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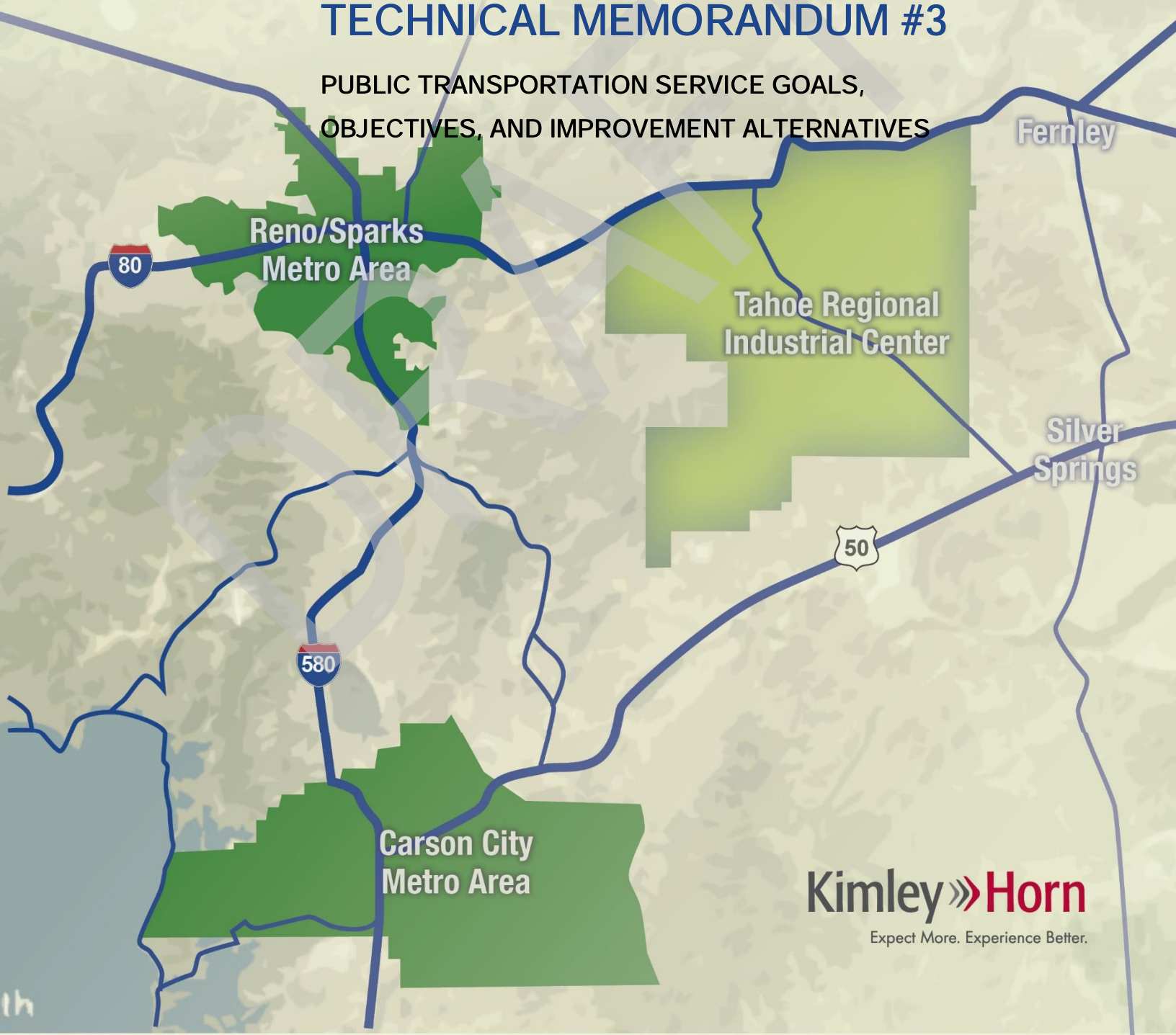
Inter-County and Regional



TRANSIT PLAN

TECHNICAL MEMORANDUM #3

**PUBLIC TRANSPORTATION SERVICE GOALS,
OBJECTIVES, AND IMPROVEMENT ALTERNATIVES**



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TECHNICAL MEMORANDUM #3: PUBLIC TRANSPORTATION SERVICE
GOALS, OBJECTIVES, AND IMPROVEMENT ALTERNATIVES
FOR

INTER-COUNTY AND REGIONAL TRANSIT PLAN

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EXECUTIVE SUMMARY

With a growing economy, increased development activity, and employment growth in Northern Nevada, the Nevada Department of Transportation (NDOT) is developing a plan to explore transit options to address inter-county commuting needs in Northern Nevada. Technical Memorandum #3 summarizes public transportation service goals, objectives and improvement alternatives for the five-county area, with a specific focus on the Tahoe Reno Industrial Center (TRIC).

E.1. Goals and Objectives

Transportation plans and Master Plans within the five-county region were reviewed by the project team to identify existing, local transit-related policy direction. This Technical Memorandum responds to existing policy direction and integrates it with the focus of the inter-county and regional transit plans by identifying four sets of inter-county and regional transit goals and objectives. These four sets of goals and objectives complement, support, and are supported by existing transit-related policies and goals in the region. **Table E.1** presents the goals and objectives developed by the project team for the Inter-County and Regional Transit Plan.

All the major themes related to public transportation identified within this Technical Memorandum are represented by the four goals developed for this plan. These themes, goals, and objectives, along with stakeholder input, help guide identification of feasible near-term transit improvement alternatives.

Table E.1 – Inter-County and Regional Transit Goals and Objectives

Goal 1 – Enhance regional access to activity centers	
Goal 1 Objectives	
A	Maximize transit access to housing, employment, and the number of potential transit passengers
B	Provide fast and reliable travel alternatives to delay caused by highway congestion
C	Align with and promote local and regional economic development
D	Increase the number of options for when and how to travel
Goal 2 – Contribute to a cost-effective and economically viable transit system	
Goal 2 Objectives	
A	Expand use of emerging technologies
B	Minimize public capital and operating costs
C	Maximize flexibility to efficiently adjust the transit investment to accommodate changes in demand
Goal 3 – Effectively integrate into the existing and planned transportation system	
Goal 3 Objectives	
A	Leverage existing public transportation right-of-way and services
B	Expand accessible multimodal options for moving people
C	Improve connectivity between all modes of passenger transportation

Table E.1 – Inter-County and Regional Transit Goals and Objectives (Continued)

Goal 4 – Support safe and healthy communities and sound environmental practices	
Goal 4 Objectives	
A	Avoid or minimize impacts on sensitive natural, historic, and cultural resources
B	Avoid or minimize short- and long-term impacts on property, property access, and on-street parking
C	Maximize pedestrian and bicycle connections to transit
D	Avoid or minimize disproportionately high and adverse impacts on minor and/or low-income communities
E	Minimize traffic impacts

E.2. Public Transportation Improvement Options

Improvement options for inter-county and regional transit in the five-county area were reviewed by the project team for industry best practices, applicability to the region’s existing transit-related policy, and input from stakeholders. **Table E.2** provides a summary of the public transportation options considered by the project team.

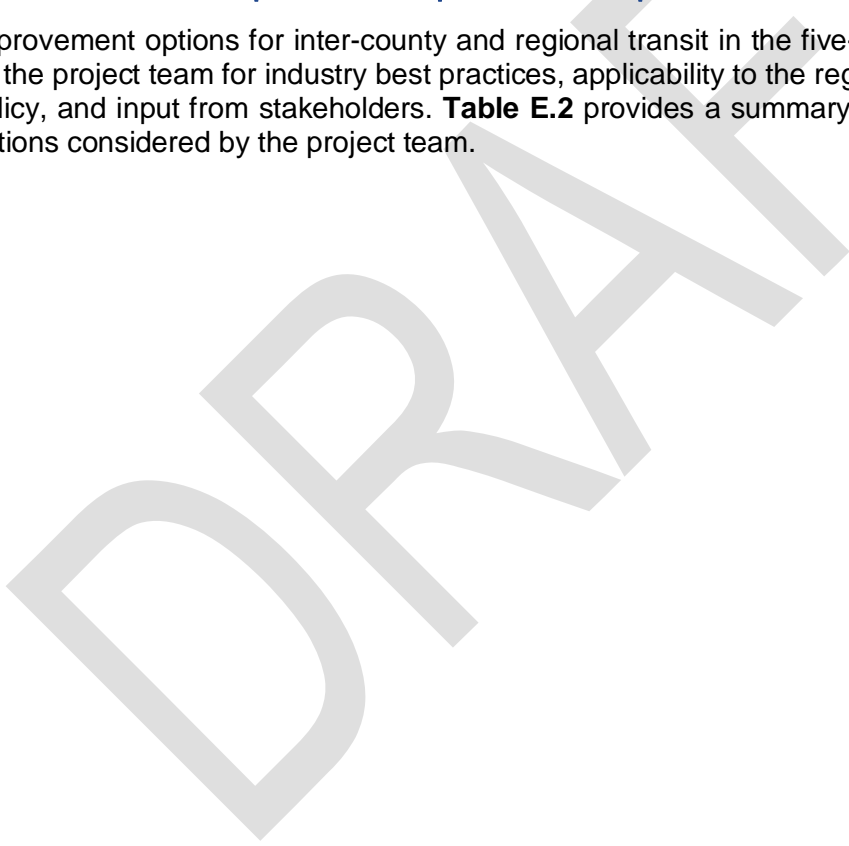




Table E.2 – Summary of Inter-County and Regional Transit Improvement Options

Transit Improvement Type	Transit Improvement
Mobility Service	Carpooling
	Vanpooling
	Shuttle
	Fixed Route Bus
	Bus Rapid Transit (BRT)
	Express Bus
	Span and/or Frequency of Service
Mobility Service, Vehicle Infrastructure, and Propulsion Infrastructure	Light Rail Transit (LRT)
Mobility Service and Vehicle Infrastructure	Commuter Rail
Vehicle Infrastructure	Highway Shoulder Operations
	Dedicated Bus Lane
	High Occupancy Lane
	TRIC Access Points
Customer Infrastructure	Park-and-Ride
	Transit Center
	Station
	Stop
Coordination, Marketing, and Communication	Transportation Management Association (TMA)
	Employer subsidies for transit and ridesharing

E.3. Results of Inter-County Public Transportation Alternatives Evaluation

The transit improvement options were reviewed by the project team for consistency with industry best practice, existing policy, project goals and objectives, and stakeholder input. The following options are recommended for further review and consideration in future phases of this study or as stand-alone studies:

- Carpooling
- Public and private vanpooling
- Shuttle circulation within TRIC with bus stops
- Express bus service
- Transit advantages on I-80 (highway shoulder operations or high occupancy lanes, bi-directional or contraflow)
- Dedicated bus or high occupancy lanes improving access to and within TRIC
- Park-and-rides
- Transit center in TRIC
- Transportation Management Association (TMA)



- Employer subsidies for transit and ridesharing

E.4. Recommended Next Steps

These recommendations are presented as a menu of transit improvement options. Local partners should work together to advance these recommendations into implementable projects, including developing and implementing funding and governance approaches.

Recommended next steps, including typical lead implementing agencies, include completing the follow-up initiatives summarized in **Table E.3**.

Table E.3 – Recommended Next Steps and Typical Lead Organizations

Recommended Next Step	Typical Lead Organization
Organize a 5-County Transit Task Force consisting of economic development, transportation, transit, business, and land use authority (city and county) representatives to maintain and build additional momentum for improving transit and ridesharing in the 5-County area, including the work plan items that follow	Regional community and/or economic development organization with support from transportation planning experts
Develop a 5-County park-and-ride expansion implementation plan leading to design process(es), property acquisition (if needed), and construction (if needed)	Transit authority or land use authority (city and/or county)
Develop a Transportation Management Association Implementation Plan	Regional community and economic development organization with support from transportation planning experts
Perform TRIC transit center and commuter shuttle study and design process(es), property acquisition, and construction.	Transit authority or land use authority (city and/or county)
Perform an Express Bus study and design process.	Transit authority
Perform a travel time reliability study to identify where travel time reliability issues exist on I-80 and access to/from TRIC, and where highway transit advantages would provide significant benefit. Seek legislative approval for bus shoulder operations (if needed).	State department of transportation



TABLE OF CONTENTS

1. INTRODUCTION1

1.1. Project Background and Study Area1

1.1.1. Tahoe Reno Industrial Center (TRIC)1

1.2. Purpose3

1.3. Document Organization3

2. GOALS AND OBJECTIVES FOR INTER-COUNTY PUBLIC TRANSPORTATION.....4

2.1. Plans Reviewed4

2.1.1. Transportation Plans4

2.1.2. Master Plans4

2.2. Summary of Existing Transit-Related Policy Direction.....5

2.3. Inter-County and Regional Transit Goals and Objectives7

3. INTER-COUNTY PUBLIC TRANSPORTATION IMPROVEMENT OPTIONS.....9

3.1. Industry Best Practices for Commuter Transit10

3.1.1. Transit Infrastructure10

3.1.2. Peer Regions16

3.1.3. Transportation Management Association (TMA).....18

3.2. Transit Improvement Options in Adopted Plans19

3.3. Transit Improvement Options from Stakeholder Engagement20

4. SCREENING INTER-COUNTY AND REGIONAL TRANSIT IMPROVEMENT OPTIONS23

4.1. Inter-County and Regional Transit Improvement Options23

4.2. Screening Considerations24

5. RESULTS FROM INTER-COUNTY AND REGIONAL TRANSIT IMPROVEMENT OPTION SCREENING .27

5.1. Menu of Transit Improvement Options27

5.2. Example Application: I-494 Corridor Commission29

5.3. Stakeholder Input.....31

6. SUMMARY, CONCLUSIONS, AND NEXT STEPS.....32

LIST OF APPENDICES

Appendix A Summary of Existing Policy Direction for Inter-County and Regional Transit

Appendix B Summary of Stakeholder Input on Potential Inter-County and Regional Transit Improvement Alternatives

LIST OF FIGURES

Figure 1.1 – Inter-County and Regional Transit Plan Study Area2

Figure 3.1 – Bus on Interstate Shoulder in Minneapolis, MN11

Figure 3.2 – Bus Only Lane in New Jersey12

Figure 3.3 – HOV Lane in Seattle, WA.....12

Figure 3.4 – Kenrick Park-and-Ride in Minneapolis, MN14

Figure 3.5 – Chicago-Lake Transit Center in Minneapolis, MN.....14

Figure 3.6 – METRO A Line Station in Saint Paul, MN.....15

Figure 3.7 – Bus Stop in Saint Paul, MN15

Figure 3.8 – Inter-County and Regional Transit Improvement Stakeholder Comment Categories21

Figure 3.9 – Stakeholder Suggestions for Inter-County and Regional Transit Improvements (Comment Content).....22

Figure 5.1 – Transit, Interchange, and Roadway Projects near the I-494 Corridor30

LIST OF TABLES

Table 2.1 – Transit-Supportive Themes from Five-County Area Plan Review	5
Table 2.2 – Description of Transit-Supportive Themes from Five-County Area Plan Review.....	6
Table 2.3 – Inter-County and Regional Transit Goals and Objectives	7
Table 2.4 – Links Between Existing Policy Transit-Supportive Themes and Inter-County and Regional Transit Plan Goals.....	8
Table 3.1 – Fundamental Transit Service Types	9
Table 3.2 – National Statistics for Fundamental Transit Service Types	10
Table 3.3 – Typical Highway Transit Advantages by Fundamental Transit Service Type	13
Table 3.4 – Typical Boarding Amenities by Fundamental Transit Service Type.....	16
Table 3.5 – Service Type Peer Review	16
Table 3.6 – Inter-County Transit Improvements in Existing Policy Direction	19
Table 4.1 – Universe of Inter-County and Regional Transit Improvement Options	23
Table 4.2 – Results from Inter-County and Regional Transit Improvement Screening.....	24
Table 5.1 – Improvement Considerations.....	27
Table 6.1 – Inter-County and Regional Transit Plan Recommendations and Typical Lead Organizations.....	32

LIST OF ACRONYMS

CAMPO	Carson Area Metropolitan Planning Organization
EDAWN	Economic Development Authority of Western Nevada
MPO	Metropolitan Planning Organization
NDOT	Nevada Department of Transportation
RTC	Regional Transportation Commission of Washoe County
TMA	Transportation Management Association
TMO	Transportation Management Organization
TRIC	Tahoe Reno Industrial Center



1. INTRODUCTION

With a growing economy, increased development activity, and employment growth in Northern Nevada, NDOT is developing a plan to explore transit options to address inter-county commuting needs in Northern Nevada.

1.1. Project Background and Study Area

The development of the Inter-County and Regional Transit Plan specifically focuses on cross-county commuter travel within the five-county region of Washoe, Storey, Carson City, Lyon, and Churchill counties along the following corridors of interest:

- Interstate-80 (I-80) between Reno/Sparks and TRIC
- USA Parkway between TRIC and Silver Springs
- US-50 between Silver Springs and Carson City
- Interstate-580 (I-580) between Carson City and Reno/Sparks

Special consideration is being given to commute trips between Reno/Sparks and TRIC, as I-80 is physically constrained, employment opportunities at TRIC are increasing, and congestion during commute hours occurs frequently. **Figure 1.1** illustrates TRIC with respect to major roadways and the surrounding population centers of Reno/Sparks, Carson City, Silver Springs, Fernley, and Fallon. In addition to this transit plan, NDOT is currently studying traffic along I-80 in this area to identify potential capacity improvements.

1.1.1. Tahoe Reno Industrial Center (TRIC)

TRIC is located within Storey County, Nevada. According to the Economic Development Authority of Western Nevada (EDAWN) and the TRIC website (tahoereno.com), the industrial center has grown over the past 20 years to employ approximately 10,000 workers in manufacturing, distribution services, data storage, and warehousing. TRIC is a 107,000-acre industrial park that contains approximately 11 million square feet of industrial space housing over 125 companies. For the past two decades businesses have been relocating to TRIC and the number of employees at TRIC is anticipated to grow to 25,000 within the next ten years. Per EDAWN, with an estimated 75 percent of TRIC employees living north of I-80 in Reno/Sparks, growth at TRIC is expected to continue to add to the congestion along I-80 during commute hours.



Inter-County and Regional **TRANSIT PLAN**

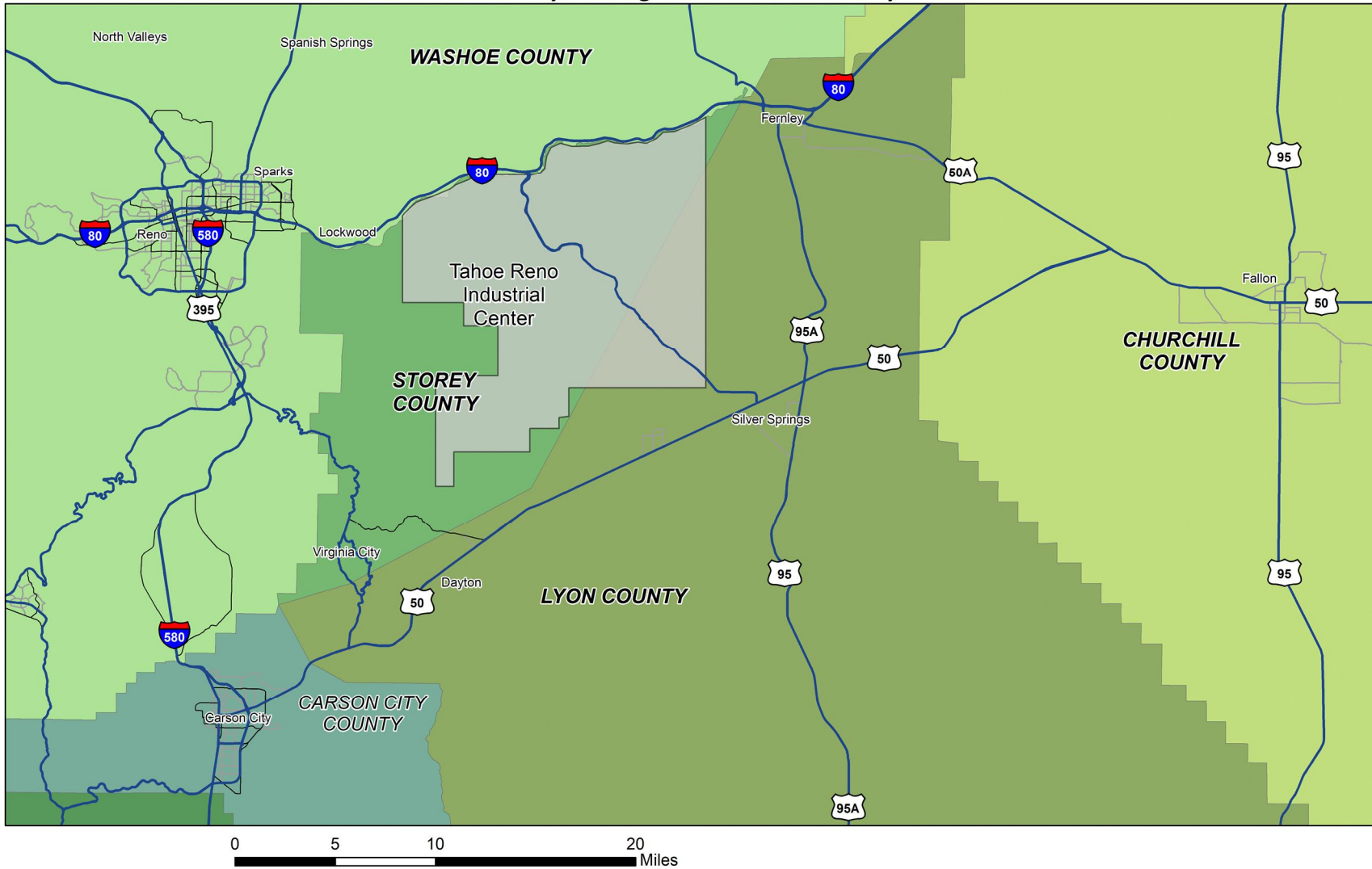


Figure 1.1 – Inter-County and Regional Transit Plan Study Area



1.2. Purpose

The purpose of Technical Memorandum #3 is to present the goals and objectives of an inter-county transit system. Technical Memorandum #3 also presents the alternatives, evaluation criteria, and results of the evaluation of conceptual alternatives. Stakeholder input relevant to this evaluation process is also included.

This study will not present goals or alternatives for intra-county transit needs because they are addressed through county and Metropolitan Planning Organization (MPO) transit planning processes. In addition, NDOT is addressing human services transit planning in another separate statewide planning study. This inter-county transit plan will complement the MPO, county, and statewide transit planning processes. The goal of the study is to identify options to address the needs of inter-county commuter transit needs in the five-county Northern Nevada Region with a specific focus on commute trips to and from TRIC.

1.3. Document Organization

Technical Memorandum #3 is organized into the following sections:

- **Section 1** contains an introduction to the project and purpose of the Technical Memorandum.
- **Section 2** provides a review of existing transit policy as it relates to the goals and objectives of an inter-county transit system.
- **Section 3** provides an overview of best practices and service types and options available in the transit industry, as well as transit options identified in stakeholder engagement.
- **Section 4** presents a menu of inter-county public transportation options for TRIC and the five-county area for consideration, based on the analysis and stakeholder input to-date.
- **Section 5** includes concepts and conceptual capital and operating costs based on existing services in the area for the recommendations presented in Section 5.
- **Section 6** provides a summary, conclusions and next steps.
- **Appendices** include an existing policy review, a summary of the stakeholder input on potential transit improvement options, and supporting documentation.

2. GOALS AND OBJECTIVES FOR INTER-COUNTY PUBLIC TRANSPORTATION

To guide the process of identifying and implementing solutions to address public transportation needs in the five-county area, a set of goals and objectives were developed in coordination with NDOT. These goals and objectives were informed by a review of relevant, existing public transportation policies.

The sections that follow provide a summary of findings from the review of existing policies and plans, and present the inter-county and regional transit goals and objectives. A more detailed compilation of the relevant material reviewed is provided in **Appendix A**.

2.1. Plans Reviewed

The project team reviewed the following plans to identify existing, local transit-related policy direction.

2.1.1. Transportation Plans

- One Nevada Transportation Plan, Nevada Department of Transportation, adopted November 2018. The statewide transportation plan is a comprehensive transportation plan that provides strategic direction and actions to meet Nevada's current and future transportation needs.
- 2040 Regional Transportation Plan, Regional Transportation Commission (RTC) Washoe, adopted May 2017, amended August 2018. The region's metropolitan transportation plan defines the long-range policies and priorities for Washoe County's future transportation system.
- 2040 Regional Transportation Plan, Carson Area Metropolitan Planning Organization (CAMPO), adopted in August 2016, amended February 2018. The region's metropolitan transportation plan defines the long-range transportation system policies and priorities for the area including Carson City, northern Douglas County, and western Lyon County.

2.1.2. Master Plans

The project team reviewed the following county master plans. These plans describe the vision and goals for how and where the region's counties will grow.

- Carson City Master Plan, adopted in April 2006
- 2015 Churchill County Master Plan, adopted in December 2015
- Lyon County Master Plan, adopted in December 2010
- Storey County Master Plan, adopted in July 2016

In addition to these plans, the project team noted that RTC Washoe adopted its 2018-2022 Short Range Transit Plan in March 2017 and CAMPO is developing its short-range transit plan as of May 2019. These short-range plans serve as the five-year element of the 2040 regional transportation plans and communicate the five-year operating and capital plan for public transportation within each system's service area.



2.2. Summary of Existing Transit-Related Policy Direction

All plans reviewed support transit in some way. Some plans include specific transit improvements (see listing in **Section 3.2**) while others support transit more generally by including transit-supportive concepts and themes. **Table 2.1** identifies the transit-supportive themes drawn from the plan review, and **Table 2.2** describes the themes as they apply to transit.

Table 2.1 – Transit-Supportive Themes from Five-County Area Plan Review

Transit Theme	Plan and Goal							
	One Nevada	2040 RTP Washoe	2040 RTP Carson	Carson Master Plan	Churchill Master Plan	Lyon Master Plan	Storey Master Plan	Washoe Master Plan
Safe	Enhance safety	Improve safety	Increase safety				Enhance safety	
	Preserve infrastructure		Maintain sustainable system					
	Optimize mobility – safe, efficient, reliable		Increase mobility and reliability for all					
Coordinated with economic development	Transform economies through innovation		Maintain and develop multi-modal system that supports economic vitality				Support development at McCarran and TRIC	
Sustainable	Sustainability – natural resources and costs	Promote healthy communities and sustainability					Orderly, efficient, safe, and sustainable transportation	Reduce dependence on automobiles
Connected	Connect communities	Focus on regional connectivity						
		Integrate land use and transportation						
		Manage existing systems efficiently						

Table 2.1 – Transit-Supportive Themes from Five-County Area Plan Review (Continued)

Transit Theme	Plan and Goal							
	One Nevada	2040 RTP Washoe	2040 RTP Carson	Carson Master Plan	Churchill Master Plan	Lyon Master Plan	Storey Master Plan	Washoe Master Plan
Integrated multimodal system		Integrate all types of transportation	Provide an integrated transportation system	Establish integrated multimodal system	Explore and evaluate alternatives modes	Cohesive transportation system		Transportation systems are seamless and efficient
		Promote equity and environmental justice						
Fiscally feasible		Invest strategically				Cost-effective, public transportation within and between population centers	Develop financial plan	

Table 2.2 – Description of Transit-Supportive Themes from Five-County Area Plan Review

Theme	Description
Safe	Public transit is one of the overall safest means of travel in the United States. Transit uses professional drivers to operate vehicles while moving large numbers of people. Transit also provides higher-risk drivers (for example, people with medical conditions preventing them from driving or people who have been drinking) an alternative to driving themselves.
Coordinated with Economic Development	Transit can support economic development by helping to concentrate groups of people and business clusters, by providing visible and ongoing investment in a community, by attracting talent and residents that value transportation options, and by reducing transportation costs for customers and allowing them to invest in other ways while participating in the economy.
Sustainable	Transit can reduce single-occupant vehicle trips and the resulting demand for highway capacity, demand for parking, and greenhouse gas and particulate emissions.
Connected	Transit encourages inter-county movements and collaboration. It can connect people across communities, employees to jobs, and people to other life-enriching opportunities in regional activity centers.
Integrated Multimodal System	Effective transit systems connect with other modes and networks of transportation to provide customers with convenient access between land uses.
Fiscally Feasible	Transit options range greatly in capital and operational costs; a well-designed transit service and system productively meets transit demands while fitting within local capital and operating budgets.

2.3. Inter-County and Regional Transit Goals and Objectives

This transit plan responds to existing policy direction and integrates it with the focus of the inter-county and regional transit plans by identifying four sets of inter-county and regional transit goals and objectives. These four sets of goals and objectives complement, support, and are supported by existing transit-related policies and goals in the region.

Table 2.3 – Inter-County and Regional Transit Goals and Objectives

Goal 1 – Enhance regional access to activity centers	
Goal 1 Objectives	
A	Maximize transit access to housing, employment, and the number of potential transit passengers
B	Provide fast and reliable travel alternatives to delay caused by highway congestion
C	Align with and promote local and regional economic development
D	Increase the number of options for when and how to travel
Goal 2 – Contribute to a cost-effective and economically viable transit system	
Goal 2 Objectives	
A	Expand use of emerging technologies
B	Minimize public capital and operating costs
C	Maximize flexibility to efficiently adjust the transit investment to accommodate changes in demand
Goal 3 – Effectively integrate into the existing and planned transportation system	
Goal 3 Objectives	
A	Leverage existing public transportation right-of-way and services
B	Expand accessible multimodal options for moving people
C	Improve connectivity between all modes of passenger transportation
Goal 4 – Support safe and healthy communities and sound environmental practices	
Goal 4 Objectives	
A	Avoid or minimize impacts on sensitive natural, historic, and cultural resources
B	Avoid or minimize short- and long-term impacts on property, property access, and on-street parking
C	Maximize pedestrian and bicycle connections to transit
D	Avoid or minimize disproportionately high and adverse impacts on minor and/or low-income communities
E	Minimize traffic impacts

All the major themes related to public transportation identified in **Section 3.2.1.** are represented by the four goals developed for this plan, as shown in **Table 2.4.** These themes, goals, and objectives, along with stakeholder input, help guide identification of feasible transit improvement alternatives.

Table 2.4 – Links Between Existing Policy Transit-Supportive Themes and Inter-County and Regional Transit Plan Goals

Goal	Safe	Reliable	Coordinated	Sustainable	Connected	Integrated	Feasible
Enhance reliable access to regional activity centers		✓	✓		✓	✓	
Contribute to a cost-effective and economically viable transit system				✓			✓
Effectively integrate into the existing and planned transportation system					✓	✓	
Support safe and healthy communities and sound environmental practices	✓			✓			

DRAFT



3. INTER-COUNTY PUBLIC TRANSPORTATION IMPROVEMENT OPTIONS

The universe of potential public transportation services is large. Public transportation services vary according to what types of vehicles are utilized in the service, how frequently the service runs, when service is available, and what types and lengths of trips are intended to be served.

Table 3.1 provides an overview of the fundamental service types in the transit industry. Each of these service types addresses a different demand and/or land use context, and many urban areas provide more than one of the service types.

Table 3.1 – Fundamental Transit Service Types

Transit Service Type	Vehicle	Frequency & Span of Service	Trips Best Served	Typical System Length
CARPOOLING Ridesharing using a privately owned or leased, personal vehicle.	Personal automobile	On-Demand & All-Day	Long, door-to-door trips	Varies
VANPOOLING Ridesharing using an agency owned or leased and branded vehicle.	Branded or marked vehicle	On-Demand & All-Day	Longer trips to consistent destinations	Varies
FLEX SHUTTLE SERVICE Shuttle service to a set geographic area, sometimes providing door-to-door service.	Branded or marked van or cutaway bus	On-Demand & All-Day	Varies	10-20 miles
FIXED ROUTE BUS Bus service in mixed traffic on a designated route with frequent, low amenity stops.	Transit bus	Varies & All-Day	Local, short trips	5-15 miles
BRT Bus service in mixed traffic or exclusive bus lanes, on a designated alignment, with infrequent, high amenity stations.	Specialized & branded transit bus	7-15 minutes & All-Day	Local, short-medium trips	5-15 miles
LRT Train service in exclusive right-of-way, on a designated alignment, with infrequent, high amenity stations	Light rail train car	7-15 minutes & All-Day	Local, short-medium trips	10-20 miles
EXPRESS BUS Bus service during the peak hour(s) operating in mixed traffic or in exclusive bus lanes on high-speed roadways, serving commuters.	Coach bus	Varies & Rush Hour	Long, peak hour commutes	10-20 miles
COMMUTER RAIL Train service during the peak hour(s) operating in exclusive right-of-way serving commuters.	Heavy rail train car	Varies & Rush Hour	Long, peak hour commutes	20-50 miles



3.1. Industry Best Practices for Commuter Transit

The national average trip length, passengers per hour (a measure of the productivity of the service) and estimated capital and operating costs per fundamental service type is listed in **Table 3.2**. While LRT and Commuter Rail have the highest national average passengers per hour, these two service types also have the highest capital and operating costs.

Table 3.2 – National Statistics for Fundamental Transit Service Types

Service Type	Average Trip Length (miles) ¹	Average Passengers Per Hour ²	Capital Costs ³	Operating Costs ⁴
Carpooling	N/A	N/A	\$0	\$200K/year
Vanpool	35.8	2.4	varies - depends on subsidy	\$750K/year
Flex Service Shuttle	9.2	0.2	\$2M/mile	\$4/revenue mile
Fixed Route Bus	3.8	31.6 ⁵	\$400K-800K/mile	\$10/revenue mile
BRT	2.8	31.6 ⁵	\$3-30M/mile	\$10/revenue mile
LRT	5.1	71.4	\$100-125M/mile	\$18/revenue mile
Express Bus	25.4	31.6 ⁵	\$10-150M/new Park-and-Ride	\$10/revenue mile
Commuter Rail	24	45.9	\$250M/mile	\$17/revenue mile

3.1.1. Transit Infrastructure

Intentional transit infrastructure can make transit more efficient, but transit infrastructure can be costly and time-consuming to plan, construct, and maintain. The various transit service types have different purposes. Some of the service types are intended to accommodate local, short trips in urban areas that require access to a diversity of locations at varying times of the day; these service types require a different operating plan and base infrastructure than the service types that are intended for longer trips between specific regional destinations or trip generators. For discussion in this Technical Memorandum, transit infrastructure is discussed in two categories:

- Highway Transit Advantages: Infrastructure that enables the transit vehicle to bypass congestion.
- Boarding Amenities: Infrastructure that provides access to the transit service.

3.1.1.1. Highway Transit Advantages

Some of the service types intended for longer, targeted trips (such as commuter trips) will utilize freeways or exclusive right of way to travel long distances relatively fast. Highway Transit

¹ APTA. 2017 Public Transportation Fact Book, page 9

² APTA. 2017 Public Transportation Fact Book, Adapted from Table 1

³ Recent Kimley-Horn projects

⁴ APTA. 2017 Public Transportation Fact Book, page 24

⁵ Includes all bus modes, including Fixed Route, BRT, and Express Bus

Advantages is the name given to the infrastructure that enables the transit vehicle to bypass congestion.

There is a spectrum of highway transit advantages that have been applied nationally.

- **Highway Shoulder Operations** – the transit vehicle operates on the highway shoulder. This is one of the more cost-effective highway transit advantages because the only certain capital cost is signage indicating that buses may use the shoulder. However, some non-interstate shoulders may not be suitable for transit operations and would therefore require additional widening or other improvements to enable safe operations on the shoulder. Another implementation challenge is that through-moving transit vehicles will need to negotiate traffic at entrance and exit ramps in both interstate and non-interstate conditions.



Figure 3.1 – Bus on Interstate Shoulder in Minneapolis, MN

- **Dedicated Bus Lane** – the transit vehicle has a designated lane for operations. This highway transit advantage has significant capital cost and implementation implications because right-of-way would need to be made available and designed for transit-specific use. This additional capital cost can result in more reliable travel times for transit (as compared to mixed-traffic or shoulder operations); however, depending on the location of the dedicated bus lane relative to general purpose traffic and the transit service type using the lane, new boarding platforms and/or transit specific access ramps may be required for operation to truly realize the travel time savings. Dedicated bus lanes designs can be bi-directional (i.e., one lane in each direction) or contraflow (i.e., one lane that serves one direction of bus traffic at a time and can change direction at different times of the day).



Figure 3.2 – Bus Only Lane in New Jersey

- High Occupancy Lanes** – transit vehicles and high-occupancy vehicles (i.e. carpools and vanpools) use designated lane for operations. This highway transit advantage can result in significant travel time savings for transit and for other high-occupancy vehicles. Similar to the exclusive bus lane, right-of-way would need to be made available and access points designed for both transit and high-occupancy vehicle traffic. This form of highway transit advantage would require additional enforcement and/or infrastructure to ensure that general purpose vehicles using the lane are indeed high-occupancy (or permitted for another reason, e.g. tolling). High occupancy lane designs can be bi-directional (i.e., one lane in each direction) or contraflow (i.e., one lane that serves one direction of HOV traffic at a time and can change direction during different times of the day).



Figure 3.3 – HOV Lane in Seattle, WA



Highway transit advantages are best suited for the transit service types that serve mobility-based trips, or commuter trips. **Table 3.3** details which highway transit advantage types are typically used for each transit service type.

Table 3.3 – Typical Highway Transit Advantages by Fundamental Transit Service Type

Transit Service Type	Highway Shoulder Operations	Exclusive Bus Lane	High Occupancy Lane
Carpooling	No	No	Yes
Vanpool	Yes	Yes	Yes
Flex Service Shuttle	Yes	Yes	Yes
Fixed Route Bus	Yes	Yes	Yes
BRT	Yes	Yes	Yes
LRT	No	No	No
Express Bus	Yes	Yes	Yes
Commuter Rail	No	No	No

3.1.1.2. Boarding Amenities

The transit vehicle needs to be accessed by passengers, and how passengers access the transit service varies by transit service type. Boarding amenities is the name given to the infrastructure that enables a passenger to access the transit service.

There is a spectrum of boarding amenities that have been applied nationally.

- **Park-and-ride:** passenger vehicles drive to a designated parking area, park their vehicle, and use transit to get to a regional destination or employment concentration. Park-and-rides vary in scale and types of services sharing the parking capacity. Some park-and-rides include above ground structured parking, while some are simple surface parking lots. All park-and-rides need to include circulation for transit vehicles, personal automobiles, pedestrians, boarding and alighting areas, and parking capacity.



Figure 3.4 – Kenrick Park-and-Ride in Minneapolis, MN

- **Transit center:** while a station typically only serves one or two local routes, a transit center is the compilation of several stations and stops and many times includes several transit service types. Transit centers can have buildings with public seating, restaurants, and bathrooms to accommodate passengers with long transfers. Sometimes transit centers have parking availability (and could therefore act as a park-and-ride). Transit centers are typically where intercity transit transfers occur.

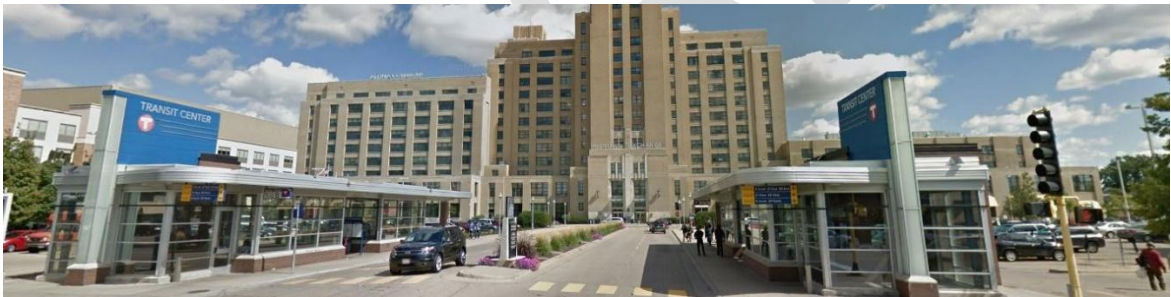


Image Source: Google Maps

Figure 3.5 – Chicago-Lake Transit Center in Minneapolis, MN

- **Station:** an enhanced boarding facility that requires more space than a traditional bus stop or platform for amenities, such as ticket vending machines, vehicle arrival and schedule information, benches, etc. The necessary space depends on the vehicles and transit service types using the station. An LRT station, for example, accommodates several train cars and could be several hundred feet long, while a station that only serves buses may not require as much space.



Figure 3.6 – METRO A Line Station in Saint Paul, MN

- **Stop:** the foundational transit boarding amenity that can be as simple as a curb adjacent pole and sign indicating the route(s) serving the stop. Many bus stops also include a small bus shelter and additional boulevard or sidewalk space to create a more comfortable waiting environment. Typically curb space is reserved, but not modified, for bus stops.



Figure 3.7 – Bus Stop in Saint Paul, MN

Boarding amenities are necessary for all transit service types, as detailed in **Table 3.4**. **Table 3.4** lists the infrastructure associated with getting passengers on and off the vehicle.

Table 3.4 – Typical Boarding Amenities by Fundamental Transit Service Type

Service Type	Park-and-ride	Transit Center	Station	Stop
Carpooling	Yes , may be informal	No	No	No
Vanpool	Yes	Possible, not typical	Possible, not typical	Possible, not typical
Flex Service Shuttle	Possible, not typical	Possible, not typical	Possible, not typical	Possible, not typical
Fixed Route Bus	No	Yes	No	Yes
BRT	Possible, not Typical	Yes	Yes	No
LRT	Possible, not Typical	Yes	Yes	No
Express Bus	Yes	Yes , as a part of the park-and-ride	Yes , as a part of the park-and-ride	Possible, not typical
Commuter Rail	Yes	Yes	Yes	No

3.1.2. Peer Regions

Not all fundamental services types are applicable for every setting or region. While only the largest, most dense urban areas have heavy rail systems (such as the “L” in Chicago or the subway in New York City), many communities (including rural and suburban areas) have flex service or fixed route bus. **Table 3.5** describes the typical metropolitan areas and travel conditions associated with each of the fundamental service types.

Table 3.5 – Service Type Peer Review








Service Type	Typical Metro Area	Smallest Metro Area/Exception	Example System
Carpooling	Implemented formally and informally in all community types		
Vanpool	Large metros like Los Angeles, Seattle, or Houston use it to supplement other transit services	Rural communities use as primary transit service	 <p>Image: Ben Franklin Transit Vanpool (Kennewick, WA)</p>
Flex Service Shuttle	Large metros like New York, Chicago, and Los Angeles use as last-mile and suburban transit solutions	Rural communities use as primary transit service	 <p>Image: CART cutaway bus</p>

Table 3.5 – Service Type Peer Review (Continued)

Service Type	Typical Metro Area	Smallest Metro Area/Exception	Example System
Fixed Route Bus	Most fundamental transit type: accounts for 50% of transit trips nationally	Used in many different contexts; frequency of service tailored to community size and travel needs	 <p>Image: Bus stop (Minneapolis)</p>
BRT	Common in larger metro areas like Los Angeles, Cleveland, and Kansas City	Varieties of BRT are common in 'college towns' where large numbers of people rely on transit (Eugene, OR; Fort Collins, CO)	 <p>Image: Silver Line BRT (Grand Rapids)</p>
LRT	Most common in metro areas with several million people like Los Angeles, Boston, San Francisco, Portland	Also in metro areas with at least 1M people: Buffalo, NY (1M people) Virginia Beach (1.7M people) St. Louis (2.8 M people)	 <p>Image: UTA Green Line LRT (Salt Lake City)</p>
Express Bus	Larger cities use to supplement all-day service to a concentrated employment destination	Medium and small cities, and suburban or ex-urban communities use to access regional hubs	 <p>Image: Gwinnet County coach bus (Georgia)</p>
Commuter Rail	In largest metro areas: New York, Washington DC, Chicago, Boston, San Francisco	Anchorage, AK Albuquerque, NM Minneapolis, MN	 <p>Image: BART commuter rail (San Francisco)</p>



3.1.3. Transportation Management Association (TMA)

Transportation Management Associations (TMAs, also called TMOs, for Transportation Management Organizations) are legally constituted groups, often led by the private sector or a nonprofit organization, that facilitate the movement of people within an area. There are hundreds of TMAs in the United States, each of which is unique in structure, funding, and programming. Some TMAs focus on resolving congestion in a specific corridor, some focus on multi-modal or non-motorized improvements, some focus on funding.

Common services of a TMA include:

- First/last mile shuttling
- Rideshare matching and vanpooling
- Commuter assistance and incentives, or commuter trip reduction strategies
- Travel and parking demand management
- Marketing and promotion

According to a MassCommute report (prepared by the Eastern Research Group in 2015), TMA annual budgets range from less than \$50,000 to more than \$5,000,000, and more than half of TMAs reported an annual budget between \$100,000 and \$499,999. The most common funding streams for TMAs include membership dues, governmental grants, service fees or agreements, and taxing districts.

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3.2. Transit Improvement Options in Adopted Plans

Table 3.6 summarizes transit improvements identified in existing policy direction, their source, and indicates the number of times they are mentioned by a check mark.

Table 3.6 – Inter-County Transit Improvements in Existing Policy Direction

Transit Service Type	Plan							
	One Nevada	2040 RTP Washoe	2040 RTP Carson	Carson Master Plan	Churchill Master Plan	Lyon Master Plan	Storey Master Plan	Washoe Master Plan
General	✓✓		✓	✓			✓✓	✓
Carpooling								
Vanpooling		✓					✓	
Employer Shuttles								✓
Bus						✓	✓✓	
LRT							✓✓	
Express Bus		✓						✓
Commuter Rail		✓			✓			
Park-and-Ride Facilities		✓			✓			✓
Transit Lanes								✓
Carpool Lanes								✓
Employer-Subsidized Bus Passes/Market Incentives for Transit								✓✓✓✓
Employer Incentives for Carpooling								✓
Transportation Demand Management Programs and Policies								✓

In addition to these plans, RTC Washoe adopted its 2018-2022 Short Range Transit Plan in March 2017 and CAMPO is developing its short-range transit plan as of May 2019. These short-range plans serve as the five-year element of the 2040 regional transportation plans and communicate the five-year operating and capital plan for public transportation within each system's service area. The RTC Washoe 2018-2022 SRTP does not identify potential inter-county transit improvements.



3.3. Transit Improvement Options from Stakeholder Engagement

To supplement industry best practices and existing policy direction, the project team reviewed stakeholder input collected through the 2018 TRIC Employer Interviews (available in Technical Memorandum #2 Appendix B), 2018 TRIC Employee Survey (available in Technical Memorandum #2 Appendix C), and Inter-County and Regional Transit Plan Stakeholder Meeting Minutes. The text that follows summarizes inter-county transit improvements suggested by stakeholders. More detailed analysis of the stakeholder input is available in Appendix B.

- **Provide an alternative route to I-80** between Reno and TRIC to allow people using ridesharing services to avoid congestion caused by crashes and weather.
 - The railway parallel to I-80 was noted several times as a possibility for a new road and/or **rail-based transit** option along the I-80 corridor.
 - Additional lanes on I-80 were requested. Most comments were regarding general purpose traffic, but some were regarding **transit-specific lanes or carpool lanes**. Trains were frequently cited in conjunction with the idea that “we need more lanes” (i.e. capacity) and “alternative routes” are necessary.
- **Improve access into and out of Tesla** to address the gridlock that people perceive before and after shifts. USA Parkway was cited numerous times as the slowest part of the drive. People recommended more access points, revising access point control (e.g., revise from signal control to interchange/flyover), and provide more variable shift times.
- **Increase span and frequency of the existing shuttle and bus services** to help TRIC employees give up the freedom of driving alone. Increasing the frequency of the shuttle or bus services in conjunction with more variable shift times was recommended several times.
- In general, **having more options** was the overall theme of the comments. More options were sometimes referred to as:
 - more driving routes to take than just I-80.
 - more access points to TRIC from I-80.
 - more modes to choose from (in the case of weather or schedule).
 - more schedule options/frequency of existing transit services.
 - more transparent/real-time carpool options through a rideshare app, etc.

Quantitatively, the interviews, survey, and stakeholder input showed the following:

- **Figure 3.8** shows that over half of the comments were about increased modal options and expanding services or routes (Category: Mode and Facilities Selection).

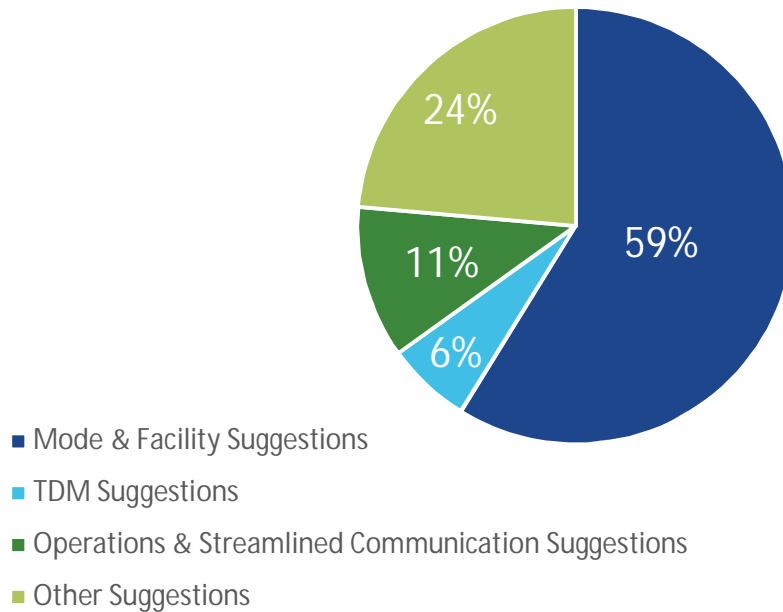


Figure 3.8 – Inter-County and Regional Transit Improvement Stakeholder Comment Categories

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- **Figure 3.9** shows stakeholders suggested a variety of ways to improve the available options with comments split between modes, adding lanes, etc. The single more common comment was regarding access into the TRIC site specifically, with traffic operations and gridlock into and out of TRIC mentioned 94 times.

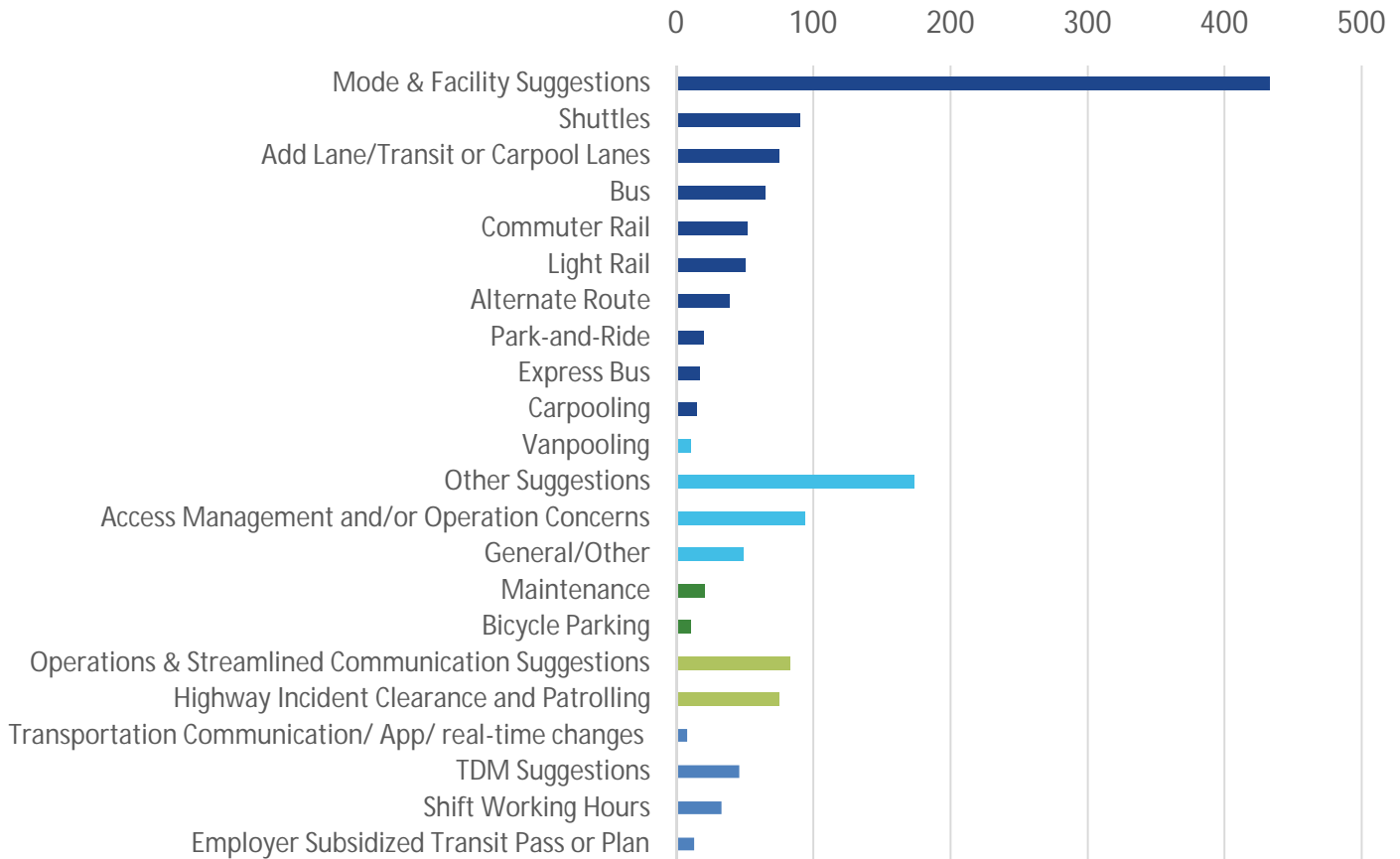


Figure 3.9 – Stakeholder Suggestions for Inter-County and Regional Transit Improvements (Comment Content)

4. SCREENING INTER-COUNTY AND REGIONAL TRANSIT IMPROVEMENT OPTIONS

The following sections summarize inter-county and regional transit improvement options as well as screening considerations and recommendations for options to be removed from further screening.

4.1. Inter-County and Regional Transit Improvement Options

Through the industry best practices, review of existing transit-related policy, and input from stakeholders, the project team has identified the following near-term improvement options for inter-county and regional transit in the five-county area are summarized in **Table 4.1**.

Table 4.1 – Universe of Inter-County and Regional Transit Improvement Options

Transit Improvement Type	Transit Improvement	Typical Implementation Leader
Mobility Service	Carpooling	Individual
Mobility Service	Vanpooling	Individual in coordination with public or private sector host agency
Mobility Service	Shuttle	Public or private sector host agency
Mobility Service	Fixed Route Bus	Local government
Mobility Service	Bus Rapid Transit (BRT)	Local government
Mobility Service, Vehicle Infrastructure, and Propulsion Infrastructure	Light Rail Transit (LRT)	Local or regional government
Mobility Service	Express Bus	Local or regional government
Mobility Service and Vehicle Infrastructure	Commuter Rail	Local or regional government
Mobility Service	Span and/or Frequency of Service	Public or private sector host agency
Vehicle Infrastructure	Highway Shoulder Operations	Roadway authority
Vehicle Infrastructure	Dedicated Bus Lane	Roadway authority
Vehicle Infrastructure	High Occupancy Lane	Roadway authority
Vehicle Infrastructure	TRIC Access Points	Transportation authority in coordination with land owners
Customer Infrastructure	Park-and-Ride	Local, regional, or state government in coordination with land owners
Customer Infrastructure	Transit Center	Local or regional government in coordination with land owners
Customer Infrastructure	Station	Local or regional government in coordination with land owners
Customer Infrastructure	Stop	Local government in coordination with land owners

Table 4.1 – Universe of Inter-County and Regional Transit Improvement Options (Continued)

Transit Improvement Type	Transit Improvement	Typical Implementation Leader
Coordination, Marketing, and Communication	Transportation Management Association (TMA)	TMA supported by local, regional, and state government, and business community
Marketing and Communications	Employer subsidies for transit and ridesharing	Public- or private-sector employers

4.2. Screening Considerations

Table 4.2 summarizes results for each potential near-term inter-county and regional transit improvement option for the five-county area based on evaluation for consistency with industry best practice, existing policy, project goals and objectives, and stakeholder input. The project team recommends removing several transit service and infrastructure improvement options from further consideration. These are noted in **Table 4.2**.

Table 4.2 – Results from Inter-County and Regional Transit Improvement Screening

Transit Improvement Type	Transit Improvement	Screening Considerations
Mobility Service	Carpooling	<ul style="list-style-type: none"> ▪ Consistent with industry best practice, existing policy, project goals and objectives, and stakeholder input
Mobility Service	Vanpooling	<ul style="list-style-type: none"> ▪ Consistent with industry best practice, existing policy, project goals and objectives, and stakeholder input
Mobility Service	Shuttle	<ul style="list-style-type: none"> ▪ Consistent with industry best practice, existing policy, project goals and objectives, and stakeholder input
Mobility Service	Fixed Route Bus **Recommendation: Remove from further consideration as a near- term improvement	<ul style="list-style-type: none"> ▪ Consistent with existing policy and stakeholder input ▪ Not consistent with industry best practice and project goals and objectives. Considerations: <ul style="list-style-type: none"> ○ Locations and levels of existing and anticipated future population, employment, and activity center densities (Goal 1) ○ Operating costs (Goal 2)
Mobility Service	Bus Rapid Transit (BRT) **Recommendation: Remove from further consideration as a near- term improvement	<ul style="list-style-type: none"> ▪ Consistent with existing policy and stakeholder input ▪ Not consistent with industry best practice and project goals and objectives. Considerations: <ul style="list-style-type: none"> ○ Locations and levels of existing and anticipated future population, employment, and activity center densities (Goal 1) ○ Capital costs (Goal 2) ○ Operating costs (Goal 2)



Table 4.2 – Results from Inter-County and Regional Transit Improvement Screening (Continued)

Transit Improvement Type	Transit Improvement	Screening Considerations
Mobility Service, Vehicle Infrastructure, and Propulsion Infrastructure	Light Rail Transit (LRT) **Recommendation: Remove from further consideration as a near-term improvement	<ul style="list-style-type: none"> ▪ Consistent with existing policy and stakeholder input ▪ Not consistent with industry best practice and project goals and objectives. Considerations: <ul style="list-style-type: none"> ○ Locations and levels of existing and anticipated future population, employment, and activity center densities (Goal 1) ○ Capital costs (Goal 2) ○ Operating costs (Goal 2)
Mobility Service	Express Bus	<ul style="list-style-type: none"> ▪ Consistent with industry best practice, existing policy, project goals and objectives, and stakeholder input
Mobility Service and Vehicle Infrastructure	Commuter Rail **Recommendation: Remove from further consideration as a near-term improvement	<ul style="list-style-type: none"> ▪ Consistent with existing policy and stakeholder input ▪ Not consistent with industry best practice and project goals and objectives. Considerations: <ul style="list-style-type: none"> ○ Locations and levels of existing and anticipated future population, employment, and activity center densities (Goal 1) ○ Capital costs (Goal 2) ○ Operating costs (Goal 2)
Mobility Service	Span and/or Frequency of Service	<ul style="list-style-type: none"> ▪ Consistent with industry best practice, existing policy, project goals and objectives, and stakeholder input
Vehicle Infrastructure	Highway Shoulder Operations	<ul style="list-style-type: none"> ▪ Consistent with industry best practice, existing policy, project goals and objectives, and stakeholder input
Vehicle Infrastructure	Dedicated Bus Lane	<ul style="list-style-type: none"> ▪ Consistent with industry best practice, existing policy, project goals and objectives, and stakeholder input
Vehicle Infrastructure	High Occupancy Lane	<ul style="list-style-type: none"> ▪ Consistent with industry best practice, existing policy, project goals and objectives, and stakeholder input
Vehicle Infrastructure	TRIC Access Points	<ul style="list-style-type: none"> ▪ Consistent with industry best practice, existing policy, and stakeholder input ▪ Explore consistency with project goals and objectives. Considerations: <ul style="list-style-type: none"> ○ Capital cost (Goal 2) ○ Integration with existing transportation system (Goal 3) ○ Impacts on private property (Goal 4)



Table 4.2 – Results from Inter-County and Regional Transit Improvement Screening (Continued)

Transit Improvement Type	Transit Improvement	Screening Considerations
Customer Infrastructure	Park-and-Ride	<ul style="list-style-type: none"> ▪ Consistent with industry best practice, existing policy, project goals and objectives, and stakeholder input
Customer Infrastructure	Transit Center	<ul style="list-style-type: none"> ▪ Consistent with industry best practice, existing policy, project goals and objectives, and stakeholder input
Customer Infrastructure	Station **Recommendation: Remove from further consideration as a near- term improvement	<ul style="list-style-type: none"> ▪ Consistent with existing policy ▪ Not consistent with industry best practice, project goals and objectives, and stakeholder input. Considerations: <ul style="list-style-type: none"> ○ Locations and levels of existing and anticipated future population, employment, and activity center densities (Goal 1) ○ Capital costs (Goal 2) ○ Operating costs (Goal 2) ○ Integration with existing and planned transportation system (Goal 3) ○ Impacts on private property (Goal 4)
Customer Infrastructure	Stop	<ul style="list-style-type: none"> ▪ Consistent with industry best practice, existing policy, project goals and objectives, and stakeholder input
Coordination, Marketing, and Communication	Transportation Management Association (TMA)	<ul style="list-style-type: none"> ▪ Consistent with industry best practice, existing policy, project goals and objectives, and stakeholder input
Marketing and Communications	Employer subsidies for transit and ridesharing	<ul style="list-style-type: none"> ▪ Consistent with industry best practice, existing policy, project goals and objectives, and stakeholder input

5. RESULTS FROM INTER-COUNTY AND REGIONAL TRANSIT IMPROVEMENT OPTION SCREENING

The following sections include transit improvement considerations along with an example application of a TMA along the I-494 Corridor in the Twin Cities, Minnesota.

5.1. Menu of Transit Improvement Options

The transit options presented in **Table 5.1** address the immediate and anticipated near-term future inter-county and regional transit needs identified through this planning process. Some options function in tandem with others, independently of each other and could be adopted as stand-alone (a-la-carte) solutions, or phased improvements over time. All options directly improve access to inter-county and regional transit in the five-county area.

Table 5.1 – Improvement Considerations

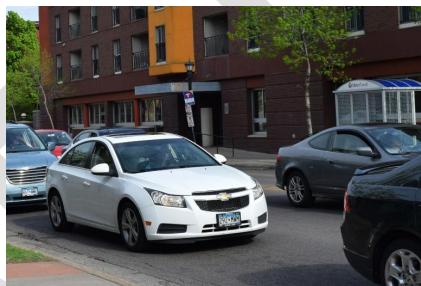


Consideration	Characteristics/Support	Example
Carpooling	<ul style="list-style-type: none"> ▪ Effective and already working for many TRIC employees ▪ Currently the only option for getting to work for some TRIC employees (based on 2018 TRIC employee survey) 	 <p>Image: Private car Source: Kimley-Horn</p>
Public and Private Vanpooling	<ul style="list-style-type: none"> ▪ Effective and already working for many TRIC employees ▪ Currently the only option for getting to work for some TRIC employees (based on 2018 TRIC employee survey) ▪ Could continue to expand span of service 	 <p>Image: RTC VANPOOL (Reno, NV) Source: RTC Washoe</p>
Shuttle circulation within TRIC with bus stops	<ul style="list-style-type: none"> ▪ “First-” and “last-mile” connections ▪ Flex service or microtransit service have potential to serve this need well <ul style="list-style-type: none"> ○ Could serve locations by request ○ Microtransit software platforms provide on-demand dispatching ○ Could scale operations based on demand ▪ Could serve public and private stop locations throughout TRIC 	 <p>Image: CART cutaway bus Source: Churchill Area Regional Transportation</p>

Table 5.1 – Improvement Considerations (Continued)







Consideration	Characteristics/Support	Example
Express Bus Service	<ul style="list-style-type: none"> ▪ Could provide a connection to communities with housing surrounding TRIC ▪ Could connect Reno, TRIC, and Fernley ▪ Supplement to My Ride to Work <ul style="list-style-type: none"> ○ would offer comparable service for workers at all TRIC employers ▪ Supported by the peaking of shift times at TRIC 	 <p>Image: RTC REGIONAL CONNECTOR Source: RTC Washoe</p>
Transit Advantages on I-80 (Highway Shoulder Operations or High Occupancy Lanes)	<ul style="list-style-type: none"> ▪ Perception that congestion is becoming worse and crashes are becoming more frequent along I-80 ▪ Land use constraints along I-80 limit expansion options for consideration ▪ Could provide an incentive for more TRIC employees to start utilizing ridesharing 	 <p>Image: Bus traveling on Highway Shoulder Source: Washington State DOT</p>
Dedicated Bus or High Occupancy Lanes improving access to and within TRIC	<ul style="list-style-type: none"> ▪ Perception that access into and out of TRIC is congested and some identify it as the most time-consuming part of their work commute ▪ Could be added at a new or modified TRIC access point to I-80 ▪ Could be added within TRIC to give transit or ridesharing advantages at congested locations on the internal road network 	 <p>Image: Image: Bus Only Lane (New Jersey) Source: Planetizen.com</p>

Table 5.1 – Improvement Considerations (Continued)

Consideration	Characteristics/Support	Example
Park-and-Rides	<ul style="list-style-type: none"> Additional park-and-ride facilities could provide capacity for additional vanpooling and future bus service Some larger employers are already leasing park-and-ride lots for their employees to gather for service to TRIC My Ride to Work highlighted that the lack of park-and-ride facilities and parking resources is limiting growth of ridesharing 	 <p>Image: Mt. Rose Highway Park-and-Ride Facility Source: RTC Washoe</p>
Transit Center in TRIC	<ul style="list-style-type: none"> TRIC is a large area and traveling between all employers is travel time prohibitive A transit hub could provide a central location for coordination amongst VANPOOLS or express bus service with first- and last-mile connections This improvement has received support from TRIC employers Could be coordinated with Emerald Lake Town center or similar initiative 	 <p>Image: Transit Center Source: Kimley-Horn</p>
Transportation Management Association	<ul style="list-style-type: none"> Could coordinate amongst all employers within TRIC Could actively promote transportation options for commuting to TRIC, including coordination with private ridesharing applications (My Ride to Work, Scoop, etc.) Idea is supported by TRIC employers 	 <p>Image: RTC SMART TRIPS Web Banner Source: RTC Washoe</p>
Employer subsidies for transit and ridesharing	<ul style="list-style-type: none"> Effective and already working for many TRIC employees Could work with TRIC employers to expand subsidy program to additional employers 	<p>BENEFITS TO THE EMPLOYER</p> <p>Today's business environment is competitive. Employee transportation to and from work is a growing concern recognized by many companies. To attract and retain qualified employees, employers large and small are implementing RTC SMART TRIPS programs.</p> <p>Source: RTC SMART TRIPS Employer Brochure Source: RTC Washoe</p>

5.2. Example Application: I-494 Corridor Commission

Interstate 494 is a suburban commuter freeway on the south side of the Twin Cities metropolitan area that provides regional access to more than 300,000 corporate and retail/industrial jobs, the Minneapolis-Saint Paul International Airport, and the Mall of America. Interstate 494 has some of the heaviest traffic volumes in the Twin Cities region outside of downtown Minneapolis and

experiences traffic congestion daily. The central part of the I-494 corridor has entirely built-up land uses with auto-oriented land use patterns including big box retail, corporate offices with free employee parking, auto dealerships, and manufacturing plants; subsequently the interstate has limited right-of-way for general purpose traffic lane expansion. Transportation efficiency in this corridor is complicated, and the complication is furthered by continual land use changes and many inter-connected long-term transportation projects. **Figure 5.1** shows the transitway, interchange, and roadway projects surrounding the I-494 Corridor in the Twin Cities.

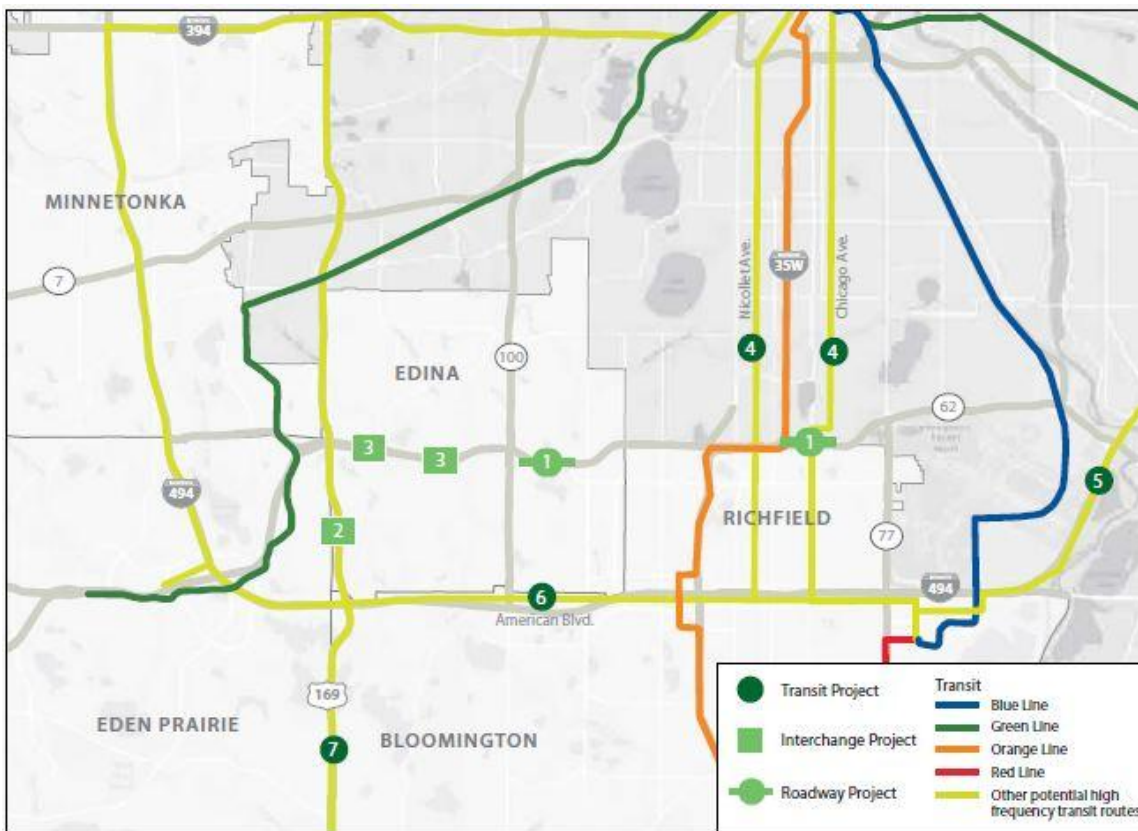


Figure 5.1 – Transit, Interchange, and Roadway Projects near the I-494 Corridor

Interchange improvements, access revisions, transit enhancements, transportation demand management programs, and increasing non-motorized travel are seen as some of the most feasible ways to add capacity and/or ease traffic congestion in this vital economic corridor. The I-494 Corridor Commission was formed in 1986 to address concerns about increasing congestion along the I-494 Corridor, and to implement and coordinate this inter-related system of improvements. Specifically, “the Commission has been a leader in helping commuters find more efficient means of getting to work and school, in working with businesses and residents to ease the pain of road construction projects, and in encouraging economic growth and regional prosperity through improved transportation options along I-494.” The board of the I-494 Corridor Commission includes representatives from each of the five corridor-adjacent cities, the Minnesota Department of Transportation, the Metropolitan Council (regional planning agency, including federal MPO), and the private business community. By including broad representation, the Corridor Commission can make decisions on multi-jurisdictional transportation goals and policies. The support of the I-494 Corridor Commission has been critical for large-scale regional

transportation improvements through the corridor, such as implementing the METRO Orange Line (bus rapid transit service), several interchange improvements, and many roadway improvement projects.

The outreach arm of the I-494 Corridor Commission is called I-494 Commuter Services. Commuter Services is one of five Transportation Management Organizations (TMOs) in the Twin Cities metropolitan region (TMO is another name for a TMA). Commuter Services staff work closely with employers and managers of multi-tenant office buildings to promote alternatives to the drive-alone commute. Some day-to-day activities that I-494 Commuter Services coordinates include:

- Finding a carpool partner - individuals with a similar work trip who are interested in sharing the ride can contact Commuter Services to be paired together
- Understanding transit information - personalized trip plans, pocket schedules for buses or trains, and a How To Ride Guide are all available to residents of member communities
- Bicycling Commuting Resources - maps showing recommended on-street bike routes and off-road bike trails, tips for biking to work, and Minnesota bike laws are all distributed to interested businesses and persons

Commuter Services also hosts annual events to raise awareness of commute options among employees working in the I-494 corridor. Together, the Corridor Commission and the Commuter Services are working toward both near-term and long-term transportation solutions for the vital I-494 Corridor.

5.3. Stakeholder Input

Project stakeholders reviewed the draft recommendations at their May 29, 2019 meeting and offered the following comments:

- Support for the recommendations.
- Request to include acknowledgement that high occupancy lanes and bus lanes can be bi-directional (i.e., one lane in each direction) or contraflow (i.e., one lane that serves one direction of bus/HOV traffic at a time and can change direction at different times of the day).
- Request for continued coordination of land use and transportation decisions in the 5-County area.
- Request for identification of lead implementing organizations for recommended next steps.



6. SUMMARY, CONCLUSIONS, AND NEXT STEPS

These recommendations are presented as a menu of near-term transit improvement options. Local partners should work together to advance these recommendations into implementable projects, including developing and implementing funding and governance approaches.

Recommended next steps, including typical lead implementing agencies, include completing the follow-up initiatives summarized in **Table 6.1**.

Table 6.1 – Inter-County and Regional Transit Plan Recommendations and Typical Lead Organizations

Recommended Next Step	Typical Lead Organization
Organize a 5-County Transit Task Force consisting of economic development, transportation, transit, business, and land use authority (city and county) representatives to maintain and build additional momentum for improving transit and ridesharing in the 5-County area, including the work plan items that follow	Regional community and/or economic development organization with support from transportation planning authority
Develop a 5-County park-and-ride expansion implementation plan leading to design process(es), property acquisition (if needed), and construction (if needed)	Transit authority in cooperation with land use authority (city and/or county) and potential property owners
Develop a Transportation Management Association Implementation Plan	Regional community and economic development organization with support from transportation planning authority
Perform TRIC transit center and commuter shuttle study and design process(es), property acquisition, and construction.	Transit authority in coordination with land use authority (city and/or county) and potential property owners
Perform an Express Bus study and design process.	Transit authority in coordination with land use authority (city and/or county) and businesses
Perform a travel time reliability study to identify where travel time reliability issues exist on I-80 and access to/from TRIC, and where highway transit advantages would provide significant benefit. Seek legislative approval for bus shoulder operations (if needed).	Roadway authority in coordination with transit providers



Inter-County and Regional

TRANSIT PLAN

APPENDIX A

SUMMARY OF EXISTING POLICY DIRECTION FOR INTER-COUNTY AND REGIONAL TRANSIT

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To guide the process of identifying and implementing solutions to address public transportation needs in the five-county area, the planning team reviewed relevant, existing public transportation policy. The sections that follow provide a compilation of findings from the review of existing policy and plans. The following documents were reviewed by the project team as part of this Technical Memorandum.

Transportation Plans

- One Nevada Transportation Plan, Nevada Department of Transportation, adopted November 2018. The statewide transportation plan is a comprehensive transportation plan that provides strategic direction and actions to meet Nevada's current and future transportation needs.
- 2040 Regional Transportation Plan, RTC Washoe, adopted in May 2017, amended August 2018. The region's metropolitan transportation plan defines the long-range policies and priorities for Washoe County's future transportation system.
- 2040 Regional Transportation Plan, CAMPO, adopted in August 2016, amended February 2018. The region's metropolitan transportation plan defines the long-range transportation system policies and priorities for the area including Carson City, northern Douglas County, and western Lyon County.

Master Plans

The following county master plans were reviewed by the project team. These plans describe the vision and goals for how and where the region's counties will grow.

- Carson City Master Plan, adopted in April 2006
- 2015 Churchill County Master Plan, adopted in December 2015
- Lyon County Master Plan, adopted in December 2010
- Storey County Master Plan, adopted in July 2016

In addition to these plans, RTC Washoe adopted its 2018-2022 Short Range Transit Plan in March 2017 and CAMPO is developing its short-range transit plan as of May 2019. These short-range plans serve as the five-year element of the 2040 regional transportation plans and communicate the five-year operating and capital plan for public transportation within each system's service area. The RTC Washoe 2018-2022 SRTP does not identify potential inter-county transit improvements.

ONE NEVADA TRANSPORTATION PLAN, NEVADA DEPARTMENT OF TRANSPORTATION, NOVEMBER 2018

The text that follows is a compilation of relevant text from the document and is not intended to be comprehensive. As of May 2019, the full plan is available online at: <https://www.nevadadot.com/home/showdocument?id=16388>. *The planning team added emphasis to highlight more specific transit improvements.*

Chapter 2 Nevada's Transportation Vision and Goals

Vision: Nevada's transportation vision is for a safe and connected multimodal transportation system that links Nevadans and supports the state's economic vitality.

Goals and Guiding Principles



- Goal: Enhance safety by building, maintaining, and operating the safest transportation system possible.
- Goal: Preserve infrastructure to support economic vitality, visitor experience, and travel safety.
- Goal: Optimize mobility to deliver people and goods more safely, efficiently, and reliably.
 - Guiding principle: Minimize growth in future delay through targeted investments and strategies for addressing bottlenecks, incidents, special events, and other sources of recurring and non-recurring delay.
 - *Guiding principle: Expand multimodal options for moving people, including walking, bicycling, and transit.*
 - *Guiding principle: Improve connectivity between all modes of Nevada's transportation system, including highways, rail, transit, and airports.*
 - Guiding principle: Expand use of emerging technologies to improve the management and operation of the transportation system, including considering the implications of autonomous, connected, and alternatively fueled vehicles when designing and operating the transportation system.
- Goal: Transform economies by supporting an innovative transportation framework.
 - Guiding principle: Strengthen partnerships between NDOT and state and regional economic development agencies.
 - Guiding principle: Promote state and regional economic development goals by aligning transportation and economic development goals, strategies, and investments.
 - Guiding principle: Continue to position Nevada as a leader in emerging transportation technologies.
 - Guiding principle: Provide reliable and accessible transportation options to get people to work and customers and supplies to businesses.
- Goal: Foster sustainability by minimizing impacts to our natural resources and reducing long-term maintenance costs.
 - Guiding principle: Enhance the performance of the transportation system while protecting and enhancing the natural environment.
 - Guiding principle: Secure sustainable and reliable funding to support the preservation, management, and expansion of Nevada's transportation system.
 - Guiding principle: Promote fiscal responsibility and financial sustainability of state funded investments.
- Goal: Connect communities to local resources and amenities, and collaborate with partners to best serve our communities
 - Guiding principle: Coordinate transportation services across the public and private sectors to deliver programs and services effectively and responsively.
 - Guiding principle: Ensure integrated and seamless multimodal transportation choices locally and regionally.
 - Guiding principle: Strengthen and modernize transportation systems through investments in new technologies.
 - Guiding principle: Provide accessibility to all users of the transportation system.
 - Guiding principle: Foster inclusive, long-term relationships with regional and local planning partners to ensure transportation is coordinated with regional and community visions.

2040 REGIONAL TRANSPORTATION PLAN, RTC WASHOE, MAY 2017, AMENDED AUGUST 2018

The text that follows is a compilation of relevant text from the document and is not intended to be comprehensive. As of May 2019, the full plan is available online at: <https://www.rtcwashoe.com/mpo-projects/rtp/>. *The planning team added emphasis to highlight more specific transit improvements.*

Guiding Principles

- Safe and healthy communities
- Economic development and diversification
- Sustainability
- Increased travel choices

Goals

- Improve safety
- Integrate land use and economic development
- Promote healthy communities and sustainability
- Manage existing systems efficiently
- Integrate all types of transportation
- Focus on regional connectivity
- Promote equity and environmental justice
- Invest strategically

Unfunded vision includes

- *More VANPOOLS to Tahoe Regional Industrial Center and Carson City*
- *Commuter transit service from Reno and Sparks to Tahoe Regional Industrial Center (express bus or commuter rail) and Fernley*
- *Plan mentions that RTC is exploring park-and-ride facilities beyond what NDOT currently provides*

Performance Measures

- Preventive maintenance of transit rolling stock and facilities
- Maintain industry standard vehicle life cycle
- Transit passengers per service hour – performance target: RTC RIDE system-wide average of 30 passengers per service hour
- Travel time reliability
- Transit system on-time performance
- Transit fleet mix – performance target: 100% on cost-effective alternate fuels such as electric by 2035
- Alternative mode share in the transit service area – performance target: 15% by 2040



2040 REGIONAL TRANSPORTATION PLAN, CARSON AREA METROPOLITAN PLANNING ORGANIZATION, AUGUST 2016, AMENDED FEBRUARY 2018

The text that follows is a compilation of relevant text from the document and is not intended to be comprehensive. As of May 2019, the full plan is available online at: <https://carson.org/home/showdocument?id=65348>. *The project team added emphasis to highlight more specific transit improvements.*

Goals and Objectives

- Goal: Increase the safety of the transportation system for all users
- Goal: Maintain a sustainable regional transportation system
- Goal: Increase the mobility and reliability of the transportation system for all users
 - Objective: Increase the number of ADA compliant transportation facilities
 - Objective: Improve *transit system* efficiencies and *accessibilities*
 - Performance Measure: The number of passengers per revenue hour/mile/day for Jump Around Carson and RTC Intercity
 - Performance Measure: The cost per revenue hour/mile/trip for Jump Around Carson and RTC Intercity
 - Performance Measure: The number of passengers per day for Jump Around Carson and RTC Intercity
 - Performance Measure: Monthly ridership for Jump Around Carson (fixed route and paratransit) and RTC Intercity
 - Performance Measure: Farebox recovery rate for Jump Around Carson and RTC Intercity
 - Performance Measure: On-time performance (departure from a time point between zero and five minutes is considered on time) for Jump Around Carson's fixed route and RTC Intercity
 - Objective: Maintain or improve travel times
- Goal: Maintain and develop a multi-modal transportation system that supports economic vitality
 - Objective: Foster quality of life in the CAMPO boundary by increasing transportation choices and access to transportation services for all users
- Goal: Provide an integrated transportation system
 - Objective: Accommodate additional modes of transportation on existing transportation facilities

Unfunded Vision Includes

- No expansion of existing transit services noted - NDOT notes CAMPO Transit Plan scope of work for Carson City/county and urbanized portions of Lyon and Douglas County that are in the CAMPO boundary.

CARSON CITY MASTER PLAN, APRIL 2006

The text that follows is a compilation of relevant text from the document and is not intended to be comprehensive. As of May 2019, the full plan is available online at: <https://carson.org/government/departments-a-f/community-development/planning-division/master-plan>. *The project team added emphasis to highlight more specific transit improvements.*

Guiding Principal 11: A Safe, Efficient, Multi-Modal Transportation System – Carson City will maintain a safe transportation system that facilitates efficient travel both within and through the community using a variety of motorized and non-motorized modes.

Goal 11.1 – Establish an Integrated Multi-Modal Transportation System

11.1a – Plan Consistency

“... Continue to coordinate with the Carson Area Metropolitan Planning Organization (CAMPO), Nevada Department of Transportation, Regional Transportation Commission, adjacent counties, and other partners on transportation issues.”

11.2b – Regional Coordination – “Maintain an active presence in regional and state-level transportation planning activities (such as the completion of the Carson City Freeway) to identify opportunities for joint planning/construction efforts, enhanced levels of service, and to monitor the impacts of potential projects on the community. ...”

11.3c – Plan Overlap/Implementation

Seek opportunities for coordination in the implementation of the City’s Transportation, Transit, and Unified Pathways Plans. Actively encourage ridership of the City’s *transit system*.

2015 CHURCHILL COUNTY MASTER PLAN, DECEMBER 2015

The text that follows is a compilation of relevant text from the document and is not intended to be comprehensive. As of May 2019, the full plan is available online at: <http://www.churchillcounty.org/DocumentCenter/View/8884>. *The project team added emphasis to highlight more specific transit improvements.*

GOAL T 1: Continue to explore and evaluate alternative modes of transportation.

- Policy T 1.1 Continue to explore the possibility of *commuter rail service* to Reno with a *commuter parking area* at Trento Lane.

LYON COUNTY MASTER PLAN, DECEMBER 2010

The text that follows is a compilation of relevant text from the document and is not intended to be comprehensive. As of May 2019, the full plan is available online at: <https://www.lyon-county.org/773/Comprehensive-Master-Plan>. *The project team added emphasis to highlight more specific transit improvements.*

Goal TR 1: Cohesive Transportation System – Lyon County’s transportation system will provide transportation options where residents and goods can move safely and efficiently, including during peak travel times.



Policy TH 1.3: Alternative Modes – Lyon County will encourage and enable the use of transportation alternatives to cars, such as bicycling, walking, or *riding a bus*

Goal TR 3: Public Transportation – Lyon County will pursue cost-effective, public transportation for travel within and between population centers.

Policy TR 3.1: Identify Public Transportation Options - Lyon County will identify potential public transportation options that may be feasible in the context of our population demographics and distribution.

STOREY COUNTY MASTER PLAN, JULY 2016

The text that follows is a compilation of relevant text from the document and is not intended to be comprehensive. As of May 2019, the full plan is available online at: <https://www.storeycounty.org/292/Master-Plan>. *The project team added emphasis to highlight more specific transit improvements.*

Goal 1 Direct and manage development that provides for orderly, efficient, safe, and sustainable transportation

- Objective 1 To facilitate pedestrian-friendly communities
 - Policy 4 By separating walkways, pathways, and access roads from collector, arterial, and other high-speed traffic route
- Objective 2 To facilitate existing and future automobile-alternative transportation systems
 - Policy 1 By reserving necessary property, right-of-way, and easements in new planned unit developments to support existing and future pedestrian, bicycle, *bus, rail*, and other transportation systems
 - Policy 3 By aligning right-of-ways and easements for *transit systems* with existing *transit system* right-of-ways, easements, and planned corridors
 - Policy 4 By connecting bicycle ways in Mustang, McCarran, and Painted Rock to the Tahoe Pyramid Bikeway alignment, and by coordinating with the Lockwood community in its desires for the bikeway alignment in the Lockwood area
 - Policy 5 By collaborating with the Union Pacific Railroad, Washoe County Regional Transportation Commission, Tahoe-Reno Industrial Center, and other agencies and entities to assess and consider the feasibility of *light-rail commuter systems* utilizing new and existing infrastructure along the Truckee River and Interstate 80 corridor

Goal 3 Enhance public safety

- Policy 3 By requiring area land developers to develop necessary transportation infrastructure to meet the needs of new developments

Goal 4 Develop a partial financial plan for transportation infrastructure, growth, and maintenance

- Objective 1 To reconcile countywide policies with expected revenue and expenses in order to maintain and potentially expand and enhance infrastructure as needed

Goal 7 Support the continued orderly development at McCarran and the Tahoe Reno Industrial Center

- Objective 1 To actively monitor traffic and congestion levels in and around the Tahoe-Reno Industrial Center



- Policy 2 By continuing to promote and coordinate with regional entities to enhance *vanpool and other shared commuter systems* at McCarran
- Policy 4 By coordinating with the Washoe County Regional Transportation Commission; Lyon and Washoe Counties; the City of Sparks; and the Nevada Department of Transportation to model future transportation issues, and develop proactive strategies to mitigate traffic impacts in and around McCarran
- Policy 5 By encouraging the Tahoe-Reno Industrial Center to examine pedestrian infrastructure especially when models and observations confirm demand

WASHOE COUNTY MASTER PLAN, ADOPTED SEPTEMBER 2011

The text that follows is a compilation of relevant text from the document and is not intended to be comprehensive. As of May 2019, the full plan is available online at: https://www.washoecounty.us/csd/planning_and_development/master_plan.php

Inter-County Transit-related Goals and Policies

- Goal 29: Transportation systems are seamless and efficient
 - Policy LUT.29.2 Direct public transportation to the core of an area or to areas with more intense development
 - Policy LUT.29.4 Minimize travel times for daily commuters within suburban areas
 - Policy LUT.29.7 The *addition of new lanes for transit* will be promoted without eliminating existing lanes for auto traffic
 - Policy LUT.29.9 Employ Transportation System Management (TSM) strategies such as minor widening, improved channelization, improved signage, traffic signals, and other low-cost mitigation measures whenever warranted and possible. *Encourage carpool lanes* and work times to be staggered to allow fewer individuals from utilizing the road network during peak commute times.
- Goal 30: Transportation systems reduce dependence on automobile
 - Policy LUT.30.1 Promote and create incentives for alternative modes of transportation before expanding the roadway network through the construction of new roads.
 - All commercial development proposals that generate over 750 average daily trips should offer transportation services such as:
 - *i. Park-and-ride programs;*
 - *ii. Employer-sponsored shuttles;*
 - *iii. Employer-subsidized bus passes;*
 - *iv. Employer incentives for carpooling;*
 - v. Requiring employees to pay for parking, or
 - vi. Similar transportation demand management programs or policies.
 - Encourage existing employers to develop and implement *transportation demand management programs and policies.*
 - Require development of area public transportation services in the unincorporated portions of Washoe County to the maximum extent that is financially and operationally feasible.
 - Explore and encourage options to increase pedestrian facilities.



- Promote the development of *market incentives for transit* and vehicle reduction opportunities.
- Explore the creation of *express buses during peak hours* from unincorporated Washoe County employment centers.
- Policy LUT.30.2 Encourage the reduction of the proportion of trips made in single occupancy vehicles.
 - Promote transit-oriented development in suburban areas.
 - Transit-oriented development is a mixed-use community within walking distance of a transit stop that mixes residential, retail, office, open space, and public uses in a way that makes it convenient to travel on foot or by public transportation instead of by car.
 - Explore and encourage options to increase and connect bikeways.
 - Explore and encourage options to increase and connect pedestrian facilities.
 - Require the *development of market incentives for transit* and vehicle reduction opportunities.
 - Explore connectivity between bicycle lanes and pedestrian paths with *transit*.
- Policy LUT.30.3 *Maximize connectivity of all transportation modes* to enhance internal movement within and between individual neighborhoods, including appropriate connections to the regional circulation system.

DRAFT



Inter-County and Regional

TRANSIT PLAN

APPENDIX B

SUMMARY OF STAKEHOLDER INPUT ON POTENTIAL INTER-COUNTY AND REGIONAL TRANSIT IMPROVEMENT ALTERNATIVES

DRAFT

		Walmart	AUECC	Intellisource	PPG	Zulily	Tesla	Total
MODE/Facility Options	Alternate Route	1			1	1	1	4
	Carpooling	1		1				2
	Vanpooling	1		1	1			3
	Shuttles	1		1		1	1	4
	Bus							
	Light Rail	1			1			2
	Express Bus							
	Commuter Rail							
	Park-and-Ride					1		1
	Add Lane/Transit or Carpool Lanes	1					1	2
TDM OPTIONS	TDM Policies (Shift structure [to disperse] or to gather [for transit])						1	1
	TDM Policies (Employer Subsidized Transit Pass/Market Incentives)							
	TDM Policies (Others)							
OPERATIONS & Communications	HIGHWAY INCIDENT CLEARANCE		1					1
	Transportation Communication/App/Board between employees to coordinate real-time changes			1			1	2
OTHER	General/Other							

Comment	Alternate Route	Carpooling	Vanpooling	Shuttles	Bus	Light Rail	Express Bus	Commuter Rail	Park-and-Ride	Add Lane/Transit or Carpool Lanes	Shift Working Hours	Employer Subsidized Transit Pass or Plan	Highway Incident Clearance and Patrolling	Transportation Communication/ App/ real-time changes	General/Other	Maintenance	Access Management and/or Operation Concerns	Bicycle Parking
The question about what would change my commuting habits is a bit over-constrained. I'm not so much interested in a faster option, so much as a more flexible option. My hours fluctuate day-to-day, so fixed commuting options that only depart at set times, or regular ride shares that require a regular schedule don't work for me. The question doesn't allow me to provide a true answer.											1				1			
Alternative routes for whenever there is an accident													1					
Need another on/off ramp to the industrial park and maybe convince the state to make I-80 a six lane highway from Fernley to Reno to relieve some congestion that the increase of trucks and commuters have put on the highway. We need to be looking to the future so maybe increasing to an eight lane hwy would be more advisable as more companies come into industrial center the congestion grow exponentially.										1							1	
I would have been more likely to have tried the shuttle bus if I didn't have to download an app to find out when and where they leave as I don't have any more room on my phone.				1														
At traffic light by the Gas Station on USA Parkway. When turning onto USA Parkway from Electric Ave, the solid line goes way too far, which makes people who obey the law passed the line of cars already waiting to get on the freeway, most people will not let you in... It causes people to try and jump in, causing them to plow into the back of the car they are trying to get behind. I only notice this situation on the peek in and out times. If the line was shortened (broken sooner) them maybe people would not feel as if they can't let anyone in... I'm one of those people who leaves plenty of room between me, and the next car to allow others to get in safely. But am scared that I will be the next one hit, daily. Hope this makes sense... not sure of how else you could handle it. :) Wish I could just tell everyone, be kind to one another.... smile have a Happy Thanksgiving!!													1				1	
expand the general area (high ways, roads etc.)										1								
Transportation between the TRIC area and Reno is only going to get worse. Road rage is common and that makes the commute dangerous. This is a golden opportunity to be a pioneer in transportation by investing in Loop and HyperLoop. I view expanding other options instead of investing in one that is revolutionary as acceptance that people will die in preventable road crashes. Please consider this option seriously.						1		1					1					
Your almost going to need a 4 lane route into industrial complex other than I80 in 5 or 6 years. Because of increased development.										1								
highway staff should control car moving around accidents. they sit at the incident and cause the back up. they do not assist during accidents.													1					
more ways to exit with less congestion																	1	
I feel safer in the bus provided by Tesla, My company has record that I made every attempt to get to work, I save Money and get a little down time on the bus.					1							1						
I believe that to reduce congestion on USA Parkway overpass, there needs to be 3 lanes going northbound - 1 lane to I-80 eastbound and 2 to I-80 westbound. Having only a merge lane is causing constant back-ups.										1							1	
shuttle parking closer to pick-up and a later time..more road to get into the job site to congested when everyone is trying to get to work at the same time.				1							1							
I am very grateful for Tesla provided shuttles. Because our work shift is so long, however, having an extra hour each way on commute makes having a family very difficult. Being away 14 hours a day is too much. Please allow for housing options in the TRIC, light rail, and for Tesla to be able to install its own dedicated highway exit like at DisneyWorld. The traffic problems all revolve around out of date county roads, some of which are not even 2 lanes at times. To handle current volume at least 4 lanes are needed in all bottleneck roads/turns--AND we're only at 30% hiring capacity. Please take drastic measures about traffic here; commute time is the worst part of this already difficult job schedule. If it gets worse my family and I may have to relocate elsewhere. A lot of my coworkers feel the same. THANK YOU for your efforts like this survey to change the very outdated roads between Reno and the gigafactory! Another helpful option would be to double the shuttle options and stagger them, so half the workforce arrives at 5:30 am± and the other half arrives at 6:30am&pm. I understand this issue is much bigger than Tesla, and that there are multiple high ranking employers setting up in TRIC. But as the most established and highest volume traffic producer, there really needs to be creative and drastic solutions, like a dedicated highway exit straight to the Tesla gates/parking, with added lanes on all access roads, and added lanes on I-80. Thanks again				1						1	1	1					1	
traffic and congestion is so backed up during the times of shift changes, accidents are a regular occurrence, to get out the exit traffic is usually backed up all the way to the intersection. there needs to be a better flow of exiting traffic off of USA pkwy at specific times of the day like from 5:45-6:30 am/pm. the amount of time just waiting for the light to change at the exit ramp and people to start moving takes at least an extra 15 minutes to my commute home. and god forbid there is an accident, youll be there for at least 30 mins before u can get on the 80W.													1				1	
They need a transit/train that can avoid traffic. Its BAD.						1		1		1								
I want scoop or something similar to start offering night shift routes that way I could carpool with others.		1																
there are bus routes to my job but not close to me					1													
We need to get to work earlier. Too many late shuttles				1														
need shift offsets to help congestion											1							
One of the biggest time limiters for the commute to Tesla Gigafactory is the Security Gate congestion. It would be highly efficient for Tesla to add a third lane at the Security Gate to help reduce the congestion. There is nothing short term that we can do about the one way road to the Gigafactory (I 80), especially when there are accidents. Upsetting, but unavoidable.																	1	
The roads get very congested due to everyone arriving and leaving work at the same time. If there were staggered shifts it would help some of the flow in and out.											1							

Comment	Alternate Route	Carpooling	Vanpooling	Shuttles	Bus	Light Rail	Express Bus	Commuter Rail	Park-and-Ride	Add Lane/Transit or Carpool Lanes	Shift Working Hours	Employer Subsidized Transit Pass or Plan	Highway Incident Clearance and Patrolling	Transportation Communication/ App/ real-time changes	General/Other	Maintenance	Access Management and/or Operation Concerns	Bicycle Parking
The traffic is not a problem yet but it will be when Tesla finishes the building.....perhaps now is the time to start looking into estimated time of completion and who or what other companies are coming to the Tahoe Industrial Center in the near future.											1							
Traffic into the factory is already bad, sometimes have to wait for 40 minutes. This is not good specially when arriving too work late when all preparation too arrive early was in-vain.											1						1	
I think a light rail system with park n ride options would be amazing for TRIC.						1			1									
Having a shuttle bus with frequent pick up times would work best because I usually do not know exactly what time I will leave work. This is why I drive myself - to provide flexibility on when I can leave.				1		1												
The traffic in the parking lot of the Tesla Giggafactory 1 is beyond horrible. I think if there was another entrance/exit that went to I80 it would make traffic so much better.																	1	
Please build a bike path connecting Sparks to the TRIC.																		1
Ultimately, a rail-based transport system would be best and would be the most likely form of public transport that I would use. A line that runs from Reno/Sparks to Fernley would be great to see and would reduce strain on the I-80 corridor.						1		1										
We have much traffic during shift change time.											1							
When are you going to build a monorail system? Could the Sparks bus stop be at Scheels or somewhere with closer parking?						1		1	1									
The intersection and on ramp from US parkway to 80 west bound needs to change to handle the traffic volume.																	1	
Hate working here.															1			
More lanes in the exit towards u.s.a parkway										1								
I would prefer public transportation if 1) had more central/secure parking locations, 2) modes were more environmentally friendly, and 3) modes were quicker and more efficient than car travel. Solutions: 1. More frequent bus transportation throughout the day/night from ride-share/public transportation secure parking lots in Reno/Sparks. This would allow me to drive from my home to the pick up location. 2. Environmentally conscious modes of transportation. Examples: Electric buses and rail transport from the Industrial park to Reno/Sparks. 3. Rail transport is more efficient than automotive travel and can scale easier than interstate traffic flow. I think there is value in have a rail transport system as it would relieve traffic/accidents along I-80 and create job growing infrastructure that can expand with the Northern Nevada industries.					1	1		1	1	1								
We need additional routes to get to and from work. Also, driving lessons for all Reno natives. At least a sign that tells them to get out of the fast lane or to not do 15 under the speed limit.	1														1			
I only wish there was another option to getting to work then USA pkwy. There are too many vehicles merging into on street															1		1	
Make trucks use the right lane exclusively, they cause way too much backup.										1								
I-80 Extension										1								
The speed limit from Sydney drive to Silver Springs on the USA parkway is at least 20 MPH too slow. 55 MPH on a 2 lane highway is silly, especially when it is the best road in Nevada.																	1	
Parking within my work needs shuttles to relive the incoming and outgoing traffic, its a bottleneck.				1					1								1	
I need to drop off/pick up my daughter at daycare. I also need to be able to drive home immediately in the event of an emergency. An alternative route would be a great help, in case of an accident or road closure, it takes an additional 2 hours at least, to reach the destination.	1												1					
concerned with winter weather over USA Parkway																1		
Would consider riding a bus if one picked-up and dropped off at Summit Mall, South Virginia, Meadow Wood Mall or South Park Meadows.				1	1													
I sometimes take the shuttle from downtown sparks but they move the location farther from the parking spot so now I park and have to at least a half a mile to the shuttle I just wish there was somewhere closer to park.				1					1									
Electric ave needs 3 lanes going into the plant so security has 3 lanes for entry										1							1	
Any delays or interruptions to normal traffic flow make I-80 almost unusable at times. This needs to be addressed as soon as possible to make the TRIC more reliably accessible.													1					
More conveniently located shuttles for the north mccarren area would be nice.				1														
Too much traffic. Takes to long to get into work.															1			
I would love to switch from Vanpool to a Shuttle or a Bus, if there was one available off Vista Blvd. Right now, the closest one is McCarran so I would be driving backwards to take a shuttle, which doesn't make sense.				1	1													
More public transit infrastructure and/or lanes please				1	1	1	1	1		1								
More stops would always be a benefit.				1	1													
I would like more information on the transportation options available to me. I keep getting the run around.														1	1			
Will there be dedicated lines that come out to the Tahoe Reno Industrial Center - example in Colorado was the Frequent Flyers that were morning buses located on the bus lines and function only during busy commuter hours 6am -9am and then 5pm - 8pm.					1										1			

Comment	Alternate Route	Carpooling	Vanpooling	Shuttles	Bus	Light Rail	Express Bus	Commuter Rail	Park-and-Ride	Add Lane/Transit or Carpool Lanes	Shift Working Hours	Employer Subsidized Transit Pass or Plan	Highway Incident Clearance and Patrolling	Transportation Communication/ App/ real-time changes	General/Other	Maintenance	Access Management and/or Operation Concerns	Bicycle Parking
Can we utilize the railways that run parallel to the 80? It seems like a good fit for the needs here.	1					1		1										
Need to have more north 395 connections there are currently No other options ther than driving my self															1			
Would be great if we had an alternate route to sparks that doesn't involve I-80	1																	
Improving, Still backup to West bound 80 at night goes from Electric Av to 80. I go East bound yet people wait till last second to get in lane to Reno.																	1	
Congestion is my main concern. It has been getting worse if recently. If the trend continues, I will really consider the idea of using mass transportation instead.				1	1													
I would like more shuttle times in the later morning to the Tesla				1														
Would like to have a shuttle pick up drop off in yerington				1														
Car Pool lane would be awesome!										1								
Add a flyover from I-80 directly to Electric Avenue in the short term. Long term - build a multi-level parking garage at Legends Outlet and GET HYPERLOOP from there to TRIC with an employee payroll deduction for cost.								1	1			1					1	
People drive to fast on 80 and there are more accidents where I work													1					
I would like to see the option for a Tesla bus route from South Reno to Gigafactory					1													
One highway is toxic. when there is an accident, either take a znr detour, or wait in traffic for 3hrs. ramp to 180v from USA Parkway is too small. The cars gets lined up all the past electric ave. Overall, the worst part about working here is definitely the traffic and transportation, almost makes me consider leaving this area.													1				1	
Improvements have been made, but traffic flow in and out of the Tahoe Reno industrial center needs to be improved as there are more and more employees driving here for work. Additionally the on/off ramps driving through Reno are ridiculous and need to be improved to help overall traffic (i.e. interstate speed traffic needs to merge with a short on-ramp traffic within a few hundred feet in multiple locations is ridiculous)																	1	
need additional methods beside I-80 to reach TRIC, light rail, bike path, hyperloop.	1			1	1	1	1	1		1								
There has been a ton of accidents out east of sparks. People die just trying to get to and from work. I think public transportation would be a huge help getting people to and from work and also free up the interstate for semi trucks and travelers from everywhere.															1			
Is there a plan to have a regularly scheduled bus route?					1													
I would be very interested in travelling by bus if there were more options. Ideally, there would be a bus getting to Gigafactory every hour from 7am to 10am and a bus leaving Gigafactory every hour from 5pm to 8pm					1		1											
It would be good if buses traveling to the Gigafactory could pick up from multiple bus stop locations based on employees addresses and Interest in riding buses				1	1		1											
How about a Trolley down the center of I-80 or Subway or a Tunnel from the Tahoe Reno Industria Center to Sparks Outlet Mall and other various locations that have ample parking in Reno. I have seen alot of accidents and traffic on I-80 between Sparks and the Industrial Center in the last year and a half. Or 2 right hand turn lanes into the Industrial center from a mile back from the turn. Thank you,				1	1	1	1	1	1	1			1				1	
Parking lot is hard to exit																	1	
Transit with WIFI					1	1	1	1										
If there were buses that 1) made stops where there was ample parking 2) arrived at work at 5:30am, not 5:40-5:50am.					1													
Widening the freeway would be a huge help, or creating an alternate route when the freeway is shut down. Public transportation out here (train) would be a great idea to help solve for traffic.	1					1		1		1								
It is a deathrace to work and to leave. It is getting worse																	1	
Work start times need to be staggered. The commute currently is literally killing people												1						
Need to assess getting to USA parkway. Currently the only way to/from TRIC is I-80. If there is an accident or event (fire) this route becomes impassable. Should look at where people are living/moving and adjust transportation from those areas (i.e. road from Spanish springs / vista blvd to USA parkway or a road from south Reno to USA parkway).													1				1	
Build hyperloop								1										
need an alternate route than I-80	1																	
Coming and going to Fernley has much less traffic, but congestion within and around USA Parkway affects everyone.																	1	
Would love light rail commuter option that had more time options for morning and evening commutes. Or a shuttle service that serviced south reno along veterans parkway.				1	1	1												
I think everyone would benefit from more access roads to get to the Tahoe Reno Industrial Center, or more lanes on the highway.										1							1	
Safety is a huge concern. I think we need more police to ensure that people are motivated to drive safer.													1					
on and off ramps to I80 should be fly overs not stop lights.																	1	
I have cumulatively spent days of my life gridlocked on I-80 commuting to and from work in the last year and a half. I would love to see a viable alternative route between Reno/Sparks and the TRIC that could be used whenever the frequent severe accidents temporarily shut down I-80	1												1					
The busses are filling up fast and people are regularly being turned away. More busses are needed. And maybe a second stop at gigafactory 1. I have almost missed the bus trying to walk across the plant to reach the bus area.				1	1													
I would be interested in rides when the weather is bad and my car may be unable to make the drive. My concern there is still transportation to the pickup location and the time difference of taking public transit				1	1								1					
More police activity to reduce speeders													1					

Comment	Alternate Route	Carpooling	Vanpooling	Shuttles	Bus	Light Rail	Express Bus	Commuter Rail	Park-and-Ride	Add Lane/Transit or Carpool Lanes	Shift Working Hours	Employer Subsidized Transit Pass or Plan	Highway Incident Clearance and Patrolling	Transportation Communication/ App/ real-time changes	General/Other	Maintenance	Access Management and/or Operation Concerns	Bicycle Parking	
We need more lanes. There is not enough lanes for the amount of people driving out there. Traffic is bumper to bumper the entire way there, there are accidents and deaths every single day. There needs to be more lanes or a second route to stop this. Thousands of people with 2 lanes does not work. And I would like a shuttle from south Reno to Tesla, as it takes me 2 hours to get to work because I have to drive all the way downtown to get to the shuttle. I leave my house an hour before the shuttle gets there, and then it is another hour to get to work because of traffic. It is insane. More lanes and more routes! A side road would be great so people can opt to stay off of the freeway and avoid the accidents that always happen. I would much rather drive to work on a side road than risk dying by going on the freeway, especially in winter. Last year there was a 30 car pile up on 2 freeways out there at the same exact time. There were people in ditches every single time it snowed. There were not enough lanes for people to pass others, which resulted in people sliding into each other. I work graveyard and the snow plow did not show up after I got off work at 6am, which resulted in having to drive home in inches of snow. There was no plow on the freeway or on USA Parkway. There is no excuse.	1			1						1			1						
The freeway needs to be widened and the spaghetti bowl needs fly overs. USA pkwy needs overpasses build for continuous flow of traffic. 15-30 minutes to get to the freeway is ridiculous.										1							1		
Need more lanes. possibly look into a train, train track come right by here						1		1		1									
The fact that there is such a limited way to leave the complex makes the drive home take a hour or more due to the lack of exits. I would use a ride share program if I could find a ride anytime. I start work anywhere from 7-9am and finish anywhere from 5-8pm. Current ride share makes me schedule to far ahead of time and I don't have that flexibility.	1																1		
I-80 has no alternate surface streets - so a single crash between the industrial center and Reno blocks everything. Having a backup plan (even a dirt road) would be a huge benefit.	1												1						
Please invest more in the driver education programs in Nevada. I am embarrassed to have to put a Nevada license plate on my car.															1				
Shuttle in the Spanish springs/ sunvalley area				1															
The issue is leaving TESLA parking lot. They require thousands of people to clock out and leave at the exact same time. Causes way too much traffic, sometimes can take 20-30 minutes just to leave the parking lot. It's unsafe, people run to their cars and speed because we all want to get home after already being here for 12 hours, being stuck in the parking lot for 30 extra minutes is not fair and not safe to have that many people leave at the same time											1						1		
High speed rail or tell Elon to give me a model X with autopilot.								1											
Question number 9 missed a very important point. Only "Faster" transportation was mentioned. More frequent transportation would really be the only way I would take transit to work. Running lines at greater frequency would allow for flexibility. Right now, shuttles run once an hour. That is not nearly frequent enough to cause most people to change their commuting habits.				1															
I have significant concerns about the proposed Blockchains LLC development and its impact on traffic on I80. The traffic situation has continually worsened as the Tesla Gigafactory expands and it takes just a single accident on the highway to bring traffic to a halt. I'm seriously concerned about the impact on the roads with the additional freight traffic coming from Tesla heading toward California in terms of traffic flow and road conditions.	1												1				1		
Have Tesla shuttle at Stead area.				1															
Widen the road way on electric to 3 or 4 lanes per. The N. Gate would follow suite. Traffic backing and gridlocking the site is imperative to production.										1							1		
I used to live in South Reno and there was no easy option for getting to work other than driving alone. I now live downtown and can walk ~1 mile to a work shuttle. There needs to be something that I can either walk, bike, or drive a very short distance and park for free that will leave a home location ~30min from 5:30AM-9:00AM and location of employment every ~30 minutes between 4 and 8 PM.				1	1														1
It's a hot mess. Several accidents													1						
Interstate 80 needs three lanes each direction between Sparks and USA Parkway										1									
It's ridiculous that there is no reliable, high frequency transit from town to TRIC.					1	1	1												
Driving out to USA Parkway is very dangerous during traffic hours. Accidents are very common. Also, driving out there and back everyday is so costly transportation wise considering the amount of miles put on your car, the amount of gas used, weather conditions while driving and the constant wear and tear on the tires. Not to mention the fact that it is free range for the horses so avoiding hitting them is a constant challenge when entering and leaving work during dark hours.													1			1			
My biggest concern is the speed limit not being enforced on I-80.													1						
Every company should have shuttles to help minimize traffic				1															
Carpooling needs to be not only recommended but enforced as it helps everyone out. I sincerely would like to see this being pushed harder.		1																	
Somewhat educated guess on number of employees. No diversion options when accidents occur. Would like some other option, but don't see how that would work with irregular hours.	1			1							1								
It can be frightening and frustrating with the traffic													1						
Put in a commuter train!								1											
More control at exit 32																	1		
The commute to tesla gigafactory is terrible. We need more roads. If we had more roads maybe there would be less accidents.		1																	
Add more bus routes include my zipcode 89502					1														
I use USA parkway from Silver Springs and I LOVE it!!!																	1		

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Traffic from Tesla and erratic drivers on I 80													1					
A light rail that went to a central location within the Center would be a good idea, as people could then be distributed by the companies						1												
we really need a light rail system to go from Sparks to USA Parkway! The infrastructure should have been thought of before USA Parkway became so congested. For some reason EDAWN wants to continue to add more companies in an area when there are too many problems with the infrastructure to accommodate the growth. EDAWN is on a mission to make this the biggest biggest city and is destroying the way of life so many of us have enjoyed for a long time. If you want to be a big city, it's time to start acting like it. Learn from Sacramento, San Jose, Las Vegas, etc., and put a light rail system in.						1												
Nothing really with the transportation. The condition of the road once passed the gas station going up toward the Silver Springs needs to be worked on. Also it is a very dark drive, street lights along the way would be better to see wild life.															1			
a train stop-tric Commuter Rail						1		1										
Any plans for alternate routes?	1																	
The bottle neck coming in from the valleys is an absolute hazard during the winter due to the amount of traffic and accidents													1			1	1	
I'd love a bus that went to and from TRIC every half hour. I could make that work. I don't have a set schedule, so it's difficult to use the commuter buses that are already set up. I'd recommend working with the city planning agencies to encourage higher density housing options that can help sustain mass transit. Abolish single family zoning. Encourage developments that allow people to walk to school, groceries and other non-commute destinations.					1										1			1
we need a bus route out here and more ways to get out there. more lanes on i80 too					1					1								
A bus service would be great. Stopping at central office locations.					1													
Waltham Way becomes treacherous during icing and there are very few ice trucks working it.																1		
Build new apartments near USA pkwy. This is a housing problem, not a traffic problem.															1			
just started with V ride should be changing my mode of transportation in the next week			1															
Create a public rail system that leaves Reno & Sparks and stops near the industrial center and then has buses that deliver you from a train station to businesses in the Tahoe Reno Industrial Center.						1		1										
I am very blessed to have the vanpool as a option! It helps me and others a lot. To be able to help others get to work is awesome! Thank you!			1															
You guys are already doing a job to help employees to get to our job faster,easier and cheaper by providing a vehicle that our employer pays for it and with the vanpool subsidy that provides by your organization thanks keep up the good job		1	1									1						
Wider roads and alternate routes since the Tahoe Reno Industrial Center is growing and getting a lot of employee	1									1								
If transportation to and from TRIC is to improve, NDOT and other agencies must take the lead because by this point, I think virtually everyone has realized that the top brass at Tesla could not care less about this issue and many others that relate to employee safety and wellness. In the two years that I have been at GF1, Tesla has NEVER shown any real interest in providing adequate facilities for their workers, whether it is toilets, break rooms, or parking, and that includes back in the old days when there were 400-500 total employees at GF1. There weren't enough toilets or parking spaces back then and there still aren't now. A significant portion of the demoralization that characterizes so many Tesla workers is a result of standing in line for bathrooms at work and being stuck in a ridiculous parking lot for 30+ minutes after every twelve-hour shift. Asinine, ridiculous, preposterous upper management.															1			
Tesla traffic is awful. Exiting the parking lot just to get on Electric Avenue can take up to an hour. More exit routs could help traffic congestion.																	1	
I-80 really needs to be more lanes if possible, also the on and off ramps need to be a longer for ease of getting on the interstate. I also think the speed limit on I-80 needs to be 70 MPH.										1							1	
When will we get a reliable regional train system that goes from Reno to the Tahoe-Reno industrial center? The public transportation in this region is mediocre at best.						1		1										
We need a wider overpass for USA parkway and better onramps. I'm all for sustainable transportation but not at the expensive or punishing those who drive. People on shuttles or vanpools suffer too as they sit in traffic. Tesla should be required to pay for some of this construction as they are the biggest contributor to the traffic. Tesla should also be required to stagger shifts. Having thousands of people all leave at 6:00 is ridiculous.			1	1						1	1	1					1	
Possibly make it 3 lanes instead of 2 for slower vehicles/semitrucks										1								
Build a bike path. I'll ride my bike to work year round																		1
No comment on the transportation topic, but there is TOO much congestion for such a small road way. Need better solution to traffic that consists thousands of employees in one area.															1			
looking for something that is much more flexible than currently. More similar to an uber pool driving system that can be quickly called or signed up for last minute. No waiting.		1												1				
A regular bus or train would be nice					1	1		1										
it would be a smoother commute if there were more police presence on I 80. People constantly drive 80 mph or more, cut others off, and are going to hurt someone													1					
Would like to see a bus route end at a park and ride in TRIC. Distribution by carpool from inside TRIC would decrease freeway congestion. Any options on the table such as this?					1													
More incentives to carpool such as the ride share app scoop. Would be helpful in reducing congestion		1										1						
Why not using the Rail Road to commute people from Reno and Sparks to Reno Industrial Center.						1		1										
TOO MUCH TRAFFIC															1			

