



**TRANSPORTATION
OPTIMIZATION PLAN
STRATEGIES (TOPS)**

2023–2027

July 2022

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TABLE OF CONTENTS

Introduction1
Market Assessment2
Existing Service Evaluation6
Community Engagement.	14
Peer Review	17
Goals and Objectives	19
Public Transportation Service Recommendations	22
Capital & Technology Recommendations	39
Rebuilding Public Transportation Ridership	43
Implementation Plan	45

MAPS / FIGURES

Figure 1 - RTC Washoe Monthly Public Transportation Boardings	1
Figure 2 - Transit Demand Potential Map	3
Figure 3 - TMRPA Regional Form Map	5
Figure 4 - Weekly Boardings by Service Type and Route	6
Figure 5 - RTC RIDE & RAPID Boardings by Hour and Day Type (2021)	7
Figure 6 - Weekday Fixed-Route & Microtransit Boardings (2019 v. 2021)	8
Figure 7 - RTC RIDE Weekday Productivity by Route	9
Figure 8 - RTC Vanpool Origin & Destination Map (2021)	12
Figure 9 - Phase 1 Survey: Priorities for Service Improvements	14
Figure 10 - Phase 1 Survey: Current RTC Performance	15
Figure 11 - Phase 2 Survey: TOPS Service Proposal Sentiment	16
Figure 12 - RTC Peer Agency Map	17
Figure 13 - Annual per Capita Fixed-Route Boardings	18
Figure 14 - Fixed-Route Boardings per Revenue Mile	18
Figure 15 - Senior Mobility Program Recommendations	38
Figure 16 - TOPS Capital Project and Vehicle Replacement Plan	40
Figure 17 - Technology Phasing Plan	42
Figure 18 - Marketing and Outreach Recommendations	44
Figure 19 - TOPS Financial Plan	46

INTRODUCTION

Purpose of TOPS

The Transit Optimization Plan Strategies (TOPS) serves as the basis for changes to RTC’s public transportation services over the next five years (FY23-FY27). It also sets out the work plan for RTC’s Public Transportation Division during this period. This planning document is updated every five years and is coordinated with the long-range Regional Transportation Plan.

The plan development process included the following components:

- Review of demographics and mobility needs in the Truckee Meadows region
- Analysis of existing public transportation services operated by RTC
- Peer review of similar agencies and industry best practices
- Community engagement on needs and priorities
- Definition of Goals and Performance Metrics
- Development of Service Recommendations
- Five-year Implementation Plan

In addition to the components above, during this plan cycle the following additional items were addressed:

- Strategies for retaining and attracting new riders
- Technology review and recommendations
- Customer service review and recommendations
- Potential public-private partnerships

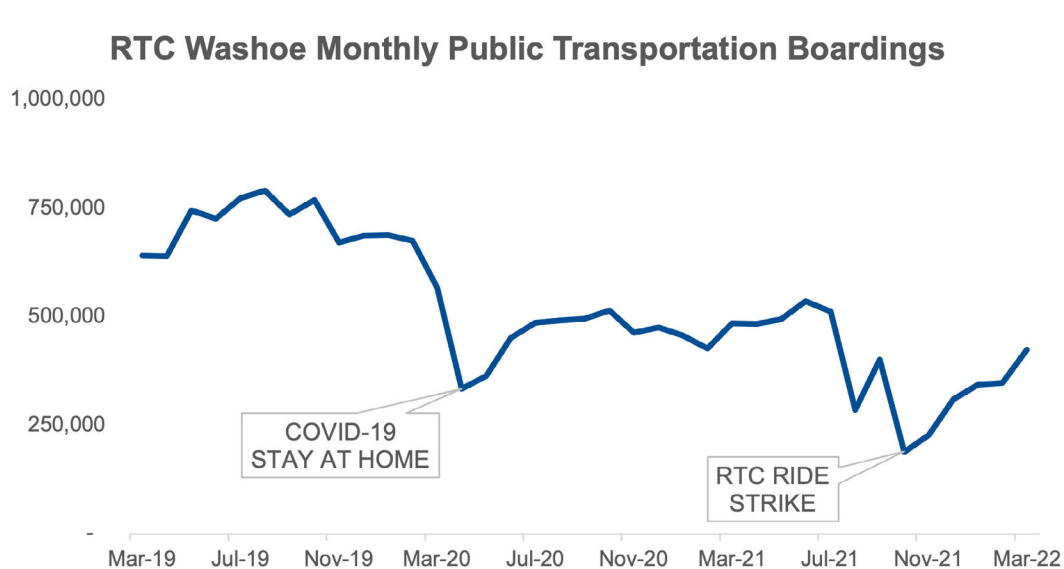
Impacts of the COVID-19 Pandemic

During this plan development, it was necessary to address the impacts of the COVID-19 on public transportation service in the Truckee Meadows area. The plan development was adjusted to address this in the following ways:

- ✓ Public transportation ridership was analyzed both before (Fall 2019) and during the pandemic (Spring 2021)
- ✓ Recent changes to travel patterns were analyzed using anonymized cell phone data
- ✓ Community engagement shifted to virtual online methods

As show in Figure 1, RTC’s public transportation services experienced a 48% decrease in usage during the early days of the pandemic, but have since returned to 66% of pre-pandemic levels. The sharp decrease in ridership during the pandemic and slow recovery has been a trend with transit agencies across the country. The RTC recovery was additionally slowed by multiple transit worker strikes in 2021. This plan assumes that ridership will continue to recover during the plan period, though the rate is uncertain.

Figure 1 - RTC Washoe Monthly Public Transportation Boardings



MARKET ASSESSMENT

It is important to identify any gaps in the existing and future transit system. The market assessment included an analysis of existing demographics to determine how the current routes serve areas with the highest transit needs. This included looking at the general population, employment, and trip densities as well as specific demographic markets which are more likely to use transit.

It is also helpful to review local and regional plans which may help inform where transit is needed in the future. Understanding future land use plans is key to identifying how transit can help support future development. Other transportation plans were also reviewed to see which projects been previously planned and the role of transit in the general transportation system.

Transit Demand Potential

To develop a more complete picture of transit demand, 10 key demographic factors were compiled into a single map showing the potential for transit in each census block group. These factors were:

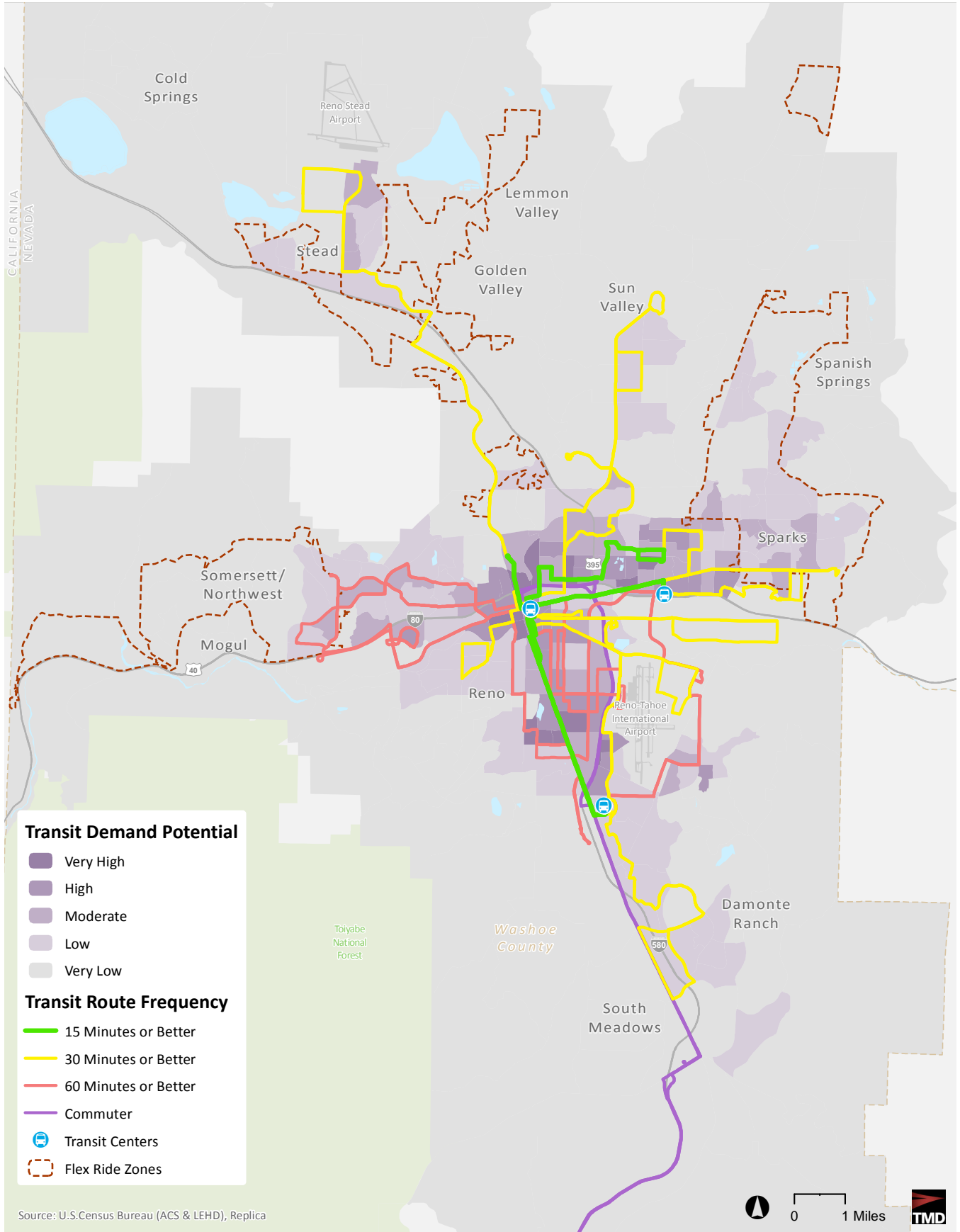
- ✓ Population
- ✓ Jobs
- ✓ Trip Activity for All Modes
- ✓ Youth Residents
- ✓ College-Aged Residents
- ✓ Low-Income Individuals
- ✓ Senior Residents
- ✓ Minority Residents
- ✓ Persons with Disabilities
- ✓ Zero-Vehicle Households

Each factor was equally weighted and indexed to determine relative potential. Figure 2 shows demand from “Very High” to “Very Low”. Areas with “Very High” and “High” demand potential merit fixed-route bus service at RTC’s higher frequencies. Areas with “Moderate” and “Low” demand would merit lower frequency service or potentially the FlexRIDE microtransit service. Areas with “Very Low” potential would not merit transit service unless serving a specific need or destination.

In general, the areas with highest demand are currently served by fixed-route service. There are some areas to the west of Downtown Reno and the east of Centennial Plaza which merit additional frequency. The area west of the airport may also merit additional frequency on corridors parallel to Virginia Street.



Figure 2 - Transit Demand Potential Map



Source: U.S. Census Bureau (ACS & LEHD), Replica

Planned Development

The TMRPA Truckee Meadows Regional Plan ties together the future land use planning for Reno, Sparks and unincorporated areas of Washoe County. The plan includes the designation of the Truckee Meadows Service Area Boundary (TMSA), which defines the areas are eligible to receive municipal services and infrastructure.

The Washoe County Consensus Forecast shows that population and jobs are projected to grow between 2018 and 2038. Population is projected to grow by 106,823 residents (23.6%) and employment is projected to grow by 80,578 jobs (26.5%). The new housing needed to accommodate this growth is projected to be 43,207 units.

The adopted plan allocated 25% of the new development inside the McCarran Loop. Additional residential development would take place within planned greenfield developments on the edges of the TMSA. The plan designates development intensity tiers from “Mixed Use Core” through “Rural Area” outside of the TMSA. Fixed-route bus service would be most compatible with the Mixed Use Core and Tier 1 land designations. Tier 2 may merit on-demand service, depending on actual density and destinations. Figure 3 shows the areas of the TMSA by land use designation. The Mixed Use Core areas include Downtown Reno, Sparks along 4th Street/Prater, Virginia Street from UNR to Meadowood Mall. In general, these mirror where investments have been made in Bus Rapid Transit and high frequency bus service. There are Tier 1 corridors which follow 395 north of UNR to Stead and along Virginia Street to Damonte Ranch. Other Tier 1 land designations include the area around Reno Airport, areas within the McCarran Loop, and Sun Valley. It will be important to consider these corridors and areas when making recommendations for changes to fixed-route and microtransit services.



RTC Washoe 2050 Regional Transportation Plan

The most recent Regional Transportation Plan for Washoe County was adopted in early 2021 and covers transportation improvements to 2050. The plan uses the 2017 Short-Range Transit Plan as a basis for the transit recommendations included in the plan. Listed below are the operating and capital recommendations:

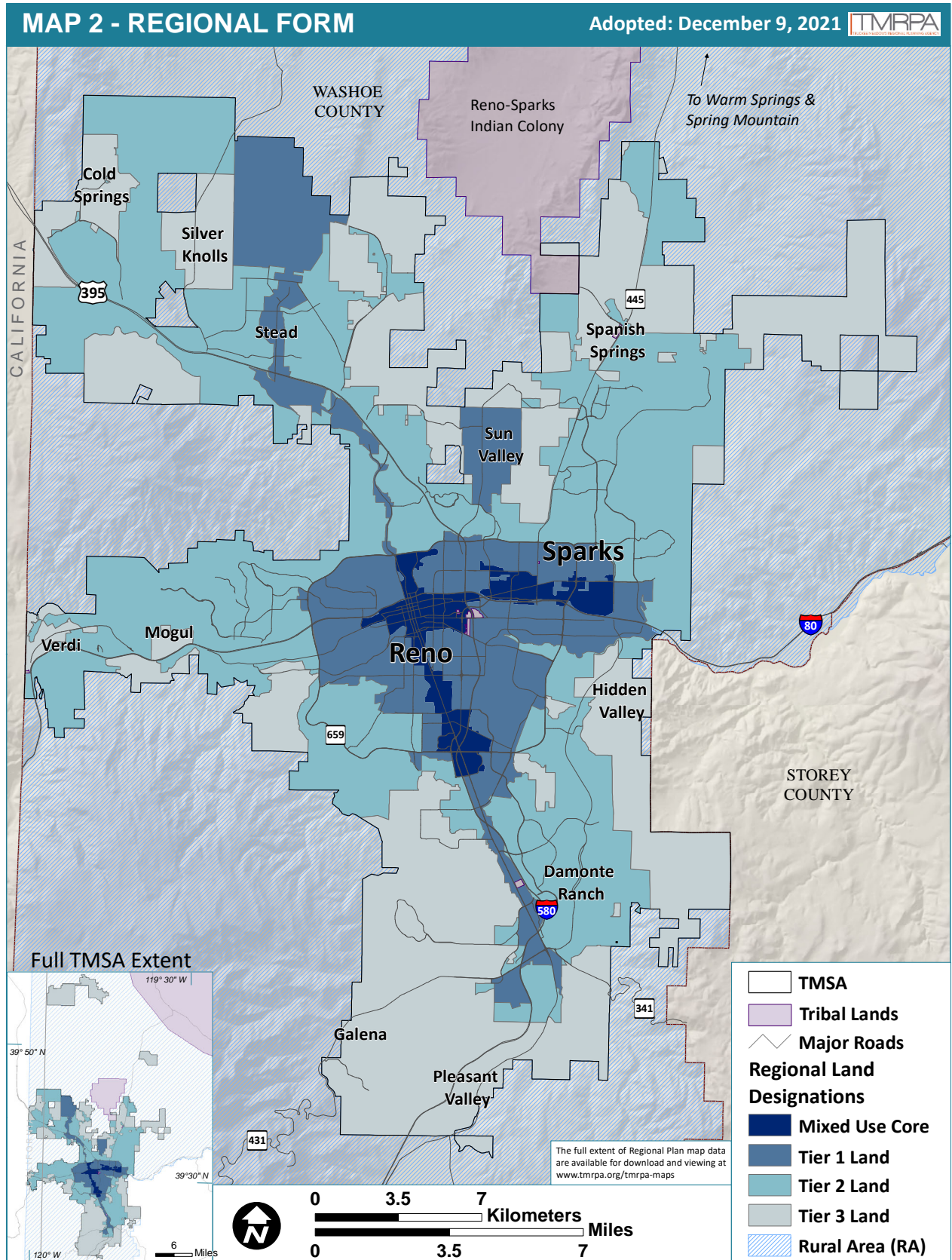
OPERATING RECOMMENDATIONS

- Reallocation of service hours to achieve greater efficiency.
- Increase service hours to high ridership corridors where feasible.
- Expand FlexRIDE Program.
- Increase subsidy and expand eligibility for taxi bucks/Washoe Senior Ride Program.
- Continuation of grant program for not-for-profit transportation services, as identified in the Coordinated Human Services.

CAPITAL RECOMMENDATIONS

- Expand RTC 4TH Street Station to construct four additional bus bays, electric bus chargers, and parking spaces.
- Installation of electric bus charging infrastructure at RTC Centennial Plaza Station.
- Upgrade the northbound Virginia Line station at Peppermill to provide full ADA accessibility, additional seating capacity, and full RAPID amenities.
- Bus stop accessibility improvements throughout the region, in support of the ADA Transition Plan.
- Park and ride facilities to support RTC Vanpool passengers.

Figure 3 - TMRPA Regional Form Map



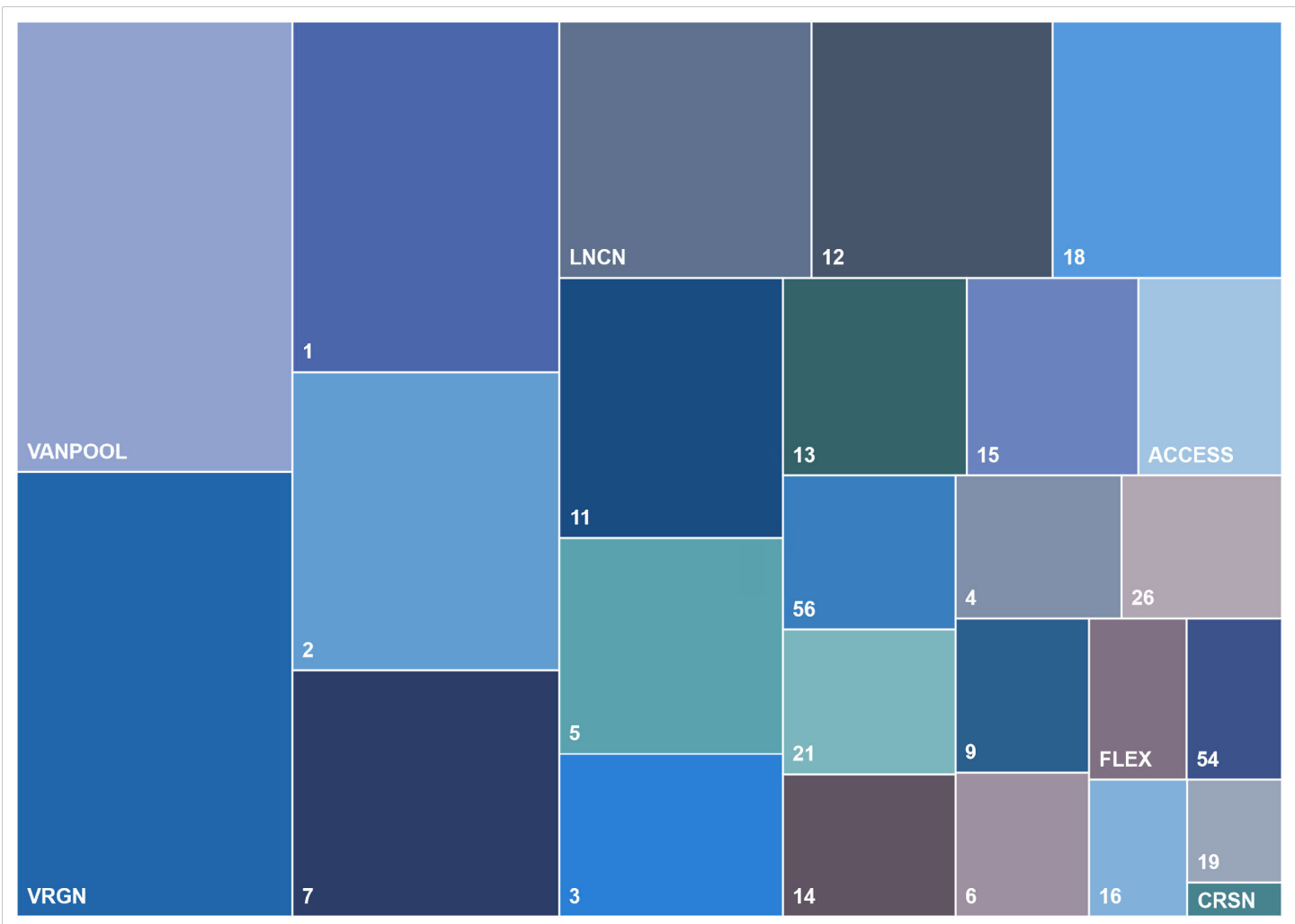
EXISTING SERVICE EVALUATION

A comprehensive analysis of RTC Washoe’s existing public transportation services was performed to determine strengths and weaknesses. Data from both September 2019 and April 2021 were analyzed to identify any changes in usage or travel patterns during the pandemic.

Figure 4 shows the relative weekly ridership across RTC’s different public transportation offerings in 2021. There are some important data points when we look at ridership this way:

- The top seven RIDE routes account for 50.5% of the ridership. The balance of the 15 routes account for 36.5%.
- Services on the Virginia Street corridor account for 20% of boardings.
- The VANPOOL service is 9% of boardings, which is higher than expected and reflects the robust usage in Washoe County
- The ACCESS paratransit service is 2.3% of boardings
- The FlexRIDE microtransit service is 1.4% boardings which reflects the capacity of this service

Figure 4 - Weekly Boardings by Service Type and Route



RIDE and RAPID (Fixed-Route)

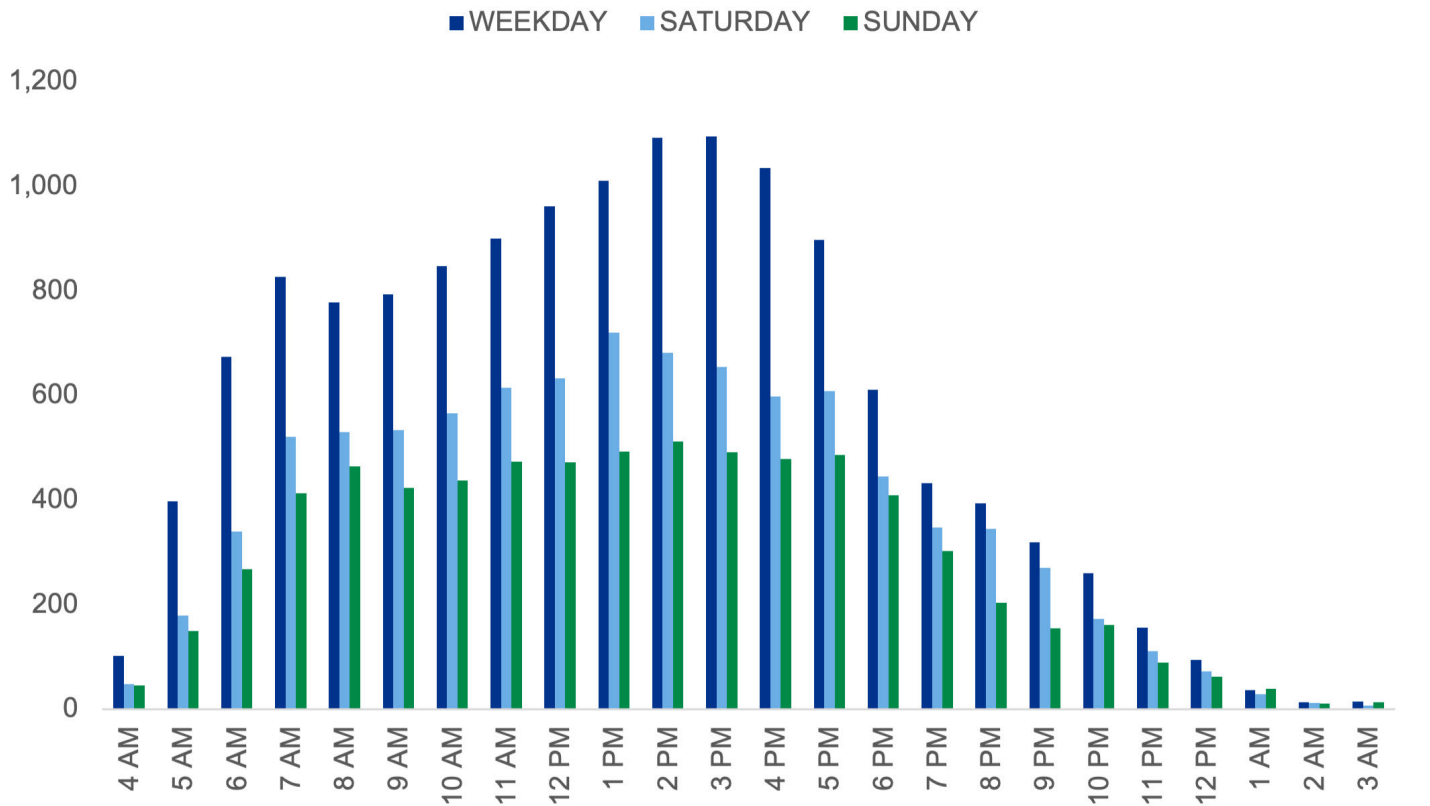
RTC Washoe operates the RIDE and RAPID fixed-route bus system. There are 22 RIDE local bus routes, two RAPID bus rapid transit routes, and one regional route between Reno and Carson City. The routes connect to three major transit centers which are 4th Street Station in Downtown Reno, Centennial Plaza in Sparks, and the Meadowood Mall in the southern portion of the service area. Schedules are coordinated at these transit centers to allow riders to quickly transfer between routes. Routes generally operate on compatible clock-based headways of 10, 30, and 60 minutes.

RIDERSHIP BY HOUR AND DAY TYPE

Figure 5 shows the number of passengers boarding RTC RIDE and RAPID bus by hour and day type in 2021. The post-pandemic weekday ridership had a larger afternoon peak than pre-pandemic, which is consistent with other transit agencies. Saturday and Sunday ridership are strong compared to weekday ridership which indicates that the current design is not overly focused on commuter trips.

Figure 5 - RTC RIDE & RAPID Boardings by Hour and Day Type (2021)

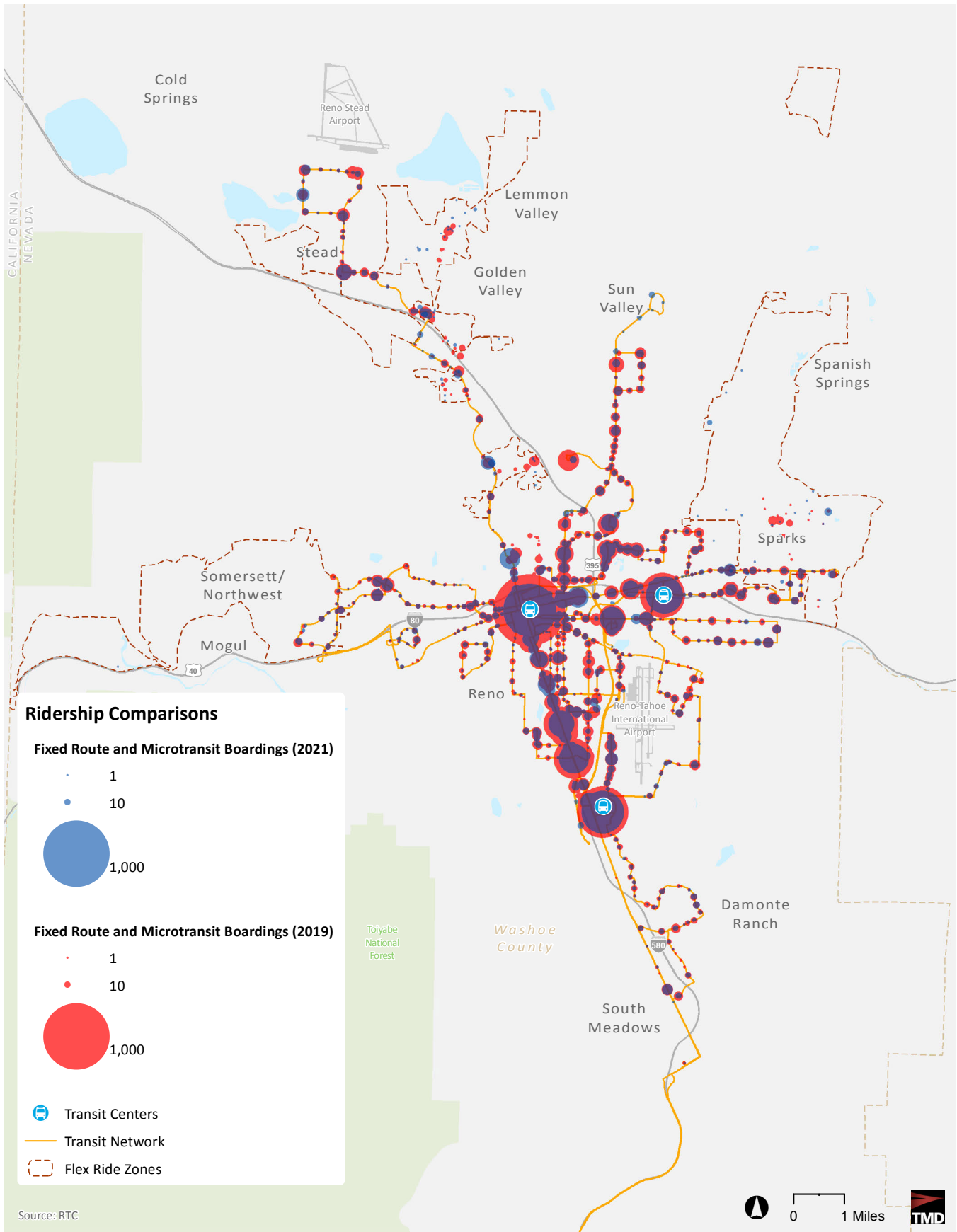
RTC RIDE & RAPID Boardings by Hour and Day Type (2021)



RIDERSHIP BY STOP

Stop-level ridership shows where transit demand is high and helps identify the top destinations and transfer locations in the network. Figure 6 shows the weekly boardings by stop in 2019 compared to 2021. As ridership was down systemwide during the pandemic, ridership in 2021 (blue dots) is smaller than ridership in 2019 (red dots). Ridership was down in almost all areas with a couple of isolated pockets where microtransit service was introduced and along the southern Virginia Street corridor. The Sparks Industrial Area did not see a ridership decrease during the pandemic, most likely because of the essential jobs located there.

Figure 6 - Weekday Fixed-Route & Microtransit Boardings (2019 v. 2021)



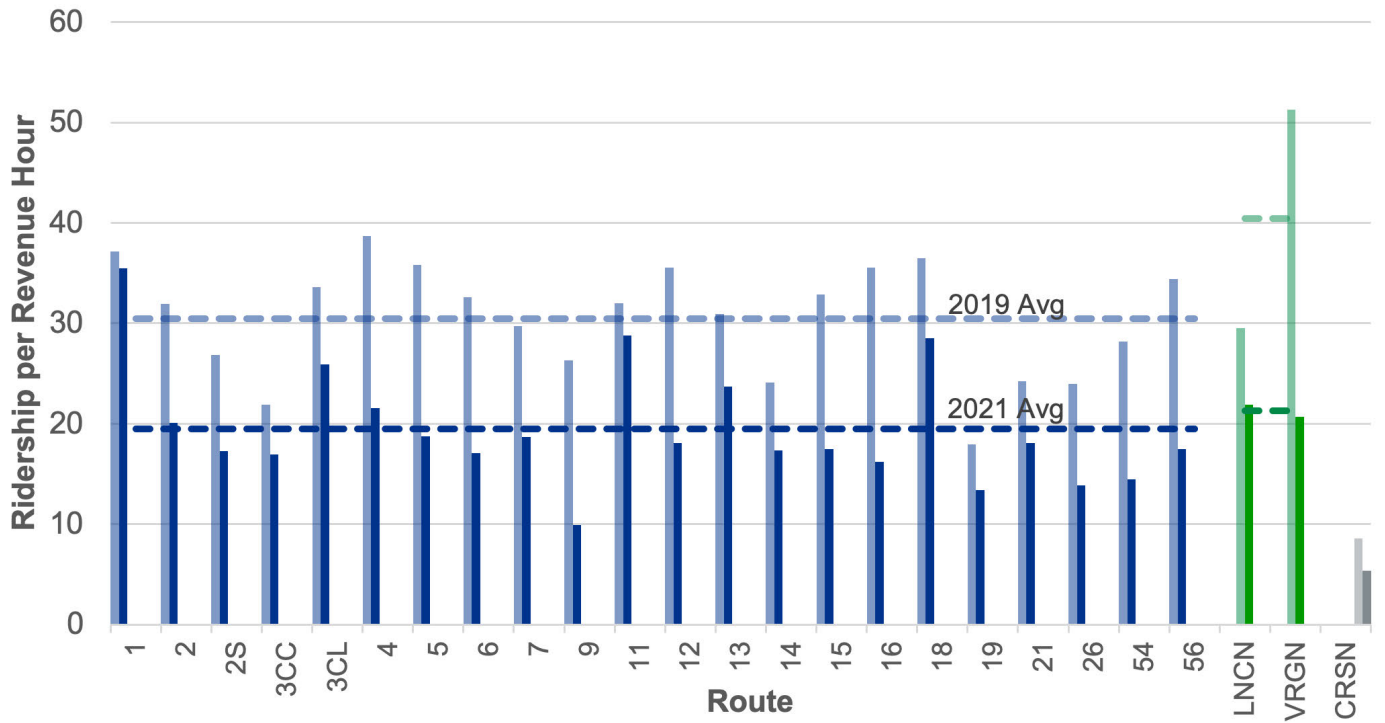
ROUTE PRODUCTIVITY (BOARDINGS PER REVENUE HOUR)

One of the most common metrics for measuring performance is looking at productivity, which measures the number of passengers carried per hour of service as show in Figure 7. In 2019, under pre-pandemic conditions, on average RTC’s local routes carried 31 boardings per revenue hour, and its RAPID routes carried 40 boardings per revenue hour, indicating a relatively high level of productivity across the network for a transit service of its size. In 2021, during ongoing pandemic conditions, productivity rates decreased by a third for local routes and by a half for RAPID routes, which relates to lower ridership levels and aligns with trends experienced by transit agencies nationwide.

Currently, RTC’s routes feature moderate productivity rates. Therefore, it is important to evaluate the appropriateness of fixed-route service on a route-by-route and community-by-community basis, and exploring other potential transit solutions that might serve low productivity areas more efficiently. This is key to optimizing transit performance across the Truckee Meadows region and ensuring that RTC is dedicating resources in the most effective way possible.

Figure 7 - RTC RIDE Weekday Productivity by Route

RTC RIDE Weekday Productivity by Route



RTC FlexRIDE (Microtransit)

RTC introduced their new FlexRIDE microtransit service in 2019. The service was subsequently expanded and now consists of three service zones; Sparks/Spanish Springs, North Valleys, and Somersett/Verdi. This innovative service allows customers to book on-demand trips between origins and destinations within a defined zone using a smartphone or by calling into a dispatcher. The existing zones are in areas where RTC eliminated fixed-route service and areas where no transit service was previously provided.

BOARDINGS BY DAY AND TIME

In 2021, the service averaged 256 weekday boardings and 164 boardings on Saturday and 156 boardings on Sunday. The Sparks/Spanish Springs Zone accounted for 53% of the total weekly boardings, while the North Valleys Zone was 46%, and the Verdi/Somersett Zone was only 2%. Because of the low overall ridership, there are no dedicated vehicles for the Verdi/Somersett Zone and vehicles are dispatched from the North Valleys Zone as needed.

The highest usage is during the 8:00am and 4:00p hours which corresponds with peak commute times. The service has similar ridership during the midday and early evening periods. Weekend ridership shows a similar pattern, but with lower hourly boardings.

TOP BOARDING LOCATIONS

Centennial Plaza had 308 weekly boardings which is 20% of all boardings. This makes sense as this location allows for riders to connect to many RTC routes. The second highest boarding location was “The Villas” apartment complex in Sparks. Almost all the trips originating at “The Villas” were to Centennial Plaza with 20 passengers traveling daily between these two locations. Major retail and grocery stores are also top boarding locations.

RTC ACCESS (ADA Complementary Paratransit)

RTC Washoe operates the RTC ACCESS service for their ADA complementary paratransit service. This service is for people who have disabilities which prevent them from independently using the RTC RIDE fixed-route bus service. Potential customers must complete an application and have an interview or functional assessment to determine if they are eligible prior to using the service.

As paratransit trips are more expensive to provide than fixed-route trips, most transit agencies try to limit the growth of their paratransit service by managing demand. Agencies are generally not able to limit service supply based on federal requirements. ACCESS trips grew 5.6% between 2010 and 2019 while the service area population increased by just 3%. Fixed-route trips shrank by 3.9% over the same period. Many agencies have seen their demand response trips grow while the fixed-route trips were declining because of an aging population and increased need for social service transportation.

BOARDINGS BY DAY AND TIME

Average weekday boardings decreased from 791 in 2019 to 446 in 2021, a decrease of 44%. Saturday boardings were down only 8.2% while Sunday boardings were down 38%. The drop in boardings during the pandemic was typical as many services for persons with disabilities were reduced or suspended or undertaken virtually for health and safety reasons.

The peak service hours in 2019 were 8:00am and 2:00pm. This is most likely because these are drop-off and pick-up times for vocational and adult day-care services which are some of the larger trip generators. The difference between the peak and off-peak hours is smaller in 2021 which may be because some social service providers have not fully reopened. Of note is that there are more weekends trips in the morning hours in 2021 than 2019, even though the total numbers are down. A review of the data during these hours suggests additional trips to dialysis centers on the weekends.

TOP BOARDING LOCATIONS

The top destinations are locations which provide services for permanently disabled adults including adult day health care, vocational services, and dialysis centers. Ridership to these locations in 2021 was approximately half of the 2019 ridership, which tracks with the overall ridership. The trips to some of the disability service providers are lower based on services not being fully restored to pandemic levels. The trips to dialysis centers continue to be strong in 2021.

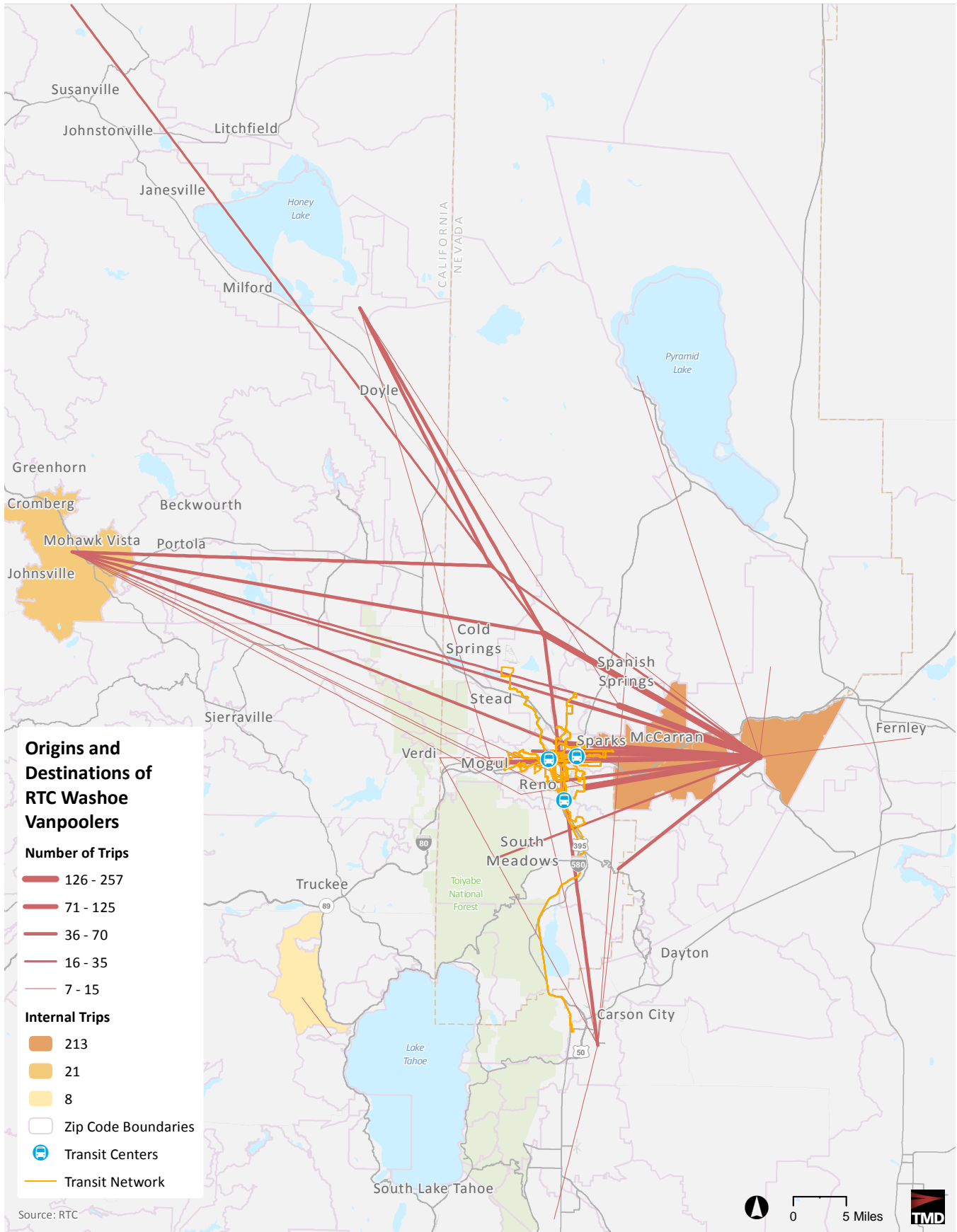
RTC Smart Trips (Vanpool)

RTC Washoe operates an extensive vanpool program connecting residents to major employers in the region. The service is provided using large sport utility vehicles or vans to transport 5 to 15 employees with similar home locations, work locations, and work hours. The Federal Transit Administration considers vanpools to be public transportation when they meet certain minimum requirements including accessibility and availability to the general public. The vehicles are driven by one of the vanpool members who may get to use the vehicle on the weekends or may pay a reduced amount of the vanpool cost. Vanpools can receive between \$400 - \$600 per month from RTC Washoe which covers approximately 50% of the operating cost. The balance of the cost is typically split between the employees or may be further subsidized by their employer.

The number of vanpools has grown from 110 in 2017 to 284 in 2021, an increase of 158% during the past five years. In 2019, the RTC Washoe vanpool program was the 23rd largest in the country. The average vanpool carries just over seven passengers and has an average trip length of 36.7 miles. The employers with the largest number of vanpools are Tesla, the United States Army, the Nevada Bureau of Prisons, and the Nevada National Guard, with Tesla accounting for 71% of the current vanpool riders. As shown in Figure 8, most of the vans are from Reno, Sparks, Spanish Springs, and Cold Springs to the Tesla factory in the Tahoe-Reno Industrial Center (TRIC). There is also a large flow of trips from Reno and Sparks to the Sierra Army Depot and Federal Correction Institution in Herlong, CA.



Figure 8 - RTC Vanpool Origin & Destination Map (2021)



Key Takeaways

- 1 The existing service is designed around connections at the 4th Street, Centennial Plaza, and Meadowood Mall transit centers.
- 2 Clock-based headways of 10, 30, and 60 minutes allow for convenient connection between routes.
- 3 Based on a review of the street network, existing land use, and future plans, the existing hub and spoke bus network works well for Reno. There is limited opportunity for other transit network typologies in this region.
- 4 Ridership and productivity have dropped significantly during the pandemic as commuting and other trips were reduced. It will be important to look at a combination of 2019 and 2021 ridership when recommending the optimal frequencies for the bus network in the future.
- 5 RTC has made significant investment and commitments to the RAPID service on the Virginia Street and 4th Street/Prater corridors.
- 6 Both the in-service and overall operating speed for the local and RAPID routes is lower than expected. This may be partly explained by the higher than typical layover/recovery for some routes. There are some routes with lower in-service speed which should also be explored. It will also be important to look carefully at cycle times and frequencies when designing service recommendations which are efficient.
- 7 RTC ACCESS ridership was down during the pandemic, but may return to pre-pandemic levels as social service agencies and disability service providers return to full levels of service.
- 8 RTC has done a good job managing ADA paratransit costs since the 2017 Short-Range Transit Plan.
- 9 The FlexRIDE microtransit service connection to the fixed-route service at Centennial Plaza generates many of the trips. Customers also use it frequently for shopping trips. Most riders do not use it on a daily basis.
- 10 The RTC Vanpool program is a cost-effective way to provide transportation to major employers outside of the RTC Washoe core service area. The agency should plan for growing vanpool demand as employment continues to grow in at Tahoe-Reno Industrial Center.

COMMUNITY ENGAGEMENT

RTC recognizes that developing a successful plan requires input from a broad array of stakeholders. A Public and Stakeholder Outreach Plan was developed at the beginning of the project which included a schedule to engage a wide variety of stakeholders, transit customers, and the public throughout the study process. Throughout the engagement process, RTC translated all outreach materials and surveys into Spanish and facilitated participation by Spanish speakers, in consistency with its Public Participation Plan. The outreach efforts were designed to be effective during the pandemic by allowing for virtual participation.

Phase 1 Outreach: Existing Conditions and Needs Assessment

During the first phase of outreach, a survey was conducted from mid-November 2021 to mid-January 2022 to determine the public transportation priorities for both existing customers and the public. The online survey was promoted through existing RTC channels including:

- Email
- Social media
- Signage throughout the system
- Presentations to community and senior organizations
- Media release
- Promotion on “The Road Ahead”

As an incentive, a 7-day weekly pass was offered to participants and 1,021 responses were received, with 93% of these responses coming from current and previous passengers.

PRIORITIES FOR SERVICE IMPROVEMENT

Existing customers were asked to rank their priorities for how to improve service. Figure 9 shows the priorities ranked with red and orange being highest ranking choices and blues being least important. The top choice was additional frequency, which is typical in these surveys, as waiting at

the stop is a major pain point for riders. The second priority of making the buses run more on-time may have been influenced by the driver strikes and missed service occurring during the survey period. RTC’s routes operate a very high on-time performance level under more normal conditions. Customers also wanted buses to run earlier and later, which is interesting because RTC’s routes already operate a longer span of service than most of their peers. Customers found expanding services to new areas, lowering the fares, and additional security to be low priorities. This is an indication that RTC is doing well in these areas.

CURRENT RTC PERFORMANCE

Customers were also asked how satisfied they were with how RTC was performing across sixteen components of the transit experience. Figure 10 shows how satisfied customers were with components to the left of middle being higher performance and ones to the right lower performance. The experience onboard the bus and getting to the bus had the highest rankings. Some items with lower performance included waiting time, on-time arrival, and accuracy and timeliness of vehicle delays. As noted earlier, the labor shortages and strike during the survey may be skewing these to a lower performance level.

BOARD WORKSHOP

In January 2022, the RTC Board held a workshop that focused on the future of public transportation services where they provided the following principles for developing recommendations for TOPS:

- Evaluate ongoing ridership and workforce trends to guide the development of new transit services.
- Review the provision of RTC RIDE services to ensure that the vehicle size and vehicle type match the demand for the service.
- Support the creation of additional microtransit services including areas of poorly performing fixed routes or suburban areas where no transit service exists.
- Leverage technology to improve operational efficiency and effectiveness whereby improving the customer experience by having a single application for both trip planning and payment.

Figure 9 - Phase 1 Survey: Priorities for Service Improvements

Priorities for Service Improvements

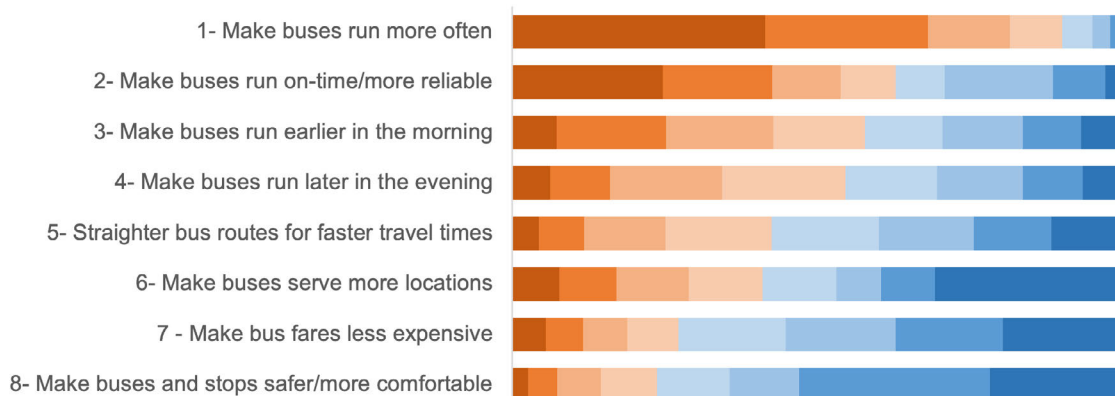
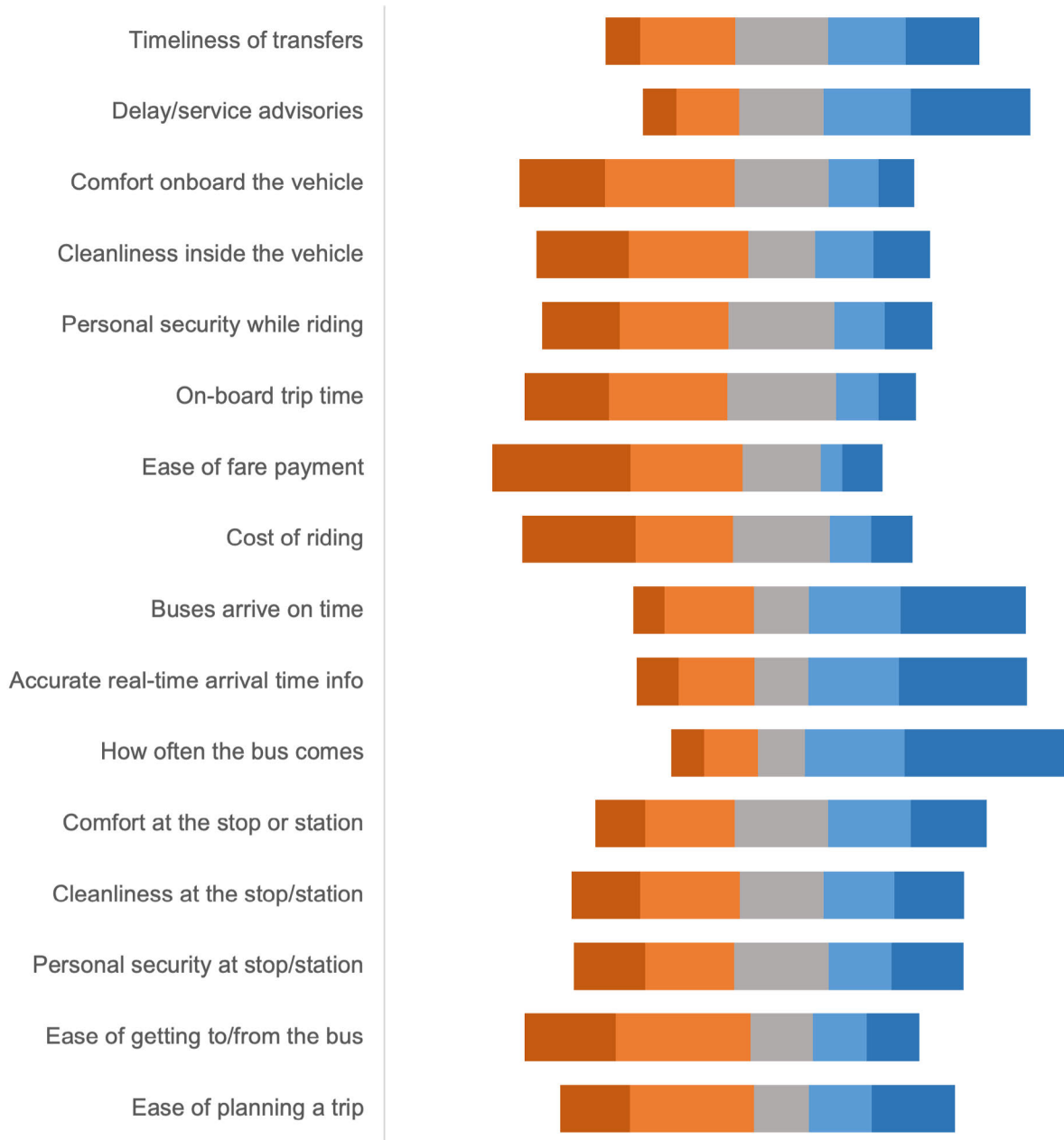


Figure 10 - Phase 1 Survey: Current RTC Performance

Current RTC Performance

Very Satisfied Somewhat Satisfied Neither Satisfied nor Dissatisfied Somewhat Dissatisfied Very Dissatisfied



Phase 2 Outreach: Draft Service Recommendations

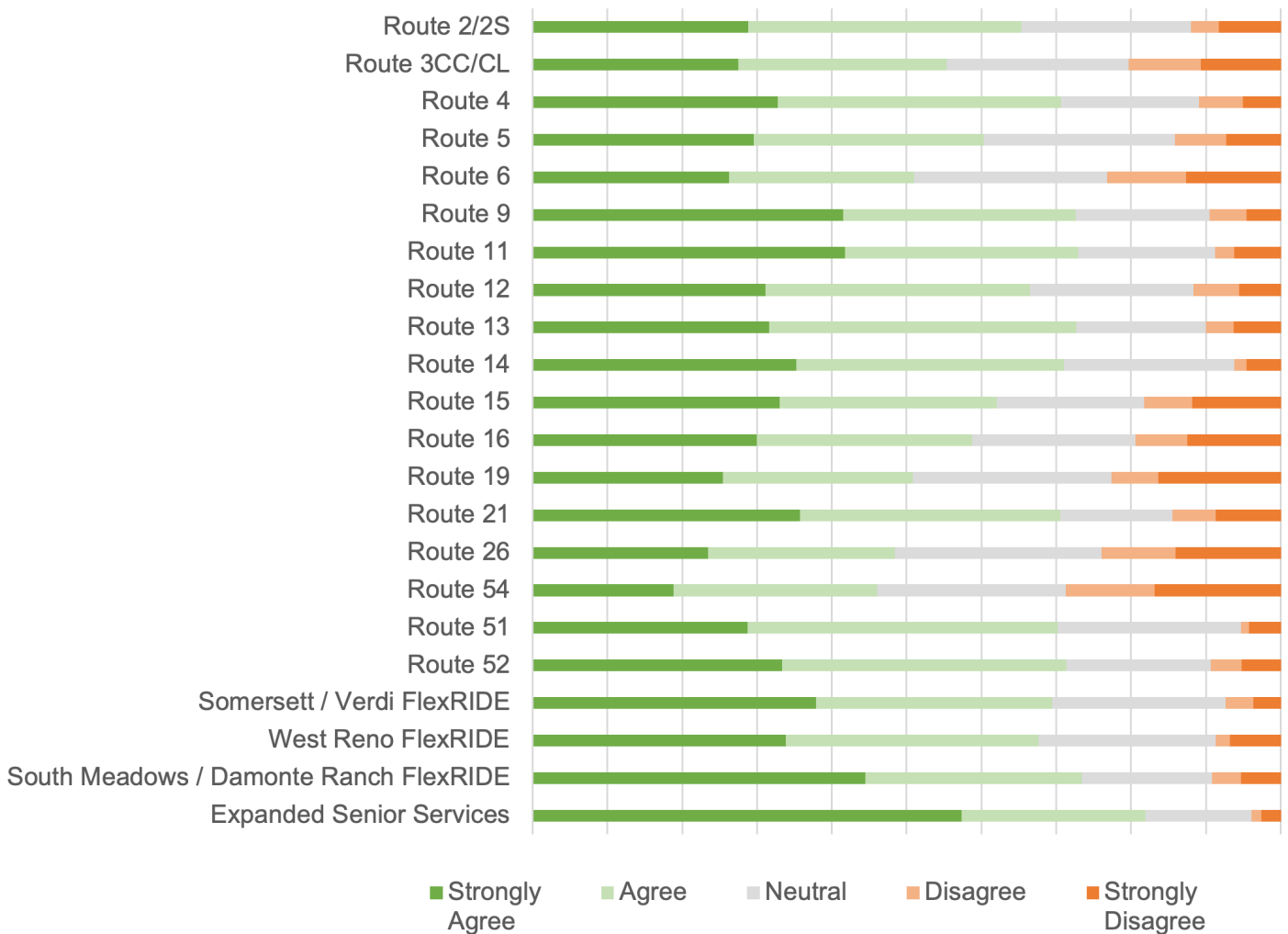
The second phase of outreach focused on receiving feedback on the proposed changes to transit service. A second survey was conducted in May 2022 which allowed respondents to provide feedback on individual service proposals. The survey included descriptions and maps of the proposals and a video overview. Like the first survey, 7-day weekly passes were offered to encourage participation and the survey was promoted through the same RTC channels as well as at public workshops held at the 4th Street and Centennial Plaza Transit Centers.

Extensive feedback and comments were received from 698 survey participants, 87% of which indicated that they use RTC public

transportation services. Figure 11 shows the level of support for each proposal. Participants largely agree with the proposals with Routes 9, 11, the South Meadow / Damonte Ranch FlexRide, and expanded senior services receiving the most support. While some level of disapproval was expressed for each alternative, not one route proposal indicated a majority of participant disapproval, and most proposals feature support from at least two thirds of respondents. The services proposed for discontinuation (Routes 6, 26, & 54) received the highest level of disapproval.

Figure 11 - Phase 2 Survey: TOPS Service Proposal Sentiment

TOPS Service Proposal Sentiment

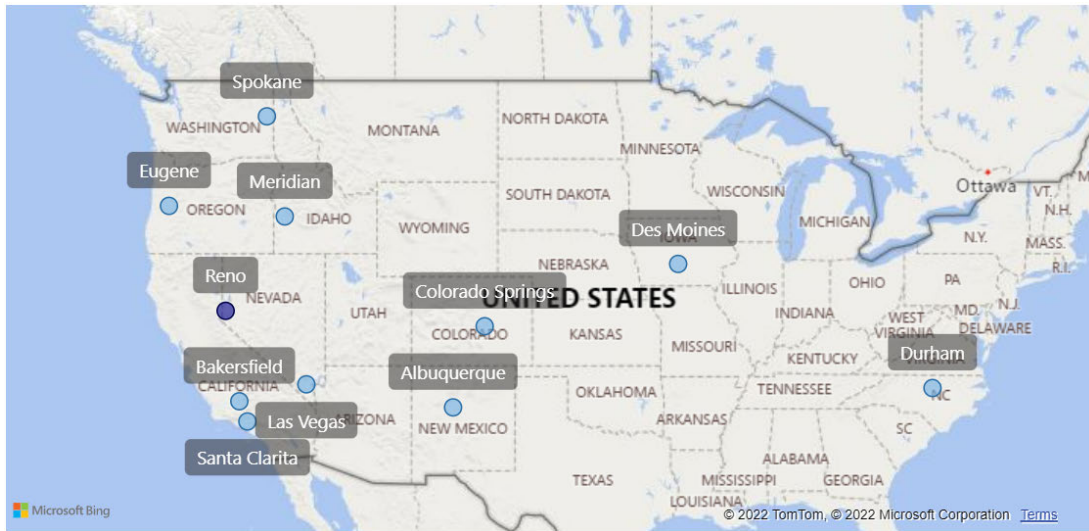


PEER REVIEW

A peer review of ten transit systems was completed for both fixed-route and paratransit services. This review was based on 2019 National Transit Database data, which is the latest information available and represents pre-COVID-19 operations. This analysis looked at service supply, service effectiveness, and service efficiency.

Peer agencies were selected based on likeness to RTC Washoe, use in previous studies, and similar local settings. Las Vegas was included since it is the other major urbanized area in Nevada.

Figure 12 - RTC Peer Agency Map



Albuquerque, NM (ABQ Ride)	Bakersfield, CA (GETbus)
Colorado Springs, CO (Mountain Metro)	Eugene, OR (LTD)
Durham, NC (GoDurham)	Las Vegas, NV (RTC Southern Nevada)
Santa Clarita, CA (Santa Clarita Transit)	Spokane, WA (Spokane Transit)
Des Moines, IA (DART)	Meridian, ID (Valley Regional Transit)

Key Findings

Overall, RTC Washoe provides more productive and cost-effective public transportation services than their peers. There are a few areas like fixed-route speed and service coverage which were used to inform the service recommendations. Below is a summary of RTC peer findings:

- Most peers saw noticeable population growth over the past ten years
- Spends a similar amount on total transit service as its peers
- Provides a similar amount of overall bus service as peers
- Provides less route coverage within their paratransit service area
- Fixed-route average headways are slightly better than peers
- Fixed-route bus speed average speed are 22% below the peer average
- Truckee Meadows area residents use fixed-route and paratransit more than the peer average (Figure 13)
- Exceeds peers in fixed-route passenger boardings per revenue hour and mile (Figure 14)
- Fixed-route trips lengths are much shorter than peer agencies
- Spends more per capita than peers for fixed-route and paratransit service
- Has lower cost per fixed-route boarding and higher farebox recovery than most peers
- Provides more cost-effective service compared to peers

Figure 13 - Annual per Capita Fixed-Route Boardings

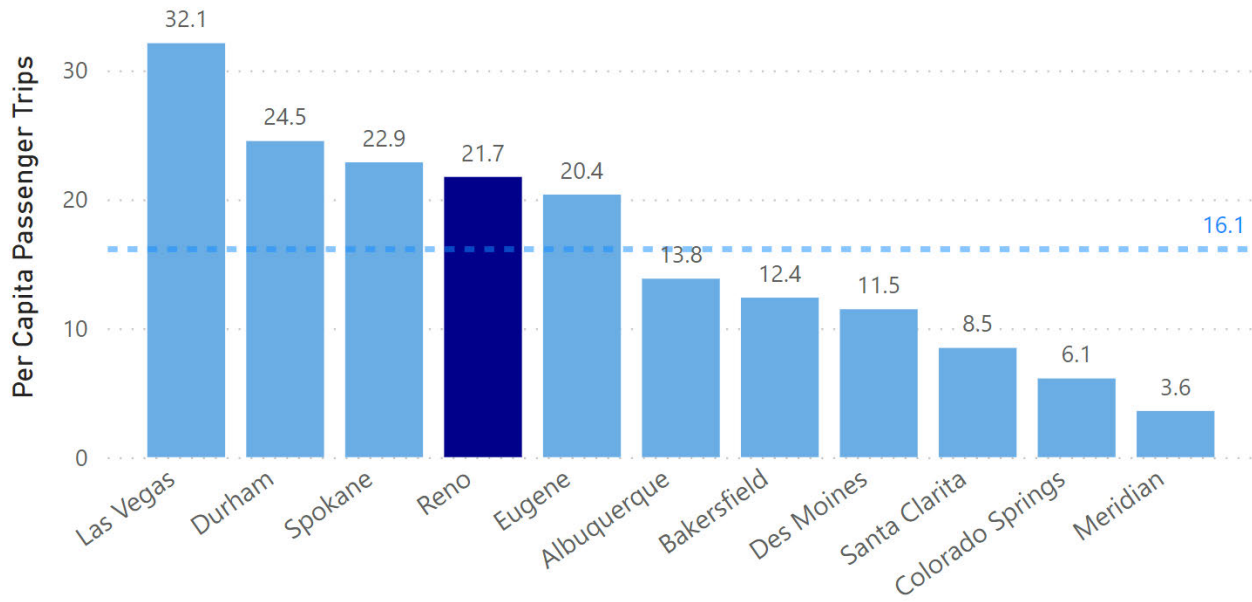
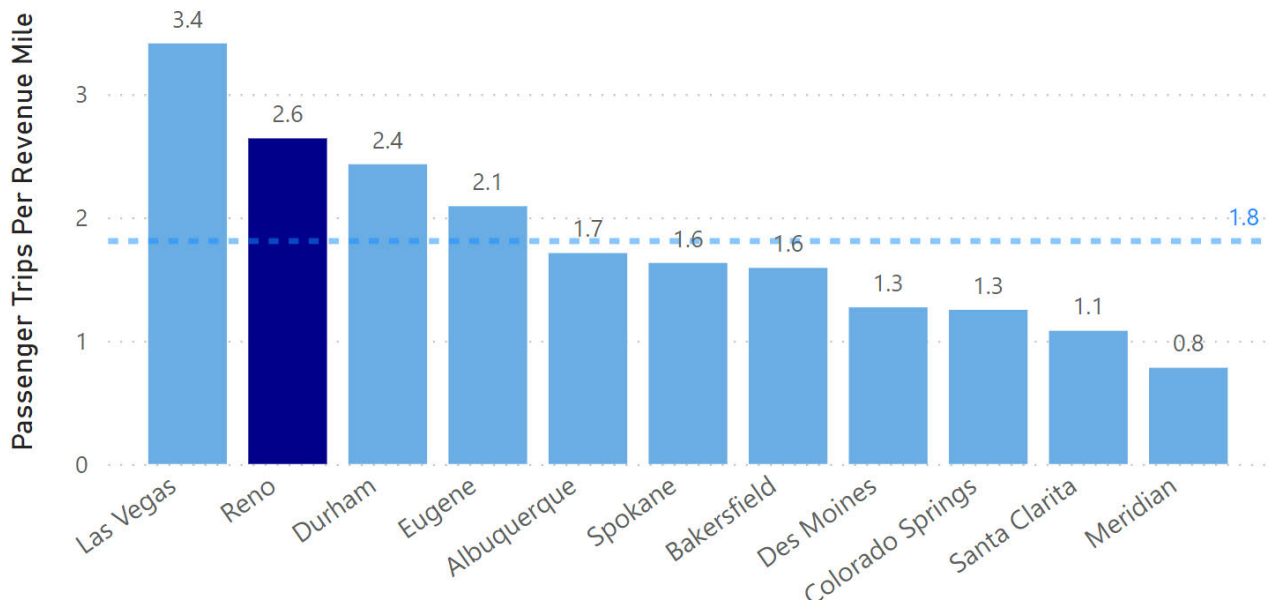


Figure 14 - Fixed-Route Boardings per Revenue Mile





GOALS AND OBJECTIVES

The goals for TOPS were developed by reviewing the goals and objectives from the previous short-range transit plan and other RTC plans including the Regional Transportation Plan. The goals are very similar to the previous short-range plan which covered the most important aspects of public transportation. The objectives were greatly simplified and now focus on measurable outcomes.

Goal 1: Enhance Mobility for All Residents of Washoe County



- ✓ Provide fixed-route or microtransit service to most residents in the urbanized areas of Washoe County
- ✓ Provide paratransit within 3/4 mile of fixed-route network by time of day and hour
- ✓ Provide minimum frequencies and span of service based fixed-route service types
- ✓ Integrate public transportation services for seamless travel between modes

Goal 2: Ensure that service is Safe, Reliable, Comfortable, and Customer Focused



- ✓ Maintain and operate transit vehicles and stations to ensure customer safety (Safe)
- ✓ Provide services which pick-up and drop-off customers consistently on-time (Reliable)
- ✓ Provide service with adequate seating on-board vehicles (Comfortable)
- ✓ Interact with customers in a courteous and helpful way (Customer Focused)

Goal 3: Deliver Service Cost-Effectively



- ✓ Provide service which meets minimum productivity standards
- ✓ Provide service which is a good value for taxpayers and customers
- ✓ Test and evaluate innovative transit technologies and service delivery models

Goal 4: Promote transit service as part of a sustainable future in Washoe County



- ✓ Provide frequent service on key corridors in support of transit-oriented development
- ✓ Extend the reach of the transit service by integrating with other alternative transportation modes
- ✓ Enhance the air-quality benefits of public transportation by providing service with low/no emission vehicles

Performance Standards

To provide transit mobility that meet the goals outlined in the previous section, the following performance standards were developed to offer a formal mechanism for evaluating and improving mobility in a fair and equitable way. These standards define the evaluation metrics that RTC will use to assess the efficiency, effectiveness, and quality of service delivered. They also establish benchmarks to inform decision-making on shaping existing and future services to better align with RTC's defined goals and objectives. The performance standards are organized into six categories and are tied back to the goal they help achieve.

SERVICE AVAILABILITY (GOAL 1)			
Performance Standard	Goal	Frequency	Reporting Channel
Transit Service Accessibility	More than 70% percent of residents living in the Mixed Use Core, Tier 1, and Tier 2 TMRPA land use designation areas are within ¼ mile of a fixed-route or within a microtransit zone	Annually	Title VI Performance Monitoring
Fixed-Route Headway	Fixed-Route: Average Headways comparison of Minority and Non-Minority Bus Routes	Annually	Title VI Performance Monitoring
Microtransit Wait Time	Microtransit: 20 minute or less median wait time by day type	Monthly	Public Transportation & Operations Report
SERVICE DELIVERY (GOAL 2)			
Performance Standard	Goal	Frequency	Reporting Channel
Fixed-Route On-Time Performance	Fixed-Route: At least 85% of departures at timepoints within 1 minute early and 5 min late (does not include being early at last timepoint). Fixed-Route: Average on-time performance comparison of Minority and Non-Minority Bus Routes	Monthly/Annually	Public Transportation KPI Dashboard Title VI Performance Monitoring
Customer Service	Fixed-Route: Less than 1 complaints per 20,000 boardings Paratransit: Less than 1 complaints per 4,000 boardings Microtransit: Average 90% or higher positive rating	Monthly	Transit Operations Statistics
Fixed-Route Vehicle Load Factor	Fixed-Route: 125% or less - during peak hour/peak direction travel for local and RAPID routes 100% or less - for commuter routes at all times 100% or less - during midday hours for local and RAPID routes 150% or less - for individual trips	Monthly	Title VI Performance Monitoring
Preventative Maintenance	Fixed-Route, Paratransit, & Microtransit: 100% on-time preventative maintenance	Monthly	Transit Operations Statistics
Miles Between Road Calls	Fixed-Route: 15,000 miles between valid mechanical road calls Paratransit & Microtransit: 50,000 miles between valid mechanical road calls	Monthly	Transit Operations Statistics

SERVICE DELIVERY (GOAL 2)			
Performance Standard	Goal	Frequency	Reporting Channel
Vehicle Assignment	Fixed-Route: Average vehicle age comparison of Minority and Non-Minority Bus Routes	Annually	Title VI Performance Monitoring
SAFETY & SECURITY (GOAL 2)			
Performance Standard	Goal	Frequency	Reporting Channel
Preventable Transit Accidents	Fixed-Route: 1 or preventable accident for every 100,000 vehicle miles Paratransit & Microtransit: 1 or preventable accident for every 100,000 vehicle miles	Annually	Public Transportation KPI Dashboard
Passenger Incidents	Fixed-Route, Paratransit, & Microtransit: No more than one non-collision safety and security incident per year	Annually	NTD Report
FINANCIAL PERFORMANCE (GOAL 3)			
Performance Standard	Goal	Frequency	Reporting Channel
Service Productivity	Fixed-Route: FY22-23 - for each route, 18 or more boardings per revenue hour, increasing annually to 30 boardings by FY26-27 Microtransit: for each zone, 3.5 or more boardings per revenue hour Paratransit: for the overall service, 2.3 or more boardings per revenue hour	Monthly	Public Transportation KPI Dashboard
Cost Effectiveness	Fixed-Route: FY22-23 - \$7.00 or less per boarding, decreasing to \$5.50 by FY25-26 Paratransit: \$36.00 per boarding (increases 2.5% annually) Microtransit: \$18.00 or per boardings (half of paratransit subsidy)	Monthly	Transit Operations Statistics
COMMUNITY IMPACT (GOAL 4)			
Performance Standard	Goal	Frequency	Reporting Channel
Alternative Mode Share by Corridor	At least 40% alternative mode share on 4th St/Prater Way by 2040 At least 40% alternative mode share on Virginia St by 2040	Four Years	Regional Transportation Plan
Clean-Fuel Transit Mix	100% electric or CNG transit fleet by 2040	Four Years	Regional Transportation Plan
Public Transportation GHG Emission Reductions	Green House Gas Emission Reductions from Fixed-Route and Vanpool services	Quarterly	Public Transportation KPI Dashboard

PUBLIC TRANSPORTATION SERVICE RECOMMENDATIONS

This section outlines recommendations for the public transportation services to be implemented during the five-year TOPS period. The RIDE, RAPID, and FlexRIDE recommendations have been grouped into implementation years based on how the changes relate to each other and urgency to make certain changes. The recommendations were developed using the following guiding principles which were based on findings from the Market Assessment, Existing Service Evaluation, and Community Engagement, and Peer Review.

RIDE, RAPID, and FlexRIDE Guiding Principles

- Restore service on RAPID corridors in support of existing and future development in the Mixed Use Core
- Provide minimum headways by service type
 - › Primary Transit Network (RAPID): 15 min or better for 14-18 hours per day
 - › Secondary Transit Network: 30 min or better for 14-18 hours per day
 - › Coverage-Oriented Service: 60 min or microtransit
- Provide minimum service span from 6:00 am to 7:00 pm.
- Provide service to key trip generators including schools, hospitals, shopping centers, strip commercial areas, social service and civic center locations, elderly/disabled residence concentrations, and special-use facilities
- Keep existing radial route structure with timed-transfers at transit centers for 30 and 60 min routes
- Explore combining routes to reduce transfers and travel time
- Explore microtransit for 60-minute routes and lower productivity sections of 30 min routes
- Provide microtransit in areas with lower transit propensity or to test service in new areas

RIDE, RAPID, and FlexRIDE Service Plan Impacts

An analysis of the service recommendations was conducted to determine how the changes would impact access to transit. The analysis looked at how many residents and jobs are served by transit with the current service compared to the proposed plan. A couple of key findings are:

- While the fixed-route revenue hours decrease slightly during the plan, the number of revenue miles will increase because of more efficient routing and schedules. This means more service on the street for customers at less cost to RTC.
- The number of square miles served by FlexRIDE would increase by 43%, further expanding transit access to new area.
- Total population and jobs within ¼ mile of any fixed-route or microtransit service would increase by 10%
- Total population and jobs within ¼ mile of 30-minute peak frequency weekday fixed-route or microtransit service would increase by 40%, meaning more existing and potential customers will have frequency service.

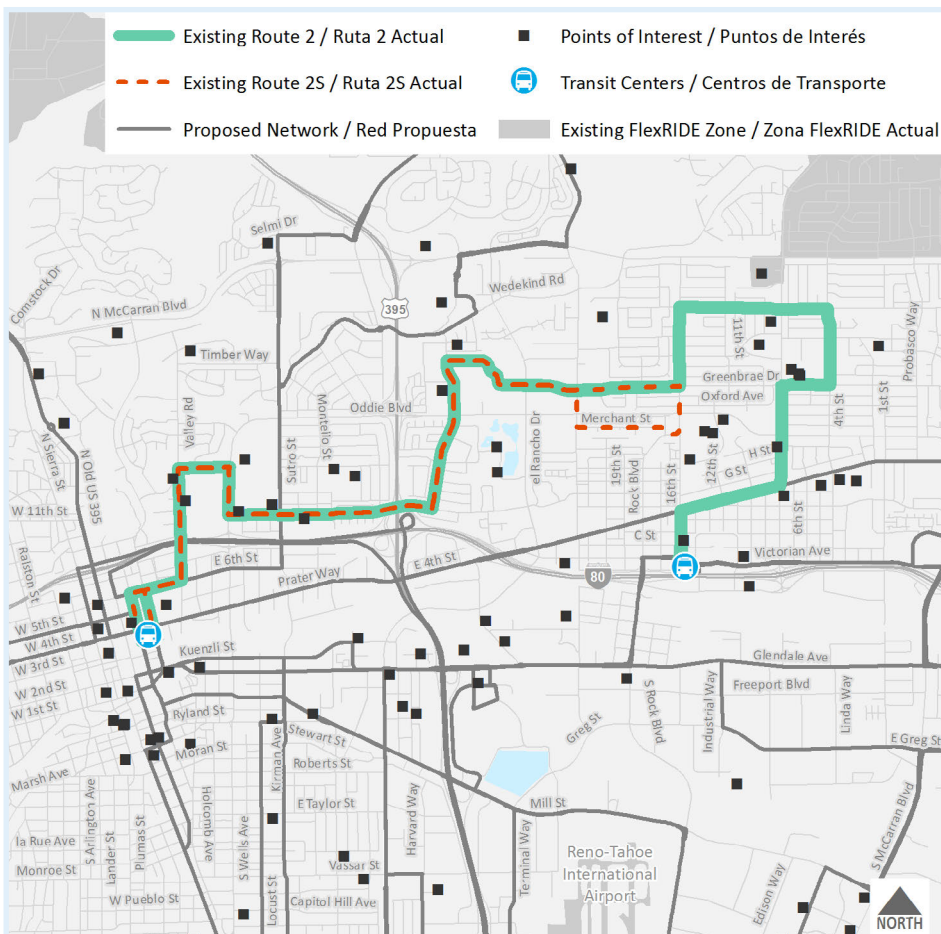




Future Procter R. Hug High School

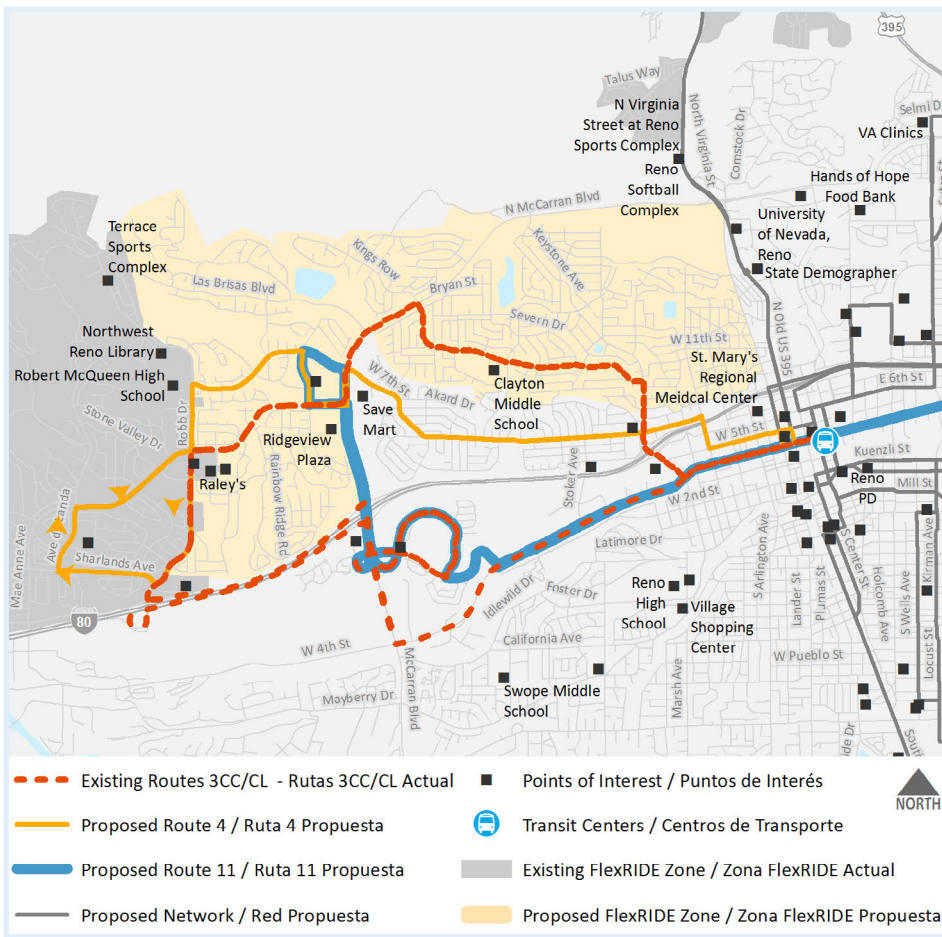
2022-2023 RAPID, RIDE, and FlexRIDE Service Recommendations

The first year of changes focus on services in the central and northern parts of the service area. The routing changes to Routes 5 & 15 need to be made soon to better serve the upcoming relocation of Hug High School. Routes 2S, 3CC, and 19, which have not operated since the start of the pandemic, are formally discontinued. The alignment change to Route 13 partially covers some of the discontinued Route 19 alignment. The alignment changes to Routes 9 and 12 need to occur at the same time to make sure riders connecting to destinations around Renown Medical Center continue to have service. During this year, the RAPID routes should return to their full pre-pandemic frequencies and span to support the overall transit network and fulfill funding commitments. RTC should also explore infrastructure and operational improvements to the Virginia RAPID corridor to reduce travel compared to the local route. Example strategies include completing bus lanes, adding queue jumps, increasing signal priority, and boarding customers faster. There are no FlexRIDE changes recommended for this year. Overall, these changes result in a decrease of four fixed-route buses and a decrease of 7,000 annualized revenue hours.



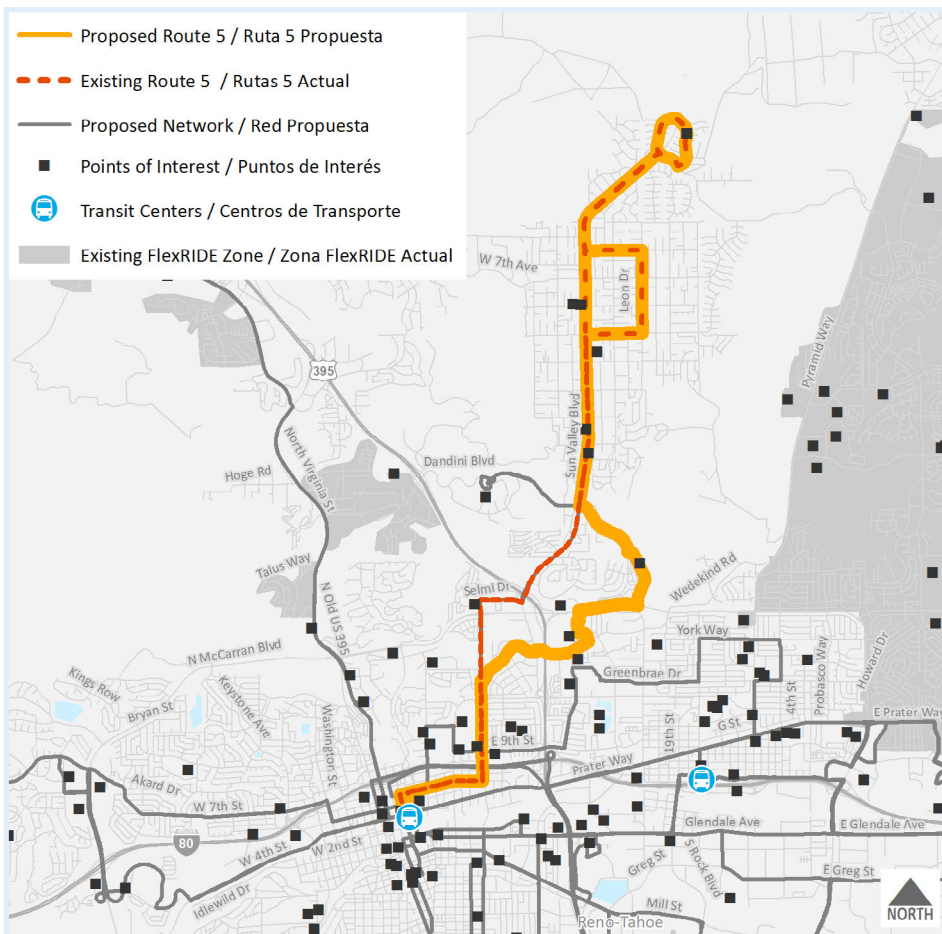
ROUTE 2 (UNCHANGED) ROUTE 2S (DISCONTINUED)

- Continue to operate Route 2 at 30 min peak service on weekdays
- Discontinue Route 2S
- Monitor Route 2 for additional trips based on passenger loads



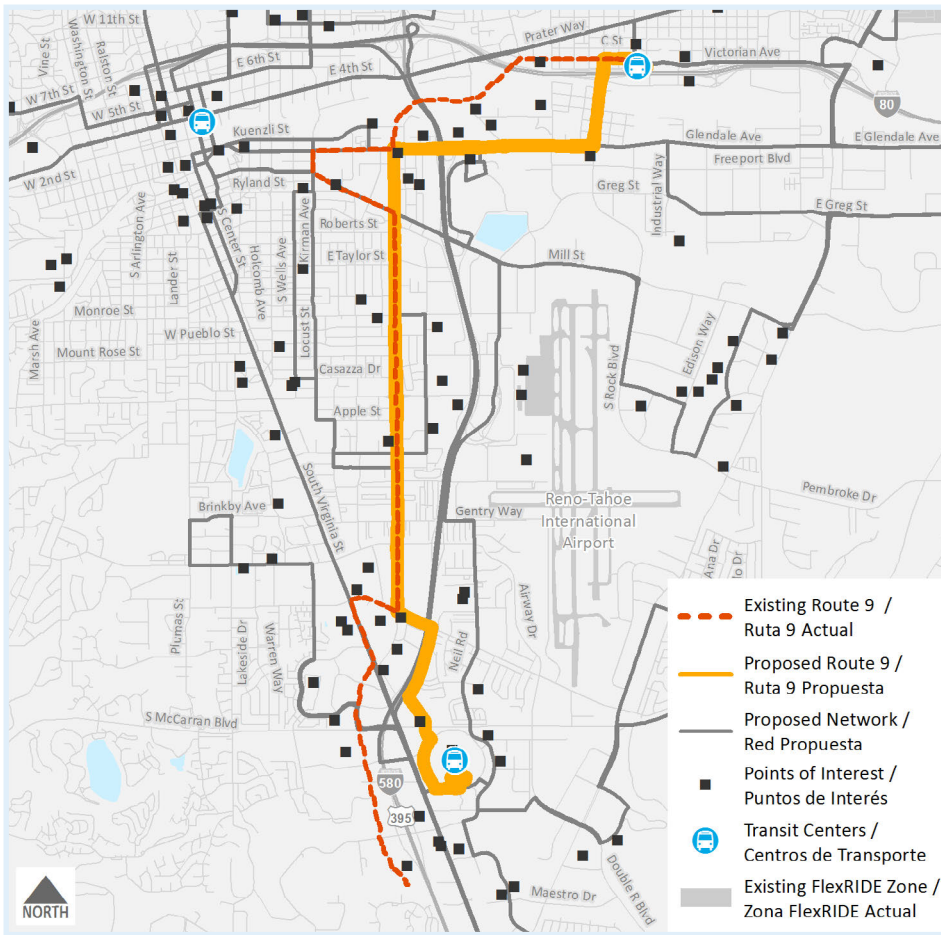
ROUTE 3CC (DISCONTINUE)

- Discontinue Route 3CC because of one-way loop routing
- Partially replaced with changes to Routes 4 & 11
- Extended Route 11 will connect communities west of Downtown to Sparks with a one-seat ride
- Extend Somerset / Verdi FlexRIDE Zone to cover Kings Row



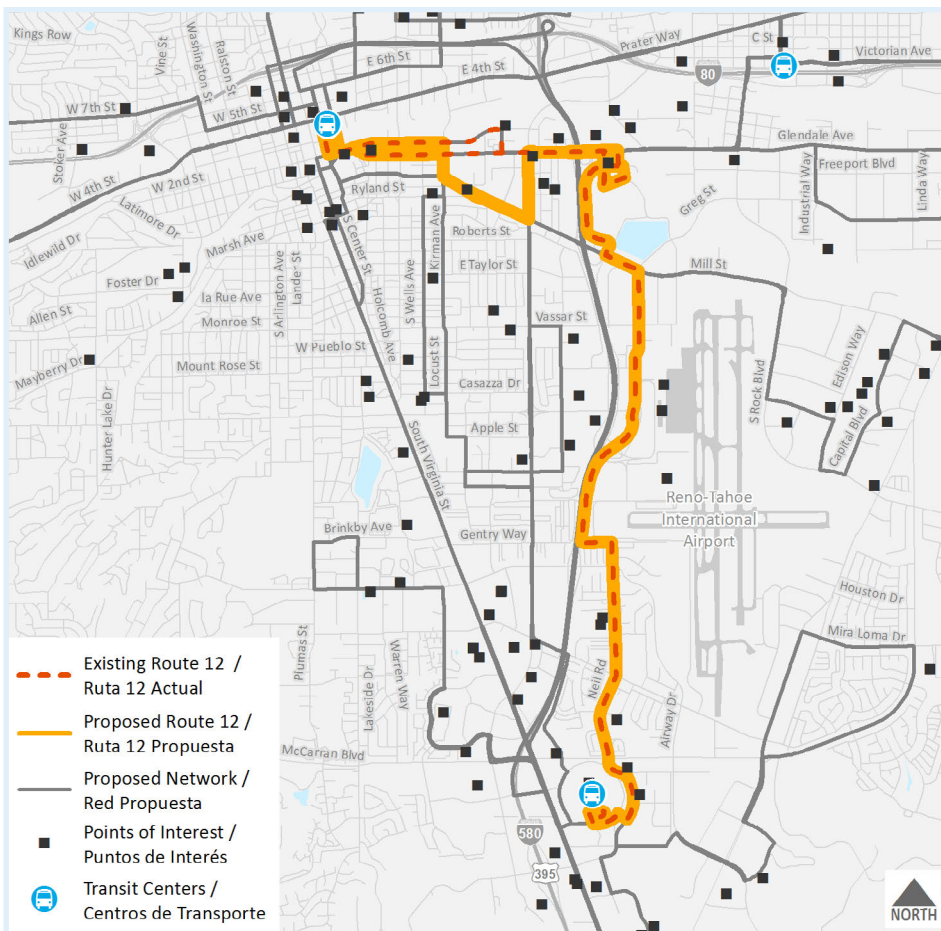
ROUTE 5 (MODIFY)

- Swap alignments south of Sun Valley Blvd & El Rancho Dr with Route 15
- Serve relocated new Hug High School location on Sullivan Ln
- Create connection between Sun Valley and the new Hug High School
- Discontinue service on segment of El Rancho Rd



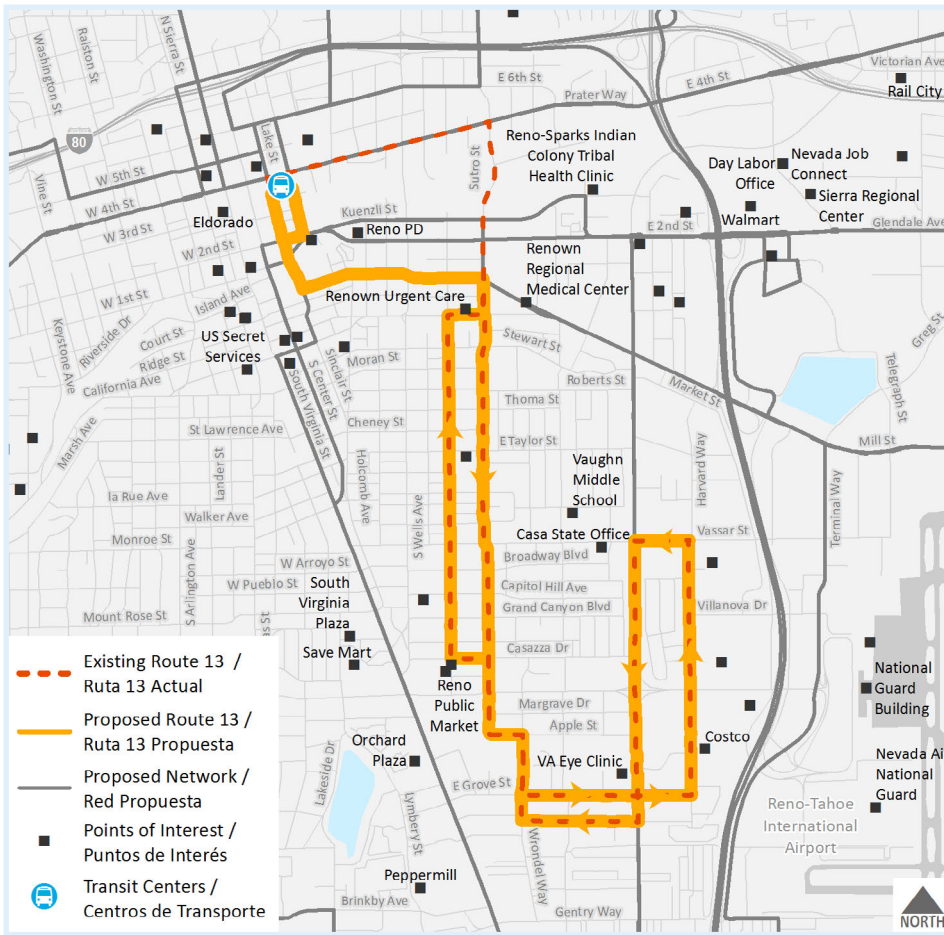
ROUTE 9 (MODIFY)

- More direct routing between Centennial Plaza and Meadowood Mall
- Connection to Meadowood Mall will allow for additional transfers and should increase ridership
- Connect Centennial Plaza to Walmart on 2nd St
- Provide service along Smithridge Dr
- Increase frequency to 30 min during weekday peak and midday



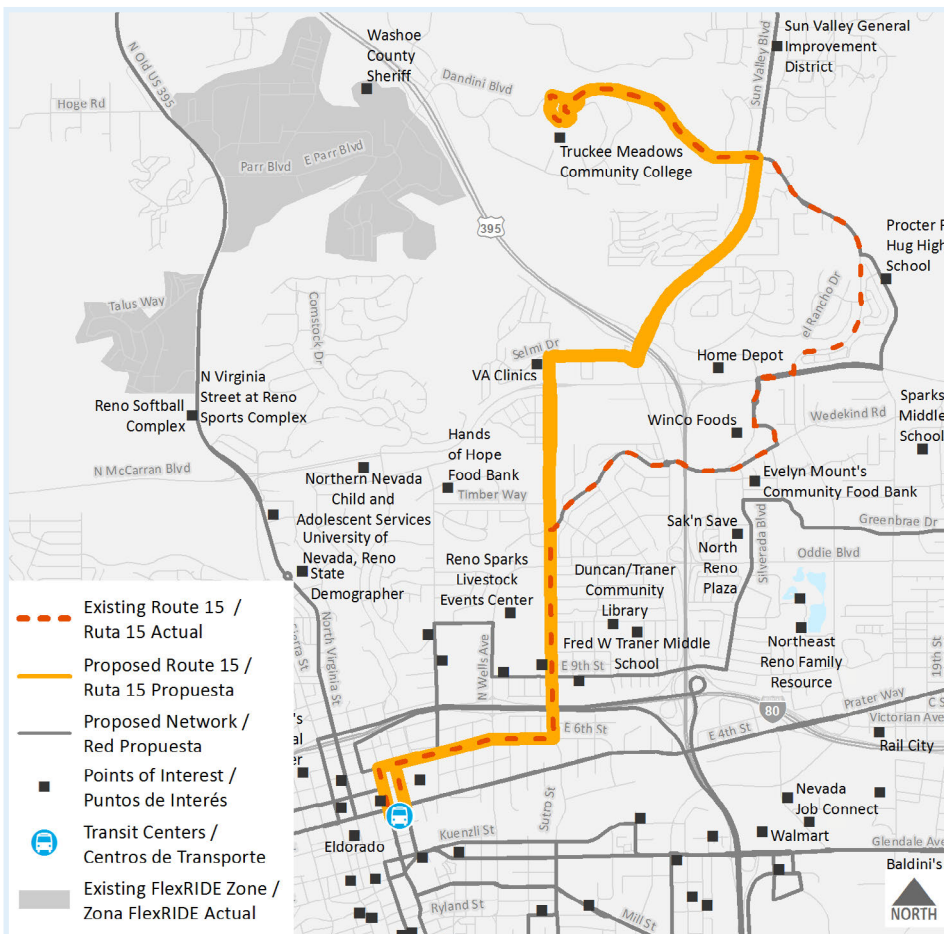
ROUTE 12 (MODIFY)

- Change routing to serve Renown Regional Medical Center via Kirman Ave, Mills St, and Kietzke Ln



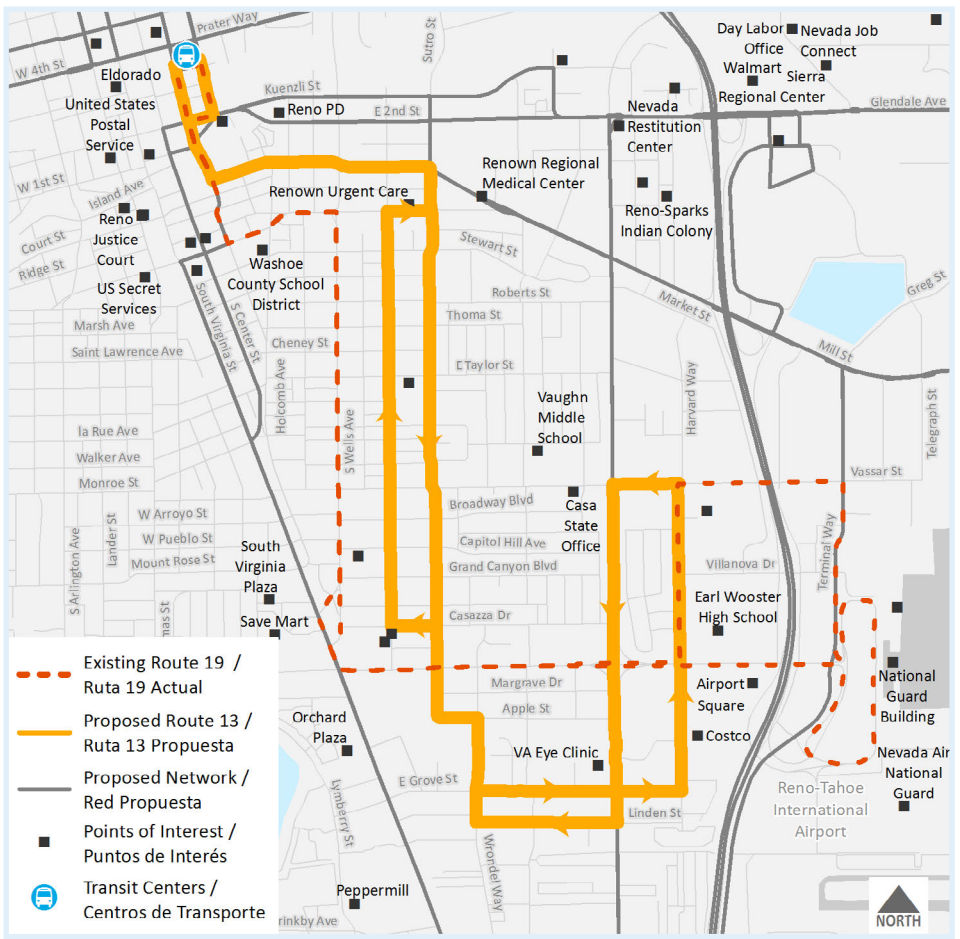
ROUTE 13 (MODIFY)

- Change alignment near Downtown to Mill Street instead of 4th St
- Add midday service on Sundays



ROUTE 15 (MODIFY)

- Swap alignments south of Sun Valley Blvd & El Rancho Dr with Route 5
- Faster routing to Truckee Meadows Community College (TMCC)
- Add TMCC as a North Valleys FlexRIDE Point of Interest



ROUTE 19 (DISCONTINUE)

- Discontinue route because of low ridership and nearby parallel routes
- Southern section of route covered by recent change to Route 13

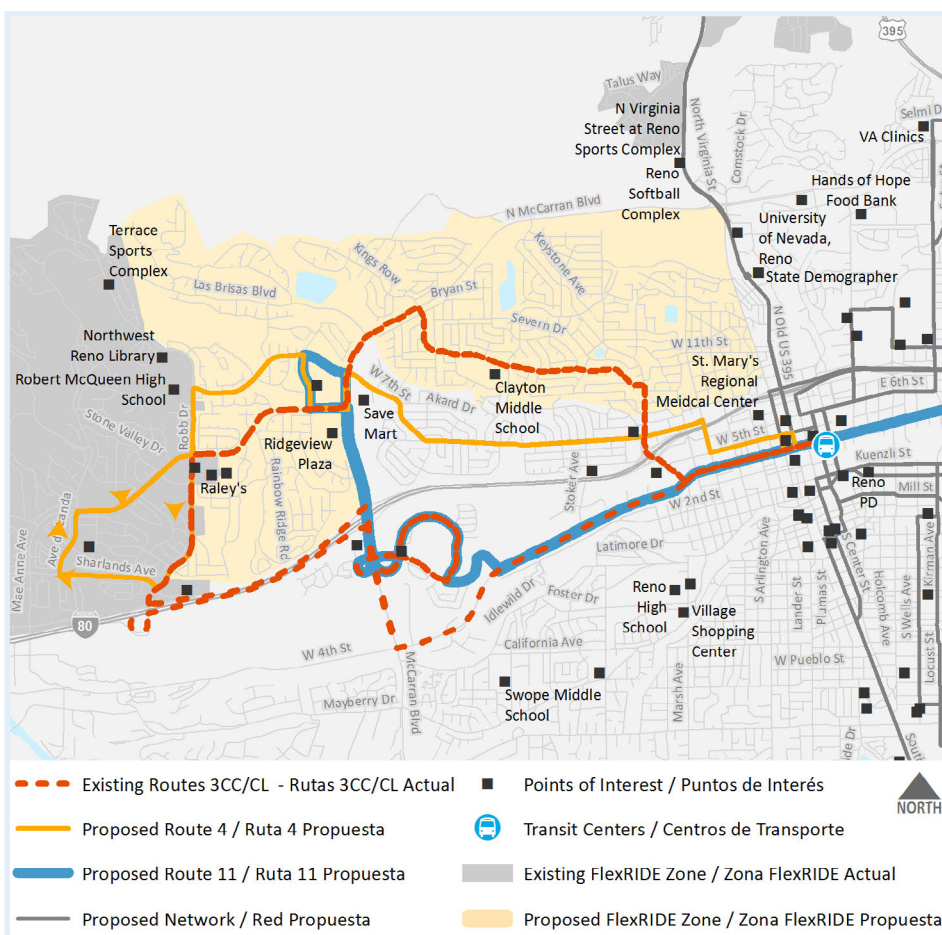




Sparks Hot August Nights

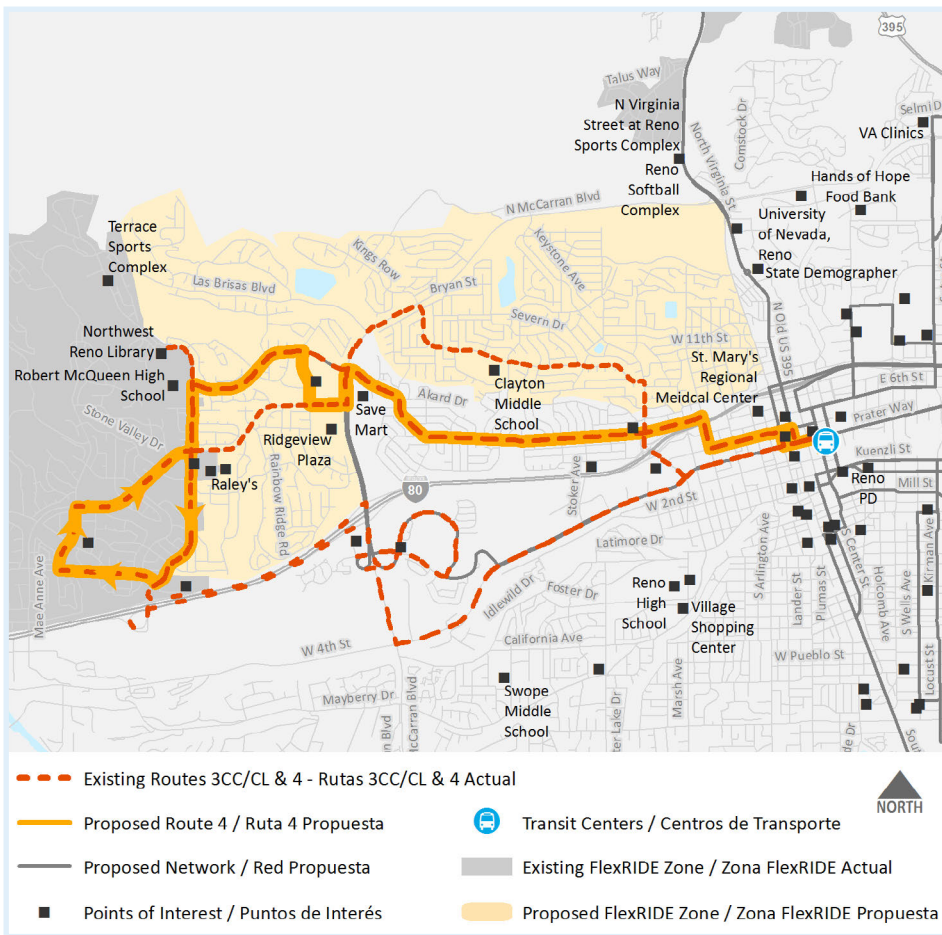
2023-2024 RAPID, RIDE, and FlexRIDE Service Recommendations

The second year of changes focus on services in western Reno and Sparks north of I-80. The major improvement is the extension of Route 11 further west and east, providing higher frequency service to these areas. Routes 3CL and 4 would be discontinued because of duplication with the new Route 11 and low productivity of remaining route segments. The existing Somerset / Verdi FlexRIDE Zone would be extended further east to cover the areas impacted by the removal of existing routes. Route 26 would be eliminated and Route 21 alignment would be modified to serve some of the discontinued Route 26 segments. Route 21 would also see an improvement in frequency on the weekends. Overall, these changes result in a decrease of four fixed-route buses, an increase of five microtransit buses, and an increase in 12,000 revenue hours of service.



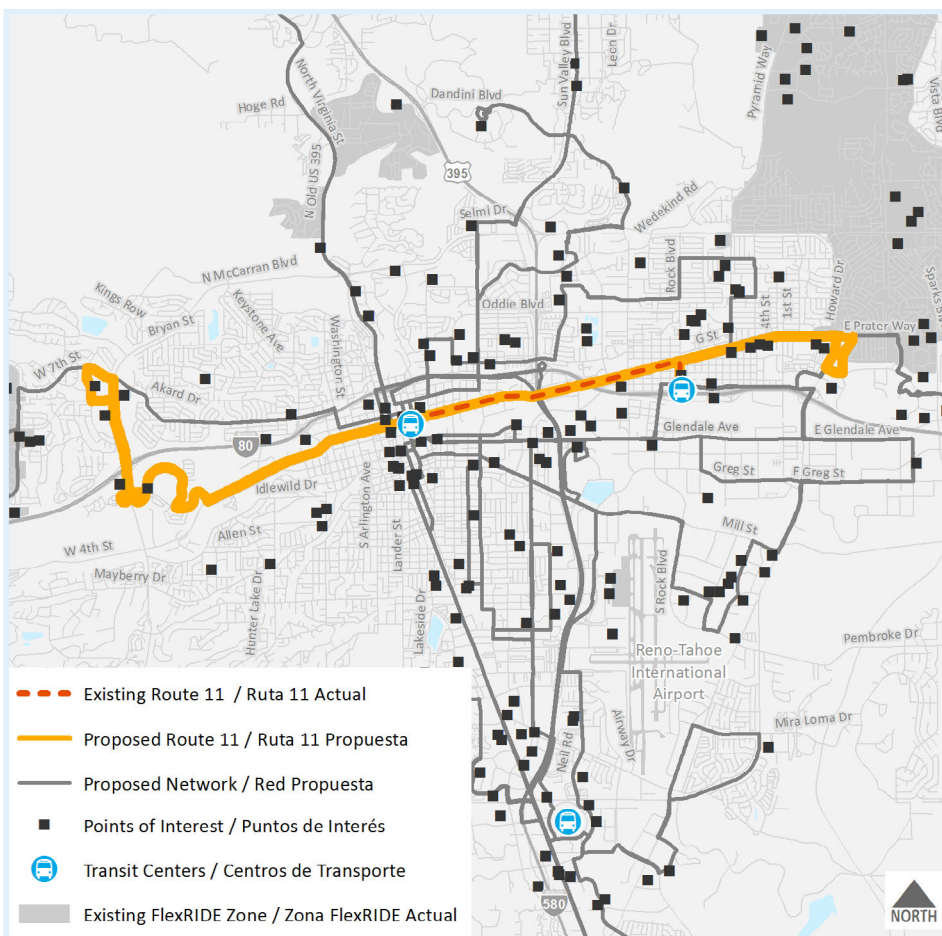
ROUTE 3CL (DISCONTINUE)

- Discontinue 3CL because of one-way loop routing
- Partially replaced with changes to Routes 4 & 11
- Extended Route 11 will connect communities west of Downtown to Sparks with a one-seat ride
- Extend Somerset / Verdi FlexRIDE Zone to cover Kings Row



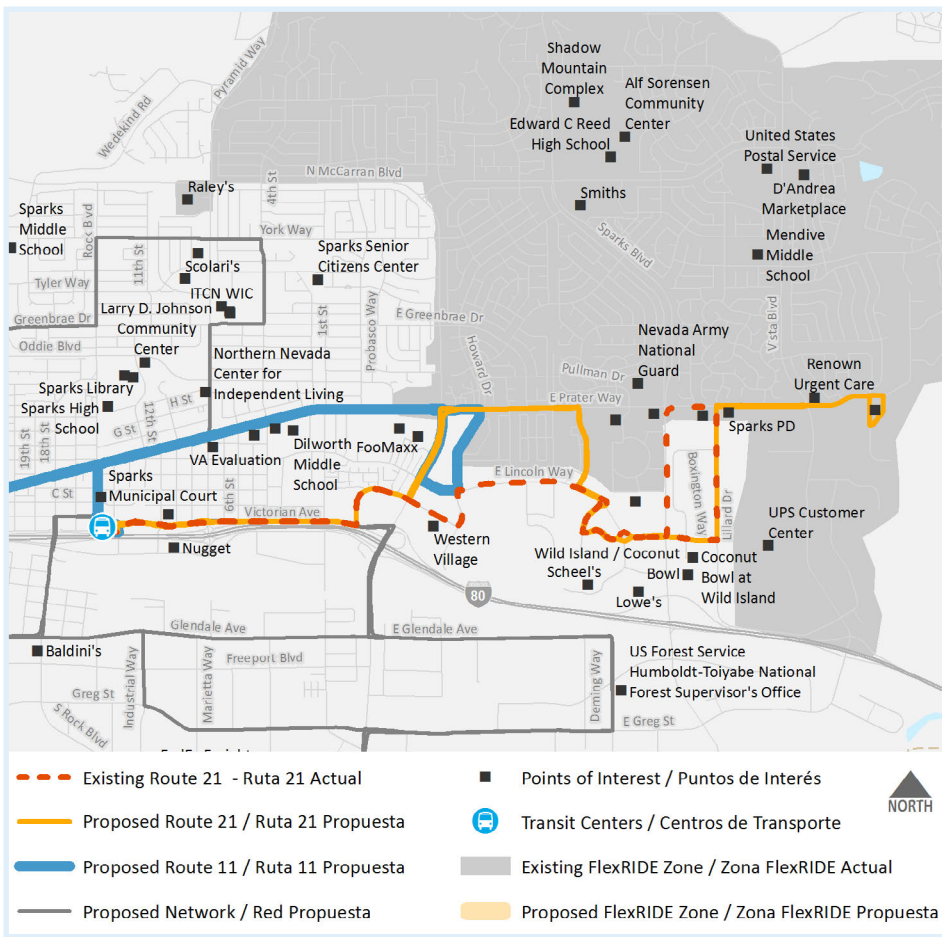
ROUTE 4 (MODIFY)

- Reroute to cover most productive segments of Routes 3CC, 3CL, and 4 north of I-80
- Add midday service on Sundays



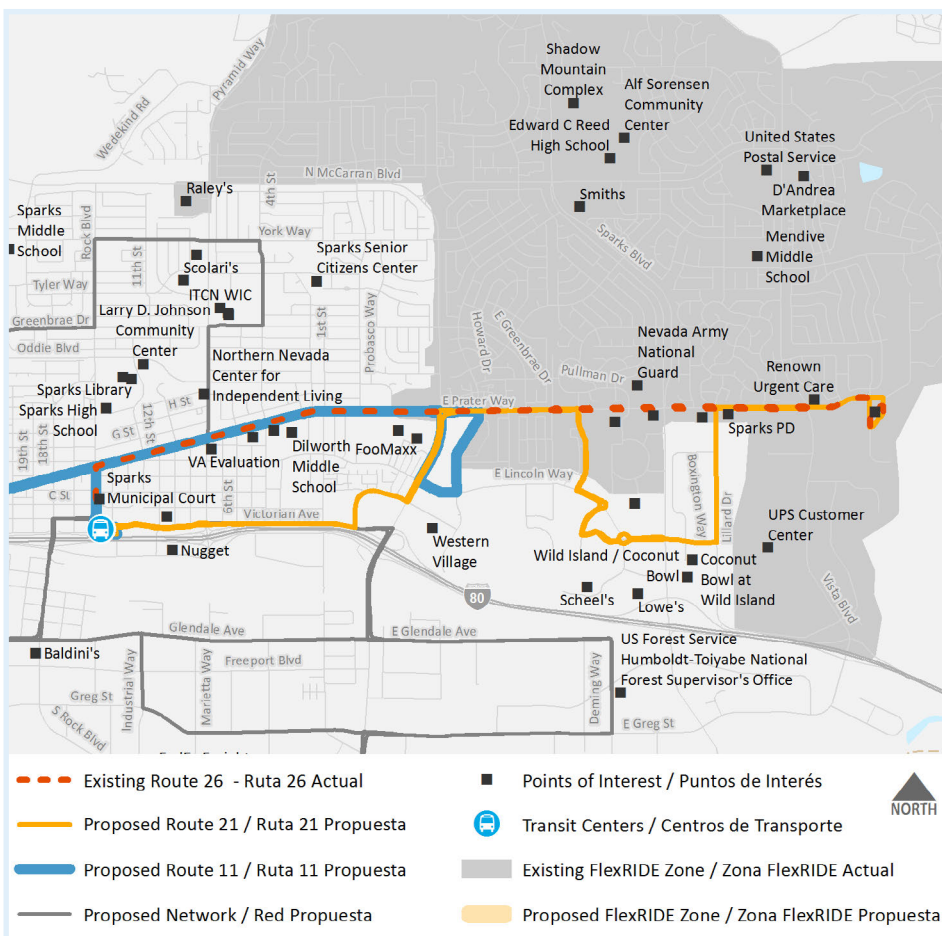
ROUTE 11 (MODIFY)

- Extend route further east and west along the 4th St / Prater corridor
- Connect to shopping destinations at McCarran Blvd @ 7th St
- Connect to shopping destinations at McCarran Blvd @ Prater Wy
- Partially replaces discontinued Routes 3CC, 3CL, and 26



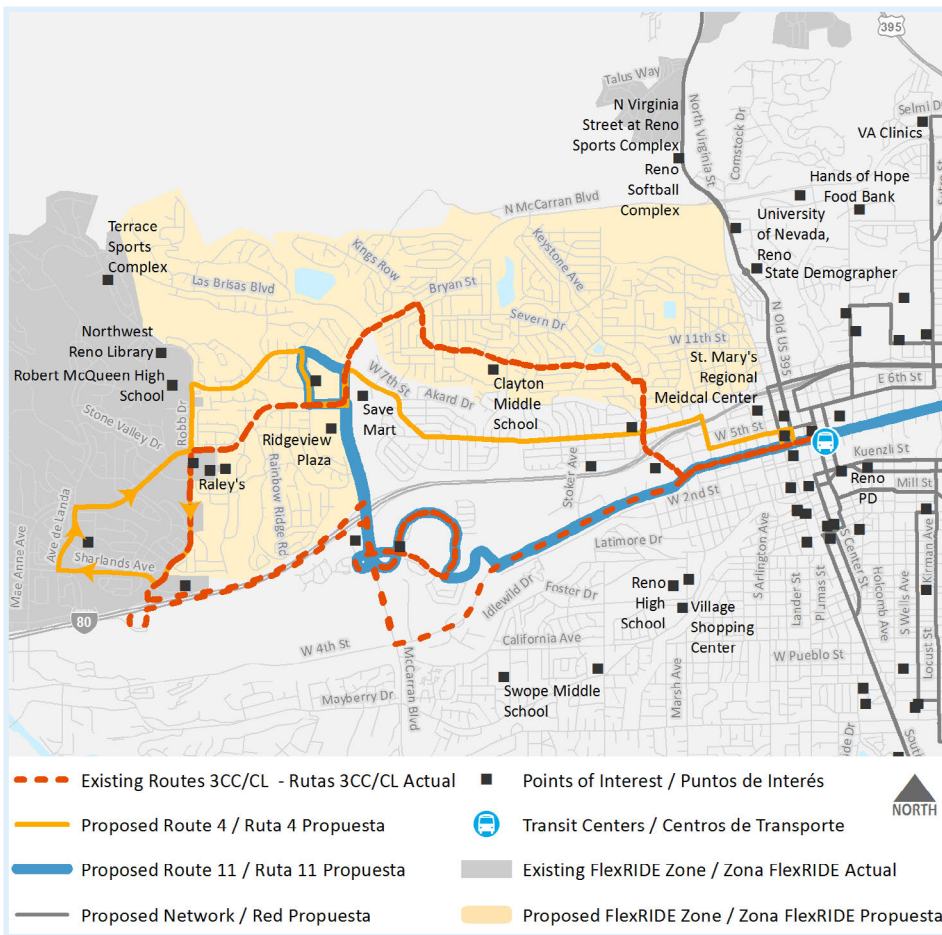
ROUTE 21 (MODIFY)

- Extend route to Northern Nevada Medical Center
- Reroute to serve discontinued portion of Route 26 on Prater Wy
- Improve Saturday frequency to 30 minutes



ROUTE 26 (DISCONTINUE)

- Discontinue route
- Partially replace with changes to Routes 11 and 21



SOMERSETT / VERDI FLEXRIDE (EXPAND)

- Provide FlexRIDE in areas along discontinued segments of Routes 3CC/CL and 4
- Provides connections to Routes 4 and 11
- Connect to North Valleys FlexRIDE at Reno Sports Complex or Rancho San Rafael Park

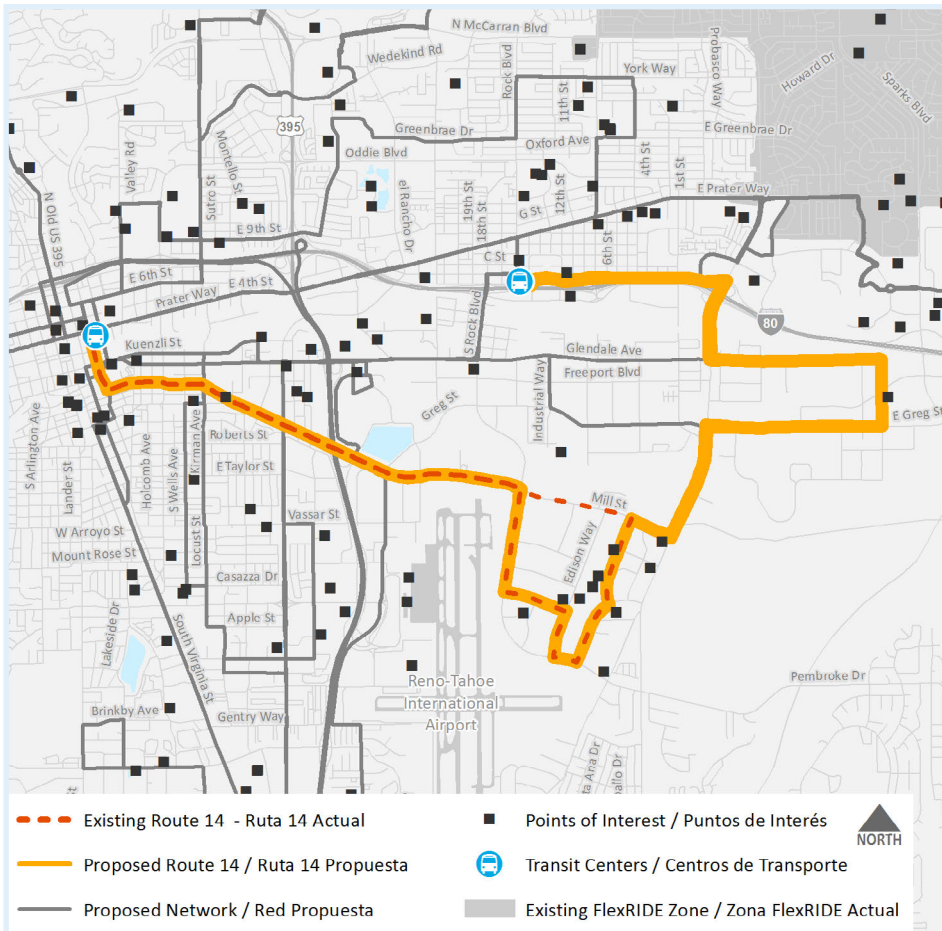




Northern Nevada Medical Center- Sierra

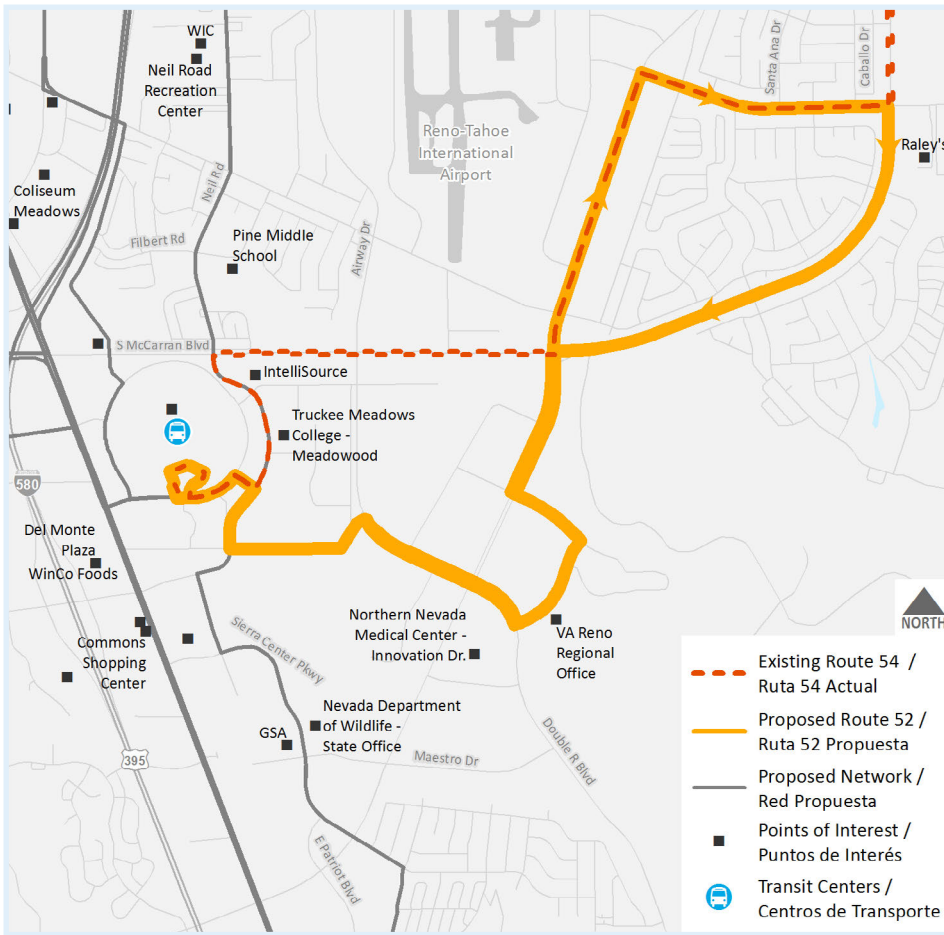
2024-2025 RAPID, RIDE, and FlexRIDE Service Recommendations

The third year of changes focus on services in the southern part of the service area and the Sparks Industrial Area. The major improvement is the extension of Route 14 which would connect the Sparks Industrial Area to the area of Sparks north of I-80. Route 54 would be discontinued because of duplication with the extended Route 14. A new Route 52 would provide service to connect to new destinations south and east of Meadowood Mall and cover a segment of the discontinued Route 54. A new South Meadows / Damonte Ranch FlexRIDE Zone would connect to Route 56 and provide coverage to newer development in the southern part of the service area. Overall, these changes result in an increase of two fixed-route buses, an increase of two microtransit buses, and an increase in 18,000 revenue hours of service.



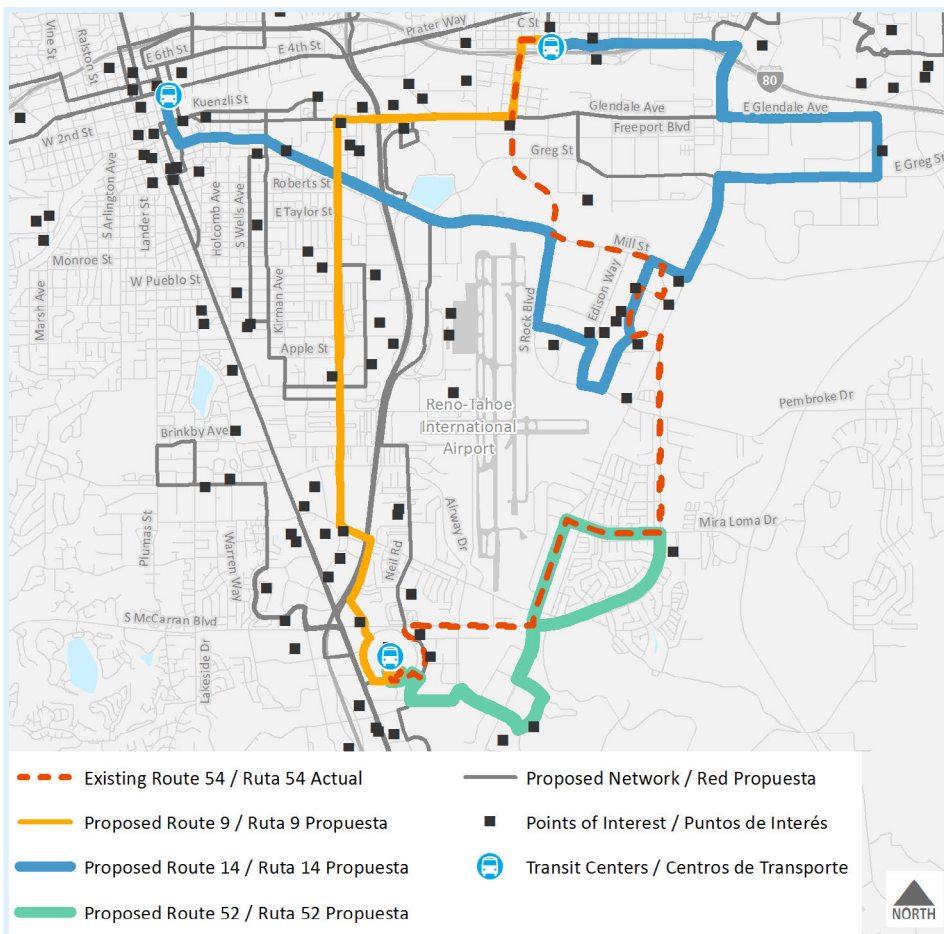
ROUTE 14 (MODIFY)

- Extend route to Centennial Plaza via McCarran Blvd, Greg St, Glendale Ave, and Victorian Ave
- Replace section of eliminated Route 54
- Connects Centennial Plaza to Sparks Industrial Area



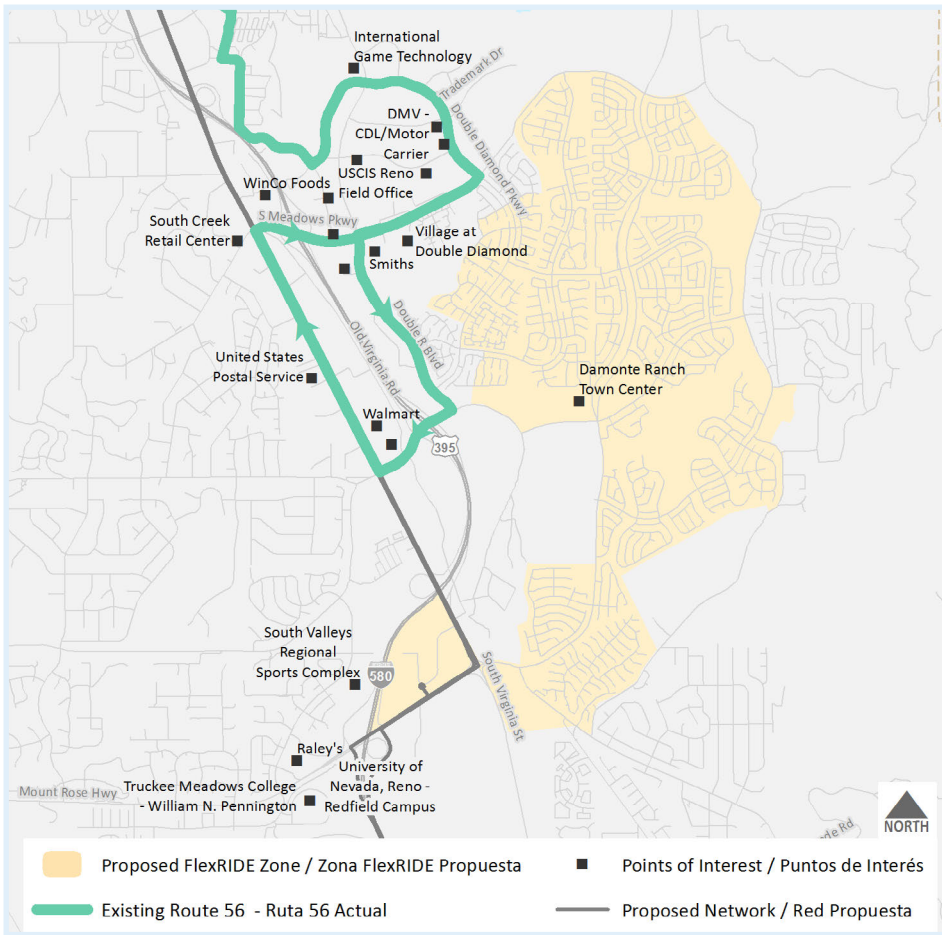
ROUTE 52 (NEW)

- New route connecting Donner Springs to Meadowood Mall
- Provides connection to Veterans Affairs offices and the new Sierra Medical Center
- Partially replaces southern portion of discontinued Route 54
- Service would operate every 30 minutes during weekday peak and midday.
- Service would operate every 60 minutes during early morning, evenings, and weekends



ROUTE 54 (DISCONTINUE)

- Discontinue route
- Partially replace with changes to Route 9, 14, and new Route 52



SOUTH MEADOWS – DAMONTE RANCH FLEXRIDE (NEW)

- Covering new areas of South Meadows south and east of Route 56
- Additional points of interest served outside of zone
 - » Walmart
 - » Raley's at Galena
 - » University of Nevada Reno: Redfield Campus
 - » Other locations as demand warrants



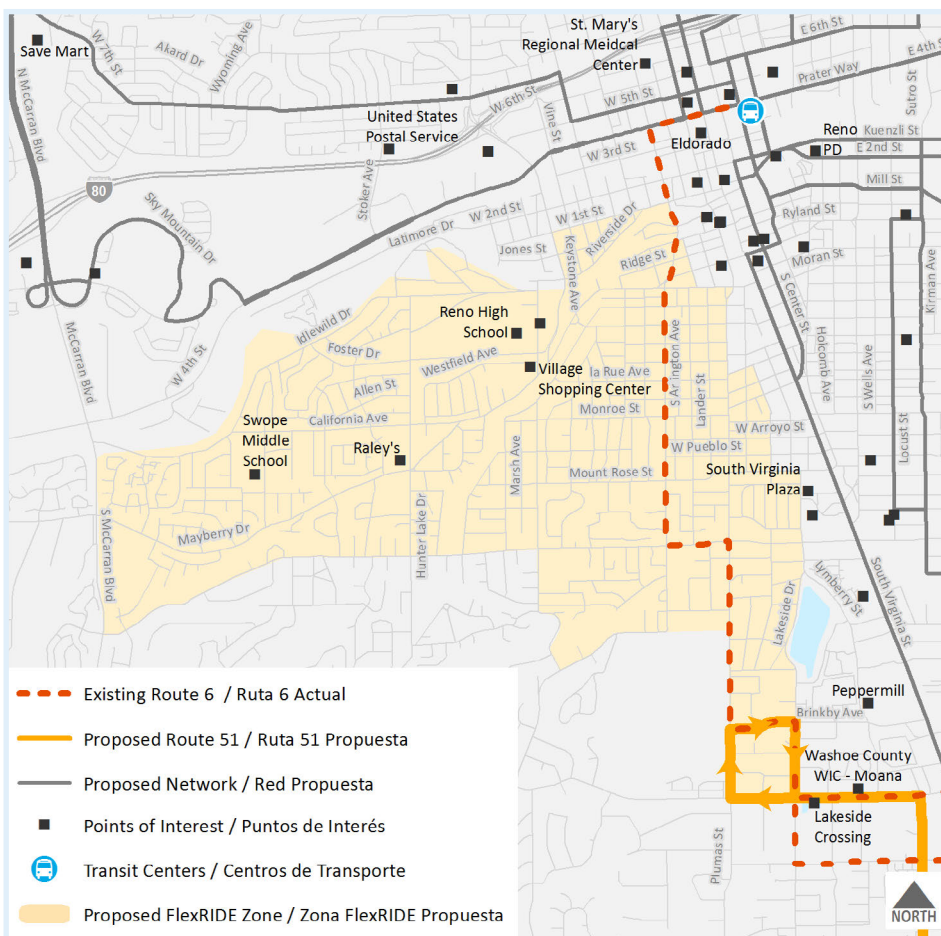
Damonte Ranch



Food Truck Friday at Idlewild Park

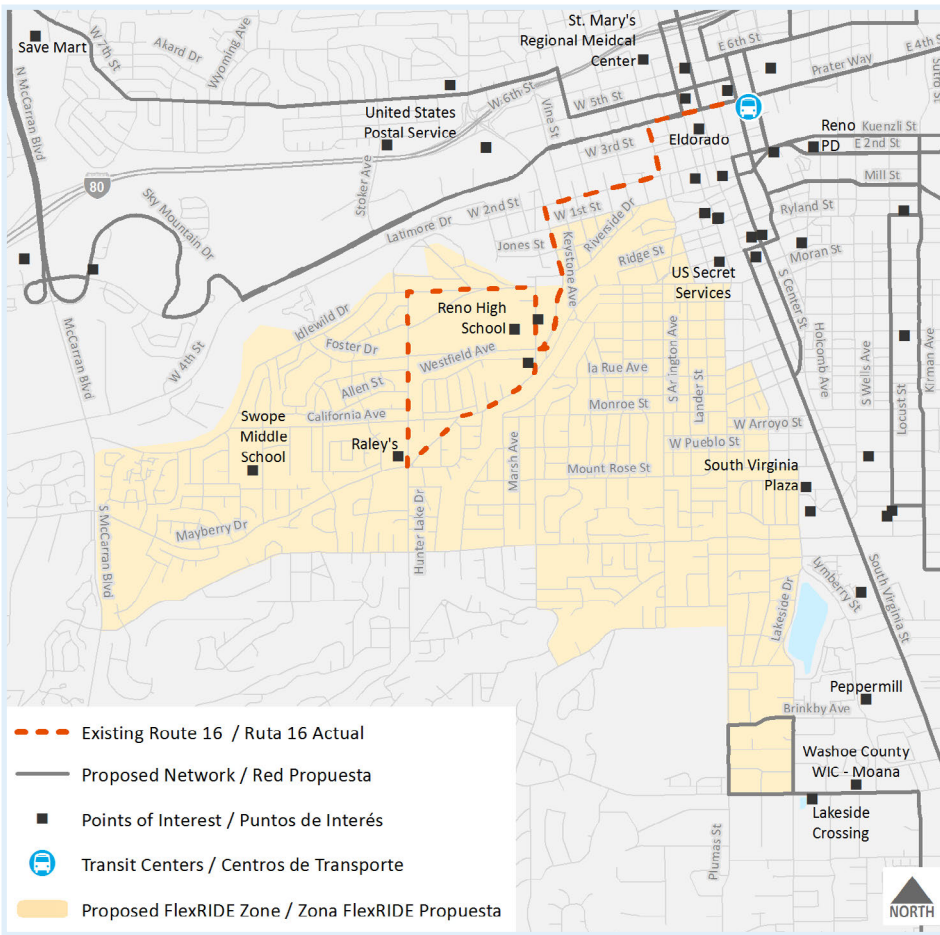
2025-2026 RAPID, RIDE, and FlexRIDE Service Recommendations

The fourth year of changes focus on services in the part of Reno which is south of I-80 and west of Virginia Street. Routes 6 and 16 would be discontinued because of low ridership. A new Route 51 would provide service on the southern section of Route 6, connecting to Meadowood Mall. A new Western Reno FlexRIDE Zone would cover the no longer served segments of Route 6 and 16 and provide expanded transit service coverage in this part of Reno. Overall, these changes result in a decrease of one fixed-route bus, an increase of five microtransit buses, and an increase in 18,000 revenue hours of service.



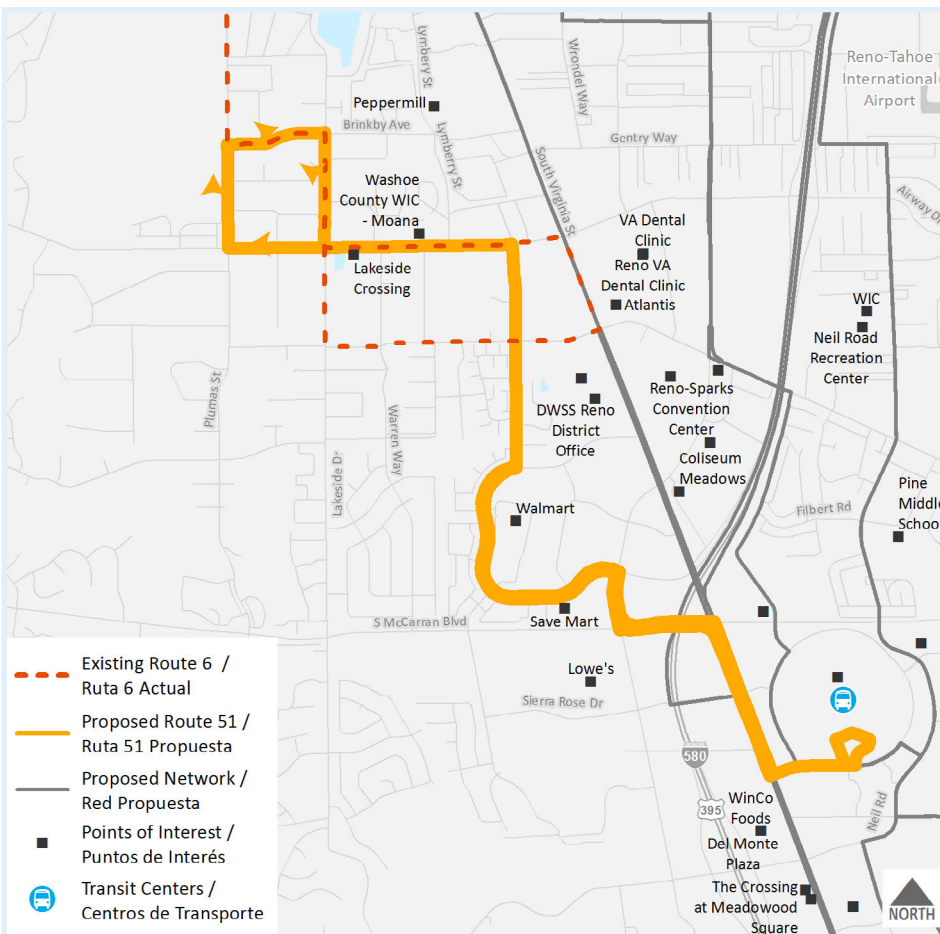
ROUTE 6 (DISCONTINUE)

- Discontinue route because of low ridership
- Partially replace with new West Reno FlexRIDE and new Route 51



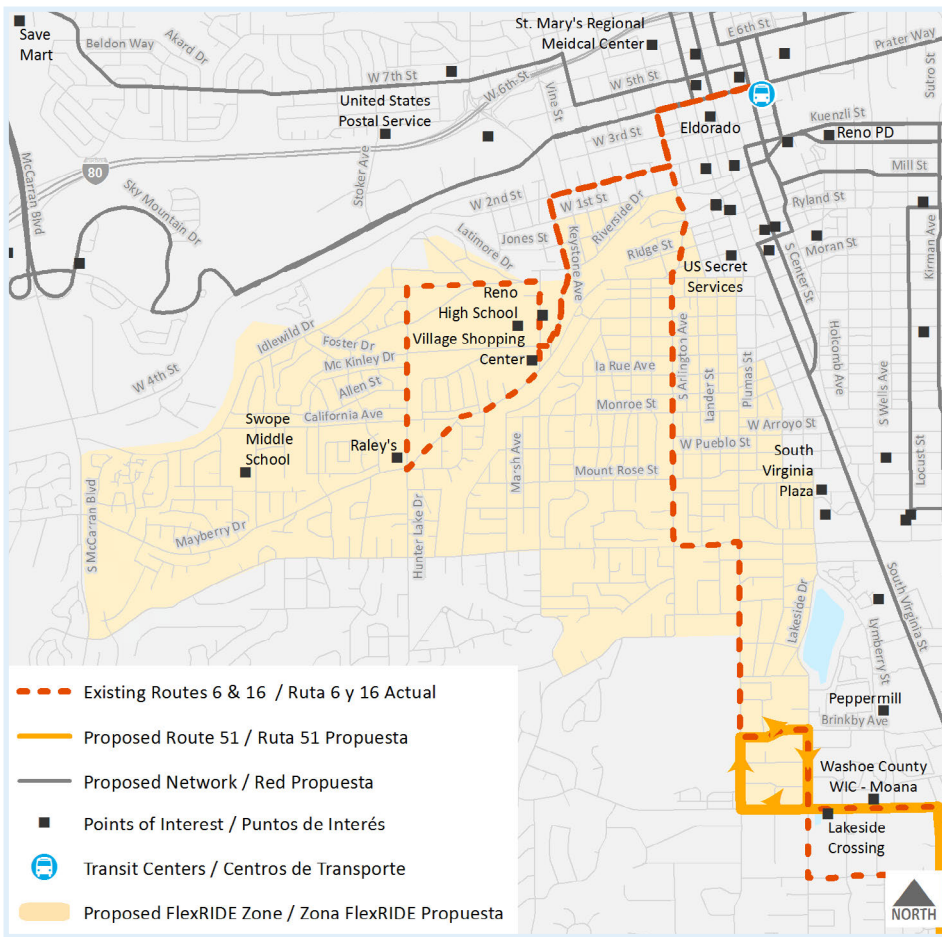
ROUTE 16 (DISCONTINUE)

- Discontinue route because of low ridership
- New West Reno FlexRIDE zone will provide service along eliminated route and expanded service in this area



ROUTE 51 (NEW)

- Connects Greenfield to Firecreek Crossing and Meadowood Mall
- Partially replaces southern portion of discontinued Route 6
- Service would operate every 30 minutes during weekday peak and midday
- Service would operate every 60 minutes during early morning, evenings, and weekends



WEST RENO FLEXRIDE (NEW)

- Partially covering areas covered by discontinued Routes 6 & 16
- Connects to 4th Street Station as a Point of Interest

2026-2027 RAPID, RIDE, and FlexRIDE Service Recommendations

There are no specific route changes recommended for the fifth year of the plan. This year should focus on making refinements to the routes as follows:

- Adjust frequencies of new and modified routes based on ridership
- Adjust boundaries of FlexRIDE zones to include additional areas or points of interest based on customer feedback and trip patterns
- Adjust FlexRIDE vehicle levels and hours of service based on trip demand

ACCESS Paratransit Recommendations

The TOPS plan does not assume any reductions in the ACCESS service area based on the proposed routing changes. There are two new routes which may expand the service area in the area south and east of Meadowood Mall. RTC can reasonably assume that demand for ACCESS will continue to increase towards pre-pandemic levels and potentially beyond as population increases in within the service area. RTC has already implemented the following best practices for controlling the cost of ADA paratransit:

- Providing service only within ¾ miles of the fixed-route bus network. This was a recommendation of the 2017 SRTP and was implemented in 2018.
- Providing service during the same hours as the individual fixed-route services. This was also implemented in 2018.
- Conducting interviews and in-person assessments during the eligibility process. Customers must also recertify every five years.
- Require trips to be book next day, including return trips. RTC also negotiates trips times with customers as allowed within the ADA regulations. There is an allowance for will-call and medical return trips to have a more flexible schedule, but a premium fare is charged.
- Have a written no show and late cancellation policy which is enforced by RTC staff.
- Billing Medicaid for eligible trips.

There are a few areas where RTC may want to explore during the next five years to offset the increasing costs of paratransit.

- Allowing RTC ACCESS customers to use the fixed-route service for free. Currently, they pay a \$.75 fare which may cause some users to continue to use the ACCESS service when fixed-route is an option.
- Limiting reservation hours to match RTC Washoe’s Business Office Hours which are 8:00am to 5:00pm. Reservations are currently open from 6:00am to 6:00pm on weekdays.
- Enforcing trip-by-trip eligibility for customers who are only eligible to make trips under certain circumstances.

Senior Mobility Recommendations

RTC currently offers the Washoe Senior Ride and Uber Rides programs for seniors in parts of Washoe County. Washoe Senior Ride is a subsidized taxi program which allows participants to purchase up to \$60 per month in taxi credit for \$15 for use on trips throughout the county. Under the Uber Rides program, RTC subsidizes 75% of up to five monthly trips on Uber up to \$9 for trips within the general Reno/Sparks area.

These programs provide additional mobility for seniors at a lower cost to RTC than ACCESS. They also have the benefit of providing mobility in areas not currently served by RIDE or FlexRIDE services. The TOPS plan recommends increasing the RTC contribution for the taxi program and increasing Uber trips and contribution as shown in Figure 15 to allow for additional usage and to account for inflation. These increased costs may be offset by reduced or deferred usage of ACCESS eligible customers.

Vanpool Recommendations

The Vanpool program is RTC’s most cost-effective public transportation service and generally “pays for itself” based on new federal funding received for each new vanpool. RTC should provide additional funding to expand the number of vanpools during the TOPS plan. The TOPS plan assumes a 10% annual growth rate for the program. This growth will mainly come from additional development around the Tahoe Reno Industrial Center (TRIC) and isolated facilities on the outskirts of Washoe County.

Figure 15 - Senior Mobility Program Recommendations

PROGRAM	CURRENT	PROPOSED
Washoe Senior Ride	RTC provides \$60 of monthly taxi credit for \$15 (max \$180)	RTC provides \$75 of monthly taxi credit for \$15 (max \$150)
Uber Rides	RTC covers up to \$9 per trip for 5 trips per month	RTC covers up to \$10 per trip for 6 trips per month

CAPITAL & TECHNOLOGY RECOMMENDATIONS

Capital Project List and Vehicle Replacements

A capital plan was developed to support the TOPS service recommendations. Figure 16 lists each project, estimated cost, and expenditure year. The projects would be grant funded when possible and assume a 95% federal match for vehicles and 80% federal match for non-vehicle projects. The local match for the capital projects has been accounted for in the revenue estimates in the Financial Plan included in the Implementation Plan section of this document. The total capital plan will require \$48,246,000 over five years.

BUS STOP AMENITIES

RTC plans to continue making upgrades to bus stops throughout the region. The improvements will include necessary ADA upgrades and improved passenger waiting facilities. The agency will plan to spend an average of \$410,000 per year for a total of \$2,050,000.

Facility / Infrastructure

RTC plans on making upgrades to several passenger-facing facilities during the TOPS. This includes expansion of the 4th Street Station and upgrades to the existing South Virginia BRT stations. There are also several operating facility projects including a Hydrogen Fuel Cell facility and the design of the future Villanova Operations facility. The plan also includes annual amounts for miscellaneous upgrades at the existing operating facilities. These projects total \$33,248,000 and account for a majority of the capital plan costs.

Technology and Equipment

RTC also plans on funding for technology upgrades, replacements, and enhancements to occur during TOPS. These are further described in the upcoming “Technology Recommendations” section. These projects are expected to cost \$1,190,000 over the five-year TOPS.

REVENUE VEHICLES

The TOPS service recommendations impact the number of vehicles required to provide the different public transportation services operated by RTC. The fixed-route fleet is expected to be reduced by five buses. This allows RTC to reduce a vehicle replacement by from 12 to 7 buses in Year 3 of the plan. The microtransit service will require 12 new vehicles with the addition of two new zones and expansion of another. The largest vehicle replacement will be for a total of 32 paratransit buses between Years 1 and 5. Vehicle expansion and replacement costs will total \$11,761,000 over the five-year plan.

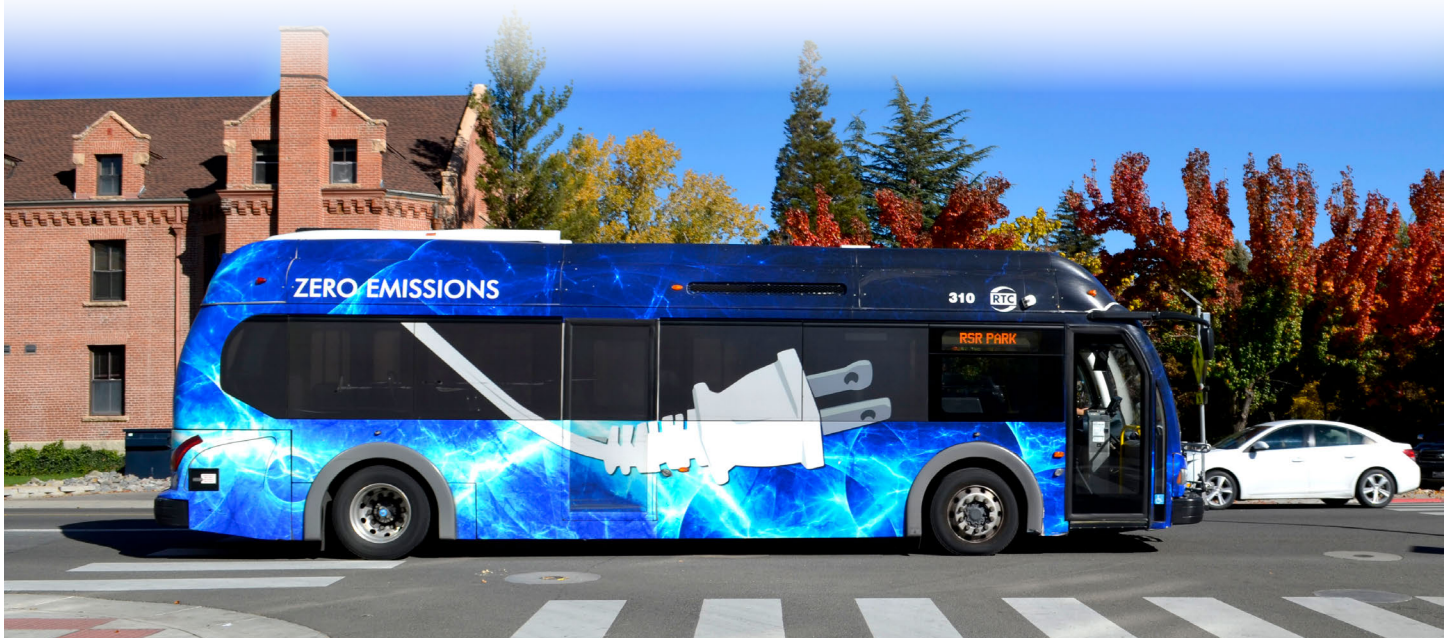


Figure 16 - TOPS Capital Project and Vehicle Replacement Plan

	YEAR 1 FY2023	YEAR 2 FY2024	YEAR 3 FY2025	YEAR 4 FY2026	YEAR 5 FY2027	5-YEAR TOTAL
Bus Stop Amenities						
Bus Stop Amenities and Maintenance	\$389,500	\$399,238	\$409,218	\$419,449	\$429,935	\$2,047,340
Total	\$389,500	\$399,238	\$409,218	\$419,449	\$429,935	\$2,047,340
Facility/Infrastructure						
4th Street Transit Station Expansion	\$3,500,000	\$-	\$-	\$-	\$-	\$3,500,000
Operating Facility Upgrades	\$512,500	\$525,313	\$538,445	\$551,906	\$565,704	\$2,693,868
South Virginia BRT Upgrades	\$5,000,000	\$5,000,000	\$5,000,000	\$-	\$-	\$15,000,000
Shop Equipment	\$10,250	\$10,506	\$10,769	\$11,038	\$11,314	\$53,877
Villanova Facility Design	\$-	\$-	\$-	\$3,500,000	\$3,500,000	\$7,000,000
Hydrogen Fuel Cell Project	\$1,000,000	\$2,500,000	\$1,500,000	\$-	\$-	\$5,000,000
Total	\$10,022,750	\$8,035,819	\$7,049,214	\$4,062,945	\$4,077,018	\$33,247,746
Technology and Equipment						
Computer Hardware & Software	\$226,525	\$232,188	\$237,993	\$243,943	\$250,041	\$1,190,690
Total	\$226,525	\$232,188	\$237,993	\$243,943	\$250,041	\$1,190,690
Revenue Vehicles Purchases						
Fixed-Route Buses - Replacement	-	-	7	-	-	7
Paratransit Bus - Replacement	22	-	-	-	10	32
Microtransit Bus- Expansion	-	5	2	5	-	12
Microtransit Bus - Replacement	3	-	-	-	5	8
Vehicles						
Revenue Vehicle Expansion	\$-	\$368,000	\$150,800	\$386,500	\$-	\$905,300
Revenue Vehicle Replacement	\$3,372,400	\$-	\$5,502,000	\$-	\$1,981,000	\$10,855,400
Total	\$3,372,400	\$368,000	\$5,652,800	\$386,500	\$1,981,000	\$11,760,700
Annual Capital Cost	\$14,011,175	\$9,035,244	\$13,349,225	\$5,112,836	\$6,737,995	\$48,246,476

Technology Recommendations

RTC relies on technology to provide and manage their public transportation services. The agency's technology footprint allows it to either leverage existing technologies, retire some redundant ones, or replace multiple technologies with a single new solution. This section provides recommendations for ways to implement, manage and use technology more efficiently.

STRATEGY AND PLANNING

The first step for RTC Washoe is to build the foundation to manage technology today and in future. This starts with developing a strategy and the people to manage the strategy. The following critical tasks should be followed to establish the appropriate strategy and manage it going forward.

- Create a Public Transportation Technology Steering Committee
- Establish transit technology standards
- Establish ownership of different technology products and data
- Establish technology life cycles
- Establish business rules for data management
- Establish a staff roles and responsibilities matrix
- Develop and maintain a public transportation information technology inventory

RIDE AND RAPID RECOMMENDATIONS

The purpose of these recommendations is to improve the current technology footprint and make things easier and more functional for fixed-route operations. The recommendations also reduce manual effort, improve data internally and externally, and potentially reduce costs in the long term.

- Implement General Transit Feed Specification – Real Time (GTFS-RT) for third-party mapping providers
- Streamline scheduling software and processes
- Move to a single solution for dispatch, vehicle location, real-time information, and CAD/AVL
- Streamline National Transit Database data collection and reporting
- Encourage adoption of mobile ticketing
- Evaluate route planning and Title VI analysis options
- Streamline management of bus stops data
- Move towards a single asset management solution

ACCESS, FLEXRIDE, AND SMART TRIPS RECOMMENDATIONS

There are opportunities to simplify technology use in the paratransit and microtransit service. The Vanpool systems are meeting current needs, but other aspects of the Smart Trips services could use some consolidation. This space is growing with software solutions trying to meet the needs of transit agencies and cities by addressing the different modes under one product suite. Some newer vendors combine paratransit, ridesharing, non-emergency medical transportation, microtransit, planning and others within one suite. The important elements here are to develop the requirements that capture the services, meet the ADA requirements, and required NTD reporting then ensuring the vendor can meet those requirements. The following recommendations should be explored for these services:

- Move towards a single management platform for FlexRIDE, ACCESS, and Smart Trips
- Move to a single solution for paratransit dispatch and eligibility
- Streamline National Transit Database data collection and reporting
- Leverage the fixed-route mobile ticketing solution for use with on-demand services

ADMINISTRATION AND ANCILLARY SYSTEMS RECOMMENDATIONS

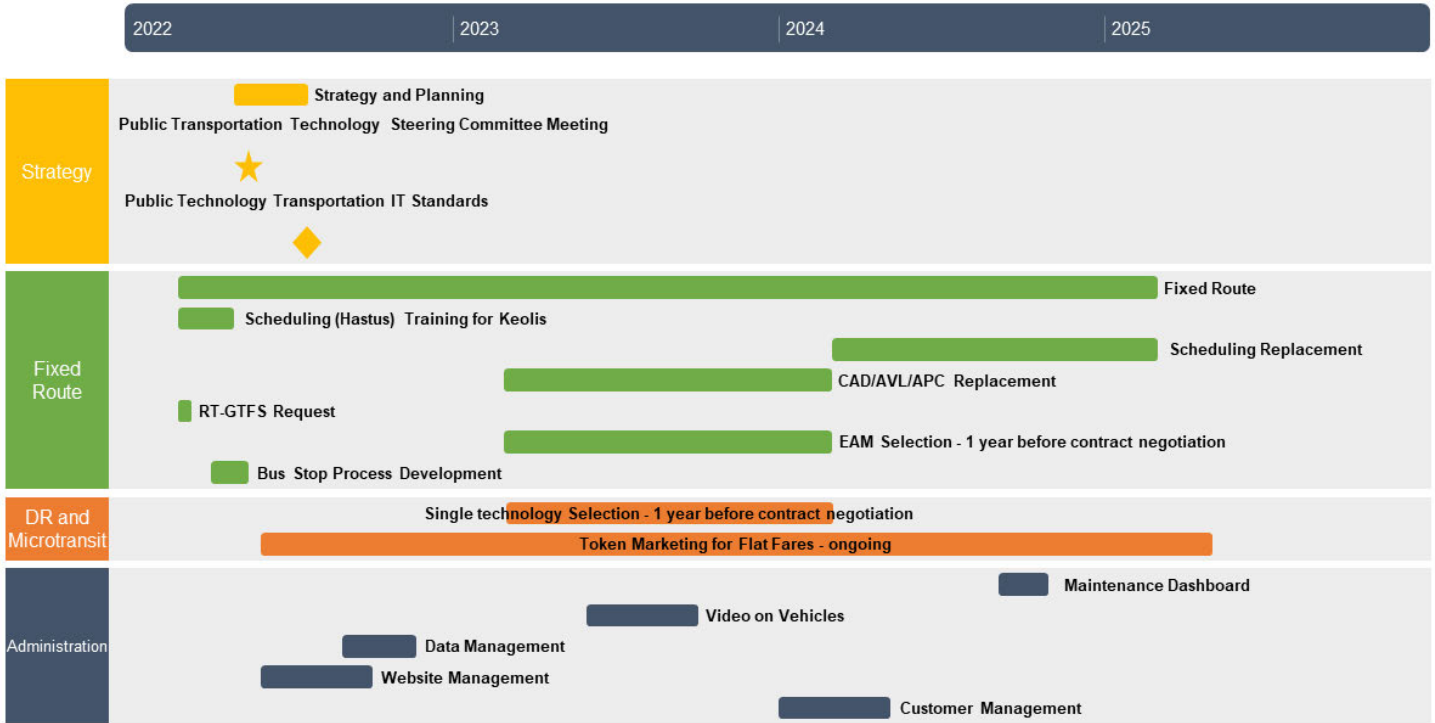
RTC Washoe needs to plan for the future with a new Customer Relationship Management solution to capture customer information. This information is used for marketing and communications and is essential data on their ridership. It can make Origin/Destination surveys easier and can be a great way to get customer feedback. Today this information is scattered across a number of applications and in some instances is not captured. When new systems that have customer information are procured an integration with the new CRM solution will be part of the implementation and a requirement. RTC Washoe should own all its customer information. The following projects are recommended to improve the systems which support public transportation operations:

- Procure a Customer Relationship Management solution
- Review and revise website content for ease of use
- Develop a maintenance dashboard
- Standardize on-board vehicle video systems
- Implement data management business rules

Implementation Phasing

The phasing of the technology recommendations is shown in the Figure 17. Some of the projects will take a few years to complete as moving from requirements to procurement to implementation takes time. RTC should first establish the Public Transportation Technology Steering Committee to manage these efforts and update them should priorities change. The phasing plan is meant to be a working plan, and some changes are to be expected, and will need to be managed in an organized manner.

Figure 17 - Technology Phasing Plan



REBUILDING PUBLIC TRANSPORTATION RIDERSHIP

Implementing strategies for retaining current transit riders and attracting new ones is a core objective of the 2023-2027 Transit Optimization Plan Strategies (TOPS) effort. Coming out of the pandemic, much has changed that directly impacts transportation and use of transit. New commuting patterns, labor shortages, and resource issues require RTC to be strategic, innovative, and nimble. New service solutions, technologies, and system improvements must be embraced and communicated to set the stage for sustainable ridership growth.

Ridership Growth Strategies

The recommended strategies were developed using relevant industry research and publications, exploring best practices among other transit systems, and the consultant's experience working with multiple transit systems to grow ridership. The following is a summary of core recommendations:

- 1) **Take a comprehensive approach to retaining customers and building ridership:** Getting current riders to ride more frequently is often the highest value strategy in growing overall ridership. Focus on the end-to-end customer experience and align improvements, innovations, programs, and services to attract high-potential ridership markets.
- 2) **Use BRT/RAPID lines as the foundation for service innovations:** Improve speed of service wherever possible and feed the RAPID lines with more direct connections and expanded FlexRIDE zones.
- 3) **Enhance digital RTC capabilities:** Transform the RTC website into a powerful marketing tool and create a fully integrated digital marketing and communications program that takes full advantage of all available technology.
- 4) **Directly engage, educate, and encourage high potential riders:** Use smart-targeted digital and traditional communications to reach high potential ridership markets (employers, employees, schools, communities, popular destinations) and educate on how to use new services, their features, and benefits.
- 5) **Build momentum for increasing ridership:** Leverage market conditions (like high gas prices), embrace regional efforts, and tout RTC accomplishments (like 100% alternative-fuel fleet) to build momentum for increasing ridership.



Implementation Phasing and Cost

The ridership strategies will require resources including staff time, consultant support, and campaign implementation costs. The following table outlines recommended strategies by year and the estimated cost and resources required to implement. The plan is generally front-loaded based on current ridership levels and the need to bring back riders post-pandemic. There are also resources dedicated to match each year of service improvements to RIDE and FlexRIDE services as outlined in the Public Transportation Service Recommendation section of this report.

Figure 18 - Marketing and Outreach Recommendations

YEAR 1 (FY22-23)		
Strategy	Resource	Estimated Cost
Develop comprehensive 5-year marketing and communications (MAC) plan that aligns with, celebrates and integrates TOPS implementation, regional and operational plans	RTC Staff or Consultant	\$20,000
Identify core messages (Rapid, Flex, service improvements, gas prices, safety, how to ride, apps, etc.) and core audiences (students, employers, employees, Spanish language) for each phase of TOPS implementation	RTC Staff or Consultant	\$20,000
Map out upgrades to rtcwashoe.com website: site design; ADA compliance; SEO; content; URL; landing pages; site performance	RTC Staff or Consultant	\$60,000
Procure external web development consultant; make smart site upgrades where/when possible (First Year)	Consultant	\$90,000
Budget more resources into paid digital campaigns across multiple platforms. Note: website integration and performance are critical in digital marketing; off-site landing pages may be a work around while new website is in development	Digital Media	\$60,000
Enhance employer outreach; use Smart Trips platform and staff to reach out to major employers and schools to identify their transportation needs; explore digital push/pull campaign reach employers and employees; seek out Spanish-language employees	RTC Staff	\$40,000
YEAR 2 (FY23-24)		
Strategy	Resource	Estimated Cost
Complete website redesign; incorporate best practices, real-time information, apps, and all aspects of RTC Washoe (Second Year)	Consultant	\$90,000
Plan digital/ social campaigns that align with TOPS implementation; explore Spanish-first ridership efforts; use influencers in digital campaigns where it makes sense; promote best service; drive everyone to new RTC website; possibly add new promotional URL	RTC Staff	\$200,000
Map out customer journeys; study complete customer experience; identify high potential ridership markets; work with RTC customer service to conduct a satisfaction survey	RTC Staff or Consultant	\$40,000
Continue work with employers; identify benefits with TOPS implementation and service improvements	RTC Staff	\$40,000
YEAR 3 (FY24-25)		
Strategy	Resource	Estimated Cost
Continue digital/ social campaigns that align with TOPS implementation. Campaigns should include FlexRIDE; Rapid; Spanish-first ridership; influencer campaign; features and benefits of RTC Washoe system	RTC Staff	\$40,000
Map out customer journeys; study the complete customer experience; identify high potential ridership markets and align with best, most competitive service	RTC Staff or Consultant	\$40,000
Continue work with employers; identify benefits with TOPS implementation; evaluate pass programs and pricing for employers who subsidize employee passes	RTC Staff	\$40,000
YEAR 4 (FY25-26)		
Strategy	Resource	Estimated Cost
Continue digital campaigns that align with TOPS implementation. Showcase bus speed improvements; target high-potential riders	RTC Staff	\$200,000
Continue work with employers; identify benefits with TOPS implementation; evaluate pass programs and pricing for employers who subsidize employee passes	RTC Staff	\$40,000
YEAR 5 (FY26-27)		
Strategy	Resource	Estimated Cost
Continue digital campaigns that align with TOPS implementation. Showcase bus speed improvements; target high-potential riders	RTC Staff	\$200,000
Continue work with employers; identify benefits with TOPS implementation; evaluate pass programs and pricing for employers who subsidize employee passes	RTC Staff	\$40,000

IMPLEMENTATION PLAN

This section of the report provides a summary of how the agency should implement the TOPS over the next five years. The Financial Plan brings together operating costs, capital projects, and revenues for future budgeting and plannings. We have also provided summaries of the work plan for each year which includes the service recommendations, capital projects, technology efforts, and marketing needs.

Financial Plan

The TOPS Financial Plan in Figure 19 provides a summary of the financial resources required to implement the plan over the five-year implementation period. The plan includes the assumed levels or service for the different public transportation services and anticipated ridership and revenues. The plan also includes a summary of the capital projects discussed in more detail in the Capital & Technology Recommendation section of the report. The plan includes a number of assumptions as outlined below:

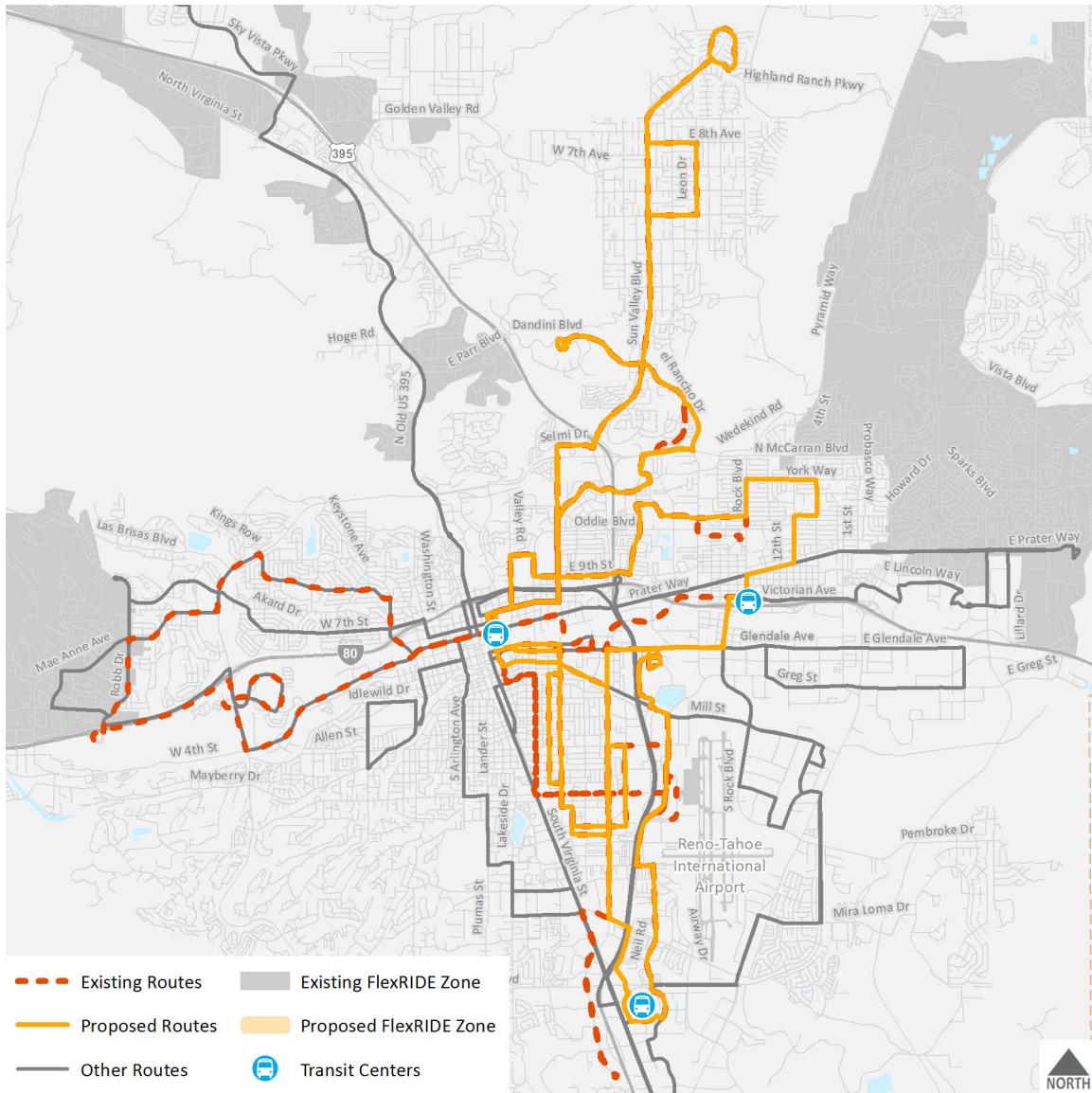
- Ridership on the fixed-route, paratransit, and microtransit services will grow at 10% per year during the five-year plan. This assumes ridership will return to pre-pandemic levels by the end of the fourth year of the plan
- There will no be a fare increase during this period
- Contracted operating costs will increase at a greater rate than in previous years based on increasing cost pressures
- RTC will use federal grant funds to reduce the local match of capital projects
- Public Transportation Sales Tax revenue available to public transportation will grow by 3% annually



Figure 19 - TOPS Financial Plan

OPERATIONS SUMMARY	YEAR 1 FY2023	YEAR 2 FY2024	YEAR 3 FY2025	YEAR 4 FY2026	YEAR 5 FY2027	5-YEAR TOTAL
Fixed-Route and Flex Service Statistics						
Revenue Hours	281,580	296,816	314,860	333,268	333,268	1,559,792
Revenue Miles	3,167,488	3,561,230	3,796,172	4,187,825	4,187,825	18,900,541
Passengers	5,867,160	6,420,544	7,157,384	7,802,860	8,585,200	35,833,148
System Productivity	20.8	21.6	22.7	23.4	25.8	23.0
ADA Service Statistics						
Total Hours	73,700	81,070	89,177	98,095	107,904	449,946
Total Miles	1,179,200	1,297,120	1,426,832	1,569,515	1,726,467	7,199,134
Passengers	147,400	162,140	178,354	196,189	215,808	899,892
Operating Revenues						
Fixed-Route and Flex Fare Revenue	\$3,494,488	\$3,825,093	\$4,263,937	\$4,648,875	\$5,114,564	\$21,346,957
ADA Passenger Fares	\$294,800	\$324,280	\$356,708	\$392,379	\$431,617	\$1,799,783
Non-Operating Revenue	\$41,965,963	\$43,795,172	\$45,052,057	\$47,280,084	\$48,610,164	\$226,703,440
Total Operating Revenues	\$45,755,252	\$47,944,545	\$49,672,701	\$52,321,338	\$54,156,345	\$249,850,181
Operating Expenses						
Fixed-Route and Flex Operating Cost	\$26,068,341	\$28,171,700	\$30,903,100	\$33,064,700	\$34,717,900	\$152,925,741
ADA Operating Cost	\$5,670,319	\$6,549,200	\$7,564,300	\$8,736,800	\$10,091,000	\$38,611,619
Administrative and Other Cost	\$11,561,623	\$12,152,735	\$12,530,846	\$12,923,939	\$13,332,846	\$62,501,988
Total Operating Expenses	\$43,300,283	\$46,873,635	\$50,998,246	\$54,725,439	\$58,141,746	\$254,039,349
Operating Expense/Revenue Summary						
Net Operating Revenue	\$2,454,969	\$1,070,910	(\$1,325,544)	(\$2,404,100)	(\$3,985,401)	(\$4,189,168)
Fixed-Route and Flex Service Farebox Recovery Ratio	13%	14%	14%	14%	15%	14%
CAPITAL SUMMARY						
Capital Expenses						
Bus Stop Amenities	\$389,500	\$399,238	\$409,218	\$419,449	\$429,935	\$2,427,340
Facility/Infrastructure	\$10,022,750	\$8,035,819	\$7,049,214	\$4,062,945	\$4,077,018	\$38,232,746
Technology and Equipment	\$226,525	\$232,188	\$237,993	\$243,943	\$250,041	\$1,553,049
Vehicles	\$3,372,400	\$368,000	\$5,652,800	\$386,500	\$1,981,000	\$28,458,740
Total Capital Expenses	\$14,011,175	\$9,035,244	\$13,349,225	\$5,112,836	\$6,737,995	\$70,671,875
Net Capital Revenue	\$-	\$-	\$-	\$-	\$-	\$-
TOTAL OPERATING & CAPITAL EXPENSES	\$57,311,458	\$55,908,880	\$64,347,471	\$59,838,275	\$64,879,741	\$364,605,805
FUNDING SUMMARY						
Funding						
Operating Revenues and Funds	\$45,755,252	\$47,944,545	\$49,672,701	\$52,321,338	\$54,156,345	\$294,406,431
Capital Funding	\$14,011,175	\$9,035,244	\$13,349,225	\$5,112,836	\$6,737,995	\$70,671,875
TOTAL FUNDING	\$59,766,427	\$56,979,789	\$63,021,927	\$57,434,175	\$60,894,339	\$365,078,306

Fiscal Year 2022-2023 Work Plan

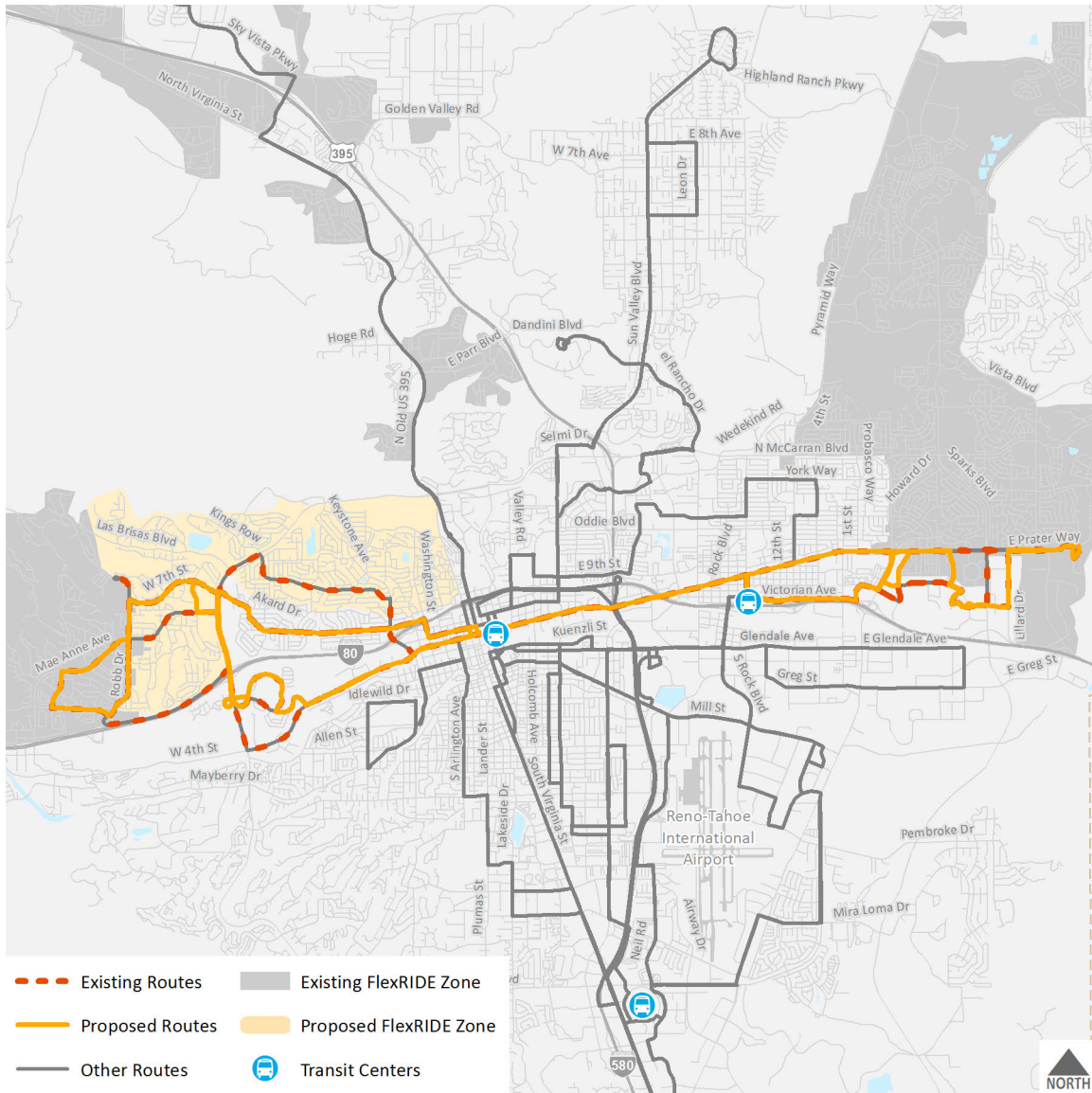


Public Transportation Service Recommendations

Capital & Technology Recommendations

Rebuilding Public Transportation Ridership

- Modify Routes 5, 9, 12, 13, & 15
 - Discontinue Routes 2S, 3CC, & 19
-
- Bus Stop Amenities and Maintenance
 - 4th Street Transit Station Expansion
 - Operating Facility Upgrades & Equipment
 - South Virginia BRT Upgrades (Multi-year)
 - Hydrogen Fuel Cell Project (Multi-year)
 - Replace 22 Paratransit Buses
 - Replace 3 Microtransit Buses
 - Fixed Route Software Upgrades
 - GTFS Real-Time Implementation
-
- Develop 5-year Marketing and Communications (MAC) Plan
 - Plan for Website Upgrades
 - Paid Digital Campaigns
 - Enhance Employer Outreach



Public Transportation Service Recommendations

- Modify Routes 4, 11, & 21
- Discontinue Routes 3CL, & 26
- Expand Somerset / Verdi FlexRIDE Zone

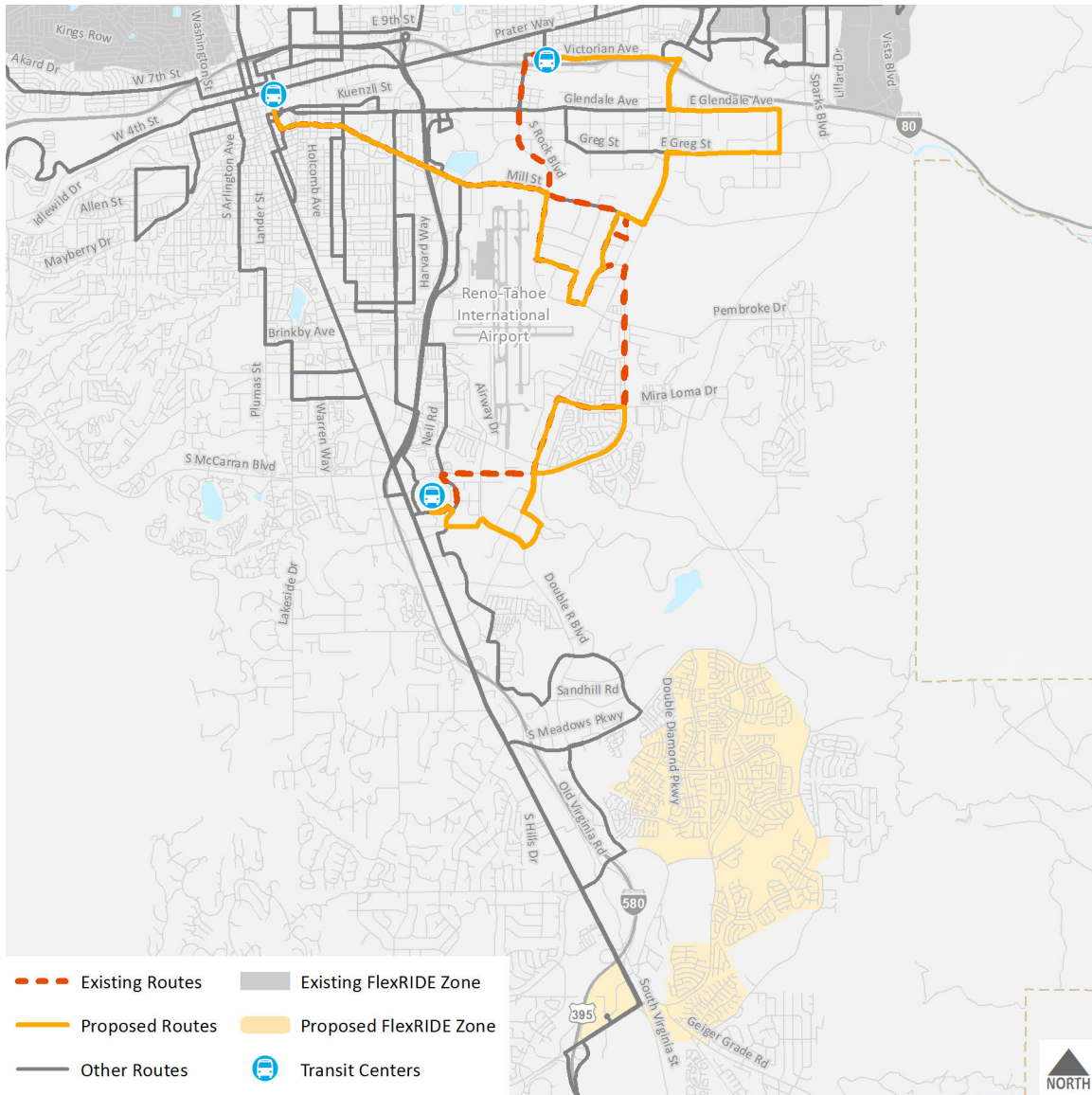
Capital & Technology Recommendations

- Bus Stop Amenities and Maintenance
- Operating Facility Upgrades & Equipment
- South Virginia BRT Upgrades (Multi-year)
- Hydrogen Fuel Cell Project (Multi-year)
- Purchase 3 Expansion Microtransit Buses
- CAD/AVL Software Replacement
- Procure Enterprise Asset Management System

Rebuilding Public Transportation Ridership

- Website Redesign
- Continue Paid Digital Campaigns
- Study Customer Experience
- Continue Employer Outreach

Fiscal Year 2024-2025 Work Plan



Public Transportation Service Recommendations

- Modify Route 14,
- Discontinue Route 54
- New Route 52
- New South Meadows -Damonte Ranch FlexRIDE Zone

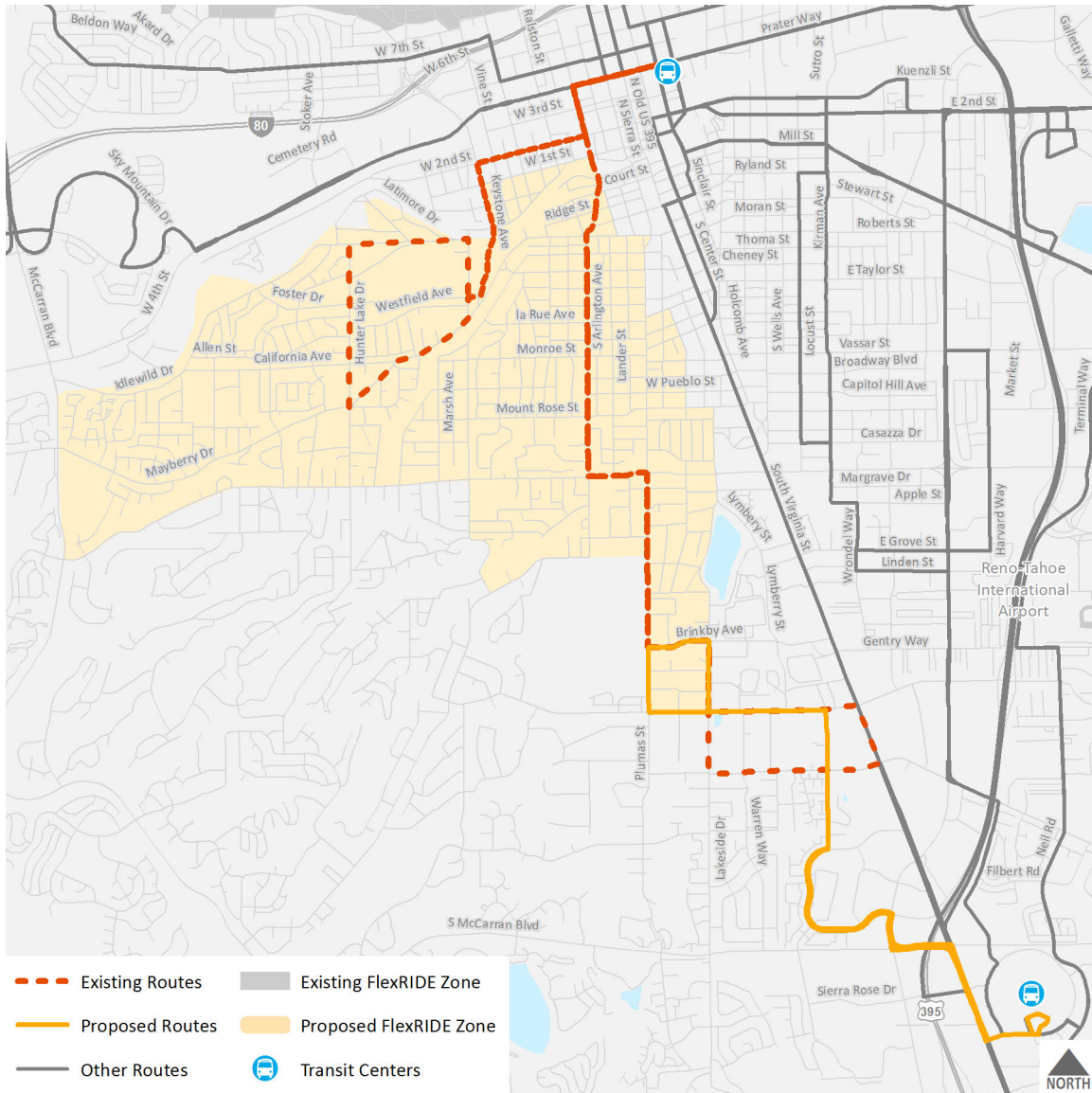
Capital & Technology Recommendations

- Bus Stop Amenities and Maintenance
- Operating Facility Upgrades & Equipment
- South Virginia BRT Upgrades (Multi-year)
- Hydrogen Fuel Cell Project (Multi-year)
- Replace 7 Fixed-Route Buses
- Purchase 2 Expansion Microtransit Buses
- Fixed-Route Software Replacement
- Develop Maintenance Dashboard
- Procure Customer Management Software

Rebuilding Public Transportation Ridership

- Continue Paid Digital Campaigns
- Study Customer Experience
- Continue Employer Outreach

Fiscal Year 2025-2026 Work Plan

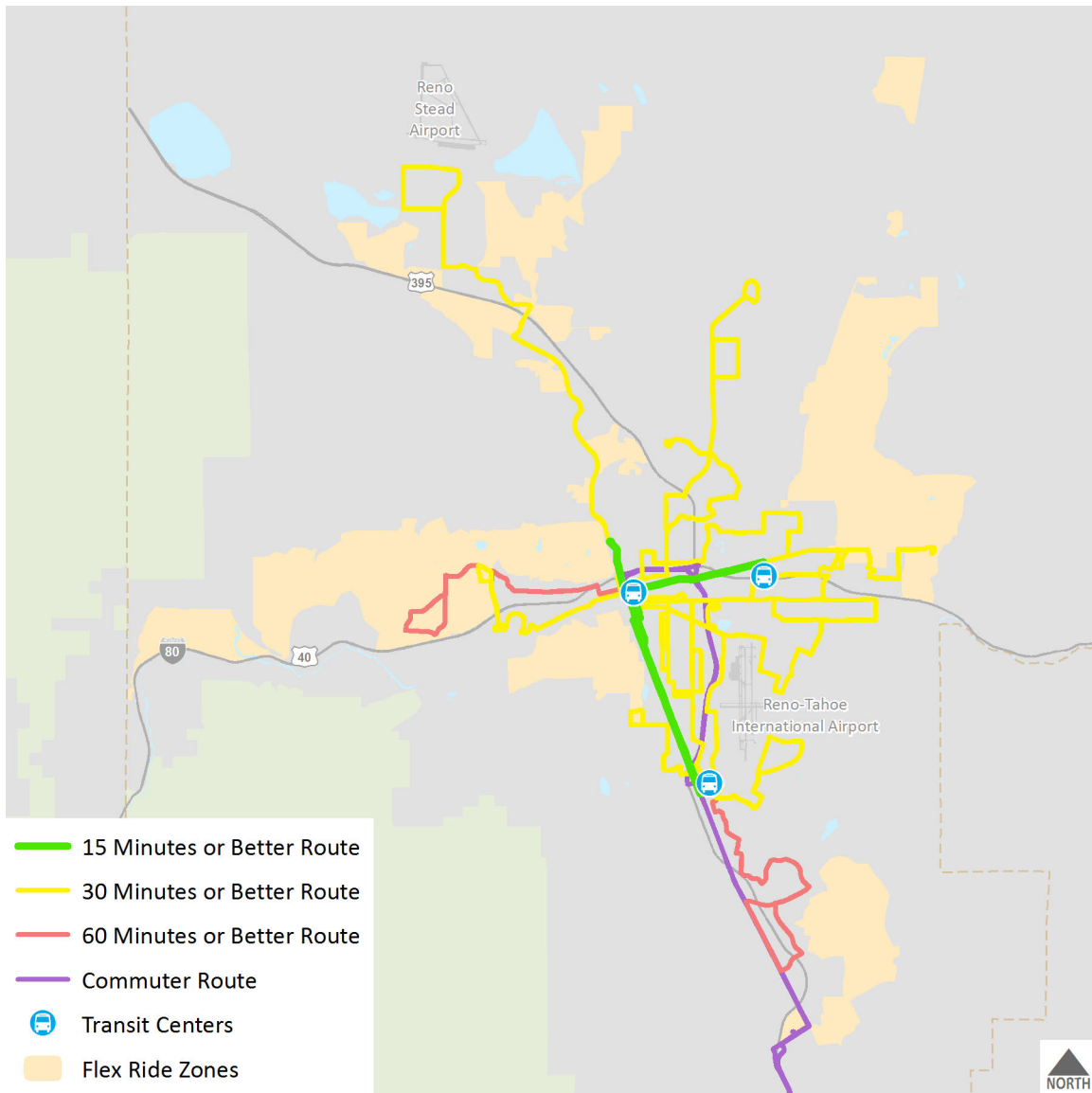


Public Transportation Service Recommendations

Capital & Technology Recommendations

Rebuilding Public Transportation Ridership

- Discontinue Routes 6 & 16
 - New Route 51
 - New Western Reno FlexRIDE Zone
-
- Bus Stop Amenities and Maintenance
 - Operating Facility Upgrades & Equipment
 - Villanova Facility Design (Multi-year)
 - Purchase 5 Expansion Microtransit Buses
-
- Continue Paid Digital Campaigns
 - Continue Employer Outreach



Public Transportation Service Recommendations

- Adjust new and modified routes based
- Adjust boundaries and service levels for FlexRIDE Zones

Capital & Technology Recommendations

- Bus Stop Amenities and Maintenance
- Operating Facility Upgrades & Equipment
- Villanova Facility Design (Multi-year)
- Replace 10 Paratransit Buses
- Replace 5 Microtransit Buses

Rebuilding Public Transportation Ridership

- Continue Paid Digital Campaigns
- Continue Employer Outreach