REGIONAL TRANSPORTATION COMMISSION
CITIZENS MULTIMODAL ADVISORY COMMITTEE
MEETING AGENDA

Wednesday, March 2, 2022 at 5:30 pm
MEETING TO BE HELD VIA ZOOM ONLY

I. This meeting will be held via Zoom in accordance with Assembly Bill 253 (2021). There will be no physical location.

II. The committee may combine two or more agenda items for consideration and/or may remove an item from the agenda or delay discussion relating to an item on the agenda at any time.

III. Members of the public may attend the meeting via Zoom by registering at https://us02web.zoom.us/webinar/register/WN_WyizZBZTRxK3JIReArZu_g. Registered persons will receive an email from Zoom with a link to the meeting and instructions on how to join the meeting. Registered persons should follow the instructions from Zoom to join the meeting. Registered persons can participate by telephone or video via Zoom. To provide public comment during the meeting via Zoom, please make sure your computer or device has a working microphone. Use the "Chat" feature to submit a request to make a comment. When the time comes to make public comments, you will be invited to speak.

IV. If you cannot register via Zoom but want to attend the meeting via telephone, please call +1-346-248-7799 (WEBINAR id: 832 2830 5565; webinar passcode: 149147) on the day of the meeting. If you wish to provide public comment during the meeting, please contact Jacqueline Maldanado at (775) 332-2148 prior to 4:00 p.m. on the day before the meeting and provide the telephone number you will be calling from as well as the item(s) you would like to comment on. When the time comes to make public comments, you will be invited to speak.

V. Public comment is limited to three minutes per person.

VI. Members of the public may also provide public comment in advance of the meeting by one of the following methods: (1) submitting comments via online Public Comment Form (www.rtcwashoe.com/about/contact/contact-form/); or (2) emailing comments to: rtcpubliccomments@rtcwashoe.com. Comments received prior to 4:00 p.m. on the day before the meeting will be forwarded to members of the committee and included in the minutes of the meeting.

VII. The supporting materials for the meeting can be found at www.rtcwashoe.com. If you need to request a copy of the supporting materials, please contact Jacqueline Maldanado by phone at (775) 332-2148 by email at jmaldonado@rtcwashoe.com, or by mail or in person at 1105 Terminal Way, Reno, NV 89502.

VIII. RTC staff will make reasonable efforts to assist and accommodate individuals with disabilities. Please contact Jacqueline Maldanado at (775) 332-2148 in advance so that arrangements can be made.

ITEM 1 Call to order/Roll Call

ITEM 2 Approval of Agenda *(For Possible Action)*

ITEM 3 Public Comment - *please read paragraph III near the top of this page*

ITEM 4 Approval of the February 2, 2022 Meeting Minutes *(For Possible Action)*

ITEM 5 Update on the FY 2022 – 2026 Transit Optimization Plans Strategies (TOPS) *(Information Only)*

ITEM 6 Acknowledge Receipt of a Report on the Status of Projects Administered by the RTC Engineering Department. *(For Possible Action)*

ITEM 7 Acknowledge Receipt of a Report Regarding the Lemmon Drive Segment 2 Project. *(For Possible Action)*

ITEM 8 Acknowledge Receipt of a Report Regarding a Micro-Mode Regional Traffic Management Strategy. *(For Possible Action)*

ITEM 9 Acknowledge Receipt of the 2021 Bicycle & Pedestrian Data Collection Annual Report *(For Possible Action)*

ITEM 10 Member Announcements/Agenda Items for Future CMAC Meetings *(For Possible Action)*

ITEM 11 RTC/RIDE/ACCESS Staff Items *(Informational Only)*

ITEM 12 Public Comment - *pursuant to paragraph III under Public Notice near the top of this page*

ITEM 13 Adjournment *(For Possible Action)*

*The Committee **may** take action on any item noted for possible action*

Posting locations: RTC, 1105 Terminal Way, Reno, NV; RTC website: www.rtcwashoe.com, State website: https://notice.nv.gov/

REGIONAL TRANSPORTATION COMMISSION
CITIZENS MULTIMODAL ADVISORY COMMITTEE
Meeting Minutes
Wednesday, February 2, 2022

Members Present

Mark Miranda
Dora Martinez
Paul Malikowski
Jeff Bonano, Chair
Larry Skelton
Matthew Boog
David Giacomin
Vince Harris
Paul Hewen
Lindsey Costello

CMAC Members Absent

Benjamin Miller, Vice Chair
Mayuko Majima
Salvador Duarte
Ann Silver

RTC Staff

Dan Doenges
Jim Gee
Lolita Davis
Xuan Wang
Rebecca Kapuler
Jacqueline Maldonado
Amber Bowsmith

CMAC Guest

Kevin Verre, NDOT
Sondra Rosenberg, NDOT
Jeffrey Doyle, NDOT

The Citizens Multimodal Advisory Committee (CMAC) was conducted as a Zoom Webinar. The meeting was called to order at 5:35 p.m. by the Chair, Jeff Bonano.

ITEM 1. APPROVAL OF AGENDA

The agenda was approved as submitted.

ITEM 2. PUBLIC COMMENT

Matthew Boog stated his mother did not have a good experience riding the bus. Schedules were not up to date and a bus was out of service. Jim Gee, Service Planning and Innovation Manager, stated he will address this situation near the end of the meeting.

ITEM 3. APPROVAL OF THE DECEMBER 1, 2021 MEETING MINUTES

The CMAC December 1, 2021, meeting minutes were approved as submitted.

Dora Martinez entered the meeting at 5:39 p.m., David Giacomin entered the meeting at 5:40 p.m. and Sondra Rosenberg entered the meeting at 5:45 p.m.

ITEM 4. ACKNOWLEDGE RECEIPT OF A PRESENTATION ON THE NEVADA SUSTAINABLE TRANSPORTATION FUNDING STUDY AND ADVISORY WORKING GROUP

Dan Doenges, RTC Director of Planning, gave a presentation on the Nevada Sustainable Transportation Funding Study and Advisory Working Group. A copy of the PowerPoint presentation is on file at the RTC Metropolitan Planning Department.

Matthew Boog asked if any of the Advisory Working Group members have urban planning expertise. Sondra Rosenberg, NDOT, stated the advisory committee is made up of planning experts and a number of the members have an urban planning background. There is a requirement to have a certain number of different perspectives in the group.

Lindsey Costello made a motion to acknowledge receipt of a presentation on the Nevada Sustainable Transportation Funding Study and Advisory Working Group.

Matthew Boog seconded.

The motion carried unanimously.

ITEM 5. RECOMMEND APPROVAL OF AMENDMENT 1 TO THE FY 2022 – FY 2023 UNIFIED PLANNING WORK PROGRAM (UPWP).

Dan Doenges, RTC Director of Planning, briefed the committee on the approval of Amendment 1 to the FY 2022 – FY 2023 Unified Planning Work Program (UPWP).

Jim Gee, RTC Service Planning and Innovation Manager, commented there is a notion the Virginia Line project will start right away but emphasized this is a planning grant and not an operational project.

Matthew Boog asked if this applies to the existing extent of the Rapid route or only the extension. Dan Doenges, RTC Director of Planning, stated the area study will go from Meadowood Mall south to Summit Sierra Mall vicinity. Matthew Boog suggested looking at building up the density within the current existence of the route. Dan Doenges, RTC Director of Planning, stated that RTC Planning along with partners of the City of Reno, will be looking at all perspectives.

Vince Harris made a motion to recommend approval of Amendment 1 to the FY 2022 – FY 2023 Unified Planning work Program (UPWP).

Paul Hewen seconded.

The motion carried unanimously.

ITEM 6. ACKNOWLEDGE RECEIPT OF A PRESENTATION ON NEVADA DEPARTMENT OF TRANSPORTATION (NDOT) PROCESS USED FROM THE ONE NEVADA PLAN TO ARRIVE AT THE CURRENT STATEWIDE TRANSPORTATION IMPROVEMENT PROGRAM (STIP).

Kevin Verre, NDOT, gave a presentation on Nevada Department of Transportation (NDOT) process used from the One Nevada Plan to arrive at the current Statewide Transportation Improvement Program. A copy of the PowerPoint presentation is on file at the RTC Metropolitan Planning Department.

Mark Miranda made a motion to acknowledge receipt of a presentation on Nevada Department of Transportation (STIP) process used from the One Nevada Plan to arrive at the current Statewide Transportation Improvement Program (STIP).

Larry Skelton seconded.

The motion carried unanimously.

ITEM 7. ACKNOWLEDGE RECEIPT OF A PRESENTATION ON THE MT. ROSE HIGHWAY CORRIDOR STUDY

Kevin Verre, NDOT, gave a presentation on the Mt. Rose Highway Corridor Study. A copy of the PowerPoint presentation is on file at the RTC Metropolitan Planning Department.

Matthew Boog inquired about plans and safety aspect for a bike lane. Kevin Verre, NDOT, stated plans are still in the concept stage to have a multi-use path from Bordeaux Drive to Veterans Parkway and these options are something that will be evaluated through the One Nevada Plan process.

Matthew Boog made a motion to acknowledge receipt of a presentation on the Mt. Rose Highway Corridor Study.

Paul Hewen seconded.

The motion carried unanimously.

ITEM 8. MEMBER ANNOUNCEMENTS/AGENDA ITEMS FOR FUTURE CMAC MEETINGS

There were no member announcements/agenda items given.

ITEM 9. RTC/RIDE/ACCESS STAFF ITEMS

Jim Gee, Service Planning and Innovation Manager, addressed the issue of schedules being out of date and buses being out of service. On January 8th, a foundation was set for a Sunday level service seven days per week which allowed RTC to be nimble while getting full service back for our customers. January 10th rolled out the first package of improvements on several routes. January 18th added the second round of improvements to several more routes. These improvements allowed us to be more reliable and provide better service without missing trips. RTC still has the hurdle of drivers and also mechanics but expecting to get back to full service mid-March or early April.

Dora Martinez stated that the bus strikes are the reason for the service problems and not the national driver shortage. FlexRide and RTC ACCESS busses need shocks. Disabled passengers in wheelchairs are denied rides when busses are full and she feels that bigger vehicles are needed. She stated RTC ACCESS drivers should be paid more money per hour. Jim Gee, Service Planning and Innovation Manager, responded that three strikes were too many and has a large impact on the workforce and passengers. The national shortage of drivers and impact from COVID-19 definitely added to the service problems. Also, advised that if anyone has experienced being denied a trip, they can contact RTC.

ITEM 10. PUBLIC COMMENT

There were no public comments given.

ITEM 11. ADJOURNMENT

The meeting adjourned at 6:59 p.m.

REGIONAL TRANSPORTATION COMMISSION
Metropolitan Planning • Public Transportation & Operations • Engineering & Construction
Metropolitan Planning Organization of Washoe County, Nevada

MEETING DATE: March 2, 2022 **AGENDA ITEM 5**

To: Citizens Multimodal Advisory Committee

From: Michael Dulude
Senior Technical Transit Operations Planner

RECOMMENDED ACTION

Update on the FY 2022-2026 Transit Optimization Plans Strategies (TOPS).

BACKGROUND AND DISCUSSION

The FY 2022-2026 Transit Optimization Plans Strategies (TOPS) was previously known as RTC's Short-Range Transit Plan (SRTP). This document is the operating and capital business plan to guide transit service delivery over the next five years. The RTC typically updates the TOPS every three to five years. The last SRTP was approved by the RTC Board in May 2017.

The project work began on July 14, 2021 with a kick-off meeting. The following is an update on project progress:

- Public Outreach: A survey was released in mid-November and concluded in mid-January. RTC received a little over 1,000 surveys and tabulated. Following are the operational highlights:
  - Top Three Areas RTC does well –
    - Ease of fare payment
    - Comfort on-board buses
    - Cost of riding
  - Top Three Requested Improvements –
    - How often bus comes
    - Delay service advisories
    - Accurate real-time arrival time information

- Peer review revealed the RTC provides a public transit that effectively serves the population within the RIDE service area, within the top five of frequency provided, the best for span of service provided, and is in the top five for cost effectiveness;
- Technology review is still underway; however, it does reveal improvement is needed to enhance information the riders have access to and, as noted by respondents in the survey results;
- Customer service review is still underway; the review is indicating the RTC is providing customer service near industry standard, although there is always room for improvement;
- The review of current best practices for retaining current riders and attracting new riders is still underway. Based on the survey results noted above, having frequent and accurate real-time arrival time information will help in rider retention and attract new riders.
- Comprehensive review and analysis of all RTC transportation services is still under review. This review will be completed and presented to the public late Spring.
- Service standards are still being reviewed and developed. These standards will reflect operating conditions as a result of Covid-19 and will detail the necessary metrics needed to determine the process of how routes will be reduced or discontinued for service contractions;
- Recommendations for public-private partnerships has not yet been reviewed. This is to provide an overview of current state of partnerships and an overview of what opportunities may exist now exist because of the changes brought on by the pandemic and the economy to create partnerships.

Currently, the TOPS consultant is working on various recommendations for service, standards, and technology. The following is the tentative TOPS completion and recommendation implementation schedule:

- Late Spring 2022 – Release TOPS recommendations to the public with survey to receive feedback on the proposed recommendations.
- Late Spring / Early Summer 2022 – Present the final TOPS document, including recommendations to the Board for approval and adoption.
- Early Summer 2022 – Present to the Board as a public hearing of the first phase of recommendations to be implemented by early Fall 2022 (expected to be September 10, 2022).

REGIONAL TRANSPORTATION COMMISSION
Metropolitan Planning • Public Transportation & Operations • Engineering & Construction
Metropolitan Planning Organization of Washoe County, Nevada

MEETING DATE: March 2, 2022 **AGENDA ITEM 6**

To: Citizens Multimodal Advisory Committee

From: Doug Maloy, P.E.
Engineering Manager

RECOMMENDED ACTION

Acknowledge receipt of a report on the status of projects administered by the RTC Engineering Department.

BACKGROUND AND DISCUSSION

Staff will provide an update on the status of several Engineering projects currently under development and anticipated to be under construction in 2022. Projects that will be discussed include Pavement Preservation, Multimodal, and Traffic Engineering projects.

MEETING DATE: March 2, 2022 **AGENDA ITEM 7**

To: Citizens Multimodal Advisory Committee

From: Brian Stewart, P.E., Director of Engineering

RECOMMENDED ACTION

Acknowledge receipt of a report regarding the Lemmon Drive Segment 2 Project.

BACKGROUND AND DISCUSSION

The Lemmon Drive Segment 2 Project will reconstruct 3.7 miles of Lemmon Drive between Fleetwood Drive to Ramsey Way above the 100-year flood plain of Swan Lake. The Project will also widen Lemmon Drive from Fleetwood Drive to Palace Drive, provide safe connections to the Heppner subdivisions, and improve the multimodal connectivity.

After considering a wide range of alternatives, the Project's Technical Advisory Committee (TAC) endorsed three (3) top roadway alternatives to advance into Level 2 evaluation. The top 3 alternatives are:

- **Alternative 2 - Raise Existing Lemmon Drive:** This alternative would elevate the existing Lemmon Drive above the 100-year floodplain.
- **Alternative 6 – Natural Berm Realignment:** This alternative would realign Lemmon Drive to the west along the natural berm of Swan Lake. The realignment would begin near Deodar Way and possibly end at the northern end by Pompe Way.
- **Alternative 8 – Deodar Way Realignment:** This alignment would realign Lemmon Drive to the east and follow the current Deodar Way corridor to Chickadee Drive.

The Level 2 evaluation applied more quantitative criteria to measure the potential benefits and impacts and highlight differentiating characteristic among the alternatives. As such, the Level 2 screening identified higher versus lower performing alternatives for each criterion.

The Project team, along with our partner agencies, is reviewing the draft final report with a Preferred Alternative recommendation. The Preferred Alternative will be presented to the public for public input.

The RTC is working closely with Washoe County and the City of Reno as the Swan Lake recovery plan continues, and long-term mitigation alternatives are prepared and vetted.

FISCAL IMPACT

Funding for this item is included in the approved FY 2020 budget, and there is no additional cost in connection with this agenda item.

REGIONAL TRANSPORTATION COMMISSION
Metropolitan Planning • Public Transportation & Operations • Engineering & Construction
Metropolitan Planning Organization of Washoe County, Nevada

MEETING DATE: March 2, 2022 **AGENDA ITEM 8**

To: Citizens Multimodal Advisory Committee

From: Brian Stewart, P.E., Director of Engineering

RECOMMENDED ACTION

Acknowledge receipt of a report regarding a Micro-Mode Regional Traffic Management Strategy.

BACKGROUND AND DISCUSSION

The Reno/Sparks area is experiencing significant growth, and with this growth comes a larger demand on the regional roadway network. Simultaneously, developments in technology and mobility sharing in the last decade have made micro-modes (bicycles, e-bikes, e-scooters) increasingly accessible and popular choices for transportation. This presentation discusses the role of micro-modes within the local transportation network and how strategic implementation of micro-mode targeted infrastructure can help support region-wide traffic management.

FISCAL IMPACT

Funding for this item is included in the approved FY 2022 budget, and there is no additional cost in connection with this agenda item.

PREVIOUS BOARD ACTION

There has been no previous Board action or direction on this matter.

REGIONAL TRANSPORTATION COMMISSION
Metropolitan Planning • Public Transportation & Operations • Engineering & Construction
Metropolitan Planning Organization of Washoe County, Nevada

March 2, 2022 **AGENDA ITEM 9**

TO: Citizens Multimodal Advisory Committee

FROM: Rebecca Kapuler
Senior Technical Planner

RECOMMENDATION

Acknowledge receipt of the 2021 Bicycle & Pedestrian Data Collection Annual Report.

BACKGROUND AND DISCUSSION

The Objective of the Regional Bicycle& Pedestrian Data Collection Program is to document the number of people walking, using wheelchairs or mobility scooters, or riding bicycles on regional roads. The program has been in effect since September 2013 and documents the proportion of trips that are made using alternative modes and changes in alternative mode use over time. This data is used in the ongoing analysis of the performance measures identified in the 2050 Regional Transportation Plan (RTP). This report is a summary of data collected in May 2021 and September 2021. The draft 2021 Bicycle, Pedestrian, and Wheelchair Data Collection Program Annual Report is attached.

Items of interest in the annual report include:

- Total hours of data collection – 180
- Total counted bicycles – 1,133
- Total counted pedestrians – 4,946
- Total counted wheelchairs – 58
- Highest bicycle volume observed – Veterans Parkway and Mira Loma Drive - 242
- Highest pedestrian volume observed – 4th Street at Evans Avenue (near the RTC 4th STREET STATION) -1,479

Key findings include:

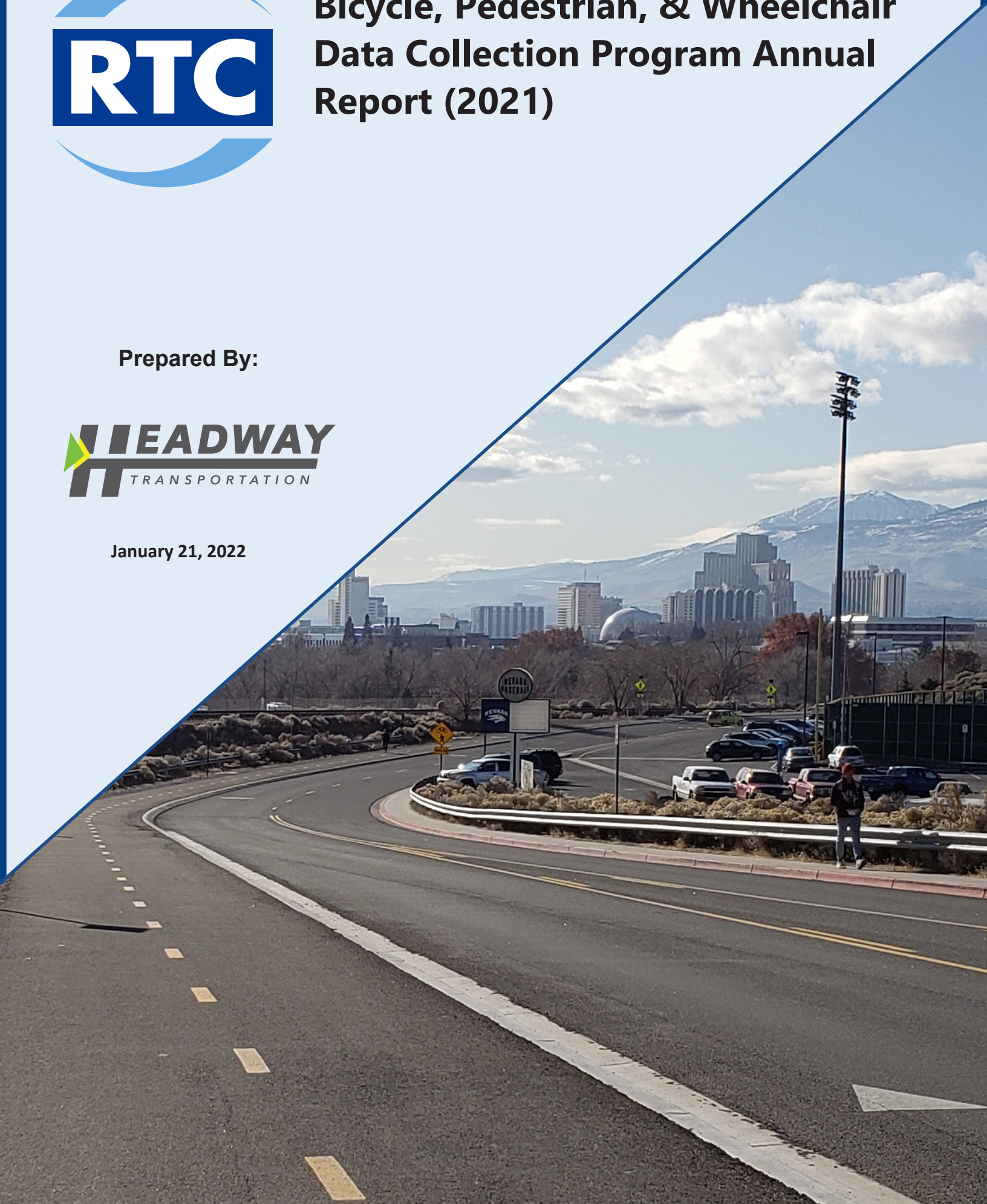
- Counts were conducted in May and September 2021 at 15 different locations.
    - Similar pedestrian and wheelchair volumes were observed in the May 2021 and September 2021 count cycles.
        - May: 2,455 pedestrians and 26 wheelchairs
        - September: 2,491 pedestrians and 32 wheelchairs.
- The top five locations with the highest pedestrian activity across the 2021 annual cycle were 1) 4th Street at Evans Avenue, 2) Virginia Street at Martin Street, 3) Virginia Street at 17th Street, 4) 5th Street at Virginia Street, and 5) 4th Street at Sutro Street
- Bicycle volume was significantly less in September 2021 compared to May 2021.
        - May: 736 bicycles

    - September :397 bicycles
- The top five locations with the highest bicycle activity across the 2021 annual cycle were 1) Veterans Parkway and Mira Loma Drive, 2) 4th Street at Evans Avenue, 3) 4th Street at Mayberry Drive, 4) 4th Street at Sutro Street, and 5) Virginia Street at Martin Street
- The 2021 wheelchair total was the lowest recorded yearly cycle since 2016. The second lowest annual total was a tie between 2015 with a total of 15 wheelchair users at the comparable locations.
- The 4th Street and Evans Avenue location continues to have significantly higher wheelchair volumes compared to other locations.
- The top five locations with the highest wheelchair activity across the 2021 annual cycle were: 1) 4th Street at Evans Avenue, 2) 4th Street at Sutro Street (tie), 3) Prater Way at 15th Street (tie), 4) 5th Street at Virginia Street, and 5) Vine Street at 4th Street
- A 2021 Mode Share of travel at the 15 count program locations
    - Pedestrian volumes represented 2.44% of all regional trips.
    - Bicycling volumes represented 0.62% of all regional trips.
    - Wheelchair user activity was 0.03% of all regional trips.
    - Transit ridership accounted for 8.88% of all travel.
    - Vehicle traffic accounted for 88.03% of all travel
- Seven complete annual cycles of bicycle, pedestrian and wheelchair user data have been conducted in the Reno-Sparks region since the Programs' inception with the following noteworthy trends:
    - Pedestrian volumes were relatively consistent between 2015 and 2019. However, the 2021 count cycle recorded significantly less pedestrians compared to the prior count cycles. It is assumed that this trend was a result of the pandemic.
    - Bicycle volumes have had a significant decrease since 2017 but have been relatively consistent from 2018 to present.
    - Active mode usage is generally higher on roadways with lower speed limits.
    - COVID-19 restrictions and impacts were still prevalent in 2021. The absence of many special events and low transit ridership negatively impacted the overall alternative mode share.

Attachment

AGENDA ITEM 9 ATTACHMENT

Bicycle, Pedestrian, & Wheelchair Data Collection Program Annual Report (2021)



Prepared By:

HEADWAY TRANSPORTATION

January 21, 2022

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Executive Summary

Introduction

This 2021 Annual Report for the RTC Bicycle, Pedestrian, and Wheelchair Data Collection Program ("Program") provides a detailed review of bicycling, walking, and wheelchair use at key locations throughout Reno, Sparks, and Washoe County. This ongoing collection of active transportation data supplements motorized traffic and transit ridership data to develop a more complete picture of overall travel behavior in our community. The data collection methodology, collection times, and analysis factors follow the National Bicycle and Pedestrian Documentation Project (NBPDP).

It is important to note that data collection efforts were paused during 2020 due to COVID-19 restrictions and disruptions. Comparisons using 2021 data will only be made with data collected in 2019 and prior years.

Purpose

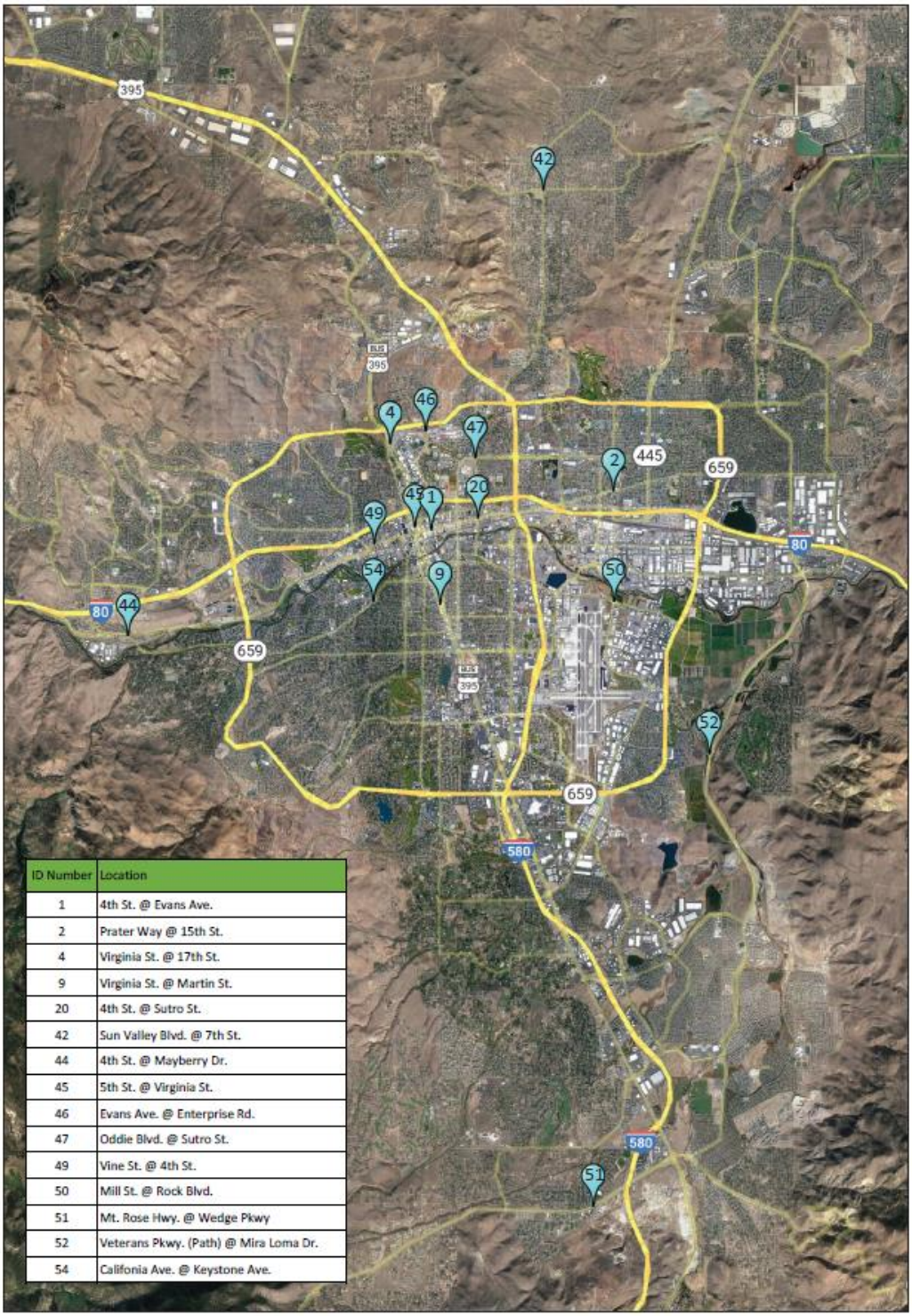
The primary purpose of the Program is to document year-to-year trends in the number of people walking, using wheelchairs or mobility scooters, or riding bicycles on regional roads, as well as the share of each active transportation mode at the comparison locations. The collected data assists transportation planners in evaluating performance measures and the return on active transportation and "complete streets" infrastructure investment and helps identify and prioritize active transportation connectivity and safety improvements.

Program Revision

This is the first data collection cycle following a major Program revision which reduced the total number of count locations from forty (40) to fifteen (15). The fifteen locations include six carry-over locations that have been counted since September 2014. The other nine locations are new to the program and are included to help the RTC gain better insights into the benefits from recent or upcoming bicycle and pedestrian projects throughout the Truckee Meadows and continue to track Regional Transportation Plan (RTP) performance metrics. In future cycles of the Program, locations may be revised based on current projects and need. The location ID numbers were not reassigned so these locations can be revisited with future data collection efforts if desired. Carry over locations include the following:

- 4th Street @ Evans Avenue
- Prater Way @ 15th Street
- Virginia Street @ 17th Street
- Virginia Street @ Martin Street
- 4th Street @ Sutro Street
- Sun Valley Boulevard @ 7th Street

A map of the current count locations is provided in **Figure 1**.



ID Number	Location
1	4th St. @ Evans Ave.
2	Prater Way @ 15th St.
4	Virginia St. @ 17th St.
9	Virginia St. @ Martin St.
20	4th St. @ Sutro St.
42	Sun Valley Blvd. @ 7th St.
44	4th St. @ Mayberry Dr.
45	5th St. @ Virginia St.
46	Evans Ave. @ Enterprise Rd.
47	Oddie Blvd. @ Sutro St.
49	Vine St. @ 4th St.
50	Mill St. @ Rock Blvd.
51	Mt. Rose Hwy. @ Wedge Pkwy
52	Veterans Pkwy. (Path) @ Mira Loma Dr.
54	California Ave. @ Keystone Ave.

Figure 1. 2021 Count Program Locations

2021 Count Data Overview

The following is a summary of total annual data collected in the 2021 data collection cycle (May 2021 and September 2021):

180
Total hours of data collection

34.1
Pedestrians, Bicyclists, and Wheelchair Users per count hour (average)

1,133 - Total Counted Bicyclists

4,946 - Total Counted Pedestrians

58 - Total Counted Wheelchairs

242
Total bicyclists observed on Veterans Parkway at Mira Loma Drive, the highest total bicycle volume of the 15 Program locations

1,479
Total pedestrians observed on 4th Street at Evans Avenue, the highest total pedestrian volume of the 15 Program locations

September 2021– Fewer Pedestrians, Bicyclists and Wheelchairs

The September 2021 count was the eighth September cycle and completed the seventh full year of data collection. 1,842 pedestrians, 181 bicyclists, and 26 wheelchair users were observed at the six comparison count locations in September 2021. From the six comparable September cycles, September 2021 had the lowest recorded pedestrian, bicycle, and wheelchair volume totals. September 2021 had a total of 2,049 bicycle, pedestrians, and wheelchair users at the comparable locations. The previous lowest recorded volume totals of the six comparable location was in 2017 with a total of 2,675 bicycles, pedestrians, and wheelchairs. The 4th Street @ Evans Avenue intersection which has historically been the most active location, had about half of the pedestrian, bicycle, and wheelchair volumes of previous September count cycles which heavily affects the decline in overall volumes. The other five comparable locations had 2021 volumes that were similar to previous data collection cycles.

Veterans Parkway @ Mira Loma Drive Attracting Bicyclists

2021 was the first yearly count cycle to include the Veterans Parkway @ Mira Loma Drive count location. This location primarily observes activity on the separated multi-use path and had the highest bicycle volume of any location in both May 2021 and September 2021. The total volume counted at the location was 242 bicycles. The second highest bicycle volume location for the 2021 count cycle was the 4th Street @ Evans Avenue location with a total of 212 bikes.

RTP Performance Measures

The alternative mode performance goals established in the 2050 Regional Transportation Plan (RTP), are the following:

1. Reach 15% alternative mode share within the Transit Service Area (most of the 15 count locations fall within the transit service area) by 2040. The 2021 alternative mode share was 11.97%.
2. Reach 40% alternative mode share at locations along the Virginia Street and 4th Street/Prater Way transit-oriented development (TOD) corridors. The 2021 alternative mode share was 12.3% on the Virginia Street corridor and 31.12% on the 4th Street/Prater Way corridor.

Introduction

This Report presents the results of manual (video) counts conducted in May 2021 and September 2021 at 15 locations throughout Reno, Sparks, and Washoe County. These counts represent the seventh full year of data collection in a continuing effort by the RTC to better understand pedestrian, bicyclist, and wheelchair user activity and trends throughout the region.

Objective

The primary objective of the Program is to document year-to-year trends in the number of people walking, using wheelchairs or mobility scooters, riding bicycles on regional roads, as well as the share of overall transportation modes at the comparison locations. The collected data will assist transportation planners with evaluating performance measures and the return on active transportation and "complete streets" infrastructure investment and help identify and prioritize active transportation connectivity and safety improvements. The locations consist of regional roadways with and without pedestrian and bicycle facilities. Conducting a regular count program with consistent pedestrian, bicycle, and wheelchair data is important for many reasons, including:

- Baseline Data – Establishing and continuing a consistent count program following nationally standardized guidelines over multiple years allows for accurate trend analysis on regional roadways.
- Performance Metrics – The 2050 Regional Transportation Plan (RTP) includes performance measures for increasing the share of trips made by alternative modes. Availability of data is essential in determining achievement of the performance measures outlined in the RTP.
- Facility Usage/Improvement Planning – Many factors contribute to pedestrian and bicycle usage, however, counts help assess the benefits of bicycle and pedestrian capital improvement projects. The collected data can also increase awareness and help prioritize the need for future roadway corridor improvements and complete streets programs.
- Safety – A better understanding of pedestrian and bicycle collision rates can be gained with accurate volumes.

Methodology

Data Collection Methodology

Data was collected at each of the 15 locations for two hours during one weekday morning (10:00 AM to Noon), one weekday afternoon (5:00 PM to 7:00 PM), and one weekend mid-day period (Saturday, Noon to 2:00PM) for a total of six hours of observation time. Weekday refers to either a Tuesday, Wednesday, or Thursday.

All locations were recorded using portable video recording units and the video was broken down for the desired time frames detailed above. At each location, contextual information, such as date, time, and

presence of bike and pedestrian facilities were documented and the number of cyclists, pedestrians and wheelchair users were recorded. These counts were tabulated in a data reporting spreadsheet and supplied to the RTC for inclusion in the interactive count data GIS based webpage.

Manual Count Extrapolation Methodology

Estimations of daily, weekly, and annual values in this report are extrapolations based upon the manual counts collected and on temporal (climate) adjustment factors suggested by the NBPDP. The NBPDP extrapolation methodology is based on patterns of use by climate region. These patterns effect how much weight any given count will have depending on the hour, day, and month the count was collected. For more information regarding this methodology refer to the **NBPDP Count Adjustment Factors Document** in the Appendix.

Data Collection Locations

Throughout the Program's history, multiple locations have been added and/or removed for observation. The location ID numbers were not reassigned so these locations can be revisited with future data collection efforts if desired. The count location comparison in this report compares only the six comparison count locations at which data has continually been collected (September 2015 – Present).

Data collection locations were selected based on meeting the following criteria:

- Recently constructed projects
- Planned alternative mode improvement projects
- Stakeholder recommendations
- Presence of transit routes
- Existing bicycle facilities
- Mix of land uses
- Historical count location

Count Data

Alternative Modes Volume Totals

The following section documents the total 2021 annual volumes of each alternative mode for each data collection location. The total of 180 hours of observed activity recorded 1,133 bicyclists, 4,946 pedestrians, and 58 wheelchair users. **Table 1** shows the overall count summary for the 2021 annual count period.

Table 1. 2021 Count Summary by Location

ID No.	Location	May 2021					September 2021					2021 Total				
		Bike	Ped	Wheelchair	Total	Rank	Bike	Ped	Wheelchair	Total	Rank	Bike	Ped	Wheelchair	Total	Rank
1	4th St. @ Evans Ave.	134	800	13	947	1	78	679	9	766	1	212	1479	22	1713	1
2	Prater Way @ 15th St.	17	57	0	74	9	19	68	10	97	7	36	125	10	171	9
4	Virginia St. @ 17th St.	10	481	0	491	2	3	314	0	317	3	13	795	0	808	3
9	Virginia St. @ Martin St.	55	370	1	426	3	43	506	2	551	2	98	876	3	977	2
20	4th St. @ Sutro St.	83	261	6	350	4	38	260	4	302	5	121	521	10	652	4
42	Sun Valley Blvd. @ 7th St.	4	41	0	45	12	0	15	1	16	13	4	56	1	61	13
44	4th St. @ Mayberry Dr.	128	5	0	133	7	64	0	0	64	10	192	5	0	197	8
45	5th St. @ Virginia St.	17	298	5	320	5	11	291	3	305	4	28	589	8	625	5
46	Evans Ave. @ Enterprise Rd.	11	50	0	61	10	4	234	0	238	6	15	284	0	299	6
47	Oddie Blvd. @ Sutro St.	5	16	0	21	14	14	42	0	56	11	19	58	0	77	12
49	Vine St. @ 4th St.	35	47	1	83	8	20	56	3	79	9	55	103	4	162	10
50	Mill St. @ Rock Blvd.	9	7	0	16	15	2	1	0	3	15	11	8	0	19	15
51	Mt. Rose Hwy. @ Wedge Pkwy.	29	4	0	33	13	5	6	0	11	14	34	10	0	44	14
52	Veterans Pkwy. @ Mira Loma Dr.	159	3	0	162	6	83	5	0	88	8	242	8	0	250	7
54	California Ave. @ Keystone Ave.	40	15	0	55	11	13	14	0	27	12	53	29	0	82	11
	Total By Mode :	**736**	**2,455**	**26**	**3,217**		**397**	**2,491**	**32**	**2,920**		**1,133**	**4,946**	**58**	**6,137**	

Top Five Bicycle Count Locations

Top Five Pedestrian Count Locations

Top Five Wheelchair Count Locations

As shown in the table, similar pedestrian and wheelchair volumes were observed in the May 2021 and September 2021 count cycles. However, bicycle volume was significantly less in September 2021 compared to May 2021.

Bicyclist Count Data

A total of 1,133 bicyclists were counted over the two data collection periods. May 2021 had nearly twice the bicycle volume of September 2021. The locations with the five highest bicycle activity in each individual cycle and across the 2021 annual cycle are shown to the right. A significantly higher number of bicyclists were observed at the following three locations:

- Veterans Parkway @ Mira Loma Drive
- 4th Street @ Evans Avenue
- 4th Street @ Mayberry Drive

The May 2021 count cycle recorded a total of 736 bicyclist at the 15 count locations. At the six comparison locations, there were 303 bicyclists observed, ranking as the third highest May bicycle volume counted since 2015. The September 2021 count cycle recorded a significantly lower number of bicyclists (397). September 2021 had the lowest volume of bicycles observed at the comparable locations since 2015. **Figure 2** shows bicycle totals for the 2021 count cycle by location.

Locations with Highest Bicycle Activity

May 2021
1. Veterans Pkwy. @ Mira Loma Dr.
2. 4th St. @ Evans Ave.
3. 4th St. @ Mayberry Dr.
4. 4th St. @ Sutro St.
5. Virginia St. @ Martin St.

September 2021
1. Veterans Pkwy. @ Mira Loma Dr.
2. 4th St. @ Evans Ave
3. 4th St. @ Mayberry Dr.
4. Virginia St. @ Martin St.
5. 4th St. @ Sutro St.

2021 Annual Cycle
1. Veterans Pkwy. @ Mira Loma Dr.
2. 4th St. @ Evans Ave
3. 4th St. @ Mayberry Dr.
4. 4th St. @ Sutro St.
5. Virginia St. @ Martin St.

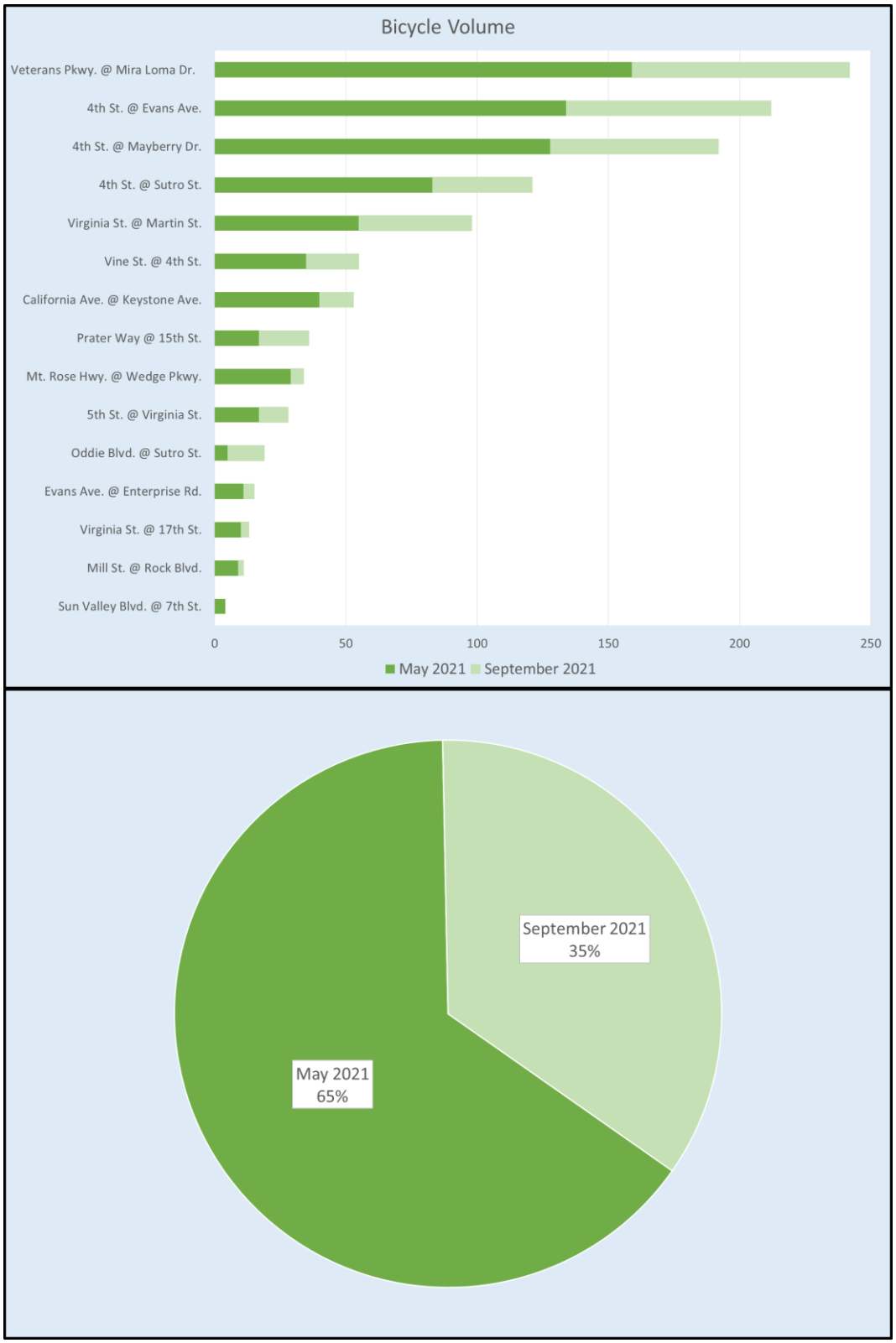


Figure 2. 2021 Total Bicyclist Volumes by Location

Pedestrian Count Data

During the 2021 annual count cycle, 4,946 pedestrians were observed across all 15 locations. May 2021 and September 2021 had similar total pedestrian volumes observed. The Evans Avenue @ Enterprise Road location had a significant pedestrian activity increase in September 2021 compared to May 2021. This location is in close proximity to the university and is the route used by many college students between campus and the nearby student housing complexes. The increase is likely due to the University of Nevada, Reno holding mainly remote classes in May, but then returning to in-person classes in September. The 4th Street @ Evans Avenue, Virginia Street @ 17th Street and Virginia Street @ Martin St. locations were the top three pedestrian activity locations for the 2021 cycle. There were 3,852 pedestrians counted at the six comparison locations. The comparable locations for 2021 had the lowest recorded pedestrian volumes since 2015. The 4th Street @ Evans Avenue location continues to be the most active pedestrian location, although, volumes for this location were approximately 50% lower compared to prior counts. The five highest pedestrian volume locations for May 2021, September 2021, and the 2021 annual cycle are shown to the right. **Figure 3** shows the observed pedestrian volumes for the 2021 annual period.

Locations with Highest Pedestrian Activity

May 2021
1. 4th St. @ Evans Ave.
2. Virginia St. @ 17th St.
3. Virginia St. @ Martin St.
4. 5th St. @ Virginia St.
5. 4th St. @ Sutro St.

September 2021
1. 4th St. @ Evans Ave.
2. Virginia St. @ Martin St.
3. Virginia St. @ 17th St.
4. 5th St. @ Virginia St.
5. 4th St. @ Sutro St.

2021 Annual Cycle
1. 4th St. @ Evans Ave.
2. Virginia St. @ Martin St.
3. Virginia St. @ 17th St.
4. 5th St. @ Virginia St.
5. 4th St. @ Sutro St.

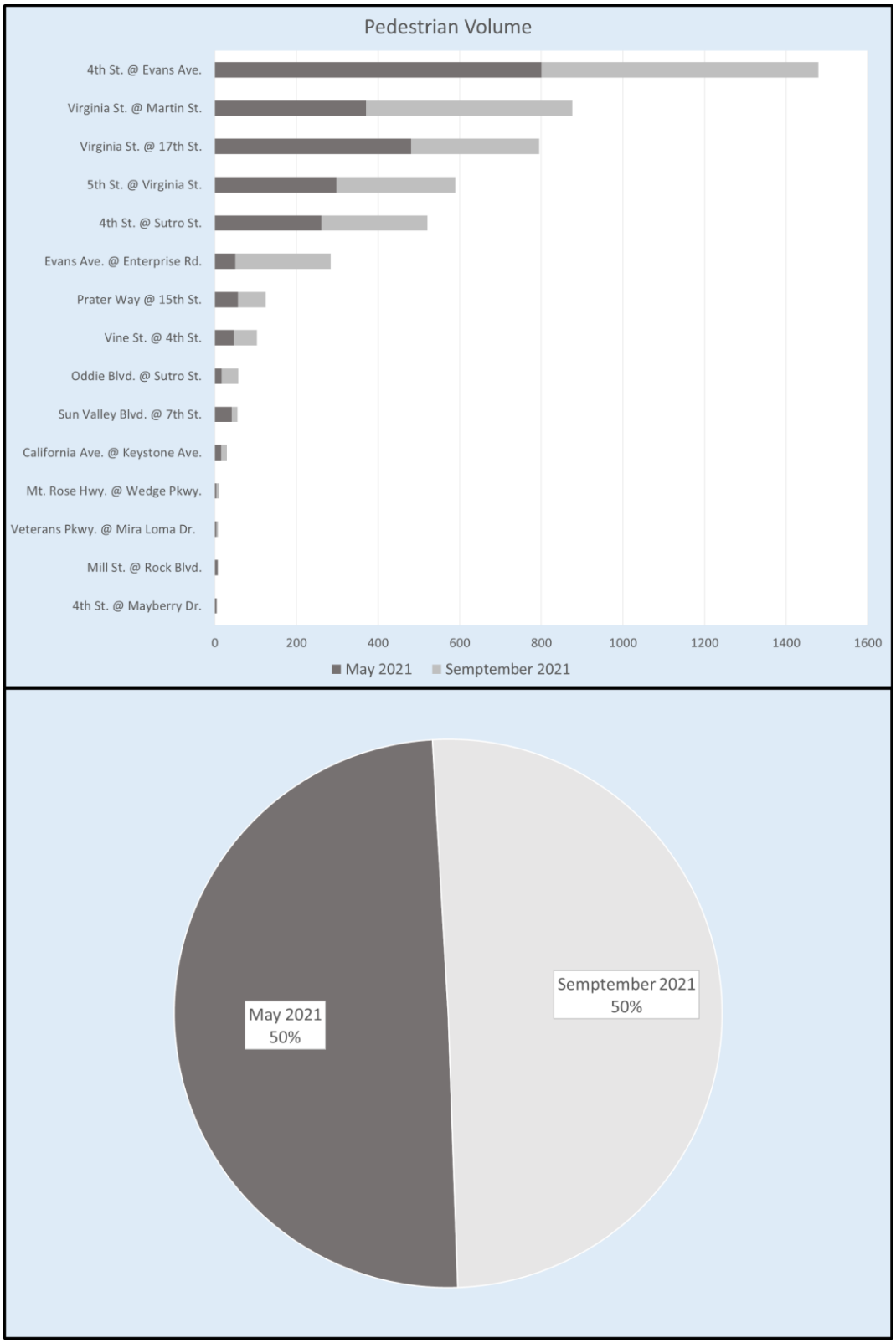


Figure 3. 2021 Total Pedestrian Volumes by Location

Wheelchair Count Data

The 2021 annual count cycle observed 58 wheelchair users at the 15 count locations and 46 wheelchair users at the six comparison count locations. At the 15 locations counted in 2021, September had slightly more wheelchair traffic than May. At the comparable count locations, May 2021 was the second lowest May wheelchair volume since May 2015 and September 2021 was the second lowest wheelchair since September 2015. The 2021 wheelchair total was the lowest recorded yearly cycle since 2016. The second lowest annual total was a tie between 2015 with a total of 15 wheelchair users at the comparable locations. The 4th Street @ Evans Avenue location continues to have significantly higher wheelchair volumes compared to other locations. **Figure 3** shows the observed wheelchair volumes for the 2021 annual period.

Locations with Highest Wheelchair Activity

May 2021
1. 4th St. @ Evans Ave.
2. 4th St. @ Sutro St.
3. 5th St. @ Virginia St.
4. Vine St. @ 4th St. (Tie)
4. Virginia St. @ Martin St. (Tie)

September 2021
1. Prater Way @ 15th St.
2. 4th St. @ Evans Ave.
3. 4th St. @ Sutro St.
4. Vine St. @ 4th St. (Tie)
4. Virginia St. @ Martin St. (Tie)

2021 Annual Cycle
1. 4th St. @ Evans Ave.
2. 4th St. @ Sutro St. (Tie)
2. Prater Way @ 15th St. (Tie)
3. 5th St @ Virginia St.
4. Vine St. @ 4th St.

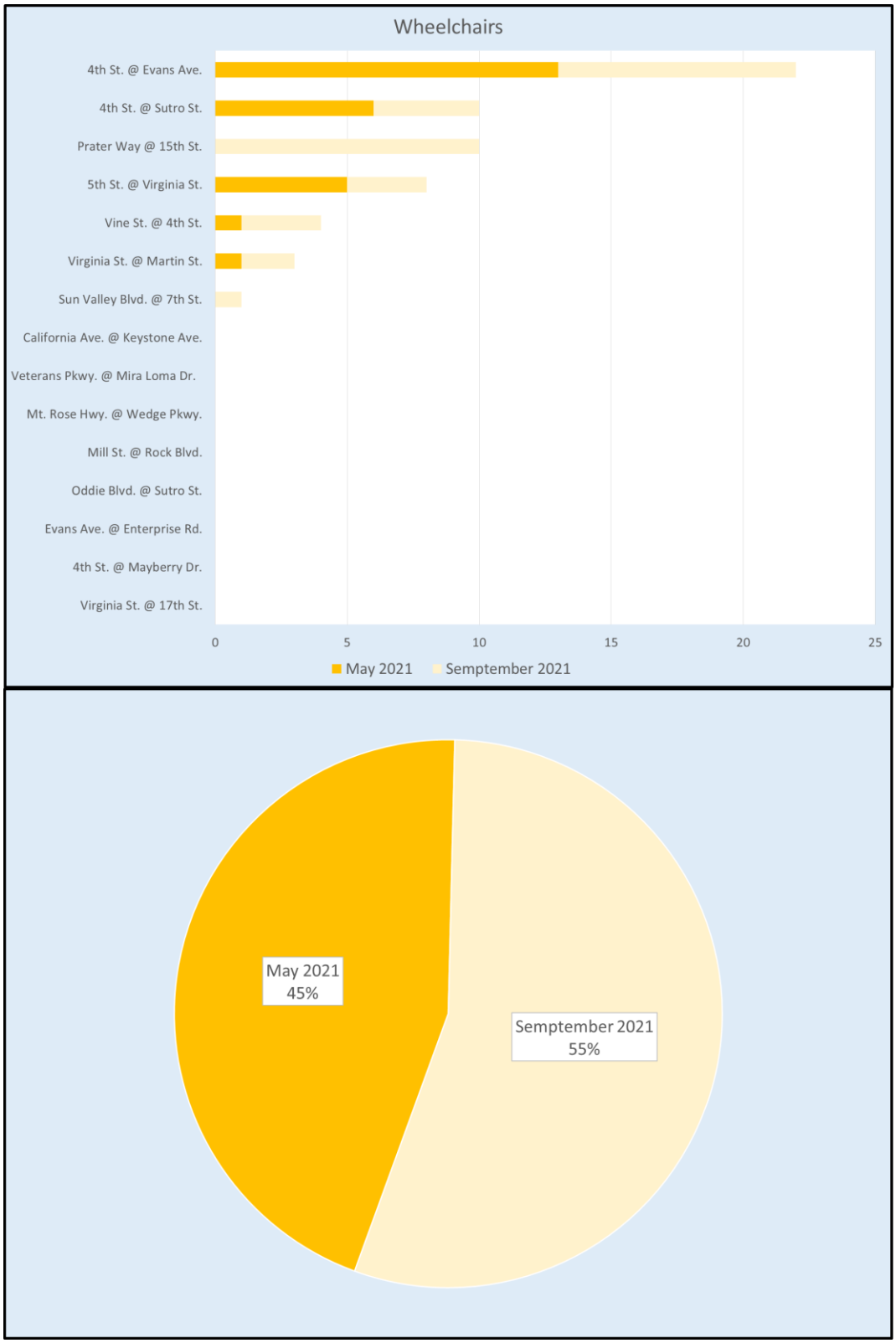


Figure 4. 2021 Total Wheelchair Volumes by Location

Volumes by Location

Figure 5 shows the recorded 2021 bicycle, pedestrian, and wheelchair user volumes at the 15 Program count locations. The scale of the bar graphs is proportionate to the total volumes of bicycles, pedestrians, and wheelchairs users observed at each location over the annual count cycle.

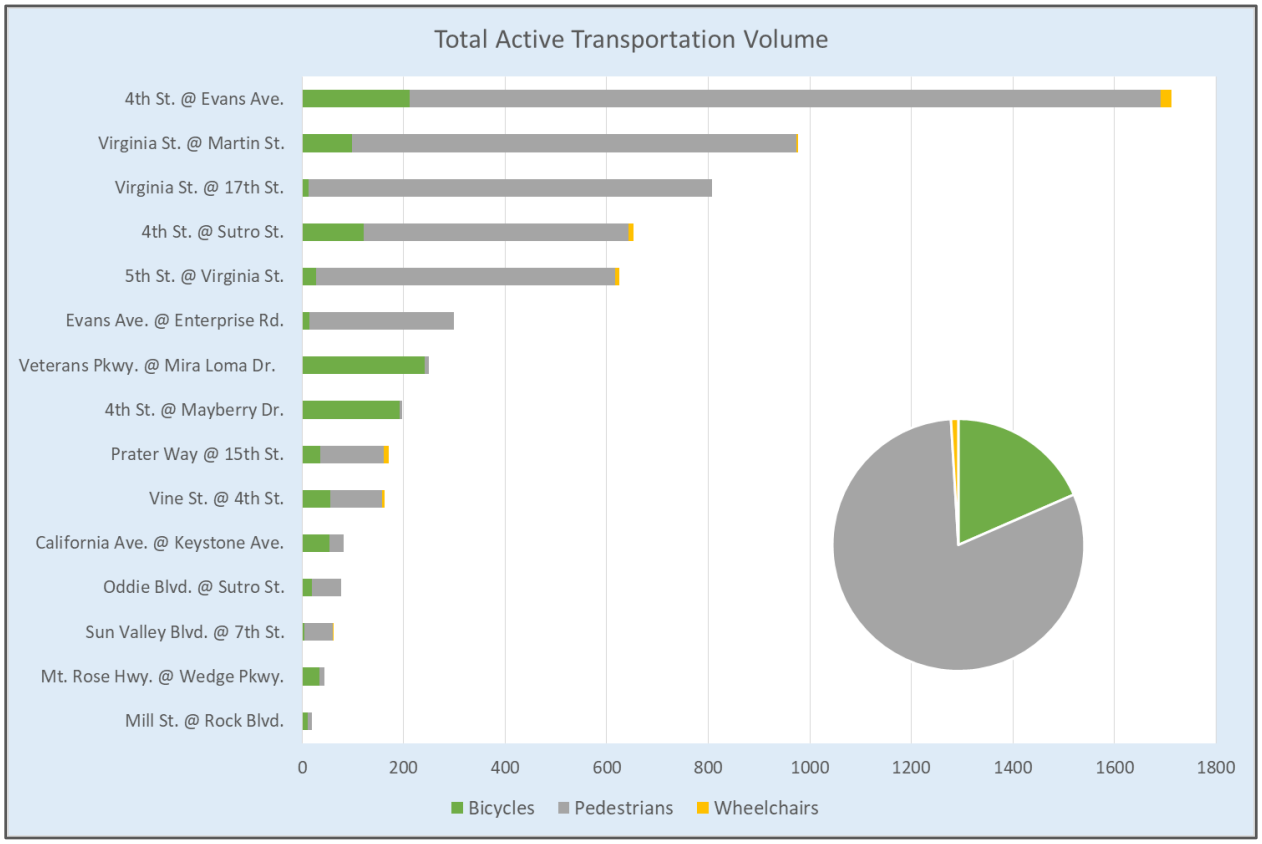


Figure 5. 2021 Relative Volumes

Pedestrian & Bicycle Crash Data

At the time of this report, the Nevada Department of Transportation was unable to provide pedestrian and bicycle crash data for 2020 or 2021.

Wrong-Way Riding

Wrong-way riding is a major safety concern because incidents involving wrong-way riding are typically severe and often fatal for bicyclists when an automobile is involved. **Figure 6** shows the total volume of bicycles by location and the number of wrong way riders during the 2021 count cycle.

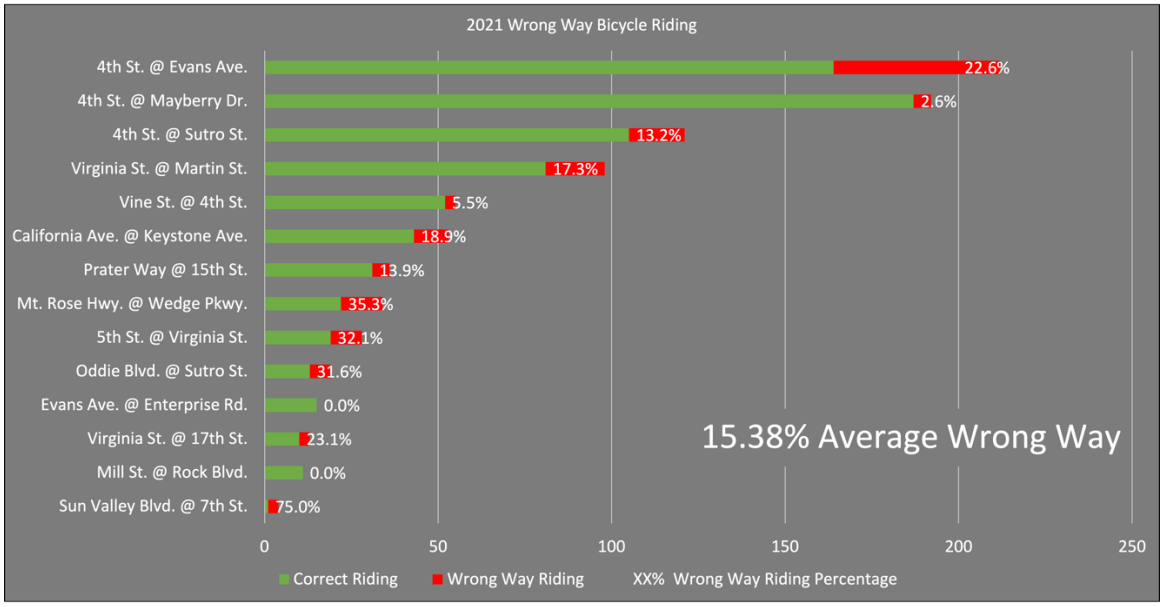


Figure 6. 2021 Wrong Way Riding

Relatively low percentages of wrong way bicycle riding were observed at the 15 count locations. The average wrong way percentage across the study was 15.4%. Veterans Parkway @ Mira Loma Drive was omitted from wrong way percentages as the data collected focuses on the multi-use path which provides two-way cycling. Detailed wrong way bicycle riding at each count location is shown below in **Table 2**.

Table 2. 2021 Wrong Way Riding Percentages

ID No.	Location	Wrong way	Total Bicyclists	Percentage
1	4th St. @ Evans Ave.	48	212	22.64%
2	Prater Way @ 15th St.	5	36	13.89%
4	Virginia St. @ 17th St.	3	13	23.08%
9	Virginia St. @ Martin St.	17	98	17.35%
20	4th St. @ Sutro St.	16	121	13.22%
42	Sun Valley Blvd. @ 7th St.	3	4	75.00%
44	4th St. @ Mayberry Dr.	5	192	2.60%
45	5th St. @ Virginia St.	9	28	32.14%
46	Evans Ave. @ Enterprise Rd.	0	15	0.00%
47	Oddie Blvd. @ Sutro St.	6	19	31.58%
49	Vine St. @ 4th St.	3	55	5.45%
50	Mill St. @ Rock Blvd.	0	11	0.00%
51	Mt. Rose Hwy. @ Wedge Pkwy.	12	34	35.29%
54	California Ave. @ Keystone Ave.	10	53	18.87%
Total		**137**	**891**	**15.38%**

2021 Mode Share

Mode share refers to the percentage of a type or "mode" of transportation traveling on a given roadway or within a defined area. This section provides information about the overall regional mode share based on alternative modes data from all 15 Program locations, as well as the mode share of active transportation at the individual count locations.

Mode shares at each location were calculated by comparing the Average Annual Daily Traffic (AADT), the transit Annual Daily Ridership Average (AADR), and the estimated average annual daily bicycle, pedestrian, and wheelchair traffic extrapolated from the collected counts. AADT at each roadway segment was retrieved from the Traffic Records Information Access (TRINA) database published by the Nevada Department of Transportation (NDOT). At the time of this annual report, NDOT has not released data for 2021, but did release data for 2020 and 2019. The higher volume of the two years was used since 2020 was severely impacted by COVID-19. 2021 is anticipated to have higher vehicle volumes than 2020. Annual Daily Ridership Average (AADR) was obtained from the most recent RTC transit ridership data based on individual roadway segments. RTC ridership volume for 2021 is significantly lower than previous years due to factors such as COVID-19 restrictions and multiple labor strikes that disrupted transit service. At the six comparable locations, 2021 transit volumes were down approximately 44% from 2019.

Figure 7 shows the average calculated modal split for all locations using the most recent AADT and AADR. data for May and September 2021.

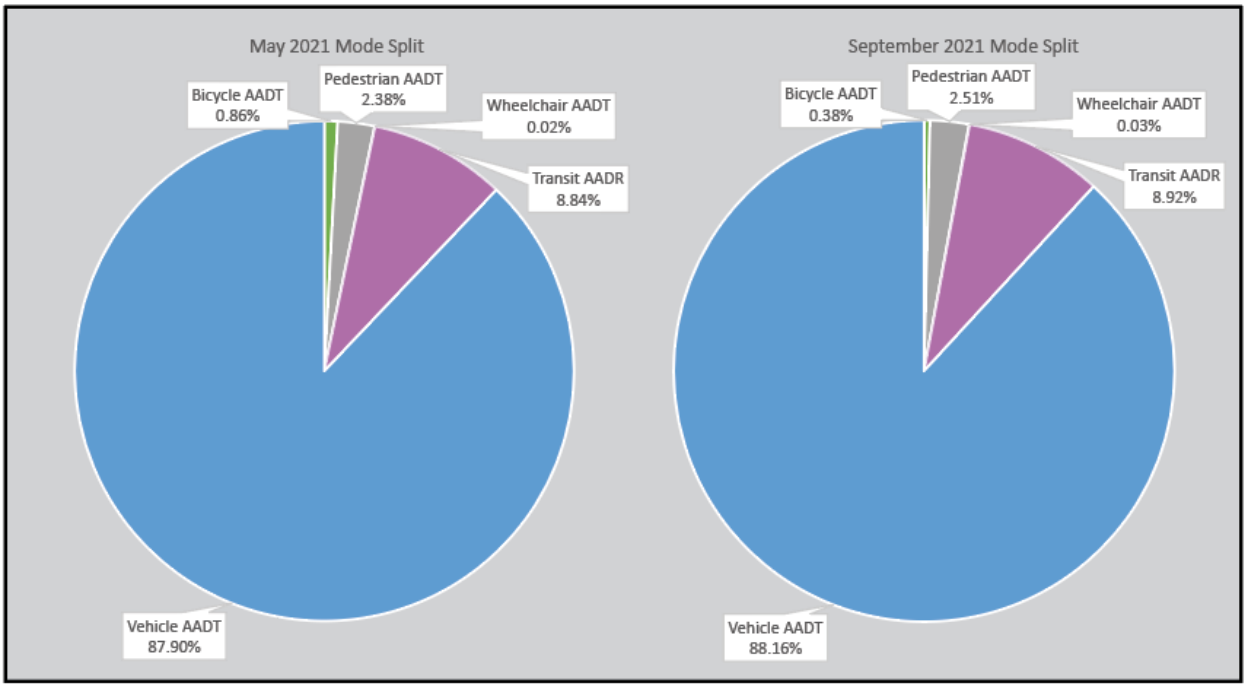


Figure 7. 2021 Transportation Regional Mode Share

In the 2021 yearly count cycle, pedestrian volumes represented 2.44%, bicycling volumes represented 0.62%, and wheelchair user activity represented 0.03% of all regional trips. Transit ridership accounted for 8.88% percent and vehicle traffic accounted for 88.03% of all travel at the 15 count program locations.

The Vine Street @ 4th Street location had the highest bicycle percentage (1.96%) of the 15 locations. The location with the highest pedestrian percentage was 5th Street @ Virginia Street (6.78%). The location with the highest transit percentage was the 4th Street @ Evans Avenue location (49.4%) which is due to the proximity of the RTC 4th Street Station.

Table 3 contains a complete breakdown of the modal split by location in the 2021 count cycle.

Table 3. 2021 Mode Share by Count Location

ID	Location	Existing Facilities			Mode Split				
		Bicycle	Pedestrian	Transit	Bicycles	Pedestrians	Wheelchairs	Transit	Vehicles
1	4th St. @ Evans Ave.				0.83%	6.34%	0.06%	49.40%	43.37%
2	Prater Way @ 15th St.				0.52%	1.44%	0.02%	16.03%	95.03%
4	Virginia St. @ 17th St.				0.03%	3.94%	0.00%	2.42%	93.60%
9	Virginia St. @ Martin St.				0.43%	5.01%	0.02%	12.68%	81.87%
20	4th St. @ Sutro St.				0.87%	4.29%	0.08%	13.49%	81.26%
42	Sun Valley Blvd. @ 7th St.				0.04%	0.50%	0.00%	1.86%	97.61%
44	4th St. @ Mayberry Dr.				1.62%	0.06%	0.00%	0.00%	98.32%
45	5th St. @ Virginia St.				0.39%	6.78%	0.11%	13.47%	79.25%
46	Evans Ave. @ Enterprise Rd.				0.24%	4.18%	0.00%	0.00%	95.58%
47	Oddie Blvd. @ Sutro St.				0.10%	0.40%	0.00%	3.67%	95.83%
49	Vine St. @ 4th St.				1.96%	3.41%	0.12%	14.60%	79.91%
50	Mill St. @ Rock Blvd.				0.22%	0.12%	0.00%	4.88%	94.78%
51	Mt. Rose Hwy. @ Wedge Pkwy				0.20%	0.05%	0.00%	0.00%	99.75%
52	Veterans Pkwy. @ Mira Loma Dr.				1.44%	0.05%	0.00%	0.00%	98.51%
54	California Ave. @ Keystone Ave.				0.44%	0.27%	0.00%	0.69%	98.60%
		Average			**0.62%**	**2.44%**	**0.03%**	**8.88%**	**88.03%**

Performance Measures Monitoring

With the Program data, performance measures can be created and monitored to assess progress towards goals outlined in the 2050 Regional Transportation Plan (RTP) as well as those highlighted in the Bicycle and Pedestrian Master Plan. A stated goal in the 2050 RTP is a 15% alternative mode share within the transit service area by 2040. In 2021, the average total non-motorized user mode share at the 15 Program locations within the RTP Transit Service Area was 11.97%, including transit users.

Two count locations on the Virginia Street corridor and three count locations on the 4th Street/Prater Way corridor help to measure performance against 2050 RTP criteria. A target of 40% alternative mode share for both the Virginia Street and 4th Street/Prater Way TOD corridors was set in the 2050 RTP. **Table 5** shows the 2021 mode share for the count locations on both corridors.

Table 4. 2021 Virginia Street & 4th Street/Prater Way TOD Corridor Mode Share

Location	Bikes	Pedestrians	Wheelchair	Transit	Vehicle
Virginia St. @ 17th St.	0.03%	3.94%	0.00%	2.42%	93.60%
Virginia St. @ Martin St.	0.43%	5.01%	0.02%	12.68%	81.87%

Alternative Modes Average: 12.3%

Location	Bikes	Pedestrians	Wheelchair	Transit	Vehicle
4th St. @ Evans	0.83%	6.34%	0.06%	49.40%	43.37%
4th St. @ Sutro	0.87%	4.29%	0.08%	13.49%	81.26%
Prater Way @ 15th St.	0.52%	1.44%	0.02%	16.03%	95.03%

Alternative Modes Average: 31.12%

The average alternative mode share for the 2021 yearly cycle, including transit, was 12.3% and 31.12% for the Virginia Street and 4th Street/Prater Way TOD corridors, respectively.

Analysis and Trends

Multi-Year Trends

In any given count cycle, special events, inclement weather, and other factors can have a significant effect on observed volumes. A central reason for the existence of this consistent data collection effort is to help planners and the public understand the general multi-year trends in alternative mode usage, and thereby more easily identify any abnormalities in seasonal activity at each location or region-wide. For this reason, a trend line is included in each of the graphs below containing historical total alternative mode volumes.

Bicyclist Activity

Figure 8 shows that, since September 2015, bicycling activity at the six comparison locations has shown a trend towards slightly decreasing volumes in each year-to-year count cycle, most notably since 2017. 2021 is the lowest recorded volume recorded at the count locations, next to 2018. The volumes of bicycles observed over the last 3 count cycles at the comparable locations have been relatively consistent.

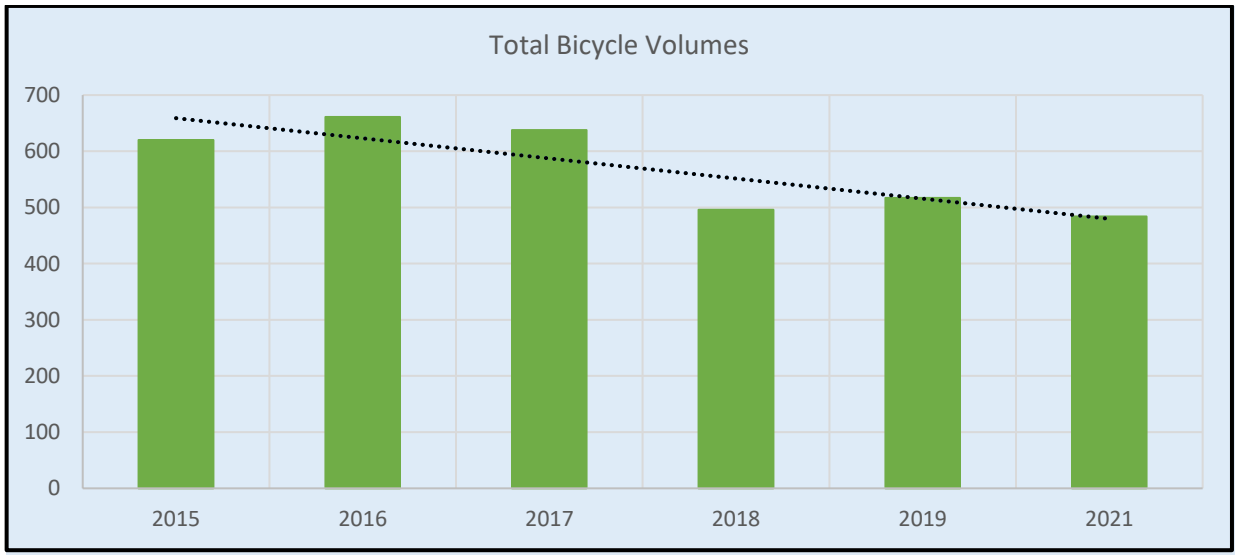


Figure 8. Multi-Year Total Bicycle Volumes

Pedestrian Activity

Figure 9 indicates that overall pedestrian activity at the six comparison count locations was relatively consistent (approximately 5,000 pedestrians) from 2015 to 2019. The recorded 2021 pedestrian volume was significantly lower than prior yearly count cycles. This is mostly due to the low number of pedestrians observed at the 4th Street @ Evans Avenue location in September 2021.

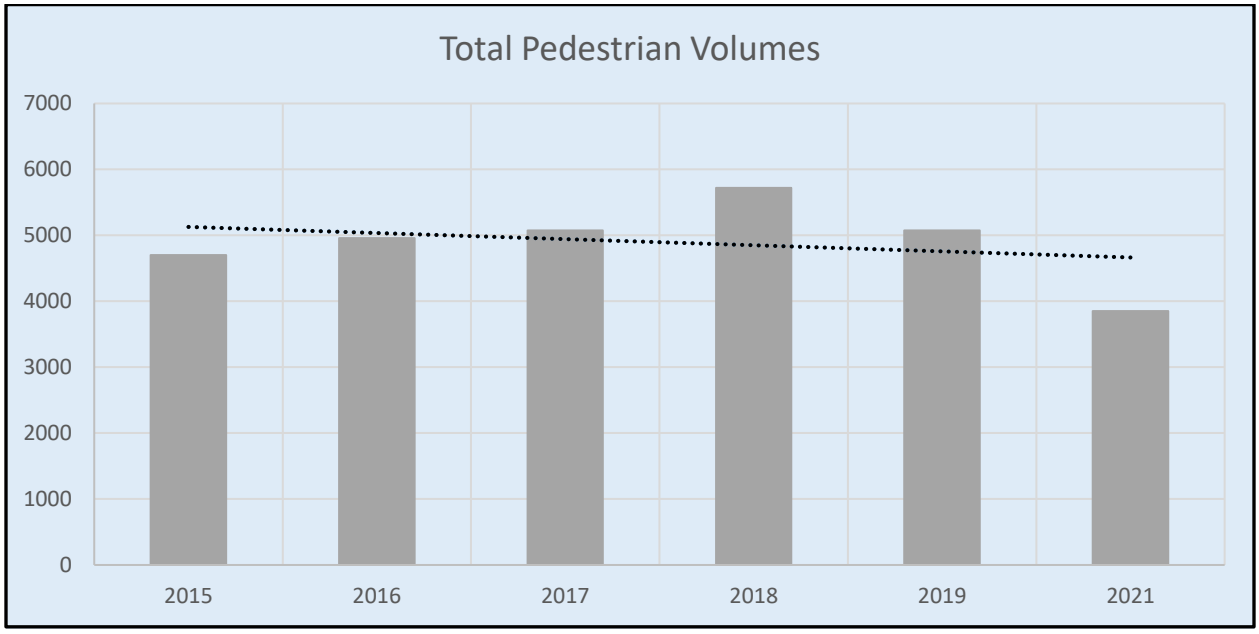


Figure 9. Multi-Year Total Pedestrian Volumes

Wheelchair Activity

Figure 10 indicates that overall wheelchair user activity at the six comparison count locations has been relativity consistent (45 to 75 persons in total).

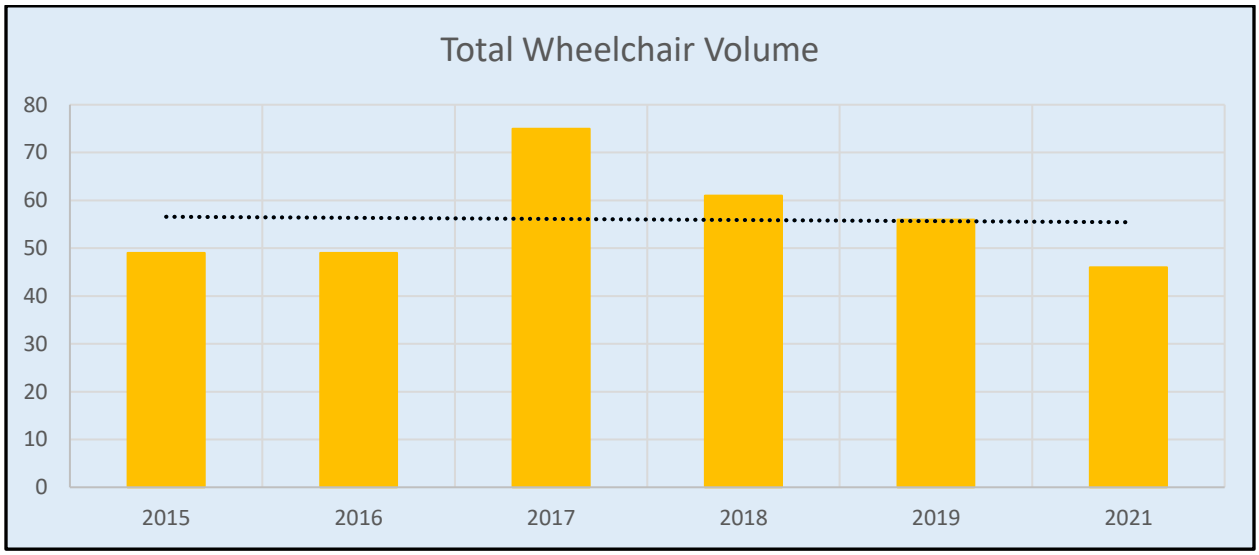


Figure 10. Multi-Year Total Wheelchair Volumes

The seventh full year of data collection for the Bicycle, Pedestrian and Wheelchair Data Collection Program, has helped to identify multi-year trends and factors contributing to the use of alternative modes of transportation in the Reno-Sparks area. A total of 12 data collection cycles are now complete at the six "comparison" count locations.

Posted Speed Limit Impacts

In general, areas with lower posted speed limits had higher percentages of alternate mode usage. Posted speed limits at count locations ranged from 25 MPH to 55 MPH. The highest alternate mode percentage was 7.23% which was at 4th Street @ Evans Avenue. That location has a posted speed limit of 25 MPH. The lowest alternate mode percentage was 0.25% which was recorded at the Mt. Rose Highway @ Wedge Parkway count location. The posted speed limit at that location is 50 MPH. **Figure 11** shows the correlation between posted speed limit and alternate mode usage percentage.

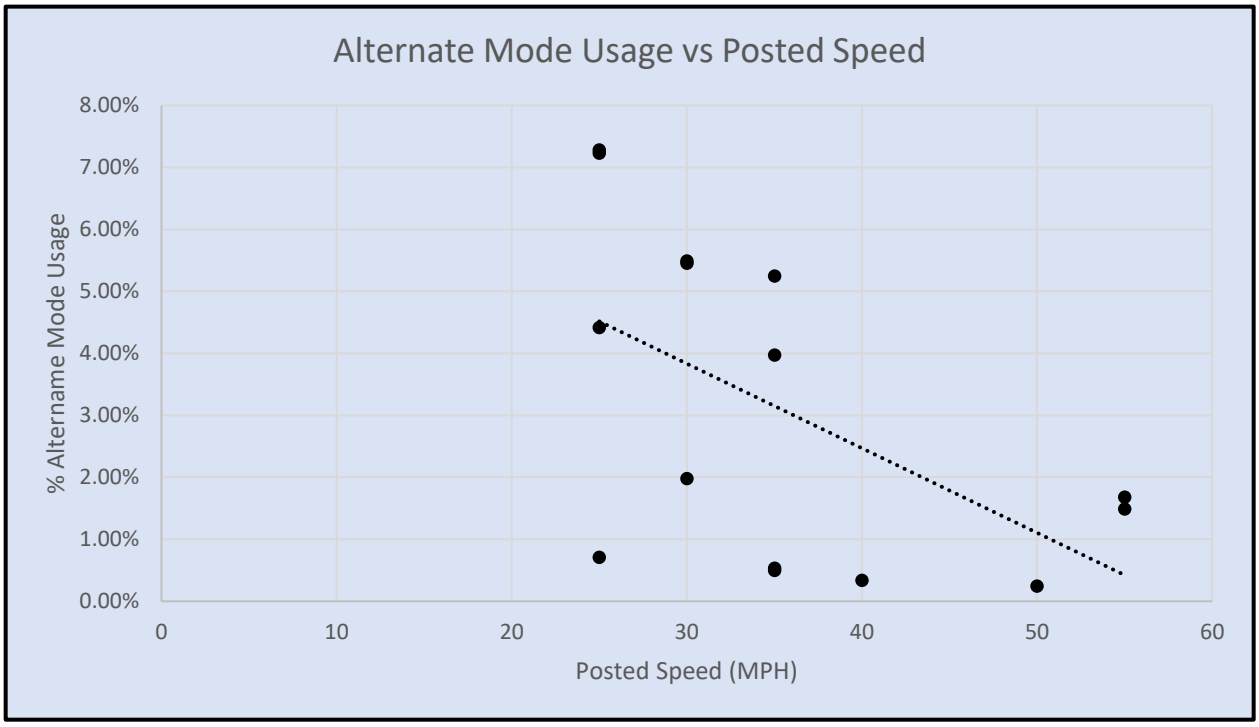


Figure 11. Posted Speed Limit vs. Alternate Mode Usage

Conclusions

Seven complete annual cycles of bicycle, pedestrian and wheelchair user data have been conducted in the Reno-Sparks region since the Programs' inception. In this section, the multi-year trends of each alternative mode are analyzed based on the associated total volumes at the six comparison count locations collected between September 2015 and September 2021.

Alternative Mode Activity Data Trends

- Pedestrian volumes were relatively consistent between 2015 and 2019. However, the 2021 count cycle recorded significantly less pedestrians compared to the prior count cycles.
- Bicycle volumes have had a significant decrease since 2017 but have been relatively consistent from 2018 to present.
- Active mode usage is generally higher on roadways with lower speed limits.
- COVID-19 restrictions and impacts were still prevalent in 2021. The absence of many special events and low transit ridership negatively impacted the overall alternative mode share.

Considerations for Future Data Collection Efforts / Program

The following suggestions to improve future data collection and analysis include modifications or additions to what and how data is being collected and analyzed for the Bicycle, Pedestrian, and Wheelchair Data Collection Program. The list represents ideas brought forth by the Program consultant. It is assumed that their implementation depends on their relative suitability and feasibility as determined by RTC staff and Program stakeholders.

- Obtain and map crash location data from NDOT and other sources, if available, to identify and characterize high-crash locations.
- Analyze post COVID-19 data trends (how fast will transit and other active transportation volumes return to normal levels)
- Monitor specific locations with upcoming "compete street" improvements before and after construction to measure the effectiveness of new infrastructure and roadway treatments that are intended to improve the use of alternative transportation.
- Consider longer term data collection efforts to create better hourly to daily volume conversion factors.

Appendix

NATIONAL BICYCLE & PEDESTRIAN DOCUMENTATION PROJECT

Count Adjustment Factors March 2009

While more year-long automatic count data is needed from different parts of the county, especially for pedestrians and on-street bicyclists, enough data now exists to allow us to adjust counts done almost any period on multi-use paths and pedestrian districts to an annual figure.

All percentages in the following tables represent the percentage of the total period (day, week, or month).

How to Use This Data

The factors in the following tables are designed to extrapolate daily, monthly, and annual users based on counts done during any period of a day, month, or year. The factors currently are designed to be used by (a) multi-use pathways (PATH) and (b) higher density pedestrian and entertainment areas (PED).

How Many Counts Can it Be Based On?

Given the variability of bicycle and pedestrian activity, we strongly encourage that all estimates be based on the average of at least two (2) and preferably three (3) counts during the same time period and week, especially for lower volume areas. For example, counts could be done from 2-4pm on consecutive weekdays (Tuesday – Thursday) during the same week, or, in consecutive weeks. Weekday counts should always be done Tuesday through Thursday, and never on a holiday. Weekend counts can be done on either day.

Bicyclists versus Pedestrians

The factors used in these formulas are for combined bicyclist and pedestrian volumes. Once you have calculated your total daily, monthly, or annual volume, you can simply multiple the total by the percent breakdown between bikes and pedestrians based on your original count information.

Start with the Hour Count

Once you have collected your count information and developed an average weekday and weekend count volume for bicyclists and/or pedestrians, pick any one (1) hour period from either of those days.

<u>Adjustment Factor</u>

Your next step is to multiply those counts by 1.05. Sample #1

Average 1 hour weekday count: 236 bikes/peds x 1.05 = 248
Average 1 hour weekend day count: 540 bikes/peds x 1.05 = 567

This adjustment factor is done to reflect the bicyclists/pedestrians who use the facility between 11pm and 6am, or, about 5% of the average daily total. The count formulas are all based on total counts between 6am and 10pm, since many available counts only cover those periods. If you are certain your facility gets virtually no use between those hours, you can forgo this step.

Calculate Daily Weekday and Weekend Daily Total

Identify the weekday and weekend hour your counts are from in Table 1 below. Be sure to use the PATH column for all multi-use paths, and the PED column for all higher density pedestrian areas with some entertainment uses such as restaurants. Be sure to select the correct time of year (April- September, or, October-March) as well.

Sample #2: done in June on a multiuse path (weekday = 4-5pm, weekend day = 12-1pm): Adjusted weekday hourly count = 248/.07 = 3,542 daily users
Adjusted weekend day hourly count = 567/.1= 5,670 daily users Calculating Average Weekly Volumes
We need to adjust these figures based on the day of the week. See table 2 below. Find the day of the week your counts were done, and factor them by that percent. If you did multiple counts on different days of the week, then take the average of those factors.

Sample #3: counts were done on a Tuesday and a Saturday. Adjusted weekday count = 3,542/.13 = 27,246 average weekly users Adjusted weekend count = 5,670/.18 = 31,500
Add these two figures together, and divide by 2: 27,246+31,500=58,746/2 = 29,373 people The average weekly volumes for that month are 29,373 people.

Convert to Monthly Volumes

To convert from average weekly volumes to an average monthly volume, multiply the average weekly volume by the average number of weeks in a month (4.33 weeks).

Sample #4: 29,373 x 4.33 = 127,282 people.
This is the average monthly volume for the month the counts were conducted. Convert to Annual Totals
To convert from the average monthly volume for the month the counts were taken into an annual total, divide the average monthly figure by the factor from Table 3 for the month the counts were conducted. Use the general climate zones described. Some climate zone types are not included.

Sample #5: counts were done in June in a moderate climate zone. Average monthly volumes = 127,282/.08 = 1,591,037 people.
Based on these sample figures, it is estimated that almost 1.6 million people use the pathway annually.

Average Monthly and Daily Figures

To identify the average monthly and daily figures, simply divide the annual figure by 12 (for month) or by 365 (for daily figures).

Monthly average = 1,591,037/12 = 132,586 people Daily Average = 1,591,037/365 = 4,359 people

Table 1: Hourly adjustment factors for multi-use paths and pedestrian entertainment areas by season.

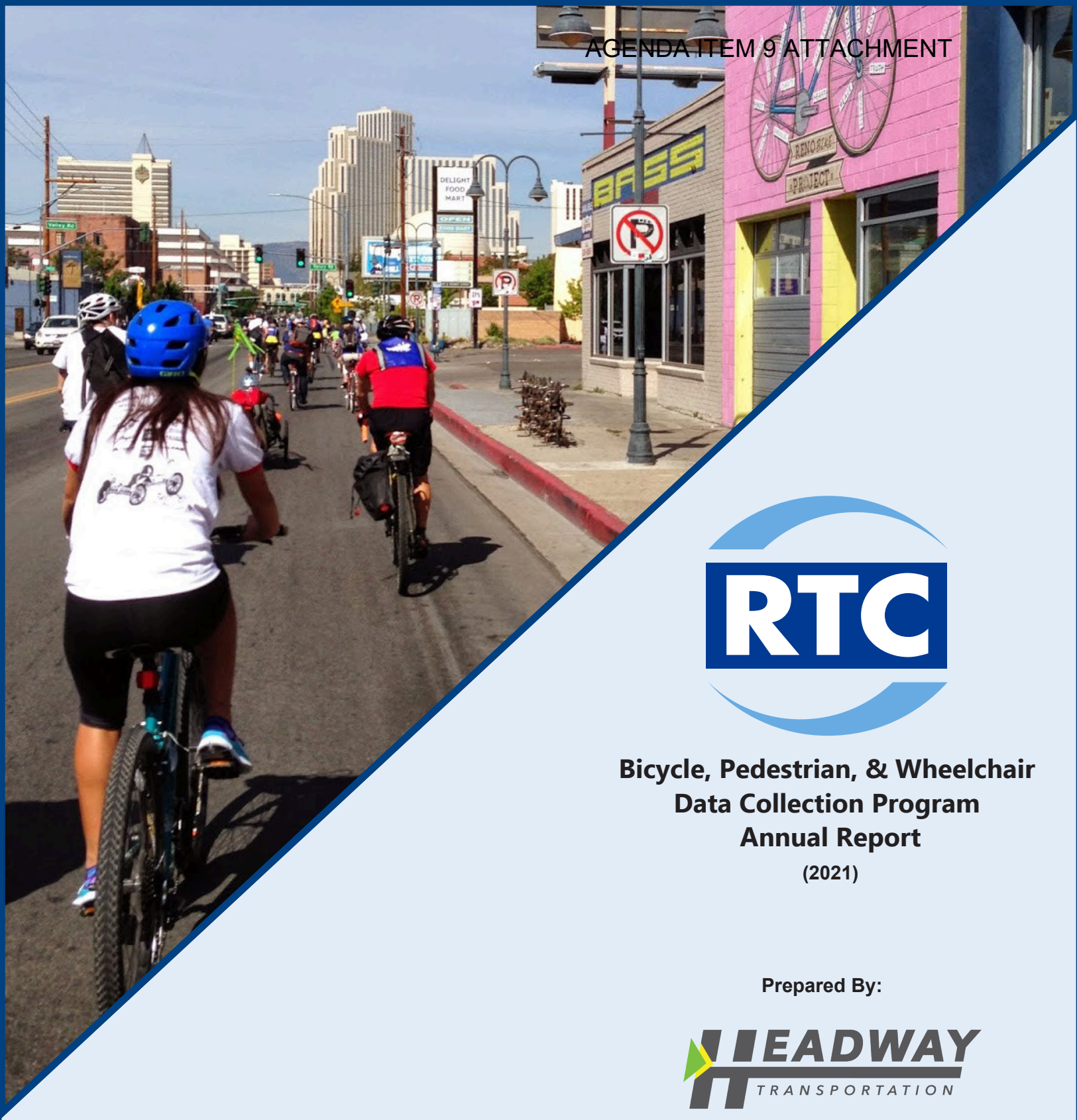
	April - September 6am - 9pm					October - March 6am - 9pm			
	---- PATH------		-----PED-----			---- PATH------		-----PED-----	
	wkdy	wkend	wkdy	wkend		wkdy	wkend	wkdy	wkend
0600	2%	1%	1%	1%	0600	2%	0%	1%	0%
0700	4%	3%	2%	1%	0700	4%	2%	2%	1%
0800	7%	6%	4%	3%	0800	6%	6%	3%	2%
0900	9%	9%	5%	3%	0900	7%	10%	5%	4%
1000	9%	9%	6%	5%	1000	9%	10%	6%	5%
1100	9%	11%	7%	6%	1100	9%	11%	8%	8%
1200	8%	10%	9%	7%	1200	9%	11%	9%	10%
1300	7%	9%	9%	7%	1300	9%	10%	10%	13%
1400	7%	8%	8%	9%	1400	9%	10%	9%	11%
1500	7%	8%	8%	9%	1500	8%	10%	8%	8%
1600	7%	7%	7%	9%	1600	8%	8%	7%	7%
1700	7%	6%	7%	8%	1700	7%	5%	6%	6%
1800	7%	5%	7%	8%	1800	6%	3%	7%	6%
1900	5%	4%	7%	8%	1900	4%	2%	7%	6%
2000	4%	3%	7%	8%	2000	2%	1%	6%	6%
2100	2%	2%	6%	8%	2100	2%	1%	5%	5%

Table 2: Daily adjustment factors. Note: Holidays use weekend rates.

MON	14%
TUES	13%
WED	12%
THURS	12%
FRI	14%
SAT	18%
SUN	18%

Table 3: Monthly Adjustment Factors by Climate Area

	Climate Region		
Month	Long Winter Short summer	Moderate Climate	Very hot summer Mild winter
JAN	3%	7%	10%
FEB	3%	7%	12%
MAR	7%	8%	10%
APR	11%	8%	9%
MAY	11%	8%	8%
JUN	12%	8%	8%
JUL	13%	12%	7%
AUG	14%	16%	7%
SEP	11%	8%	6%
OCT	6%	6%	7%
NOV	6%	6%	8%
DEC	3%	6%	8%



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Bicycle, Pedestrian, & Wheelchair Data Collection Program Annual Report

(2021)

Prepared By:

HEADWAY TRANSPORTATION