTC and local agency partners refine their Complete Streets Policy to be a cohesive and standalone policy document that clearly identifies all ten elements identified by the National Complete Streets Coalition² of a model Complete Streets Policy as listed below.

1. **Vision and Intent** – Specifies an equitable vision and need for creating a complete, connected, network for active modes.
2. **Diverse Users** – Focuses benefits on all users equitably, particularly for vulnerable users and underinvested communities.
3. **Commitment in all projects and phases** – Applies to all new, retrofit / reconstruction, maintenance, and on-going projects.
4. **Clear, accountable expectations** – Identifies a procedure for when exceptions to Complete Street designs including high-level approval and public notice of granted exceptions.
5. **Jurisdiction** – Requires interagency coordination between government departments and partner agencies.
6. **Design** – Directs the use of the latest and best design criteria and guidelines.

7. **Land Use and Context Sensitivity** – Considers surrounding community's current and expected land use and transportation needs.
8. **Performance Measures** – Establishes performance standards that are specific, equitable, and available to the public.
9. **Project Selection Criteria** – Provides specific criteria to encourage funding prioritization for Complete Street implementation.
10. **Implementation Steps** – Includes specific next steps for implementation of the policy.

Formalizing the shared vision for and commitment to design and implementation of Complete Streets across transportation projects will help to ensure that streets are safe for people of all ages and abilities and balance the needs to different modes across the Truckee Meadows. Once formalized and adopted by the RTC and local jurisdictions, this policy should remain available online for easy reference by agency partners and the community at large.



²The Elements of a Complete Streets Policy, Smart Growth America and National Complete Streets Coalition, (2023). Pg. 1 (<https://smartgrowthamerica.org/wp-content/uploads/2018/02/Complete-Streets-Policy-Framework.pdf>).

Local Roadway Standards

The RTC Streets & Highways Policy presents the strategy to implementing projects on regional roads throughout the Truckee Meadows through specific project types. This policy provides conformity on implementation throughout the region while working within the existing local zoning codes and roadway standards. All three local entities (City of Reno, City of Sparks, and Washoe County) maintain standards for the construction of roadways within their jurisdiction including typical cross-sections, lane widths, and accommodations for pedestrians and bicyclists. While these standards are largely similar, they vary slightly in their requirements for overall roadway widths and pedestrian and bicycle accommodations. Currently, Washoe County roadway standards indicate that bicycle facilities should be provided in accordance with the RTC Bicycle and Pedestrian element of the Regional Transportation Plan.

There is an on-going regional effort to update local roadway standards for a greater level of consistency across all three jurisdictions which could include updating the standards from both City entities to provide bicycle facilities in accordance with the RTC Bicycle and Pedestrian element of the Regional Transportation Plan. This would help to ensure a consistent application of active transportation facilities on regional roadways throughout the Truckee Meadows. It is important to note that the Regional Streets Typology Guide is intended to complement the local design standards within each partner jurisdiction and work within local zoning codes, ordinances, and design standards as they are maintained and updated by local partners.



Cyclists, pedestrians, and drivers traveling comfortably along tree lined Riverside Drive

RTC Neighborhood Greenways Program

While the RTC maintains regional roadways in the Truckee Meadows, the NNP process may consider connections on local neighborhood roads to create low-stress connections while larger scale projects on regional roads are designed and constructed or longer-term improvements when regional roads have significant constraints which may prevent the implementation of a low-stress facility. In these instances, it is recommended that the RTC partner with the local roadway owner (City of Reno, City of Sparks, or Washoe County) to implement traffic calming improvements to create a low-stress connection on local streets also known as a Neighborhood Greenway or Neighborhood Byway. This type of program has been applied in cities across the country to provide important connections between and within neighborhoods as longer-term improvements are planned, designed, and funded for construction.

Using this strategy, the RTC and local entity would collaboratively identify appropriate traffic calming measures for the local street which adhere to each entities traffic calming policy or guide (further detailed below). Additionally, these projects would identify crossing improvements at intersections with higher level streets (arterials and collectors). These improvements could include crossing improvements such as signals, crosswalks, curb extensions, curb ramps, signage, and street markings as well as way-finding signage, modal filtering, and connections to nearby bicycle routes. Neighborhood Greenways may not be appropriate on all local streets and should be prioritized on streets with the following characteristics:

- Direct connections between neighborhood destinations
- Low vehicle speeds
- Low traffic volumes



Figure 5.3 Example of modal filtering on Neighborhood Byway (Provo, UT).



Figure 5.4 Neighborhood Greenway with reduced speed limit (Portland, OR).

- Greening or shade elements including trees and other landscaping along the route (when available)

To support the implementation of neighborhood greenways, the RTC may consider modifying existing policy or developing a focused grant program for local entities. This could include adding a definition for neighborhood greenways as part of the existing definition of regional roads to support usage of existing additional funding for traffic calming improvements on these select roadways. In developing a focused grant program for local entities specifically for traffic calming on neighborhood greenways, the RTC could ensure the implementation of high-quality improvements on candidate streets.

RTC E-bike Incentive Program

Electric bikes (e-bikes) have grown significantly in popularity in the past five years and have been shown to encourage increased levels of bicycle usage and replacement of vehicle trips⁴ as well as empowering seniors to bicycle⁵. In order to encourage greater adoption of this mode and make these vehicles more affordable for those who wish to use an e-bike, local and state entities from across the country have implemented incentive programs of various forms since 2018. Programs such as these have been implemented in areas as various as Hawaii, Iowa, Maine, Wisconsin, Colorado, and North Carolina⁶. These programs provide either a point-of-sale or post-sale discount on electric bikes directly to the consumer and some programs provide higher rebates based on income levels. Research into the effectiveness and benefits of these incentive programs from the National Center for Sustainable Transportation highlight that

those who received a rebate to purchase an e-bike engaged in an increased level of bicycle activity after purchasing an e-bike and nearly 40% replaced at least one weekly vehicle trip⁷.

It is recommended that the RTC and local partners develop an e-bike incentive program similar to those implemented in states and localities across the US to further encourage the use of e-bikes in order to support shifting vehicle trips to active modes and bolstering mobility for seniors. Existing federal funding through the Transportation Alternatives (TA) or Congestion Management and Air Quality (CMAQ) programs present the greatest potential for developing this incentive program (See [Denver, CO](#) and [Salt Lake County, UT](#)). Implementing a pilot program and tracking the effectiveness locally may be a beneficial step to help gauge local interest and set appropriate income thresholds and incentive levels.

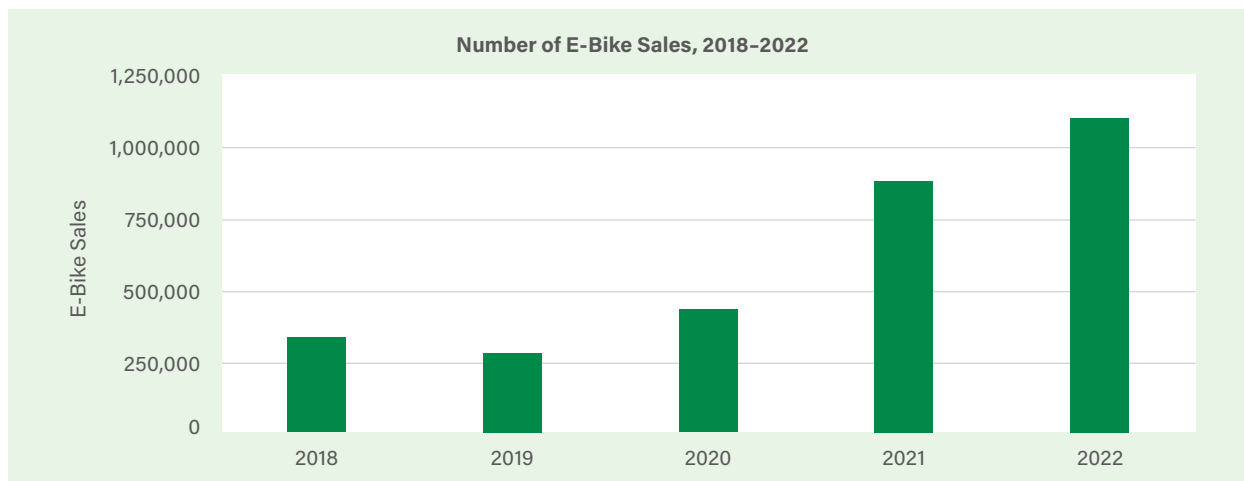


Figure 5.5 E-bike sales in the US (2018 - 2022) - Office of Energy Efficiency & Renewable Energy (2023)

⁴ Aslak Fyhri, Nils Fearnley, Effects of e-bikes on bicycle use and mode share, *Transportation Research Part D: Transport and Environment*, Volume 36, 2015, Pages 45-52

Rérat, P. (2021). The rise of the e-bike: Towards an extension of the practice of cycling? *Mobilities*, 16(3), 423–439. <https://doi.org/10.1080/17450101.2021.1897236>

⁵ Samantha J. Leger, Jennifer L. Dean, Sara Edge, Jeffrey M. Casello,

"If I had a regular bicycle, I wouldn't be out riding anymore": Perspectives on the potential of e-bikes to support active living and independent mobility among older adults in Waterloo, Canada,

Transportation Research Part A: Policy and Practice, Volume 123, 2019, Pages 240-254,

⁶ A full list of E-bike incentive programs in North America produced by Transportation Research and Education Center at Portland State University is available as a google doc which is periodically updated [here](#).

⁷ Examining e-Bike Rebates in California, UCD-CT-FAST-060, National Center for Sustainable Transportation (2022). Available at: <https://ncst.ucdavis.edu/project/examining-e-bike-rebates-california>

RTC Bicycle, Pedestrian, and Wheelchair Data Collection Program

The previous iteration of the RTC Washoe Bicycle, Pedestrian, and Wheelchair data collection program focused on collecting short-term two-hour count data using manual video counts during key months of activity throughout the year. While this approach mirrors the standard practices at the time of program inception from the National Bicycle and Pedestrian Documentation Program (NBPDP), advancements in data collection, storage, and processing have significantly changed the landscape of available data and reasonable analysis approaches. Additionally, collecting two-hour count data exclusively may be overly impacted by fluctuations in usage by time of year, weather, adverse climate events (i.e., extreme heat events or poor air quality days), and other factors to draw conclusions about long-term trends in active transportation across the region. Recent adjustments to the data collection program include using LiDAR sensors to extend the data collection period to multiple days which expands the total amount of day collected but does not provide insights into fluctuations throughout a week, month, or year. By expanding the program to incorporate continuous data collection, the RTC will be able to identify how active transportation activity is changing over time on a holistic sense as compared to small windows of time. Furthermore, incorporating data collection equipment into regular roadway maintenance programs and roadway construction projects will help the RTC to significantly increase the amount of data collected across the region at regular intervals at a lower overall cost per piece of data collection equipment than installing single counters into existing roadways outside of a roadway reconstruction, maintenance. This may be accomplished by implementing the following methods:

PAVEMENT PRESERVATION & MAINTENANCE PROGRAM

The Pavement Preservation & Maintenance Program will be a primary vehicle for implementing active transportation improvements throughout the Truckee Meadows such as quick-builds and bolstering the RTC's data collection efforts. The RTC repaves all regional roads on a seven-year cycle which provides a clear path to incorporate continuous data collection technology within on-street bicycle facilities within a relatively short timeframe with relatively low implementation costs. In order to program this change, the RTC may establish an internal policy to install continuous bicycle counters at regular intervals along any on-street bicycle facility that is installed, repaved or resurfaced as part of the pavement preservation or maintenance program. Continuous bicycle counters that the RTC could consider under this strategy include radar sensors (Sensys Network – FlexRadar/MicroRadar) or inductive loops (EcoCounter – ZELT).



Figure 5.6 2021 Bicycle, Pedestrian, and Data Collection Program Report.

TRAFFIC SIGNAL VIDEO CAMERA COUNT TECHNOLOGY

Traffic signals which utilize video detection may incorporate technology which allows for additional passive data collection for active transportation. This includes the GridSmart Bell Camera and Iteris Vantage video detection systems which utilize AI to count movements from vehicles and may be calibrated to count pedestrians and bicyclists with the purchase of an additional module. The City of Reno currently uses GridSmart Bell Cameras for video detection at multiple traffic signals within the City and has access to the specialized bicycle and pedestrian module. It is recommended that the RTC work with the City of Reno to obtain access to this data or receive regular data updates in order to leverage this data which is currently passively collected but has been under-utilized.

LONG-TERM DATA COLLECTION & PUBLIC ART INSTALLATION

Data collection equipment may also be included into large-scale roadway construction projects or other activities which could incorporate space for public art installations. For example, the RTC may consider installing long-term permanent counters along bicycle facilities. These counters may include a real-time display of the annual and daily counts of bicyclists, pedestrians, or both ([Figure 5.7](#)). These displays may be incorporated into a unique art installation which would represent the unique style and character of the area and provide an opportunity for the community to engage with the corresponding bicycle facility project. It is important to note that funding for art installations would need to be provided by local entities or another outside source due to existing restrictions for RTCs' local, state, and federal funds.

Available counting technologies are further described in [Appendix B](#).



Figure 5.7 Eco-Counter Real-Time Display
(Source: Eco-Counter).



Implementation, Funding, and Performance Metrics



IMPLEMENTATION, FUNDING, AND PERFORMANCE METRICS

This section will provide an overview of different options for implementing identified projects including highlighting quick-build opportunities and project synergies with maintenance projects when feasible. This section will highlight considerations of funding for Active Transportation projects and include the identified performance metrics for tracking the success of implementation.

Implementation Strategies

Active transportation improvements identified in Neighborhood Network Plans will be implemented in two primary ways:

1. Quick build improvements or long-term enhancements that can be completed within the curb-to-curb extents of regional roadways will be implemented through the pavement preservation and maintenance program with additional funding for active transportation specific elements coming from the RTC Active Transportation Program.
2. Identified projects on regional roadways without an upcoming planned pavement preservation or maintenance project will be programmed through the RTIP based on priority and funded using applicable funding streams such as Congestion Mitigation and Air Quality (CMAQ) or through pursuit of state and federal discretionary grant programs. The RTC will pursue grant funds when projects are identified as strong candidates as determined by the RTC and based on available grant opportunities on a case-by-case basis.



Collaboration with Partners

The RTC and local entities collaborate across project planning, design, and implementation due to the unique relationship between these entities and the management and maintenance of regional roads. In order to implement the concepts included in the Regional Street Typology guide in a consistent method across the region, the RTC will need to leverage and enhance collaborative efforts focused on active transportation. The primary opportunity for this increased collaboration will be the ATWG in addition to the on-going NNP process which will include the entity or entities which are included within the NNP area under review. These opportunities will help to foster a strong working dialogue to proactively assess issues with design, implementation, and maintenance specifically related to active transportation facilities which will be vital for a consistent application of the Street Typology Guide across the Truckee Meadows.



Bicyclist connecting with the Truckee River Path.

Maintenance & Operations

Providing regular sweeping of bicycle facilities is vital to maintaining a useful and comfortable network for people choosing to ride. Bicycle facilities can become full of dirt and other roadway debris which creates a hazard for people biking, scooting, or using a mobility scooter and can obscure the location of the path or facility as shown in [Figure 6.1](#).

A key consideration related specifically to bicycle facility design is the type of maintenance vehicle that can be used to maintain the facility. Sweeping bikeways free of dirt and other debris may need to be accomplished with specialized maintenance equipment (see [Figure 6.2](#)) unless the facility is wide enough to accommodate more standard maintenance vehicles such as a light-duty pick-up truck. A light-duty pick-up truck with a sweeper attachment is typically an efficient option for maintenance when a separated bikeway or shared-use path is wide enough (seven feet or wider between the curb and vertical buffer element)¹. In order to fit within the bikeway width, the front-facing maintenance attachment may be attached at an angle.

AASHTO allows for vertical delineators to be placed at the edge of the buffer space on separated bikeways to provide a greater level of operational space for maintenance vehicles (as depicted on [Figure 6.2](#)). It is important to note however, that seven (7) feet represents the absolute minimum width for a pick-up mounted sweeper to maintain a separated bikeway lane and this may require angling of the sweeper attachment. Ten feet of operational space is the preferred minimum width for bikeways to accommodate light-duty pick-up trucks with mounted sweepers.

¹ FHWA Separated Bike Lane Guide, 2015, pg. 77



Figure 6.1 Local shared-use path with significant dirt build up.



Figure 6.2 Small specialized sweeper example (Source: Multihog).



Figure 6.3 City of Sparks maintenance vehicle accessing Rock Park via the Truckee River Path.

Constructing a connected network of separated bikeways may also provide maintenance efficiencies by allowing specialized sweeping equipment to avoid being loaded onto a trailer and transported to the next separated bikeway. The additional staff hours and equipment for maintaining bikeways may be provided through the general fund or through a focused special assessment for a specific area. Beyond separated bikeways, the addition of paved shoulders with intermittent rumble strips in the rural context provides multiple benefits² including reduced maintenance requirements³. Existing shared-use paths are generally wide-enough to accommodate most maintenance vehicles considering the lack of vertical buffer elements (see [Figure 6.4](#)). The ATWG will lead efforts to identify agency maintenance responsibilities and common practices for active transportation facilities and supportive landscaping elements in the Truckee Meadows.

Facility Materials

Barriers which provide vertical separation for people bicycling can also have a maintenance impact as painted buffers must be restriped each time the roadway is resurfaced compared to a shared-use path or curb-protected bike lane which can be resurfaced independently from vehicle travel lanes. The installation of robust barriers (concrete barrier [Figure 6.5](#) or water-filled barrier for quick-build projects [Figure 6.5](#)) often increases initial capital costs which may be offset by reduced long-term maintenance of that facility. Additionally, the RTC may elect to use permeable pavement treatments on permanent bikeway installations to help reduce ongoing maintenance needs and improve stormwater management. This treatment has higher initial capital costs but typically results in lower long-term maintenance costs.

² AASHTO Bike Guide 2012, p. 4-7

³ AASHTO Flexibility Guide 2004, p. 66



Figure 6.4 Vertical Buffer Alignment Placement to Accommodate Wide Bikeway Sweepers (Source: Google (Imagery - August 2019), W. Kinzie Street looking east at N. Jefferson Street).



Figure 6.5 Concrete barrier between shared-use path and vehicle traffic on Sparks Blvd.



Figure 6.6 Water-filled barriers on Arlington Ave which can be used for quick-build installations.

Funding

Establishing the Active Transportation Program and implementing projects identified through Neighborhood Network Plans will require two separate but inter-related approaches in regards to funding. These approaches are based on the existing local, state, and federal funding landscape for active transportation projects which may shift as new legislation is enacted and when new federal programs through the Bipartisan Infrastructure Law come to an end.

This section describes the overall approaches to applying existing funding for the new Active Transportation Program and securing funding for large-scale or stand-alone active transportation projects. In addition to the resources identified below, a table of all federal funding options for a variety of active transportation plans and projects is included in [Appendix D](#).



A child using the Victorian Avenue cycle track with their parent.

Active Transportation Program

ACTIVE TRANSPORTATION PROGRAM MANAGER

The Active Transportation Program Manager will oversee the development, implementation, and on-going operation of the Active Transportation Program including leading Neighborhood Network Plans, convening the ATWG, and being the primary liaison for bicycle and pedestrian projects between the RTC and community. This newly formed position within the RTC will be integral to the success of the Active Transportation Program. The RTC will utilize existing funding resources such as CMAQ or MPO Planning funds to support staffing this position.

NEIGHBORHOOD NETWORK PLANS

The on-going NNP process will take the place of the periodic development of a large-scale countywide Active Transportation Plan. As such, the funding typically allocated for the large-scale Active Transportation Plan will be refocused towards conducting more focused and dynamic Neighborhood Network Plans, largely conducted by RTC in-house staff and led by the Active Transportation Program Manager.

ACTIVE TRANSPORTATION SPOT IMPROVEMENTS

The NNP process will identify a variety of projects throughout the twelve different planning areas identified in [Chapter 5](#). These projects will be of a wide variety of scales and complexities from large-scale corridor improvement projects to focused enhancements such as updating crosswalks or making targeted safety improvements at select intersections. In order to address focused enhancements identified through Neighborhood Network Plans, the RTC will establish an annual allocation for active transportation spot improvements. This funding source is intended to be an on-going way for the RTC to make targeted improvements which respond to community identified needs in a more nimble way in instances when implementation does not require more detailed analysis or design. Funding for this program may be allocated from the RTC-5 fuel tax or federal funding such as CMAQ or STBG.



The Truckee River Path creates a comfortable connection for active modes of all ages and abilities.

Active Transportation Projects

Projects identified through the NNP process which are complex will often require funding from existing federal formula funding sources or through obtaining federal or state discretionary grants. These grants programs are competitive applications which require an entity such as the RTC to develop a robust grant application for a specific project based on the requirements for each grant. In order to obtain these grants, the RTC can leverage existing local funding from the RTC-5 fuel tax or other local funding source to provide the matching funds which are required for nearly all grant programs.

Existing federal formula funds and local funding are listed below as well as current discretionary grant programs which represent the best opportunities for funding active transportation projects. Beyond these identified programs [Appendix D](#) provides a comprehensive table of available federal discretionary grant programs and their applicability for various active transportation activities and projects.

FEDERAL FORMULA FUNDS ADMINISTERED BY NDOT AND RTC

Carbon Reduction Program

Under this program, the FHWA provides funds for projects designed to reduce transportation emissions from on-road highway sources through a variety of strategies including constructing active transportation facilities. *State funds are programmed by NDOT, local Carbon Reduction Program funds are programmed by RTC.*

Congestion Mitigation and Air Quality Improvement (CMAQ) Program

CMAQ funding supports projects that reduce congestion and help jurisdictions meet National Ambient Air Quality Standards for ozone, carbon monoxide, or particulate matter. Projects must be included in the local Metropolitan Planning

Organization's transportation improvement plan. *Funds are programmed by NDOT and the RTC.*

Surface Transportation Block Grants (STBG)

These grants are used to maintain and improve the performance on any federal-aid highway, bridges, and tunnel projects on any public road, pedestrian and bicycle infrastructure, and transit capital projects. Additional Transportation Alternatives set aside funds for active transportation, and active transportation access to transit improvements are also available through NDOT. *Funds are programmed by NDOT and the RTC.*

LOCAL FUNDING:

RTC-5 Fuel Tax

This local funding source applies an inflation adjusted tax at the pump for gasoline sold within Washoe County based on the Producer Price Index (PPI). This voter approved tax is the primary local funding source for roadway improvements and helps the RTC to construct improvements on regional roads that support congestion relief. *Funds are programmed by the RTC.*

STATE AND FEDERAL

DMV Complete Streets Funding

The Nevada Legislature passed AB 145 in 2013 which created allows local residents to donate \$2 while registering or renewing their registration for their vehicle at their local Department of Motor Vehicles (DMV) towards Complete Streets initiatives. Each RTC collects the funds which are donated through vehicle registrations in their respective jurisdictions. The RTC Washoe collects funding from this program donated through the Washoe County DMV which helps fund Complete Street initiatives within Washoe County. This dedicated funding stream presents another opportunity for the RTC to fund Complete Street projects and programs going forward."

DISCRETIONARY GRANT PROGRAMS:

Safe Streets and Roads for All

Established under the Bipartisan Infrastructure Law, this discretionary program funds regional, local, and tribal initiatives to prevent roadway deaths and serious injuries. Grant types include Planning and Demonstration Grants as well as Implementation Grants. Eligible activities include pilot and demonstration projects, data analytics, creating safe routes to school, promotional and education materials, and expanding bicycle networks. An eligible Safety Action Plan must be developed prior to applying for Implementation Grants under this program. *Funds are awarded by the US Department of Transportation.*

Reconnecting Communities Pilot Program

This federal program provides funds to local, regional, and state entities to reconnect communities that were previously cut off from economic opportunities by transportation facilities such as a rail line or highway. This funding supports planning, design, and implementation for



Two people going for a walk and jog along a shared-used path.

addressing identified barriers. *Funds are awarded by the US Department of Transportation.*

RAISE Grants

The Rebuilding America Infrastructure with Sustainability and Equity (RAISE) program supports projects that improve transportation system safety, accessibility, and sustainability. Eligible projects must have quantifiable environmental benefits, serve disadvantaged communities, and address equity concerns in the project's design. Eligible projects range between \$5 million and \$25 million. RAISE grants can fund both planning and capital projects. A 20% local match is required except in rural areas. *Funds are programmed by the United States Department of Transportation.*

Active Transportation Infrastructure Investment Program (ATIIP)

This new competitive grant program, created through the Bipartisan Infrastructure Law, is focused on supporting efforts to plan, design and construct safe and connected active transportation facilities and networks including trails, pedestrian facilities, bikeways, and other routes which create connections within and between communities. This program provides funding in Planning and Design Grants and Construction Grants. Planning and Design grants fund projects over one-hundred thousand dollars and construction grants provide funding for projects which are at least \$15 million. The program requires a 20% local match for all projects but may cover up to 100% of project costs for projects serving communities with a poverty rate of over 40% based on the majority of census tracts. *Funds are programmed by the United States Department of Transportation.*

NDOT Transportation Alternatives Program (TAP)

The TAP program administered by NDOT provides federal funds for small-scale non-traditional, and community-based transportation projects that improve safety, expand travel choices, and enhance the transportation experience. These FHWA funds are provided to each state and are administered by NDOT through a bi-annual grant program. NDOT provides extensive resources for those looking to apply for infrastructure, non-infrastructure, and planning projects through their website. *Funds are programmed by NDOT.*



Tracking Performance

In order to track how successful the NNP process is at affecting real-world change within the Truckee Meadows, it is important to measure progress towards meeting the project goals identified in this plan. This section highlights the active transportation specific performance metrics which the RTC will track on a regular basis to assess how effective the process of planning and designing for active modes is working.



The Veterans Parkway shared-use path provides a low-stress connection for people walking and biking.

The RTC will achieve these goals by implementing specific strategies with actionable steps and tracking the successful implementation of each through primary or secondary performance metrics.

- Strategies represent a more specific approach to achieving the plan goals with actionable steps detailing the ways in which strategies will be implemented and actions that the RTC and partners will take.
- Priority performance metrics represent datapoints which the RTC and partners are most directly able to affect and track; secondary performance metrics represent important data metrics which can be affected by RTC actions but may also be impacted by factors outside of RTC's control. Some strategies have both a primary and secondary performance metric but all have at least one performance metric identified.

Strategies, actionable steps, and performance metrics for each project goal are listed in [Table 6.1](#) to [Table 6.4](#) on the following pages.

Table 6.1 Improve Safety - Strategies, Actionable Steps, and Performance Metrics

GOAL: IMPROVE SAFETY

Strategy 1	
Prioritize low-stress facilities for active transportation across applicable RTC projects	
Actionable Steps	Develop Annual Safety Report to track safety data and progress toward Vision Zero goal.
Primary Metric	<ul style="list-style-type: none"> Number of bicyclist fatalities Number of pedestrian fatalities Number of bicyclist serious injuries Number of pedestrian serious injuries Number of bicyclist fatalities within the McCarran Loop Number of pedestrian fatalities within the McCarran Loop Number of bicyclist serious injuries within the McCarran Loop Number of pedestrian serious injuries within the McCarran Loop Total miles of sidewalk gaps closed Total miles of bicycle network gaps closed Total miles of sidewalk gaps closed in Equity Focus Area Total miles of bicycle network gaps closed in Equity Focus Area Percentage of total bicycle network which is separated from vehicle traffic Annual number of miles of bicycle facilities constructed Annual number of miles of pedestrian facilities constructed
Secondary Metric	<ul style="list-style-type: none"> Number of Washoe County Schools accessible on a low-stress network for the average resident Number of Washoe County Schools accessible on a low-stress network for the residents within Equity Focus Areas
Strategy 2	
Implement proactive safety improvements on high-crash corridors and at high-crash intersections	
Actionable Steps	Collaborate with partners through the Vision Zero Task Force to implement proactive traffic calming measures in areas with identified safety concerns.
Primary Metric	Number of the specific traffic safety / traffic calming measures implemented
Secondary Metric	Track the time taken to implement traffic safety / traffic calming measures after safety concerns are identified.
Strategy 3	
Education (Promote increased engagement, understanding, and inclusivity of walking and biking by implementing programs designed for individuals of all ages and abilities.)	
Actionable Steps	<ul style="list-style-type: none"> Host a regular bicycle safety course through the League of American Bicyclists for bicyclists in the community. Develop an education program promoting awareness of bicycle and pedestrian laws and responsibilities geared toward all roadway users; Collaborate with stakeholders and jurisdictions to promote and offer education regarding bike safety
Secondary Metric	Participation Rates; the number of individuals who participate in the education program; can be measured through sign-up sheets, online registrations, or attendance at events.

Table 6.2 Expand Mode Share - Strategies, Actionable Steps, and Performance Metrics

GOAL: EXPAND MODE SHARE	
Strategy 1	Conduct Neighborhood Plans to identify specific facility recommendations based on regional typologies and neighborhood network connections
Actionable Steps	Conduct a profile analysis of active transportation users in the community to highlight their stories.
Primary Metric	Total Neighborhood Plans completed or in-progress
Strategy 2	Construct low-stress facilities which connect to major employment centers and community destinations
Actionable Steps	Establish an Active Transportation Technical Working Group (ATWG) and conduct an annual prioritization process of identified projects from Neighborhood Network Plans.
Secondary Metric	<ul style="list-style-type: none"> Number of residents within a 15-minute ride from a school on a low-stress network Estimated number of jobs accessible for the average resident on a low-stress network
Strategy 3	Prioritize projects in Equity Focus Areas through the Active Transportation Program
Actionable Steps	Develop and operate the Bicycle Assistance Grant program (potentially collaboration with the Reno Bike project) to provide financial assistance for people purchasing a bicycle with an emphasis on low-income individuals and families.
Secondary Metric	Estimated number of jobs accessible for the average resident in an Equity Focus Area on a low-stress network
Strategy 4	Monitor the performance of active transportation projects to ensure goals identified in the Neighborhood Plans are being met
Actionable Steps	<ul style="list-style-type: none"> Construct low-stress facilities within 2 miles of school bus zones. Implement expanded data collection program by integrating long-term automatic counter installation into pavement preservation program, rehabilitation, and capacity projects which include active transportation element. Conduct user intercept survey to regularly assess trip purposes on multi-use paths. Install long-term automatic counters on regionally significant multi-use paths to track levels of overall usage.
Primary Metric	Total bicycle and pedestrian usage on regional paths / trails (Truckee River Path, Sparks Blvd Path, SouthEast Connector Path)
Secondary Metric	<ul style="list-style-type: none"> Active Transportation mode share along key multimodal corridors 4th Street & Virginia Street Active Transportation mode share within the McCarran Loop
Strategy 5	Construct low-stress network prioritizing facilities in high Active Trip Potential Areas
Actionable Steps	Develop and maintain public facing annual report detailing the completed and in-progress pedestrian and bicycle facilities from each year including breakdown of facilities completed in Equity Focus Areas, jurisdictions, and neighborhood areas.
Secondary Metric	Average census block group connectivity ratio (ratio of a perfect circle to bikeshed)
Strategy 6	Collaborate with City of Reno, City of Sparks, and Washoe County to promote end of trip facilities
Actionable Steps	Develop and maintain Reimagined Parking Space Program which offers business owners an opportunity to install a bicycle parking rack in a vehicle parking space
Secondary Metric	Total number of bicycle parking spaces or racks

Table 6.3 Maintain the System Sustainably - Strategies, Actionable Steps, and Performance Metrics

GOAL: MAINTAIN THE SYSTEM SUSTAINABLY

Strategy 1	Develop and maintain Active Transportation Program which combines available funding sources (CMAQ, SRTS, STBG) into a funding program for active transportation projects.
Actionable Steps	Develop and maintain annual implementation tracking report which highlights the projects completed and allocated funding for active transportation projects.
Primary Metric	Annual number of miles of bicycle/pedestrian facilities constructed
Strategy 2	Establish Active Transportation Program Manager position to manage and implement the Active Transportation Program and other active transportation initiatives.
Actionable Steps	Conduct annual comprehensive budget analysis to assess the current funding allocated to sustainable infrastructure maintenance, including bike lanes and sidewalks.
Primary Metric	Total funding allocated to sidewalk maintenance & replacement
Secondary Metric	Total funding allocated to bike lane maintenance
Strategy 3	Develop a sustainable and comprehensive framework for maintaining the active transportation network
Actionable Steps	<ul style="list-style-type: none"> Establish regional maintenance standards for bicycle and pedestrian facility maintenance frequency Establish regional maintenance fund to promote maintenance of low-stress facilities.
Primary Metric	<ul style="list-style-type: none"> Total number of 311 calls related to bicycle lane debris Total number of 311 calls related to sidewalk maintenance Total funding allocated to Active Transportation Program projects through Active Transportation Program



Bicyclist riding on a shared-use path.

Table 6.4 Enhance the Community - Strategies, Actionable Steps, and Performance Metrics

GOAL: ENHANCE THE COMMUNITY

Strategy 1	
Achieve a silver level bicycle friendly community status.	
Actionable Steps	Collaborate with the Reno Housing Authority, CARES Campus, KIWANIS, Truckee Meadows Bicycle Alliance, Washoe County Health District and others to expand events promoting active transportation, such as Bike to Work/Everywhere Days and Bike to Work Month.
Primary Metric	Apply for Bicycle Friendly Community Status annually and track specific progress on recommendations identified in the BFC report.
Strategy 2	
Collaborate with Jurisdictions to incorporate opportunities for public art, green spaces, and other placemaking elements into RTC projects.	
Actionable Steps	Collaborate with WCSD SRTS Coordinator to expand SRTS events, educational opportunities, and regular rides to school
Secondary Metric	<ul style="list-style-type: none"> Public Value of the Arts - Truckee Meadows Tomorrow Park Acreage Rate - Truckee Meadows Tomorrow
Strategy 3	
Collaborate with local community organizations to achieve secondary benefits such as improved public health, increased quality of life, and thriving neighborhood economies.	
Actionable Steps	<ul style="list-style-type: none"> Conduct a local before-and-after study to quantitatively measure the health benefits within neighborhoods affected by major active transportation projects.
Secondary Metric	<ul style="list-style-type: none"> Access to Exercise - Access to Exercise Opportunities Public Health - Health Equity Index Health / Mental Health - Truckee Meadows Tomorrow County Health Rankings - Conduent Healthy Communities Institute Transportation - Truckee Meadows Tomorrow Economy - Cost of Living Index



Residents walking on a shared-use path around the Sparks Marina.

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