

Location:



REGIONAL TRANSPORTATION COMMISSION
1105 Terminal Way, 1st Floor Great Room, Reno, NV
Date/Time: 10:00 AM., Friday, April 19, 2024

REGIONAL TRANSPORTATION COMMISSION
OF WASHOE COUNTY
BOARD MEETING AGENDA

- I. The Regional Transportation Commission Great Room is accessible to individuals with disabilities. Requests for auxiliary aids to assist individuals with disabilities should be made with as much advance notice as possible. For those requiring hearing or speech assistance, contact Relay Nevada at 1-800-326-6868 (TTY, VCO or HCO). Requests for supporting documents and all other requests should be directed to Michelle Kraus at 775-348-0400 and you will receive a response within five business days. Supporting documents may also be found on the RTC website: www.rtcwashoe.com.
- II. This meeting will be televised live and replayed on RTC's YouTube channel at: bit.ly/RTCWashoeYouTube
- III. Members of the public in attendance at the meeting may provide public comment (limited to three minutes) after filling out a request to speak form at the meeting. Members of the public that would like to provide presentation aids must bring eight (8) hard copies to be distributed to the Board members at the meeting. Alternatively, presentation aids may be emailed, in PDF format only, to mkraus@rtcwashoe.com prior to 4:00 p.m. on the day preceding the meeting to be distributed to the Board members in advance of the meeting. Members of the public may also provide public comment by one of the following methods: (1) emailing comments to: rtcpubliccomments@rtcwashoe.com; or (2) leaving a voicemail (limited to three minutes) at (775) 335-0018. Comments received prior to 4:00 p.m. on the day preceding the meeting will be entered into the record.
- IV. The Commission may combine two or more agenda items for consideration and/or may remove an item from the agenda or delay discussion relating to an item on the agenda at any time.
- V. The supporting materials for the meeting will be available at <https://rtcwashoe.com/news/board-meeting-notes/>. In addition, a member of the public may request supporting materials electronically from Michelle Kraus at the following email address: mkraus@rtcwashoe.com.

1. Call to Order:

- 1.1. Roll Call
- 1.2. Pledge of Allegiance

2. Public Comment: *Public comment taken under this item may pertain to matters both on and off the agenda. The Chair may take public comment on a particular item on the agenda at the time it is discussed. Comments are to be made to the Board as a whole and not to individual commissioners.*

3. Approval of Agenda (For Possible Action)

4. Consent Items (For Possible Action):

- 4.1. Minutes
 - 4.1.1 Approve the meeting minutes for the 02/16/2024 RTC Board meeting. (For Possible Action)
 - 4.1.2 Approve the meeting minutes for the 03/22/2024 RTC Board Retreat meeting. (For Possible Action)

4.2. Reports

- 4.2.1 Acknowledge receipt of the monthly Procurement Activity Report. (For Possible Action)
- 4.2.2 Acknowledge receipt of the monthly Planning Activity Report. (For Possible Action)
- 4.2.3 Acknowledge receipt of the Summary Report for the Technical, Citizens Multimodal, and Regional Road Impact Fee Advisory Committees. (For Possible Action)
- 4.2.4 Acknowledge receipt of the monthly Engineering Activity Report. (For Possible Action)
- 4.2.5 Acknowledge receipt of the monthly Public Transportation and Operations Report. (For Possible Action)
- 4.2.6 Acknowledge receipt of monthly Community and Media Outreach activities. (For Possible Action)

4.3. Planning Department

- 4.3.1 Approve an Interlocal Cooperative Agreement with the University of Nevada, Reno for the Intersection Safety Priority project, in the amount of \$30,000. (For Possible Action)

4.4. Engineering Department

- 4.4.1 Approve a contract with Kimley-Horn and Associates, Inc., for design services and engineering during construction for the Traffic Signal Fiber 25-01 Project, in an amount not-to-exceed \$496,134. (For Possible Action)

4.5. Public Transportation/Operations Department

- 4.5.1 Acknowledge receipt of this quarterly Construction/Maintenance update on Transit Stops as presented to the Citizens Multimodal Advisory Committee on April 3. (For Possible Action)
- 4.5.2 Approve the RTC Safety Management System Plan (Safety Management Plan) as required by 49 C.F.R. Part 673. (For Possible Action)

4.6. Executive, Administrative and Finance Department

- 4.6.1 Approve a contract with Nichols Consulting Engineers to conduct a study to identify and summarize current roadway maintenance practices and available funding in the Washoe County Metropolitan Planning Organization (MPO) boundary, in an amount not-to-exceed \$163,000. (For Possible Action)
- 4.6.2 Approve Amendment No. 3 to the contract with Loomis Armored US, LLC for Armored Car Services for cash pick-up and delivery, in the amount of \$833,005, for a new total not to-exceed amount of \$2,587,511. (For Possible Action)
- 4.6.3 Approve modifications to RTC Personnel Rule 5.7 regarding employee pay-for-performance, to allow the Board to later consider and approve an employee cost-of-living adjustment and performance-based salary increases for this fiscal year during its final review of the FY 2025 budget. (For Possible Action)
- 4.6.4 Approve revised bylaws for the Regional Transportation Commission of Washoe County. (For Possible Action)
- 4.6.5 Approve RTC Management Policy P-01, Executive Director Position. (For Possible Action)

5. Discussion Items and Presentations:

- 5.1. Presentation from UNR regarding the RTC Regional Signal Timing Program. (Informational Only)
- 5.2. Approve a memorandum of understanding (MOU) between the Regional Transportation Commission of Washoe County (RTC), the City of Reno, the City of Sparks, and Washoe County to collaborate on the deployment recommendations contained within RTC's Intelligent Transportation Systems (ITS) Strategic Master Plan. (For Possible Action)
- 5.3. Review a report from the RTC's Director of Finance regarding the Fiscal Year 2024 increase in the indexed fuel taxes in Washoe County that will become effective on July 1, 2024, as required by NRS 373.067 and WCC § 20.43416. (Informational Only)
- 5.4. Acknowledge receipt of the Fiscal Year 2025 RTC Tentative Budget. (For Possible Action)

6. Reports (Information Only):

- 6.1. Monthly verbal update/messages from RTC Executive Director Bill Thomas - No action taken.
- 6.2. Monthly verbal update/messages from Paul Nelson, RTC Government Affairs Officer on federal matters related to the RTC - No action will be taken.
- 6.3. Monthly verbal update/messages from NDOT Director Tracy Larkin Thomason or designated NDOT Deputy Director - No action will be taken.

7. Commissioner Announcements and Updates: *Announcements and updates to include requests for information or topics for future agendas. No deliberation or action will take place on this item.*

8. Public Comment: *Public comment taken under this item may pertain to matters both on and off the agenda. The Chair may take public comment on a particular item on the agenda at the time it is discussed. Comments are to be made to the Board as a whole and not to individual commissioners.*

9. Adjournment (For Possible Action)

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



REGIONAL TRANSPORTATION COMMISSION

Metropolitan Planning • Public Transportation & Operations • Engineering & Construction

Metropolitan Planning Organization of Washoe County, Nevada

Meeting Date: 4/19/2024

Agenda Item: 4.1.1

To: Regional Transportation Commission

From: Michelle Kraus, Clerk of the Board

SUBJECT: Draft Board Meeting Minutes for 02/16/2024

RECOMMENDED ACTION

Approve the meeting minutes for the 02/16/2024 RTC Board meeting.

BACKGROUND AND DISCUSSION

See attached for Background and Discussion

FISCAL IMPACT

There is no fiscal impact related to this item.

PREVIOUS BOARD ACTION

There has been no previous Board action taken.

**REGIONAL TRANSPORTATION COMMISSION
WASHOE COUNTY, NEVADA**

FRIDAY

8:03 A.M.

February 16, 2024

PRESENT:

**Ed Lawson, Mayor of Sparks
Alexis Hill, Vice Chair, Washoe County Commissioner (Arrived 8:09 a.m.)
Devon Reese, Reno City Council
Mariluz Garcia, Washoe County Commissioner**

**Bill Thomas, RTC Executive Director
Adam Spear, Legal Counsel
Sajid Sulahria, Deputy Director of NDOT**

ABSENT:

Hillary Schieve, Mayor of Reno

The regular monthly meeting, held in the 1st Floor Great Room at Regional Transportation Commission of Washoe County, Reno, Nevada, was called to order by Chair Lawson. The Board conducted the following business:

Item 1 CALL TO ORDER

- 1.1 Roll Call
- 1.2 Pledge of Allegiance

Item 2 PUBLIC INPUT

Chair Lawson opened the meeting to public input and called on anyone wishing to speak on topics relevant to the Regional Transportation Commission (RTC) that are not included in the current agenda.

Earl Brynewen, CMAC member and RIDE driver, I'm asking if we can change the CMAC from virtual meeting back to an in-person meeting. We joined to help our system get back to how it was when it was good. FlexRIDE is an issue, you don't have enough drivers. It's too early to expand South Meadows, which is a huge area to cover.

Jennifer Iveson, Safe Routes to School with the Washoe County School District. I want to thank RTC for being an amazing partner in the first annual Pedestrian Safety Message Poster Contest. One of the buses is outside now, this is one of three buses and we're super excited. Having three buses with safety messages was more than we could have imagined. We thought there would only be one, and the RTC surprised us with three. We can't thank you enough for your commitment to Pedestrian Bike Safety in our community and your constant support of our program, Safe Routes to School and the students of the Washoe County School District. We will have assemblies at the three schools next week to announce the winners and have the buses for each winner presented to them and their schools.

Matthew McCarthy, Northern Nevada Public Health Air Quality Management Division, emailed public comment on February 15, 2024 @ 9:07 a.m. Attached you will find public comment from Northern Nevada Public Health, Air Quality Management Division specific to Agenda Item 4.4.2 for tomorrow's (February 16, 2024) RTC Washoe Board meeting.

The Northern Nevada Public Health, Air Quality Management Division (AQMD) has the responsibility to maintain federal air quality standards in Washoe County, Nevada. This letter is being written to express support for Agenda Item 4.4.2 which is for the approval of the purchase of six hydrogen fuel cell transit buses. As you may know, Washoe County struggles with elevated levels of a pollutant known as ozone. A major contributor to ozone in our region is the emission of nitrogen oxides (NOx) from combustion engines. Transit buses improve our air quality by reducing vehicle miles traveled, but they also emit this pollutant when powered by fossil fuels. AQMD estimates that over 7 tons of NOx is emitted from transit buses every year in Washoe County. By operating the six hydrogen fuel cell buses that are for approval in this agenda item, air quality in Washoe County will benefit. AQMD appreciates the efforts that RTC Washoe takes to improve our air quality and is in support of RTC's goal of a 100% alternative fuels fleet by 2035. AQMD requests that the Commission approve Agenda Item 4.4.2 and move forward with the purchase of the six hydrogen fuel cell buses. Sincerely, Francisco Vega, P.E., MBA, Director of Air Quality Management Division.

There being no one else wishing to speak, Chair Lawson closed public input.

Item 3 APPROVAL OF AGENDA

On motion of Commissioner Reese to approve agenda, seconded by Commissioner Garcia, which motion unanimously carried, Chair Lawson ordered that the agenda for this meeting be approved.

Items 4 CONSENT ITEMS

Bill Thomas, RTC Executive Director pulled Item 4.5.3 from the Agenda, to be discussed at a later date.

4.1 Minutes

4.1.1 Approve minutes from 1/19/2024 Board meeting. (For Possible Action)

4.2. Reports

4.2.1 Acknowledge receipt of the monthly Procurement Activity Report. (For Possible Action)

4.2.2 Acknowledge receipt of the monthly summary report for the Technical, Citizens Multimodal, and Regional Road Impact Fee Advisory Committees. (For Possible Action)

4.2.3 Acknowledge receipt of the monthly Planning Activity Report. (For Possible Action)

4.2.4 Acknowledge receipt of the monthly Engineering Activity Report. (For Possible Action)

4.2.5 Acknowledge receipt of the monthly Public Transportation and Operations Activity Report. (For Possible Action)

4.2.6 Acknowledge receipt of the monthly Outreach Report from the Communications staff. (For Possible Action)

4.3 Engineering Department

4.3.1 Approve a contract with Headway Transportation, LLC, for design and optional engineering during construction services for the Traffic Signal Modifications 25-01 Project, in an amount not-to-exceed \$595,650. (For Possible Action)

4.3.2 Approve a contract with Wood Rogers, Inc., for design and engineering during construction services related to the McCarran Boulevard Safety and Operational Improvements Project, in an amount not-to-exceed \$2,970,000. (For Possible Action)

- 4.3.3 Approve a contract with Nichols Consulting Engineers, CHTD (NCE) for design services related to the Downtown Reno Micromobility Project, in an amount not-to-exceed \$2,498,920. (For Possible Action)
- 4.3.4 Approve a contract with CA Group, Inc., for design and engineering during construction services related to the Eagle Canyon Safety and Operations Project, in an amount not-to-exceed \$298,199. (For Possible Action)

4.4 Public Transportation/Operations Department

- 4.4.1 Approve four Senior/Disabled Transportation Program funding agreements totaling \$679,273.20, in amounts not-to-exceed \$360,886.30 for Access to Healthcare Network; \$136,717.40 for Neighbor Network of Northern Nevada; \$118,057 for the University of Nevada Reno, Senior Outreach Services; and \$63,612.50 for Volunteers of America. (For Possible Action)
- 4.4.2 Approve the purchase of six (6) hydrogen fuel cell buses utilizing the State of Washington's Cooperative Purchasing Agreement for Transit Buses Master Contract No. 06719, for an estimated amount not-to-exceed \$8,377,051.08. (For Possible Action)

4.5 Executive, Administrative and Finance Department

- 4.5.1 Approve a contract with Anderson Keuscher PLLC, for specialized legal services. (For Possible Action)
- 4.5.2 Approve modification to RTC Personnel Rule 10.16 regarding the employee wellness benefit. (For Possible Action)
- 4.5.3 Approve a contract with Simmons Group to conduct a classification and compensation study for the agency, in an amount not-to-exceed \$182,000. (For Possible Action) – **Pulled from Agenda by Executive Director Thomas.**
- 4.5.4 Acknowledge receipt of a report regarding quarterly progress on RTC Agency Goals and Strategic Roadmap - FY 2024 (Q2). (For Possible Action)

On motion of Commissioner Reese to approve agenda, seconded by Commissioner Garcia, which motion unanimously carried, Chair Lawson ordered that the consent items for this meeting be approved.

Item 5 PUBLIC HEARING

- 5.1 Adopt a resolution approving an agreement for the exchange of property owned by RTC (a fee simple interest in APN 004-061-28, and a permanent access and utility easement over APN 004-061-20, 004-061-26, 004-061-22, 035-033-02) for property owned by the Truckee Meadows Water Authority (a fee simple interest in APN 140-051-23). (For Possible Action)
 - a. Staff Presentation
 - b. Public Hearing
 - c. Action

Dale Keller, RTC Engineering Director, the RTC acquired these parcels between 1989 and 2004, related to the Clear Acre/Sutro Interchange project. We completed the work and these RTC parcels are no longer needed. The areas that will be exchanged with TMWA are shown on the presentation. This is a general exhibit, but the legals and exhibits are shown in the agenda packet.

In exchange, the RTC will be receiving the area shown in blue on the far right of the presentation as part of an upcoming Geiger Grade Realignment/Toll Road Extension project. There is a full simple acquisition for this APN, and the road parallels and connects into Geiger Grade, which we will be looking into for improving the connections in the south part of town.

RTC and TMWA have finalized the terms of the property exchange agreement attached to this resolution, so following this public hearing, the adoption of this resolution will approve the agreement and satisfy the requirements per NRS.

There were no questions from the commission at this time.

Chair Lawson opened the item up for public comment, being none, we'll bring it back to the dais and we're looking for a motion.

On motion of Vice Chair Hill to approve, seconded by Commissioner Reese, which motion unanimously carried, Chair Lawson ordered the item be approved.

- 5.2 Conduct a public hearing on proposed service changes as recommended by the Fiscal Year 2025 Transit Optimization Plan Strategies (TOPS) document for RTC RIDE and FlexRIDE beginning on or after May 4, 2024; approve the recommended service changes. (For Possible Action)
- a. Staff Presentation
 - b. Public Hearing
 - c. Action

James Gee, Public Transportation Operations Director, quickly outlined the service changes proposed on the presentation for this year. The first change is a very simple routing change on Route 13. This change was suggested by our Keolis Safety Team and it is to avoid the parking at Grove and Harvard near Costco, which gets very congested and it makes a very difficult left hand turn for our drivers.

There are also some miscellaneous increases to service for Route 21, which connects Centennial Plaza in Sparks to the Legends area. We will have increased frequency on Sundays, moving from every 60 minutes to every 30 minutes. This is based upon ridership and demands from passengers.

The Virginia Line will have extended high frequency service later in the evening going from 7:00 where it is today to approximately 9:30pm, to accommodate shoppers and people that work at Meadowood Mall and also work later and want to take advantage of the Virginia Line.

To address customer service issues, we are physically assigning bus bays at Meadowood Mall, to make it easier for customers to navigate to correct bus connections.

We also looked at our level of service for each of the holidays listed on the chart. We are changing the level of service for those days from a weekend schedule to a normal weekday service schedule to accommodate people who do not get those days off of work.

Our biggest change is the creation of a fourth FlexRIDE zone, this zone will serve the South Meadows and Damonte Ranch with connections to the Summit on the south and to Meadowood Mall in the north, with additional connections at Walmart, Raley's at Galena, UNR Redfield Campus, Northern Nevada Medical Center Sierra Campus, Meadowood Mall and several others.

Vice Chair Hill, these are great changes and are things that the Board have asked for and just thank you for these changes. On Route 13, did we go to any of our Committees for that change?

James Gee, all of these changes went through the TAC and CMAC Committees. Route 13 doesn't miss any bus stops, it actually adds a bus stop at Linden and Grove.

Chair Lawson, how do we address Earl's public comment on FlexRIDE. Do we have enough drivers?

James Gee, we are always looking, we could use more, but what we do when we are short on drivers is we outsource to Uber and Lyft. We have in-house mechanisms that automatically pushes those trips to Uber and Lyft when there is a more than a 30 minuet wait for FlexRIDE.

Chair Lawson opened the item up for public comment, being none, we'll bring it back to the dais and we're looking for a motion.

On motion of Vice Chair Hill to approve, seconded by Commissioner Reese, which motion unanimously carried, Chair Lawson ordered the item be approved.

Item 6 *REPORTS (Informational Only)*

6.1 *RTC Executive Director Report*

- We recently held two events in the North Valleys.
 - The first was a ribbon-cutting ceremony for the completion of the Sky Vista Widening Rehabilitation Project.
 - This was an important project that made a lot of improvements for drivers, cyclists, and pedestrians – including a roundabout.
 - This was a 17.7 million-dollar investment in the community, using Regional Road Impact Fees – so we accomplished this without using fuel tax dollars.
 - The other event was the first public meeting for the Lemmon Drive Safety and Resiliency Project.
 - Around 60 people including local media attended the meeting to discuss the future of this important corridor.
 - As you know, we have a lot of plans in the North Valleys, so these discussions are very valuable as we move forward.
- According to the Transit App, the RTC has the fastest-growing user base on the app – with a 350 percent growth, in the past year.
 - We launched the app, last January.
 - We added 970 active users in the first month.
 - Last month, that grew to nearly 34-hundred users and we expect that to continue to rise.
 - The Transit App is an easy and convenient way for our customers to buy their bus passes, and we've received a lot of positive feedback on it.
- Once again, we will provide free transit on all of our services for St. Patrick's Day, March 17th.
 - The free service will run from 4 o'clock in the afternoon to 2 o'clock in the morning.
 - This will give all of our residents a safe option to get from place to place, especially if they plan on drinking.
- We recently partnered with Safe Routes to School on the First Annual Pedestrian Safety Message Poster Contest.
 - Our staff selected the three top posters from all ages in the Washoe County School District – which we enlarged into three different bus wraps.
 - The 1st place winner is Anna Yunqing from Peavine Elementary School and her poster is on the bus outside.
 - 2nd Place goes to Ricardo Marquez from Desert Heights Elementary School. 3rd Place goes to Jaelynn Vicente of Depoali Middle School.
 - Each winner's school will have an assembly next week, where they will get to see their artwork displayed on our bus.

- Safe Routes to School and Blue Zone Sports are also providing these students with an iPad and a bike, so congratulations to these kids.
- As you know, some other public agencies are interested in using this room for their public meetings.
 - Our staff has worked to develop a pilot policy to permit TMRPA and TMWA to use the Great Room for these meetings.
 - Due to the need for I.T. network security, we will charge for the use of this room when agencies need to use our meeting broadcast capabilities.
 - Between the RTC, TMRPA, and TMWA's meeting needs, this room will be very busy most days.
 - We'll keep you posted on how the room-sharing works out.
- I am pleased to introduce you to our newest employee, Trisha Starkey.
 - Trisha joined Agency Services as an Administrative Associate Tuesday.
 - Her background includes operating her own flower farm and floral design company. She also worked with the City of Fernley as a Financial Administrative Specialist, served as patient liaison in a medical office, and worked in banking.
 - Welcome to the team, Trisha!
- I would also like to congratulate Marquis Williams on his one-year anniversary.
 - Marquis started with the RTC as a Senior Technical Planner February 6th, last year.
 - Thank you, Marquis for your hard work and we look forward to many more years with you onboard, helping us plan the future of our community.
- Please join us in congratulating Daryl Berkley as the MTM employee of the month for January.
 - Daryl has driven for ACCESS for four-and-a-half years
 - He says the passengers make it a great place to work.
 - The customers really like Daryl and he receives positive feedback all the time.
 - He has an excellent safety record and you can always count on him to show up to work every day on time.
 - Outside of work he is a gamer and he enjoys Rock concerts like G3 and Cheap Trick, here locally.
- The Keolis Driver of the Month is Merrill Gibson.
 - Merrill was born in Mexico and grew up in Phoenix before moving up here to Reno.
 - He has worked as a bus operator for RIDE since September of 2020.
 - His on-time performance was 95 percent in January with zero preventable accidents.
 - Merrill enjoys spending time with his family and traveling.
- Finally, we brought Celtis Ventures on board to handle our TOPS Marketing Plan.
 - They're in town to get the ball rolling and to learn more about our transit system and community.

Welcome Devon Cichoski, Project Manager and Sandra Gonzalez.

Devon Cichoski, thank you everyone, we are really excited to be here. We've spent the last few days in town touring all of the offices, facilities and the town in general, and everyone has been great. We will be looking at your customer communications and your brand and how you are applying that, not just online or in any one touch-point, but as a journey across the system. We look at how the customer moves through your system, how are they seeing all of the different things that the RTC puts out to the public. Is that journey seamless? Do you know where you are going and what services the RTC offers?

We are always on the lookout for better ideas for campaigns, how to promote your services, reach out to customers. So, at the end of this visit we will be putting together a communications audit, compiling

all of our findings and then we'll use that to make any suggestions or updates to your marketing plan. That will really guide our work together going forward for the next 3-5 years as we roll out the TOPS Marketing Plan.

We are really focused on Spanish language marketing, that is a specialty of Sandra's, she's put a lot of work in that area and one of her campaigns just won an APTA Award.

6.2 RTC Federal Report

Paul Nelson, RTC Government Affairs Officer. Both houses of Congress are on their President's Day weekend and they plan to return February 26th. That will give them about a week to get their appropriations bills passed before the March 1 and March 8 deadlines. They think they're on course to pass these bills, but they don't have an agreement in place yet. If they push the timeline past April or if they keep the spending flat through October 1, then there would be some automatic cuts that would kick in.

We are in the process of submitting some of our congressionally directed spending. We have six project requests that we're working on now, each in the amount of between \$1 million to \$5 million in Reno, Sparks and Washoe County. We'll have those submitted soon and hopefully we'll have an answer before too long.

The FTA is making recommendations for improving bus procurement in a few different ways. These include more standardized buses, with fewer customizations to speed up production. It is also trying to strengthen the bus manufacturing industry, reduce contract costs and to shorten deliver times.

Finally, we are looking at some climate pollutions reduction grants. These would use federal dollars that we could apply to reduce emissions in our community. Some of the things that we're really focusing on is trying to get bus ridership up to take people out of their cars.

6.3 NDOT Director Report

NDOT Deputy Director Sajid Sulahria gave a presentation and started off announcing a promotion benefiting our local NDOT Operations District 2. Bhupinder Sandhu has served as acting District Engineer over recent months and now he has been promoted to District Engineer. At District 2, he will oversee our highway maintenance and construction activities across northwestern Nevada. He has been with the Department 18 years and he has moved up in the ranks as a Construction Resident Engineer, overseeing many of our regional construction projects. Congratulations Bhupinder!

Updates were given on the following:

- US 395 North Valleys Northbound Lane Reductions.
- NDOT Vacancy Rates.
- US 50 Tahoe East Shore Corridor Management Plan for Public Review. Please visit our website at www.dot.nv.gov/us50eastshore.
- Critical Hires during Winter Months.

Item 7 COMMISSIONER ANNOUNCEMENTS AND UPDATES

There were no commissioner announcements or updates.

Item 8 PUBLIC INPUT

Chair Lawson opened the meeting to public input and called on anyone wishing to speak on topics relevant to the Regional Transportation Commission (RTC) that are not included in the current agenda. There being no one wishing to speak, Chair Lawson moved to Adjournment.

Item 9 ADJOURNMENT

There being no further business to come before the Board, the meeting adjourned at 8:36 a.m.

ED LAWSON, Chair
Regional Transportation Commission

****Copies of all presentations are available by contacting Michelle Kraus at mkraus@rtcwashoe.com.**



REGIONAL TRANSPORTATION COMMISSION

Metropolitan Planning • Public Transportation & Operations • Engineering & Construction

Metropolitan Planning Organization of Washoe County, Nevada

Meeting Date: 4/19/2024

Agenda Item: 4.1.2

To: Regional Transportation Commission

From: Michelle Kraus, Clerk of the Board

SUBJECT: Draft Board Retreat Meeting Minutes for 03/22/2024

RECOMMENDED ACTION

Approve the meeting minutes for the 03/22/2024 RTC Board Retreat meeting.

BACKGROUND AND DISCUSSION

See attached for Background and Discussion.

FISCAL IMPACT

There is no fiscal impact related to this item.

PREVIOUS BOARD ACTION

There has been no previous Board action taken.

**REGIONAL TRANSPORTATION COMMISSION
WASHOE COUNTY, NEVADA
BOARD WORKSHOP**

FRIDAY

10:03 A.M.

March 22, 2024

PRESENT:

**Ed Lawson, Mayor of Sparks, Chair
Alexis Hill, Washoe County Commissioner, Vice Chair
Mariluz Garcia, Washoe County Commissioner
Hillary Schieve, Mayor of Reno (Arrived 10:07 a.m.)
Devon Reese, Reno Councilman (Via Zoom, Left @ 11:30 a.m.)**

**Bill Thomas, RTC Executive Director
Adam Spear, Legal Counsel
Tracy Larkin Thomason, Director of NDOT**

**Dale Keller, Director of Engineering
James Gee, Director of Public Transportation/Operations
Christian Schonlau, Director of Finance/CFO
Laura Freed, Director of Administrative Services**

The annual Board Workshop meeting was held at the Reno Sparks Convention Center, Rooms A1/A6, 4590 S. Virginia Street, Reno, and was called to order by Chair Lawson.

**NO ACTION WAS TAKEN AT THIS WORKSHOP
EXCEPT TO APPROVE THE AGENDA, CONSENT ITEMS AND TO ADJOURN**

- 1. CALL TO ORDER**
 - 1.1 Roll Call**
 - 1.2 Pledge of Allegiance**

- 2. PUBLIC COMMENT**

Chair Lawson opened the meeting to public input and called on anyone wishing to speak on topics relevant to the Regional Transportation Commission (RTC) that are not included in the current agenda. There being no one wishing to speak, Chair Lawson moved to Approval of Agenda.

- 3. APPROVAL OF AGENDA**

On motion of Vice Chair Hill, seconded by Commissioner Garcia, which motion unanimously carried, Chair Lawson ordered that the agenda for this meeting be approved.

- 4. CONSENT ITEMS (*For Possible Action*)**

Administration

- 4.1 Approve a contract with Simmons Group to conduct a classification and compensation study for the agency, in an amount not-to-exceed \$182,000. (*For Possible Action*)**

Executive

4.2 Authorize the Executive Director to negotiate and execute a funding agreement with Placer County to contribute \$150,000 for the provision of the TART Connect (micro transit) service in the Washoe County portion of the Lake Tahoe Basin for a one-year period. *(For Possible Action)*

On motion of Vice Chair Hill, seconded by Commissioner Garcia, which motion unanimously carried, Chair Lawson ordered that the consent items for this meeting be approved.

5. WORKSHOP *(No Action Will be Taken at this Workshop)*

The purpose of the workshop is to discuss and give general direction regarding policy and strategic objectives of the Regional Transportation Commission of Washoe County for the current and coming years. Erica Olsen with OnStrategy Consultants will be moderating this workshop.

5.1 Welcome, Opening Remarks & Stage Setting – Chair Lawson/Bill Thomas/Erica Olsen

Chair Lawson: Thank you all for being here. This is the second workshop that I've done, and it's kind of interesting to talk about what we did last year and where we are today. We're going to talk about a lot of things that we wanted to do last year, but we didn't set any goals or measurements for it. This year, I want to really set some incremental goals so that we can revisit at three, six, nine, 12 months, and come back together to see how we're doing.

Bill Thomas: I want to echo the Chair's thanks and appreciation for everyone setting time aside to be here. This is the most important meeting of the year, because it gives everyone the chance to have conversations with each other. There are no decisions that will be made today and what we are looking for is general direction. I wanted to start by thanking some particular staff members who pulled this together. Lee Anne, Michelle and John did a great job setting up the workshop. I want to thank Amber for being the architect of all of this and pulling it all together.

I feel very good as your Executive Director, that this format and this process is one that's very beneficial to us. We've engaged with Erica Olsen, and she's done a great job working with us, not only in running this meeting, but also as she'll go through how we follow through. I'm going to let Erica get into the details and hand it over to her.

Erica Olsen: Good morning everybody, thank you Chair Lawson and Bill Thomas and thanks for everybody for being here. We are styled as we have been for the past couple of retreats to walk through strategic issues and topics that we're looking for the Board's direction on. Based on that, we will pull measurable outcomes together, we have great topics to get into, and we have staff that will be co-presenting with us. We will have discussion on the following topics:

- RTC's Vision, Strategic Goal and Progress to Date
- RTP Process and Community Input
- ITS – The Intelligent Transportation System
- Active Transportation Plan

Bill Thomas: We recently completed the Culture Study and one of the things we heard from our staff is that are very interested in a stronger engagement with the Board. It is intentional that we've changed the way we're doing it this year and that we'll have staff members who will be talking about their particular projects. The employees will be able to engage with you and also give you a greater understanding of

the project process. We are not talking about Public Transportation today, but that doesn't mean it's not a very important part of us. We will be coming back in the very near future with the update to the TOPS Plan, which is your five-year look at how we provide Public Transportation. It doesn't mean we can't talk about it today, but again, the reason we don't have it as one of the items is because of the upcoming TOPS Plan.

5.2 RTC's Vision & Strategic Goals + Progress To Date – Bill Thomas/Erica Olsen

The strategic roadmap we have in place for the organization includes four goals, which we built based upon input from the Board in 2022, and have been using since, which include: valued public transportation, future transportation needs, network experience and financial and organizational stewardship.

The top items from last year's Vision board included:

- Connected Network - Since migrating to the Transit App, we've had 350% growth in use and over 3,400 users.
- Bike Network – River & Downtown Connection – Adoption of the Downtown Reno Micromobility project.
- Transit - Transportation System Maintenance – Sustainable Maintenance Study
- Safety
- Broad Long-Term Planning
- Culture and People, Communication and Collaboration

Proposed New Goals:

- Transit
- Neighborhood Approach to Multi-modal
- River Corridor
- Manage Congestion
- Sustainable Maintenance of Current Roads
- Financial Stewardship
- Safety
- People & Culture

New Input included:

- New Generation of Riders
- Ways to Engage with Seniors other than Technology
- Campaign to Reach Influencers
- Ethnic Diversity – Communication in Spanish
- All Students Riding for Free

NDOT would like us to connect a little more about our progression of projects. NDOT looks more regionally and statewide, but they want to be sensitive to growth in our area. If RTC and NDOT could be more connected on project preparation, we could have more connectivity and use resources for areas simultaneously.

The Board then went through creating a “Heat Map” of everyone's top priorities in our Region. Identified areas included: Verdi, Lake Tahoe, UNR, Sun Valley, North Valleys, River Corridor, La Posada to USA Parkway, 4th Street/Downtown Connection, McCarran, & Downtown.

5.3 RTP Process & Community Input – Bill Thomas/Xuan Wang/Graham Dollarhide

Bill Thomas introduced the RTP (Regional Transportation Plan) update, which is a process we do every four years. The Plan is a foundation that will be used over the next four years in terms of guiding and ultimately deciding which projects get built and which projects move forward.

The purpose of the RTP is to identify the transportation goals and principles that direct regional transportation investments through 2050. This is federally required by MPO's. Metropolitan Planning Organization (MPO) is a federal construct for communities of 50,000 or more people and we are designated by the Governor to be an MPO. We expect to have a draft for review in the fall of 2024, with Plan completion by March 2025.

Xuan Wang, RTC Planning Manager, discussed how the RTP update is founded on public and community outreach. We're currently working on public kickoff and later this month will launch a project website. We will include a video that shows the overview of the process, as well as include an online survey, so the community can give us feedback and input. The survey will be available in different languages, from a drop down menu where you can choose your language.

In discussing the Agency Working Group (AWG), which includes regional partners, school districts, and many others, Vice Chair Hill would like to see the Tahoe Truckee District (TTD) included in the AWG going forward. The Board also acknowledged that their role as Commissioners is to be the voice of their local jurisdictions.

5.4 ITS Desired Outcomes, Vision & Funding Agreement – Dale Keller/Alex Wolfson

Dale Keller and Alex Wolfson presented an overview of the Intelligent Transportation Systems (ITS) and Plan Implementation, which includes:

- Decision Making, SMP recommendations and Oversight Committee
- Operations
- Maintenance
- Develop and Adopt Standards and Specifications and Asset Management

Alex Wolfson then showed two videos on how providing proactive and reactive management of arterial operations from one consolidated location could greatly improve the timing of traffic in the North Valleys.

The timeline of what comes next is starting here at this March 22nd Board Retreat, where we have presented the ITS SMP and MOU, with no action being taken. April 19th will be the next RTC Board meeting where there will be a request to approve the MOU and a tentative budget will be presented. April/May, we will present the MOU to the Reno and Sparks City Councils and the Washoe County Commission. We are looking at a final SMP report to come in June.

The Board was supportive of this effort.

5.5 Active Transportation Plan – Marquis Williams/Sara Going

Marquis Williams and Sara Going gave a presentation on the Active Transportation Plan, which is where we focus on active modes of walking, biking and micromobility, which includes E-bikes and E-

Scooters. We want to shift from looking at this corridor by corridor and focus on the connectivity between and to each corridor.

The preliminary staffing needs would be to hire an FTE program manager in the Planning Department to manage the whole.

The Board was supportive of this effort.

5.6 Close Out & Summarize Direction

Our main goals going forward are:

- Regional Transportation Plan (RTP)
- Neighborhood Approach to Micromodal
- Exploring free rides for kids/students
- River Corridor
- Managing Congestion
- Safety
- Financial Stewardship
- People and Culture, to include communications

6. PUBLIC COMMENT

Chair Lawson opened the meeting to public input and called on anyone wishing to speak on topics relevant to the Regional Transportation Commission (RTC) that are not included in the current agenda. There being no one wishing to speak, Chair Lawson moved to Adjournment.

7. ADJOURNMENT *(For Possible Action)*

There being no further business to come before the Board, the meeting adjourned at 1:55 p.m.

ED LAWSON, Chair
Regional Transportation Commission

Presentations copies are available upon request. Contact mkraus@rtcwashoe.com.



REGIONAL TRANSPORTATION COMMISSION

Metropolitan Planning • Public Transportation & Operations • Engineering & Construction

Metropolitan Planning Organization of Washoe County, Nevada

Meeting Date: 4/19/2024

Agenda Item: 4.2.1

To: Regional Transportation Commission

From: Christian Schonlau, Director of Finance/CFO

SUBJECT: Procurement Activity Report

RECOMMENDED ACTION

Acknowledge receipt of the monthly Procurement Activity Report.

BACKGROUND AND DISCUSSION

See attached for Background and Discussion.

FISCAL IMPACT

There is no fiscal impact related to this action.

PREVIOUS BOARD ACTION

There has been no previous Board action taken.

ATTACHMENT A

PROJECTS CURRENTLY ADVERTISED

<u>Invitations for Bids (IFB)</u>	
Project	Due Date
S. Virginia Street Capacity and Safety Plan	April 9, 2024
2024 Preventative Maintenance	April 10, 2024
Kietzke Lane ITS	April 18, 2024
<u>Request for Proposals (RFP)</u>	
Project	Due Date
Janitorial Services	April 8, 2024

REPORT ON INVITATION FOR BID (IFB) AWARDS

Per NRS 332, NRS 338 and RTC's Management Policy P-13 "Purchasing," the Executive Director has authority to negotiate and execute a contract with the lowest responsive and responsible bidder on an Invitation for Bid (IFB) without Commission approval.

Project	Contractor	Award Date	Contract Amount
TE Spot 11 – Package 3 – Steamboat Parkway	Q&D Construction	2/14/2024	\$9,532,000
North Virginia Street – University Rehabilitation	Granite Construction Company	3/27/2024	\$2,102,102

PROFESSIONAL SERVICES/CONSULTING AGREEMENTS

Per RTC's Management Policy P-13 Executive Director has authority to approve contracts greater than \$25,000 and less than (or equal to) \$100,000.

Project	Contractor	Contract Amount
5310 Grant Application for Senior/Disabled Transportation Funding	Access to Healthcare Network	\$77,174
Prater Way & South Virginia Geotechnical Investigation	Lumos & Associates	\$64,800
Annual e-Builder Software Maintenance	e-Builder Inc./Trimble Company	\$69,998
Sparks Boulevard Appraisals	Carter-Ott Appraisers	\$52,000
Virginia Line BRT Appraisals	John S. Wright & Associates	\$91,500
Lemmon Valley/Spanish Springs Connector	C.A. Group	\$65,470
Executive Coaching	Sawyer Educational Consulting	\$30,000
Virginia Line BRT Appraisals	Johnson, Perkins, Griffin Real Estate Appraisers	\$46,000
Sparks Boulevard Appraisals	Johnson, Perkins, Griffin Real Estate Appraisers	\$95,000

Project	Contractor	Contract Amount
Arlington Avenue Bridges Hydraulic Modeling	Recreation Engineering and Planning Inc.	\$49,785
Specialized Legal Services FY25	Lemons, Grundy & Eisenberg	\$49,500
Steamboat Parkway Outreach Services	MJT Consulting LLC	\$28,750

CHANGE ORDERS AND CONTRACT AMENDMENTS WITHIN EXECUTIVE DIRECTOR'S RTC's P-13 PURCHASING POLICY AUTHORITY

Project	Contractor	Approval Date	CO / Amend. Number	CO / Amend. Amount	Revised Total Contract Amount
ITS Phase 4 Amendment 2	Kimley-Horn and Associates	1/1/2024	2	\$4,330	\$415,052
Raleigh Heights Amendment 1	Lumos and Associates, Inc.	2/13/2024	1	\$26,932	\$715,072



REGIONAL TRANSPORTATION COMMISSION

Metropolitan Planning • Public Transportation & Operations • Engineering & Construction

Metropolitan Planning Organization of Washoe County, Nevada

Meeting Date: 4/19/2024

Agenda Item: 4.2.2

To: Regional Transportation Commission

From: Graham Dollarhide, Planning Manager

SUBJECT: Planning Activity Report

RECOMMENDED ACTION

Acknowledge receipt of the monthly Planning Activity Report.

BACKGROUND AND DISCUSSION

See Attachment A for Background and Discussion.

FISCAL IMPACT

There is no fiscal impact related to this action.

PREVIOUS BOARD ACTION

There has been no previous Board action taken.

PLANNING STUDIES

Virginia Street Transit Oriented Development (TOD) Planning Study	
Graham Dollarhide, Project Manager	https://www.rtcwashoe.com/mpo-corridor-plan/south-virginia-street-transit-oriented-development-tod-study/
<i>Status: Transit analysis under final review with completion of land use analysis expected by the end of March. Coordination between RTC, City of Reno, and NDOT underway; consistent messaging being developed for final public outreach prior to completing study recommendations.</i>	
Active Transportation Plan	
Marquis Williams, Project Manager	https://www.rtcwashoe.com/mpo-reports/active-transportation-plan/
<i>Status: Continued refinement of planning and implementation strategies based on public input, three Agency Working Group (AWG) meetings, and internal priorities. Board retreat discussion to be held on 3/22. Draft deliverables are beginning to be submitted to RTC for review.</i>	
Regional Freight Study	
Marquis Williams, Project Manager	N/A
<i>Status: Project team is preparing deliverables based on analysis and feedback heard at 1-on-1 meetings and stakeholder engagement sessions. Third stakeholder workshop will be held in April 2024.</i>	
RTC REGIONAL TRAVEL CHARACTERISTICS STUDY	
Xuan Wang, Project Manager	https://www.rtcwashoe.com/mpo-reports/survey2023/
<i>Status: Project team is working on data collection. Transit and visitor survey near completion. Household travel survey on going.</i>	
RTC REGIONAL TRAVEL DEMAND MODEL UPDATE	
Xuan Wang, Project Manager	https://www.rtcwashoe.com/mpo-reports/model2023/
<i>Status: Project team is working on developing TAZ inputs, network and counts.</i>	
RTC REGIONAL TRANSPORTATION PLAN UPDATE	
Xuan Wang, Project Manager	TBA
<i>Status: Board retreat discussion on 3/22, started public kick-off and an online survey.</i>	

ONGOING PROGRAMS

Data Collection Program	
Xuan Wang, Project Manager	N/A
<i>Status: Identifying sites for 2024 and 2025 Multimodal Traffic Data Support. Data collections are scheduled throughout the year and started.</i>	
Bicycle and Pedestrian Planning	
RTC Planning and Engineering Staff	https://www.rtcwashoe.com/metropolitan-planning/
<i>Status: Ongoing collaboration with partner agencies on several initiatives to improve bicycle and pedestrian safety & facilities:</i>	
<ul style="list-style-type: none"> • Coordinating with Engineering to develop design details on roadway network concepts and outreach activities. 	

Vision Zero Truckee Meadows	
RTC Planning Staff	https://visionzerotruckeemeadows.com/
<i>Status: RTC staff has been working behind the scenes with Vision Zero Task Force members to compile data ahead of a deeper dive (possible charrette) into crashes. Meeting planned for spring to include discussion of possible charrette and other topics. Possible application for SS4A planning funds to update the Action Plan and/or High Injury Network.</i>	



REGIONAL TRANSPORTATION COMMISSION

Metropolitan Planning • Public Transportation & Operations • Engineering & Construction

Metropolitan Planning Organization of Washoe County, Nevada

Meeting Date: 4/19/2024

Agenda Item: 4.2.3

To: Regional Transportation Commission

From: Marquis Williams, Senior Technical Planner

SUBJECT: Advisory Committee Report

RECOMMENDED ACTION

Acknowledge receipt of the Summary Report for the Technical, Citizens Multimodal, and Regional Road Impact Fee Advisory Committees.

BACKGROUND AND DISCUSSION

The RTC has three advisory committees that provide input on a wide range of policy and planning issues as well as key planning documents and the RTC Budget. The committees include:

- The Citizens Multimodal Advisory Committee (CMAC), which includes three individuals who use RTC RIDE, two individuals who use RTC ACCESS, five individuals who represent bicyclists/pedestrians, and five individuals who represent general multimodal transportation. The RTC Board approves appointments to this advisory committee.
- The Technical Advisory Committee (TAC), which includes local public works directors, community development directors, and staff from other key agencies.
- The Regional Road Impact Fee Technical Advisory Committee (RRIF TAC), which was created to oversee and advise the local governments regarding land use classification assumptions and the Capital Improvements Plan (CIP) used in the impact fee program. The RRIF TAC consists of three representatives from each local entity, two RTC representatives, and four private sector members who are appointed by the RTC Board.

The CMAC and the TAC met on April 3, 2024 and April 4, 2024, respectively. Each committee acknowledged the receipt of a presentation on the Active Transportation Plan. Additionally, the CMAC reviewed a report from the RTC's Public Transportation Department regarding the Bus Stop Improvement & Connectivity Program, and filled vacancies for the Chair and Vice Chair positions until June 30, 2024.

There has not been a RRIF TAC meeting since the Board previously met.

FISCAL IMPACT

There is no fiscal impact related to this action.

PREVIOUS BOARD ACTION

There has been no previous Board action taken.



REGIONAL TRANSPORTATION COMMISSION

Metropolitan Planning • Public Transportation & Operations • Engineering & Construction

Metropolitan Planning Organization of Washoe County, Nevada

Meeting Date: 4/19/2024

Agenda Item: 4.2.4

To: Regional Transportation Commission

From: Dale Keller, Director of Engineering

SUBJECT: Engineering Activity Report

RECOMMENDED ACTION

Acknowledge receipt of the monthly Engineering Activity Report.

BACKGROUND AND DISCUSSION

See Attachment A for Background and Discussion.

FISCAL IMPACT

There is no fiscal impact related with this action.

PREVIOUS BOARD ACTION

There has been no previous Board action taken.

ACTIVE TRANSPORTATION IMPROVEMENTS

Downtown Reno Micromobility Project	
Sara Going, Project Manager	www.downtownrenomicromobility.com
<i>Status: A contract with Nichols Consulting Engineers (NCE) for design services was approved by the RTC Board in February. The project design kickoff meeting is scheduled for April.</i>	

Truckee River Shared Use Path	
Scott Gibson, Project Manager	https://www.rtcwashoe.com/engineering-project/truckee-river-shared-use-path-project/
<i>Status: The RTC is continuing to coordinate with the Reno Sparks Indian Colony (RSIC) for the necessary property in which the pathway will traverse. There has been no progress on this in recent months.</i>	

CAPACITY/CONGESTION RELIEF PROJECTS

Buck Drive Circulation	
Maria Paz Fernandez, Project Manager	https://www.rtcwashoe.com/engineering-project/buck-drive-circulation/
<i>Status: Kimley Horn is the selected firm for the design and construction engineering services. Ongoing coordination with City of Reno staff. 50% Design Plans expected by June. Construction is tentatively scheduled for spring 2025.</i>	

Butch Cassidy Drive Extension	
Kim Diegle, Project Manager	https://www.rtcwashoe.com/engineering-project/butch-cassidy-drive-extension/
<i>Status: The project design kickoff occurred in January 2024. Preliminary design is underway.</i>	

Eagle Canyon Safety and Operations	
Sara Going, Project Manager	https://rtcwashoe.com/projects/eagle-canyon-safety-and-operations/
<i>Status: A contract with C.A. Group for design services was approved by the RTC Board in February. The project design kickoff meeting is scheduled for April.</i>	

Geiger Grade Realignment	
Kim Diegle, Project Manager	https://www.rtcwashoe.com/engineering-project/geiger-grade-road-realignment/
<i>Status: RTC is in the process of selecting a consulting team to perform a feasibility study to further investigate preliminary design alternatives, traffic, and environmental impacts.</i>	

Kietzke Lane ITS	
Garrett Rodgers, Project Manager	https://www.rtcwashoe.com/engineering-project/kietzke-lane-its-project/
<i>Status: Construction bids are anticipated to be opened on April 18th. Construction is anticipated to start in June.</i>	

Military Road Capacity & Safety	
Austin McCoy, Project Manager	https://www.rtcwashoe.com/engineering-project/military-road-capacity-and-safety/
<i>Status: Alternative selection for roadway and intersection configurations is complete. Intermediate design is underway. A public meeting is scheduled for Thursday, April 25th.</i>	

North McCarran Boulevard & Pyramid Hwy Fiber	
Alex Wolfson, Project Manager	https://www.rtcwashoe.com/engineering-project/mccarran-pyramid-fiber/
<i>Status: Construction is substantially complete; contractor is working on punch list items.</i>	

North Valleys North Virginia Street Capacity	
Garrett Rodgers, Project Manager	https://www.rtcwashoe.com/engineering-project/north-valleys-north-virginia-street-capacity/
<i>Status: The traffic analysis study and conceptual design is under agency review.</i>	

Pembroke Drive Capacity & Safety	
Maria Paz Fernandez, Project Manager	https://www.rtcwashoe.com/engineering-project/pembroke-drive-capacity-and-safety/
<i>Status: Nichols Consulting Engineers (NCE) was the selected design consultant. Preliminary design alternatives were updated to include widening to two (2) lanes on each direction. 30% design plans expected by June.</i>	

Pyramid Highway Intelligent Corridor	
Alex Wolfson, Project Manager	https://www.rtcwashoe.com/engineering-project/pyramid-highway-intelligent-corridor/
<i>Status: Construction of new fiber will begin in April. Testing of software for the notification system is in progress.</i>	

Pyramid Highway Operations Improvements	
Jessica Dover, Project Manager	https://www.rtcwashoe.com/engineering-project/pyramid-highway-operations-improvements/
<i>Status: Preliminary Engineering is underway; design alternatives anticipated Summer 2024.</i>	

Pyramid Way, Sparks Boulevard, Highland Ranch Interchange	
Austin McCoy, Project Manager	https://www.rtcwashoe.com/engineering-project/pyramid-highway-us-395-connection-project/
<i>Status: NDOT LPA Agreement has been executed and a notice to proceed from NDOT has been received. Data collection and preliminary design is underway with Parametrix.</i>	

South Meadows Traffic Enhancements	
Austin McCoy, Project Manager	https://www.rtcwashoe.com/engineering-project/south-meadows-traffic-enhancements/
<i>Status: The apparent low bidder was Sierra Nevada Construction (SNC). Construction is anticipated to begin May 2nd.</i>	

South Virginia Street & I-580 Exit 29 Capacity & Safety	
Maria Paz Fernandez, Project Manager	https://www.rtcwashoe.com/engineering-project/south-virginia-street-nb-lane-widening/
<i>Status: RTC staff have received bids and they are under review prior issuing the intent to award for construction contract. Construction is anticipated to start in June.</i>	

Sparks Boulevard – North Phase	
Garrett Rodgers, Project Manager	SparksBLVDproject.com .
<i>Status: Project design will continue to advance with final design. RTC received environmental approval and determination of the Finding of No Significant Impact (FONSI) for the project. Right-of-way acquisition activities have begun.</i>	

Steamboat Parkway Improvement	
Garrett Rodgers, Project Manager	https://www.rtcwashoe.com/engineering-project/steamboat-pkwy-improvement/
<i>Status: The apparent low bidder was Q&D Construction. Construction started on April 2nd, and will continue through the fall.</i>	

Traffic Signal Fiber 25-01	
Austin McCoy, Project Manager	https://rtcwashoe.com/projects/traffic-signal-fiber-25-01/
<i>Status: A contract with Kimley Horn and Associates (KHA) for design and EDC is being presented to the RTC Board for possible action at the April RTC Board Meeting.</i>	

Traffic Signal Installations 23-01	
Alex Wolfson, Project Manager	https://www.rtcwashoe.com/engineering-project/traffic-signal-installations-23-01/
<i>Status: Work on the new traffic signal at the Moana / Baker intersection will resume in May with activation expected at the end of the month. Work is in progress to replace the traffic signal system at the Prater / 4th intersection in Sparks.</i>	

Traffic Signal Modifications 23-01	
Sara Going, Project Manager	https://www.rtcwashoe.com/engineering-project/traffic-signal-modifications-23-01/
<i>Status: The construction contract for the project was awarded to Summit Line Construction, Inc. Construction will begin in summer of 2024.</i>	

Traffic Signal Modifications 24-01	
Sara Going, Project Manager	https://www.rtcwashoe.com/engineering-project/traffic-signal-modifications-24-01/
<i>Status: Preliminary design is underway.</i>	

Traffic Signal Modifications 25-01	
Alex Wolfson, Project Manager	https://rtcwashoe.com/projects/traffic-signal-modifications-25-01/
<i>Status: Preliminary design is underway.</i>	

Traffic Signal Timing 7	
Alex Wolfson, Project Manager	https://www.rtcwashoe.com/engineering-project/traffic-signal-timing-7-project/
<p><i>Status: New signal timing plans have been implemented on the following corridors:</i></p> <ul style="list-style-type: none"> - N Virginia St from N McCarran to Panther (for construction) <p><i>The next corridors that are being worked on are:</i></p> <ul style="list-style-type: none"> - El Rancho / Battle Born from Galletti to Oddie - Prater Way from Galletti to El Rancho 	

Veterans Parkway ITS	
Austin McCoy, Project Manager	https://www.rtcwashoe.com/engineering-project/veterans-parkway-its/
<i>Status: Preliminary project design is underway.</i>	

Veterans Roundabout Modifications	
Jessica Dover, Project Manager	https://www.rtcwashoe.com/engineering-project/veterans-roundabout-modifications/
<i>Status: 15% conceptual design concurrence obtained from NDOT; Preliminary Design (30%) anticipated Spring 2024.</i>	

Vista Boulevard/Disc Drive Intersection Improvement	
Alex Wolfson, Project Manager	https://rtcwashoe.com/projects/vista-boulevard-disc-drive-intersection-improvements/
<i>Status: Preliminary project design is underway.</i>	

Vista Boulevard/Prater Way ITS	
Garrett Rodgers, Project Manager	https://www.rtcwashoe.com/engineering-project/vista-boulevard-prater-way-its/
<i>Status: Final design is underway.</i>	

CORRIDOR IMPROVEMENT PROJECTS

Arlington Avenue Bridges	
Bryan Byrne, Project Manager	https://www.rtcwashoe.com/engineering-project/arlington-avenue-bridges-project/
<i>Status: The design is advancing to the 100% level, which is anticipated to be completed in April. Construction is tentatively scheduled for 2025 and 2026. RTC is exploring opportunities to reduce construction impacts.</i>	

Keystone Bridge Replacement	
Sara Going, Project Manager	https://www.rtcwashoe.com/engineering-project/keystone-avenue-bridge-replacement/
<i>Status: The project team is advancing the alternatives through a Level 2 screening process.</i>	

Lemmon Drive Traffic Improvements and Resiliency	
Bryan Byrne, Project Manager	https://www.rtcwashoe.com/engineering-project/lemmon-drive-segment-2/
<i>Status: The project is actively advancing in completing the necessary NEPA studies. The project's Public Involvement Meeting comments are being evaluated for implementation into the preliminary design.</i>	

Mill Street Capacity & Safety (Kietzke Lane to Terminal Way)	
Kimberly Diegle, Project Manager	http://millstreetwidening.com
<i>Status: Final design is underway. The right-of-way acquisition activities and utility coordination is ongoing. Outreach with adjacent business owners continues. Construction anticipated to start early 2025.</i>	

McCarran Boulevard Safety and Operational Improvements	
Jessica Dover, Project Manager	https://rtcwashoe.com/projects/mccarran-boulevard-safety-and-operational-improvements/
<i>Status: Issuance of Task Order No. 1 and start of preliminary design services anticipated April 2024.</i>	

Oddie/Wells Multimodal Improvements	
Maria Paz Fernandez, Project Manager	http://oddiewellsproject.com/
<i>Status: Weather dependent</i>	
<i>Phase 1 (Pyramid Way to Sullivan Lane in Sparks) was completed at the end of August.</i>	
<i>Pavement completed in Phase 2 (Sullivan Ln in Sparks to Silverada Blvd in Reno) and Phase 3 (Silverada Blvd to east of US 395 in Reno). NVE lights continue to be installed.</i>	
<i>Roadwork construction activities on Phase 4 are underway with pavement anticipated to be completed in May.</i>	
<i>One lane on each direction is maintained along Oddie Boulevard/Wells Avenue.</i>	
<i>Overall construction, including the remaining phases, is anticipated to be completed by the third quarter of 2024.</i>	

Sierra Street Bridge Replacement	
Bryan Byrne, Project Manager	https://sierrastreetbridge.com/
<i>Status: The design team has begun preliminary design and is working to deliver a 30% design plan. The project held a Public Involvement Meeting on March 21, 2024, at the McKinley Arts Center.</i>	

Sun Valley Boulevard Corridor Improvements – Phase 2	
Jessica Dover, Project Manager	https://www.rtcwashoe.com/engineering-project/sun-valley-boulevard-corridor-improvements-phase-2/
<i>Status: Preliminary design tasks associated with development of drainage alternatives underway. Draft Conceptual Drainage Design Report anticipated to be sent to NDOT for review April, 2024.</i>	

West Fourth Street Downtown	
Scott Gibson, Project Manager	https://www.rtcwashoe.com/engineering-project/west-fourth-street-downtown/
<i>Status: 30% design Plans have been completed and submitted for review to the City and Utilities.</i>	

West Fourth Street Safety	
Scott Gibson, Project Manager	https://www.rtcwashoe.com/engineering-project/west-fourth-street-safety/
<i>Status: Wood Rodgers has submitted 60% design plans for review. Work on NEPA and coordination with NDOT environmental continues.</i>	

PAVEMENT PRESERVATION PROJECTS

2024 Preventive Maintenance Program	
Jessica Dover, Project Manager	https://rtcwashoe.com/projects/2024-preventive-maintenance-project/
<i>Status: Project out to Bid March 20, 2024; Construction tentatively scheduled to start in May 2024.</i>	

2025 Bridge Maintenance	
Scott Gibson, Project Manager	https://rtcwashoe.com/projects/2025-bridge-maintenance/
<i>Status: Preliminary design is underway.</i>	

1st Street Rehabilitation and Signal Replacement	
Scott Gibson, Project Manager	https://www.rtcwashoe.com/engineering-project/1st-street-rehabilitation-and-signal-replacement/
<i>Status: Construction is ongoing and anticipated to be complete this summer.</i>	

Arrowcreek/Wedge Rehabilitation	
Jessica Dover, Project Manager	https://www.rtcwashoe.com/engineering-project/arrowcreek-parkway-wedge-rehabilitation/
<i>Status: Feasible Design Alternatives anticipated Spring 2024. Preliminary design (50%) anticipated Summer 2024.</i>	

Las Brisas and Los Altos Resurfacing	
Jessica Dover, Project Manager	https://www.rtcwashoe.com/engineering-project/las-brisas-and-los-altos-resurfacing/
<i>Status: Las Brisas BLVD mill and overlay (Robb Drive to Britannia Drive) and signage throughout the corridor has achieved Final Acceptance. Los Altos PKWY mill and overlay (S. Vista BLVD to Goodwin RD) and utility adjustments throughout the corridor has achieved Final Acceptance. Slurry and associated remaining Contract Items at both locations to be completed Summer 2024.</i>	

Meadowood Rehabilitation	
Garrett Rodgers, Project Manager	https://rtcwashoe.com/projects/meadowood-rehab/
<i>Status: Preliminary design is underway.</i>	

N Virginia Street University Rehabilitation	
Bryan Byrne, Project Manager	https://www.rtcwashoe.com/engineering-project/north-virginia-street-university-rehabilitation/
<i>Status: The construction bid was awarded to Granite Construction. Construction is planned for the summer of 2024, coinciding with UNR's summer break.</i>	

Raleigh Heights Rehabilitation	
Austin McCoy, Project Manager	https://www.rtcwashoe.com/engineering-project/raleigh-heights-rehabilitation/
<i>Status: Final design review is ongoing. Advertisement to contractors is scheduled for mid April. Construction is tentatively scheduled for June through October 2024.</i>	

Selmi Drive Rehabilitation	
Maria Paz Fernandez, Project Manager	https://www.rtcwashoe.com/engineering-project/selmi-drive-rehabilitation/
<i>Status: Construction awarded to Q&D Construction, LLC., and it started on April 2nd. Substantial completion is expected by the end of May.</i>	

Somerset Parkway Corrective Project	
Scott Gibson, Project Manager	https://rtcwashoe.com/projects/2024-corrective-maintenance-somerset/
<i>Status: Preliminary design and community engagement is underway. 90% design submittal is anticipated by the end of April.</i>	

Stanford Way Rehabilitation	
Kimberly Diegle, Project Manager	https://www.rtcwashoe.com/engineering-project/stanford-way-rehabilitation/
<i>Status: Construction is ongoing and will continue through summer.</i>	

OTHER PROJECTS

4th Street Station Expansion	
Ian Chamberlain, Project Manager	https://www.rtcwashoe.com/engineering-project/4th-street-station-expansion/
<i>Status: This project is on hold due to issues with property acquisition for proposed improvements.</i>	

Virginia Line BRT Improvements	
Kimberly Diegle, Project Manager	https://www.rtcwashoe.com/engineering-project/virginia-line-brt-improvements/
<i>Status: 60% Design is complete. Coordination with the City of Reno, FTA, and affected utility companies continues. NEPA re-evaluation of the original Virginia Street Bus RAPID Transit Extension project is underway.</i>	

REPORT ON NEGOTIATED SETTLEMENT AGREEMENTS FOR THE ACQUISITION OF PROPERTY

Project	Property Owner	Purchase Amount	Amount Over Appraisal
Mill Street Capacity and Safety	Olaciregui Family Limited Partnership	\$23,275.00	\$0
S. Virginia Street & I580 Exit 29 Capacity & Safety	In-N-Out Burgers	\$3,000.00	\$0

CONTRACTS UP TO \$100,000

Project	Vendor	Scope	Amount
Pavement Evaluation: Prater Way and S. Virginia Street	Lumos & Associates	pavement investigation, visual assessment, and alternatives analysis	\$64,800



REGIONAL TRANSPORTATION COMMISSION

Metropolitan Planning • Public Transportation & Operations • Engineering & Construction

Metropolitan Planning Organization of Washoe County, Nevada

Meeting Date: 4/19/2024

Agenda Item: 4.2.5

To: Regional Transportation Commission

From: James Gee, Director of Public Transportation and Operations

SUBJECT: Public Transportation and Operations Report

RECOMMENDED ACTION

Acknowledge receipt of the monthly Public Transportation and Operations Report.

BACKGROUND AND DISCUSSION

See Attachment A for Background and Discussion.

FISCAL IMPACT

There is no fiscal impact related to this action.

PREVIOUS BOARD ACTION

There has been no previous Board action taken.

BACKGROUND AND DISCUSSION

ATTACHMENT A

Highlights

Emerging Leaders Program (ELP) Class of 2025 – RTC is pleased to announce that Alex Cruz, Senior Transit Planner in the Public Transportation and Operations Department, has been recognized by the American Public Transportation Association’s ELP Committee, as one of 35 professionals in the transit industry well deserving of a coveted seat in the 2025 program.

Legislative Non-Profit Tour – On Friday, April 12, RTC staff along with lobbyist Mike Hillerby, hosted a tour of the area’s local non-profits for legislators. The tour included visits to the Eddy House, Veterans Guest House, Our Center, Northern Nevada HOPES, OUR Place/RISE, Food Bank of Northern Nevada, the Children’s Cabinet and Community Health Alliance.



National Transit Employee Appreciation Day – Annually, March 18 is designated – *National Transit Employee Appreciation Day* by the American Public Transportation Association (APTA). In honor of its drivers and transit staff, Keolis hosted an early morning breakfast with festivities throughout the day.



RTC Offered Free RIDEs on St. Patrick's Day - On March 17, the RTC marked 21 years of providing a safe transportation choice to help people celebrate St. Patrick’s Day responsibly with the FREE Safe RIDE program. Scheduled RTC transit services were free on Sunday, March 17 from 4 p.m. until 2 a.m. The RTC’s FREE Safe RIDE program supports Vision Zero Truckee Meadows’ goal of zero pedestrian fatalities in our community by 2030.



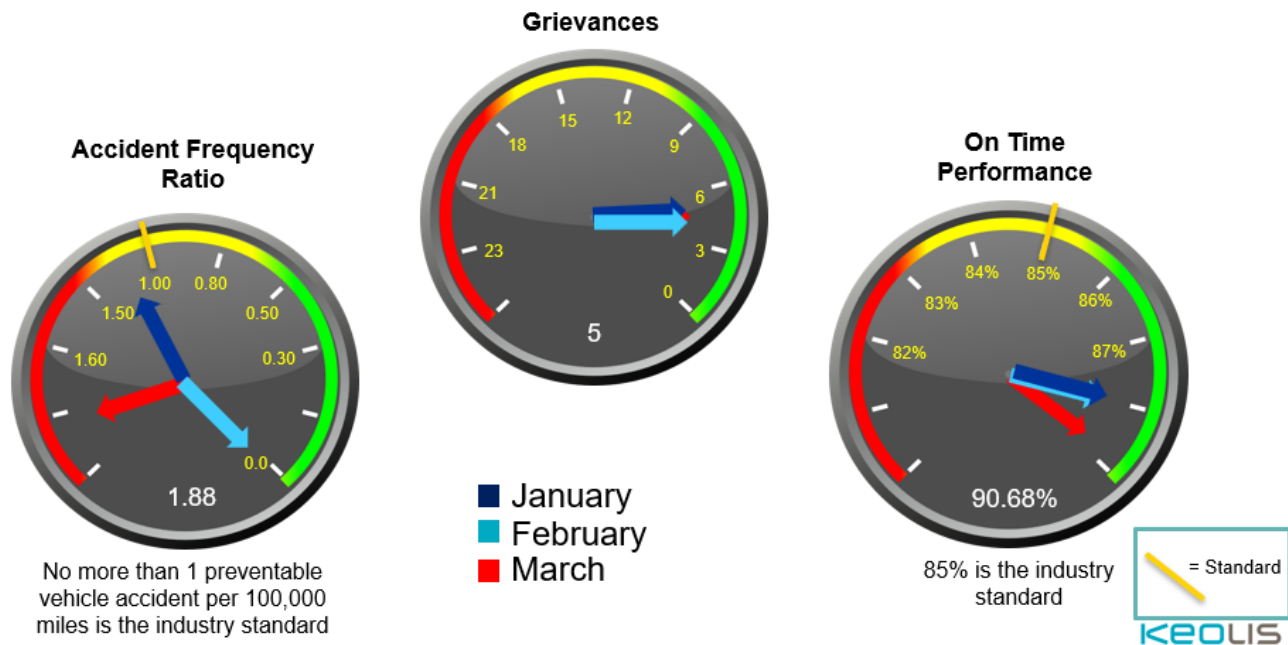
RTC RIDE Key Highlights – February

- 4 trainees released to Operations for revenue service
- Driver of the Month: Bruce Jones
- 99% for completed hours and trips
- Employee Engagement:
 - 3/6/24 – Handed out Oreo cookie packs on the tables for *National Oreo Cookie Day*
 - 3/15/24 – HR and Operations St. Patrick’s Day handouts to drivers and customers
 - 3/18/24 – *National Transit Employee Appreciation Day*
 - 3/21/24 – Operators wore UNR shirts and hats in support of the Wolf Pack in their bid for March Madness
- CUTA Training: 12 New Hires completed Modules 1 – 4, and 11 Operators participated and/or completed modules in March
- 2 new grievances filed in March, 1 settled
- 1 new ULP filed in March

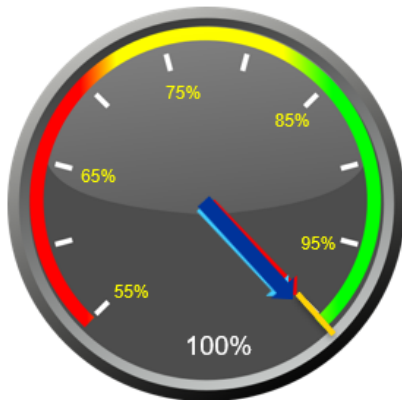
Keolis represented staffing headcount as of February 29, 2024:

Position	Total Employed	#Needed
Coach Operator Trainees	10	6+
Coach Operators	155	10
Dispatchers	7	0
Road Supervisors	4	0
Mechanic A	6	1
Mechanic B	4	0
Mechanic C	4	1
Facilities Technician	2	0
EV Technician	1	0
Utility Worker	11	0
Electronics Tech	2	0
Body Technician	1	0

RTC RIDE Contract Compliance – 1st Quarterly Update for 2024



Preventative Maintenance Inspections



100% is the industry standard

- January
- February
- March

Miles Between Road Calls



15,000 miles is the industry standard



Completed Trips



- January
- February
- March

Valid Complaints per 20,000 Passengers



No more than 1 valid complaint per 20,000 passengers is the industry standard



RTC ACCESS Key Highlights – February

Classes: 3-5-2024 ~ 3 in class, 2 made it out of training
 3-19-2024 ~ 2 in class, 1 currently in training

Safety:

- **Accidents:**
 - 2 Preventable
 - 0 Non-Preventable
- **Incidents**
 - 0

- **Injuries:**
 - 0
- **YTD Preventable Accident Count: 3**
- **YTD Injury Count: 0**

- **March Safety Blitz**
 - St. Patrick's / LLLC / Driver Appreciation Breakfast
- **March Safety Meeting**
 - Defensive Driving

MTM represented staffing headcount as of February 29, 2024:

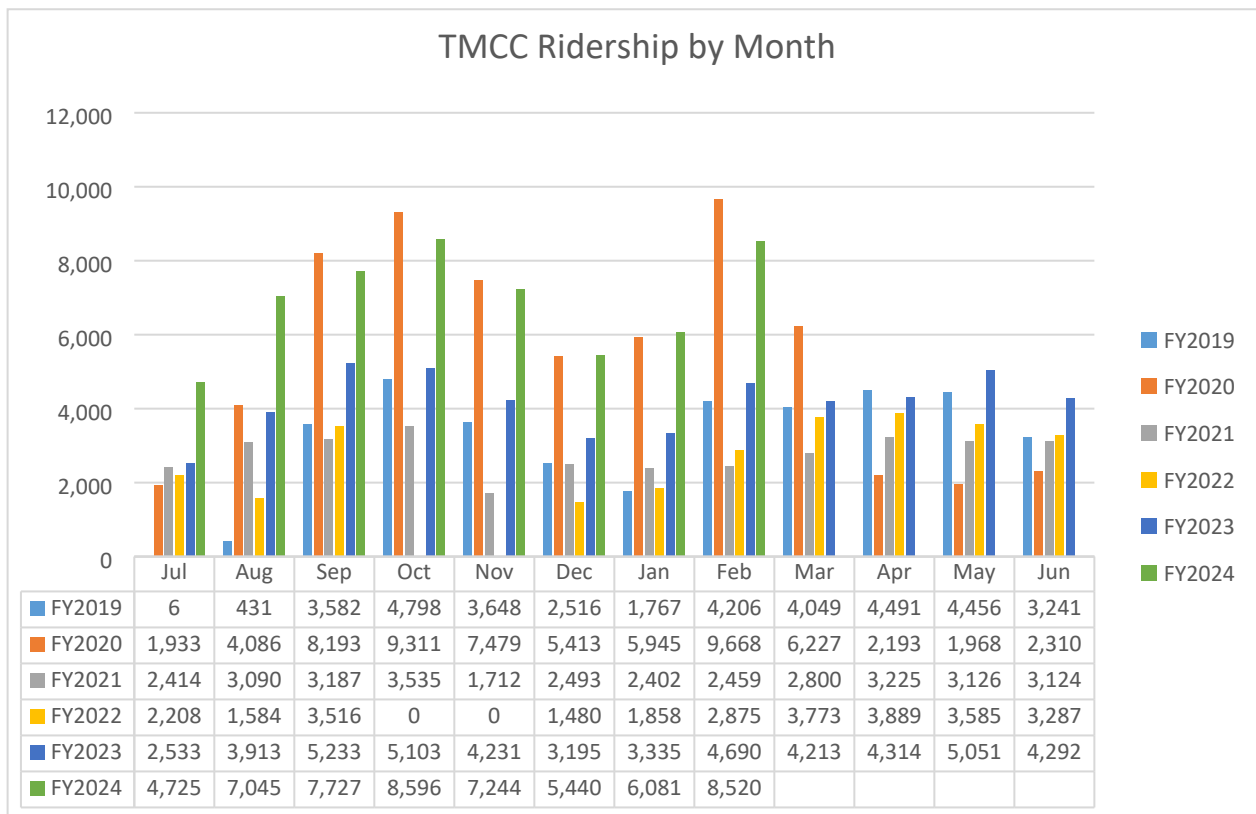
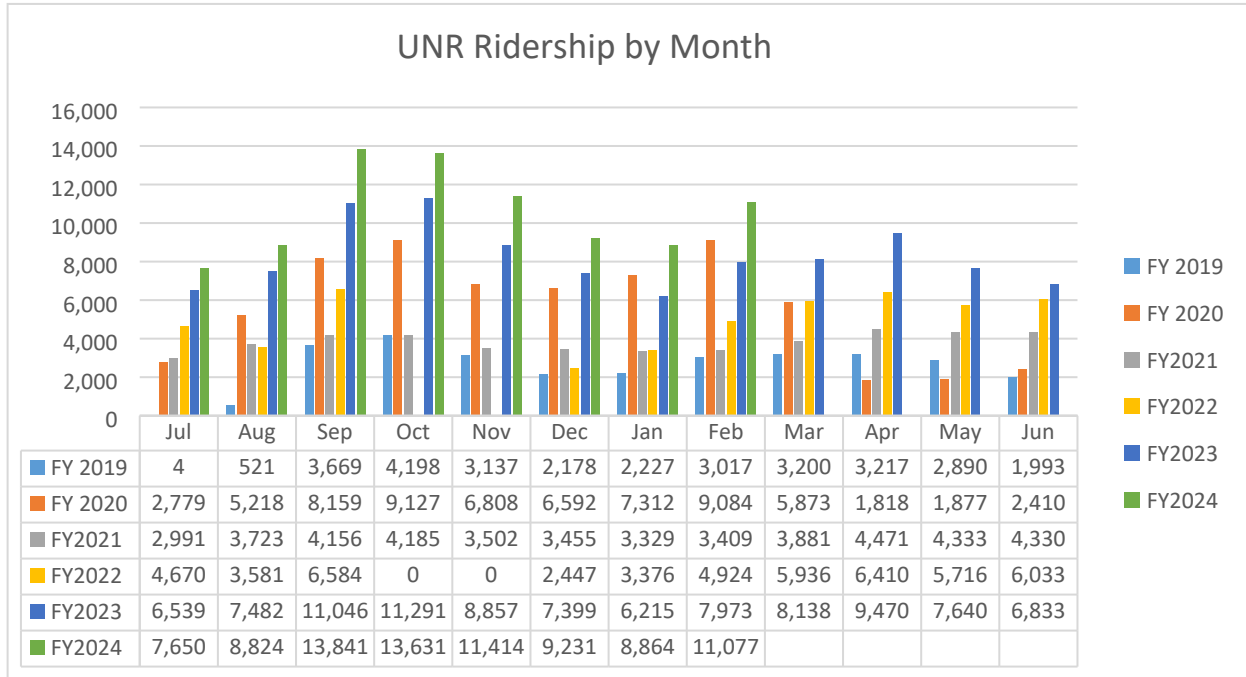
Position	Total Employed	#Needed
Drivers	51FT – 4PT	14 FT – 0 PT
Dispatchers	4 FT – 1PT	0
Reservationists	4.5 FTE's	0
Mechanic A	3 FT	0
Maintenance Technician	1	0
Utility Worker	1	0

TRANSIT DEMAND MANAGEMENT (TDM) Update

- Vanpools added 6 more vanpools increasing the total to 332. Staff is continually working with folks from Lake Tahoe area to increase vanpools. Both the Truckee North Tahoe TMA (Transportation Management Association) and South Shore TMA have received grants to give further subsidies to help the vanpools. Staff is working with a group in Tahoe to increase the number of vans going to the Lake. Currently 19 vans are serving the Lake Tahoe area.
- Staff presented and answered questions on Smart Trips at the Workforce Transportation event at the Reno Town Mall on March 21.
- Staff is meeting weekly with Celtis Venture on RTC's marketing plan. Celtis staff were on site from March 14-16, to gain a feeling for the Washoe County area, and took lots of photos. Staff is working on two campaigns - Spanish and ED Pass.
- Staff attended the Reno Chamber of Commerce Small Business meeting on March 5th.
- Staff will be participating in the Reno Earth Day event at Idlewild Park on April 20. An all-electric bus will be on display, and a special shuttle will provide transit service from the Reno Court House parking lot to the event.
- Staff has begun working with Washoe County on this year's Bike Month. Biketopia kicks off the event on Sunday, April 28 from noon to 3pm at the Reno Public Market. Attendees will learn more about Bike Month and will have the opportunity to sign up on the Smart Trips website.



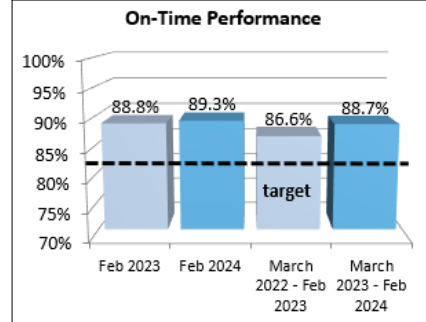
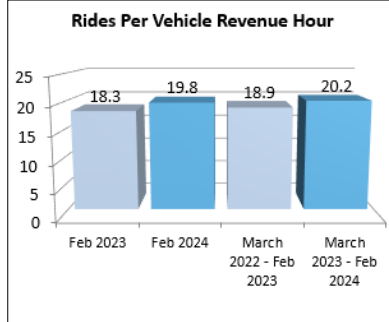
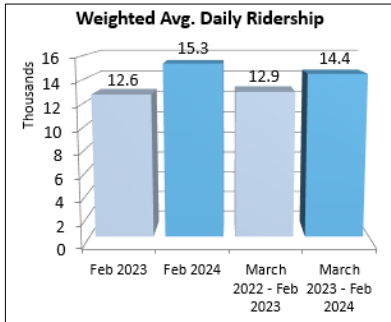
Ridership numbers from the ED Pass Program through the month of February 2024:



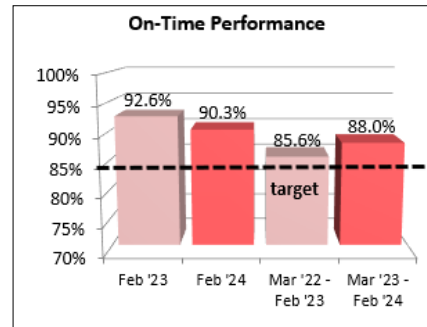
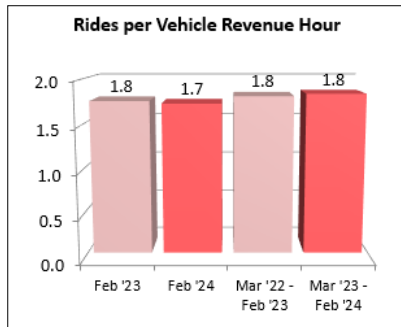
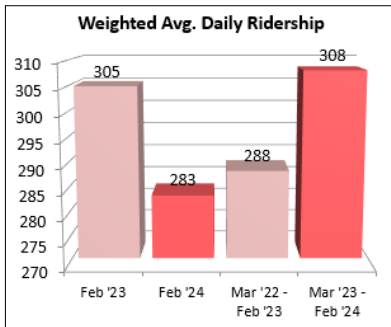
Both UNR and TMCC had their highest ridership for January to date, with UNR also having the highest ridership for February.

FEBRUARY 2024 TRANSIT PERFORMANCE

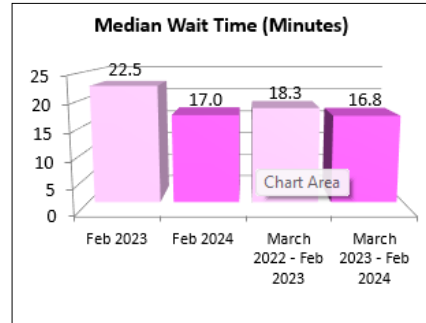
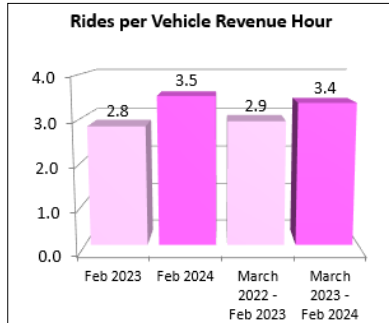
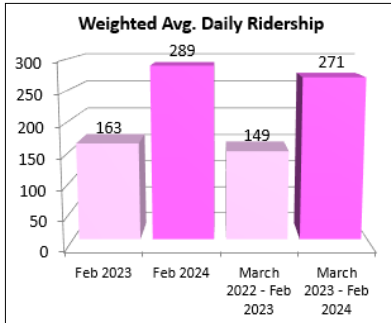
RTC RIDE



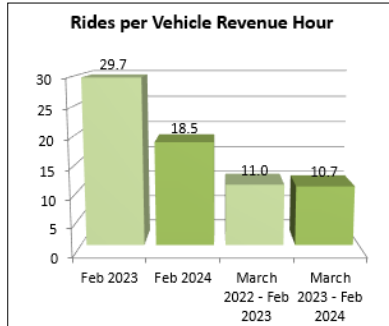
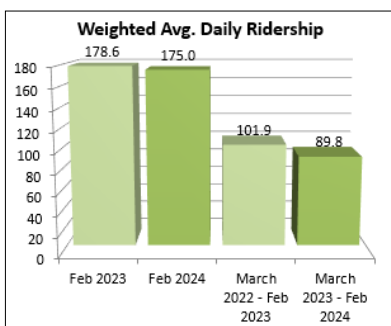
RTC ACCESS



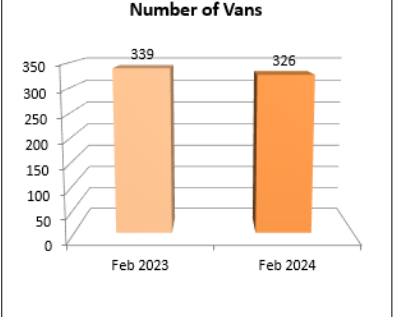
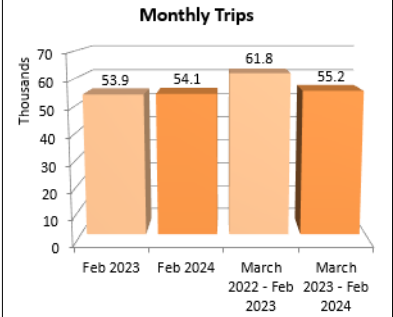
RTC FlexRIDE



TART



RTC VANPOOL





REGIONAL TRANSPORTATION COMMISSION

Metropolitan Planning • Public Transportation & Operations • Engineering & Construction

Metropolitan Planning Organization of Washoe County, Nevada

Meeting Date: 4/19/2024

Agenda Item: 4.2.6

To: Regional Transportation Commission

From: Josh MacEachern, Public Information Officer

SUBJECT: Community and Media Outreach Activities

RECOMMENDED ACTION

Acknowledge receipt of monthly Community and Media Outreach activities.

BACKGROUND AND DISCUSSION

Please see attached for Background and Discussion.

FISCAL IMPACT

There is no fiscal impact related to this action.

PREVIOUS BOARD ACTION

There has been no previous Board action taken.

COMMUNITY AND MEDIA OUTREACH ACTIVITIES

*February and March 2024

Outreach Activities
Josh MacEachern, Project Manager
<i>Status: RTC staff conducted the following outreach activities from February 1 – March 31</i>
<i>2/16/24 – Intersection Closure at Oddie Boulevard and Silverada Boulevard</i>
<i>2/19/24 – First Street Rehabilitation Project Begins</i>
<i>2/19/24 – RTC Unveils Student-Designed Bus Wrap Promoting Pedestrian Safety</i>
<i>3/1/24 – Prater and Fourth Street Signal Improvements</i>
<i>3/4/24 – Stanford Way Rehabilitation Project</i>
<i>3/6/24 – RTC Citizens Multimodal Advisory Committee (CMAC) Meeting</i>
<i>3/7/24 – Reno Midtown Historical Plaque Installation</i>
<i>3/15/24 – RTC Free Rides on St. Patrick’s Day</i>
<i>3/19/24 – Sierra Street Bridge Project Public Meeting</i>
<i>3/21/24 – Sierra Street Bridge Project Public Meeting</i>
<i>3/22/24 – RTC Board Retreat</i>
<i>3/22/24 – Prater and Fourth Street Signal Replacement</i>
<i>3/29/24 – Full Intersection Closure First Street and Sierra Street</i>

Media Mentions
Josh MacEachern, Project Manager
<i>2/8/24 – Lemmon Drive Project (News 4)</i>
<i>2/12/24 – Traffic Signal Improvements (KTVN 2)</i>
<i>2/14/24 – North Valleys (KOLO 8)</i>
<i>2/19/24 – Oddie Wells Project (KTVN 2)</i>
<i>2/20/24 – First Street Rehab Project (KTVN 2)</i>
<i>2/20/24 – Pedestrian Safety Poster Contest (KTVN 2)</i>
<i>2/21/24 – Micromobility Project (KOLO 8)</i>
<i>2/28/24 – Traffic Signal Improvements (KOLO 8)</i>
<i>3/4/24 – Stanford Way Rehabilitation Project (KTVN 2)</i>
<i>3/6/24 – Construction Preview (KOLO 8)</i>
<i>3/7/24 – Historical Plaques in Midtown (KTVN 2)</i>
<i>3/14/24 – RTC Offers Free Transit on St. Patrick’s Day (KOLO 8)</i>
<i>3/15/24 – RTC Offers Free Transit Service on St. Patrick’s Day (FOX 11)</i>
<i>3/20/24 – RTC Bridge Replacement Projects (KTVN 2)</i>
<i>3/22/24 – RTC holds public meeting on Sierra Street Bridge Replacement to occur in next few years (FOX 11)</i>
<i>3/25/24 – RTC Replacing Traffic Signal System at Prater Way and Fourth Street (KTVN 2)</i>
<i>3/27/24 – First Street Rehabilitation Project Underway (KOLO 8)</i>
<i>3/20/24 – (RTC GAO Paul Nelson) KTVN 2 Interview re: Steamboat Parkway Improvement Project</i>

Social Media engagement and reach has increased across all platforms.

Informational Materials and Video Production

Paul Nelson, Project Manager

Status: Three (3) topics were broadcast on KOLO-TV for The Road Ahead with RTC.

- Library Transit Routes
- Us 395 North Valleys Project
- Downtown Reno Micromobility
- Traffic Signal Installation
- Construction Project Update w/ Jeffrey Wilbrecht
- Free St. Patrick's Day Transit
- First Street Rehabilitation Project



REGIONAL TRANSPORTATION COMMISSION

Metropolitan Planning • Public Transportation & Operations • Engineering & Construction

Metropolitan Planning Organization of Washoe County, Nevada

Meeting Date: 4/19/2024

Agenda Item: 4.3.1

To: Regional Transportation Commission

From: Graham Dollarhide, Planning Manager

SUBJECT: UNR Intersection Safety Priority ICA

RECOMMENDED ACTION

Approve an Interlocal Cooperative Agreement with the University of Nevada, Reno for the Intersection Safety Priority project, in the amount of \$30,000.

BACKGROUND AND DISCUSSION

The purpose of the proposed agreement (Attachment A) with the University of Nevada, Reno (UNR) is to conduct a safety treatments prioritization analysis, providing an in-depth analysis of intersections that focuses on safety metrics and recommending improvements. The project will prioritize safety treatments for 20 signalized intersections and 20 unsignalized intersections within the regional road network. The plan will identify short and long-term improvements and develop a funding strategy.

The project will produce detailed GIS maps showcasing the prioritized intersections and proposed safety treatments, as well as a comprehensive report detailing the methodology, findings, and recommendations for intersection safety improvements. The report will include an analysis comparing the prioritized intersections and recommended treatments with existing local jurisdiction improvement lists and planned RTC projects.

The item supports the FY2024 RTC Goal, "Complete the Predictive Safety Tool to improve decision-making for the TE Spot Program."

FISCAL IMPACT

Funding for the project cost has been budgeted based on anticipated federal and local revenue sources. The agreement outlines the terms for RTC reimbursement of an amount not to exceed \$30,000.

PREVIOUS BOARD ACTION

There has been no previous Board action taken.

UNR INTERSECTION SAFETY PRIORITY & SAFETY
INTERLOCAL COOPERATIVE AGREEMENT

This Cooperative Agreement (the “Agreement”) is made and entered into on by and between the Board of Regents, Nevada System of Higher Education, on behalf of the University of Nevada, Reno (hereinafter the “UNIVERSITY”), and the Regional Transportation Commission of Washoe County (hereinafter “RTC”).

WHEREAS, the parties to this Agreement are public agencies and authorized to enter into agreements in accordance with NRS 277.080 through 277.180; and

WHEREAS, NRS 277.110 authorizes any two or more public agencies to enter into agreements for the “joint exercise of powers, privileges and authority”; and

WHEREAS, pursuant to NRS 277.180, if it is reasonably foreseeable that a public agency will be required to expend more than \$25,000 to carry out such an agreement, the agreement must set forth fully the purposes, powers, rights, objectives and responsibilities of the parties, be ratified by appropriate official action of the governing body of each party, and be in writing; and

WHEREAS, the purpose of this Agreement is to conduct a safety treatments prioritization analysis ; and

WHEREAS, the services to be provided by the UNIVERSITY will be of benefit to the RTC and to the people of the Washoe County, Nevada; and

WHEREAS, the UNIVERSITY, through its Civil Engineering Department, is willing and able to provide in-depth analysis of intersections, focusing on safety metrics and recommending improvements.

NOW, THEREFORE, in consideration of the premises and of the mutual covenants herein contained, it is agreed as follows:

A. RTC agrees to:

1. To reimburse UNIVERSITY in an amount not-to-exceed \$30,000.00. The authorized direct and indirect costs are identified in the budget justification attached as Exhibit A.
 2. To allow the UNIVERSITY to observe, review, and inspect associated multimodal traffic projects with the understanding that all items of concern are to be reported to the RTC’s Project Manager.
 3. To observe, review, and inspect all work associated with the project during implementation to ensure adherence to project standards, specifications, and criteria.
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4. In furtherance of University's role as a public institution of higher education, it is necessary that significant results of research activities be reasonably available for publication and/or presentation by the University and RTC acknowledges that University may publish and/or present the results of research conducted in connection with this Agreement.

In furtherance of University's role as a public institution of higher education, it is necessary that significant results of research activities be reasonably available for publication and/or presentation by the University and RTC acknowledges that University may publish and/or present the results of research conducted in connection with this Agreement.

B. UNIVERSITY agrees to:

1. To provide the RTC, through its Civil Engineering Department, analysis, data collection, and program development services and deliverables identified in Exhibit A, including all reports.
2. To invoice the RTC periodically, though not more often than monthly, in a total amount not- to-exceed \$30,000.00. Each invoice shall identify the direct and indirect costs incurred for the applicable billing period. The authorized direct and indirect costs are identified in the budget justification attached as Exhibit A. The UNIVERSITY will provide supporting documentation that the work performed conforms to the tasks and deliverables requested by RTC.

C. It is mutually agreed that:

1. Invoices must be submitted to accountspayable@rtcwashoe.com. RTC's payment terms are 30 days after the receipt each invoice. The final invoice shall become due upon RTC acceptance of the Final Analysis Report.
 2. The term of this Agreement shall be from March 1, 2024 to July 31, 2024.
 3. This Agreement may be terminated at any time by either party without cause, provided that a termination shall not be effective until thirty (30) days after a party has served written notice upon the other party. The parties expressly agree that this Agreement shall be terminated immediately if, for any reason, RTC's funding ability to satisfy this Agreement is withdrawn, limited, or impaired. If this agreement is terminated pursuant to the foregoing, the UNIVERSITY shall be paid for services provided after the period covered by the last invoice through the date of receipt of written notice of termination.
 4. All notices or other communications required or permitted to be given under this Agreement shall be in writing and shall be deemed to have been duly given if delivered personally in hand, by telephonic facsimile or electronic mail with simultaneous regular mail, or mailed certified mail, return receipt requested, postage
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prepaid on the date posted, and addressed to the other party at the address set forth below:

If to UNIVERSITY:

TECHNICAL MATTERS: Dr. Hao Xu, PhD.
Department of Civil and Environmental Engineering
University of Nevada, Reno
Reno, NV 89557-0152
Phone: (775) 784-1232
Fax: (775) 784-1390
E-mail: zongt@unr.edu

CONTRACTUAL MATTERS: Office of Sponsored Projects/325
c/o Executive Director
University of Nevada, Reno
1664 N. Virginia St.
Reno, Nevada 89557
Phone: (775) 784-4040
Fax: (775) 784-6680
E-mail: ospadmin@unr.edu

If to RTC:

Xuan Wang, Planning Manager
Regional Transportation Commission
1105 Terminal Way
Reno, NV 89502
Phone: (775) 332-9521
E-mail: xwang@rtcwashoe.com

5. The RTC does not provide any warranty that the estimate is an accurate reflection of the final cost. The RTC disclaims any such warranty. The final costs may vary widely depending on the type of work, scope of work, and the manner in which the work is performed. All parties hereto shall be wary in their reliance on the estimates set forth in this Agreement.
 6. Any and all completed reports, materials, studies, photographs, negatives, drawings or other documents prepared in the performance obligations under this Agreement shall be deemed public information unless specifically and lawfully classified confidential. Both parties shall ensure no such documents are used for commercial purposes other than performance of obligations under this Agreement.
 7. To the fullest extent of NRS Chapter 41 liability limitations, each party shall indemnify, hold harmless and defend the other from and against all liability, claims, actions, damages, losses, and expenses, including but not limited to reasonable attorneys' fees and costs, caused by the negligence, errors, omissions, recklessness or intentional misconduct of the party, its officers, employees and agents, which may occur during or which may arise out of the performance of this Agreement. Such
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obligation shall not be construed to negate, abridge, or otherwise reduce any other right or obligation of indemnity which would otherwise exist as to any party or person described herein. This indemnification obligation is conditioned upon the performance of the duty of the party seeking indemnification (indemnified party), to serve the other party (indemnifying party) with written notice of actual or pending claim, within 30 days of the indemnified party's notice of actual or pending claim or cause of action. The indemnifying party shall not be liable for reimbursement of any attorney's fees and costs incurred by the indemnified party due to said party exercising its right to participate with legal counsel. UNIVERSITY indemnity obligation for actions sounding in tort is limited in accordance with the provisions of NRS 41.035 to \$200,000 per cause of action.

8. The parties do not waive and intend to assert available NRS Chapter 41 liability limitations in all cases. Agreement liability of both parties shall not be subject to punitive damages. Actual damages for any RTC breach shall never exceed the amount of funds which have been appropriated for payment under this Agreement, but not yet paid, for the fiscal year budget in existence at the time of the breach.
 9. Failure to declare a breach or the actual waiver of any particular breach of the Agreement or its material or nonmaterial terms by either party shall not operate as a waiver by such party of any of its rights or remedies as to any other breach.
 10. An alteration ordered by the RTC which substantially changes the services provided for by the expressed intent of this Agreement will be considered extra work, and shall be specified in an Amendment which will set forth the nature and estimated scope thereof. The method of payment for extra work shall be specified at the time the amendment is written.
 11. This Agreement and the rights and obligations of the parties hereto shall be governed by, and construed according to, the laws of the State of Nevada. The parties consent to the jurisdiction of the Nevada district courts for enforcement of this Agreement.
 12. The illegality or invalidity of any provision or portion of this Agreement shall not affect the validity of the remainder of the Agreement and this Agreement shall be construed as if such provision did not exist. The unenforceability of such provision shall not be held to render any other provision or provisions of this Agreement unenforceable.
 13. All or any property presently owned by either party shall remain in such possession upon termination of this Agreement, and there shall be no transfer of property between the parties during the course of this Agreement.
 14. It is specifically agreed between the parties executing this Agreement that it is not intended by any of the provisions of any part of the Agreement to create in the public or any member thereof a third party beneficiary status hereunder, or to authorize anyone not a party to this Agreement to maintain a suit for personal injuries or
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property damage pursuant to the terms or provisions of this Agreement.

15. Each party agrees to keep and maintain under generally accepted accounting principles full, true and complete records and documents pertaining to this Agreement and present, at any reasonable time, such information for inspection, examination, review, audit and copying at any office where such records and documentation is maintained. Such records and documentation shall be maintained for three (3) years after final payment is made.
 16. The parties are associated with each other only for the purposes and to the extent set forth in this Agreement. Each party is and shall be a public agency separate and distinct from the other party and each party only has the right to supervise, manage, operate, control and direct performance of the details incident to its respective duties under this Agreement. Nothing contained in this Agreement shall be deemed or construed to create a partnership or joint venture, to create relationships of an employer-employee or principal-agent, or to otherwise create any liability for one agency whatsoever with respect to the indebtedness, liabilities, and obligations of the other agency or any other party.
 17. Neither party shall assign, transfer, subcontract, or delegate any rights, obligations or duties under this Agreement without the prior written consent of the other party.
 18. The parties hereto represent and warrant that the person executing this Agreement on behalf of each party has full power and authority to enter into this Agreement and that the parties are authorized by law to engage in the cooperative action set forth herein.
 19. Pursuant to NRS 239.010, information or documents may be open to public inspection and copying. The parties will have the duty to disclose unless a particular record is confidential by law or a common law balancing of interests.
 20. Each party shall keep confidential all information, in whatever form, produced, prepared, observed or received by that party to the extent that such information is confidential by law or otherwise required by this Agreement.
 21. This Agreement shall not become effective until and unless approved by appropriate official action of the governing body of each party.
 22. This Agreement constitutes the entire agreement of the parties and such is intended as a complete and exclusive statement of the promises, representations, negotiations, discussions, and other agreements that may have been made in connection with the subject matter hereof. Unless an integrated attachment to this Agreement specifically displays a mutual intent to amend a particular part of this Agreement, general conflicts in language between any such attachment and this Agreement shall be construed consistent with the terms of this Agreement. Unless otherwise expressly authorized by the terms of this Agreement, no modification or amendment to this
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Agreement shall be binding upon the parties unless the same is in writing and signed by the respective parties hereto.

23. UNIVERSITY has completed and signed the following: (1) Certification Regarding Debarment, Suspension, Other Ineligibility and Voluntary Exclusion; (2) Certification Required by 31 U.S.C. § 1352, Restrictions on Lobbying Using Federal Appropriated Funds, and “Instructions for Completion of SF-LLL, Disclosure of Lobbying Activities”. UNIVERSITY affirms that such certifications remain valid and shall immediately notify RTC if circumstances change that affect the validity of these certifications.

24. This Agreement is funded in whole or in part with money administered by the Nevada Department of Transportation on behalf of the Federal Highway Administration. As a condition for receiving payment under this Agreement, UNIVERSITY agrees to comply with the federally required clauses set forth in Exhibit B, C and D.

IN WITNESS WHEREOF, the parties have to have caused this Agreement to be executed on the date first above written.

REGIONAL TRANSPORTATION
COMMISSION OF WASHOE COUNTY

BOARD OF REGENTS,
NEVADA SYSTEM OF
HIGHER EDUCATION, on
behalf of the University of
Nevada, Reno

Bill Thomas, AICP, Executive Director

Thomas Landis
Associate Director, Sponsored Projects

Exhibit A

Scope and Budget

Intersection Safety Priority and Safety Treatment Recommendations

UNR Service Scope

To

RTC Washoe

UNR Contact: Hao Xu, Ph.D., P.E., haox@unr.edu, 775-784-6909

1. Overview

This project aims to prioritize safety treatments for 20 signalized and 20 unsignalized intersections within the Washoe County road network, excluding freeway interchanges. The University of Nevada, Reno (UNR) will conduct an in-depth analysis of these intersections, focusing on safety metrics and recommending improvements.

2. Methodology

2.1 Intersection Prioritization

The UNR team will prioritize intersections based on a weighted safety score, considering the following factors:

- Frequency of incidents (20% weightage)
- Crash Rate, defined as crashes per total Annual Average Daily Traffic (AADT) of approaches (30% weightage)
- Equivalent Property Damage Only (EPDO) scores (50% weightage)
- Each statistical measure will be normalized by dividing by the highest value within the dataset, which represents the 3rd standard deviation. Any value above the 3rd standard deviation will be treated as equivalent to 1.
- These prioritized intersections will be cross-referenced with the intersection improvement lists provided by the City of Reno and the City of Sparks.

2.2 Safety Treatment Recommendations

- For each prioritized intersection, UNR will perform a crash diagnosis.
- Countermeasures will be suggested based on the crash diagnosis and Crash Modification Factor (CMF) information of possible treatments for each prioritized intersection.

2.3 Integration with RTC Washoe Projects

- The recommended treatments for the prioritized intersections will be reviewed in conjunction with planned RTC Washoe corridor projects.
- This process will identify opportunities to incorporate intersection improvements into ongoing or future corridor projects.

3. Deliverables

- **GIS Maps:** Detailed geographic information system (GIS) maps showcasing the prioritized intersections and proposed safety treatments.
- **Study Report:** A comprehensive report detailing the methodology, findings, and recommendations for intersection safety improvements. The report will include an analysis comparing the prioritized intersections and recommended treatments with existing city improvement lists and RTC Washoe projects.

4. Schedule

The project is contracted for a duration of six months (Feb 2024 – July 2024). Within the first three months (Feb 2024 – April 2024), UNR will deliver the prioritized list of intersections and corresponding maps, along with recommendations for countermeasures. In the following three months (May 2024-July 2024), UNR will focus on completing the project report and addressing any comments from RTC

5. Budget

The service budget is \$30,000. The budget details are listed in Table 1.

Table 1 Service Budget

Employee Type	Fringe Rate	Budget
Professional Faculty (Acad./Admin)	32.80%	\$5,731.06
Professional Faculty (w/o retirement)	2.4%	\$10,000
Total Professional/Postdoc		\$15,731.06
Graduate Assistant	17.60%	\$0
Total Salaries		\$15,731.06
Fringe Benefits-Manual Entry		\$2177.10
Total Salaries & Fringe		\$17,908.16
Materials and Supplies		\$500
Tuition		\$0
Total Direct Costs		\$20,408.16
F&A Rate		47%
Modified Total Direct Costs (exclude tuition for F&A calculation)		\$20,408.16
Facilities & Admin Costs (F&A)		\$9,591.84
Total		\$30,000.00

Exhibits B to D

FHWA Contract Provisions

Exhibit B

Federally Required Clauses

1. PROMPT PAYMENT PROVISION

CONSULTANT must pay all subconsultants for satisfactory performance of their contracts no later than thirty (30) days from the receipt of payment made to CONSULTANT by RTC. Prompt return of retainage payments from CONSULTANT to the subconsultants will be made within fifteen (15) days after each subconsultant's work is satisfactorily completed. Any delay or postponement of payment among the parties may take place only for good cause and with RTC's prior written approval. If CONSULTANT determines the work of the subconsultant to be unsatisfactory, it must notify RTC's project manager immediately in writing and state the reasons. The failure by CONSULTANT to comply with this requirement will be construed to be a breach of the Contract and may be subject to sanctions as specified in the Contract or any other options listed in 49 C.F.R. 26.29.

2. NONDISCRIMINATION

During the performance of this Contract, CONSULTANT, for itself, its assignees, and successors in interest, agrees as follows:

A. Compliance with Regulations. CONSULTANT shall comply with the regulations relative to nondiscrimination in DOT-assisted programs, 49 C.F.R. Part 21, as they may be amended from time to time (referred to in this section as the "Regulations"), which are herein incorporated by reference and made a part of this Contract.

B. Nondiscrimination. CONSULTANT shall not discriminate on the grounds of age, race, color, sex, or national origin in the selection and retention of subconsultants, including procurement of materials and leases of equipment. CONSULTANT shall not participate, either directly or indirectly, in the discrimination prohibited by Section 21.5 of the Regulations, including employment practices when the Contract covers a program set forth in Appendix B of the Regulations.

C. Solicitations for Subcontracts, including Procurement of Materials and Equipment. In all solicitations, whether by competitive proposing or negotiation made by CONSULTANT for work to be performed under a subcontract, including procurement of materials or leases of equipment, each potential subconsultant or supplier must be notified by CONSULTANT of CONSULTANT's obligations under this Contract and the Regulations relative to nondiscrimination on the grounds of age, race, color, sex, or national origin.

D. Information and Reports. CONSULTANT must provide all information and reports required by the Regulations or directives issued pursuant thereto, and must permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by RTC to be pertinent to ascertain compliance with such Regulations, orders, and instructions.

Where any information is required, or the information is in the exclusive possession of another who fails or refuses to furnish this information, CONSULTANT must so certify to RTC, and must set forth what efforts it has made to obtain the information.

E. Sanctions for Noncompliance. In the event of CONSULTANT's noncompliance with the nondiscrimination provisions of this Contract, RTC shall impose such contract sanctions as it may determine to be appropriate, including, but not limited to: (1) withholding of payments to CONSULTANT under the Contract until CONSULTANT complies, and/or (2) cancellation, termination, or suspension of the Contract, in whole or in part.

CONSULTANT shall include the provisions of this clause in every subcontract. CONSULTANT must take such action with respect to any subcontract or procurement as RTC may direct as a means of enforcing those provisions, including sanctions for noncompliance. However, if CONSULTANT becomes involved in or is threatened with litigation with a subconsultant as a result of such direction, CONSULTANT may request RTC to enter into the litigation to protect the interests of RTC.

3. AFFIRMATIVE ACTION IN EMPLOYMENT

CONSULTANT shall comply with the provisions of Section 503 of the Rehabilitation Act of 1973 (the "Rehabilitation Act").

A. CONSULTANT will not discriminate against any employee or applicant for employment because of physical or mental handicap in regard to any position for which the employee or applicant for employment is qualified. CONSULTANT agrees to take affirmative action to employ, advance in employment and otherwise treat qualified handicapped individuals without discrimination based upon their physical or mental handicap in all employment practices such as the following: employment, upgrading, demotion or transfer, recruitment, advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship.

B. CONSULTANT agrees to comply with the rules, regulations, and relevant orders of the Secretary of Labor pursuant to the Rehabilitation Act.

C. In the event of CONSULTANT's noncompliance with the requirements of this clause, actions for noncompliance may be taken in accordance with the rules, regulations, and relevant orders of the Secretary of Labor pursuant to the Rehabilitation Act.

D. CONSULTANT agrees to post in conspicuous places, available to employees and applicants for employment, notices in a form to be prescribed by the director, provided by or through the contracting officer. Such notices shall state CONSULTANT's obligation under the law to take affirmative action to employ and advance in employment qualified handicapped employees and applicants for employment, and the rights of applicants and employees.

E. CONSULTANT shall include the provisions of this clause in every subcontract or purchase order of \$2,500 or more unless exempted by rules, regulations, or orders of the Secretary of Transportation issued pursuant to Section 503 of the Rehabilitation Act, so that such provisions will be binding upon each subconsultant or vendor. CONSULTANT will take such action with respect to any subcontract or purchase order as the director of the Office of Federal Contract Compliance Programs may direct to enforce such provisions, including action for noncompliance (41 C.F.R. 60-741.4.4).

4. **INTEREST OF MEMBERS OF, OR DELEGATES TO, CONGRESS**

In accordance with 18 U.S.C. 431, no member of, or delegate to, the Congress of the United States shall be admitted to any share or part of this Contract or to any benefit arising therefrom.

5. **INTEREST OF PUBLIC OFFICIALS**

No member, officer, or employee of any public body, during his tenure, or for one (1) year thereafter, shall have any interest, direct or indirect, in this Contract or the benefits thereof.

6. **CIVIL RIGHTS**

The following requirements apply to the underlying Contract:

A. **Nondiscrimination**. In accordance with Title VI of the Civil Rights Act, as amended, 42 U.S.C. 2000d, section 303 of the Age Discrimination Act of 1975, as amended, 42 U.S.C. 6102, section 202 of the Americans with Disabilities Act of 1990, 42 U.S.C. 12132, and Federal transit law at 49 U.S.C. 5332, CONSULTANT agrees that it will not discriminate against any employee or applicant for employment because of race, color, creed, national origin, sex, age or disability.

B. **Equal Employment Opportunity**. The following equal employment opportunity requirements apply to the underlying contract:

- (1) **Race, Color, Creed, National Origin, Sex**. In accordance with Title VII of the Civil Rights Act, as amended, 42 U.S.C. 2000e, and Federal transit laws at 49 U.S.C. 5332, CONSULTANT agrees to comply with all applicable equal employment opportunity requirements of U.S. Department of Labor (U.S. DOL) regulations, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor", 41 C.F.R. Parts 60 et seq., (which implement Executive Order No. 11246, Equal Employment Opportunity", as amended by Executive Order No. 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity", 42 U.S.C. 2000e note), and with any applicable Federal statutes, executive orders, regulations, and Federal policies that may in the future affect construction activities undertaken in the course of the Project. CONSULTANT agrees to take affirmative action to ensure that applicants are employed, and that employees are

treated equally during employment, without regard to their race, color, creed, national origin, sex, or age. Such action must include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship.

(2) Age. In accordance with section 4 of the Age Discrimination in Employment Act of 1967, as amended, 29 U.S.C. 623 and Federal transit law at 49 U.S.C. 5332, CONSULTANT agrees to refrain from discrimination against present and prospective employees for reason of age.

(3) Disabilities. In accordance with section 102 of the Americans with Disabilities Act, as amended, 42 U.S.C. 12112, CONSULTANT agrees that it will comply with the requirements of U.S. Equal Employment Opportunity Commission, "Regulations to Implement the Equal Employment Provisions of the Americans with Disabilities Act", 29 C.F.R. Part 1630, pertaining to employment of persons with disabilities.

C. CONSULTANT also agrees to include these requirements in each subcontract.

7. INELIGIBLE CONSULTANTS

In the event CONSULTANT is on the Comptroller General's List of Ineligible Consultants for Federally financed or assisted projects, this contract may be canceled, terminated, or suspended by RTC.

8. NOTICE OF FEDERAL REQUIREMENTS

New Federal laws, regulations, policies, and administrative practices may be established after the date of this Contract, which may apply to this Contract. If Federal requirements change, the changed requirements will apply to the Contract or the performance of work under the Contract as required. All standards or limits set forth in this Contract to be observed in the performance of the work are minimum requirements.

9. THIRD-PARTY RIGHTS

Notwithstanding anything herein to the contrary, the services provided under this Agreement shall not give rise to, nor shall be deemed to or construed so as to confer any rights on any other party, as a third-party beneficiary or otherwise.

10. RECORDS RETENTION; AUDIT AND INSPECTION OF RECORDS

A. CONSULTANT shall permit the authorized representatives of RTC, FHWA, the U.S. Department of Transportation's Inspector General, NDOT, and the Comptroller General of the United States, or any of their duly authorized representatives to inspect and audit

all data and records of CONSULTANT relating to its performance under the contract until the expiration of three (3) years after final payment under this Contract.

B. CONSULTANT further agrees to include in all subcontracts hereunder a provision to the effect that the subconsultant agrees that RTC, FHWA, the U.S. Department of Transportation's Inspector General, NDOT, and the Comptroller General of the United States, or any of their duly authorized representatives shall, until the expiration of three (3) years after final payment under the subcontract, have access to and the right to examine any books, documents, papers, and records of the subconsultant directly pertinent to this contract. The term "subcontract" as used in this clause excludes (1) purchase orders not exceeding \$10,000 and (2) subcontracts or purchase orders for public utility services at rates established for uniform applicability to the general public.

C. The periods of access and examination described above, for records which relate to (1) appeals under the dispute clause of this Contract, (2) litigation or the settlement of claims arising out of the performance of this Contract, or (3) costs and expenses of this Contract to which an exception has been taken by the U.S. Comptroller General or any of his duly authorized representatives, shall continue until such appeals, litigation, claims or exceptions have been disposed of.

11. NO FEDERAL GOVERNMENT OBLIGATION TO THIRD PARTIES

A. RTC and CONSULTANT acknowledge and agree that, notwithstanding any concurrence by the Federal Government in or approval of the solicitation or award of the underlying Contract, absent the express written consent by the Federal Government, the Federal Government is not a party to this Contract and shall not be subject to any obligations or liabilities to RTC, Consultant, or any other party (whether or not a party to that Contract) pertaining to any matter resulting from the underlying Contract.

B. CONSULTANT agrees to include the above clause in each subcontract. It is further agreed that the clause shall not be modified, except to identify the subconsultant who will be subject to its provisions.

12. DEBARMENT, SUSPENSION, OTHER INELIGIBILITY AND VOLUNTARY EXCLUSION

A. This Contract is a covered transaction for purposes of 2 C.F.R. Part 1200 and 2 C.F.R. Part 180. As such, CONSULTANT is required to verify that none of CONSULTANT, its principals, as defined at 2 C.F.R. 180.995, or affiliates, as defined at 2 C.F.R. 180.905, are excluded or disqualified as defined at 2 C.F.R. 180.940 and 180.945.

B. CONSULTANT is required to comply with 2 C.F.R. 180, Subpart C, and must include the requirement to comply with 2 C.F.R. 180, Subpart C, in all contracts for lower-tier transactions over \$25,000 and in all solicitations for lower tier contracts.

C. CONSULTANT agrees that it shall not knowingly enter into any lower-tier covered transaction with a person or firm who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this contract.

13. COMPLIANCE WITH FEDERAL LOBBYING POLICY

Section 1352 of Title 31, United States Code, provides in part that no appropriated funds may be expended by the recipient of a federal contract, grant, loan, or cooperative agreement to pay any person by influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any of the following covered Federal actions: the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement.

Consultants who apply or bid for an award of \$100,000 or more shall file the certification required by 49 C.F.R. Part 20, "New Restrictions on Lobbying." Each tier certifies to the tier above that it will not and has not used federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any Federal Agency, a member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any federal Contract, grant or any other award covered by 31 U.S.C. 1352. Each tier shall also disclose the name of any registrant under the Lobbying Disclosure Act of 1995 who has made lobbying contacts on its behalf with non-federal funds with respect to that federal Contract, grant or award covered by 31 U.S.C. 1352. Such disclosures are forwarded from tier to tier up to the recipient.

CONSULTANT also agrees to include these requirements in each subcontract exceeding \$100,000 financed in whole or in part with Federal assistance.

14. REPORTING REQUIREMENTS

CONSULTANT shall provide all information and reports required by the Regulations, or directives issued pursuant shall provide all information and reports required by the Regulations, or directives issued pursuant thereto, and shall permit access to its facilities as may be determined by RTC or the Federal Highway Administration (FHWA) to be pertinent to ascertain compliance with such Regulations or directives. Where any information required of a Consultant is in the exclusive possession of another who fails or refuses to furnish this information, CONSULTANT shall so certify to RTC, or the FHWA as appropriate, and shall set forth what efforts it has made to obtain the information.

Exhibit C

During the performance of this contract, CONTRACTOR, for itself, its assignees, and successors in interest, agrees as follows:

1. **Compliance with Regulations:** The Consultant (hereinafter includes subconsultants) will comply with the Acts and the Regulations relative to Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation, Federal Highway Administration (FHWA), as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.
2. **Non-discrimination:** The Consultant, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subconsultants, including procurements of materials and leases of equipment. The Consultant will not participate directly or indirectly in the discrimination prohibited by the Acts and the Regulations, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 C.F.R. Part 21.
3. **Solicitations for Subcontracts, Including Procurements of Materials and Equipment:** In all solicitations, either by competitive bidding, or negotiation made by the Consultant for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subconsultant or supplier will be notified by the Consultant of the Consultant's obligations under this contract and the Acts and the Regulations relative to Non-discrimination on the grounds of race, color, or national origin.
4. **Information and Reports:** The Consultant will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the FHWA to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a Consultant is in the exclusive possession of another who fails or refuses to furnish the information, the Consultant will so certify to the Recipient or the FHWA, as appropriate, and will set forth what efforts it has made to obtain the information.
5. **Sanctions for Noncompliance:** In the event of a Consultant's noncompliance with the Non-discrimination provisions of this contract, the Recipient will impose such contract sanctions as it or the FHWA may determine to be appropriate, including, but not limited to:
 - a. withholding payments to the Consultant under the contract until the Consultant complies; and/or
 - b. cancelling, terminating, or suspending a contract, in whole or in part.
6. **Incorporation of Provisions:** The Consultant will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of

equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The Consultant will take action with respect to any subcontract or procurement as the Recipient or the FHWA may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the Consultant becomes involved in, or is threatened with litigation by a subconsultant, or supplier because of such direction, the Consultant may request the Recipient to enter into any litigation to protect the interests of the Recipient. In addition, the Consultant may request the United States to enter into the litigation to protect the interests of the United States.

Exhibit D

During the performance of this contract, CONSULTANT, for itself, its assignees, and successors in interest, agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

Pertinent Non-Discrimination Authorities:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d *et seq.*, 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); and 49 C.F.R. Part 21.
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 *et seq.*), (prohibits discrimination on the basis of sex);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 *et seq.*), as amended, (prohibits discrimination on the basis of disability), and 49 C.F.R. Part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 *et seq.*), (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982, (49 U.S.C. § 471, Section 47123), as amended (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and Consultants, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131 – 12189) as implemented by Department of Transportation regulations at 49 C.F.R. Parts 37 and 38;
- The Federal Aviation Administration's Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures nondiscrimination against

minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;

- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. § 1681 et seq).



REGIONAL TRANSPORTATION COMMISSION

Metropolitan Planning • Public Transportation & Operations • Engineering & Construction

Metropolitan Planning Organization of Washoe County, Nevada

Meeting Date: 4/19/2024

Agenda Item: 4.4.1

To: Regional Transportation Commission

From: Austin McCoy, Project Manager

SUBJECT: Traffic Signal Fiber 25-01 Project Professional Services Agreement

RECOMMENDED ACTION

Approve a contract with Kimley-Horn and Associates, Inc., for design services and engineering during construction for the Traffic Signal Fiber 25-01 Project, in an amount not-to-exceed \$496,134.

BACKGROUND AND DISCUSSION

This Professional Services Agreement (PSA) with Kimley-Horn and Associates, Inc., is for professional design services for the Traffic Signal Fiber 25-01 Project in the amount of \$292,435 and engineering during construction services (EDC) in the amount of \$170,699. Project contingency in the amount of \$33,000 is also included in the agreement.

The project includes the installation of fiber optic cable and other traffic operations improvements to existing facilities at three locations; Longley Lane between Maestro Drive and South McCarran Boulevard, Vista Boulevard between E Prater Way and Baring Boulevard, Kietzke Lane between the Reno Corp Yard and Galletti Way and continuing south on Galletti Way to the signal at Glendale Avenue, and between Kietzke Lane and the Reno Corp Yard. These ITS locations are prioritized within the RTC ITS Network Master Plan. Kimley-Horn and Associates, Inc., was selected from the Traffic Engineering Design and Construction Management Services List as a qualified firm to perform engineering, construction management, and quality assurance. Kimley-Horn and Associates, Inc.'s scope, schedule, and negotiated budget amount for services is within the appropriated budget.

- Design Notice-to-Proceed: April 2024
 - 60% Design Submittal: July 2024
 - Final Design Submittal: January 2025
 - Construction: April 2025
-

FISCAL IMPACT

Project appropriations are included in the FY 2024 Budget.

PREVIOUS BOARD ACTION

3/18/2022 Authorized the procurement of a qualified list of consultants to provide civil engineering design and construction management services for the Traffic Engineering Program and the Intelligent Transportation Systems (ITS) Program.

**AGREEMENT
FOR
PROFESSIONAL SERVICES**

This agreement (this “Agreement”) is dated and effective as of _____, 2024, by and between the Regional Transportation Commission of Washoe County (“RTC”) and Kimley-Horn and Associates, Inc. (“CONSULTANT”).

WITNESSETH:

WHEREAS, RTC has selected CONSULTANT from the Traffic Engineering and ITS shortlist to perform design, Engineering During Construction (EDC), and optional services in connection with the Traffic Signal Fiber 25-01 (TSF 25-01) Project.

NOW, THEREFORE, RTC and CONSULTANT, in consideration of the mutual covenants and other consideration set forth herein, do hereby agree as follows:

ARTICLE 1 – TERM AND ENGAGEMENT

- 1.1. The term of this Agreement shall be from the date first written above through December 31, 2025, unless terminated at an earlier date, or extended to a later date, pursuant to the provisions herein.
- 1.2. CONSULTANT will perform the work using the project team identified in the Exhibit A – Scope of Work . Any changes to the project team must be approved by RTC’s Project Manager.
- 1.3. CONSULTANT will promptly, diligently and faithfully execute the work to completion in accordance with applicable professional standards subject to any delays due to strikes, acts of God, act of any government, civil disturbances, or any other cause beyond the reasonable control of CONSULTANT.
- 1.4. CONSULTANT shall not proceed with work until both parties have executed this Agreement and a purchase order has been issued to CONSULTANT. If CONSULTANT violates that prohibition, CONSULTANT forfeits any and all right to reimbursement and payment for that work and waives any and all claims against RTC, its employees, agents, and affiliates, including but not limited to monetary damages, and any other remedy available at law or in equity arising under the terms of this Agreement. Furthermore, prior to execution and issuance of a purchase order, CONSULTANT shall not rely on the terms of this Agreement in any way, including but not limited to any written or oral representations, assurances or warranties made by RTC or any of its agents, employees or affiliates, or on any dates of performance, deadlines, indemnities, or any term contained in this Agreement or otherwise.

ARTICLE 2 - SERVICES OF CONSULTANT

2.1. SCOPE OF SERVICES

The scope of services consist of the tasks set forth in Exhibit A.

2.2. SCHEDULE OF SERVICES

Tasks and subtasks shall be completed in accordance with the schedule in Exhibit A. Any change(s) to the schedule must be approved by RTC's Project Manager.

2.3. CONTINGENCY

Contingency line items identified in the scope of services are for miscellaneous increases within the scope of work. Prior to the use of any contingency amounts, CONSULTANT shall provide a letter to RTC's Project Manager detailing the need, scope, and not-to-exceed budget for the proposed work. Work to be paid for out of contingency shall proceed only with the RTC Project Manager's written approval.

2.4. OPTIONS

RTC shall have the right to exercise its option(s) for all or any part of the optional tasks or subtasks identified in Exhibit A. CONSULTANT will prepare and submit a detailed scope of services reflecting the specific optional services requested, a schedule for such services, and a cost proposal. RTC will review and approve the scope of services and RTC and CONSULTANT will discuss and agree upon compensation and a schedule. CONSULTANT shall undertake no work on any optional task without written notice to proceed with the performance of said task. RTC, at its sole option and discretion, may select another individual or firm to perform the optional tasks or subtasks identified in Exhibit A.

2.5. ADDITIONAL SERVICES

CONSULTANT will provide additional services when agreed to in writing by RTC and CONSULTANT.

2.6. PERFORMANCE REQUIREMENTS

Any and all design and engineering work furnished by CONSULTANT shall be performed by or under the supervision of persons licensed to practice architecture, engineering, or surveying (as applicable) in the State of Nevada, by personnel who are careful, skilled, experienced and competent in their respective trades or professions, who are professionally qualified to perform the work, and who shall assume professional responsibility for the accuracy and completeness of documents prepared or checked by them, in accordance with appropriate prevailing professional standards. Notwithstanding the provision of any drawings, technical specifications, or other data by RTC, CONSULTANT shall have the

responsibility of supplying all items and details required for the deliverables required hereunder.

Any sampling and materials testing shall be performed by an approved testing laboratory accredited by AASHTO or other ASTM recognized accrediting organization in the applicable test methods. If any geotechnical or materials testing is performed by a sub-consultant, that laboratory shall maintain the required certification. Proof of certification shall be provided to RTC with this Agreement. If certification expires or is removed during the term of this Agreement, CONSULTANT shall notify RTC immediately, and propose a remedy. If an acceptable remedy cannot be agreed upon by both parties, RTC may terminate this Agreement for default.

CONSULTANT shall provide only Nevada Alliance for Quality Transportation Construction (NAQTC) qualified personnel to perform field and laboratory sampling and testing during the term of this Agreement. All test reports shall be signed by a licensed NAQTC tester and notated with his/her license number.

2.7. ERRORS AND OMISSIONS

CONSULTANT shall, without additional compensation, correct or revise any deficiencies, errors, or omissions caused by CONSULTANT in its analysis, reports, and services. CONSULTANT also agrees that if any error or omission is found, CONSULTANT will expeditiously make the necessary correction, at no expense to RTC. If an error or omission was directly caused by RTC, and not by CONSULTANT and RTC requires that such error or omission be corrected, CONSULTANT may be compensated for such additional work.

ARTICLE 3 - COMPENSATION

3.1. CONSULTANT shall be paid for hours worked at the hourly rates and rates for testing in Exhibit B. RTC shall not be responsible for any other costs or expenses except as provided in Exhibit B.

3.2. The maximum amount payable to CONSULTANT to complete each task is equal to the not-to-exceed amounts identified in Exhibit B. CONSULTANT can request in writing that RTC's Project Manager reallocate not-to-exceed amounts between tasks. A request to reallocate not-to-exceed amounts must be accompanied with a revised fee schedule, and must be approved in writing by RTC's Project Manager prior to performance of the work. In no case shall CONSULTANT be compensated in excess of the following not-to exceed amounts:

Design Services	\$233,958.00
Optional Design Services	\$58,477.00
Design Contingency	\$19,000
Engineering During Construction Services	\$170,699.00
<u>Engineering During Construction Contingency</u>	<u>\$14,000.00</u>
Total Not-to-Exceed Amount	\$496,134.00

- 3.3. For any work authorized under Section 2.5, "Additional Services," RTC and CONSULTANT will negotiate not-to-exceed amounts based on the standard hourly rates and rates for testing in Exhibit B. Any work authorized under Section 2.5, "Additional Services," when performed by persons who are not employees or individuals employed by affiliates of CONSULTANT, will be billed at a mutually agreed upon rate for such services, but not more than 105% of the amounts billed to CONSULTANT for such services.
- 3.4. CONSULTANT shall receive compensation for preparing for and/or appearing in any litigation at the request of RTC, except: (1) if such litigation costs are incurred by CONSULTANT in defending its work or services or those of any of its sub-consultants; or (2) as may be required by CONSULTANT's indemnification obligations. Compensation for litigation services requested by RTC shall be paid at a mutually agreed upon rate and/or at a reasonable rate for such services.

ARTICLE 4 - INVOICING

- 4.1. CONSULTANT shall submit monthly invoices in the format specified by RTC. Invoices must be submitted to accountspayable@rtcwashoe.com. RTC's payment terms are 30 days after the receipt of the invoice. Simple interest will be paid at the rate of half a percent (0.5%) per month on all invoices approved by RTC that are not paid within thirty (30) days of receipt of the invoice.
- 4.2. RTC shall notify CONSULTANT of any disagreement with any submitted invoice for consulting services within thirty (30) days of receipt of an invoice. Any amounts not in dispute shall be promptly paid by RTC.
- 4.3. CONSULTANT shall maintain complete records supporting every request for payment that may become due. Upon request, CONSULTANT shall produce all or a portion of its records and RTC shall have the right to inspect and copy such records.

ARTICLE 5 - ACCESS TO INFORMATION AND PROPERTY

- 5.1. Upon request and without cost to CONSULTANT, RTC will provide all pertinent information that is reasonably available to RTC including surveys, reports and any other data relative to design and construction.
- 5.2. RTC will provide access to and make all provisions for CONSULTANT to enter upon RTC facilities and public lands, as required for CONSULTANT to perform its work under this Agreement.

ARTICLE 6 - OWNERSHIP OF WORK

- 6.1. Plans, reports, studies, tracings, maps, software, electronic files, licenses, programs, equipment manuals, and databases and other documents or instruments of service prepared

or obtained by CONSULTANT in the course of performing work under this Agreement, shall be delivered to and become the property of RTC. Software already developed and purchased by CONSULTANT prior to the Agreement is excluded from this requirement. CONSULTANT and its sub-consultants shall convey and transfer all copyrightable interests, trademarks, licenses, and other intellectual property rights in such materials to RTC upon completion of all services under this Agreement and upon payment in full of all compensation due to CONSULTANT in accordance with the terms of this Agreement. Basic survey notes, sketches, charts, computations and similar data prepared or obtained by CONSULTANT under this Agreement shall, upon request, also be provided to RTC.

- 6.2. CONSULTANT represents that it has secured all necessary licenses, consents, or approvals to use the components of any intellectual property, including computer software, used in providing services under this Agreement, that it has full legal title to and the right to reproduce such materials, and that it has the right to convey such title and other necessary rights and interests to RTC.
- 6.3. CONSULTANT shall bear all costs arising from the use of patented, copyrighted, trade secret, or trademarked materials, equipment, devices, or processes used on or incorporated in the services and materials produced under this Agreement.
- 6.4. CONSULTANT agrees that all reports, communications, electronic files, databases, documents, and information that it obtains or prepares in connection with performing this Agreement shall be treated as confidential material and shall not be released or published without the prior written consent of RTC; provided, however, that CONSULTANT may refer to this scope of work in connection with its promotional literature in a professional and commercially reasonable manner. The provisions of this subsection shall not apply to information in whatever form that comes into the public domain. The provisions of this paragraph also shall not restrict CONSULTANT from giving notices required by law or complying with an order to provide information or data when such order is issued by a court, administrative agency, or other entity with proper jurisdiction, or if it is reasonably necessary for CONSULTANT to defend itself from any suit or claim.

ARTICLE 7 - TERMINATION

7.1. CONTRACT TERMINATION FOR DEFAULT

If CONSULTANT fails to perform services in the manner called for in this Agreement or if CONSULTANT fails to comply with any other provisions of this Agreement, RTC may terminate this Agreement for default. Termination shall be effected by serving a notice of termination on CONSULTANT setting forth the manner in which CONSULTANT is in default. CONSULTANT will only be paid the contract price for services delivered and accepted, or services performed in accordance with the manner of performance set forth in this Agreement.

If it is later determined by RTC that CONSULTANT had an excusable reason for not performing, such as a fire, flood, or events which are not the fault of or are beyond the

control of CONSULTANT, RTC, after setting up a new performance schedule, may allow CONSULTANT to continue work, or treat the termination as a termination for convenience.

7.2. CONTRACT TERMINATION FOR CONVENIENCE

RTC may terminate this Agreement, in whole or in part, at any time by written notice to CONSULTANT when it is in RTC's best interest. CONSULTANT shall be paid its costs, including contract closeout costs, and profit on work performed up to the time of termination. CONSULTANT shall promptly submit its termination claim to RTC to be paid CONSULTANT. If CONSULTANT has any property in its possession belonging to RTC, CONSULTANT will account for the same, and dispose of it in the manner RTC directs.

ARTICLE 8 - INSURANCE

- 8.1. CONSULTANT shall not commence any work or permit any employee/agent to commence any work until satisfactory proof has been submitted to RTC that all insurance requirements have been met.
- 8.2. In conjunction with the performance of the services/work required by the terms of this Agreement, CONSULTANT shall obtain all types and amounts of insurance set forth in Exhibit C, and shall comply with all provisions set forth therein.

ARTICLE 9 - HOLD HARMLESS

- 9.1. CONSULTANT's obligation under this provision is as set forth in Exhibit C. Said obligation would also extend to any liability of RTC resulting from any action to clear any lien and/or to recover for damage to RTC property.

ARTICLE 10 - EQUAL EMPLOYMENT OPPORTUNITY

- 10.1. During the performance of this Agreement, CONSULTANT agrees not to discriminate against any employee or applicant for employment because of race, color, religion, sex, age, disability, or national origin. CONSULTANT will take affirmative action to ensure that applicants are employed, and that employees are treated fairly during employment, without regard to their race, color, religion, sex, age, disability, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. CONSULTANT agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by RTC setting forth the provisions of this nondiscrimination clause.

- 10.2. CONSULTANT will, in all solicitations or advertisements for employees placed by or on behalf of CONSULTANT, state that well qualified applicants will receive consideration of employment without regard to race, color, religion, sex, age, disability, or national origin.
- 10.3. CONSULTANT will cause the foregoing provisions to be inserted in all sub-agreements for any work covered by this Agreement so that such provisions will be binding upon each sub-consultant.

ARTICLE 11 - RESOLUTION OF CLAIMS AND DISPUTES

11.1. NEGOTIATED RESOLUTION

In the event that any dispute or claim arises under this Agreement, the parties shall timely cooperate and negotiate in good faith to resolve any such dispute or claim. Such cooperation shall include providing the other party with all information in order to properly evaluate the dispute or claim and making available the necessary personnel to discuss and make decisions relative to the dispute or claim.

11.2. MEDIATION

If the parties have been unable to reach an informal negotiated resolution to the dispute or claim within thirty (30) days following submission in writing of the dispute or claim to the other party, or such longer period of time as the parties may agree to in writing, either party may then request, in writing, that the dispute or claim be submitted to mediation (the "Mediation Notice"). After the other party's receipt or deemed receipt of the Mediation Notice, the parties shall endeavor to agree upon a mutually acceptable mediator, but if the parties have been unable to agree upon a mediator within ten (10) days following receipt of the Mediation Notice, then each party shall select a mediator and those two selected mediators shall select the mediator. A mediator selected by the parties' designated mediators shall meet the qualification set forth in as provided in Rule 4 of Part C., "Nevada Mediation Rules" of the "Rules Governing Alternative Dispute Resolutions adopted by the Nevada Supreme Court." Unless otherwise agreed to by the parties, in writing, the mediator shall have complete discretion over the conduct of the mediation proceeding. Unless otherwise agreed to by the parties, in writing, the mediation proceeding must take place within thirty (30) days following appointment of the mediator. The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in Washoe County, Nevada, unless otherwise agreed to by the parties, in writing. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

11.3. LITIGATION

In the event that the parties are unable to settle and/or resolve the dispute or claim as provided above, then either party may proceed with litigation in the Second Judicial District Court of the State of Nevada, County of Washoe.

11.4. CONTINUING CONTRACT PERFORMANCE

During the pendency of any dispute or claim the parties shall proceed diligently with performance of this Agreement and such dispute or claim shall not constitute an excuse or defense for a party's nonperformance or delay.

ARTICLE 12 – PROJECT MANAGERS

- 12.1. RTC's Project Manager is Austin McCoy, P.E. or such other person as is later designated in writing by RTC. RTC's Project Manager has authority to act as RTC's representative with respect to the performance of this Agreement.
- 12.2. CONSULTANT' Project Manager is Michael Mosley, P.E., PTOE or such other person as is later designated in writing by CONSULTANT. CONSULTANT's Project Manager has authority to act as CONSULTANT's representative with respect to the performance of this Agreement.

ARTICLE 13 - NOTICE

- 13.1. Notices required under this Agreement shall be given as follows:

RTC: Bill Thomas, AICP
Executive Director
Austin McCoy, P.E.
RTC Project Manager
Regional Transportation Commission
1105 Terminal Way
Reno, Nevada 89502
Email: amccoy@rtcwashoe.com
(775) 335-1824

CONSULTANT: Michael Mosley, P.E., PTOE
Vice President / Project Manager
Kimley-Horn and Associates Inc.
Kimley-Horn and Associates, Inc.
7900 Rancharrah Parkway, Suite 100
Reno, NV 89511
Email: michael.mosley@kimley-horn.com
(702) 862-3626

ARTICLE 14 - DELAYS IN PERFORMANCE

14.1. TIME IS OF THE ESSENCE

It is understood and agreed that all times stated and referred to herein are of the essence. The period for performance may be extended by RTC's Executive Director pursuant to the

process specified herein. No extension of time shall be valid unless reduced to writing and signed by RTC's Executive Director.

14.2. UNAVOIDABLE DELAYS

If the timely completion of the services under this Agreement should be unavoidably delayed, RTC may extend the time for completion of this Agreement for not less than the number of days CONSULTANT was excusably delayed. A delay is unavoidable only if the delay is not reasonably expected to occur in connection with or during CONSULTANT's performance, is not caused directly or substantially by acts, omissions, negligence or mistakes of CONSULTANT, is substantial and in fact causes CONSULTANT to miss specified completion dates, and cannot adequately be guarded against by contractual or legal means.

14.3. NOTIFICATION OF DELAYS

CONSULTANT shall notify RTC as soon as CONSULTANT has knowledge that an event has occurred or otherwise becomes aware that CONSULTANT will be delayed in the completion of the work. Within ten (10) working days thereafter, CONSULTANT shall provide such notice to RTC, in writing, furnishing as much detail on the delay as possible and requesting an extension of time.

14.4. REQUEST FOR EXTENSION

Any request by CONSULTANT for an extension of time to complete the work under this Agreement shall be made in writing to RTC. CONSULTANT shall supply to RTC documentation to substantiate and justify the additional time needed to complete the work and shall provide a revised schedule. RTC shall provide CONSULTANT with notice of its decision within a reasonable time after receipt of a request.

ARTICLE 15 - GENERAL PROVISIONS

15.1. SUCCESSORS AND ASSIGNS

RTC and CONSULTANT bind themselves and their successors and assigns to the other party and to the successors and assigns of such party, with respect to the performance of all covenants of this Agreement. Except as set forth herein, neither RTC nor CONSULTANT shall assign or transfer interest in this Agreement without the written consent of the other. Nothing herein shall be construed as creating a personal liability on the part of any officer or agent or any public body which may be a party hereto, nor shall it be construed as giving any rights or benefits hereunder to anyone other than RTC and CONSULTANT.

15.2. NON TRANSFERABILITY

This Agreement is for CONSULTANT's professional services, and CONSULTANT's rights and obligations hereunder may not be assigned without the prior written consent of RTC.

15.3. SEVERABILITY

If any part, term, article, or provision of this Agreement is, by a court of competent jurisdiction, held to be illegal, void, or unenforceable, or to be in conflict with any law of the State of Nevada, the validity of the remaining provisions or portions of this Agreement are not affected, and the rights and obligations of the parties shall be construed and enforced as if this Agreement did not contain the particular part, term, or provision held invalid.

15.4. RELATIONSHIP OF PARTIES

CONSULTANT is an independent contractor to RTC under this Agreement. Accordingly, CONSULTANT is not entitled to participate in any retirement, deferred compensation, health insurance plans or other benefits RTC provides to its employees. CONSULTANT shall be free to contract to provide similar services for others while it is under contract to RTC, so long as said services and advocacy are not in direct conflict, as determined by RTC, with services being provided by CONSULTANT to RTC.

15.5. WAIVER/BREACH

Any waiver or breach of a provision in this Agreement shall not be deemed a waiver of any other provision in this Agreement and no waiver is valid unless in writing and executed by the waiving party. An extension of the time for performance of any obligation or act shall not be deemed an extension of time for the performance of any other obligation or act. This Agreement inures to the benefit of and is binding upon the parties to this Agreement and their respective heirs, successors and assigns.

15.6. REGULATORY COMPLIANCE

A. CONSULTANT shall comply with all applicable federal, state and local government laws, regulations and ordinances. CONSULTANT shall be responsible for obtaining all necessary permits and licenses for performance of services under this Agreement. Upon request of RTC, CONSULTANT shall furnish RTC certificates of compliance with all such laws, orders and regulations.

B. CONSULTANT represents and warrants that none of the services to be rendered pursuant to this Agreement constitute the performance of public work, as that term is defined by Section 338.010(17) of the Nevada Revised Statutes. To the extent CONSULTANT does engage in such public work, CONSULTANT shall be responsible for paying the prevailing wage as required by Chapter 338 of the Nevada Revised Statutes.

15.7. EXCLUSIVE AGREEMENT

There are no verbal agreements, representations or understandings affecting this Agreement, and all negotiations, representations and undertakings are set forth herein with the understanding that this Agreement constitutes the entire understanding by and between the parties.

15.8. AMENDMENTS

No alteration, amendment or modification of this Agreement shall be effective unless it is in writing and signed by both parties.

15.9. CONTINUING OBLIGATION

CONSULTANT agrees that if, because of death or any other occurrence it becomes impossible for any principal or employee of CONSULTANT to render the services required under this Agreement, neither CONSULTANT nor the surviving principals shall be relieved of any obligation to render complete performance. However, in such event, RTC may terminate this Agreement if it considers the death or incapacity of such principal or employee to be a loss of such magnitude as to affect CONSULTANT's ability to satisfactorily complete the performance of this Agreement.

15.10. APPLICABLE LAW AND VENUE

The provisions of this Agreement shall be governed and construed in accordance with the laws of the State of Nevada. The exclusive venue and court for all lawsuits concerning this Agreement shall be the Second Judicial District Court of the State of Nevada, County of Washoe, and the parties hereto submit to the jurisdiction of that District Court.

15.11. ATTORNEYS' FEES

In the event of a dispute between the parties result in a proceeding in any Court of Nevada having jurisdiction, the prevailing party shall be entitled to an award of costs and any reasonable attorneys' fees.

15.12. CERTIFICATION REQUIRED BY NEVADA SENATE BILL 27 (2017)

CONSULTANT expressly certifies and agrees, as a material part of this Agreement, that it is not currently engaged in a boycott of Israel. CONSULTANT further agrees, as a material part of this Agreement, it will not engage in a boycott of Israel for the duration of this Agreement. If, at any time during the formation or duration of this Agreement, CONSULTANT is engaged or engages in a boycott of Israel, it will constitute a material breach of this Agreement.

IN WITNESS WHEREOF, the parties hereto have made and executed this Agreement the day and year first above written.

REGIONAL TRANSPORTATION COMMISSION
OF WASHOE COUNTY

By: _____
Bill Thomas, AICP, Executive Director

KIMLEY-HORN AND ASSOCIATES, INC.

By: _____
Michael Mosley, P.E. PTOE
Vice President

Exhibit A

Scope of Services

EXHIBIT A

SCOPE OF SERVICES
FOR THE
TRAFFIC SIGNAL FIBER 25-01 PROJECT

This scope of services includes design and construction support of the Intelligent Transportation System (ITS) infrastructure within in the City of Reno, City of Sparks, and NDOT. Procurement and installation of actual infrastructure will be provided by the selected contractor after the bid has been awarded for the bidding documents provided by the CONSULTANT.

The extent of design work includes the improvement objectives at the following locations:

#	Main Street	Side Street	Improvement Objective
City of Reno			
1	Longley Lane* (1.15 mile of fiber)	Maestro Drive to South McCarran Blvd	Design new conduit and fiber interconnect to connect existing signal controller cabinets and tie to existing ITS network. Connect to existing NDOT fiber at South McCarran Blvd to tie to existing ITS network.
City of Sparks			
2	Vista Blvd (1.17 mile of fiber)	E Prater Way to Baring Blvd	Design new conduit and fiber interconnect to connect existing signal controller cabinets and tie to existing ITS network.
City of Reno, City of Sparks, and NDOT			
3	Kietzke Lane* Galletti Way* Connection (0.75 mile of fiber)	Reno Corp Yard to Galletti Way Kietzke Lane to Glendale Ave	Design new conduit and fiber interconnect to connect existing signal controller cabinets and tie to existing ITS network. Connections include COR Corp yard gate near Fisherman’s Park #2 to Fiber Hut in NDOT Galletti Yard (old DMV building), from the NDOT Fiber Hut to the Kietzke/Galletti signal cabinet, and from the Kietzke/Galletti traffic signal cabinet to the Glendale/ Galletti traffic signal cabinet. Entrance to the Old DMV Building is assumed to be through existing conduits entering the building near the south building face adjacent to the generator yard.
*Denotes need for NDOT Encroachment Permit			

A. Preliminary and General Items (Project Management):

1. Coordination with RTC project manager and staff will be ongoing throughout the project. Project management and coordination meetings or conference calls will be held with the RTC and other parties as appropriate. CONSULTANT will coordinate kick-off meeting and hold progress meetings during course of project monthly. The anticipated schedule will be ten (10) months. Most meetings will be virtual.
2. Coordination meetings with the City of Reno, City of Sparks and NDOT. CONSULTANT will conduct up to four (4) in-person one-on-one agency

meetings, outside of meetings included in other tasks, in order to confirm existing design conditions, needs, and coordinate design to complete project design objectives. The RTC Project Manager will determine appropriate contact personnel at each agency to be met with. Meeting notes will be developed and provided as a summary of discussions.

B. Data Collection, Analysis, and Design

1. Investigate Existing Conditions and Field Inventory for interconnect design:
 - a. CONSULTANT will obtain and review available as-built plans from City of Reno, City of Sparks, NDOT and the RTC and map into CAD.
 - b. CONSULTANT will conduct a field review with City of Reno and City of Sparks, and NDOT to evaluate existing field conditions for new conduit paths.
 - c. CONSULTANT will evaluate existing network equipment at locations identified herein for connection to network.
 - d. CONSULTANT will not evaluate existing pedestrian ramps for general compliance with current ADA standards. If the ramps are in conflict with proposed improvements evaluation of ramps will be considered an additional service.
 - e. CONSULTANT will prepare a written and graphical Design Criteria & Concept Memo Document to work with agencies in establishing the design concept and criteria before 60% plans production.

2. Survey and Mapping for site #s 1-3
 - a. Aerial Mapping: Aerial photography for these sites will be done using NearMap Aerials. The aerials will be put in the same coordinate system for consistency.
 - b. Center lines will be developed off of existing features and NDOT as-builts as applicable.
 - c. CONSULTANT will evaluate right of way and easement needs based on County GIS data and where new equipment is to be installed.
 - d. Boundary Survey: Survey boundary services will not be done for these sites as work will be limited to infrastructure within existing right of way.
 - e. Supplemental Design Survey (Optional): Supplemental Survey is not anticipated to be required for these project sites. Where required it will be considered an additional service.

3. Subsurface Utilities Engineering (SUE): CONSULTANT will investigate and locate subsurface utilities within the roadway right-of-way, and areas reasonably effected, in accordance with the American Society of Civil Engineers Standard guideline for the Collection and Depiction of Existing Subsurface Utility Data, Quality Level D deliverables will include: Depiction of subsurface utilities on plan sheets developed under design. All located, existing underground utilities will be shown on the Plan Sheets accompanied with the following “Note: Subsurface utilities are depicted by

their Quality Levels in accordance American Society of Civil Engineers Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data (CI/ASCE 38-02). All utility information shown hereon is depicted to Quality Level 'D', unless otherwise noted.”

4. Utility coordination: Based on field investigation, CONSULTANT will provide RTC a list of utility company whose utilities are likely to be within the project limits or reasonably affected by the project. RTC will issue the initial notification to the utility agencies on the list and CONSULTANT will coordinate with the utility agencies for upcoming work, facility relocation and new installation, and to ensure utilities likely affected by the project are drawn on the plans, evaluate potential conflicts through field investigation, investigate conflict resolution strategies.
5. Traffic Signal Basis of Design: Existing traffic signal/ ITS equipment shall be depicted in a “greyed out” format using “new” and “existing” stipple patterns with new installations shown superimposed unless important details are obscured.
6. A geotechnical evaluation will not be performed under this project as it is not required.
7. Drainage Evaluations are not anticipated for this project and therefore excluded.
8. Environmental Services are not anticipated for this project and therefore excluded.

C. 60% Design

1. Prepare 60% Plans and Specifications
 - a. The construction plans will be on 11" x 17" size sheets and will show all elements of the project construction, including plan view, right-of-way lines, and ITS design. The final plan set will include, at a minimum: Cover Sheet, Interconnect Plan Sheets (at 1"=40' scale, double banked), Detail Sheets (scales as noted).
 - b. Plan updates and further development. Prepare plans, and an OPC suitable for RTC and Local Government review.

Project Plans (28) will include:

- i. Cover (1)
- ii. Sheet index (1)
- iii. General notes (1)
- iv. Interconnect Plan sheets (14)
- v. Project details (10)
- vi. Building Connection details (1)

(x) indicated the number of plan sheets anticipated

- c. CONSULTANT will perform a project walk through to evaluate that every aspect of the project scope has been captured.
- d. A quality control review of the plans, contract documents and technical specifications will be performed by the CONSULTANT which will focus on technical aspects of the plans and specifications and will review that all items of work are adequately covered. The quality control reviewer will check, initial, and date each plan sheet as appropriate.
- e. CONSULTANT will submit 60% Plans to RTC, City of Reno, City of Sparks, and to utility agencies.

D. 90% Design

- 1. Prepare 90% Plans and Specifications
 - a. CONSULTANT shall incorporate review comments from RTC, City of Reno, and City of Sparks into the 90% design process
 - b. Plan updates and further development. Prepare plans and an OPC suitable for RTC and Local Government review.

Project Plans (39) will include:

- i. Cover (1)
- ii. Sheet index (1)
- iii. General notes (1)
- iv. Interconnect Plan sheets (14)
- v. Project details (10)
- vi. Building Connection details (1)
- vii. Project fiber splice details (11)
(x) indicated the number of plan sheets anticipated

- c. Project Specifications: CONSUTLANT will prepare Contract Documents and Technical Specifications which will reference the latest edition of Standard Specifications for Public Works Construction (Orange Book) for standard construction items and follow the Standard Provisions for ITS developed by the RTC.
- d. A quality control review of the plans, contract documents and technical specifications will be performed by the CONSULTANT which will focus on technical aspects of the plans and specifications and will review that all items of work are adequately covered. The quality control reviewer will check, initial, and date each plan sheet as appropriate.

- e. CONSULTANT will perform a project walk through to evaluate that every aspect of the project scope has been captured.
- f. CONSULTANT will submit 90% Plans to RTC, City of Reno, City of Sparks, and to utility agencies with a comment review matrix to document 60% comments. A PDF cover sheet with digital signature blocks will be produced at this submittal for routing to the agencies for project bidding.
- g. Prepare and Submit NDOT Encroachment Permits: CONSULTANT will prepare and process encroachment permit package through the NDOT District 2. The CONSULTANT will submit the completed application and submit the color-coded plans at the 90% submittal. One set of review comments will be processed by the CONSULTANT for the permit. The final submittal of permit will be at the 100% submittal. The RTC will be the applicant on the permit and will provide all applicant fees, signatures and submittal documentation needed by the CONSULTANT to process the permit. Permit Terms and Conditions will be incorporated into the project specifications. This work will include (2) meeting with NDOT, a pre-permitting meeting and a comment review meeting.

E. Final Design (100% Signed and sealed bid documents)

1. CONSULTANT shall incorporate review comments from RTC, City of Sparks, and City of Reno into Final Construction Document process.
2. Prepare Final Plans and Specifications: Prepare Final Construction Plans, Contract Documents and Technical Specifications suitable for construction bid advertisement for the approved alignment in accordance with RTC standards and requirements. RTC will provide the boilerplate via e-mail in MS Word format.
3. A quality control review of the plans, contract documents and technical specifications will be performed by the CONSULTANT which will focus on technical aspects of the plans and specifications and will review that all items of work are adequately covered. The quality control reviewer will check, initial, and date each plan sheet as appropriate. The RTC, Local Entity and Quality Control review comments will be incorporated into the final Plans and Specifications.
4. The final construction plans will be on 11" x 17" size sheets and will show all elements of the project construction. The final plans and specifications will be signed and sealed by a Nevada Registered Professional Civil Engineer in responsible charge of preparation. Plans and specifications will be submitted to the RTC, City of Reno, City of Sparks, and utility agencies for review at the

60%, 90%, and final (100%) stages of completion per the following:

- a. Electronic (PDF) 11"x17" plans and specifications will be sent to the review agencies at each submittal including the final cover sheet which will be routed digitally.

F. Bidding Services

1. Plan Set and Specification Distribution. CONSULTANT will provide the RTC with final plans and specifications, including addenda, in Portable Document Format (PDF), for use in RTC Procurement system.
2. Pre-bid Meeting. CONSULTANT will be available during the bidding process to answer technical questions and will participate in the pre-bid meeting. All questions and responses will be documented and provided to RTC. CONSULTANT will prepare and provide PDF addenda, if required. All questions regarding legal aspects of the contract documents will be referred directly to RTC. CONSULTANT will prepare and provide a PDF summary of the pre-bid meeting, as directed by the RTC.
3. Bid Opening. CONSULTANT will attend the bid opening and review the bids received for irregularities and provide a recommendation for award. CONSULTANT will tabulate bid results into a MS Excel spreadsheet and check multiplication and addition of bid items.

G. Construction Phase Services or Engineering During Construction (EDC)

The RTC and CONSULTANT shall review Optional Construction Services following the completion of final design. The following tasks summarize the major elements of Construction Support Services anticipated with this project.

1. Contract Administration: Provide contract administration services as follows:
 - a. Pre-Construction Conference: CONSULTANT will attend a Pre-Construction Conference prior to commencement of Work at the Site.
 - b. Visits to Site and Observation of Construction: CONSULTANT will provide on-site construction observation services during the construction phase. CONSULTANT will make visits at intervals as directed by RTC in order to observe the progress of the Work. Such visits and observations by CONSULTANT are not intended to be exhaustive or to extend to every aspect of Contractor's work in progress. Observations are to be limited to spot checking, selective measurement, and similar methods of general observation of the Work based on CONSULTANT's exercise of professional judgment. Based on information obtained during such visits and

such observations, CONSULTANT will evaluate whether Contractor's work is generally proceeding in accordance with the Contract Documents, and CONSULTANT will keep RTC informed of the general progress of the Work. CONSULTANT shall also provide recommendations to RTC for any construction changes necessitated by field conditions.

- c. The purpose of CONSULTANT's site visits will be to enable CONSULTANT to better carry out the duties and responsibilities specifically assigned in this Agreement to CONSULTANT, and to provide RTC a greater degree of confidence that the completed Work will conform in general to the Contract Documents. CONSULTANT shall not, during such visits or as a result of such observations of Contractor's work in progress, supervise, direct, or have control over Contractor's work, nor shall CONSULTANT have authority over or responsibility for the means, methods, techniques, equipment choice and usage, sequences, schedules, or procedures of construction selected by Contractor, for safety precautions and programs incident to Contractor's work, nor for any failure of Contractor to comply with laws and regulations applicable to Contractor's furnishing and performing the Work. Accordingly, CONSULTANT neither guarantees the performance of any Contractor nor assumes responsibility for any Contractor's failure to furnish and perform its work in accordance with the Contract Documents.
- d. Review and provide recommendations on contractor's traffic control plans. CONSULTANT will review and provide feedback to the RTC on traffic control plans submitted to RTC for approval.
- e. Review and provide recommendations on contractor's construction schedule and work progress. CONSULTANT will review and provide feedback to the RTC on the construction schedule and work progress submitted to the RTC for approval.
- f. Submittals: CONSULTANT will review and approve or take other appropriate action in respect to Submittals, Shop Drawings, Samples, and other data which Contractor is required to submit, but only for conformance with the information given in the Contract Documents. Such review and approvals or other action will not extend to means, methods, techniques, equipment choice and usage, sequences, schedules, or procedures of construction or to related safety precautions and programs.
- g. Substitutes and "or-equal": Evaluate and determine the acceptability of substitute or "or-equal" materials and equipment proposed by Contractor in accordance with the Contract Documents,

but subject to the provisions of applicable standards of state or local government entities.

- h. Recommendations with Respect to Defective Work. CONSULTANT will recommend to RTC that Contractor's work be disapproved and rejected while it is in progress if, on the basis of such observations, CONSULTANT believes that such work will not produce a completed Project that conforms generally to Contract Documents.
- i. Clarifications and Interpretations: CONSULTANT will respond to reasonable and appropriate Contractor requests for information and issue necessary clarifications and interpretations of the Contract Documents to RTC as appropriate to the orderly completion of Contractor's work. Any orders authorizing variations from the Contract Documents will be made by RTC.
- j. Disagreements between RTC and Contractor: CONSULTANT will, if requested by RTC, render written decision on all claims of RTC and Contractor relating to the acceptability of Contractor's work or the interpretation of the requirements of the Contract Documents pertaining to the progress of Contractor's work. In rendering such decisions, CONSULTANT shall be fair and not show partiality to RTC or Contractor and shall not be liable in connection with any decision rendered in good faith in such capacity.
- k. Applications for Payment: Based on its observations and on review of applications for payment and accompanying supporting documentation, CONSULTANT will determine the amounts that CONSULTANT recommends Contractor be paid. Such recommendations of payment will be in writing and will constitute CONSULTANT's representation to RTC, based on such observations and review, that, to the best of CONSULTANT's knowledge, information and belief, Contractor's work has progressed to the point indicated and that such work-in-progress is generally in accordance with the Contract Documents subject to any qualifications stated in the recommendation. In the case of unit price work, CONSULTANT's recommendations of payment will include determinations of quantities and classifications of Contractor's work, based on observations and measurements of quantities provided with pay requests.
- l. By recommending any payment, CONSULTANT shall not thereby be deemed to have represented that its observations to check Contractor's work have been exhaustive, extended to every aspect of Contractor's work in progress, or involved detailed inspections of

the Work beyond the responsibilities specifically assigned to CONSULTANT in this Agreement. It will also not impose responsibility on CONSULTANT to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, nor to determine that title to any portion of the work in progress, materials, or equipment has passed to RTC free and clear of any liens, claims, security interests, or encumbrances, nor that there may not be other matters at issue between RTC and Contractor that might affect the amount that should be paid.

- m. Substantial Completion: CONSULTANT will, promptly after notice from Contractor that it considers the entire Work ready for its intended use, in company with RTC and Contractor, conduct a site visit to determine if the Work is substantially complete. Work will be considered substantially complete following satisfactory completion of all items with the exception of those identified on a final punch list. If after considering any objections of RTC, CONSULTANT considers the Work substantially complete, CONSULTANT will notify RTC and Contractor.
- n. Final Notice of Acceptability of the Work: CONSULTANT will conduct a final site visit to determine if the completed Work of Contractor is generally in accordance with the Contract Documents and the final punch list so that CONSULTANT may recommend, in writing, final payment to Contractor. Accompanying the recommendation for final payment, CONSULTANT shall also provide a notice that the Work is generally in accordance with the Contract Documents to the best of CONSULTANT's knowledge, information, and belief based on the extent of its services and based upon information provided to CONSULTANT upon which it is entitled to rely.
- o. Inspections and Tests: CONSULTANT may require special inspections or tests of Contractor's work as CONSULTANT deems appropriate and as further defined in the scope of services below, and will receive and review certificates of inspections from Subconsultants within CONSULTANT's area of responsibility or of tests and approvals required by laws and regulations or the Contract Documents. CONSULTANT's review of such certificates will be for the purpose of determining that the results certified indicate compliance with the Contract Documents and will not constitute an independent evaluation that the content or procedures of such inspections, tests, or approvals comply with the requirements of the Contract Documents. CONSULTANT shall be entitled to rely on the results of such tests and the facts being certified.

- p. Change Orders: CONSULTANT may recommend Change Orders to RTC, and will review and make recommendations related to reasonable and appropriate Change Orders submitted or proposed by the Contractor.
- q. Limitation of Responsibilities: CONSULTANT shall not be responsible for the acts or omissions of any Contractor, or of any of their subcontractors, suppliers, or of any other individual or entity performing or furnishing the Work. CONSULTANT shall not have the authority or responsibility to stop the work of any Contractor.

2. Inspection

- a. "Inspection services" means the observation of construction process for the purpose of determining that the Contractor is in substantial compliance with the plans and specifications and reporting to the RTC any observed deficiencies. The following tasks summarize the major elements of Inspection anticipated with this project.
- b. Construction of the project that requires inspection is anticipated at 85 working days (17 weeks). A full-time (8 hours per day) primary inspector will be on site during working days that include trenching, pouring concrete, grading, utility adjustments, directional drill, and paving (37 working days anticipated). A part-time (3 hours per day) primary inspector will be on site during all other working days (48 working days anticipated). A full-time supplemental technician will be provided at 8 hours per day (12 working days anticipated) and will perform asphalt sampling and density testing during paving operations. The primary inspector will be responsible for the following items:
 - i. Attend the preconstruction conference.
 - ii. Monitor the work performed by the Contractor to ascertain whether the work is in substantial accordance with the plans and specifications.
 - iii. Assist in problem resolution with the RTC, contractor personnel, utility agencies, the public and others.
 - iv. Prepare daily inspection reports, submitted weekly to RTC and copied to the appropriate government jurisdiction(s). The daily inspection will contain materials delivered to the site, excavation and earthwork, preparation of sub grades, placement of aggregate base material, asphaltic concrete, Portland cement concrete, the forming, placement or erection of structures, and review of contractor daily progress logs.
 - v. Provide materials quantity reports and assist in reviewing and analyzing contractor's monthly progress payments.
 - vi. Provide verification of the distribution of public relation notices required to be delivered by the Contractor.
 - vii. Assist in preparation of the Punch List.
 - viii. Maintain a field blue-line set of drawings (bond copy) to incorporate contractor record drawing mark-ups.

3. Materials Testing

- a. Upon receiving authorization from the RTC, the CONSULTANT will engage a Subconsultant to perform the Materials Testing services. The following tasks summarize the major elements of testing anticipated with this project:
- b. Provide Material Testing for compliance with the specifications per the 2012 edition of the Standard Specifications for Public Works Construction (Orange Book) testing requirements. Materials to be tested will include plantmix bituminous pavement, aggregate base, concrete cylinder samples, and trenching backfill material. Test reports, accompanied with CONSULTANT’s recommendation regarding acceptance/mitigation of materials, shall be submitted promptly to the RTC and CC’d to appropriate governmental jurisdiction(s).

4. As-Built Information

- a. Record Drawings. Provide as-built record drawings for the completed project. A single file PDF format (11” x 17” at 300 dpi), will be provided to RTC for its files and distribution. The PDF file shall include all plan sheets in one file with index/bookmark for easy access to different sheets or sections of the plan set.
- b. The final record drawings must be identified, dated, and signed as the record drawings and must also contain the engineer’s stamp and signature. The Consultant may either:
 - i. Provide the final revisions on the original engineer-stamped/signed reproducible drawings, which will then also be identified as the record drawings, or
 - ii. Provide new engineer-stamped/signed reproducible drawings identified as the record drawings.
- c. The Record Drawings shall include a scan of the original title sheet (including the appropriate signatures by RTC, local government, signed and stamped by the CONSULTANT) and identified as record drawings.

H. City of Reno Signal Shop Alternate Connection (Optional)

#	Main Street	Side Street	Improvement Objective
City of Reno			
4	Alternate Connection to Reno Signal Shop (0.38 mile of fiber)	Via Fisherman’s Park #2 and West of Corp Building	Design alternative for fiber and conduit connections from existing signal vault within the Reno Corp Yard to pull boxes at the Kietzke Lane yard gate. Provide a key fiber optic connection between City and NDOT.

- 1. In the case that Reno is acceptable to an alternate alignment for conduit

installation in the Corp Yard to make a better fiber connection between NDOT and the Reno signal shop this task may be authorized. A proposed alignment would be along the south border of the yard through Fisherman #2 Park and then north along the west Corp Yard roadway. When authorized CONSULTANT will complete design efforts including the following Plans, Special Provision, and Estimating services:

- a. Data Collection
 - b. 60% Design
 - c. 90% Design
 - d. Final Plans (100%)
2. Plans are anticipated to be two sheets.

I. Testholes for Utility Exploration (Optional)

1. In the case that testholes are needed for utility exploration on the project this optional services task is set aside for approximately fifteen (15) testholes.
2. Subsurface Utilities Engineering (SUE) Quality Level A: When authorized CONSULTANT will investigate and locate subsurface utilities within the roadway right-of-way, and areas reasonably effected, in accordance with the American Society of Civil Engineers Standard guideline for the Collection and Depiction of Existing Subsurface Utility Data, Quality Level A Deliverables will include: Depiction of subsurface utilities on plan sheets developed under design. All located, existing underground utilities will be shown on the Plan Sheets accompanied with the following “Note: Subsurface utilities are depicted by their Quality Levels in accordance American Society of Civil Engineers Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data (CI/ASCE 38-02).

J. Design Contingency

1. This is a contingency for miscellaneous increases within the scope of this contract. CONSULTANT shall provide a letter detailing the need, scope, and not-to-exceed budget for any proposed work. Work under this task shall proceed only with the RTC Project Manager’s written approval. A 8% contingency was added to the design tasks only.

K. Engineering During Construction Contingency

1. This is a contingency for miscellaneous increases within the scope of this contract. CONSULTANT shall provide a letter detailing the need, scope, and not-to-exceed budget for any proposed work. Work under this task shall proceed only with the RTC Project Manager’s written approval. A 8% contingency was added to the EDC task only.

Exhibit B

Compensation

Exhibit "B"

Exhibit B - Schedule of Services
RTC 2024 Traffic Signal Fiber 25-01 Project



Prepared by Kimley-Horn: MSM 4/1/2024

TASK	DESCRIPTION	TASK TOTALS
Design Services		
A	Preliminary and General Items	\$ 17,905.00
B	Data Collection and Analysis	\$ 36,315.00
C	60% Design Phase	\$ 52,621.00
D	90% Design Phase	\$ 75,363.00
E	Final Design Phase	\$ 43,269.00
F	Bidding Services	\$ 8,485.00
Total Design Services		\$233,958.00
EDC		
G	Engineering During Construction	\$ 170,699.00
Total EDC Services		\$170,699.00
Optional Services		
H	City of Reno Signal Shop Alternate Connection (Optional)	\$ 33,477.00
I	Testholes for Utility Exploration (Optional)	\$ 25,000.00
Total Optional Services		\$58,477.00
Contingency		
J	Design Contingency (8% of Design)	\$ 19,000.00
K	EDC Contingency (8% of EDC)	\$ 14,000.00
Total Coningency		33,000.00
Total Not-to-Exceed Amount		\$496,134.00



Exhibit B - Schedule of Services

RTC 2024 Traffic Signal Fiber 25-01 Project

Prepared by Kimley-Horn: MSM 4/1/2024 v3

TASK	DESCRIPTION	ITS Sys. Manager/ Prof. II	Senior Prof. I	Prof.	Senior Technical Support	Analyst II	Analyst I	Technical Support	Support Staff	Hours Subtotal	Expenses	Expense Description	Lump Sum Task Amounts
		\$330	\$285	\$225	\$190	\$185	\$150	\$130	\$117				
A	Preliminary and General Items												
	Project Management (10 months)									0			\$0.00
	Kickoff Meeting	1	2			2				5			\$1,270.00
	Monthly Progress calls		10	10		5				25	\$700	Travel	\$6,725.00
	Coordination Meetings (4)	1	8	8		8				25			\$5,890.00
	Invoicing, Progress Reports, Work Planning		10						10	20			\$4,020.00
										0			\$0.00
	Subtotal Hours	2	30	18	0	15	0	0	10	75			
	Subtotal Fee	\$660.00	\$8,550.00	\$4,050.00	\$0.00	\$2,775.00	\$0.00	\$0.00	\$1,170.00		\$700		\$17,905.00
B	Data Collection and Analysis												
										0			\$0.00
	Obtain, Review As-builts, Map into CAD			15			20	20		55			\$8,975.00
	Field Review with RTC, Sparks, and Reno		12			12	6			30	\$700	Travel	\$7,240.00
	Aerial mapping				3		10	10		23			\$3,370.00
	Centerline development			2		10				12			\$2,300.00
	Utility Coordination			10		10	10			30			\$5,600.00
	Evaluate existing network equipment	1	1	2		2				6			\$1,435.00
	Prepare Design Concept and Criteria Memo	1	4	4		15	15			39			\$7,395.00
										0			\$0.00
	Subtotal Hours	2	17	33	3	49	61	30	0	195			
	Subtotal Fee	\$660.00	\$4,845.00	\$7,425.00	\$570.00	\$9,065.00	\$9,150.00	\$3,900.00	\$0.00		\$700		\$36,315.00
C	60% Design Phase												
	Cover, General Notes, Sheet Index (3)			1		4		4		9			\$1,485.00
	Project details (10)			3	6	6	6			21			\$3,825.00
	Building Connection details (1)			1		6	6			13			\$2,235.00
	Interconnect Plans (14)		2	16	16	60	60	60		214			\$35,110.00
	OPC			4		2	10	10		26			\$4,070.00
	Quality Control Review	2	8			8				18			\$4,420.00
	Submit 60% RTC and Utilities			1			6		3	10			\$1,476.00
	Subtotal Hours	2	10	26	22	86	88	74	3	311			
	Subtotal Fee	\$660.00	\$2,850.00	\$5,850.00	\$4,180.00	\$15,910.00	\$13,200.00	\$9,620.00	\$351.00		\$0		\$52,621.00

Exhibit "B"

TASK	DESCRIPTION									Hours Subtotal	Expenses	Expense Description	Lump Sum Task Amounts
		ITS Sys. Manager/ Prof. II	Senior Prof. I	Prof.	Senior Technical Support	Analyst II	Analyst I	Technical Support	Support Staff				
D	90% Design Phase												
	Comment Review and Response		4	4		4	4			16			\$3,380.00
	Cover, General Notes, Sheet Index (3)			1			2			3			\$525.00
	Project details (10)			2	6		6			14			\$2,490.00
	Building Connection details (1)		1			4				5			\$1,025.00
	Project fiber splice details (11)	6	2	5		1	12			26			\$5,660.00
	Interconnect Plans (14)		1	12	24	40	40	40		157			\$26,145.00
	Prepare Specifications	1	3	10		10	10			34			\$6,785.00
	OPC			2		10	10	10		32			\$5,100.00
	Quality Control Review	2	8			8				18			\$4,420.00
	Plan in Hand Field Walk			8		8				16	\$700	Travel for Field Walk	\$3,980.00
	Submit 90% RTC and Utilities			1			6		3	10			\$1,476.00
	NDOT Encroachment Permit (3)			15		30	30		6	81	\$250	Printing/Delivery	\$14,377.00
	Subtotal Hours	9	19	60	30	115	120	50	9	412			
	Subtotal Fee	\$2,970.00	\$5,415.00	\$13,500.00	\$5,700.00	\$21,275.00	\$18,000.00	\$6,500.00	\$1,053.00		\$950		\$75,363.00
E	Final Design Phase												
	Comment Review and Response		2	2		4	4			12			\$2,360.00
	Cover, General Notes, Sheet Index (3)			1			1			2			\$375.00
	Project details (10)			1	3		3			7			\$1,245.00
	Building Connection details (1)		1			2				3			\$655.00
	Project fiber splice details (11)	2	1	2		1	4			10			\$2,180.00
	Interconnect Plans (14)		1	6	12	20	20	20		79			\$13,215.00
	Prepare specifications	1	1	5		5				12			\$2,665.00
	OPC			2		8	8	8		26			\$4,170.00
	Quality Control Review	2	8			8				18			\$4,420.00
	Submit Bid documents to RTC			1			6		2	9			\$1,359.00
	Revised NDOT Permit & Incorp. Bid Docs		5	10		20	20			55	\$250	Printing/Delivery	\$10,625.00
	Subtotal Hours	5	19	30	15	68	66	28	2	233			
	Subtotal Fee	\$1,650.00	\$5,415.00	\$6,750.00	\$2,850.00	\$12,580.00	\$9,900.00	\$3,640.00	\$234.00		\$250		\$43,269.00
F	Bidding Services												
	Pre-Bid Meeting and addenda		4	4		4	4			16			\$3,380.00
	RFI Responses		1	2		4	4			11			\$2,075.00
	Bid Opening and Bid Tabs		2	4			4	2		12	\$700	Travel	\$3,030.00
	Subtotal Hours	0	7	10	0	8	12	2	0	39			\$0.00
	Subtotal Fee	\$0.00	\$1,995.00	\$2,250.00	\$0.00	\$1,480.00	\$1,800.00	\$260.00	\$0.00		\$700		\$8,485.00

Exhibit "B"

TASK	DESCRIPTION									Hours Subtotal	Expenses	Expense Description	Lump Sum Task Amounts
		ITS Sys. Manager/ Prof. II	Senior Prof. I	Prof.	Senior Technical Support	Analyst II	Analyst I	Technical Support	Support Staff				
G	Engineering During Construction												
	85 Working Days												
	Construction Administration		20	60		120	50		12	262	\$700	Travel	\$51,004.00
	Inspection			30		296	144			470	\$1,000	Mileage	\$84,110.00
	Material Testing			6		30				36	\$19,000	Materials Testing	\$25,900.00
	As-built information		1	12		20	20			53			\$9,685.00
										0			\$0.00
	Subtotal Hours	0	21	108	0	466	214	0	12	821			
	Subtotal Fee	\$0.00	\$5,985.00	\$24,300.00	\$0.00	\$86,210.00	\$32,100.00	\$0.00	\$1,404.00		\$20,700		\$170,699.00
H	City of Reno Signal Shop Alternate Connection (Optional)												
										0			\$0.00
	City of Reno Coordination		8	8		8	8			32			\$6,760.00
	Data Collection	0	2	4	0	7	8	4	0	25			\$4,485.00
	60% Design	0	1	3	3	12	12	10	0	41			\$6,850.00
	90% Design	1	2	8	4	16	17	7	1	56			\$9,997.00
	Final Plans (100%)	0	2	4	2	9	9	4	0	30			\$5,385.00
										0			\$0.00
	Subtotal Hours	1	15	27	9	52	54	25	1	184			
	Subtotal Fee	\$330.00	\$4,275.00	\$6,075.00	\$1,710.00	\$9,620.00	\$8,100.00	\$3,250.00	\$117.00		\$0		\$33,477.00
I	Testholes for Utility Exploration (Optional)										\$25,000	15 Testholes	\$25,000.00
J	Design Contingency (8% of Design)											8% of Design	\$19,000.00
K	EDC Contingency (8% of EDC)											8% of Design	\$14,000.00
	Total Services Hours	21	138	312	79	859	615	209	37	2,270			
	Total Services Fee	\$6,930.00	\$39,330.00	\$70,200.00	\$15,010.00	\$158,915.00	\$92,250.00	\$27,170.00	\$4,329.00		\$49,000		\$496,134.00

Exhibit C

Indemnification and Insurance Requirements

INDEMNIFICATION AND INSURANCE REQUIREMENTS FOR
PROFESSIONAL SERVICE AGREEMENTS
[NRS 338 DESIGN PROFESSIONAL]

2022-07-08 Version

1. INTRODUCTION

IT IS HIGHLY RECOMMENDED THAT CONSULTANTS CONFER WITH THEIR INSURANCE CARRIERS OR BROKERS TO DETERMINE THE AVAILABILITY OF THESE INSURANCE CERTIFICATES AND ENDORSEMENTS IN ADVANCE OF PROPOSAL SUBMISSION. IF THERE ARE ANY QUESTIONS REGARDING THESE INSURANCE REQUIREMENTS, IT IS RECOMMENDED THAT THE AGENT/BROKER CONTACT RTC'S FINANCE DIRECTOR AT (775) 335-1845.

2. INDEMNIFICATION

CONSULTANT agrees, subject to the limitations in Nevada Revised Statutes Section 338.155, to save and hold harmless and fully indemnify RTC, City of Sparks, City of Reno, and the Nevada Department of Transportation including their elected officials, officers, employees, and agents (hereafter, "Indemnitees") from and against any and all claims, proceedings, actions, liability and damages, including reasonable attorneys' fees and defense costs incurred in any action or proceeding (collectively "Damages") arising out of the:

- A. Negligence, errors, omissions, recklessness or intentional misconduct of CONSULTANT or CONSULTANT's agents, employees, officers, directors, subconsultants, or anyone else for whom CONSULTANT may be legally responsible, which are based upon or arising out of the professional services of CONSULTANT; and
- B. Violation of law or any contractual provisions or any infringement related to trade names, licenses, franchises, patents or other means of protecting interests in products or inventions resulting from the use by the Indemnitees of any materials, devices, processes, equipment, or other deliverable (including software) supplied by CONSULTANT under or as a result of this Agreement, but excluding any violation or infringement resulting from the modification or alteration by the Indemnitees of any materials, devices, processes, equipment, or other deliverable (including software) not consented to by CONSULTANT.

CONSULTANT further agrees to defend, save and hold harmless and fully indemnify the Indemnitees from and against any and all Damages arising out the negligence, errors, omissions, recklessness or intentional misconduct of CONSULTANT or CONSULTANT's agents, employees, officers, directors, subconsultants, or anyone else for whom CONSULTANT may be legally responsible, which are not based upon or arising out of the professional services of CONSULTANT.

The Damages shall include, but are not limited to, those resulting from personal injury to any person, including bodily injury, sickness, disease or death and injury to real property or personal

property, tangible or intangible, and the loss of use of any of that property, whether or not it is physically injured.

If the Indemnitees are involved in defending actions of CONSULTANT or anyone else for whom CONSULTANT is legally responsible, CONSULTANT shall reimburse the Indemnitees for the time spent by such personnel at the rate of the Indemnitees pay or compensation for such services.

If an Indemnitee is found to be liable in the proceeding, then CONSULTANT'S obligation hereunder shall be limited to the proportional share of the liability attributed to CONSULTANT.

In determining whether a claim is subject to indemnification, the incident underlying the claim shall determine the nature of the claim.

In the event of a violation or an infringement under paragraph 2.B above and the use is enjoined, CONSULTANT, at its sole expense, shall either (1) secure for the Indemnitees the right to continue using the materials by suspension of any injunction or by procuring a license or licenses for the Indemnitees; or (2) modify the materials so that they become non-infringing. This covenant shall survive the termination of the Professional Services Agreement.

The provisions of this Agreement are separate and severable and it is the intent of the Parties hereto that in the event any provision of this Agreement should be determined by any court of competent jurisdiction to be void, voidable or too restrictive for any reason whatsoever, the remaining provisions of this Agreement shall remain valid and binding upon said Parties. It is also understood and agreed that in the event any provision should be considered, by any court of competent jurisdiction, to be void because it imposes a greater obligation on CONSULTANT than is permitted by law, such court may reduce and reform such provisions to limitations which are deemed reasonable and enforceable by said court.

3. GENERAL REQUIREMENTS

Prior to the start of any work on a RTC project, CONSULTANT shall purchase and maintain insurance of the types and limits as described below insuring against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by CONSULTANT, its subconsultants, or their employees, agents, or representatives. The cost of all such insurance shall be borne by CONSULTANT.

4. VERIFICATION OF COVERAGE

CONSULTANT shall furnish RTC with a certificate(s) of insurance, executed by a duly authorized representative of each insurer, showing compliance with the insurance requirements set forth herein, on forms acceptable to RTC. All deductibles and self-insured retentions requiring RTC approval shall be shown on the certificate. All certificates and endorsements are to be addressed to RTC's Finance Director and be received by RTC before work commences. Upon request, CONSULTANT agrees that RTC has the right to review CONSULTANT'S and the Sub's insurance policies, or certified copies of the policies. Copies of applicable policy forms or endorsements confirming required additional insured, waiver of subrogation and notice of

cancellation provisions are required to be provided with any certificate(s) evidencing the required coverage.

5. NOTICE OF CANCELLATION

CONSULTANT or its insurers shall provide at least thirty (30) days' prior written notice to RTC prior to the cancellation or non-renewal of any insurance required under this Agreement. An exception may be included to provide at least ten (10) days' written notice if cancellation is due to non-payment of premium. CONSULTANT shall be responsible to provide prior written notice to RTC as soon as practicable upon receipt of any notice of cancellation, non-renewal, reduction in required limits or other material change in the insurance required under this Agreement.

6. SUBCONSULTANTS & SUBCONTRACTORS

CONSULTANT shall include all Subcontractors and Subconsultants (referred to collectively as "Subs") as insureds under its liability policies OR shall cause Subs employed by CONSULTANT to purchase and maintain separate liability coverages and limits of the types specified herein. If any Subs maintain separate liability coverages and limits, each shall include the RTC, City of Sparks, City of Reno, and the Nevada Department of Transportation as additional insureds under its commercial general liability policy, subject to the same requirements stated herein, without requiring a written contract or agreement between each of the additional insureds and any sub-consultant or sub-contractor. Any separate coverage limits of liability maintained by Subs shall be at least **\$1,000,000** per occurrence and at least **\$2,000,000** for any applicable coverage aggregates or the amount customarily carried by the Sub, whichever is GREATER. If any Subs provide their own insurance with limits less than required of the Contractor, Contractor shall include Subs in their coverage up to the full limits required of the Contractor. When requested by RTC, CONSULTANT shall furnish copies of certificates of insurance evidencing coverage for each subconsultant. CONSULTANT need not require its non-design subcontractors to carry Professional Errors and Omissions Liability insurance.

7. DEDUCTIBLES AND SELF-INSURED RETENTIONS

Any deductibles or self-insured retentions that exceed \$25,000 per occurrence or claim must be declared to RTC's Finance Director prior to signing this Agreement. RTC is entitled to request and receive additional documentation, financial or otherwise, prior to giving its approval of the deductibles and self-insured retentions. Any changes to the deductibles or self-insured retentions made during the term of this Agreement or during the term of any policy must be declared to RTC's Finance Director prior to the change taking effect.

8. ACCEPTABILITY OF INSURERS

Required insurance is to be placed with insurers with a Best's rating of no less than A-VII and acceptable to RTC. RTC may accept coverage with carriers having lower Best's ratings upon review of financial information concerning CONSULTANT and the insurance carrier. RTC reserves the right to require that CONSULTANT'S insurer(s) be licensed and admitted in the State

of Nevada or meet any applicable state and federal laws and regulations for non-admitted insurance placements.

9. OTHER CONDITIONS

- A. Failure to furnish the required certificate(s) or failure to maintain the required insurance may result in termination of this Agreement at RTC's option.
- B. If CONSULTANT fails to furnish the required certificate or fails to maintain the required insurance as set forth herein, RTC shall have the right, but not the obligation, to purchase said insurance at CONSULTANT's expense.
- C. Any waiver of CONSULTANT's obligation to furnish such certificate or maintain such insurance must be in writing and signed by an authorized representative of RTC. Failure of RTC to demand such certificate or other evidence of full compliance with these insurance requirements or failure of RTC to identify a deficiency from evidence that is provided shall not be construed as a waiver of CONSULTANT's obligation to maintain such insurance, or as a waiver as to the enforcement of any of these provisions at a later date.
- D. By requiring insurance herein, RTC does not represent that coverage and limits will necessarily be adequate to protect CONSULTANT, and such coverage and limits shall not be deemed as a limitation on CONSULTANT's liability under the indemnities granted to RTC in this contract.
- E. If CONSULTANT'S liability policies do not contain the standard ISO separation of insureds condition, or a substantially similar clause, they shall be endorsed to provide cross-liability coverage.

10. COMMERCIAL GENERAL LIABILITY

CONSULTANT shall maintain commercial general liability (CGL) and, if necessary, commercial umbrella insurance with a limit of not less than **\$2,000,000** each occurrence. If such CGL insurance contains a general aggregate limit, it shall be increased to equal twice the required occurrence limit or revised to apply separately to this project.

CGL insurance shall be written on ISO occurrence form CG 00 01 04 13 (or a substitute form providing equivalent coverage) and shall cover liability arising from premises, operations, products-completed operations, personal and advertising injury, and liability assumed under an insured contract (including the tort liability of another assumed in a business contract).

RTC and any other Indemnitees listed in Section 2. INDEMNIFICATION of this Agreement shall be included as an additional insured under the CGL, using ISO additional insured endorsement CG 20 10 07/04 or CG 20 33 07/04 or a substitute providing equivalent coverage, and under the commercial umbrella, if any.

This insurance shall apply as primary insurance with respect to any other insurance or self-insurance programs afforded to RTC or any other Indemnitees under this Agreement. CONSULTANT waives all rights against RTC and any other Indemnitees listed in section 2. INDEMNIFICATION of this Agreement for recovery of damages to the extent these damages are covered by the commercial general liability or commercial umbrella liability insurance maintained pursuant to this agreement. CONSULTANT's insurer shall endorse CGL policy to waive subrogation against RTC with respect to any loss paid under the policy.

11. COMMERCIAL AUTOMOBILE LIABILITY

CONSULTANT shall maintain automobile liability and, if necessary, commercial umbrella liability insurance with a limit of not less than **\$1,000,000** each accident. Such insurance shall cover liability arising out of any auto (including owned, hired, and non-owned autos).

Coverage shall be written on ISO form CA 00 01, CA 00 05, CA 00 25, or a substitute form providing equivalent liability coverage for all owned, leased, hired (rented) and non-owned vehicles (as applicable). RTC may agree to accept auto liability for non-owned and hired (rented) vehicles under the CGL if CONSULTANT does not own or operate any owned or leased vehicles.

CONSULTANT waives all rights against RTC, its officers, employees and volunteers for recovery of damages to the extent these damages are covered by the automobile liability or commercial umbrella liability insurance obtained by CONSULTANT pursuant to this Agreement.

12. INDUSTRIAL (WORKER'S COMPENSATION AND EMPLOYER'S LIABILITY) INSURANCE

It is understood and agreed that there shall be no Industrial (Worker's Compensation and Employer's Liability) Insurance coverage provided for CONSULTANT or any subconsultants by RTC. CONSULTANT, and any subconsultants, shall procure, pay for and maintain the required coverages.

CONSULTANT shall maintain workers' compensation and employer's liability insurance meeting the statutory requirements of the State of Nevada, including but not limited to NRS 616B.627 and NRS 617.210. The employer's liability limits shall not be less than **\$1,000,000** each accident for bodily injury by accident or **\$1,000,000** each employee for bodily injury by disease.

CONSULTANT shall provide a Final Certificate for itself and each subconsultant evidencing that CONSULTANT and each subconsultant maintained workers' compensation and employer's liability insurance throughout the entire course of the project.

If CONSULTANT, or any subconsultant is a sole proprietor, coverage for the sole proprietor must be purchased and evidence of coverage must appear on the Certificate of Insurance and Final Certificate.

CONSULTANT waives all rights against RTC, its elected officials, officers, employees and agents for recovery of damages to the extent these damages are covered by the workers compensation and employer's liability or commercial umbrella liability insurance obtained by Tenant pursuant to this agreement. CONSULTANT shall obtain an endorsement equivalent to WC 00 03 13 to affect this waiver.

13. PROFESSIONAL ERRORS AND OMISSIONS LIABILITY

CONSULTANT shall maintain professional liability insurance applying to liability for a professional error, omission, or negligent act arising out of the scope of CONSULTANT'S services provided under this Agreement with a limit of not less than **\$1,000,000** each claim and annual aggregate. CONSULTANT shall maintain professional liability insurance during the term of this Agreement and, if coverage is provided on a "claims made" or "claims made and reported" basis, shall maintain coverage or purchase an extended reporting period for a period of at least three (3) years following the termination of this Agreement.



REGIONAL TRANSPORTATION COMMISSION

Metropolitan Planning • Public Transportation & Operations • Engineering & Construction

Metropolitan Planning Organization of Washoe County, Nevada

Meeting Date: 4/19/2024

Agenda Item: 4.5.1

To: Regional Transportation Commission

From: James Gee, Director of Public Transportation and Operations

SUBJECT: Construction/Maintenance Quarterly Update on Transit Stops

RECOMMENDED ACTION

Acknowledge receipt of this quarterly Construction/Maintenance update on Transit Stops as presented to the Citizens Multimodal Advisory Committee on April 3, 2024.

BACKGROUND AND DISCUSSION

The Citizen's Multimodal Advisory Committee (CMAC) provides information and advice regarding the construction, installation and maintenance of benches, shelters and transit stops for passengers of the RTC transit system as required by Nevada Assembly Bill 214 (2023). The committee will have this topic as a discussion item at least four times a year.

At the CMAC meeting on April 3, 2024, RTC staff gave a presentation to the committee regarding the following:

Improvements Between January and March 2024 –

- Two bus stops were installed on Route 7 (on Sky Vista Parkway northbound and southbound) due to new development nearby.
- Bus stop on Sharlands Avenue across Sharlands Terrace Apartments was removed due to safety concerns. FlexRIDE is available in this area.
- Schedules were updated for the January Service Change.
- The bus stop at Silver Lake and Sky Vista Parkway was relocated 60 feet to the west, further away from the roundabout, allowing more room for vehicles to maneuver around buses.
- A bench was replaced at Kietzke Lane & Linden Street on Route 9.
- Schedule holder fixed at Lakeside Drive & Moana Lane.
- A shelter was installed at Glendale Avenue before S. Rock Boulevard (Baldini's) on Route 18.

Future Improvements –

- 20 shelters will be installed based on ridership and the availability of space.
- Bus stops on Selmi Drive will be improved as part of Selmi Drive Rehabilitation Project. Construction is expected to start in Spring 2024.

During the discussion between committee members and RTC staff, staff received the following information and advice from committee members –

- The bus stop for Route 7 inbound on W. 8th Street should be removed as it duplicates the 9th Street Station bus stop and creates difficult vehicle movements.
- Route 7 should be evaluated for the schedule timings, especially inbound at the Bonanza Casino timepoint.
- The bus stop for Route 1 near the Chamber of Commerce offices on S. Virginia Street should be evaluated for safety and amenities.
- Locations at transit facilities for potential indoor secure bicycle parking should be considered as this need exists within the community.

RTC staff is evaluating these topics and will report back to the CMAC.

FISCAL IMPACT

There is no fiscal impact related to this action.

PREVIOUS BOARD ACTION

There has been no previous Board action taken.



REGIONAL TRANSPORTATION COMMISSION

Metropolitan Planning • Public Transportation & Operations • Engineering & Construction

Metropolitan Planning Organization of Washoe County, Nevada

Meeting Date: 4/19/2024

Agenda Item: 4.5.2

To: Regional Transportation Commission

From: Rob Reeder, Administrator Security/Safety

SUBJECT: RTC Safety Management System Plan

RECOMMENDED ACTION

Approve the RTC Safety Management System Plan (Safety Management Plan) as required by 49 C.F.R. Part 673.

BACKGROUND AND DISCUSSION

The Federal Transit Administration (FTA) has enacted 49 C.F.R. Part 673 which requires all transit agencies to develop and implement a Safety Management System Plan (SMSP). The SMSP contains a Safety Management Policy, descriptions of Safety Risk Management, Safety Assurance, and Safety Promotion. In addition, the RTC designates an Accountable Executive (Director of Public Transportation) who has ultimate responsibility for ensuring that the agency's Safety Management Plan is effectively implemented throughout the agency's transportation system. The Safety Management Plan includes safety performance targets for 1) fatalities, 2) injuries, 3) safety events, and 4) system reliability. A review of the Safety Management Plan must occur at least annually or when there are significant system changes. The Regional Transportation Commission Board is required to approve the Safety Management Plan annually.

FISCAL IMPACT

Funding for this item is included in the FY25 budget, and there is no additional cost in connection with this agenda item.

PREVIOUS BOARD ACTION

There has been no previous Board action taken.

**December Safety Management System Plan
(Safety Management Plan) (SMSP)**

**The Regional Transportation Commission
of Washoe County**

DATE: September 23, 2006
REVISION: March 12, 2024

SMSP Revision History

Date	Revision	Description of Change
9/23/2006	ORIGIN	Origination of the SSPP.
4/15/2008	Revision	Enhancements to employee responsibilities.
1/20/2009	Review	Review
4/22/2010	Revision	Executive Director Signature Change and Review
5/2/2011	Revision	Annual Review and Approval of Plan.
11/3/2011	Revision	Organizational Updates.
5/8/2012	Revision	Annual Review and Approval of Plan.
3/22/2013	Revision	Section 5.4 - Roles, Responsibilities and Composition of the RTC Security/Safety Committee. Section 14.3 – Security Requirements for Modifications.
3/29/2013	Revision	Annual Review and Approval of Plan
4/29/2013	Revision	Add trend analysis with inspections, requirements to investigate accidents, incidents and near misses
4/1/2014	Revision	Annual Review and Approval of Plan
4/1/2015	Revision	Annual Review and Approval of Plan
10/6/2015	Revision	Revise Plan for Facility Changes
3/21/2016	Review	Annual Review and Approval of Plan
3/30/2017	Revision	Annual Review, Update and Approval of Plan
12/06/2017	Revision	Update Plan due to staffing changes
3/30/2018	Revision	Annual Review and Approval of Plan
3/31/2019	Revision	Revise Plan for 49 CFR Part 673 and PMOC requirements SSPP changes to SMSP
9/11/2019	Revision	Revise Plan for staffing changes and route changes
4/16/2020	Revision	Update Staffing Changes, Annual Review and Approval
3/16/2021	Revision	Update Staffing Changes
12/14/2021	Revision	Update Staffing Changes
4/20/22	Revision	Additional signatures added
8/23/2022	Revision	PTASP Targets added and Organizational Chart Updated
3/14/2023	Revision	Annual Review, Update Staffing Changes, Update PTASP targets
12/05/2023	Revision	Update Staffing Changes
03/12/2024	Revision	Annual Review, Update and Approval of Plan



REGIONAL TRANSPORTATION COMMISSION

Metropolitan Planning • Public Transportation & Operations • Engineering & Construction

Metropolitan Planning Organization of Washoe County, Nevada

Safety Management System Policy Statement

The primary goal of the Regional Transportation Commission (RTC) of Washoe County is provision of the safest and most secure transportation system reasonable. Development of this Safety Management System Plan (Safety Management System Plan or SMSP) is based upon budget considerations to provide appropriate safety commensurate with service to the public. All RTC employees and contractor personnel must strictly adhere to the content of this SMSP. A complementary Security Plan (System Security and Emergency Preparedness Program Plan or SSEPP) has been developed to address RTC system security.

The RTC management staff is responsible and accountable for the implementation of the provisions of this SMSP in their respective areas, for providing leadership to RTC employees, service providers, construction contractors, vendors and others, and for promoting safety throughout the agency, including compliance with all local, state, and federal requirements regarding environmental and occupational health.

The RTC Accountable Executive and Security and Safety Administrator has my delegated authority to manage this SMSP and provide appropriate oversight and support to all RTC departments, service providers, and construction contractors. The security and safety functional activities include facilitating measures to identify, control and resolve hazards, and to prevent accidents, injury or damage to equipment and facilities. These measures will be developed and monitored for effectiveness through safety inspection procedures, an active Safety and Security Committee (SSC), and by other means described in this SMSP.

The Executive Director is ultimately responsible and accountable for RTC’s safety and security performance policy; therefore, the undersigned authorizes and approves this SMSP.

The Executive Director and RTC Board Chairman certify the SMSP fulfills requirements under 49 C.F.R. 673.

We anticipate and appreciate your dedicated cooperation to help assure that the RTC provides the safest transportation network necessary.

Bill Thomas, AICP
Executive Director

3/12/24
Date

Rob Reeder
Security and Safety Administrator

03/12/2024
Date

Jim Gee
Director Public Transportation
Accountable Executive

3-12-24
Date

Ed Lawson
RTC Board Chair

Date

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SECTION 1: POLICY STATEMENT AND AUTHORITY FOR THE SAFETY MANAGEMENT SYSTEM PLAN

1.1 Introduction

This document is the Safety Management System Plan (Safety Management Plan or SMSP) of the Regional Transportation Commission of Washoe County (RTC). This plan describes the RTC's transit system, public facilities and provides a methodology for identifying hazards and implementing plans for their resolution. It establishes accountability for safety throughout the organization. In addition, the Regional Transportation Commission of Washoe County (RTC) has established a System Security and Emergency Preparedness Plan (SSEPP), a Continuity of Operations Plan (COOP).

The intent and design of these plans is to ensure and promote system safety and security.

1.2 Policy Statement and Mission

Our mission states, "The RTC provides leadership, vision, public policy development, and quality transportation systems through a commitment to excellence and pursuit of goals and objectives which meet the community's present and future needs." The RTC Organizational Philosophy Statement indicates that we exist to serve the public and recognize that the community continually evaluates our performance. Our most valuable resource is people and we believe in the "Team" concept. We will work with all employees to establish goals and objectives and will share success and accomplishments. The RTC recognizes the need to ensure the safety and security of our passengers, the public, employees and our transit system through our efforts. Lastly, we are results oriented and believe that the measure of our success is the facilities constructed and the services delivered.

SECTION 2: DESCRIPTION OF PURPOSE FOR SAFETY MANAGEMENT SYSTEM PLAN

The purpose of the SMSP is to establish formal mechanisms used by all RTC departments to:

- Protect the safety of passengers, the public, employees and contractors
- Establish a safety program on an organization wide basis
- Provide a medium through which the RTC can display its commitment to safety
- Provide a framework for the implementation of safety policies and the achievement of related goals and objectives
- Satisfy federal (FTA, TSA, DHS, OSHA, ADA) and state requirements
- Meet accepted industry standards and audit provisions
- Satisfy self-insurance provisions

The SMSP applies to all organizational units affecting or affected by RTC's operations including planning, procurement, testing, operation and maintenance activities.

2.1 Contractor Provision of Bus/Van Service

The RTC contracts with the private sector for the provision of all of its bus and van paratransit and fixed route services. Under each of these contracted services, the company or contractor is responsible for hiring and training its employees, operating and supervising transit services, and maintaining RTC owned maintenance facilities and vehicles used in operations. Contractors are required to adhere to all goals, objectives and requirements of the SMSP. In addition, the contracts established with each service provider contain operating performance standards those contractors are expected to meet.

2.2 Contractor Operations

The responsibilities of the Public Transit Department include:

- Ensuring contractor safety performance is compliant with SMSP Section 3 and Section 4,
- Monitoring contractor service and performance of bus operators,
- Providing evaluation of effectiveness of service, and condition of customer amenities,
- Participating in recommending route changes,
- Coordinating proper resources to provide assistance toward service delivery, and
- Participating to ensure special events are well coordinated.

The service provider contractors are required to develop and implement an ongoing internal safety program. The contractors must submit accident reports in accordance with Section 8.0 of this document. Contract Supervisors conduct the initial investigations and serve as on-the-scene coordinators, which involves securing witness statements, documenting evidence, and otherwise complying with the accident and incident investigation procedures in this document. Contractors must coordinate with the RTC's Security and Safety Administrator on the classification of all accidents, and participate in preventability efforts.

In addition to the above, contractor Instructors/Supervisors are required to monitor service for safety, on-time performance, efficiency and compliance with operating rules. Supervisors periodically perform ride checks also monitor Operator performance.

SECTION 3: CLEARLY STATED GOALS FOR SAFETY MANAGEMENT SYSTEM PLAN

The goals of the SMSP are as follows:

- Provide a superior level of safety for passengers, public, employees and contractors.
- Identify, eliminate, minimize and/or control safety hazards and their associated risks.
- Provide a superior level of safety in our transit operations.
- Achieve and maintain demonstrated improvement of safety in the company's work environment.

- Comply with the applicable requirements of regulatory agencies.
- Maximize the safety of future operations through the procurement process.

SECTION 4: IDENTIFIABLE AND ATTAINABLE OBJECTIVES

The following objectives provide a means of achieving the SMSP goals and measuring the effectiveness of RTC’s safety initiatives. The RTC’s Safety Performance Targets (Public Transit Agency Safety Plan) are:

Mode of Transit Service	Fatalities	Fatalities (per 100,000 VRM)	Injuries	Injuries (per 100,000 VRM)	Safety Events	Safety Events (per 100,000 VRM)	System Reliability (VRM/failures)
Fixed Route Bus (Keolis)	0	0	1	0.2	0	1.2	20,000
Paratransit Service (MTM)	0	0	0	0.11	3	1.28	20,000 or less

- Measurable objectives include:
 - Safety Events: Total number of reportable events and rate per total vehicle revenue miles by mode.
 - Injuries: Total number of reportable injuries and rate per total vehicle revenue miles by mode.
 - System Reliability: Mean distance between major mechanical failures by mode.
 - Fatalities: Total number of reportable fatalities and rate per total vehicle revenue miles by mode.
 - Employee and contractor on the job injuries per month.
 - Contractor safety-sensitive drug and alcohol monitoring results per month/quarter.
 - Employee and contractor safety training per month.
- Establish a safety policy, procedures and requirements that integrate safety into decision-making and operations.
- Assign responsibilities related to safety procedures and requirements.
- Thoroughly investigate all accidents, fires, injuries and near misses.
- Identify, analyze and resolve all hazards in a timely manner.
- Meet or exceed safety requirements in specifications, equipment installation, and system testing, operations and maintenance.
- Meet or exceed safety requirements in vehicle operations and maintenance.
- Thoroughly evaluate the safety implications of all proposed system modifications prior to implementation.
- Establish doctrines, standards and procedures for employee qualifications, selections, training and performance.

SECTION 5: SYSTEM DESCRIPTION/ORGANIZATIONAL STRUCTURE/ORGANIZATIONAL RESPONSIBILITIES

5.1 System Description

The RTC serves a population over 500,000. The RTC provides services to Reno, Sparks, and Carson City. The RTC provides for the operation of RTC RIDE, a bus system serving Reno and Sparks. RTC ACCESS provides scheduled and on-demand paratransit services. RTC also provides:

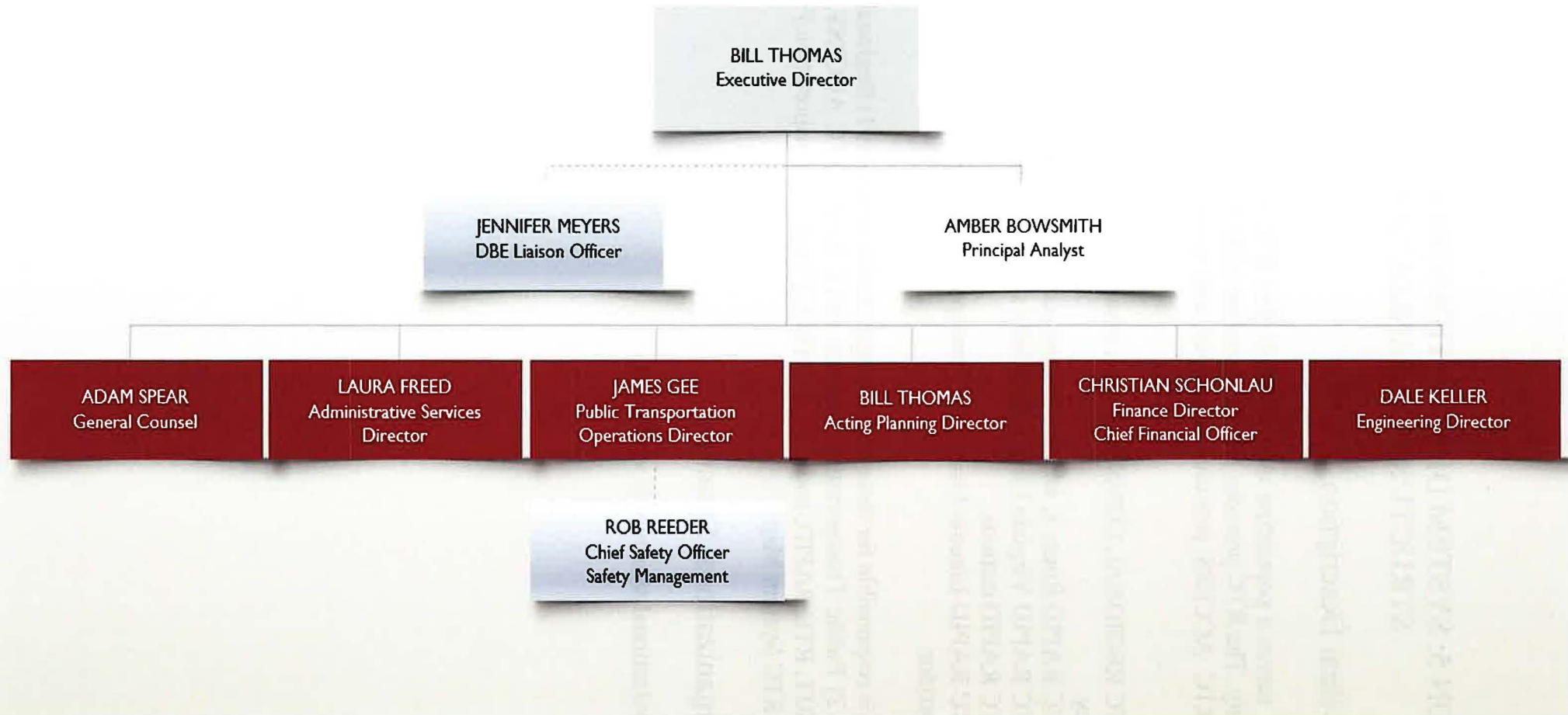
- RTC REGIONAL CONNECTOR, a commuter service between Reno/Sparks and Carson City.
- RTC RAPID Route 1, which transport people along the Virginia Street Corridor.
- RTC RAPID Virginia Line, which links stops along the Virginia Street Corridor with the RTC RAPID stations.
- RTC RAPID Lincoln Line, which transports people along the 4th Street and Prater Way Corridor.

The RTC is responsible for three major transportation programs 1) Regional Street and Highway Program, 2) Public Transportation Program (RTC RIDE, RTC ACCESS, RTC INTERCITY, RTC SPIRIT, RTC RAPID, and RTC CONNECT) and 3) Transportation Planning (see Page 48 - Table 1 RTC System Map).

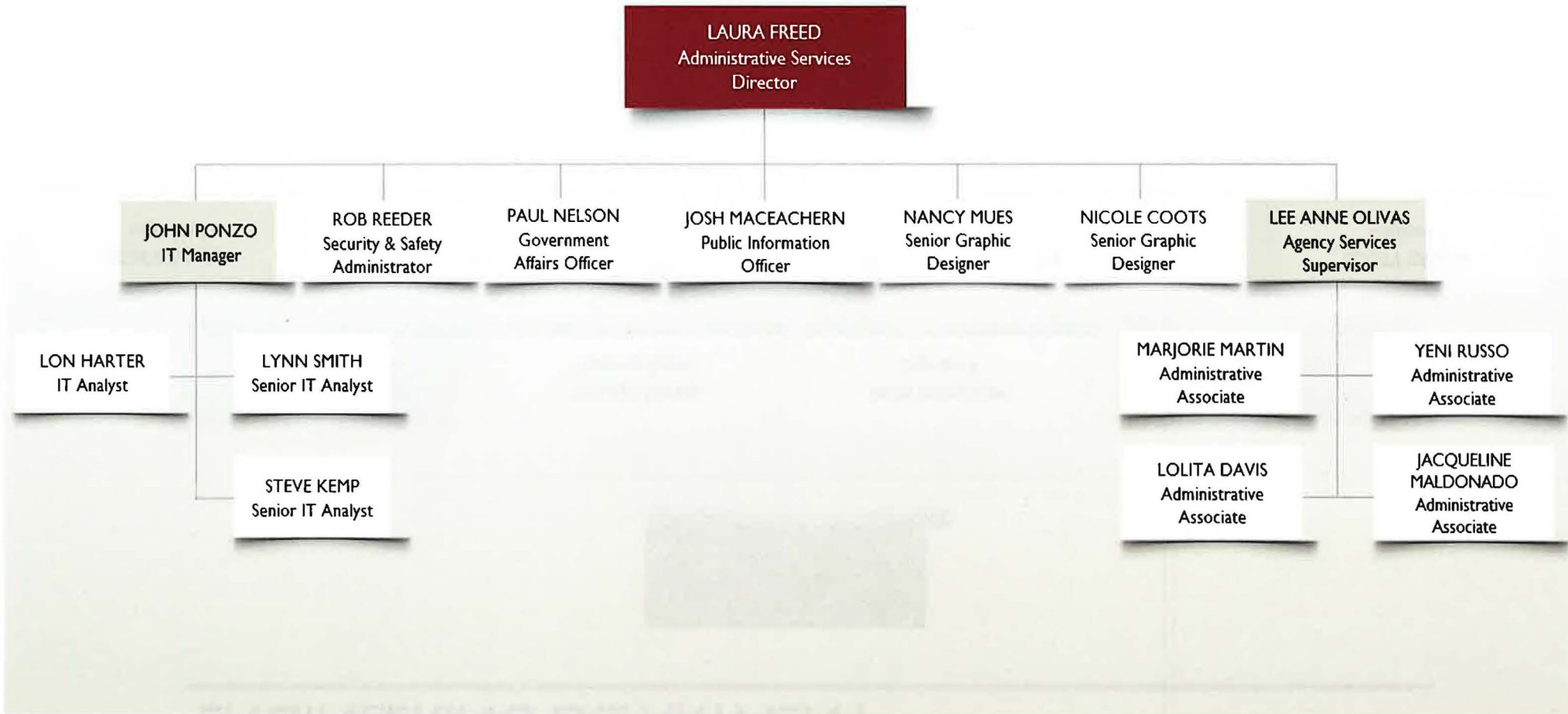
5.2 Organizational Structure

RTC organizational structure is as follows:

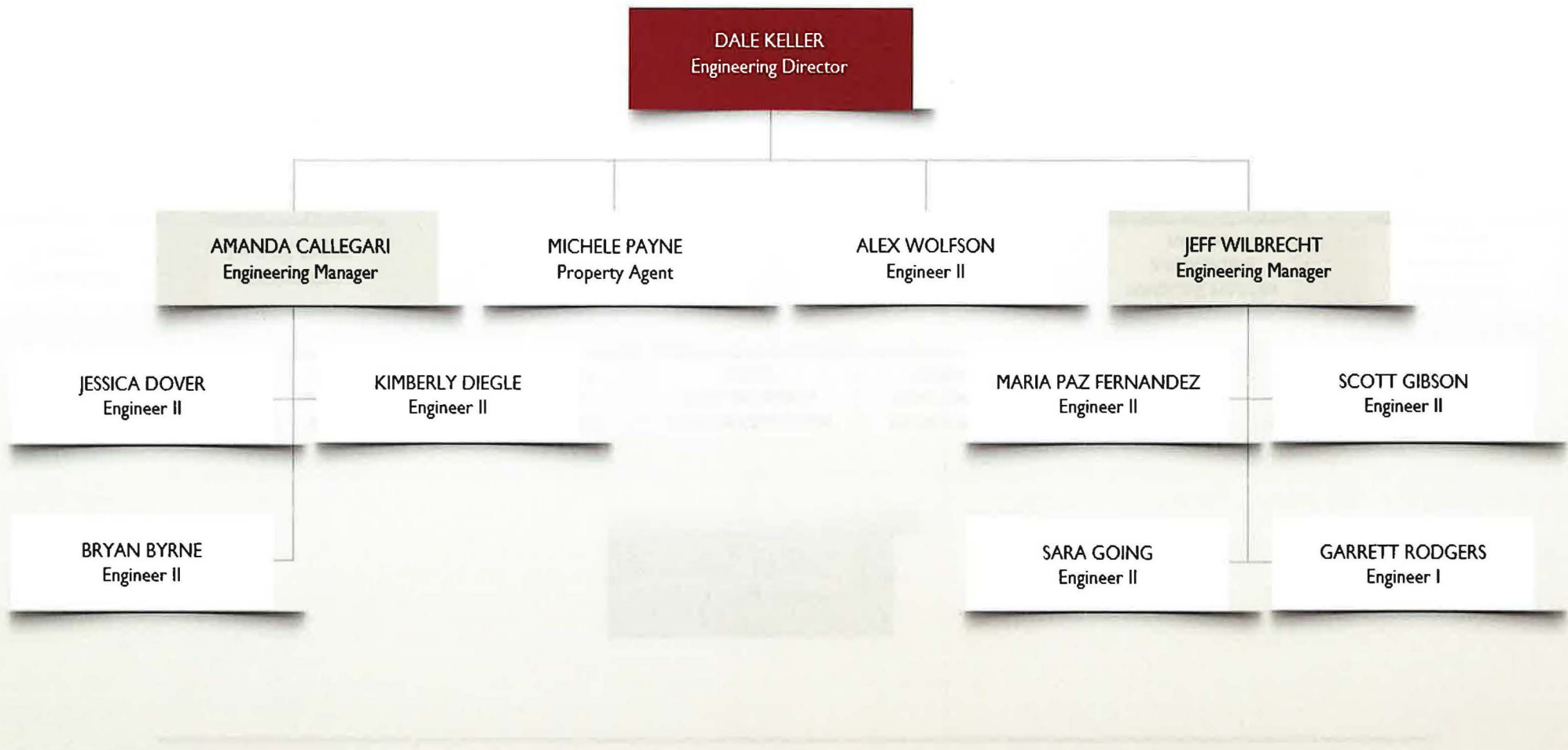
EXECUTIVE DEPARTMENT



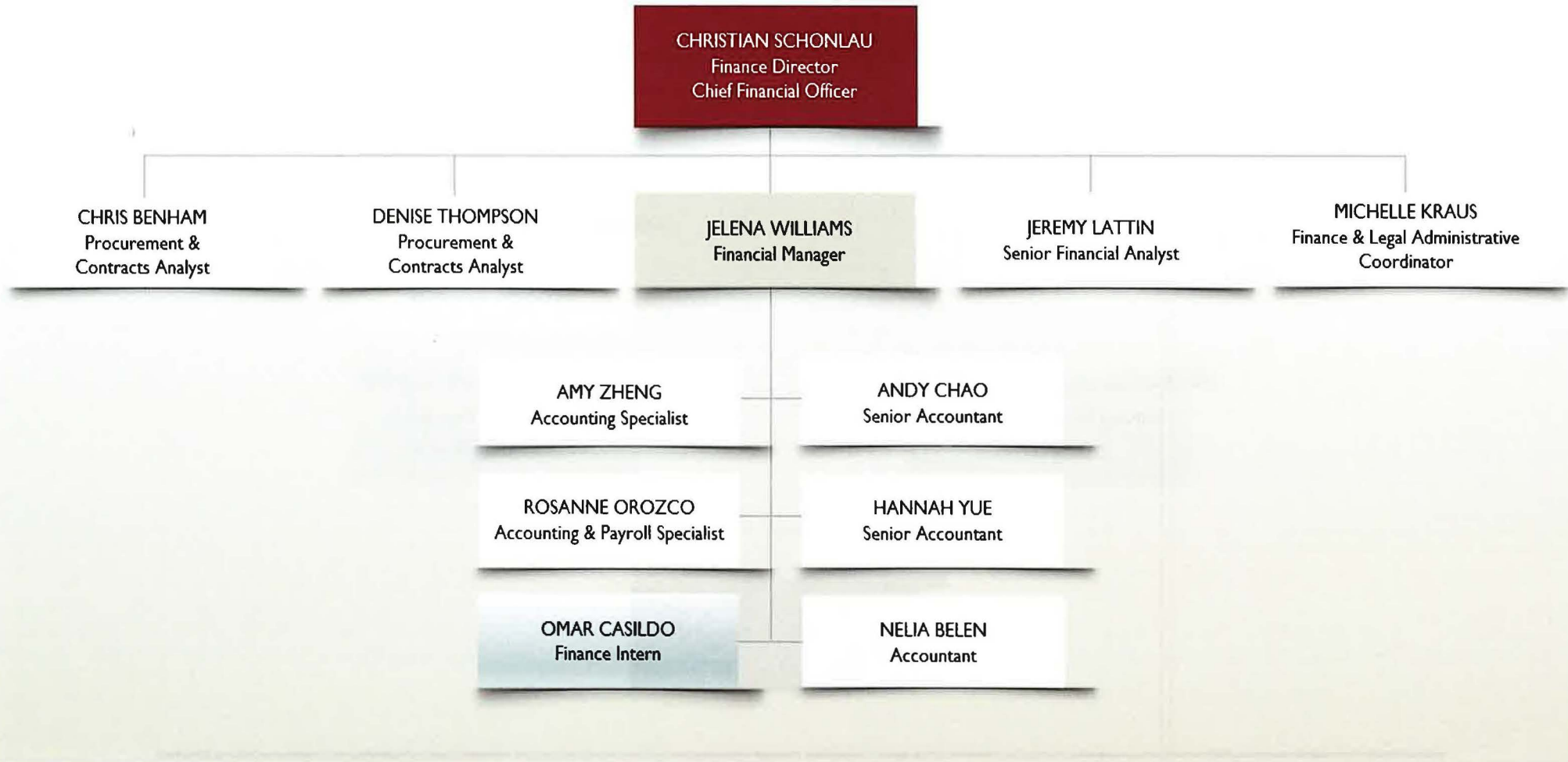
ADMINISTRATIVE SERVICES DEPARTMENT



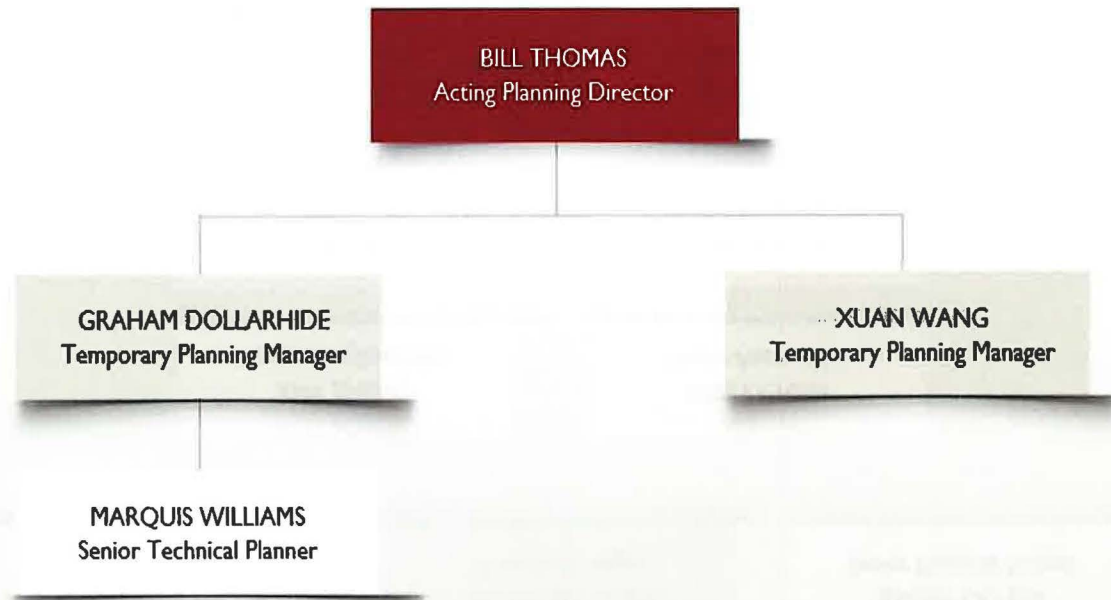
ENGINEERING DEPARTMENT



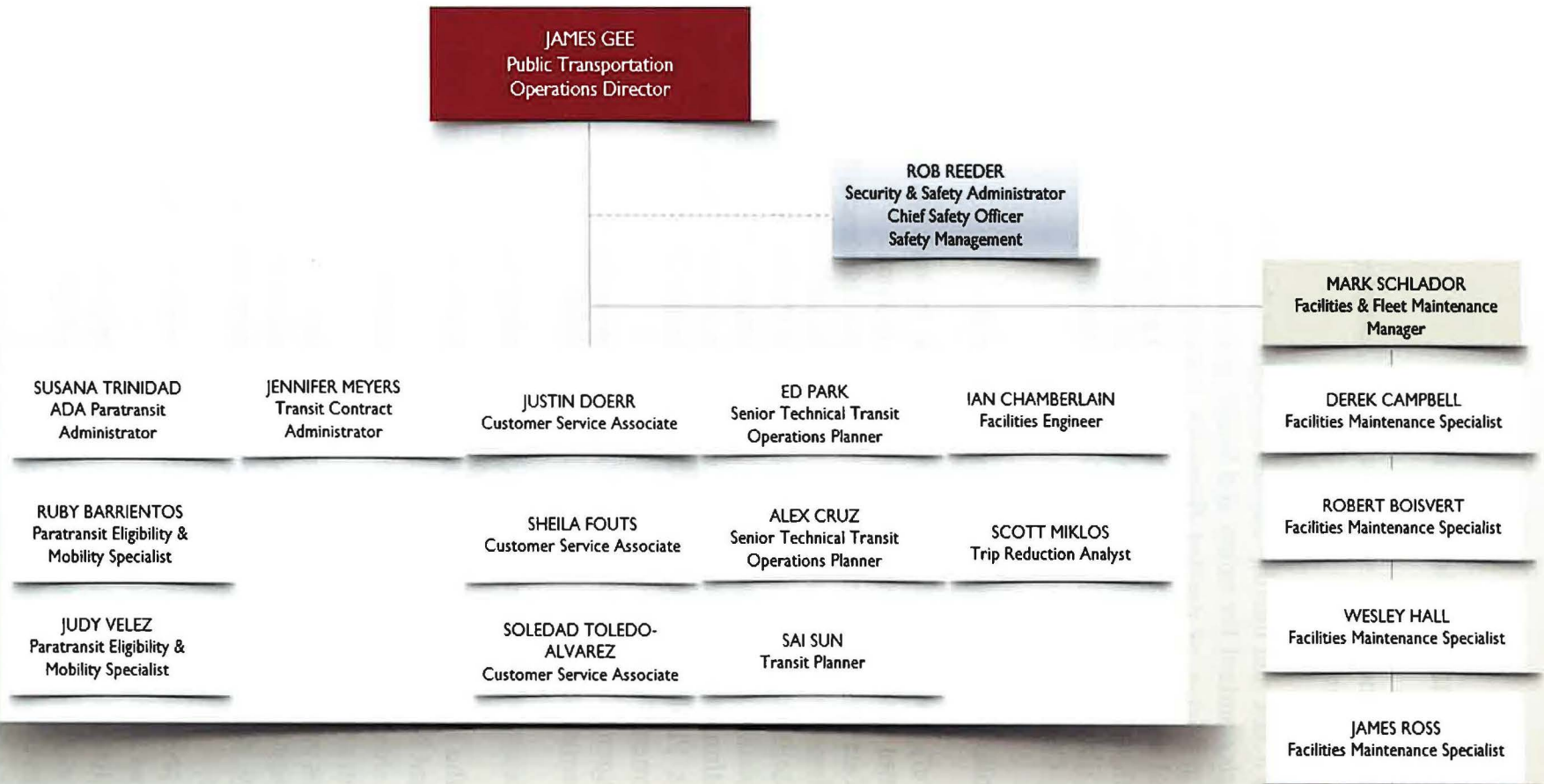
FINANCE DEPARTMENT



PLANNING DEPARTMENT



PUBLIC TRANSPORTATION/OPERATIONS DEPARTMENT



5.3 Organizational Responsibilities

Responsibility assignments and safety for all RTC employees is as follows:
The Executive Director will:

- Promote a safe and healthy culture throughout the RTC.
- Set a high standard for safety and health practices and lead by example.
- Ensure provision of needed financial, material and personnel resources to achieve the goals and objectives of the safety and health program.
- Ensure that the program is fully implemented and effective.
- Provide ultimate authority to the Safety and Security Committee and for Project Safety & Security Certification and Verification.

Director of Public Transportation and Operations will:

- Effectively implements each element of the System Management System Plan (SMSP) throughout the RTC's public transportation system.
- Ensures actions taken are necessary to address substandard performance in the SMSP.
- May delegate specific responsibilities, but the ultimate accountability for transit agency's safety performance rests with the Director of Public Transportation and Operations.
- Is responsible for carrying out the Public Transportation Agency Safety Plan; and control or direction over human and capital resources need to develop and maintain both the agency's Public Transportation Agency Safety Plan and the agency's Transit Asset Management Plan.
- AE designates a Chief Safety Officer who has authority and responsibility for day-to-day implementation and operation of the RTC SMSP

The Security/Safety Administrator (SSA) (Chief Safety Officer) will:

- Ensure the RTC's compliance with all applicable federal, state (NRS 618.375), and local safety and health requirements.
- SSA is delegated the authority and responsibility for day-to-day implementation and operation of the RTC SMSP.
- Develops and maintains SMSP documentation.
- SSA reports to the Director of Public Transportation and Operations except for Project Safety & Security Certification process where there is accountability to the Executive Director.
- Ensure provision of each RTC employee with adequate and appropriate occupational safety and health training.
- Ensure that safety and health policies are comprehensive and effective.
- Review each accident and conduct any investigation wherein an accident has resulted in serious injury or property damage.
- Promote safety and health and serve as a resource to all staff.
- Review the program on an annual basis.

Each Director will:

- Ensure implementation of each element of the program in his/her department and facility.
- Ensure that all department supervisors comply with this program.
- Ensure maintenance of all required documents.
- Conduct safety/health surveys or inspections in his/her department on a regular basis, the frequency of which shall not be less than once per quarter.
- Ensure proper maintenance of each piece of equipment in his/her department.

Each Supervisor will:

- Ensure that each employee in his/her department or section receives appropriate training upon initial assignment as well as for changes in processes, procedures, equipment or assignments.
- Ensure that each employee in his/her department/section complies with the program.
- When required by law or circumstances indicate the need for training, each employee receives refresher training.
- Conduct a daily safety and health inspection of his/her work area(s).

Each Employee will:

- Be an active participant in the safety and health program.
- Perform all tasks in accordance with established policies, procedures and safe work practices.
- Perform a safety evaluation of his/her workspace daily.
- Inspect all tools and equipment prior to use to identify any hazards.
- Question any unsafe and unhealthy practice or condition and act to correct and report it.
- Report any injuries, illnesses or incidents to the appropriate person.

5.4 Roles, Responsibilities and Composition of the RTC Security/Safety Committee

The Security/Safety Committee (SSC) membership is:

Executive Director (VM)	RIDE General Manager (VM)
Safety & Security Administrator – Chairperson (VM)	RIDE Safety Manager (VM)
Deputy Executive Director (Director of Planning) (VM)	Transit Operations Manager (VM)
Director of Administrative Services (VM)	ACCESS General Manager (VM)
Director of Engineering (VM)	ACCESS Safety Manager (VM)
Director of Finance (VM)	Security Contractor – Account Manager (VM)
Director of Public Transportation & Operations (VM)	Security Contractor – Account Supervisor
Facilities & Fleet Manager (VM)	Facilities Maintenance Supervisor (VM)

+ Note: (VM) = Voting Member

The SSC general purpose is to provide safety and security oversight of transit services as well as transit projects and development. The committee also provides oversight of emergency preparedness and community response. It also monitors and ensures compliance with Federal, state and local safety, security and emergency preparedness regulations, laws and rules affecting public transportation.

1. The SSC shall provide oversight for the Executive Director and/or the RTC Commissioners for the establishment of policies, standards and rules relating to the safety and security of the public, employees and contractors using RTC personal and real property. The deliberations, decisions, and recommendations of the SSC shall be made with due consideration of the need to balance safety and security with the RTC's mission of providing services to the public that are appropriate, efficient, and cost effective.

2. The SSC shall have authority and duty to inspect, investigate and report necessary corrective action with respect to RTC owned and operated equipment and facilities. The contract operators of RTC-RIDE and RTC- ACCESS shall have the obligation to comply with the policies, standards and rules implemented by the SSC utilizing their own personnel, but may request compliance assistance from the SSC.

3. The SSC shall have review and approval authority over all activities relating to safety and security for all RTC property and facilities. Contract operators shall seek SSC approval for any proposed activities that potentially affect safety of personnel or security of the premises. Implementation shall remain the responsibility of the contract operators.

4. The SSC shall provide oversight for all Project Safety and Security Certification Processes. This will include approval of Project Safety & Security Certification Plans, Project Hazard Analysis including preliminary hazard analysis (PHA), failure mode and effects analysis (FMEA), operating hazard analysis (OHA), threat and vulnerability assessment (TVA), project certificate of conformance completion, project safety & security certification and recommend verification of project safety & security certification. The SSC will chair and guide the Project Safety and Security Certification Committees and any sub-groups. The SSC will provide resolution for issues the PSSC cannot agree or reach consensus. The SSC will ensure tracking, monitoring, resolution and closure of any issue adversely affecting project safety and security certification. The SSC refers issues it cannot resolve to the ED as the final authority.

5. The SSC shall offer technical assistance, including but not limited to, training and education, drills, and exercises, to assist in understanding, preparedness and compliance with policies, standards and rules.

6. The SSC's enforcement authority is limited to reporting non-compliance with safety and security policies, standards and rules to RTC, RTC-RIDE, and RTC-ACCESS management and identifying what corrective action is required. The SSC shall be promptly informed of the

corrective action implemented and shall be charged with conducting follow-up inspections to verify compliance.

7. The SSC shall report directly to the Executive Director and shall be accountable only to him/her in matters of safety and security. The ED has delegated the SSA as the SSC chairperson, directing committee function. On an exception basis, voting members may delegate their vote to a supervisor of their department.

8. In general, the resolution process for committee action items is as follows. The SSC with input from the appropriate staff, contractors (transit operations, design, construction, construction management, or manufacturing) will provide recommendation approval regarding remediation, workarounds, restrictions and exceptions to action items. The SSC may require hazard analysis of a recommendation. The SSC will provide a decision for closure or refer a recommendation on the action item. When the committee cannot reach a consensus on recommendation, the Executive Director makes a final decision. This will ensure that system safety and security realized, delivered, tested and validated.

SECTION 6: SAFETY MANAGEMENT SYSTEM PLAN CONTROL AND UPDATE PROCEDURES

The SSA in consultation with the SSC and senior management will annually review the Safety Management System Plan and update it as needed. Review completion of the SMSP review will be by March 31, annually. The SSC will conduct a review of all proposals for changes to the Plan. The SSC will review all regulatory changes and other changes to the SMSP. If system changes occur, the Accountable Executive, Safety/Security Administrator, and the SSC will ensure incorporation of any changes outside a scheduled review in the SMSP. SSC authorized change bulletins may occur throughout the year and distributed within the RTC. The SSC recommends changes and the Executive Director makes the final decision on any change of the SMSP. The RTC Board Chairman and Executive Director annually certify SMSP compliance with 49 C.F.R. Part 673. SSA will preserve at least three years of SMSP documentation for compliance with Federal regulations. Documents are preserved in an electronic fashion on RTC file servers.

SECTION 7: HAZARD ANALYSIS AND RESOLUTION

Before they cause problems, the RTC desires to identify and address as many hazards as possible through a Resolution Process. The RTC will use numerous tools to recognize and evaluate hazards. Then given the nature of the hazard identified, the RTC will take specific actions to control them. The RTC's management is involved in hazard evaluation and control. Hazard analysis and resolution involves the steps of identification, categorization of hazard severity and probability and hazard resolution.

RTC management, Project Safety and Security Certification Committee (PSSCC) and Preliminary Hazard Analysis Teams (PHAT) and safety staff are responsible for conducting hazard analysis of new projects for the RTC system.

7.0 Hazard Identification

RTC management and safety are responsible to conduct periodic occupational and operational inspections of facilities and equipment to identify hazards on a proactive basis. Inspection types include safety/health inspections, OSHA compliance audits and inspections, facility inspections, preventative equipment and vehicle inspections, fire/life safety inspections. Identification of hazards may occur through direct observation, claims, customer complaints, accident reports, employee reporting, reports of safety monitors and record reviews.

The RTC will employ inductive and deductive processes to identify and eliminate hazards. The inductive process involves the analysis of system components to identify failure modes and effects on the total system and personnel actions. Failure mode analysis is a systematic method of determining which failures in systems are life threatening or cause product impairment and which are not. Examples are conditions such as, “failure to open, failure to close, failure during operation, acts which are improper or inadequate or at the wrong time, etc. or any combination thereof.” Elimination of failures can occur through various means described in following sections.

Fault hazard analysis is a deductive method of analysis that requires detailed investigation of subsystems to determine hazard modes and causes of hazards. Deductive hazard identification process involves defining an undesired effect deducing combinations of conditions or faults of the system and the determining causes necessary to produce that effect. Typical identification of fault hazards occurs through testing methods such as integrated testing or system operation testing. Elimination or reduction of fault hazards can occur through means described in the following sections.

7.1 Hazard Categorization

The RTC uses a process (Reference: MIL STD 882-E) to determine which hazards are acceptable, acceptable with certain conditions applied and those which are unacceptable. The key is the use of a formalized process that:

1. Identifies and categorizes the hazard;
2. Potential hazard mitigation steps or solutions are listed and considered;
3. Hazard mitigation steps or another solution is implemented;
4. Hazard follow-up determines reduction or elimination of the hazard and if additional steps or actions are necessary to resolve the hazard.

7.1.1 Hazard Severity

Hazard severity is a subjective measure of the worst credible mishap resulting from personnel error, environmental conditions, design inadequacies or procedural efficiencies for system, subsystem, or component failure or malfunction, categorized as follows:

I (Catastrophic)	Death or system loss.
II (Critical)	Severe injury, severe occupational illness, or major System damage.
III (Marginal)	Minor injury, minor occupational illness, or minor System damage.
IV (Negligible)	Less than minor injury, occupational illness, or System damage.

7.1.2 Hazard Probability

The definition of hazard probability is the likelihood that a specific hazard will occur during the planned life expectancy of the system element, subsystem or component. A subjective description can include potential occurrences per unit of time, events, population, items or activity, ranked as follows:

A (Frequent)	Likely to occur frequently (individual); Continuously experienced (fleet/inventory).
B (Probable)	Will occur several times in life of an item; will Occur frequently in fleet/inventory.
C (Occasional)	Likely to occur sometime in the life of an item; will Occur several times in fleet/inventory.
D (Remote)	Unlikely but possible to occur in life of an item; Unlikely but possible to occur in fleet/inventory.
E (Improbable)	So unlikely, it can be assumed no occurrence; Occurrence unlikely, but possible in Fleet/inventory.

Upon hazard identification, analysis determines potential severity and probability of occurrence. The standard process for this analysis is hazard identification, categorization, listing of potential mitigation steps or solutions, implementation of mitigation steps and finally, a follow-up of the hazard and its corrective action(s) to make certain there is reduction of severity or elimination.

The management staff of the RTC can effectively determine the severity of all but the most difficult or unusual hazards. However, should there be difficulty in establishing an agreed upon hazard categorization and/or resolution, the issue referred to the SSC for a determination as to the category and resolution. Should the SSC fail to reach consensus on categorization and/or resolution the Executive Director will resolve the matter.

The successful resolution to some hazards may require the use of outside subject matter experts, consultants or the like. The point is that the RTC will look to external resources to help resolve a hazard within the system. The SSC or management may recommend the use of external resources with approval from the Executive Director.

Hazards identified on an ongoing basis should be entered in the formal process in the same manner as those identified by formal analysis techniques associated with new procurement and new system construction. All employees involved in the hazard identification process must know and understand their respective roles.

7.2 Hazard Resolution

The definition of hazard resolution is the analysis and subsequent actions taken to reduce to the lowest level practical the risk associated with an identified hazard. Hazard resolution is not synonymous with hazard elimination. RTC’s transit environment contains some hazards that are impossible to eliminate and others that are highly impractical to eliminate. Accomplishing reduction of risk to the lowest practical level occurs in a variety of ways from protective and warning devices to special procedures.

There are, however, some hazards that present unacceptable risk requiring elimination. Part of the Hazard Resolution Process is the use of a Hazard Resolution Matrix. The Matrix prescribes which hazards are acceptable, acceptable with mitigation or unacceptable. The RTC’s Hazard Resolution Matrix is as follows:

RTC HAZARD RESOLUTION MATRIX					
	Category	I	II	III	IV
Hazard	Probability	Catastrophic	Critical	Marginal	Negligible
Employee Behaviors	A	UN	UN	UN	AC/WR
Equipment	B	UN	UN	UD	AC/WR
Facilities	C	UN	UD	UD	AC
Processes	D	UD	UD	AC/WR	AC
	E	AC/WR	AC/WR	AC/WR	AC
Codes: UN = Unacceptable UD = Undesirable AC = Acceptable AC/WR = Acceptable with review by management					

After the risk assessment, resolution occurs from plan development. Elimination or reduction of hazards in the highest risk category (IA, IIA, IIIA, IB, 2B, IC in the Hazard Resolution Matrix) occurs until they are in a lower risk category. Once in a lower category, management evaluation determines the most effective means of dealing with the hazard. As indicated, elimination or reduction of those in the highest risk category occurs until they can be classified in one of the other three categories. The strategy for dealing with risks in the second highest category (IIIB, IIC, IIIC, ID, 2D in the Hazard Resolution Matrix) are recommended by an RTC department

head or Contractor, but it must be submitted to the SSC for approval. The RTC department head or Contractors may directly address hazards posing risks in the lowest two categories with reporting to the SSC.

The entire Hazard Resolution process is a formalized, predetermined procedure for risk acceptance by the RTC and contractor staff. It allows for a systematic hazard identification process and a coordinated hazard effects minimization process.

7.3 Approach to Hazard Elimination and Mitigation

The RTC uses a hierarchal approach to eliminate or control hazards:

1. Design for minimum risk
2. Use of safety devices
3. Use of warning devices
4. Provide special procedures and training

7.3.1 Design for Minimum Risk

There should be provisions in all designs to identify and eliminate hazards through appropriate safety and security design concepts, such as fail-safe design and redundancy. Design provides mitigation to the lowest practical risk level for hazards not eliminated.

7.3.2 Use of Safety Devices

After design, the use of fixed, automatic or other protective safety devices may reduce remaining hazards to an acceptable risk level. These safety devices are critical system elements and will be inspected and maintained as such.

7.3.3 Use of Warning Devices

When design or safety devices cannot affectively mitigate hazards use of warning devices may provide timely detection of the activated hazard and generate adequate warning signals. Design of warning signals shall minimize the probability of incorrect reaction to the warning by employees or other individuals. These warning devices are critical system elements and will be inspected and maintained as such.

7.3.4 Provide Special Procedures and Training

Where it is impossible to adequately mitigate hazards through design, safety devices, or warning devices, written procedures and training are used to either reduce the probability of the hazard occurring, reduce the severity of the hazard if it does occur, or both, so that an acceptable risk level is achieved.

7.4 Hazard Resolution Methodology

PHAT and PSSCC or others will resolve and recommend further actions for hazard resolution to the SSC. The SSC provides a recommendation to the originator for resolving a hazard. After concurrence, if it is a hazard in the second highest risk category, it is further presented as a recommendation to the Executive Director, who may accept, modify or reject the recommendation. Upon modification or rejection of the recommendation, the SSC will further analyze, determine strategy and recommend other actions until final approval from the Executive Director. Referral occurs of the approved hazard resolution to the PSSCC, responsible department, or contractor for implementation. The SSC will provide oversight through resolution and closure.

7.5 Resolution of Active Hazards

Appropriate staff evaluate and eliminate operating system hazards to an acceptable level according to the Hazard Resolution Timetable. This Timetable ensures achievement of the optimum level of safety through the expeditious resolution of hazards, once identified.

RISK CATEGORY			RESOLUTION TIMETABLE			
Unacceptable - must be mitigated (1A, 1B, 1C, 2A, 2B, 3A)			Must be addressed immediately and reported to the RTC Board.			
Undesirable - Mitigation plan must be approved by the SSC (1D, 2C, 2D, 3B, 3C)			A resolution must be developed and implemented as soon as possible. (Ideal if less than 5 days, may take longer to resolve due to funding, staffing or equipment needs, procurement and implementation.)			
Acceptable - with review by SSC (1E, 2E, 3D, 3E, 4A, 4B)			The review process must be completed and resolution accepted within 30 working days.			
Acceptable - without review			The SSC must be notified of action taken within 30 working days			

Use of a Corrective Action Plan (CAP) records identified hazards, tracks recommended mitigation efforts, assigns accountability and documents closure. The CAP must describe the hazard, classification, risk, corrective actions, required resources, resolution, accountable staff and closure.

Hazard Corrective Action Plan		
System, Sub-System, Equipment, Procedure or Function:		
Hazard Description:		
Hazard Severity:	Probability of Occurrence:	Hazard Risk Index:
Corrective Action:		
Required Resources:		
Controlling Measures and Remarks:		
Resolution:		
Actions Implemented:		
Closure:		
Prepared by:	Approved by:	
_____	_____	
Name, Title and Date	Name, Title and Date	

7.6 Hazard Resolution Oversight

Direct oversight of implemented resolutions to verify their effectiveness is the responsibility of the involved department, or contractor. In those cases where the SSC was directly involved in deciding the hazard resolution, the SSC will participate in directly overseeing implementation effectiveness.

SECTION 8: ACCIDENT/INCIDENT REPORTING AND INVESTIGATION

8.1 Criteria

All employees are required to immediately report and document accidents and injuries, no matter how minor. Coach Operators must complete a written report on accidents and/or injuries occurring on or near their coach or van. A Contractor's field supervisor shall respond to every accident involving their assigned vehicles' and will assist in controlling the accident scene, securing witness statements and performing the initial investigation. RTC staff will investigate accidents involving RTC vehicles.

8.2 Reporting Procedures

The SSC reviews all accidents monthly. The review process includes final report approval, review and discussion of corrective action plans and follow-up monitoring. The SSC meeting agenda includes accident review, analysis, recommendation and follow-up monitoring. RTC's accident procedures differ for major and minor accidents.

Major accidents/incidents include any one of the following events:

- Fatalities involving passengers, employees, bystanders, and trespassers, (includes death within 30 days of the incident).
- Any accidents, which results in an injury of two or more persons, where the injured party requires medical assistance away from the scene of the accident.
- Property damage in excess of \$25,000.
- Collision at a railroad crossing.
- Incidents not addressed above which require the evacuation of passengers or employees from the vehicle, station, other facility or right of way.

Non-major accidents/incidents include the following events:

- Bodily injury of one person, and immediate medical treatment away from scene of accident.
- Property damage between \$7,500 and \$24,499.
- Fire and smoke in vehicles, and facilities not addressed above.
- Other incidents involving rules and procedures violation.

8.3 Internal Notification

The Contractor's Dispatch Control Center (RIDE or ACCESS Dispatch) has a list of criteria for determining the type of accident and notification requirements. Dispatch will notify the

appropriate department or individuals. Upon receiving notification of an accident/incident Dispatch will assure that the Coach Operator:

- Reports the location and direction of travel.
- Describes the accident/incident.
- Activates the Emergency Stop Button (or otherwise stops the vehicle).
- Provides the appropriate announcements to the passengers.
- Turns off engine, assesses on-board injuries, and assesses outside bus injuries and other related damages.
- Assists with injuries, and distributes and collects witness cards.

In the case of a major accident, Dispatch will notify emergency responders (City of Reno and Sparks Fire Departments, Police Departments, or Washoe County Sheriff's Office, etc.). Dispatch will request Emergency Medical Services for any injured parties. Dispatch will then notify its managers and appropriate maintenance staff to respond to the scene of the accident/incident. The RTC Security/Safety Administrator (SSA) will respond to all fatality accidents and other catastrophic events.

8.4 Reporting and Documentation

After the service contractor's on-scene accident/incident initial investigation, some issues may remain unresolved or need completion. This is often the case involving major accidents and/or those requiring reports to the National Traffic Safety Board (NTSB).

Accidents requiring state or federal reporting requirements shall be coordinated with the SSA prior to submission.

The degree of follow-up documentation will vary from one accident to the next. The following may require documentation:

- Compliance with operating rules and procedures
- Follow-up interviews
- Employee records review
- Post-accident drug and alcohol testing
- Vehicle equipment impounding and inspections (of vehicles involved in accident), and maintenance records review
- In-shop inspections
- Repair estimates on vehicles

Accident analysis – In preparation for the final report, investigator(s) attempt to reconstruct the events as follows:

- Who was involved?
- What events occurred?
- How did the events happen?

Sequence of events for off-site accident/incident investigations is as follows:

- Analysis of off-site data collection
- Documentation of findings
- Determining conclusions
- Determining probable cause and contributing factors
- Recommendations

For reportable accidents, the responsible contractor's written report will identify the most probable cause and any contributing cause of the accident.

8.5 Follow-up

Accident/incident investigations identifying the need for a corrective action plan should include the following information:

- Element of activity identified as deficient.
- Planned activities to resolve deficiency.
- RTC or Contractor department responsible for implementing corrective action.
- Scheduled completion date for implementation.
- Estimate cost of implementation.

As necessary (fatal accident/incident), the RTC or Contractor will provide a list of corrective actions due to accident/incident investigation and report progress to the SSC.

8.6 External Notification

The responsible service provider contractor has responsibility, in coordination through the SSA for notifying external agencies, including NTSB, if required. NTSB notification shall occur within two hours of any bus accident involving a passenger fatality.

SECTION 9: SAFETY INSPECTION AND AUDIT PROCESS

RTC will use a variety of evaluative tools to meet the needs of the organization including self-assessments and voluntary regulatory assessments. RTC staff, consultants, contractor staff or qualified persons from other agencies conduct assessments, audits and evaluations.

The RTC internal safety audit program consists of audits coordinated and conducted by RTC, Contractor and SSA to measure effectiveness of the Safety Management System Plan and compliance with its requirements. Conduction of internal safety audits will be in accordance with FTA, TSA, OSHA (or other local, state and federal agencies), etc. and will follow applicable

guidelines and requirements. The audits will ensure that all rules, procedures, operating practices, training and facilities conform to applicable safety requirements and that adequate documentation exist to verify proper performance of safety-related activities. Audit program activities include the following:

- Ensuring adequate on-the-job safety surveillance during system maintenance, operation and modification.
- Determining compliance with management safety policies as contained in the SMSP.
- Determining compliance with operating rules, regulations, standards, codes and procedures.
- Recommending specific corrective action plans to eliminate or minimize the effects of each deviation from compliance.

The Contractor's safety staff will conduct the majority of audits. Yearly performance of audits occurs on a cycle that assures audit of every element within the SMSP at least once in a three-year period.

Advance Audits announcements ensure full support and participation of each department or section. For each of the areas audited, safety staff are encouraged to use written checklists designed for that audit and outlines the key audit requirements.

Upon completion of the audit, the Contractor safety staff in conjunction with the SSA will discuss the findings and make recommendations to the audited department or section. Some findings may require the development of a corrective action plan (See Hazard CAP form) which must include:

- A full description of the tasks that will correct the item. Complex corrective actions may require multiple sub-tasks and milestones.
- An assignment of whom, by title and department is responsible for accomplishing the corrective action.
- A schedule for completion of the corrective action with intermediate milestones as appropriate.

Audited departments are responsible for implementing their respective recommendations and approved action plans within the established periods.

9.1 Facilities Inspections

All public and operating facilities are subject to periodic audit/inspections to identify unsafe or unhealthy conditions, and determine if maintenance is required. Facility inspections will include facility/audits, preventive maintenance inspections, and fire/life safety inspections.

- Facility Audits – Each operating facility is subject to quarterly audit by RTC staff or consultants. Standard inspection includes all major components at each facility.

Components include foundations, substructures, superstructures, exterior closures, roofing, doors, walls, floors, plumbing, electrical and safety systems. Use of these audits to prepare condition profiles that assist in planning and programming all maintenance repair and rehabilitation projects into the annual work plan.

- Preventive Maintenance Inspections – Each operating facility must have a scheduled preventive maintenance program. Follow the RTC’s facilities maintenance plan to ensure that the facilities and their subsystems and equipment are inspected and serviced based on the manufacturer’s recommendations. Performance of inspections by either in-house staff, or their consultants, or outside service contractors.
- Fire/Life Safety Inspections – On an annual basis, each operating facility is subject to an unannounced fire inspection by the Fire Marshall’s Office. Compliance with all fire and life safety codes are the basis of these inspections. Documentation of inspections are in the form of reports with follow-up on any areas identified as weaknesses or violations.

Each facility is also required to conduct self-inspections on a weekly or monthly basis in accordance with written procedures that contain formal checklists. Monthly inspections include items such as fire extinguishers, eyewash stations, and hazardous waste material storage areas.

RTC’s Public Transit Services, SSA and others, will frequently walk through each facility with a focus on safety and security. The goals of each of these inspections are to provide RTC employees, its contractors and the riding public with safe, reliable, high- quality service throughout all facilities and the entire service area.

9.2 Maintenance Audits/Inspections

The RTC’s Public Transit Services has two main contractors, which are responsible for preventive maintenance and repair of the contractor-operated fleet including buses and non-revenue vehicles. The contractors also work with RTC’s Facilities Maintenance Section to maintain operation and maintenance facilities.

RTC’s safety compliance assessment involves the process of spot-checking contractor maintenance records and documents to find problems before they cause a negative situation. Each maintenance area is to perform internal inspections daily, in accordance with approved procedures.

9.2.1 Maintenance Functions

Each contractor provides the same basic maintenance functions. Each contractor performs all levels of maintenance on revenue vehicles and support vehicles, including cars, trucks and vans. The intense emphasis on assuring that the fleet support equipment operates effectively and efficiently has a direct relationship to the organization’s ability to provide on-street service supervision and support, which directly supports the Safety Management System.

The contractors are responsible for preventive maintenance, of revenue collection equipment, and bus electronic fare boxes and ticket vending machines (TVM's). Contractors are also responsible for passenger shelters, benches, bus stops, parking lots and other related facilities within their operations.

Transit contractors are responsible for preventive maintenance of vehicle and fixed-end electronics systems. This includes portable and mobile radios. Other equipment such as surveillance equipment (security cameras and recorders), message signs, electronic gates, radio consoles and antenna sites are the responsibility of the RTC. This maintenance enables RTC to conduct safe and secure transit and maintenance operations on its buses and at its facilities.

Preventive maintenance includes periodic inspections and programmed testing or replacement of wearable components. Performance of preventive maintenance inspections (PMI's) occurs on a scheduled basis on all RTC assets. PMIs comprise a majority of the maintenance workload and are a key method in the prevention of failures that could result in safety-related incidents. Major systems, such as wheelchair lifts, air conditioning, and heating and fire suppression are the subject of PMI's.

Contractors (RIDE and ACCESS) are responsible for performing numerous tasks including:

- Yearly State safety inspection on revenue vehicles.
- Preventive maintenance inspections and minor repairs to the entire vehicle and its components on a scheduled basis.
- All necessary repairs found during inspections or from road defect reports.
- All cleaning and servicing to vehicles, from the daily cleaning, fueling, and fluid top-off, to complete interior major cleaning and mechanical system steam cleaning.

RTC or other Contractors maintain RTC property and equipment, such as the administration building and transit centers that not maintained by the service providing contractors.

9.2.2 Safety-Related Standard Operating Procedures

Maintenance personnel work with established safety-related Standard Operating Procedures (SOPs), including Lock-Out/Tag-Out, hazardous materials and other applicable topics. Safety-related SOPs developed by each Contractor's maintenance division are must be submitted to the SSC for review and approval.

9.2.3 Correction of Defects

Discover of defects occurs four ways: 1) defect reports used by coach operators or other end-users that identify problems; 2) service interruptions, such as road calls; 3) PMIs; and maintenance reviews. Correction of all defects found must in accordance with approved procedures.

9.2.4 Inspection Programs

The maintenance technicians perform regular equipment, facility and systems inspection programs that monitor the safety, reliability and cleanliness of the Contractor maintenance programs. There is referral to the SSC for assistance in finding an acceptable resolution for any potential hazard not reduced or eliminated through regular management procedures found during inspection.

9.2.5 Quality Assurance

Quality Assurance (QA) monitors compliance with established maintenance procedures and policies, as well as assists in the resolution of technical problems. QA personnel conduct routine review of all service interruptions and categorize them for summarization at the senior management level.

9.2.6 Warranty

Conduction of the warranty function occurs partly by contractors and partly by RTC personnel. Jointly, they are responsible for claims recovery on premature failures of warranted parts, components and systems throughout the bus fleets. Recovery may consist of cash, parts, labor, or any combination thereof. The contractor is responsible for identifying and documenting warrantable fleet defects, and offers a formalized process for responding to potential safety problems. RTC is responsible for contractually resolving warranty issues for RTC procured vehicles. The RTC is also responsible for warranty implications associated with the fare box, ticket vending machines and communication systems. The contractor is responsible for the warranty of any repair parts or equipment purchases.

9.2.7 Bus Maintenance Inspections

Performance of preventive vehicle maintenance inspections and repairs must be in accordance with approved maintenance procedures on a regularly scheduled basis, and monitored for completion and continuous improvement. Management notification providing maintenance information occurs if there are missed schedule intervals and corrective action taken. All maintenance checklists shall include recommended manufacturer, supplier, or builder procedures, programs, and guidelines.

State Emissions Inspections and Emissions Opacity Testing: RTC sends all gasoline- powered vehicles to external sources for emissions testing and certification. Although not a regulatory requirement, RTC conducts an annual opacity test for all heavy-duty buses. Correction and documentation of problems occurs prior to equipment returned to service.

Preventive Maintenance Inspections (PMI): All revenue, non-revenue and off-road support equipment is subject to scheduled PMI processes in accordance with the manufacturers' guidelines. Proactive assurance fleets are safe and well maintained is provided by the inspection processes.

Post-Accident Quality Assurance Inspections: Each Contractor shall conduct formal post-accident inspections on vehicles when there is an indication that parts or vehicle system failure may have contributed to the accident.

Communications Equipment System Inspections: Fleet radios and fixed stations undergo periodic inspections and repairs by outside vendor(s) as provided by the RTC. Each Contractor (RIDE, ACCESS) are responsible for assuring the overall functionality of their equipment and processes, including portable, mobile and fixed-end applications.

Other Shops Maintenance Inspections: The heavy repair (major component) facility, brake and battery shops and paint and body repair facility have developed internal processes and inspections procedures to assure conformance to established standards.

SECTION 10: RULES/PROCEDURES REVIEW AND ENFORCEMENT ACTIONS

RTC ensures that annual reviews are performed for all safety rules/procedures and necessary revisions made. Change of conditions may also dictate when to make revisions. A review and revision of safety rules and procedures occurs in accordance with any changes to federal, state and local codes.

The RTC encourages employees and contractors to report unsafe conditions or situations. Employees and contractors shall report unsafe conditions, situations or incidents to management without fear of reprisal. The RTC's safety and health program will only be effective if all employees and supervisors are accountable for their responsibilities and safety performance. Front line supervisors may be the best choice for administering disciplinary action for minor violations. However, upper level management administers disciplinary actions for more serious violations. In general, addressing violations of safety rules and policies occurs in the following manner.

- | | |
|---------------------|----------------------------------|
| 1. First incident: | Verbal warning |
| 2. Second incident: | Written reprimand |
| 3. Third incident: | Written reprimand and suspension |
| 4. Fourth incident: | Termination |

Examples of employee behaviors resulting in disciplinary action can include:

- Failing to comply with safety rules
- Use of unsafe methods
- Failing to report injuries
- Failing to use required personal protective equipment
- Making safety devices inoperable by removing, adjusting or disconnecting them

SECTION 11: TRAINING AND CERTIFICATION REVIEW AND AUDIT

11.1 Training and Certification Review and Audit

Proper documentation, regular review and update of all RTC and contractor training programs occurs as needed. There will be an annual review and full audit every three years of each training program. RTC officials, or their consultants, will review all training. The purpose ensures training of employees who can demonstrate their understanding of what they have learned. Contractors accomplish training of operations and maintenance employees in accordance with the provisions of their contract with the RTC, which also includes a requirement to comply with content of this SMSP. It is each contractor's responsibility to ensure that workers are knowledgeable, skilled and always focused on safety while carrying out their assigned responsibilities.

11.2 Contractor Training Programs

Contractor's training programs include licenses, training completion, internal and external certifications required by title or job responsibility. Contractors must ensure FTA defined safety-sensitive jobholders are provided all required training and certification on an on-going basis. Safety-sensitive jobs are coach operator, mechanic, dispatcher, and armed officer. In general, training should document skills performance, knowledge of operational procedures, emergency procedures, equipment usage, new equipment configurations, OSHA requirements and any other special requirements.

SECTION 12: EMERGENCY RESPONSE PLANNING, COORDINATION, AND TRAINING

RTC has developed the System Security and Emergency Preparedness Program Plan (SSEPP). The SSEPP provides information relevant to all RTC employees and its contractors regarding emergency procedures, drill procedures, and the conduct of periodic disaster and emergency response actions drills, for all modes of transportation.

The SSEPP addresses:

- Security conditions and capabilities,
- Threat and vulnerability resolution process,
- Threat levels and alerts,
- Security and emergency procedures,
- Related training and evaluation, and
- All-hazards emergency response.

All RTC and contractor personnel involved with the public must receive training in emergency operations and participate in emergency drills as part of their recurrent training.

RTC and contractor personnel must follow emergency management procedures contained in Appendix A.

SECTION 13: SYSTEM MODIFICATION REVIEW/APPROVAL PROCESS

13.1 System Modifications

Major modifications to systems, equipment or vehicles must address safety concerns and hazard through a safety certification process. Minor system modification require addressing safety concerns and hazards in the same way as major modifications. System modification often results from systems testing, observations, inspections, data analyses and equipment failures due to design problems, hazard reports, accident investigations, and internal or external audits. Proposal of modifications may occur as a means of improving a system's efficiency, maintainability and performance, or in order to eliminate or control hazards.

For elements involving either the bus fleet or infrastructure, the design, construction and coordination procedures applicable are in the appropriate RTC contract documents. It is the responsibility of the department drafting the specifications for the equipment, system or facility to assure that safety requirements specification in procurement documents.

The RTC SSC reviews modifications effecting safety and security to systems, equipment and vehicles through the Safety and Security Certification Process. Transit system expansion or reduction (e.g., addition of BRT service) requires safety and security certification. The Handbook for Transit Safety and Security Certification, FTA 2002, provides a 10-step safety and security certification process. Safety and Security Certification of projects involves the project management team, project safety and security certification committee, preliminary hazard analysis team, contractors and consultants for completion. The process requires review and approval of certification and a verification recommendation by the Executive Director. The SSC reviews and approves equipment and vehicle safety and security certification as well.

13.2 Safety Requirements for Modifications

The RTC and its representatives will approve incorporated modification and configuration control requirements into all contracts in order that changes to the design of equipment and facilities documentation. Changes to designs after completion (sign off) of reviews are to be coordinated between RTC, its representatives, and the contract holders. Included in the contracts are compliance with safety assurance; modification and configuration control; safety analysis; evaluation and review. General areas most affected by system modifications and configuration controls include: vehicles, communications, fare collection and maintenance facilities.

Procurement of new systems, facilities, and equipment for RTC includes safety requirements in specifications and design reviews, and the testing, evaluation, and certification of the new systems (including configuration). It is the responsibility of the specifier (RTC, Contractor, or vendor) of new systems to assure to the RTC that safety requirements are included in the procurement process.

13.3 Security Requirements for Modifications

The RTC will ensure that facility modifications include provisions that are consistent with current security systems for electronic access control, locks and keys, intrusion detection and closed-circuit television system. Accomplishing facility modification must ensure that there is a consistent philosophy and implementation for the RTC's security systems.

13.4 Special System Safety/Security Considerations

RTC requires special consideration to the following in contracts affecting system components:

- Compatibility with the safety features, design, and procedures of the existing system into the new designs. Design criteria includes crime prevention through environmental design (CPTED) concepts and fault tolerant principles must be incorporated into all designs of new systems, including hardware, software, equipment, and facilities, when failures would cause a catastrophic event resulting in death or injury to persons, or damage to critical systems. As a prerequisite, there will be no consideration to new designs unless they proved safe and effective in operation elsewhere.
- Avoidance, eliminations, or reduction of identified safety hazards caused by design change; the inclusion of safety devices; or introduction of new or additional parts or materials, must be built into the designs.
- Components must be located so that access by personnel during operation, maintenance, repair, or adjustment does not require exposure to hazards (such as electrical shocks, burns, sharp edges or points and dangerous or toxic materials) beyond acceptable risks.
- Designs must minimize damage to equipment or injury to personnel in the event of an accident or catastrophe.

- Proper design must avoid undue exposure to physiological and psychological stress, which might cause errors leading to accidents or catastrophes.
- Provision of suitable warning and caution notes must be included in the vendors' instructions for the operation, assembly, maintenance, and repair of their products, and the imposition of distinctive markings for personnel protection on hazardous components, equipment or facilities.
- Developed staff training programs for all new systems or modifications, submitted to the RTC for approval, and personnel trained prior to final acceptance of the system or modification.

SECTION 14: SAFETY DATA ACQUISITION/ANALYSIS

The RTC, its consultants and contractors conduct proactive safety and health activities, including periodic inspection of facilities and construction projects, documented industrial hygiene surveys, and other occupational health assessments.

Safety related data will also be collected through review of operational and maintenance reports, accident reports, hazard analysis, injury/illness/incident investigations, performance reviews, customer complaints, claims, supervisory observations, and safety audits. Collected data will be analyzed and arranged in a manner that allows ready comparison with past safety performance in similar areas. Investigation or patterns of reduced safety should occur and if warranted, recommendations made to improve safety to previous levels or better.

Careful review of safety data, such as accident reports, claims, customer complaints, etc., should continue for an acceptable period after the implementation of a hazard resolution. Comparison of "before-and-after" statistics can also provide confirmation that the resolution is effective.

Annual Safety Report: Collected safety data, and the results of analysis of that data, will constitute significant parts of the Annual Safety Report. SSA will prepare this report it then signed by the Executive Director and sent to the RTC Board, and other selected entities. The report will include a narrative assessing RTC and contractor safety performance for the year.

SECTION 15: INTERDEPARTMENTAL/INTERAGENCY COORDINATION

RTC has a system of continuing verbal and written communication procedures in place to ensure interdepartmental, contractor, and interagency coordination is occurring. Proper implementation of the contents of this Safety Management System Plan will help to achieve an open line of communication throughout the organization. It is prudent to involve employees in the planning, implementation and necessary improvements needed to enhance their personal workplace safety. Employee solicitation of solutions to safety and health problems is essential. RTC will ensure its employees, and its Contractors contribute to safety and health objectives through participation on safety committees and teams.

RTC recognizes the benefits of developing and maintaining open lines of communication with its peers, local emergency service providers and others in supporting community safety. As such, RTC participates in local community groups that plan and exercise safety and emergency action plans for Northern Nevada. In addition, RTC works with other providers as needed on statewide initiatives or efforts designed to improve emergency and safety preparedness. RTC's key leaders and the SSA act as liaisons for such work and communication.

SECTION 16: CONFIGURATION MANAGEMENT

The RTC SSC reviews modifications effecting safety and security to systems, equipment and vehicles through the safety and security certification process. The RTC provides change control for its operations through its contractors. Contractors must follow configuration control procedures to assure that changes to facilities, hardware, operating and support systems ensure the modified system meets all approved safety standards, and ensure that the changes do not degrade safety or performance. The SSC provides final approval or recommendation for approval of the change control process.

Equipment Warranty, Fleet Defects and Maintenance Campaigns: Contractor's Maintenance Divisions carefully monitor new coaches and vans to ensure identification, documentation and recording all premature failures of parts, components and assemblies. Maintenance staff will file appropriate claims against the manufacturer for the repair or replacement of the failed element(s) while assuring that the corrective action satisfies and sustains the original equipment configuration. Declaration of a formal fleet defect occurs when failure rates meet or exceed the percentage agreed upon in the respective contract. RTC Public Transportation & Operations will make the Declaration. RTC Public Transportation and Operations, and contractor maintenance staff coordinate manufacturer Corrective action campaigns to assure that such repair campaigns satisfy all configurations, functionality and quality requirements.

Technical Library: Each primary Contractor will maintain a technical library to ensure the availability of current maintenance procedures and parts information. The library is a reliable source for current information of maintenance campaigns and service bulletins, component catalogs, fleet assignments and other information that is necessary to assure required maintenance and configuration control.

16.1 New Systems Configuration Management

Verification of compliance with safety requirements contained in the specifications occurs by using coordinated reviews of contractual documentation, system design reviews, assessment of failure modes and criticality analyses, fault-tree analysis and preparation of test results. Assessed during this verification effort, are adherence to configuration control and other appropriate management procedures.

Contractors are required to prepare and submit “as-built” contract drawings after new projects, or overhauls or rehabilitation of the transit fleet, system equipment and facilities are completed. Design changes made after completion of design review will be coordinated with the Contractor Service Providers and the Public Transportation and Operations Department.

New Coach/Van Purchases: There is assignment of a project manager (PM) to each new bus procurement. The PM is responsible for coordinating, monitoring and controlling all aspects of the new contract and the ultimate equipment configuration. Review of RTC’s technical specifications in the manufacturing plant for each new bus contract promotes and ensures full understanding of the required vehicular configuration. Upon final inspection, release and acceptance at RTC, the PM is to ensure that a post-delivery audit of the bus equipment and records to assure that the agreed-upon equipment configuration standards have been satisfied.

SECTION 17: EMPLOYEE SAFETY PROGRAM

RTC and its operations and maintenance contractor employee safety programs are intended to reduce substantially the number of accidents and injuries occurring within its facilities and to ensure that when they do occur that they are handled properly. The Employee Safety Program incorporates all applicable local, state, and federal requirements including employee right to know provisions.

The SSA in conjunction with RTC Human Resource Section and others as required, review employee accidents, incidents and injuries that occur, and develop programs and initiatives to reduce event numbers. The SSA also meets with supervisors at RTC facilities to ensure the implementation of the appropriate OSHA requirements.

RTC and contractor employees must become familiar with all policies and procedures, and learn how to perform their jobs safely and efficiently. RTC encourages the use of documented on-the-job training, classroom and specialty training, to contribute to a successful safety and health program. The training effort includes hazard recognition, regulatory compliance and accident prevention. Reinforcement of training occurs through regular follow-ups with employees. This document is an integral part of the employee safety program.

As part of the employee safety program, the RTC and its contractors encourage the use of three motivational techniques: communication, incentives/awards/recognition, and employee surveys. Effective communication within the organization keeps employees informed about policies, procedures, goals and progress. Bulletins, board notice newsletters, meeting and other forums, contribute to awareness and a proactive approach toward safe conditions. RTC also requires compliance with all laws and regulations (e.g., OSHA, ADA) that enhance worker dignity, safety, health and productivity.

17.1 Industrial and Occupational Safety and Health

Each RTC Department is responsible for industrial and occupational safety and health for its employees and each contractor is responsible for the occupational safety and health of its employees. The RTC requests consultative reviews from the State of Nevada OSHA – Safety Consultation and Training Section encompassing all facilities and operations. The SSA will provide consultancy services and oversight of employee safety and training programs through the following work activities:

- Investigation of employee injuries
- Safety training at new employee orientation
- Periodic training covering applicable industrial and occupational safety topics
- Implementation of corrective action to reduce hazards identified in the workplace
- Periodic inspections to evaluate the safety of the facility
- Annual updates to the Emergency Action and Evacuation Plans

17.2 Personal Protective Equipment

All personnel participating in work actions or activities subject to personal protective equipment (PPE) requirements must be notified, trained, equipped and in its use. RTC departments and contractors are responsible for providing the necessary PPE. Employees are required to use PPE in work actions or activities subject to regulation or requirement.

17.3 Interdepartmental, Contractor and Interagency Coordination

RTC has a system of continuing verbal and written communication procedures in place to ensure interdepartmental, contractor, and interagency coordination is occurring. Proper implementation of the contents of this document will help to achieve an open line of communication throughout the organization. It is prudent to involve employees in the planning, implementation and necessary improvements needed to enhance their and their fellow workers, personal workplace safety.

17.4 Operating Environments and Passenger Facility Management

Passenger facility management at each RTC location servicing the public will provide a clean, safe and secure environment for customers. Cleaning and repairs of bus stops and shelters occur daily and as necessary based on customer feedback.

17.5 Employee Work-Related Injuries

Employees involved in a work-related accident are required to report the accident to a supervisor, who must document the accident utilizing approved report forms. A claims adjuster, hired by either the RTC or the Contractor as applicable, classifies the type of accident before incorporating the claim into the administrative process. RTC and its contractors have a formal return-to-work program, which encourages employees to return to work, with restrictions, in a modified duty assignment. The hazard management process describes the methodology used to reduce employee work-related injuries. A review of all accidents passenger or public injuries and employee injuries occurs for hazard identification, classification, risk, mitigation and follow-up to reduce or eliminate reoccurrence.

Safety-sensitive personnel (operators, dispatchers, mechanics and armed officers) will immediately report any work-related injury to a supervisor. The supervisor will ensure any necessary emergency response, documents the incident and initiates the administrative process.

SECTION 18: HAZARDOUS MATERIALS PROGRAM

The Public Transportation Department is responsible for mandating safety requirements in its service provider contracts. The RTC's purchasing authority is responsible for mandating safety requirements in its vehicle procurement, facilities design and construction contracts. Both departments require compliance from vendors with RTC's safety requirements. The SSA is responsible for ensuring that the RTC and its contractors meet requirements related to the safety of RTC employees and property, contractor employees and property and the public.

Operational and passenger safety are the highest priorities when defining vehicle and facilities design requirements. Established design criteria ensure the equipment and installed materials meet or exceed all safety, flammability and environmental requirements, and meet all state and federal standards and regulations in effect at the time governing the specific equipment and materials used. Verification of contract compliance, commence with the design phase, continue through construction and final acceptance with inspections and testing by qualified consultants or RTC personnel.

18.1 Hazardous Materials Management Plan

RTC has, and requires its contractors to have, a Hazardous Materials Management Plan (HMMP) for each operating facility. Among other requirements, each HMMP must assist the local fire department in the event of their response to a hazardous material (HAZMAT) emergency. Each HMMP is site-specific and describes features of RTC systems and equipment required for compliance with pertinent statutes, ordinances and regulations. The HMMP requires each contractor to name a facility emergency contact person and/or position, and list the types and location of chemicals stored at the facility. Facility information includes items such as floor plans, hazardous material storage locations, staff evacuation locations, etc.

Each Contractor oversees the storage, handling, approval, and use of hazardous materials at RTC facilities. Contractor must ensure compliance with federal, state and local regulations regarding the generation, handling, storage or disposal of hazardous material or waste at these facilities. The Contractor maintains and updates all the hazardous material permits and fees necessary for each facility. They are responsible for updating and maintaining all Safety Data Sheets (SDS) and Chemical Materials Control Forms for their sites. They provide a copy to the SSA for inclusion in the facilities master list.

Each facility has its own Emergency Response Plan (ERP) that outlines the procedures for utilizing and maintaining personal protective equipment, spill prevention countermeasures and control plans and spill contingency plans.

The RTC and each Contractor is also responsible for coordinating the hazardous materials training of their personnel. The Contractor, with consultation from the SSA as needed, is responsible for purchasing personal protective equipment for employees, and controlling chemicals and other hazards in the workplace.

18.2 Purchasing Hazardous Materials

The RTC requires vendors to attach a Safety Data Sheet (SDS) with each hazardous chemical shipment in order for its acceptance. The Contractor's purchasing agent(s) have the following responsibilities in addition to daily activities:

- Ensuring that the procurement process complies with established procedures for evaluating materials and products.
- Establishing procedures that require their internal safety department coordination for identification and purchase of safety-critical/hazardous materials.
- Developing, maintaining and utilizing a list of hazardous substance acquisition, handling, labeling, storage, disposal and record keeping.
- Establishing and maintaining a standard procedure for evaluation of all potentially hazardous materials with their internal safety department personnel.
- Annually reviewing inventory requirements for defined safety-critical items.

18.3 Hazardous Communication (HAZCOM)

Each Contractor has a Hazard Communication (HAZCOM) Program, for all new employees who work with or exposed to, chemicals or other hazardous materials in their work environment. All employees also receive annual training. The program design is to inform employees about the following:

- The “Right to Know” Laws
- Workplace chemical lists
- How to read and interpret information on labeling systems
- How to read and interpret information on Safety Data Sheets (SDS)
- Physical and health hazards in the workplace
- Protective measures, specific work procedures and personal protective equipment
- Methods and observations to detect the presence or release of a hazardous material.

SECTION 19: DRUG AND ALCOHOL ABUSE PROGRAMS

The purpose of the RTC Drug and Alcohol Policy is to prevent accidents, incidents and losses from alcohol and drug misuse. This policy also defines alcohol misuse and requirements for testing for prohibited drugs.

RTC developed its drug and alcohol misuse program to promote the safety of its patrons and employees by encouraging a drug-free workplace and by undertaking affirmative measures to deter and detect the use of illegal drugs and alcohol misuse in the workplace. RTC and its Contractors are responsible for administering this program for all their employees in safety sensitive positions.

The policies and procedures conform to the drug and alcohol regulations of the United States Department of Transportation Federal Transit Administration (FTA) (49 CFR Parts 40, 655) and are intended to accomplish the objectives of those regulations. The policy identifies employees subject to testing, testing requirements, prohibited behavior, consequences of positive results and resources for employee assistance and rehabilitation.

An RTC condition of employment for safety-sensitive employees is participation in prohibited drug use and alcohol misuse programs. Supervisors must not permit a safety-sensitive employee to perform his/her job function if the employee has violated any provision of the policy.

Covered Employees: All employees and contractors who perform safety-sensitive functions for the RTC are subject to the drug and alcohol-testing provisions set forth in the FTA regulations. The four categories of safety-sensitive functions are as follows:

- Revenue Vehicle Maintenance
- Revenue Vehicle Control/Dispatch
- Commercial Driver’s License/Revenue Vehicle Operations
- Armed Security Personnel

Circumstances for Testing: FTA requires that a drug testing safety-sensitive employees in the following circumstances:

- Pre-employment (new hires/transfers and return to duty)
- Reasonable suspicion
- Post-accident
- Random

Oversight of RTC and contractor compliance with Drug and Alcohol Program requirements is the responsibility of the SSA with reporting to the SSC.

SECTION 20: CONTRACTOR AND CONSTRUCTION SAFETY

The RTC provides oversight site safety for contractor and RTC personnel during the conduct of construction projects, testing, and operations and maintenance activities. The level of RTC oversight, for construction, testing and operations and maintenance, as described in the following sections.

20.1 Contractor Safety Coordination

All contractor employees working on RTC property must comply with all RTC policies and procedures. RTC requires all operating, maintenance and construction contractors to provide a Safety Management System Plan. The SSA will review and approve the plan before the contractor can begin work. If the RTC finds that the contractor is not complying with the above requirements, RTC has the right to terminate the contractor's operations until achieving full compliance.

20.2 Construction Safety Program

The RTC's administration of construction safety reviews are in accordance with contract specifications and applicable federal, state, local and other safety requirements and shall be monitored through periodic audits and inspections of the construction safety program.

RTC Engineering Staff play a role in construction safety, beginning with the procurement process. Included in each procurement package is a notice requiring that the construction contractor comply with all local, state and federal safety rules and regulations. The contractor must submit its site-specific Safety Management System Plan to the RTC for review and approval prior to receiving a Notice to Proceed.

RTC staff members provide auditing and oversight of construction contractor compliance with their written safety plans. RTC conducts unannounced inspections of construction sites. Presentation of a report containing to the Contractor's Superintendent and the Project Engineer. When corrective action is required, RTC conducts follow-ups on outstanding safety deficiencies until eliminated.

Safety personnel may also attend weekly meetings to discuss the findings of prior week inspections and determine critical work activities for the coming week that may require onsite oversight.

Worker safety is of primary interest to all parties involved in the construction process. The unique nature of each work area involves construction practices that may expose workers to potentially hazardous conditions. Contractors, subcontractors and all other parties involved in the construction process, have a legal and contractual responsibility to perform work in a safe manner that is consistent with good construction practices. This obligation involves coordinating the efforts of all parties involved to implement effective safety management techniques.

20.2.1 Construction Safety Plans

For each awarded contract, the contractor must submit a written Construction Safety Plan (CSP). Subcontractors may either sign-on to the prime contractor's plan or submit their own CSP, as long as all activities are covered. The CSP must include the following items:

- Management Policy Statement
- Safety goals and objectives
- Responsibilities for all employee levels
- Construction Operating Rules and Procedures
- Hazard Communication Standard Compliance
- Emergency plans that require medical, fire, police and others to respond
- Safety training to be provided to construction workers
- Task specific safety requirements and supervisory oversight

Depending on the nature of the project, RTC may require the CSP include some or all of the following:

- Emphasis on compliance with regulatory/RTC safety requirements
- Copy of Contractor's written safety program and hazard communication program
- Identification of safety and health responsibilities
- Specific safety obligations, such as:
 - First aid facilities, emergency transportation and medical care
 - Furnishing of personal protective equipment
 - Drinking water
 - Toilets, job sanitation, etc.
 - Cleanup and trash disposal
 - Temporary electricity, water and heating/cooling as needed
 - Guardrails, scaffolds, ladders, cranes, etc.
 - Fire protection, fire extinguisher
 - Lighting and ventilation
 - Job site and associated parking lots

- Requirements for pre-construction safety meetings
- Establishment of a disciplinary policy for subcontractor safety violations
- Identification of the subcontractor's job site Safety and Health Representative
- Identification of safety violations, which can result in shutting down a subcontractor's operations such as:
 - Imminent danger violations
 - Willful negligence or disregard for safety
 - Repeated safety violations, etc.

The following requirements are also required in the CSP.

Training: Contractors are responsible for safety education and training of all employees. As a minimum, the following is required:

- Supervisor and employee safety training
- Orientation training
- Emergency procedures
- Safety meeting
- Hazard communication standard
- Vehicle/equipment safety
- Specific hazards of work
- Use of personal protective equipment
- Employee training (excavation, confined space entry, asbestos, lead, etc.)

Inspection and Enforcement: The Contractor is responsible for regular inspection of employee work areas to ensure employees follow safe work practices. This includes periodic site visits and rigid enforcement.

Accident Investigation and Reporting: The Contractor reports all injuries within 24 hours to the Project Engineer or Manager. An accident investigation occurs immediately following an injury, and preventive measures enacted.

First Aid/Medical Services: The Contractor provides first aid capability to meet OSHA requirements. Subcontractors may choose to use the general contractor's resources only if included in the contract provisions.

Recordkeeping: Each Contractor is responsible for documenting safety activities on a monthly Safety Report. The report should include a record of contractor and subcontractor employees, documentation of training and housekeeping efforts, identification of any accident or incident report submitted during the month, and a summary of injuries and lost workdays versus hours worked.

Personal Protective Equipment: The Contractor is responsible for providing and inspecting all personal protective equipment. The general contractor has the responsibility to inspect and verify that the subcontractor is conducting the necessary inspection of safety equipment and that employees are wearing it when required.

Factors Influencing Subcontractor Safety Performance: For general contractors to demonstrate the importance of safety, they must make a firm commitment to influencing the way their subcontractors manage safety. Factors under the direct control of general contractors that influence subcontractor safety performance include:

- Effective project management
- Effective job coordination
- Emphasis on job safety
- Establishing a safe work environment

Subcontractor Safety Staffing: A Contractor or subcontractor shall assign an employee as a safety and health representative. This individual should be on site while the job is in progress and be responsible for coordinating the safety activities of the subcontracting firm. The safety representative should maintain a copy of the firm's Safety Program and have authority to take corrective action when needed.

SECTION 21: PROCUREMENT

RTC requires its own and contractor procurement sections/departments to maintain a list of all harmful or toxic materials and substances and ensure that purchases do not include items listed as prohibited. In addition, each procurement section/department maintains a list of all safety critical material, along with incoming inspection procedures for each class of safety critical material.

Procurement sections/departments assure proper markings, labeling and storage of all chemical products and/or dangerous materials in storerooms; obtain and disseminate to all storage locations. Safety Data Sheets (SDS) on all chemical products used or stored by RTC or its contractors and supply SDS(s) to the SSA. Maintain and implement the procedures for the acceptance of all materials, and the performance of receiving inspections on safety critical materials received by the RTC or its contractors.

Procurement sections/departments will also be responsible for maintaining a complete inventory of material and database of all inspections performed.

21.1 Procurement Safety Responsibilities

- Safety-related procurement tasks include:
- Establishing and maintaining a standard procedure for evaluation of all potentially hazardous materials with safety personnel.
- Including safety performance standards on equipment specifications.
- Performing acceptance inspections on all safety critical material.
- Establishing procedures that require safety department coordination for identification and purchase of safety-critical and hazardous materials.
- Annually reviewing inventory requirements for defined safety-critical items.
- Assigning responsibility for monitoring procurement safety provisions of each contract and coordinating with the SSA as needed.
- Assigning responsibility for monitoring storage safety, including inspection and housekeeping standards to improve safety of the work environment.

21.2 Bus Procurement

The RTC Public Transportation Department and Purchasing Section (Finance Department) share responsibility for bus specifications and project management of bus procurements. The Project Manager is responsible for compliance to bus specification during their manufacture. The Project Manager is responsible for coordination of issues resulting after the vehicles are in service. The RTC SSC reviews and approves safety and security certification of all coaches and installed equipment. Safety and security certification must occur prior to revenue service.

The RTC Public Transportation Department is also the technical resource for all advanced technology procurements (e.g., hybrid propulsion or hydrogen fuel use, etc.). The RTC Public Transportation and Procurement Section is responsible for the purchase, assignment, accountability and disposal of support vehicles. The Public Transportation Department also provides a central source of expertise responsible for developing and coordinating technical solutions to equipment challenges fleet wide. Assignment of highest priority to revenue equipment malfunctions that compromise the safety of RTC's contract operators, patrons and community. They also are responsible to review and approve any contractor suggested modifications to the vehicles. The SSC provides oversight of this function through the safety and security certification process and monitoring of system safety.

21.3 Facility Procurement and Development:

The Engineering Department manages plans and specifications. It ensures that all plans and specifications meet RTC format quality standards and notarized by a professional engineer registered in the state of Nevada. The Engineering Department receives all changes clearly identified on engineering plans, specifications and as-built drawings.

The RTC SSC reviews and approves the safety and security certification of all facilities prior to use in revenue operations, passenger, public or employee use. The SSC provides oversight of facility project safety and security certification through the processes of design, construction, installation, testing and implementation.

SECTION 22: ALTERNATIVE FUELS AND SAFETY

Safety considerations include Contractor's full compliance with federal, state and local regulations, policies and procedures relating to vehicle compressed natural gas and diesel fueling, and fueling infrastructure, operator and technician training, vehicle inspection, maintenance and repairs; and facilities inspection. Oversight of contractor compliance with safety rules and procedures is the joint responsibility of the Public Transportation Department and the SSA.

SECTION 23: OPERATING ENVIRONMENT AND PASSENGER FACILITY MANAGEMENT

Passenger facility management at each RTC location servicing the public provides a clean, safe and secure environment for customers. Cleaning and repairs of bus stops and shelters occurs daily and as necessary based on customer feedback. See Sections 9 and 10 regarding safety inspections and maintenance audits/inspections of these facilities.

SECTION 24: SECURITY

RTC contracts with the private sector for provision of security services as described in the System Security and Emergency Preparedness Plan (SSEPP) see Section 3. In addition to providing security, the Armed-Security Officer Contractor also provides various safety and emergency response services at the Centennial Plaza and 4th Street Station transit centers. The security Contractor is responsible for hiring and training their employees. All Contractor contracts contain performance standards, including the requirements of this SMSP.

SECTION 25: EXTERNAL AUDIT PROCESS

Local, state and federal agencies may require periodic external safety audits. The RTC will conduct periodic external safety audits utilizing contractors, consultants or staff of other organizations as needed. Use of resources, such as the APTA Bus/Rail Safety Management Audit Program, for audit RTC SMS program.

SECTION 26: SAFETY PROMOTION

It is important to provide safety information to all employees and contractors. The RTC provides safety communication to employees holding safety-sensitive jobs through monthly safety

meetings, newsletters, bulletins, poster boards and daily electronic messaging. Safety communication content includes safety-related hazards and safety risks they encounter. Examples include accident frequency, severity and causation.

Other content includes changes in safety policies, activities and procedures and actions taken in response to reports from the employee safety-reporting program. Employees not in safety-sensitive jobs receive communication in the form of quarterly newsletters and electronic messages, monthly department meetings and semi-annual all staff meetings.

Ways in which the RTC and contractors ensure understanding of communications include asking what employees heard, asking if they can explain the message to others, employing use of matching communication styles (photographs and stories vs data, graphs and charts) and eliciting visual cues of understanding.

APPENDIX A

(EMERGENCY PROCEDURES FLIPCHART)

Emergency Procedures Flipchart is in the following section: “Other”.

APPENDIX B LIST OF ACRONYMS

ANSI	American National Standards Institute
ADA	American Disabilities Act
APTA	American Public Transportation Association
CAP	Corrective Action Plan
CDL	Commercial Driver's License
CNG	Compressed Natural Gas
CPR	Cardio-Pulmonary Resuscitation
CSP	Construction Safety Plan
DOT	Department of Transportation
DWI	Driving While Intoxicated
ERP	Emergency Response Plan
FTA	Federal Transit Administration
HAZCOM	Hazard Communication
HMMP	Hazardous Material Management Plan
ISTEP	Intermodal Security Training Exercise Program
SDS	Safety Data Sheets
NDOT	Nevada Department of Transportation
NTSB	National Transportation Safety Board
PM	Project Manager

PMI	Preventive Maintenance Inspection
RTC	Regional Transportation Commission of Washoe County
SOP	Standard Operating Procedure
SSA	Security/Safety Administrator
SSC	Security/Safety Committee
SSEPP	System Security and Emergency Preparedness Program Plan
SMSP	Safety Management System Plan
TSA	Transportation Security Administration
TVA	Threat and Vulnerability Assessment
TVM	Ticket Vending Machine
VIPR	Visible Intermodal Prevention and Response Team

APPENDIX C GLOSSARY OF TERMS

Emergency: A situation which is life threatening to passengers, employees, or other citizens which causes damage to any transit vehicle or facility or results in the significant loss of services and reduces the ability of the system to fulfill its mission.

Fatality: A transit-caused death that occurs within 30 days of transit incident.

Hazard identification: The process of using numerous tools to recognize and evaluate hazards.

Hazard resolution: The analysis and subsequent actions taken to reduce to the lowest level practical the risk associated with an identified hazard.

Hazard severity: The process of using subjective measure of the worst credible mishap resulting from personnel error, environmental conditions, design inadequacies or procedural efficiencies for system, subsystem or component failure or malfunction, categorized as follows:

- Category I (Catastrophic) May cause death or loss of a significant component of the transit system, or significant financial loss.
- Category II (Critical) May cause severe injury, severe illness, major transit system damage, or major financial loss.
- Category III (Marginal) May cause minor injury or transit system damage or financial loss.
- Category IV (Negligible) Less than minor injury, occupational illness, or system damage.

Injury: Any physical damage or harm to a person that requires immediate medical attention and hospitalization.

Safety:	Freedom from danger.
Security:	Freedom from incidental danger.
Security incident:	An unforeseen event or occurrence that endangers life or property and may result in the loss of services or system equipment.
Security threat:	Any source that may result in a security breach, such as a vandal or disgruntled employee; or an activity, such as an assault, intrusion, fire, etc.
System:	A composite of people (employees, passengers, others), property (facilities and equipment), environment (physical, social, institutional), and procedures (standard operating, emergency operating and training) which are integrated to perform a specific operational function in a specific environment.
Threat:	Any real or potential condition that can cause injury or death to passengers or employees or damage to or loss of transit equipment, property, and/or facilities.
Unsafe condition or act:	Any condition or act that endangers life or property.
Vulnerability:	Characteristics of passengers, employees, vehicles and/or facilities that increase the probability of an unsafe condition or act.



RTC WASHOE SYSTEM MAP

FALL 2022

FlexRIDE

Sparks/Spanish Springs Service Area

FlexRIDE

North Valleys Service Area

FlexRIDE

Somerset/Verdi Service Area

ROUTE KEY

RUTAS CLAVE

Service Guide / Guía de Servicio

RAPID Routes

- RAPID Local Line - North - Blue
- RAPID Virginia Line - Virginia - Orange
- Sparks Line - Green
- Line 7000 - 7000 Lakeside / 7000 - 7000 Pk of Lakeside - Yellow
- Line 7000 - 7000 Lakeside / 7000 - 7000 Pk of Lakeside - Orange

Fixed Routes

- South Virginia Street
- Hill - Gibraltar - RTC CENTENNIAL PLAZA
- Craig Road - Sky Mountain
- West Smith
- Summit - Sun Valley
- Arroyo - Meadows
- Summit
- Canby
- Franklin - Placer
- Terminal - Hill
- Va Hospital - Grove
- East Hill
- Summit - Westside - Trail
- Midvale
- Elmbluff - Craig
- Sparks Station
- East Placer
- Sparks - Woodhurst
- Sparks - Meadows - Reynolds Ranch

Accessibility

- All RTC buses are wheelchair accessible. Todos los autobuses de RTC son accesibles para sillas de ruedas.
- RTC de la STREET 2 AL CH. 500 S. Lake Street, Reno, NV 89501
- RTC CENTENNIAL PLAZA 1421 Walker Ave, Sparks, NV 89421
- RTC Transfer Center at Metropolitan Mall 2000 Nevada Avenue, Reno, NV 89502
- Subjetos de carga: 40 libras (18 kg) y 50 libras (23 kg) por pasajero.

This map is effective September 10, 2022 and includes the first phase of the TOPS Plan.



April 3, 2024

The Honorable Pete Buttigieg
Secretary
U.S. Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

The Honorable Livia Shmavonian
Director, Made in America Office
Office of Management and Budget
725 17th St NW
Washington, DC 20500

Dear Secretary Buttigieg and Director Shmavonian:

We are writing in strong support and timely consideration of a temporary and targeted Buy America waiver request submitted to the Federal Transit Administration (FTA). Sixteen transit systems from five states have submitted non-availability and public interest waiver requests for an all-electric minibus, the e-JEST. It's critical that these requests receive timely consideration to ensure these transit systems and others across the country can continue to provide timely, reliable, and quality service in the face of a growing crisis in the small bus marketplace.

It's been eight months since the initial waiver submission and these systems, along with hundreds of others, are in desperate need of new buses. *This strong support is highlighted by the 152 transit stakeholders from 44 states, the District of Columbia and the Northern Mariana Islands that have signed this letter.*

The cutaway marketplace is experiencing significant challenges, including long delivery times and significant cost increases. Making matters worse, El Dorado National-California (ENC) recently announced it will be exiting the cutaway market by winding down its manufacturing by the end of the year. The consolidation in the small bus marketplace is going to have serious and profound consequences on daily operations which invariably will lead to service disruptions and increasing safety issues.

The e-JEST is a purpose-built all-electric minibus with a 12-15 year useful life and can be delivered in three to six months. Functionally, the e-JEST is a good fit for the transit trend line of increasing zero emission vehicles in rural areas, on-demand and paratransit operations.

Providing a temporary waiver for a bus like the e-JEST will incentivize future domestic manufacturing in the United States and create hundreds of American jobs. If granted a temporary waiver, Karsan Automotive - the manufacturer of the e-JEST - and Damera Bus - the North American dealer - have committed to meet the 70% domestic content and final assembly requirements of Buy America within two years. The e-JEST already has 30% American content and will be incorporating battery packs made by One Battery in Michigan, which will immediately increase domestic content to over 50% and invest in the U.S. battery marketplace.

Thus, we feel it is appropriate and within the spirit of Buy America to provide a temporary waiver to incentivize domestic manufacturing, production, and use of these needed vehicles to American transit systems. Incorporating these vehicles into U.S. fleets will allow our transit systems to meet important climate objectives, improve competition, alleviate the strain on the supply chain and provide the

service capabilities needed by our transit riding public. As such, we respectfully request a limited duration, general non-availability and public interest waiver for low entrance, 20-foot, zero-emission minibuses.

Thank you for your time and consideration.

Sincerely,

Scott Bogren
Executive Director
Community Transportation Association of America

Shawn Donaghy
CEO, North County Transit District (CA)
President, The Bus Coalition

cc: Acting FTA Administrator Veronica Vanterpool

Signatories organized by state below.

Alaska

Kimberly Schlosser, Executive Director, Sunshine Transit, Willow, Alaska

Alabama

Marshall Peter Chimwedzi, Director of Transportation and Sustainability, Alabama A&M University, Huntsville, AL

Arkansas

Joel Gardner, Executive Director, Ozark Regional Transit Authority, Springdale, Arkansas

Ken Savage, Transit Director for the City of Fort Smith, City of Fort Smith, Transit Department, Fort Smith, Ann Gilbert, Executive Director, Arkansas Transit Association, North Little Rock, AR

Amanda Webb, Member Services & Operations Manager, South West Transit Association, Booneville, AR

Arizona

Robert W. Weber, Transit Administrator, City of Sedona, Sedona, AZ

Heather Dalmolin, CEO and General Manager, Mountain Line, Flagstaff, AZ

California

Shawn Donaghy, CEO, North County Transit District, Oceanside, CA

John Andoh, Transit General Manager, Redding Area Bus Authority, Redding, CA

John Andoh 2, Transit Manager, City of Escalon, Escalon, CA

Gamaliel Anguiano, Transit Director, Santa Maria Regional Transit, Santa Maria, CA

Claude McFerguson, Director of Transportation, City of Commerce Transit, Commerce, CA

Kenneth McDonald, President and CEO, Long Beach Transit, Long Beach, CA

Moses Stites, General Manager, Fresno County Rural Transit Agency, Fresno, CA

Colorado

Frank W. Bruno, Chief Executive Officer, Via Mobility Services, Boulder, CO

Ted Schweitzer, Transit Director, Cripple Creek Transit, Cripple Creek, CO

Connecticut

Joseph Comerford, Executive Director, Estuary Transit District, Middletown, CT

District of Columbia

Scott Belcher, Executive Director, Automated. Connected. Electric. Shared. (ACES) Mobility Coalition, Washington, DC

Georgia

Kristen Joyner, Executive Director, Georgia Transit Association, Roswell, GA

Hawaii

Debbie Cabebe, CEO, Maui Economic Opportunity, Inc., Wailuku, Hawaii

Iowa

Julia Castillo, Executive Director, HIRTA, Urbandale, IA

Carl Lingen, Executive Director, Iowa Public Transit Association, Des Moines, IA

Amanda Wanke, CEO, Des Moines Area Regional Transit Authority, Des Moines, IA

Leesa A. Lester, Transit Director, Southern Iowa Trolley, Creston, IA

Brock Grenis, Transit Administrator, Corridor Rides, Cedar Rapids, IA

Kevin Kramer, Transit Administrator, North Iowa Area Council of Governments, Mason City, IA

Randy Zobrist, Executive Director / CEO, River Bend Transit, Davenport, IA

Dennis Hart, Transportation Director, City of Clinton, Municipal Transit Administration, Clinton, IA

Trisha Wilkins, CEO, Northeast Iowa Comm. Action Corp, Decorah, IA

Barbara Meal, Director of Transportation, Ames Transit Agency/CyRide, Ames, IA

Idaho

Elaine Clegg, Executive Director, Valley Regional Transit, Boise, ID

Wallace E. Morgus, Executive Director, Mountain Rides Transportation Authority, Ketchum, ID

Illinois

Jeff Nelson, General Manager, Quad Cities MetroLink, Moline, IL

Melinda J. Metzger, Executive Director, Pace, Arlington Hts. IL

Indiana

Justin Clupper, Executive Director, Community transportation Network, Fort Wayne, IN

Dale Stefani, Transportation Coordinator, Hendricks County Senior Services - Link Hendricks County, Danville, IN

Becky Allen, Access Johnson County Public Transit / Gateway Services, Access Johnson County Public Transit / Gateway Services, Franklin, IN

Trisha Dearth-Adkins, Executive Director, Union County Council on Aging and Aged, Liberty, IN

Kentucky

Rob Stephens, Chief Operating Officer, Transit Authority of River City, Louisville, KY

Pam Shepherd, President, Kentucky Pubic Transit Association, Lexington, KY

Pam Shepherd, Executive Director, Federated Transportation Services of the Bluegrass, Inc., Lexington, KY

Louisiana

Dinero Washington, CEO, SporTran, Shreveport, LA

Massachusetts

Kenneth J Rodes, Elder Care Manger, Salesian Society Inc, East Boston, MA

Maryland

Gary R Blazinsky, Harford County Maryland, Harford Transit LINK, Abingdon, MD

Roman Steichen, Director, Transit Services of Frederick County, MD, Frederick, MD

Maine

Sandy Buchanan, Executive Director, Western Maine Transportation Services (WMTS), Auburn, ME

Constance Garber, Transportation Director, Retired, York County Community Action Corporation, Sanford, ME

Rita Rose, Transportation Supervisor/Safety Officer, Biddeford Saco Old Orchard Beach Transit, Biddeford, ME

Harry Rodney Carpenter, Deputy Director, Biddeford Saco Old Orchard Beach Transit, Biddeford, ME

Chad Heid, Executive Director, BSOOB Transit, Biddeford, ME

Michigan

Edgar Benning, General Manager, Flint MTA, Flint, MI

Clark Harder, Executive Director, Michigan Public Transit Association., East Lansing, MI

Deborah Prato, Chief Executive Officer, ITP The Rapid, Grand Rapids, MI

Greg Vlietstra, Director of Support Services, Central County Transportation Authority, Kalamazoo, MI

Phyllis Yff, Executive Director, Interurban Transit Authority, Douglas, MI

MaLissa Schutt, Executive Director, Clinton Area Transit System, St. Johns, MI

Minnesota

Brandon Nurmi, Transit Director, Arrowhead Economic Opportunity Agency dba. Arrowhead Transit, Virginia, MN

Ryan Daniel, CEO, St. Cloud Metropolitan Transit Commission, St. Cloud, MN

Ryan Daniel, President, Minnesota Public Transit Association, St. Paul, MN

Nick Leske, Transportation Director, United Community Action Partnership, Marshall, MN
Beverly Sidlo-Tolliver, Principal Planner, Arrowhead Regional Transportation Coordinating Council, Duluth, MN

Northern Mariana Islands

Alfreda Camacho Maratita, Special Assistant for Public Transportation, Commonwealth Office of Transit Authority, Saipan, Commonwealth of the Northern Mariana Islands

Mississippi

Antionette Gray, Transit Director, Aaron E Henry Community Health Center Inc, Clarksdale, MS

Montana

Corey Aldridge, CEO & General Manager, Mountain Line, Missoula, MT

Jennifer Sweten, Director of Operations, Missoula Urban Transportation District, Missoula, MT

Nadine Hanning, General Manager, Great Falls Transit District, Great Falls, MT

Jodi Berry, Director, Richland County Transit, Sidney, MT

North Carolina

L.J. Weslowski, Transit Director, Concord Kannapolis Area Transit (Rider), Concord, NC

John Andoh 3, Transit Manager, City of Burlington, Burlington, NC

Tawanna Williams, Transportation Director, RCATS Transportation, Asheboro, NC

Angie Greene, Director, Lenoir County Transit, Kinston, NC

Meggan Roberts Odell, Transportation Director, Aging, Disability and Transit Services of Rockingham County, Reidsville, NC

Richard M. Jones, Jr., Transportation/Fleet Maintenance Director, Davison County Transportation System, Lexington, NC

L.J. Weslowski, Transit Director, Concord Kannapolis Area Transit, Concord, NC

North Dakota

Dale Bergman, Divisional Director, Cities Area Transit, Grand Forks, ND

Patricia Hansen, Director, South Central Adult Services Council, Inc., Valley City, ND

Dale Bergman, Public Transit Division Director, Cities Area Transit, Grand Forks, ND

Nebraska

Scott Bartels, Director, Saline County Area Transit, Western, NE

Jennifer Eureka, Executive Director, Nebraska Association of Transportation Providers, Milford, NE

Scott Bartels, Director, Saline County Area Transit, Western, NE

New Hampshire

Mike Whitten, Executive Director, Manchester Transit Authority, Manchester, NH

Charlene Huard-Marcoux, Founder / CEO, Home Base Transportation, LLC, Pembroke, NH

New Jersey

David Fitzgerald, Director, Ocean County Dept. of Transportation Services, Ocean County, NJ

John Adair, Transportation Director, County of Somerset, Bridgewater, NJ

Michael M. Vjeira, President, NJ Council on Special Transportation, Livingston, NJ

Avnish Gupta, COO & General Counsel, Meadowlands Transportation Brokerage Corporation d/b/a EZ Ride, Wood-Ridge, NJ

Dale Keith, CFO, Se-Han Transit, Audubon, NJ

New York

Miguel Velázquez, CEO, Regional Transportation Service, Rochester, NY

New Mexico

Gabrielle Chavez, Transit Director of Administration, Santa Fe Trails, Santa Fe, NM

Kevin E. Olinger, Transit Bureau Chief, New Mexico DOT, Santa Fe, NM

Nevada

James Gee, Director of Public Transportation, RTC Washoe, Reno, NV

Ohio

Bob Ruzinsky, CEO, Dayton RTA, Dayton, OH

Claudia B. Amrhein, General Manager/CEO, PARTA, Kent, OH

Lisa Leckrone, Mobility Manager, Perry County Mobility Management, New Lexington, OH

Matthew M. Dutkevich, Executive Director, Butler County Regional Transit Authority, Hamilton, OH

Oklahoma

Jason Ferbrache, Director, EMBARK/City of Oklahoma City, Oklahoma City, OK

Laura Corff, Transit Director, Cimarron Public Transit System, Pawnee, OK

Oregon

Jameson Auten, Chief Executive Officer, LTD Transit, Eugene, OR

Allan Pollock, General Manager/CEO, Salem Area Mass Transit District, Salem, OR

Patrick S. Walsh, Chief Marketing Officer, Lane Transit District, Eugene-Springfield, OR

Elaine Wells, Retired Executive Director of Ride Connection, Inc., Ride Connection, Inc., Portland, OR

Cynda Bruce, Director of Transit, Lincoln County Transit, Newport, OR

Julie A Brown, General Manager, Rogue Valley Transportation District, Medford, OR

Cynthia Thompson, Transit Manager, Yamhill County Transit, McMinnville, OR

Brian Vitulli, General Manager, Tillamook County Transportation District, Tillamook, OR

Cynda Bruce, Director of Transit, Lincoln County Transit, Newport, OR

Mike Strauch, District Manager, South Clackamas Transportation District, Molalla, OR

Pennsylvania

Maria Church, Risk Management Director, Suburban Transit Network, Inc, Blue Bell, PA

Lori Miller, Director of Business Development and Community Engagement, Centre Area Transportation Authority (CATA), State College, PA

Michael R. Noel, Owner, Noel Training & Consulting, LLC, Johnstown, PA

Rhode Island

Scott Avedisian, Chief Executive Officer, Rhode Island Public Transit Authority, State of Rhode Island

South Carolina

Michael Jonas, CS/IT Director/retired, Santee Wateree RTA, Sumter, SC

Diana P. White, Executive Director, Fairfield County Transit System, Winnsboro, SC

South Dakota

Megan Gould-Stabile, Transit Division Manager, City of Rapid City - Rapid Transit System, Rapid City, SD

Travis Bortnem, Executive Director, Brookings Area Transit Authority, Brookings, SD

Ronald Baumgart, Executive Director, River Cities Public Transit, Pierre, SD

Barbara Ballensky, Transit Director, Vermillion Public Transit, Vermillion, SD

Peter Smith, CEO, Rural Office of Community Services, ROCS - Transit, Wagner, SD

Peter W Smith, CEO, Rural Office of Community Services, ROCS - Transit, Wagner, SD

Barbara Cline, Executive Director, Prairie Hills Transit, Spearfish, SD

Tennessee

Charles Frazier, Chief Executive Officer, Chattanooga Area Regional Transportation Authority, Chattanooga, TN

Stephen G. Bland, Chief Executive Officer, WeGo Public Transit, Nashville, TN

Mike Patterson, Transportation Director, East Tennessee Human Resource Agency, Knoxville, TN

Janet Robin Moore, Transportation Director, Northwest Tennessee Human Resource Agency, Martin, TN

Texas

Jeff Arndt, Chief Executive Officer, VIA Metropolitan Transit, San Antonio, TX

Rich Sampson, Executive Director, South West Transit Association, Fort Worth, TX

Derrick Majchszak, Chief Executive Officer, Corpus Christi Regional Transportation Authority, Corpus Christi, TX

Chris Mandrell, General Manager, Citibus, Lubbock, TX

Vince Huerta, Director of Transportation, ETCOG/GoBus, Kilgore, TX

Wendy Weedon, Deputy CEO/General Manager, Brazos Transit District, Bryan, TX

Dottie L. Watkins, President & CEO, CapMetro, Austin, TX

Utah

Kim Fjeldsted, Transit Manager, Park City Transit, Park City, UT

Todd Beutler, CEO/General Manager, Cache Valley Transit District, Logan, Utah

Virginia

Noelle Pinkard, Org. Advancement Officer, Hampton Roads Transit, Hampton Roads, VA

Sheryl Adams, CEO, Greater Richmond Transit Company (GRTC), Richmond, VA

Nathan T. Sanford, Executive Director, RADAR, Roanoke, VA

Washington

Todd Morrow, Executive Director, Island Transit, Coupeville, WA

Michael Griffus, CEO, Pierce Transit, Lakewood, WA

Les Reardanz, General Manager, Whatcom Transportation Authority, Bellingham, WA

James Seeks, Transit Manager, RiverCities Transit, Longview, WA

Juli Rose, Sr. Director Government Funded Programs, Senior Services of Snohomish County DBA Homage Senior Services, Lynnwood, WA

Wisconsin

Susan De Vos, President, Madison Area Bus Advocates, Madison, WI

James William Brown, Fiscal Manager, Wheels of Independence, Inc./River City Cab, Wisconsin Rapids, WI

West Virginia

Douglas J Pixler, General Manager, Potomac Valley Transit Authority, Potomac Valley Transit Authority, Petersburg, WV

Melissa M. Weishar, Executive Director, Ohio Valley Regional Transportation Authority, Wheeling, WV

Michael Allen Kesterton, General Manager, Mid-Ohio Valley Transit Authority, Parkersburg, WV

Jeffery Allen Mullenax, General Manager, FAIRMONT-MARION COUNTY TRANSIT AUTHORITY, Fairmont, WV



REGIONAL TRANSPORTATION COMMISSION

Metropolitan Planning • Public Transportation & Operations • Engineering & Construction

Metropolitan Planning Organization of Washoe County, Nevada

Meeting Date: 4/19/2024

Agenda Item: 4.6.1

To: Regional Transportation Commission

From: Christian Schonlau, Director of Finance, CFO

SUBJECT: RTC Maintenance Needs Assessment

RECOMMENDED ACTION

Approve a contract with Nichols Consulting Engineers to conduct a study to identify and summarize current roadway maintenance practices and available funding in the Washoe County Metropolitan Planning Organization (MPO) boundary , in an amount not-to-exceed \$163,000.

BACKGROUND AND DISCUSSION

During the FY 2024 tentative budget hearing, the Board directed RTC to conduct a study identifying the maintenance needs of local roads and jurisdictional roads that are outside of the normal RTC scope. Funding for this study was included in the FY 2025 Budget. An RFP was issued September 1, 2023, which resulted in two qualified submission by the November 15, 2023 deadline. The scoring committee unanimously selected Nichols Consulting Engineers as the winning proposal. Contract negotiations and scoping have been ongoing and are now finalized. Work is expected to begin 30 days after award of this contract.

The item supports the FY2024 RTC Goal, "Analyze local and regional maintenance needs and potential solutions via maintenance study."

FISCAL IMPACT

Fuel tax funding for this study is included in the FY 2024 budget and will be included in the FY 2025 budget.

PREVIOUS BOARD ACTION

There has been no previous Board action taken.

AGREEMENT FOR SERVICES
Maintenance Needs Study

This agreement (“Agreement”) is dated and effective as of _____, 2024, by and between the Regional Transportation Commission of Washoe County, Nevada (“RTC”) and Nichols Consulting Engineers, (NCE) (“Contractor”).

1. **Term.** The term of this agreement shall commence on the effective date above and shall end on December 30, 2024
2. **Scope of Work.** Contractor shall provide the goods and services described in the scope of work attached as Exhibit A
3. **Time for Performance.** The work shall be completed by December 30, 2024 at the latest.
4. **Compensation.** RTC shall pay Contractor for the goods and services pursuant to, and in an amount not to exceed \$163,400, the pricing and fee schedule attached as Exhibit B.
5. **Proceeding with Work.** Contractor shall not proceed with work until both parties have executed this Agreement and RTC has issued a purchase order. If Contractor proceeds with work before those conditions have been satisfied, Contractor shall forfeit any and all right to reimbursement and payment for work performed during that period. In the event Contractor violates this section, Contractor waives any and all claims and damages against RTC, its employees, agents, and affiliates, including but not limited to monetary damages, and any other remedy available at law or in equity arising under the terms of this Agreement.
6. **Invoices/Payment.** Contractor shall submit invoices to accountspayable@rtewashoe.com. RTC’s payment terms are 30 days after the receipt of the invoice. Simple interest will be paid at the rate of half a percent (0.5%) per month on all invoices approved by RTC that are not paid within thirty (30) days of receipt of the invoice.
7. **Legal/Regulatory Compliance.**
 - a. Contractor shall comply with all applicable federal, state and local government laws, regulations and ordinances. Contractor shall be responsible for obtaining all necessary permits and licenses for performance of services under this Agreement. Upon request of RTC, Contractor shall furnish RTC certificates of compliance with all such laws, orders and regulations.
 - b. Contractor represents and warrants that none of the services to be rendered pursuant to this Agreement constitute the performance of public work, as that term is defined by Section 338.010(17) of the Nevada Revised Statutes. To the extent Contractor does engage in such public work, Contractor shall be responsible for paying the prevailing wage as required by Chapter 338 of the Nevada Revised Statutes.
8. **Insurance.** Contractor shall obtain all types and amounts of insurance set forth in Exhibit C, and shall comply with all of its terms. Contractor shall not commence any work or permit any employee/agent to commence any work until satisfactory proof has been submitted to RTC that all insurance requirements have been met.

9. Indemnification. Contractor's obligations are set forth in Exhibit C. Said obligation would also extend to any liability of RTC resulting from any action to clear any lien and/or to recover for damage to RTC property.

10. Termination.

- a. Mutual Assent. This Agreement may be terminated by mutual written agreement of the parties.
- b. Convenience. RTC may terminate this Agreement in whole or in part for convenience upon written notice to Contractor.
- c. Default. Either party may terminate this Agreement for default by providing written notice of termination, provided that the non-defaulting party must first provide written notice of default and give the defaulting party and opportunity to cure the default within a reasonable period of time.

11. Rights, Remedies and Disputes

- a. RTC shall have the following rights in the event that RTC deems the Contractor guilty of a breach of any term under the Agreement:
 - i. The right to take over and complete the work or any part thereof as agency for and at the expense of the Contractor, either directly or through other contractors;
 - ii. The right to cancel this Agreement as to any or all of the work yet to be performed;
 - iii. The right to specific performance, an injunction or any other appropriate equitable remedy; and
 - iv. The right to money damages.
- b. Inasmuch as the Contractor can be adequately compensated by money damages for any breach of this Agreement, which may be committed by RTC, the Contractor expressly agrees that no default, act or omission of RTC shall constitute a material breach of this Contract, entitling Contractor to cancel or rescind the Agreement (unless RTC directs Contractor to do so) or to suspend or abandon performance.
- c. Disputes arising in the performance of this Agreement that are not resolved by agreement of the parties shall be decided in writing by the authorized representative of RTC's Executive Director. This decision shall be final and conclusive unless within 10 days from the date of receipt of its copy, Contractor mails or otherwise furnishes a written appeal to RTC's Executive Director. In connection with any such appeal, Contractor shall be afforded an opportunity to be heard and to offer evidence in support of its position. The decision of RTC's Executive Director shall be binding upon the Contractor and the Contractor shall abide by the decision.
- d. Unless otherwise directed by RTC, Contractor shall continue performance under this Agreement while matters in dispute are being resolved.

12. Ownership of Work. Plans, reports, studies, tracings, maps, software, electronic files, licenses, programs, equipment manuals, and databases and other documents or instruments of service prepared or obtained by Contractor in the course of performing work under this Agreement, shall be delivered to and become the property of RTC. Software already developed and purchased

by Contractor prior to the execution of the Project that will be used in the Project and services rendered under this Agreement, is excluded from this requirement. Contractor and its sub-contractors shall convey and transfer all copyrightable interests, trademarks, licenses, and other intellectual property rights in such materials to RTC upon completion of all services under this Agreement and upon payment in full of all compensation due to Contractor in accordance with the terms of this Agreement. Basic survey notes, sketches, charts, computations and similar data prepared or obtained by Contractor under this Agreement shall, upon request, also be provided to RTC.

13. Records. Contractor will permit RTC access to any books, documents, papers and records of Contractor pertaining to this Agreement, and shall maintain such records for a period of not less than three years.

14. Exhibits. The exhibits to this Agreement, and any additional terms and conditions specified therein, are a material part hereof and are incorporated by reference as though fully set forth herein.

15. Exclusive Agreement. This Agreement constitutes the entire agreement of the parties and supersedes any prior verbal or written statements or agreements between the parties.

16. Amendment. No alteration, amendment or modification of this Agreement shall be effective unless it is in writing and signed by both parties.

17. No Assignment. Contractor shall not assign, sublease, or transfer this Agreement or any interest therein, directly or indirectly by operation of law, without the prior written consent of RTC. Any attempt to do so without the prior written consent of RTC shall be null and void, and any assignee, subleasee, or transferee shall acquire no right or interest by reason thereof.

18. Governing Law. This Agreement shall be construed in accordance with and governed by the laws of the State of Nevada.

19. Venue. Any lawsuit brought to enforce this Agreement shall be brought in the Second Judicial District Court of the State of Nevada, County of Washoe appropriate court in the State of Nevada.

20. Attorneys' Fees. In the event of a dispute between the parties result in a proceeding in any Court of Nevada having jurisdiction, the prevailing party shall be entitled to an award of costs and any reasonable attorneys' fees.

21. Certification Required by Nevada Senate Bill 27 (2017). Contractor expressly certifies and agrees, as a material part of this Agreement, that it is not currently engaged in a boycott of Israel. Contractor further agrees, as a material part of this Agreement, it will not engage in a boycott of Israel for the duration of this Agreement. If, at any time during the formation or duration of this Agreement, Contractor is engaged or engages in a boycott of Israel, it will constitute a material breach of this Agreement.

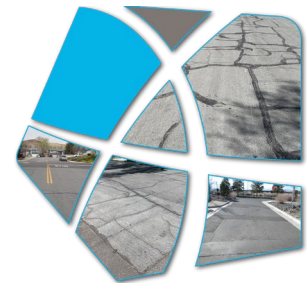
REGIONAL TRANSPORTATION
COMMISSION OF WASHOE COUNTY

BY: _____
Bill Thomas, AICP, Executive Director

NICHOLS CONSULTING ENGINEERS

BY: _____
Mei-Hui lee, PhD, Associate Engineer

EXHIBIT A – Scope of Work



Project Understanding

The RTC has established an aggressive schedule to conduct this study to identify and summarize current roadway maintenance practices and available funding in the Washoe County Metropolitan Planning Organization (MPO) boundary, which requires an in-depth knowledge of local conditions and processes. The objective of the study is to capture the current state of the pavement and transportation system maintenance practices and the individual and collective approaches to meeting those standard practices or goals. The Maintenance Needs Study results will be a tool to plan and deliver future roadway projects in the community in a fair, equitable, and fiscally responsible manner.

This study will collect individual roadway maintenance practices in the three local jurisdictions and the region overall as well as how funding is allocated to those activities at the local and regional levels. Maintenance practices are generally categorized into the following:

- Pavement preservation, including preventative maintenance, corrective maintenance, rehabilitation, and reconstruction.
- Normal operations and maintenance, including patching and crack sealing, snow removal, street sweeping, landscaping, lighting, sidewalks, signage, striping, etc.; and
- Traffic system operations and maintenance, including traffic signals, signal timing equipment, and other traffic management systems.

Scope of Work

The NCE Team possesses this knowledge, as well as excellent relationships with not only RTC staff, but staff from Washoe County and the Cities of Reno and Sparks. While technical elements will vary between agencies or activities, the general processes are largely the same and therefore only important differences will be identified regarding the Team's approach for these Tasks.

Task 3.1 – Meeting and Project Coordination

This Task focuses on the overall planning and project coordination with each agency. The NCE Team will conduct one (1) kickoff meeting with RTC and all jurisdictions to review the project goals, technical approach, available information, project schedule, etc. Prior to the kickoff meeting, NCE will prepare a detailed agenda, which will be sent to RTC and each jurisdiction for review prior to the meeting. A monthly progress updates meeting will be held to review the work performed and address any questions or issues that arise as the work progresses. Up to six (6) virtual monthly meetings will be held for this project.

Deliverable: kickoff meeting agenda, summary, and monthly progress update meetings

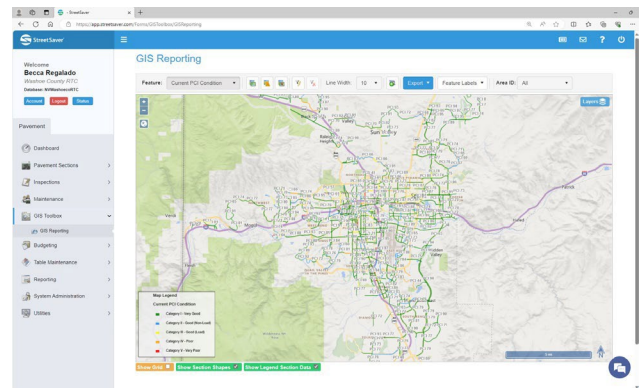
Number of meetings: One (1) kickoff meeting and up to six (6) virtual monthly progress meetings

Task 3.2 – Data Collection

Working within the framework established in Task 3.1, the NCE Team will coordinate with each jurisdiction to collect available data regarding pavement preservation, traffic system operations and maintenance, and normal operations and maintenance, along with associated funding resources and budget allocations. Staffing-related data is not included as part of this effort. The NCE team will schedule up to three virtual (3) meetings with each jurisdiction (total of 12 meetings) to collect available data, identify missing data, and obtain agency input. This assumes one (1) meeting with the financial team, one (1) meeting with engineering/technical team, and one (1) combined meeting to discuss the data collection matrix with each agency. This will require the following subtasks:

Task 3.2.1 – Pavement Preservation

Under this task, NCE will collect existing information from each jurisdiction regarding pavement management program (PMP) (StreetSaver® database for RTC and PAVER™ database for Washoe County, and Cities of Reno and Sparks), inspection update, target pavement condition index (PCI), maintenance and rehabilitation practices, pavement needs, available paving funding, etc. Detailed items will be identified in the meeting with each jurisdiction. NCE is already working with RTC to utilize the StreetSaver® program in evaluating a variety of funding scenarios for the RTP network. The RTC's goal is for the PCI to be 80 on these roadways.



Task 3.2.2 – Existing ITS Infrastructure

The NCE team will work with the RTC, Washoe County, and the Cities of Reno and Sparks to collect all available data for the existing ITS infrastructure (traffic signals, traffic cabinets, and traffic cameras). The data collection will cover items listed in below:

- Operation and Maintenance Asset Management Records (Existing Infrastructure Inventory)
- Work Order History
- Existing Maintenance Schedules/Processes to determine existing infrastructure maintenance efforts
- Current planning, decision-making, and approval processes when identifying and prioritizing projects.

Task 3.2.3 – Normal Operations and Maintenance

The NCE Team will collect available transportation-related O&M asset management records, work order history, existing maintenance schedules/processes, existing funding information, and the latest Capital Improvement Plan (CIP) from each agency. How agencies develop the maintenance program, selection criteria, funding limitations, historical records, or maintenance activity tracking will also be collected from each jurisdiction.

Activity	Description	Prioritization
Crack Sealing	Can be tracked by linear foot, square foot, roadway segment, roadway life cycle or hours and material used.	Each agency also has additional criteria for determining which cracks are filled and how they are cleaned prior to filling.
Patching	Is typically tracked by square footage, time and material.	Prioritizing repairs and methods differ between agencies.
Sweeping	Can be tracked by lane miles, pass miles, roadway miles or time.	Prioritizing sweeping typically varies by jurisdiction and regulations.
Snow Removal	Can be tracked by miles. Lane miles, time and materials (sand, salt, salt brine or other chemicals).	Prioritization varies between jurisdictions, time of day, day of the week and type of street.
Landscaping and Vegetation Control	is typically tracked by time and material.	Prioritization varies between jurisdictions, commercial, residential and or geographical area.
Roadway Striping	Is usually tracked by lineal foot, time and materials.	Prioritization varies for each jurisdiction depending on type of street and area.
Storm Drain Cleaning and Maintenance	Can be tracked in several ways and differ by jurisdiction and type of storm drain. Cleaning a small driveway cross pipe is typically tacked different than a large storm drainage system.	Prioritization of cleaning and repair methods differ as well.

Task 3.2.4 – Financing and Funding Sources

Funding sources and data as they relate to the current maintenance and operations of the RTC Region’s roadways covering pavement preservation, normal operations and maintenance (O&M) efforts, and ITS will also be collected. Financial information will be collected for each of the four entities (RTC, Washoe County, Cities of Reno and Sparks). Data to be collected includes:

- Existing Funding Information
- Future Funding Plans or Anticipated Changes
- Latest Capital Improvement Plan
- Agency and Jurisdiction Budget Documents
- Annual Comprehensive Financial Reports
- RTC-5 (Indexed Fuel Tax)

Deliverable: Four (4) matrices of collected existing data (one matrix for each agency)

Number of meetings: Up to twelve (12) virtual meetings with agencies of data collection and following up (three (3) meetings for each agency)

Task 3.3 – Data Summary and Report

The NCE Team will review the data collected as part of Task 3.2 to evaluate the current state of the pavement preservation, ITS and traffic signal system infrastructure, and normal operation and maintenance (O&M). The latest CIP lists will also be reviewed to determine the maintenance required for projects identified over the next five years.

The process for examining the funding sources authorized through state law and local ordinances will be the same for all four jurisdictions, recognizing there will be some differences from agency to agency. The NCE Team will utilize the provided financial documents and datasets provided by the local jurisdictions in Task 3.2 to prepare high-level forecasts of potential revenue streams associated with pavement maintenance, regular operation and maintenance, and traffic operations for the next five years.

Financial forecasts will be compared to identified or documented needs as provided by the local agencies to assess potential shortfalls to meet the maintenance and operations goals.

NCE team will schedule one (1) virtual meeting with each agency to discuss data summary findings related to pavement preservation, ITS and signal system infrastructure, operations and maintenance, and all fiscal-related data necessary to operate and maintain the roadways in RTC Washoe Region. A Data Summary Memorandum for each jurisdiction will be developed to summarize the data collected by each agency.

All data and memoranda presented as parts of previous tasks will be collated into a comprehensive final report. This report will include the existing maintenance practices, identified needs or goals, expenditures, and funding data at both the individual jurisdiction level and for the roadway network as a whole. Key findings and summaries will be presented to the RTC Board of Commissioners. The NCE Team will attend one (1) Board meeting to present project findings.

Deliverable: Four (4) Data Summary Memoranda (one for each agency), draft report, final report, and presentation file

Number of meetings: Up to four (4) virtual Data Summary meetings with agencies (one meeting for each agency) and up to one (1) Board meeting

EXHIBIT B – COMPENSATION

RTC will be invoiced monthly for work completed, not to exceed \$163,400.00.

Task	Fee
Task 3.1: Project Management	\$24,200
Task 3.2: Data Collection	\$69,200
Task 3.3: Data Summary and Report	\$70,000
Total	\$163,400

Deliverables/Schedule

As shown in the figure below, NCE will complete all project deliverables within the six-month schedule described. Should RTC desire the Board Presentation within the six-month window, that could also happen, but at present it is as RTC would like some time, between receipt of the final report, to consider any policy implications prior to the Board Presentation.

Task	Month from Notice to Proceed					
	1	2	3	4	5	6
3.1 Meeting and Project Coordination						
3.2 Data Collection						
3.3 Data Summary and Report						

**INDEMNIFICATION AND INSURANCE REQUIREMENTS FOR
PROFESSIONAL SERVICE AGREEMENTS**

2022-07-08 Version

1. INTRODUCTION

IT IS HIGHLY RECOMMENDED THAT CONSULTANTS CONFER WITH THEIR INSURANCE CARRIERS OR BROKERS TO DETERMINE THE AVAILABILITY OF THESE INSURANCE CERTIFICATES AND ENDORSEMENTS IN ADVANCE OF PROPOSAL SUBMISSION. IF THERE ARE ANY QUESTIONS REGARDING THESE INSURANCE REQUIREMENTS, IT IS RECOMMENDED THAT THE AGENT/BROKER CONTACT RTC'S FINANCE DIRECTOR AT (775) 335-1845.

2. INDEMNIFICATION

CONSULTANT agrees to defend, save and hold harmless and fully indemnify RTC, Washoe County, City of Reno, and City of Sparks, including their elected officials, officers, employees, and agents (hereafter, "Indemnitees") from and against any and all claims, proceedings, actions, liability and damages, including attorneys' fees and defense costs incurred in any action or proceeding (collectively "Damages") arising out of:

- A. Any breach of duty, neglect, error, misstatement, misleading statement or omission committed in the conduct of CONSULTANT'S profession, work or services rendered by (i) CONSULTANT, its employees, agents, officers, or directors, (ii) subconsultants (hereafter, "Subs"), or (iii) anyone else for which CONSULTANT may be legally responsible; and
- B. The negligent acts of CONSULTANT, its employees, agents, officers, directors, Subs, or anyone else for which CONSULTANT is legally responsible; and
- C. The infringement of any patent or copyright resulting from the use by the Indemnitees of any equipment, part, component or other deliverable (including software) supplied by CONSULTANT under or as a result of this Agreement, but excluding any infringement resulting from the modification or alteration by the Indemnitees of any equipment, part, component, or other deliverable (including software) except as consented to by CONSULTANT.

The Damages shall include, but are not limited to, those resulting from personal injury to any person, including bodily injury, sickness, disease or death and injury to real property or personal property, tangible or intangible, and the loss of use of any of that property, whether or not it is physically injured.

If the Indemnitees are involved in defending actions, CONSULTANT shall reimburse the Indemnitees for the time spent by such personnel at the rate the Indemnitees pay for such services.

If an Indemnitee is found to be liable in the proceeding, then CONSULTANT'S obligation hereunder shall be limited to the proportional share of the liability attributed to CONSULTANT.

In determining whether a claim is subject to indemnification, the incident underlying the claim shall determine the nature of the claim.

In the event of a violation or an infringement under paragraph 2.C above and the use is enjoined, CONSULTANT, at its sole expense, shall either (1) secure for the Indemnitees the right to continue using the materials by suspension of any injunction or by procuring a license or licenses for the Indemnitees; or (2) modify the materials so that they become non-infringing. This covenant shall survive the termination of this Agreement.

3. GENERAL REQUIREMENTS

Prior to the start of any work on a RTC project, CONSULTANT shall purchase and maintain insurance of the types and limits as described herein insuring against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by CONSULTANT, its Subs, or their employees, agents, or representatives. The cost of all such insurance shall be borne by CONSULTANT.

4. VERIFICATION OF COVERAGE

CONSULTANT shall furnish RTC with a certificate(s) of insurance, executed by a duly authorized representative of each insurer, showing compliance with the insurance requirements set forth herein, on forms acceptable to RTC. All deductibles and self-insured retentions requiring RTC approval shall be shown on the certificate. All certificates and endorsements are to be addressed to RTC's Finance Director and be received by RTC before work commences. Upon request, the CONSULTANT agrees that RTC has the right to review CONSULTANT'S and the Sub's insurance policies, or certified copies of the policies. Copies of applicable policy forms or endorsements confirming required additional insured, waiver of subrogation and notice of cancellation provisions are required to be provided with any certificate(s) evidencing the required coverage.

5. NOTICE OF CANCELLATION

CONSULTANT or its insurers shall provide at least thirty (30) days' prior written notice to RTC prior to the cancellation or non-renewal of any insurance required under this Agreement. An exception may be included to provide at least ten (10) days' written notice if cancellation is due to non-payment of premium. CONSULTANT shall be responsible to provide prior written notice to RTC as soon as practicable upon receipt of any notice of cancellation, non-renewal, reduction in required limits or other material change in the insurance required under this Agreement.

6. SUBCONSULTANTS & SUBCONTRACTORS

CONSULTANT shall include all Subcontractors and Subconsultants (referred to collectively as "Subs") as insureds under its liability policies OR shall cause Subs employed by CONSULTANT to purchase and maintain separate liability coverages and limits of the types specified herein. If any Subs maintain separate liability coverages and limits, each shall include the RTC, Washoe County, City of Reno and City of Sparks as additional insureds under its commercial general liability policy, subject to the same requirements stated herein, without requiring a written contract

or agreement between each of the additional insureds and any sub-consultant or sub-contractor. Any separate coverage limits of liability maintained by Subs shall be at least **\$1,000,000** per occurrence and at least **\$2,000,000** for any applicable coverage aggregates or the amount customarily carried by the Sub, whichever is GREATER. If any Subs provide their own insurance with limits less than required of the Contractor, Contractor shall include Subs in their coverage up to the full limits required of the Contractor. When requested by RTC, CONSULTANT shall furnish copies of certificates of insurance evidencing coverage for each Sub. The CONSULTANT need not require its non-design subcontractors to carry Professional Errors and Omissions Liability insurance.

7. DEDUCTIBLES AND SELF-INSURED RETENTIONS

Any deductibles or self-insured retentions that exceed \$25,000 per occurrence or claim must be declared to RTC's Finance Director prior to signing this Agreement. RTC is entitled to request and receive additional documentation, financial or otherwise, prior to giving its approval of the deductibles and self-insured retentions. Any changes to the deductibles or self-insured retentions made during the term of this Agreement or during the term of any policy must be declared to the RTC's Finance Director prior to the change taking effect.

8. ACCEPTABILITY OF INSURERS

Required insurance is to be placed with insurers with a Best's rating of no less than A-VII and acceptable to RTC. RTC may accept coverage with carriers having lower Best's ratings upon review of financial information concerning CONSULTANT and the insurance carrier. RTC reserves the right to require that CONSULTANT'S insurer(s) be licensed and admitted in the State of Nevada or meet any applicable state and federal laws and regulations for non-admitted insurance placements.

9. OTHER CONDITIONS

- A. Failure to furnish the required certificate(s) or failure to maintain the required insurance may result in termination of this Agreement at RTC's option.
- B. If CONSULTANT fails to furnish the required certificate or fails to maintain the required insurance as set forth herein, RTC shall have the right, but not the obligation, to purchase said insurance at CONSULTANT's expense.
- C. Any waiver of CONSULTANT's obligation to furnish such certificate or maintain such insurance must be in writing and signed by an authorized representative of RTC. Failure of RTC to demand such certificate or other evidence of full compliance with these insurance requirements or failure of RTC to identify a deficiency from evidence that is provided shall not be construed as a waiver of CONSULTANT's obligation to maintain such insurance, or as a waiver as to the enforcement of any of these provisions at a later date.

- D. By requiring insurance herein, RTC does not represent that coverage and limits will necessarily be adequate to protect CONSULTANT, and such coverage and limits shall not be deemed as a limitation on CONSULTANT's liability under the indemnities granted to RTC in this contract.
- E. If CONSULTANT'S liability policies do not contain the standard ISO separation of insureds condition, or a substantially similar clause, they shall be endorsed to provide cross-liability coverage.

10. COMMERCIAL GENERAL LIABILITY

CONSULTANT shall maintain commercial general liability (CGL) and, if necessary, commercial umbrella insurance with a limit of not less than **\$2,000,000** each occurrence. If such CGL insurance contains a general aggregate limit, it shall be increased to equal twice the required occurrence limit or revised to apply separately to this project.

CGL insurance shall be written on ISO occurrence form CG 00 01 04 13 (or a substitute form providing equivalent coverage) and shall cover liability arising from premises, operations, products-completed operations, personal and advertising injury, and liability assumed under an insured contract (including the tort liability of another assumed in a business contract).

RTC and any other Indemnitees listed in Section 2. INDEMNIFICATION of this Agreement shall be included as an additional insured under the CGL, using ISO additional insured endorsement CG 20 10 07/04 or CG 20 33 07/04 or a substitute providing equivalent coverage, and under the commercial umbrella, if any.

This insurance shall apply as primary insurance with respect to any other insurance or self-insurance programs afforded to RTC or any other Indemnitees under this Agreement.

CONSULTANT waives all rights against RTC and any other Indemnitees listed in Section 2. INDEMNIFICATION of this Agreement for recovery of damages to the extent these damages are covered by the commercial general liability or commercial umbrella liability insurance maintained pursuant to this agreement. CONSULTANT's insurer shall endorse CGL policy to waive subrogation against RTC with respect to any loss paid under the policy.

11. COMMERCIAL AUTOMOBILE LIABILITY

CONSULTANT shall maintain automobile liability and, if necessary, commercial umbrella liability insurance with a limit of not less than **\$1,000,000** each accident. Such insurance shall cover liability arising out of any auto (including owned, hired, and non-owned autos).

Coverage shall be written on ISO form CA 00 01, CA 00 05, CA 00 25, or a substitute form providing equivalent liability coverage for all owned, leased, hired (rented) and non-owned vehicles (as applicable). RTC may agree to accept auto liability for non-owned and hired (rented) vehicles under the CGL if CONSULTANT does not own or operate any owned or leased vehicles.

CONSULTANT waives all rights against RTC, its officers, employees and volunteers for recovery of damages to the extent these damages are covered by the automobile liability or commercial umbrella liability insurance obtained by CONSULTANT pursuant to this Agreement.

12. INDUSTRIAL (WORKER'S COMPENSATION AND EMPLOYER'S LIABILITY) INSURANCE

It is understood and agreed that there shall be no Industrial (Worker's Compensation and Employer's Liability) Insurance coverage provided for CONSULTANT or any Subs by RTC. The CONSULTANT, and any Subs, shall procure, pay for and maintain the required coverages.

CONSULTANT shall maintain workers' compensation and employer's liability insurance meeting the statutory requirements of the State of Nevada, including but not limited to NRS 616B.627 and NRS 617.210. The employer's liability limits shall not be less than **\$1,000,000** each accident for bodily injury by accident or **\$1,000,000** each employee for bodily injury by disease.

CONSULTANT shall provide a Final Certificate for itself and each Sub evidencing that CONSULTANT and each Sub maintained workers' compensation and employer's liability insurance throughout the entire course of the project.

If CONSULTANT, or any Sub is a sole proprietor, coverage for the sole proprietor must be purchased and evidence of coverage must appear on the Certificate of Insurance and Final Certificate.

CONSULTANT waives all rights against RTC, its elected officials, officers, employees and agents for recovery of damages to the extent these damages are covered by the workers compensation and employer's liability or commercial umbrella liability insurance obtained by Tenant pursuant to this agreement. CONSULTANT shall obtain an endorsement equivalent to WC 00 03 13 to affect this waiver.

13. PROFESSIONAL ERRORS AND OMISSIONS LIABILITY

CONSULTANT shall maintain professional liability insurance applying to liability for a professional error, omission, or negligent act arising out of the scope of CONSULTANT'S services provided under this Agreement with a limit of not less than **\$1,000,000** each claim and annual aggregate. CONSULTANT shall maintain professional liability insurance during the term of this Agreement and, if coverage is provided on a "claims made" or "claims made and reported" basis, shall maintain coverage or purchase an extended reporting period for a period of at least three (3) years following the termination of this Agreement.



REGIONAL TRANSPORTATION COMMISSION

Metropolitan Planning • Public Transportation & Operations • Engineering & Construction

Metropolitan Planning Organization of Washoe County, Nevada

Meeting Date: 4/19/2024

Agenda Item: 4.6.2

To: Regional Transportation Commission

From: Jelena Williams, Financial Manager

SUBJECT: Loomis Armored Car Services-Amendment 3

RECOMMENDED ACTION

Approve Amendment No. 3 to the contract with Loomis Armored US, LLC for Armored Car Services for cash pick-up and delivery, in the amount of \$833,005, for a new total not to-exceed amount of \$2,587,511.

BACKGROUND AND DISCUSSION

See attached Amendment for Background and Discussion.

FISCAL IMPACT

Project appropriations are included in the FY 2025 Budget.

PREVIOUS BOARD ACTION

- 05/20/2019 Approved an amendment with Loomis Armored US, LLC to extend the term to June 30, 2024, in an amount not to exceed \$754,586 for the provision of Armored Car Services; authorized the RTC Executive Director to execute the amendment.

 - 03/15/2019 Approved an amendment with Loomis Armored US, LLC to extend the term of option year two of their current agreement to June 30, 2019. The amendment adds approximately \$30,000 for a new not-to-exceed amount of \$143,000; authorized the RTC Executive Director to execute the amendment.
-

AMENDMENT NO. 3

The Regional Transportation Commission of Washoe County (“RTC”) and Loomis Armored US, LLC, (“Consultant”) entered into an agreement dated April 2013 as previously amended by Amendment No. 1 dated March 30, 2019 (the “Agreement”). As previously amended by Amendment No. 2 dated May 15, 2019 (the “Agreement”). This Amendment No. 3 is dated and effective as of July 1, 2024.

RECITALS

WHEREAS, the parties have determined that there is a need to amend the Agreement to extend the term; and

WHEREAS, This Amendment 3 extends the current term ending on June 20, 2024 to June 30, 2029.

NOW, THEREFORE, in consideration of the mutual promises of the parties and other good and valuable consideration, the parties do agree as that the compensation per \$1,000 deposited will be as follows:

*Fiscal Year	Rate per \$1000 deposited	Not to Exceed amount by Fiscal Year
Fiscal Year 2025	36.43 per \$1000 deposited	\$160,073.00
Fiscal Year 2026	37.16 per \$1000 deposited	\$163,281.00
Fiscal Year 2027	37.90 per \$1000 deposited	\$166,523.00
Fiscal Year 2028	38.66 per \$1000 deposited	\$169,872.00
Fiscal Year 2029	39.43 per \$1000 deposited	\$173,256.00
5 Year total		\$833,005.00

*Fiscal year runs from July 1st to June 30th

All other provisions of the Agreement shall remain in full force and effect.

IN WITNESS WHEREOF, the parties hereto have made and executed this amendment.

REGIONAL TRANSPORTATION COMMISSION
OF WASHOE COUNTY

By: _____
Bill Thomas, AICP, Executive Director

LOOMIS ARMORED US, LLC

By: _____
Andy Del Soldato, Branch Manager



REGIONAL TRANSPORTATION COMMISSION

Metropolitan Planning • Public Transportation & Operations • Engineering & Construction

Metropolitan Planning Organization of Washoe County, Nevada

Meeting Date: 4/19/2024

Agenda Item: 4.6.3

To: Regional Transportation Commission

From: Laura Freed, Director, Administrative Services

SUBJECT: Personnel Rules Amendment

RECOMMENDED ACTION

Approve modifications to RTC Personnel Rule 5.7 regarding employee pay-for-performance, to allow the Board to later consider and approve an employee cost-of-living adjustment and performance-based salary increases for this fiscal year during its final review of the FY 2025 budget.

BACKGROUND AND DISCUSSION

The current version of Personnel Rule 5.7 outlines a pay-for-performance mechanism whereby the RTC Board of Commissioners provides an overall rating for the agency, and that score is combined with individual employee evaluation scores as well as inflationary data to award employees a share of the annual pay-for-performance pool. The pool is established each year by the Board via the budget authorization process. However, one of the findings of the culture study completed last year was that employees were confused by the pay-for-performance calculation and perceived it as unfair, since the pay-for-performance pool is proportional. This means that an employee who receives more of an award causes another employee, who may have a similar rating, to receive less. In other words, employees felt that the current pay-for-performance structure was a zero-sum game. A follow up survey of employees confirmed the findings of the culture study. Furthermore, the inflation data was rolled into the pay-for-performance calculation, and employees were not always aware that inflationary adjustments were rolled into the pay-for-performance pool. One of the findings of the culture study was that performance ratings should be separate from any inflationary adjustments to the salary schedule, such as a cost-of-living adjustment (COLA).

The consultant who performed the culture study recommended revamping the pay-for-performance system. The first step in that revamp is to adjust the current system to a temporary approach for Fiscal Year 2025 only. Staff expects the upcoming classification and compensation study to provide more permanent recommendations for employee pay for performance. However, the Executive Director wishes to rapidly implement recommendations from the culture study and be responsive to staff concerns.

For this current fiscal year, the Executive Director is recommending that the RTC Board separately approve a COLA), and a performance-based salary increase tied to each employee's overall performance rating. The Executive Director will make that recommendation as part of the Board's final review of the FY 2025 budget. As part of the annual agency budget review, the Executive Director would provide recommendations regarding the percentages to be used for the COLA, and each overall performance rating category. The proposed budget for FY 2025 would include funding for both the COLA and performance-based salary increases based on the percentages recommended by the Executive Director.

This item and its proposed modifications to Personnel Rule 5.7 are designed to allow for the Board to approve the Executive Director's recommendation during its review of the FY 2025 budget. Every employee would receive the COLA for inflation because it is an economic adjustment. Employees who receive an overall performance rating of "fully successful" or "exceptional" would receive a performance-based salary increase equal to percentages tied to those rating categories. Only the employees who participate in common review would be eligible for the performance-based increases, because employees hired after January 1 of a fiscal year are too new to participate in the common review process and have their performance evaluated.

If the Board approves this item, the Executive Director will proceed with this proposed approach for this fiscal year. If the Board does not approve this item, RTC will use the pay-for-performance mechanism in the current version of Personnel Rule 5.7 for FY 2025.

The item supports the FY 2024 RTC Goals, "Complete Climate Study of the Agency as a whole" and "Update Personnel Rules and Board By-laws, including a documented process for Executive Director annual review."

FISCAL IMPACT

There is no fiscal impact related to this action.

PREVIOUS BOARD ACTION

4/29/2022 Approved modifications to RTC Personnel Rule 5.7 (Salary Adjustments and Pay-for-Performance).

5. When an employee transfers to a position in another class with the same pay band, the employee shall be entitled to the corresponding salary in the same range. Any exception may be approved by the Executive Director upon written justification of the Appointing Authority.

5.7 Salary Cost of Living Adjustments and Pay for Performance Pay

1. Eligible RTC employees, ~~both full-time and part-time, who receive an employee performance evaluation rating of "fully successful" or above, may be eligible for an annual pay for performance award. An employee who is rated below a "fully successful" may be ineligible for an annual pay for performance award.~~ receive annual performance evaluations. In the evaluation process, employees receive an overall performance rating of either: (1) "not meeting expectations/needs improvement"; (2) "fully successful"; or (3) "exceptional." RTC employees, both full-time and part-time, who receive an overall performance ratings of "fully successful" or "exceptional" may be eligible for a performance-based salary increase tied to their overall performance rating. An employee who is rated "not meeting expectations/needs improvement" is ineligible for a performance-based salary increase. The RTC Board may approve, as part of its review of the annual agency budget, funding for performance-based salary increases. The funding will be based on a recommendation from the Executive Director to the Board regarding the percentages to be used for each overall performance rating.
2. ~~A pay for performance (PFP) pool will be established by the RTC Board of Commissioners (Commissioners) prior to the beginning of each fiscal year (FY) through the budget authorization document. The Commissioners will also set agency performance goals prior to the beginning of each FY. The Commissioners' agency rating may be applied to eligible employees as a discretionary potential increase or decrease to the employee's PFP pool. The Commissioners may, at the same time the PFP pool is established, adjust the salary ranges for the non-bargaining unit effective July 1 of the next FY based on market data.~~
3. ~~After the agency rating by the Commission, the PFP pool may be adjusted and will be divided among departments by proportion of eligible employee salaries measured at the start of the applicable FY. Each Director will therefore have a PFP pool to award to their employees based on employee performance for the prior FY. The Director may award each eligible employee with a minimum of .6 and a maximum of 1.5 for each employee's allocated portion of the PFP pool. The PFP pool is a set amount and will not change.~~
4. ~~If after common review, an employee receives a rating of "exceptional" or is identified to have performed in an exceptional manner, the employee may receive an award of up to two percent (2%) in addition to any PFP pool award. The final additional amount will be decided by the Executive Director. This additional award will not come from the PFP pool and will be awarded under the fiscal discretion of the Executive Director.~~
2. Any award under the PFP pool will raise the eligible employee's RTC employees, both full-time and part-time, may be eligible for a cost-of-living adjustment (COLA) to

their salary. The RTC Board may approve, as part of its review of the annual agency budget, the percentage of the COLA. The COLA will apply to all RTC employees irrespective of their participation in the common review process or their overall performance rating. The COLA percentage will reflect a recommendation from the Executive Director to the Board based on inflation data.

3. Any COLA will raise employees' salary rates and salary ranges effective July 1st of the fiscal year for which it was approved.

5.4. Any performance-based salary increase will raise the employee's salary rate effective July 1st of the next FY by the amount of the employee's total PFP award fiscal year for which it was approved, unless the employee is at the maximum of his/her/their salary range, in which case the employee's PFP award will performance-based salary increase will instead be considered a bonus to the extent it exceeds the particular employee's salary range.

6.5. A probationary employee hired on or after January 1st of the FY fiscal year is not eligible for an annual pay-for-a performance award-based salary increase. A probationary employee hired prior to January 1st and who receives a rating of "fully successful" or above, "exceptional" is eligible to participate in the PFP pool on for a prorated basis, performance-based on hire date salary increase.

7.6. When a salary adjustment is delayed solely through administrative or clerical error, the adjustment shall be made effective as of the date it was properly due.

5.8 Special Salary Adjustments

1. Special salary adjustments may be approved in order to:
 - i. Meet difficult recruiting problems or to obtain a person with markedly superior qualifications.
 - ii. Give an employee a five percent (5%) pay increment in recognition for carrying responsibilities beyond those required for the class as a whole, such as supervising persons in the same class on a continuing basis for a portion of their time, or working under considerably less supervision than is typical in the class.
 - iii. Give an employee a temporary increase in pay for assuming a substantial portion of the major duties of another who is in a higher pay band for a temporary period of time, i.e., "acting pay" while a supervisor is on leave, etc. The employee must be performing the duties for a minimum of five (5) consecutive days to be eligible for the temporary increase. The amount will generally be equal to the percentage difference between the maximum salary of the two pay bands, not to exceed ten percent (10%), or to the entry level of the new pay band, whichever salary is greater. Whether the employee is performing a substantive portion of the major duties will be determined by the supervisor with the approval of the Executive Director. The amount to be



REGIONAL TRANSPORTATION COMMISSION

Metropolitan Planning • Public Transportation & Operations • Engineering & Construction

Metropolitan Planning Organization of Washoe County, Nevada

Meeting Date: 4/19/2024

Agenda Item: 4.6.4

To: Regional Transportation Commission

From: Bill Thomas, Executive Director

SUBJECT: Revised RTC Bylaws

RECOMMENDED ACTION

Approve revised bylaws for the Regional Transportation Commission of Washoe County.

BACKGROUND AND DISCUSSION

RTC has authority to adopt bylaws for the administration of its affairs. NRS 277A.210. The bylaws are one of the first materials given to Commissioners during their onboarding process, and are also an important document for RTC staff. This year, the Board directed the Executive Director to update the bylaws as part of the FY 2024 RTC Goals.

RTC's General Counsel drafted these revised by-laws in consultation and cooperation with the Director of Administrative Services and the Executive Director. Over the past year or two, Commissioners and staff have identified specific topics that could be better addressed through amendments to the current bylaws. The following lists the topics that have been addressed, and how the proposed revisions would address them:

1. There were comments/questions about the role of Commissioner alternates, and whether or not it is necessary for alternates to attend meetings in the event a Commissioner cannot attend a meeting. In response, the bylaws have been revised to reflect that alternates will only be asked to attend if a Commissioner will be unable to attend meetings for an extended or indefinite period of time, or if the Executive Director determines that attendance is required to achieve a quorum. See Art. II(D).
2. There were comments/questions about the historical practice of the Chair having a unique role in the annual performance evaluation of the Executive Director. In response, the bylaws have been revised to specifically reflect that it is a duty of the Chair position. See Art. III(B)(2). As a related effort, Staff has also prepared a new policy which addresses the Executive Director position and the roles of the Board and Chair in the processes for recruitment, hiring and evaluation of the position. That policy is being brought to the Board for approval at this meeting.

3. There were comments/questions about the process for filling a vacancy in the Chair position, and whether or not a vacancy in the Chair position must be filled on a rotating basis (i.e., by a Commissioner from Washoe, Reno, and Sparks in that order). The bylaws were silent on how a vacancy would be handled. In response, the bylaws have been revised so that the Vice-Chair would automatically fill the vacant Chair position for the remainder of the term and the Board would then elect a new Vice-Chair for the remainder of the term. See Art. III(D).
4. There were comments/questions about the process for Commissioners to request or insist that an item be placed on a Board meeting agenda. In response, the bylaws have been revised to clarify that Commissioners can request that the Executive Director place an item on the agenda, but that the Board must take action to place the item on an agenda if the Executive Director believes it is unnecessary or inappropriate to place the requested item on an agenda. See Art. IV(C).
5. There were comments/questions about the scope of the organizational policies and rules that the Board approves, as opposed to those that the Executive Director can approve. In response, the bylaws have been revised to add an Article to expressly address that topic. See Art. VI.

This review also presented an opportunity to reorganize and reformat the bylaws, and make other minor or non-substantive revisions, in order to improve accuracy and clarity. Examples of those types of proposed revisions include citations to legal authority, language that more closely aligns with current statutes, removal of unneeded provisions, consistent use of terminology, and articles organized to include all provisions related to the subject matter addressed in the article.

Attached is a clean version of the proposed revised bylaws dated April 19, 2024, with comment bubbles pointing out the articles, sections, and in some cases sentences, that were revised. The existing bylaws that will be replaced are also attached for review if needed. Because of the reorganization and reformatting revisions, a Word redline comparison of the current bylaws to the revised bylaws was not helpful and is not attached.

The item supports the FY 2024 RTC Goal, "Update Personnel Rules and Board By-laws, including a documented process for Executive Director annual review."

FISCAL IMPACT

There is no fiscal impact related to this action.

PREVIOUS BOARD ACTION

11/18/2016 Approved updates to the Bylaws of the RTC Board of Commissioners submitted with this agenda item.

**BYLAWS
REGIONAL TRANSPORTATION COMMISSION
OF WASHOE COUNTY**

April 19, 2024

Article I – Power and Authority

Commented [AS1]: This article was revised for purposes of accuracy and clarity. There are no substantive changes to the RTC's actual power and authority.

A. Formation.

The Regional Transportation Commission of Washoe County (the “RTC”) was formed pursuant to Nevada law, Washoe County ordinance, and the agreement of Washoe County, the City of Reno, and the City of Sparks.

B. Purpose.

The RTC has the powers granted to it by Nevada law. The RTC is responsible for three major transportation programs: the Regional Street and Highway Program; the Public Transportation Program; and the Transportation Planning Program. The foundation of the Transportation Planning Program is the Regional Transportation Plan which serves as the region’s long-range transportation plan for purposes of state and federal planning law. NRS Chapter 278; Title 23 U.S.C.; Title 49 U.S.C. RTC is the designated Metropolitan Planning Organization for the region for purposes of federal planning law.

C. Bylaws.

The RTC may adopt bylaws for the administration of its affairs. NRS 277A.210.

Article II – Board of Commissioners

Commented [AS2]: Various existing provisions were reorganized into this Article for purposes of accuracy and clarity.

A. Commissioners.

1. As mandated in NRS 277A.180, the RTC’s Board of Commissioners (the “RTC Board”) shall be comprised of five (5) representatives (“Commissioners”) selected by Washoe County, the City of Reno, and the City of Sparks from among the members of their governing bodies (each a “Public Body”), as follows:
 - a. Two appointed by the Washoe County Board of Commissioners from among its members.
 - b. Two appointed by the Reno City Council from among its members; and
 - c. One appointed by the Sparks City Council from among its members.
2. Commissioners may be reappointed by a Public Body for successive terms. There are no limits on the number of terms a Commissioner may serve.

B. Terms.

1. The term of each Commissioner shall be two years. NRS 277A.180(4).
2. In accordance with NRS 277A.180(4), the terms of the Commissioners have been established and staggered as follows:
 - a. One Commissioner selected by the Washoe County Board of County Commissioners and one selected by the Reno City Council must serve from January 1 of an even-numbered year until the next ensuing December 31 of an odd-numbered year.
 - b. One Commissioner selected by the Washoe County Board of County Commissioners and one selected by the Reno City Council must serve from January 1 of an odd-numbered year until the next ensuing December 31 of an even-numbered year.
 - c. The Commissioner selected by the Sparks City Council must serve from January 1 of an odd-numbered year until the next ensuing December 31 of an even-numbered year.
3. Vacancies must be filled for the unexpired term. NRS 277A.180(4).

C. Removal.

Unless otherwise provided by the laws, ordinances or bylaws applicable to the Public Body which appointed the Commissioner, each Public Body may remove a Commissioner from their office. The RTC Board has no power to remove a Commissioner from their office.

D. Alternates.

A Public Body may designate one or more alternates from among its members to attend RTC Board meetings and vote if one or more of the Commissioners appointed by that Public Body will be unable to attend meetings for an extended or indefinite period of time, or if the Executive Director determines that attendance of an alternate is required to achieve a quorum for a meeting.

Commented [AS3]: This section was amended to specify a more specific role for alternates, rather than implying alternates need to attend in place of a Commissioner whenever a Commissioner cannot attend. It was also amended to remove unnecessary language about how a "Public Body" appoints alternates.

E. Vacancies.

A vacancy on the RTC Board shall be deemed to exist in the case of the death of a Commissioner, the resignation of a Commissioner from the RTC Board or from the Public Body that appointed the Commissioner, or upon the Commissioner's removal from their office during a term. A vacancy on the RTC Board may be filled by an alternate designated by the Public Body, or by a member of the Public Body specifically appointed to fill the vacancy.

Article III – Chair and Vice Chair

A. Election.

At the RTC Board's first meeting after January 1 of odd-numbered years, the RTC Board shall elect a Chair and Vice Chair, both to serve a two-year term until December 31 of the next even-numbered year. The Chair and Vice Chair shall continue to serve in their positions after December 31 until the election is held. The office of Chair must be chosen from the Commissioners from Washoe County, the City of Reno, and the City of Sparks on a rotating basis, in that order.

B. Chair.

1. The Chair shall preside at all meetings of the RTC Board and perform such other duties commonly incident to the office of the Chair.
2. The Chair shall manage the annual performance evaluation of the Executive Director pursuant to RTC Board adopted policies or rules, and other RTC Board action.
3. The Chair shall perform such other duties designated to the Chair in these bylaws, RTC Board adopted policies or rules, or other RTC Board action.

C. Vice Chair.

The Vice Chair shall assume and perform the duties of the Chair in the absence or disability of the Chair.

D. Vacancies.

In the event of a vacancy in the office of Chair, the Vice Chair shall fill the vacancy for the remainder of the term of the office, in which case the RTC Board shall elect a Commissioner to fill the vacancy in the office of Vice Chair. In the event of vacancies in both the offices of Chair and Vice Chair, the RTC Board shall elect Commissioners to fill the vacancies for the remainder of the terms of the offices.

Article IV – Board Meetings

A. Regular and Special Meetings.

The RTC Board shall meet monthly on the third Friday of the month in the morning or such other day and time of the month as the RTC Board designates. The Executive Director or the Chair have the power to cancel or reschedule meetings. The Executive Director or the Chair may call a special meeting of the RTC Board.

B. Agendas and Notices.

The agendas and notices for RTC Board meetings shall comply with the Nevada Open Meeting Law, and any other applicable law. NRS Chapter 241.

Commented [AS4]: Various existing provisions were reorganized into this Article for purposes of accuracy and clarity.

Commented [AS6]: This sentence was added to specifically reflect that this is a duty of the Chair position.

Commented [AS8]: Various existing provisions were reorganized into this Article for purposes of accuracy and clarity.

Commented [AS9]: This sentence was amended to grant authority to the Executive Director (in addition to the Chair), and to remove the previous requirement that meetings could only be cancelled in the event of an emergency.

Commented [AS10]: This section was amended to grant authority to the Executive Director (in addition to the Chair), and to remove the unnecessary previous authority for "two other Commissioners" to call a special meeting.

C. Placing Items on Agendas.

The Executive Director shall prepare the agenda for each meeting and may consult with the Chair to determine which items to place on the agenda. Commissioners may request that the Executive Director place an item on an agenda. If the Executive Director determines that a requested item would conflict with, or depart from, prior action or direction from the RTC Board but the Commissioner insists on the request, the Executive Director shall place the request on the agenda for the next meeting and the RTC Board may then vote to place the item (or a similar item) on a future agenda.

Commented [AS11]: This was amended to remove a provision that stated any Commissioner could place an item on an agenda because that may not always be practical or manageable for the Board or Executive Director.

Commissioners can always informally request that an item be included on the agenda. This section was amended to add language to describe a situation that might not be possible to resolve informally, and how it would be handled.

D. Quorum.

Except as provided in subsection IV(G) below, a majority (3) of the authorized number of Commissioners (5) is necessary to constitute a quorum for the transaction of business. NRS 241.015.

E. Voting.

Each Commissioner has one vote on all matters coming before the RTC Board. Except as provided in subsection IV(G) below, all actions of the RTC Board must be approved by a majority vote (3) of the authorized number of Commissioners (5). NRS 241.0355.

F. Motions.

All motions made by a Commissioner must be seconded in order to be considered by the RTC Board. A motion to reconsider an action taken at the meeting may be made at the meeting at which the action was taken only by a Commissioner who voted on the prevailing side.

G. Abstentions and Quorum.

If a Commissioner declares to the RTC Board that they will abstain from voting because of the requirements of NRS 281A.420, the necessary quorum to act upon and the number of votes necessary to act upon the matter is reduced as though the abstaining Commissioner was not a member of the RTC Board. i.e., as though the authorized number of Commissioners is 4 instead of 5. NRS 241.0355. As a practical matter, the necessary quorum to act and the number of votes necessary to act will only be reduced if two or more Commissioners abstain on the same agenda item since a majority of 4 is still 3 for purposes of subsections IV(D) and (E) above.

Commented [AS12]: This section was amended to reflect changes to the law. Language was added to clarify the limited situation in which it would affect quorum or voting requirements.

Article V - Executive Director

A. Position.

The RTC Board shall appoint an Executive Director to direct, manage and lead the administrative and technical activities of the RTC.

Commented [AS13]: This article was added to clarify the Board's general role and responsibilities with regard to the Executive Director position. The roles and responsibilities would be defined in a Board adopted policy.

B. Performance Evaluations.

The RTC Board shall conduct an annual performance evaluation of the Executive Director. The RTC Board may consider the conduct or performance of the Executive Director at other times in its discretion.

C. Vacancy.

In the event of a vacancy in the Executive Director position, the Deputy Executive Director (if any) shall perform the duties of the Executive Director. At its discretion, the RTC Board may appoint another staff person to serve as the interim Executive Director until a new Executive Director is hired. If there is no Deputy Executive Director, the director level employee with the longest tenure at RTC shall perform the duties of the Executive Director until the RTC Board appoints an interim Executive Director.

Commented [AS14]: This section was added to clarify authority in the event of a vacancy.

Article VI - Policies and Rules

A. RTC Board.

The RTC Board shall adopt policies and rules regarding the following:

1. The recruitment, hiring, and evaluation of the Executive Director position.
2. The administration of RTC transportation programs.
3. The financial management of the RTC.
4. The acquisition and disposal of property by the RTC.
5. The organizational structure of the RTC, employee compensation schedules and benefits, and other material terms and conditions of employment with the RTC.
6. Other policies and rules required by law or recommended by the Executive Director.

Commented [AS15]: This section was added to clarify the scope of the Board's role and responsibilities with regards to policies, including a policy related to the Executive Director position. There is currently no written guidance as to which policies and rules need to go to the Board, and which do not.

B. Executive Director.

The Executive Director, after consultation with legal counsel, may approve other policies and rules necessary for the administrative and technical activities of the RTC.

Article VII - Order of Precedence

These bylaws shall govern the RTC in all cases in which they are applicable. If and when needed to supplement these bylaws, Robert's Rules of Order may be used as guidance in the transaction of business by the RTC Board. If these bylaws conflict with any other policies or rules approved by the RTC Board, the provisions of these bylaws control. If these bylaws conflict with any changes in law, that law shall control and these bylaws shall be amended.

Commented [AS16]: This article was amended to reflect that Robert's Rules of Order can be used as guidance, but that they do not "govern" in an unnecessary or overly prescriptive way.

Article VIII - Review and Amendments of Bylaws

The RTC Board shall review these bylaws as needed in its discretion or at the recommendation of the Executive Director. These bylaws may be amended only by a vote of the RTC Board.

Commented [AS17]: This is a typical article included in bylaws. This was added to reflect that the bylaws can be reviewed as needed, and would need to be amended by a normal vote of the Board.

**BYLAWS
REGIONAL TRANSPORTATION COMMISSION
OF WASHOE COUNTY**

I. Power and Authority.

A. The Regional Transportation Commission of Washoe County ("RTC" or "Commission") is formed pursuant to the following:

1. Nevada Revised Statutes ("NRS") Chapter 277A;
2. NRS Chapter 373 regarding County taxes on fuel;
3. NRS Chapter 377A concerning the County-imposed sales tax; and
4. The Washoe County Motor Fuel Tax Ordinance, Washoe County Code Sections 20.321 through 20.431, inclusive.

B. The RTC shall have the powers given it by Nevada law, including, but not limited to, the statutes and ordinances noted in subparagraph (A), which powers include: provide for a public transportation system; provide for the construction, maintenance and repair of public roads; paying the principal and interest on bonds issued to provide money for the cost of a public transportation system and the construction, maintenance and repair of public roads; receive and disburse public funds; perform its duties as the metropolitan planning organization pursuant to 23 U.S.C. Section 134 and 49 U.S.C. Section 303; and apply for and receive funds from the federal government for all these purposes.

II. The Commission.

A. Number and Qualification of Commissioners.

The number of RTC Commissioners ("Commissioners") shall be five (5), composed of the following number of Commissioners selected by the following cities and county from among the members of their city councils or county commission (collectively, "Public Body"):

1. Two members appointed by the Reno City Council;
2. One member appointed by the Sparks City Council; and
3. Two members appointed by the Washoe County Board of Commissioners.

Each Commissioner, including the Chair and Vice Chair, has one vote on all matters coming before the Commission. The Commission has no power to remove one of its members.

B. Terms.

One Commissioner selected by the Washoe County Commission and one selected by the Reno City Council must serve on the Commission until the next ensuing December 31 of an even-numbered year. One Commissioner selected by the Washoe County Commission and one selected by the Reno City Council must serve until the next ensuing December 31 of an odd-numbered year. The Commissioner selected by the Sparks City Council shall serve until the next ensuing December 31 of an even-numbered year. All Commissioners shall serve a term of two years.

III. Commission Procedure.

A. Chair and Vice Chair.

At the Commission's January meeting of odd-numbered years, the Commission shall elect a Chair and Vice Chair, both to serve until December 31 of the following year. The office of Chair must be chosen from the Commissioners from Washoe County, Reno and Sparks on a rotating basis, in that order. The Chair, when present, shall preside at all meetings of the Commission and perform such other duties commonly incident to the office of the Chair or designated to the Chair by the Commission. The Vice Chair shall assume and perform the duties of the Chair in the absence or disability of the Chair.

B. Quorum; Voting.

Except as provided in subsection III(I) below, a majority of the authorized number of Commissioners (including vacant positions) is necessary to constitute a quorum for the transaction of business except to adjourn the meeting. Except as provided in subsection III(I) below, all acts, decisions and resolutions of the Commission must be adopted by a majority vote of the authorized number of Commissioners (including vacant positions). An abstention does not count as a vote in favor of an action.

C. Adjournment.

A quorum of the Commissioners may adjourn any Commissioners' meeting. In the absence of a quorum, a majority of the Commissioners present at any meeting of the Commission, either regular or special, may adjourn the meeting.

D. Removal.

Unless otherwise provided by the laws, ordinances or bylaws applicable to the Public Body which appointed the Commissioner, any Commissioner may be removed from his or her office of Commissioner by the action of the Public Body which appointed that Commissioner.

E. Alternates.

A Public Body may appoint one or more alternate Commissioners from among its members to attend a Commission meeting and vote if one or more of the Commissioners appointed by that Public Body are unable to attend a Commission meeting. The Public Body may (i) appoint an alternate to attend one Commission meeting in the place of one of their Commissioners, (ii) appoint an

alternate to substitute for one of their Commissioners for the term of the Commissioner, (iii) choose which of the designated alternates shall attend a particular Commission meeting or designate a method for choosing which alternate(s) will attend a Commission meeting, or (iv) rank alternates or assign alternates to attend Commission meetings on a rotating basis. The Public Body may remove and replace alternates.

F. Vacancies.

A vacancy on the Commission shall be deemed to exist in the case of the death of a Commissioner, the resignation of a Commissioner from the Commission or from the Public Body that appointed the Commissioner or upon the Commissioner's removal from the Commission by the Governing Body which chose the Commissioner. A vacancy on the Commission may be filled by an alternate designated by the Governing Body which chose the Commissioner whose seat is vacated or by a member of that Governing Body chosen specifically to fill that vacancy.

G. Meetings.

The Commission shall meet monthly on the third Friday of the month in the morning or such other day and time of the month as the Commission designates. The Chair or, if the Chair is disabled, the Vice Chair, has the power to cancel meetings if, in that person's judgment, an emergency requires such cancellation. The Chair or any two other Commissioners may call a special meeting of the Commission.

H. Motions.

All motions made by a Commissioner must be seconded in order to be considered by the Commission. No motion requires a two-thirds vote of the Commissioners to be adopted by the Commission. No action on a motion may be taken unless (1) the motion has been placed on the agenda for the meeting, and (2) it is listed on the agenda as one upon which action may be taken, all in compliance with the law and these bylaws. A motion to reconsider an action taken at the meeting may be made at the meeting at which the action was taken only by a Commissioner who voted on the prevailing side. Such a motion to reconsider may be made by any Commissioner and voted on at any later meeting so long as the action has been placed on the agenda for that meeting in compliance with the law and these bylaws.

I. Abstentions and Quorum.

If a Commissioner declares to the Commission that the Commissioner will abstain from voting because of the requirements of NRS 281A.420, the necessary quorum to act upon, and the number of votes necessary to act upon, the matter is reduced as though the abstaining Commissioner was not a member of the Commission but only if, as provided in NRS 241.0355, before abstaining from the vote, the Commissioner receives and discloses to the Commission the written opinion of legal counsel to the Commission that states the abstention is required pursuant to NRS 281A.420. The opinion must set forth with specificity the factual circumstances and analysis leading to the conclusion that the abstention is required.

J. Robert's Rules of Order; Other Policies.

Except as provided by the Nevada Revised Statutes and as may be provided by these Bylaws, Robert's Rules of Order shall govern the transaction of business by the Commission. If these Bylaws conflict with any other policy or regulation of the Commission approved before these Bylaws are approved, the provisions of these Bylaws shall prevail.

IV. Agenda and Notices.

A. Agenda for Meetings.

Written notice of all meetings of the Commission must be given at least three (3) working days before the meeting. The notice must include the time, place and location of the meeting, a list of locations where notice has been posted and an agenda. The agenda must set forth a clear and complete statement of the topics scheduled to be considered during the meeting, a list describing the items on which action may be taken clearly denoting that action might be taken on those items, a period devoted to comments by the general public, if any portion of the meeting will be closed to consider the character, misconduct or professional competence of a person, the name of the person whose character, misconduct or professional competence will be considered and, if the Commission will consider administrative action against a person, the name of the person. No action may be taken on a matter raised by comments from the general public until the matter has been specifically included on the agenda as an item upon which action may be taken.

B. Placing Items on Agenda.

Any Commissioner and the Executive Director may place any item on the agenda for a Commission meeting.

C. Public Notice.

Public notice of all meetings of the Commission shall be posted at the RTC administrative offices at 1105 Terminal Way, Reno, Nevada, or such other building at which the meeting is held, on the Nevada Public Notice Website (www.notice.nv.gov) and at not less than three other separate prominent places within the jurisdiction of the Commission, all not later than 9:00 a.m. of the third working day before the meeting. The Commission shall provide a copy of the public notice to any person who has requested notices of Commission meetings by regular mail or electronically as provided in NRS 241.020(3)(b) and must post a notice on the RTC's website and on the Nevada Public Notice website.

D. Copies of Agenda and Supporting Material.

The RTC must supply at no charge a copy of the agenda for each meeting of the Commission and supporting material as provided in NRS 241.020(5) and (6).



REGIONAL TRANSPORTATION COMMISSION

Metropolitan Planning • Public Transportation & Operations • Engineering & Construction

Metropolitan Planning Organization of Washoe County, Nevada

Meeting Date: 4/19/2024

Agenda Item: 4.6.5

To: Regional Transportation Commission

From: Bill Thomas, Executive Director

SUBJECT: New Management Policy regarding the Executive Director Position

RECOMMENDED ACTION

Approve RTC Management Policy P-01, Executive Director Position.

BACKGROUND AND DISCUSSION

The RTC Board of Commissioners appoints an Executive Director to direct, manage and lead the administrative and technical activities of the RTC. The position, and the powers and duties of the position, appear to have been originally created by Washoe County ordinance. RTC's current practice is that the Board approves a job description for the position, the salary and compensation for the position, and enters into an employment contract with the person that it appoints.

There are no RTC policies or rules regarding the position or the processes that RTC uses for activities such as recruitment, hiring, performance evaluations, and other activities related to the position. During the last annual performance evaluation of the Executive Director, the Board expressed its desire for a more clearly defined process for annual reviews. The Board later approved FY 2024 RTC Goal, "Update Personnel Rules and Board By-laws, including a documented process for Executive Director annual review."

This policy was developed in conjunction with proposed amendments to RTC's bylaws, which are also being brought to the Board for approval at this meeting. The proposed bylaws state that the Board shall appoint an Executive Director and conduct annual performance evaluations. Art. V. The proposed bylaws state that the Board will adopt policies and rules regarding the Executive Director position. Art. VI, Sec. A. The proposed bylaws state that the Chair shall manage the annual performance evaluation of the Executive Director pursuant to those policies and rules. Art. III, B.

RTC's General Counsel drafted this policy in consultation and cooperation with the Director of Administrative Services and the Executive Director. The following summarizes the topics that have been addressed, and how the policy would address them:

1. **Recruitment and Hiring:** The policy establishes a recruitment and hiring process that RTC will follow unless the Board elects in its discretion to establish a different process for a specific recruitment and hiring. The process defines steps to be taken prior to a recruitment, during the evaluation of candidates, and as part of the Board's selection of a candidate and approval of an employment contract.
2. **Performance Standards and Goals:** The policy documents that the Executive Director's employment contract will reflect performance standards for the position, and that the Board approves annual goals for the position. The policy reflects that those standards and goals are used in the Board's evaluation of the Executive Director's performance.
3. **Annual Performance Evaluation:** The policy establishes an annual performance evaluation process. The process includes the following steps: (1) the Executive Director prepares a self-evaluation; (2) the Chair and another Commissioner meet and confer with the Executive Director; (3) the Chair presents an evaluation of the Executive Director's performance and a recommendation regarding any adjustments to the employment contract to the Board; and (4) the Board votes as to whether the Executive Director's performance meets or falls below expectation for the year, and approves any adjustments to the employment contract.
4. **Other Actions:** The policy reflects that the Board may consider the conduct or performance of the Executive Director at other meetings in its discretion.

This policy is intended to provide established processes in the areas described above, but it also reflects that the Board retains discretion to deviate from them and take other action it deems necessary.

This item supports the FY 2024 RTC Goal, "Update Personnel Rules and Board By-laws, including a documented process for Executive Director annual review."

FISCAL IMPACT

There is no fiscal impact related to this action.

PREVIOUS BOARD ACTION

There has been no previous Board action taken.

MANAGEMENT POLICY

SUBJECT: EXECUTIVE DIRECTOR POSITION

I. PURPOSE

It is the policy of the Regional Transportation Commission (RTC) to define procedures and processes regarding the recruitment, hiring and evaluation of the Executive Director position.

II. SCOPE

- Public
- X Board Members
- X RTC Officers
- X RTC Employees

Other: _____

III. DEFINITIONS

- A. Board – The RTC Board of Commissioners.
- B. Chair – The Chair of the RTC as elected by the Board pursuant to RTC’s bylaws.
- C. Executive Director – The person appointed by the Board to direct, manage and lead the administrative and technical activities of the RTC pursuant to RTC’s bylaws.

IV. POLICY

- A. Recruitment and Hiring
 - 1. Unless otherwise directed by Board action, a team of staff persons and outside consultants will conduct an open and competitive recruitment and hiring process as described in this policy.

2. The team shall update the job description, compensation range, and statement of benefits for the position. Legal counsel shall update an employment contract template. Those materials shall reflect that the Executive Director will be entitled to the same benefits, and subject to the same terms and conditions of employment, as other RTC management employees, subject to negotiation and execution of the employment contract.
3. The team will seek Board approval of the job description, compensation range, statement of benefits, and employment contract template prior to commencing the recruitment and hiring process. Those materials shall be made available to potential applicants as part of the recruitment and hiring process.
4. The team shall evaluate applicants and determine which applicants may be qualified, and may interview applicants as part of that process.
5. The team shall invite qualified applicants to present their qualifications to the Board at a regular or special meeting, and answer pre-prepared questions from the Board.
6. At the meeting or a subsequent meeting, the Board will vote to appoint an Executive Director pending negotiation and execution of an employment contract.
7. The Chair and legal counsel shall negotiate the final terms and conditions of the employment contract with the selected applicant. Except as otherwise modified by the employment contract, the Executive Director will be entitled to the same benefits, and subject to the same terms and conditions of employment, as other RTC management employees.
8. Upon completion of those negotiations, the Board will approve the employment contract prior to execution by the Chair and selected applicant. The Board will approve the contract either at a special meeting called for that purpose, or at its next regular meeting, as determined appropriate by the Chair.
9. The Executive Director shall begin work on a date specified in the employment contract.
10. The Board may, in its discretion, approve a recruitment and hiring process that is different from the process described in this policy.

B. Performance Standards and Goals

1. The Executive Director's employment contract will reflect performance standards as part of the terms and conditions of employment for the position. During the annual performance evaluation process described in this policy, the Board may consider and approve revisions to the performance standards.
2. The Board and the Executive Director will agree on annual goals which shall be reduced to writing. During or following the annual performance evaluation process described in this policy, the Board may approve goals for the next year.

C. Annual Performance Evaluation

1. At a regular or special meeting in June, or as soon thereafter as possible, the Board will evaluate the Executive Director's annual performance.
2. In May, the Executive Director shall prepare a self-evaluation as to whether the Executive Director's performance meets or falls below expectations for the performance standards, and whether the Executive Director has achieved (or will achieve) the goals for the year.
3. The Chair and one other Commissioner selected by the Chair will meet and confer with the Executive Director regarding the Executive Director's self-evaluation, and identify and discuss any areas of disagreement. The Chair will prepare an evaluation of the Executive Director's performance, and a recommendation to the Board regarding any adjustments to the Executive Director employment contract.
4. At the regular or special meeting in June, or as soon thereafter as possible, the Chair will present the evaluation to the Board along with a recommendation regarding any adjustments to the Executive Director's employment contract.
5. The Board will vote as to whether the Executive Director's overall performance meets or falls below expectations for the year, and may approve an amendment to the Executive Director's employment contract with regard to compensation or benefits and the performance standards for the Executive Director.
6. RTC shall provide notice of the meeting to the Executive Director as required by NRS chapter 241. The Executive Director shall have an opportunity to address the Board at the meeting.

D. Other Actions

1. The Board may consider the conduct or performance of the Executive Director at other meetings.
2. The Chair or the Board may place an item on the agenda for a regular or special meeting to consider the conduct or performance of the Executive Director, pursuant to RTC's bylaws.
3. The Board may hold a closed meeting to consider the conduct or performance of the Executive Director, if authorized by NRS chapter 241.
4. RTC shall provide notice of meetings to the Executive Director as required by NRS chapter 241.

- END -



REGIONAL TRANSPORTATION COMMISSION

Metropolitan Planning • Public Transportation & Operations • Engineering & Construction

Metropolitan Planning Organization of Washoe County, Nevada

Meeting Date: 4/19/2024

Agenda Item: 5.1.

To: Regional Transportation Commission

From: Alex Wolfson, Project Manager

SUBJECT: University of Nevada, Reno Presentation on the RTC Regional Signal Timing Program (Informational Only)

RECOMMENDED ACTION

Presentation from UNR regarding the RTC Regional Signal Timing Program.

BACKGROUND AND DISCUSSION

The RTC Regional Signal Timing Program has been an on-going project working with local agencies and UNR to optimize and update all traffic signal timing in the Truckee Meadows. The program utilizes a three-year cycle to maintain and adjust timing to reflect the changes in traffic growth, demand, and traffic movement prioritization. A presentation will be shown providing the Board an overview of the program, and the quantitative measures and benefits that it provides.

This item supports Strategic Roadmap Goal #3, "Enhance RTC's Role in Anticipating and Meeting Future Transportation Needs."

FISCAL IMPACT

There is no fiscal impact related to this action.

PREVIOUS BOARD ACTION

6/16/2023 Approved an Interlocal Cooperative Agreement with the University of Nevada, Reno for the Signal Timing 7 project, in the reimbursement amount not-to-exceed \$960,000.



REGIONAL TRANSPORTATION COMMISSION

Metropolitan Planning • Public Transportation & Operations • Engineering & Construction

Metropolitan Planning Organization of Washoe County, Nevada

Meeting Date: 4/19/2024

Agenda Item: 5.2.

To: Regional Transportation Commission

From: Alex Wolfson, Project Manager

SUBJECT: Intelligent Transportation Systems (ITS) Strategic Master Plan MOU

RECOMMENDED ACTION

Approve a memorandum of understanding (MOU) between the Regional Transportation Commission of Washoe County (RTC), the City of Reno, the City of Sparks, and Washoe County to collaborate on the deployment recommendations contained within RTC's Intelligent Transportation Systems (ITS) Strategic Master Plan.

BACKGROUND AND DISCUSSION

The Intelligent Transportation Systems (ITS) technologies aim to develop innovations to advance transportation safety, mobility, and environmental sustainability. ITS technologies augment traditional infrastructure improvement approaches by integrating advanced communications technologies into vehicles and existing infrastructure to improve transportation operations, efficiency, and reliability. Successful ITS deployments include traffic signal coordination, accident and incident detection, ramp meters, and traveler information systems.

The Regional Transportation Commission of Washoe County (RTC) initiated the development of an Intelligent Transportation System (ITS) Strategic Master Plan (SMP) to establish the region's near- and long-term vision and goals to leverage resources and capabilities of ITS applications into the future. In order to fully realize a functioning ITS system, cooperation and inter-operation among the local agencies is necessary. The purpose of this memorandum of understanding (MOU) is for RTC, the City of Reno, the City of Sparks, and Washoe County to collaborate on the deployment recommendations contained within the strategic master plan.

The ITS SMP identifies twenty-four (24) development strategies to support and expand the ITS program. The deployment strategies are divided into five strategy areas consisting of software, infrastructure, staffing, training, and funding. Whereas, the MOU outlines roles and responsibilities related to decision making, operations, signal maintenance, and network standards.

A main strategy from the ITS SMP is to regionalize transportation operations with the establishment of a regional Traffic Management Center (TMC) through which all local arterial networks can be managed for the individual jurisdictions in the urban region. The MOU identifies the RTC as the agency that will strive to establish a regional TMC and operate the regional traffic signals, ITS network, and ITS infrastructure while the local agencies will strive to participate in and provide oversight of regional traffic signal and ITS operations.

The MOU shall not obligate the parties to allocate or transfer funds. Specific projects or activities that involve the transfer of funds or property will require the execution of separate agreements. RTC will be responsible for developing funding plans for each specific deployment recommendation in coordination with the local agencies.

There are other stakeholders that may be or need to be involved with deployment recommendations in the future such as the Nevada Department of Transportation (NDOT), University of Nevada, Reno (UNR), emergency services, etc. The goal of the MOU is to unify RTC and the local agencies with regard to management of these efforts and the vision for deployment before engaging other agencies or stakeholders. If and when additional agreements are necessary, RTC will use direction gained from the MOU to pursue future agreements.

The item supports Strategic Roadmap Goal #2, "Enhance RTC's Role in Anticipating and Meeting Future Transportation Needs" and FY2024 RTC Goal, "Execute a Memorandum of Understanding with the Nevada Department of Transportation, City of Reno, City of Sparks, and Washoe County to begin implementation of ITS Strategic Master Plan to operate the regional traffic signal system as a whole."

FISCAL IMPACT

RTC will be responsible for developing funding plans for each specific deployment recommendation when implemented.

PREVIOUS BOARD ACTION

3/22/2024 Received a presentation on the ITS desired outcomes, vision and funding agreement.



RTC WASHOE ITS STRATEGIC MASTER PLAN

TECHNICAL MEMORANDUM #2:



September 2023



Prepared for:



1105 Terminal Way, Suite #108
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Prepared by:



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LIST OF ABBREVIATIONS

ATCs	Advance Traffic Controller
ATM	Active Traffic Management
ATMS	Active Traffic Management System
ATSPM	Automated Traffic Signal Performance Measures
AV/CV	Autonomous Vehicle/Connected Vehicle
C2C	Center-to-Center
CCTV	Closed-Circuit Television
CIP	Capital Improvement Program
ConOps	Concept of Operations
CV2X	Cellular Vehicle to Everything
DMS	Dynamic Message Sign
FHWA	Federal Highway Administration
ICM	Integrated Corridor Management
IT	Information Technology
ITS	Intelligent Transportation System
KMZ	Keyhole Markup Language
NDOT	Nevada Department of Transportation
PPP	Public-Private Partnership
ROC	Road Operations Center
RTC	Regional Transportation Commission of Washoe County
RTIP	Regional Transportation Improvement Program
SMP	Strategic Master Plan
SOP	Standard Operating Procedures
TMC	Traffic Management Center
TSMO	Transportation Systems Management and Operations

1. INTRODUCTION

The Regional Transportation Commission of Washoe County (RTC) initiated the development of an Intelligent Transportation System (ITS) Strategic Master Plan (SMP) for the purpose of establishing the region's long-term vision and goals to leverage resources and capabilities of ITS applications into the future. The ITS SMP provides specific vision and deployment strategies through 2030 to account for rapid advances in technology. Visions and strategies beyond 2030, through 2050, should be synthesized through the recommended strategies implemented by this master plan, in alignment with the *2050 Regional Transportation Plan*. The ITS SMP seeks to improve safety, reliability, mobility, and overall performance of the surface transportation system located in Washoe County, Nevada. The guidance provided in the *Concept of Operations Truckee Meadows Collaborative Traffic Management Plan (2010)*, the *Concept of Operations Addendum (2016)*, and development of a time-phased implementation plan will assist the RTC in successfully operating the surface transportation network in Washoe County while simultaneously implementing the strategies outlined in this SMP.

In continuation of these ITS efforts, the RTC recognizes that the Truckee Meadows area continues to grow, thereby intensifying the need for cooperation and interoperation among the partnering agencies including the City of Reno (Reno), City of Sparks (Sparks), Nevada Department of Transportation (NDOT) District 2, and Washoe County. Each partnering agency within the RTC region currently operates and maintains their own ITS devices apart from Washoe County, who has an agreement with Reno to operate and maintain all devices on their network. One goal of this ITS SMP is to recommend a regional Traffic Management Center (TMC) concept, designed such that a continued and consistent partnered collaboration with each of the regional and local agencies is possible. When this goal is attained, a centralized system for operation and maintenance of regionwide signals and ITS devices will be realized.

The RTC ITS SMP will provide a thorough evaluation and assessment of the ITS systems located within the RTC region, shown in **Figure 1**, determine current and future needs, and outline ITS strategies to advance the RTC's ability to plan, construct, operate, and manage the surface transportation system in the Truckee Meadows region into the future. The RTC ITS SMP is being developed in alignment with the *Nevada Statewide ITS and ATM Master Plan*, currently being developed by NDOT. For example, coordination in the planning for a Northern Nevada Road Operation Center (ROC), also referred to as Northern Nevada TMC, has started.

This memorandum presents a plan which focuses on buildout strategies for the ITS network in the near-, mid- and long-term time frame, provides a detailed inventory of existing field technologies, evaluates and visualizes implementation of new and future technologies, recommends the creation of a TMC, Center-to-Center (C2C) network expansion, deployment strategies for software, operations optimization, connected and autonomous vehicles (CV/AV), as well as recommendation of strategies for formalizing ITS design standards and specifications. Identified strategies will include details about deployment, integration, operations, and maintenance, with the goal of guiding the RTC towards a more robust ITS program.

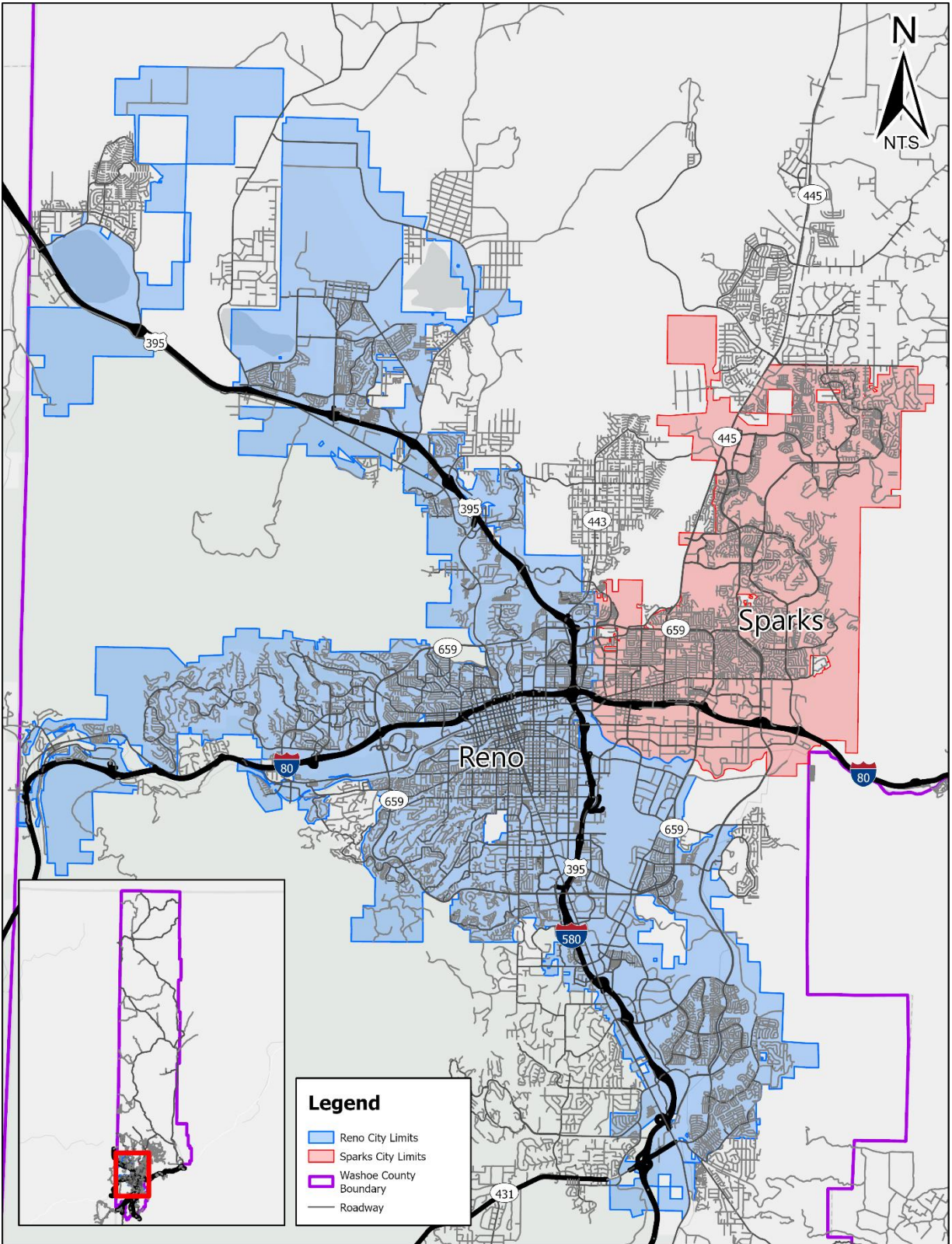


Figure 1 – Project Vicinity Map

2. ITS INVENTORY UPDATE

The following subsections provide details on the process conducted to review and update the existing ITS Inventory from 2021 with new ITS project deployments.

2.1 Review of Existing ITS Inventory

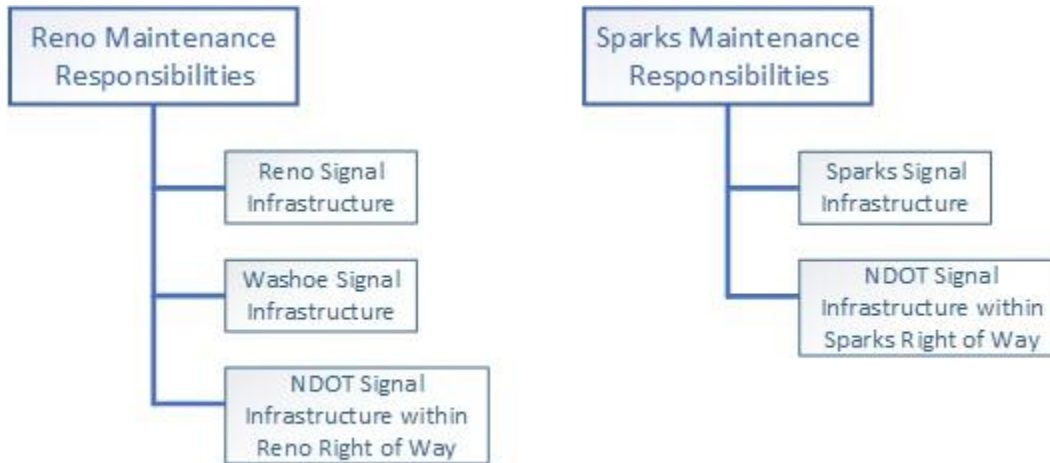
The *ITS Network Master Plan* from December 2021 set a vision and outlined strategies for the RTC to build out the existing ITS network, with recommendations for development of a C2C network infrastructure, standardization of specifications and details, and fiber network topology recommendations. A copy of the *ITS Network Master Plan* is located in **Attachment A**. The *ITS Network Master Plan* also developed a database with available data elements collected from available plan sets and record drawings as part of the strategy development. These elements included:

- Existing fiber cable paths
- Other communication links
- Fiber splice diagrams
- Communications conduit locations
- RTC 10-year map of CIP projects

The existing December 2021 *ITS Network Master Plan* inventory was reviewed, and new data collected to identify new developments for updating the inventory with devices and systems not already accounted for as part of the ITS SMP. The ITS inventory review process included a review of all inventory layers in addition to data requests from the RTC, Reno, Sparks, and Washoe County (received from Reno) to make recommendations for combining all layers into a regionwide database as part of the vision for a regionwide TMC providing operations and maintenance of the region's traffic signals. Observations from the review of the existing inventory and available layers from the agencies include the following:

- The current Signalized Intersection layer from the RTC does not have unique identifiers (IDs) corresponding to the local agency layer provided.
- Signalized Intersection naming conventions and formats differed between agencies
- Maintenance responsibilities for signals maintained by agreement were not included in the signalized intersection layer (RTC, NDOT, Reno, and Sparks). Future coordination on maintenance responsibility for signalized intersections will need to be conducted during the implementation of *Strategy 12: Establish RTC TMC* discussed in **Section 4**.
- Emergency signals and pedestrian crossings were included in the signalized intersection layers.

Maintenance responsibilities for signal infrastructure are outlined in **Figure 2** below.



See Tech Memo #1 Ch. 4 for maintenance agreements.

Figure 2 – Signal Maintenance Responsibilities

2.2 Database Schema and Updates to Inventory Database

A schema based on the observations made from the 2021 ITS inventory was developed to provide the RTC with a regionwide database for the various ITS devices. Further discussion of which agency will house the database will be determined during the implementation of Strategy 2: Regional ITS and Signal Asset Management Database discussed in **Section 4**. A GIS database schema provides the structure of a database which includes tables and any relations associated with the tables within a database. Development of this database allows information from each of the regional agencies to be standardized and stored in one location, easing future efforts for asset management when the regional TMC is established. The following layers were established in the new regionwide ITS inventory database:

- **Signalized Intersections:** Layer containing all signalized intersections within the region and associated attributes to be consistent with all agencies. Additional attributes such as RTC Identifier (RTC ID), owning agency, maintaining agency, agreements, CCTV cameras, traffic cabinets, detection, and communication type are included. The unique RTC identifier (ID) was created by using the existing agencies ATMS.now ideas and adding the corresponding owning agencies initial to the ATMS.now ID (“R”=Reno, “S”=Sparks, “N”=NDOT, and “W”=Washoe County). For example, the intersection of Sullivan Lane and Greenbrae Drive owned by Sparks has an ATMS.now ID of 1120 and was provided an RTC ID of S.1120 for incorporation into the RTC Signalized Intersection Layer. Note that any signal with only three digits added an extra zero to the beginning of the ID to ensure that all RTC IDs have at least four digits.
- **Wireless Radio Devices:** Layer providing details regarding wireless radio within the region. Devices with wireless radio to a signalized intersection are identified.

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Other layers within the database collected include:

- Pull Box
- ITS Vault
- ITS Cabinet
- NDOT Hub
- NDOT Conduit
- Reno Conduit
- Reno Interconnect
- Sparks Conduit
- Sparks Interconnect
- Network Nodes
- Washoe Conduit

Updated inventory maps with data gathered as part of the ITS SMP are shown in **Figure 3** through **Figure 13**. Only elements provided by the agencies and those found in available as-builts provided by the agencies were included. Additional elements should be incorporated as part of the deployment of the Regional ITS and Signal Asset Management Database Strategy (Strategy 2). A KMZ layer with updates is also provided with this technical memorandum.

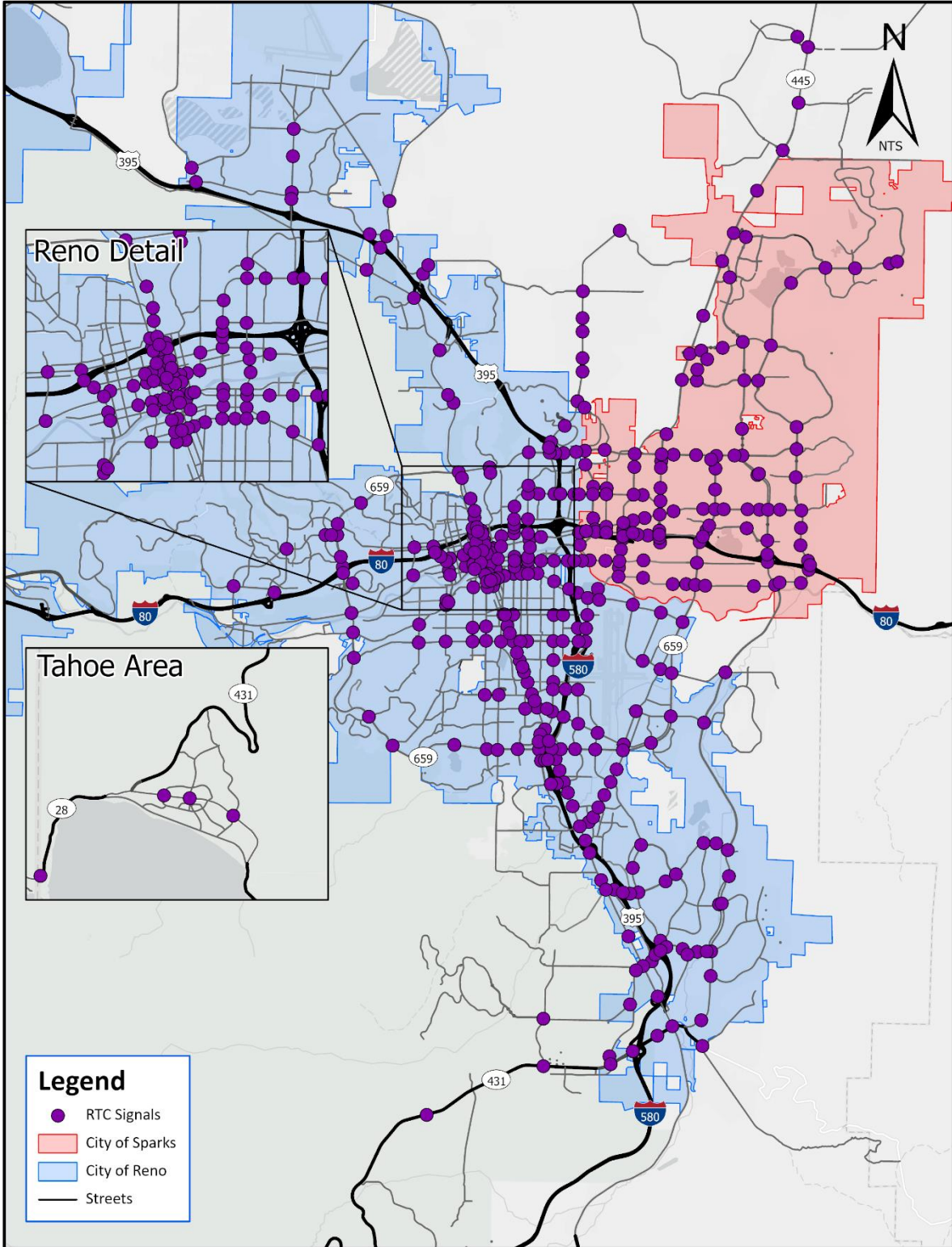


Figure 3 – RTC Region Signalized Intersections

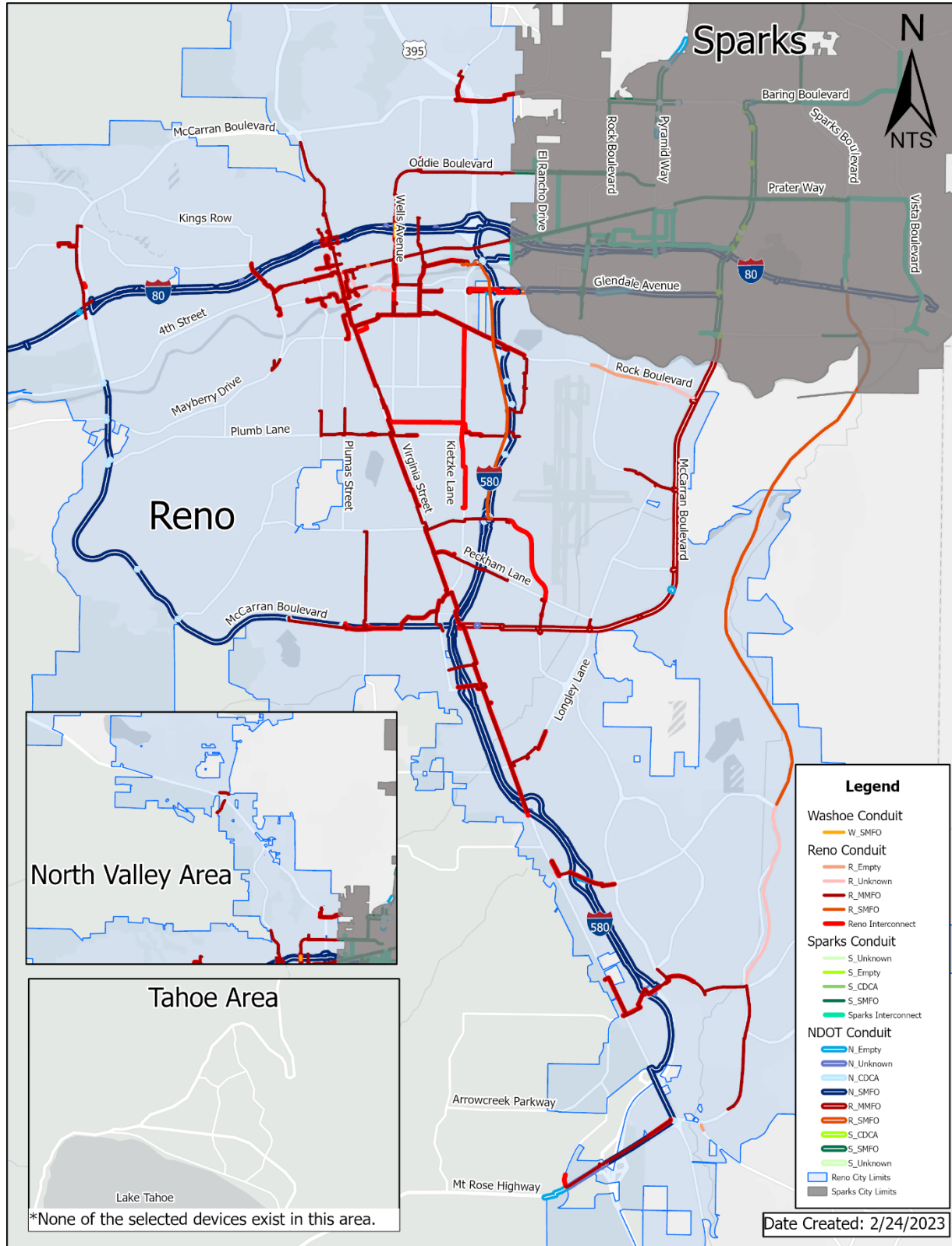


Figure 4 – City of Reno ITS Conduit and Cables

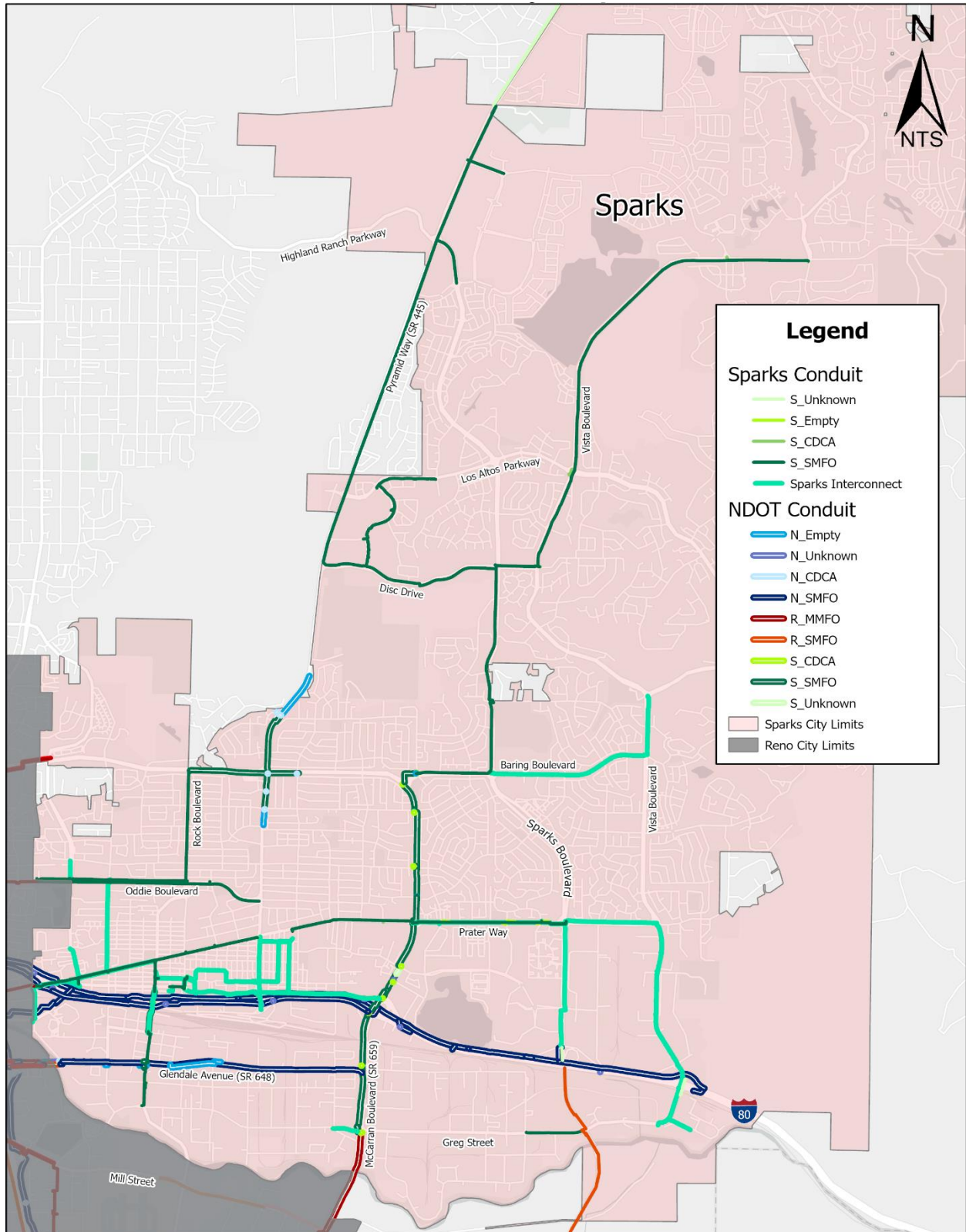


Figure 5 – City of Sparks ITS Conduit and Cables

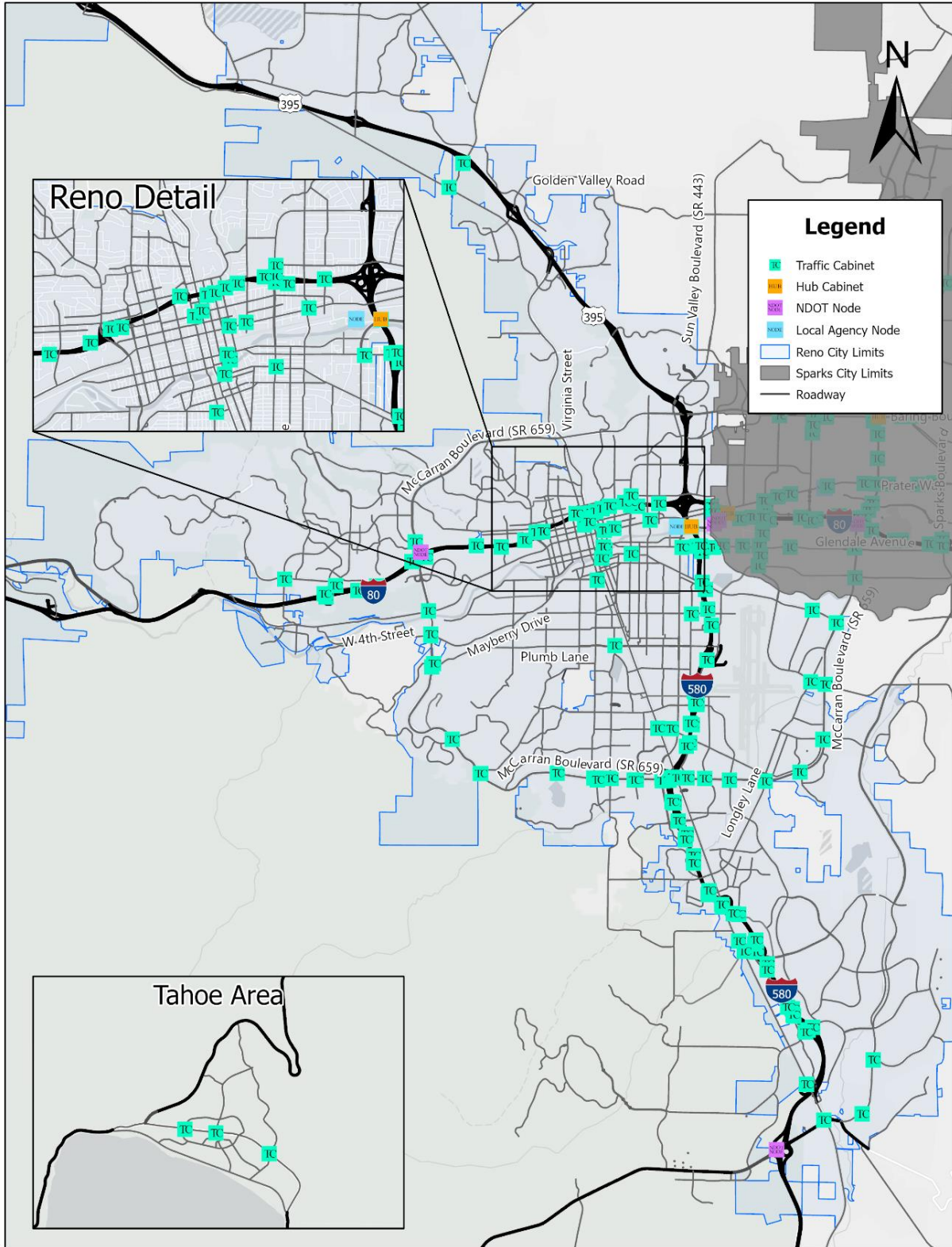


Figure 6 – City of Reno ITS Traffic Cabinets, Hub Cabinets, and Nodes

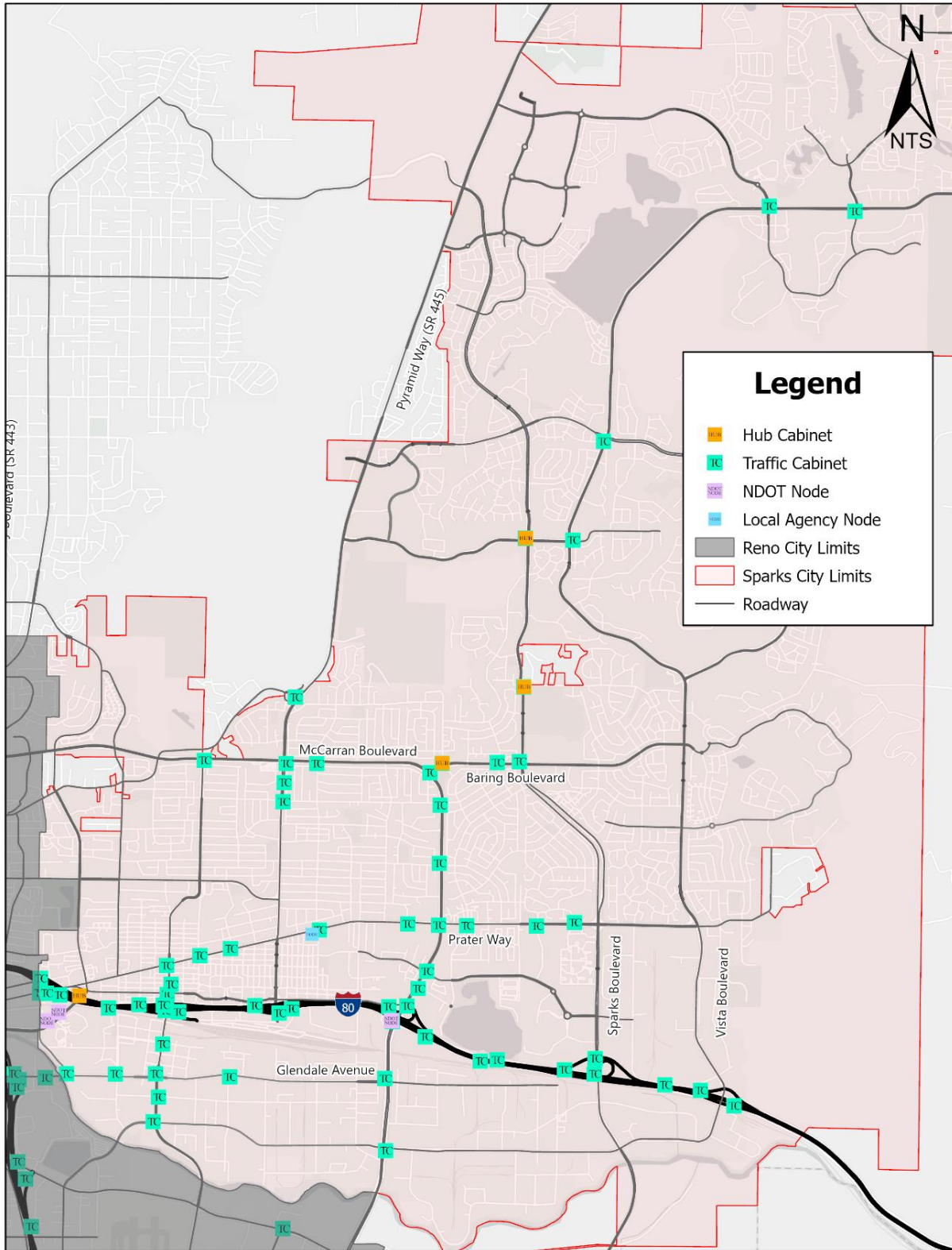


Figure 7 – City of Sparks ITS Traffic Cabinets, Hub Cabinets, and Nodes

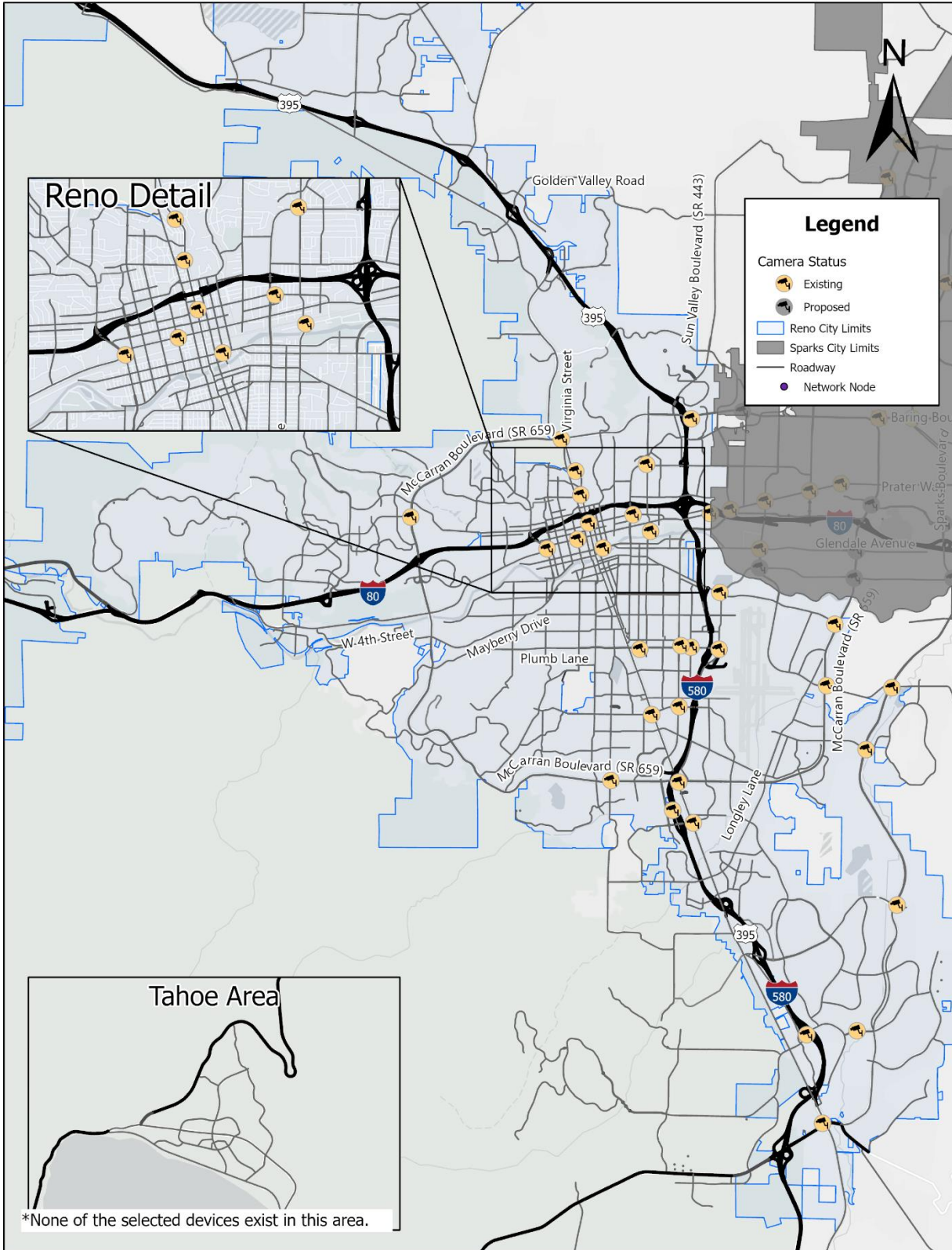


Figure 8 – City of Reno Traffic Cameras

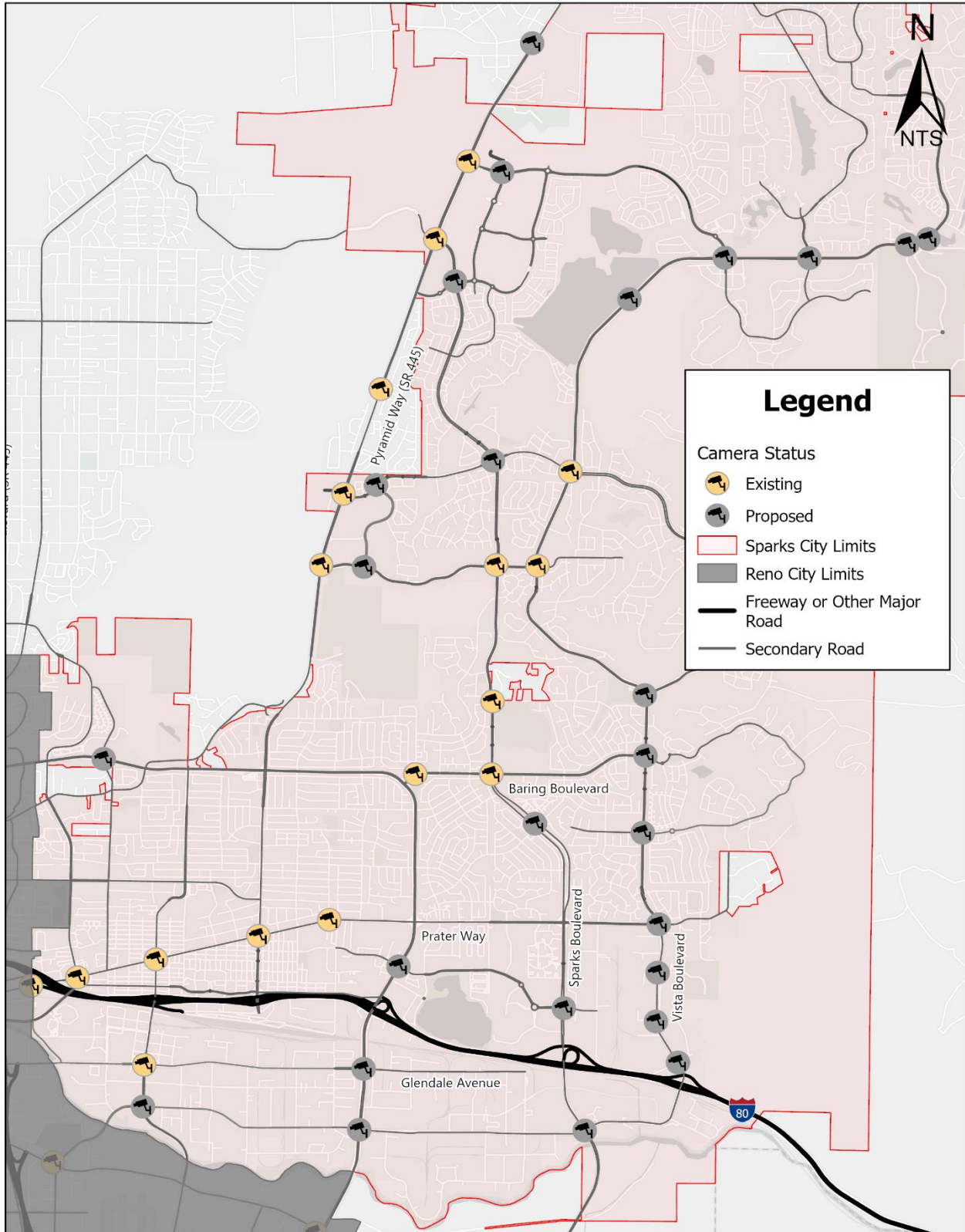


Figure 9 – City of Sparks Traffic Cameras

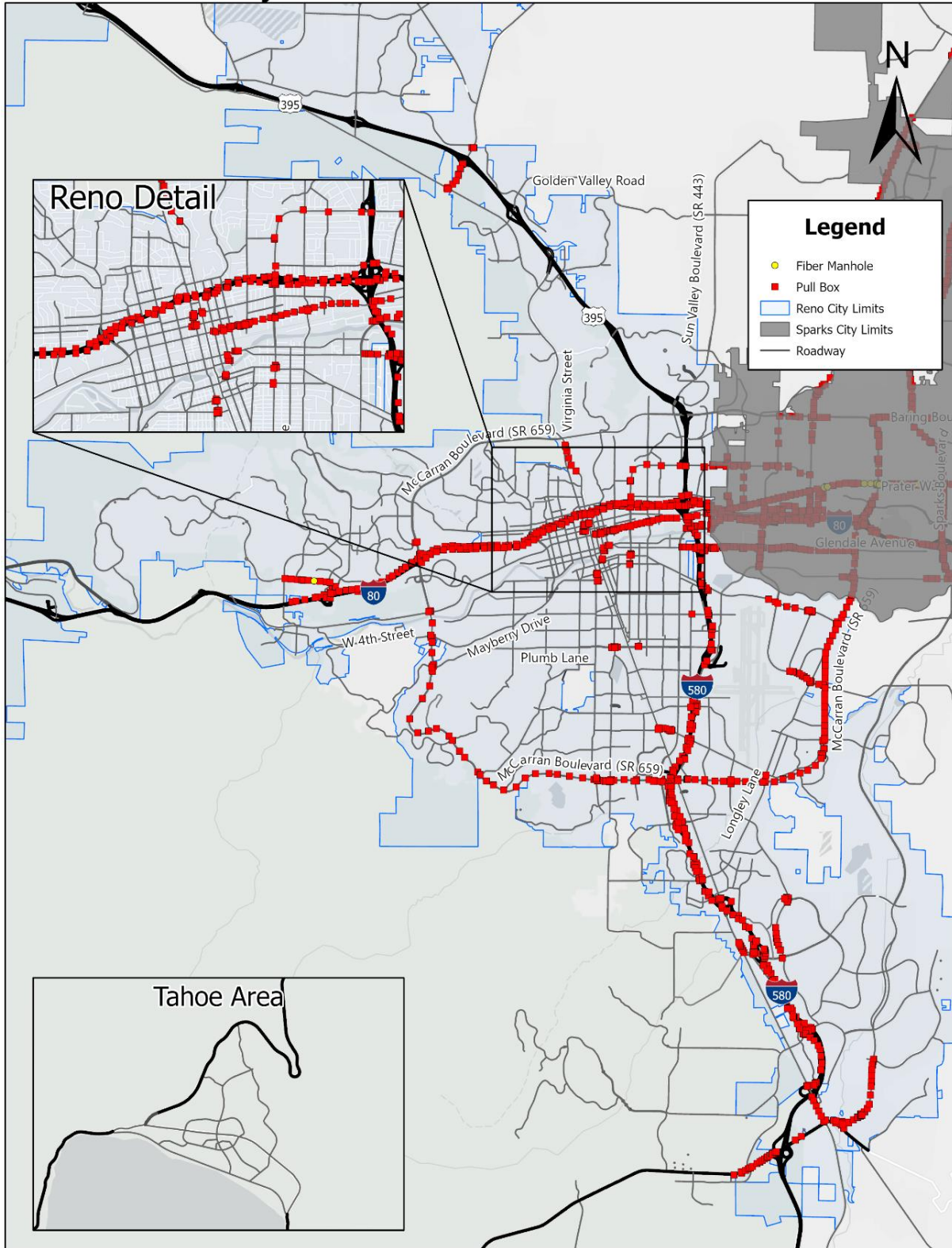


Figure 10 – City of Reno ITS Pull boxes and Manholes

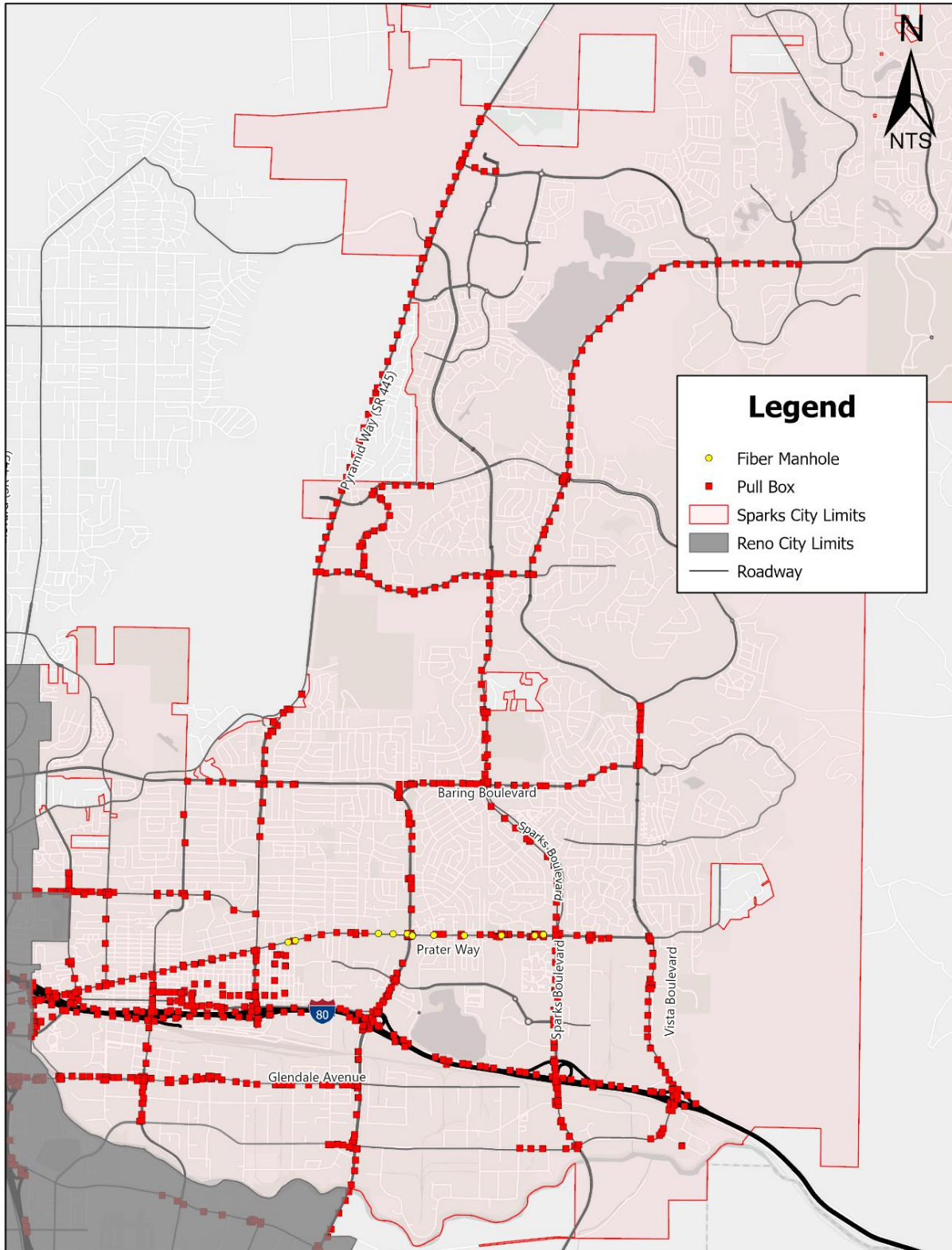


Figure 11 – City of Sparks ITS Pull boxes and Manholes

City of Reno ITS Splice Point Locations

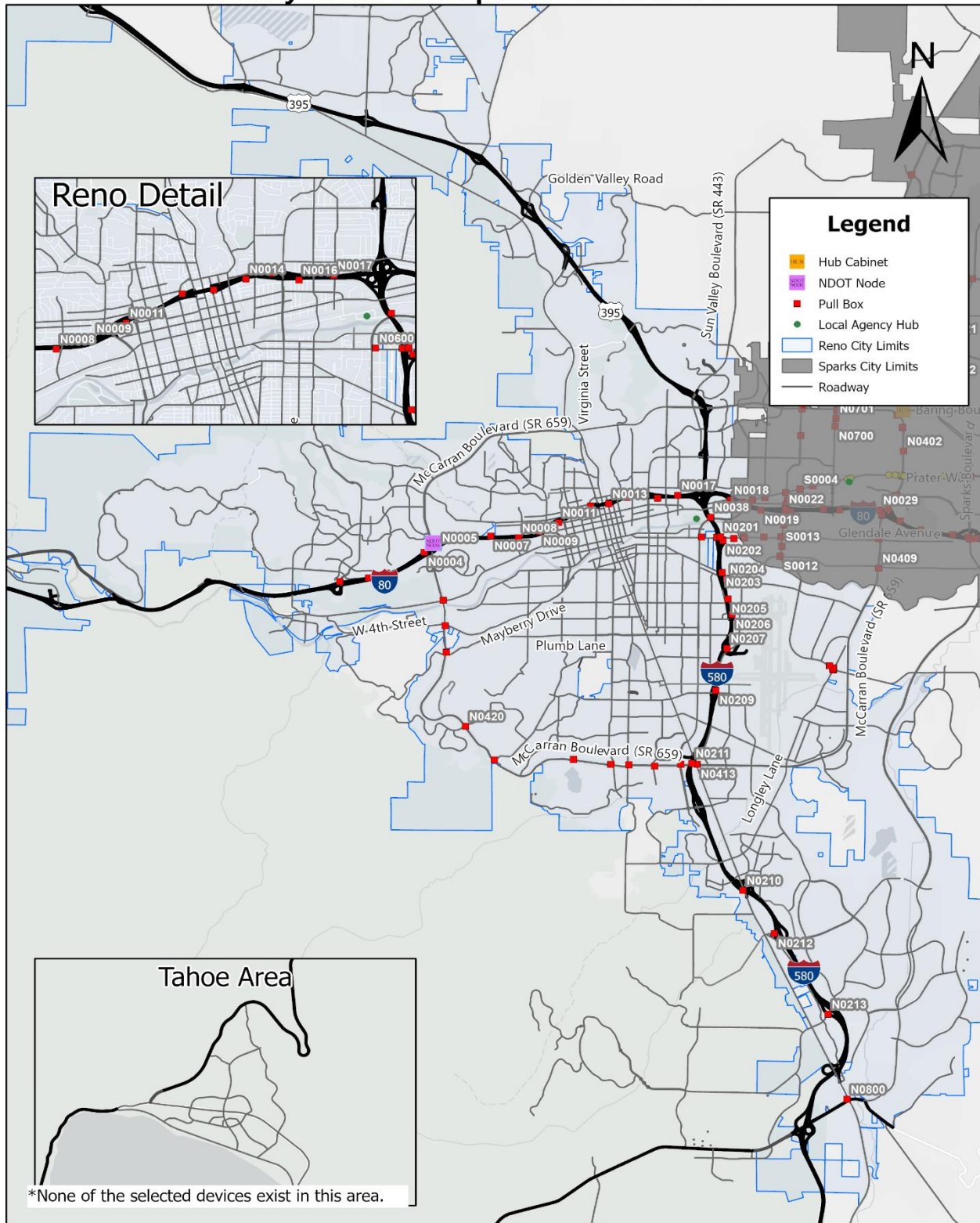


Figure 12 – City of Reno Splice Point Locations

3. NEEDS ASSESSMENT

Pre-recommendation meetings with the RTC and each of the local agencies were held to gather input on needs and desired outcomes for this SMP regarding the future of ITS infrastructure for the region. Takeaways from the pre-recommendation meetings with each of the agencies are summarized in **Table 1**.

Table 1 – Agency Needs

Agency	Identified Need
Reno	<ul style="list-style-type: none"> ▪ Utilize fiber fault tolerant ring topology when designing future fiber splices. ▪ Begin providing additional slack at pull boxes to ease installation efforts of additional ITS devices. ▪ Continue to install backup communication connections where NDOT infrastructure exists to decrease response times. ▪ Increase training and maintenance staff resources before implementation of additional ITS capabilities or network build out.
Sparks	<ul style="list-style-type: none"> ▪ Install CCTV at intersections that are not currently equipped with similar devices. ▪ Install fiber communications to traffic signals that are not currently equipped with fiber. ▪ Increase training and maintenance staff resources before implementation of additional ITS capabilities or network build out, including fault tolerant ring topology fiber communications training to prevent data storms.
Washoe County	<ul style="list-style-type: none"> ▪ Use bandwidth on ITS system. ▪ Need for better connections during emergency services.
RTC	<ul style="list-style-type: none"> ▪ Expand C2C network to include Washoe County and the University of Nevada, Reno.

A workshop discussing the next steps for a regional operations and maintenance concept and to seek consensus among the agencies was also conducted on September 7, 2022. A summary of the identified needs as they relate to software, infrastructure, staffing, training and funding from the pre-recommendation meetings and the workshop are summarized in the following subsections.

3.1 Software Needs

The City of Sparks and Reno use the same version of ATMS.now, which has increased their center-to-center capability. Additional benefits of having the same ATMS.now version include being able to view the region’s arterial traffic signal inventory list and maps for the region as entered in the system, ease of facilitation for coordination plans, ability to pivot to unified management under a central agency, and easier coordination with NDOT and their freeway management system.

NDOT operates a separate freeway software system for freeway ITS infrastructure through the region. The traveling public expects a coordinated and responsive transportation systems that does not have institutional barriers or borders. The two different systems in place create unintended barriers in operations and management of the network that could be rectified for a seamless transportation experience.



A significant challenge that software could potentially address is the need to collect data to be analyzed in order to make changes based on near real-time operational performance. Traffic condition, crash data, or travel pattern data is available today, but it is not being harnessed in a manner to justify investments, resources, or explain patterns in a way that makes sense to operators, users, and stakeholders. Insufficient use of data causes distrust as to why investments are being made when benefits for the use of these data is seen. It is important to establish a link between the data being collected and the end user experience.

3.2 Infrastructure Needs

Existing systems within the RTC region require regular maintenance, including repairs and upgrades. For signals, the City of Reno plans to install Cubic Commander controllers, whereas the City of Sparks has Cubic 980 Advanced Traffic Controllers (ATCs) which were installed in the last five years. As each agency continues to upgrade and maintain existing signal controller infrastructure, it is important to understand what type of inventory is currently used in order to determine the most appropriate investments in new or upgraded infrastructure and how compatible the different systems are at operating together.

Both Reno and Sparks have a cooperative agreement with RTC for their signal timing plans. This creates uniformity across the region, with the only difference being the use of partial clearance versus all-red clearance. There is not a single set of signal timing standards from which the agencies in the region pull from to perform signal timing updates. There is a need to review the existing Regional Traffic Guidelines and document the latest changes to the signal timing process. A vision for the future of the RTC is for everything to be adaptive, but in the meantime the RTC is establishing the best timing plans that can be used with different cycle lengths depending on conditions. The current signal timing program is funded by the fuel tax and allocates \$500k per year (\$100k for traffic counts and \$400k for signal retiming). Currently, signals are in a rotation for signal retiming but sometimes some signals could become high priority based on conditions. RTC develops all signal timing plans but signal timing implementation varies by agency. As a quality control measure, Reno reviews the plans with the RTC and implements them in their ATMS, while both Sparks and Washoe County plans are implemented directly by the RTC. Augmentation for signal timing is also provided by the University of Nevada, Reno (UNR). UNR develops plans that are then reviewed by RTC before being reviewed with the agencies and implemented in the field.

In order to perform the maintenance required on traffic signals and ITS equipment in the region, there is a limited stockpile of inventory equipment available from which to utilize during projects and maintenance activities. This limited stockpile will create a challenge in the future as infrastructure continues to be added to operate and manage the transportation network. There are opportunities to improve existing infrastructure, improve upon the functions provided by existing infrastructure, and deploy traditional infrastructure to support real-time situational awareness on the roadways prior to investing into the latest and greatest technologies like adaptive signal timing or integrated corridor management (ICM) strategies.

Other infrastructure needs within the region include the standardization of ITS design plans and specifications, since fiber optic network infrastructure materials and standards currently differ between each agency. The differences in materials and standards has caused for different types of fiber optic cables to be used within the region, multi-mode versus single mode fiber optics. Additionally, the agencies do not know how to use managed network switches causing inefficient

use of the available fiber. Infrastructure needs should also consider power resiliency of traffic signals especially within NV Energy Public Safety Outage Management (PSOM) Zones.

3.3 Staffing Needs

Currently, Reno and Sparks have staff that function as operators, maintainers, technicians, and managers. There is a varying level of staff available at each agency to support the amount of infrastructure within each jurisdiction and staff typically function in a reactive manner, responding to outages and inquiries as they are identified. While there may be some preventative maintenance activities occurring, adequate staff to serve both reactive and proactive real-time functions does not currently exist. Additionally, the RTC does not serve in a real-time operations or management role within the region. Current staff are performing job duties that require different certifications or training from what is provided or required as part of the existing job descriptions. Activities such as managing an IT network should be completed by staff with appropriate certifications that are trained and certified to verify security, risk, and data sharing requirements appropriately.

Additionally, incident management in the region is largely handled by incident responders. Incident responders are responsible for traffic control in addition to the incident management duties at the scene, which distracts and requires them to provide additional duties taking away from their core responsibilities.

3.4 Training Needs

There is a current training challenge in the signals and ITS industry in that the technology that exists are both old and outdated as well as new and innovative. The amount of knowledge required to maintain equipment that is deployed in the region is vast. Training for signal maintenance is different from training for ITS infrastructure maintenance and there are challenges in making sure new investments being made in the region have appropriate maintenance resources in place to support their longevity and usefulness.

Identifying training needs for existing and future staff will be necessary, especially as the proposed TMC becomes fully realized. Properly training staff to perform required duties, including cross-training between maintenance staff, ITS maintenance staff, and TMC staff can help alleviate unbalanced workloads, while creating a workforce capable of performing effectively in multiple positions if needed. Additional strategies may be developed for management of cross-trained maintenance staff, such as identifying tasks each staff member can perform to best maximize efficiency while addressing current needs. Both Reno and Sparks have identified training and expanding maintenance staff resources as a priority. Continuous training opportunities should also be considered by each agency.

3.5 Funding Needs

Funding operations and maintenance efforts of signals and ITS devices will require funding from numerous resources. Existing funding sources already in use to fund the system, previously described in *Technical Memorandum #1*, should be utilized moving forward. Although it is likely that additional funding should be allocated to support the ongoing operations, management, and lifecycle replacement of infrastructure. This plan serves as a concept of regional operations from which to utilize sections and recommendations for the pursuit of federal grants or other types of funding external to the region. The more formalized the partnership in the region and the clearer the strategy and vision is, the better collaboration can be demonstrated and used as a foundation from which to build upon to justify funding for innovation or pilot projects. Parties interested in pursuing grants can pursue them in coordination with other agencies in the region. RTC will seek to pursue every available grant in coordination with local agencies.

4. DEPLOYMENT STRATEGIES

Deployment strategies to support the needs identified by the RTC and local agencies were developed to align with the following goals and objectives identified for the ITS SMP:

- Support transportation needs
- Increase network efficiency
- Facilitate collaboration between agencies in the region
- Increase use of existing and future ITS infrastructure investments
- Create a safer, more effective transportation network

The deployment strategies developed outline several strategic areas where future projects and initiatives can be implemented to expand the ITS program within the RTC region through 2030. Deployment strategies are planned through 2030 to account for rapid advances in technology. Visions and strategies beyond 2030, through 2050, should be synthesized through the recommended strategies implemented by this master plan, in alignment with the *2050 Regional Transportation Plan*. It is recommended that this ITS SMP be updated every five years in order to keep up with advances in technology and for evaluation of the implementation of recommended strategies.

The deployment strategies in the ITS SMP have been developed through examination of past documents including the *Truckee Meadows Collaborative Traffic Management – Final Report v5* and the *Concept of Operations Addendum and System Engineering Management Plan*, as well as previous tasks in this project. Strategies are also being developed with synergy towards current and future RTC ITS standards and specifications, and the *NDOT ITS & ATM Master Plan* currently being developed.

Deployment strategies for software, infrastructure, staffing, training, and funding needs were discussed with the RTC and are presented as part of this memorandum. Several of these needs have already been conceptualized into current or ongoing near-, mid-, and long-term plans, while others are only just now being envisioned for implementation. Still, some ITS technology has already been deployed in the field, including a network of fiber optic cables and switches, cameras, and detection devices with each of these devices being owned and maintained by different agencies within the region.

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The deployment strategies should be pursued by the RTC to further the development of the existing ITS network. Projects included will require secured funding or capital prior to implementation, with some projects estimated to have a higher cost than others. Some projects may not require additional funding, and those projects should be completed by the agencies in the RTC region whenever possible, regardless of the timing of other projects. A summary of the deployment strategies proposed is found in **Table 2**.

4.1 Software

Deployment strategies associated with software for the RTC region include implementation of a regional ATMS systems, regional ITS and signal asset management database, and C2C software used for regional performance dashboards. Additional details regarding software deployment strategies are found in **Table 2**.

4.2 Infrastructure

Deployment strategies associated with infrastructure for the RTC region include ITS upgrades, implementation of a lifecycle replacement program, new capital ITS investments, regional signal timing optimization, implementation and standardization of ITS design details and specifications, leveraged opportunities of third-party data use, adaptive timing and feasibility studies, and development of a regional CV/AV infrastructure. The installation of ITS devices as part of future capacity and rehabilitation projects should be considered.

The lifecycle costing would look at the following elements to determine service life and replacement cycle recommendations.

- Traffic Signal System
 - Cabinets
 - Controllers
 - Field Network Switches
 - Traffic Signals
 - Wire Re-Cabling
- Traffic Signal Vehicle Detection
 - In-Pavement Detection
 - Video Image Detection
 - Radar Detection
 - Emergency Vehicle Preemption
- Cameras
- Other Traffic Signal/ITS Items
 - ITS Vehicle Detection
 - ITS Communications

Additional details about software deployment strategies are summarized in **Table 2**.

4.3 Staffing

There are and will continue to be a variety of staffing needs in the RTC region. Staffing both the virtual and established RTC TMC will require planning and careful implementation to ensure staff are properly trained, and standard operating procedures are developed. Development of clear job



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descriptions for ITS and signal maintenance staff, along with a clear career path development will also be required for the RTC, and other agencies. An RTC Transportation Systems Management and Operations (TSMO) Program Plan, similar to nationally adopted TSMO plans will be important for coordination and funding efforts. Other key staffing requirements include creation of a regional shared event tracking system, regional service patrol program, and regional traveler information services (511), note that coordination with NDOT on the traveler 511 services would be required. Details regarding the suggested staffing strategies are summarized in **Table 2**.

4.4 Training

Staff training strategies include development of a training program aimed at supporting expansion of the existing ITS network across the region, including implementation of new technologies and new and existing RTC job responsibilities. Details regarding the suggested training strategies are summarized in **Table 2**.

4.5 Funding

Funding will also be an important issue for the RTC to pursue. Strategies surrounding funding include securing funding for ITS upgrades, establishment of a lifecycle replacement program, new ITS capital investments, development of operations and maintenance agreements in the RTC region, and public awareness campaigns. The funding strategies proposed are detailed in **Table 2**.



Table 2 – Strategic Deployment Recommendations

Strategy Name	Strategy Number	Strategy Description	Implementation Year	Length	Lead/Supporting Agencies	Coordination with Other Projects/Programs	Cost Estimate
Software							
Centralized Regional ATMS	1	Create centralized ATMS system for entire region. Currently both major agencies use ATMS.now but are under different contracts and are in different versioning. All arterial signals need to be accessible and manageable from a single location. Verify with local agencies contract requirements to transition to a regional centralized ATMS. This could be an extension or upgrade to the existing ATMS in place for local agencies or establishing a new ATMS. RTC needs to have access to all signals for timing and coordination. The Regional ATMS should be shared via a center-to-center link with the NDOT freeway ATMS and also provide remote desktop and/or terminals in necessary facilities to support coordination within the ATMS platform.	2024	1 Year	Lead: RTC Support: All Local Agencies	NDOT TMC and FMS upgrades	One Time: \$650,000 Annual: \$50,000
Regional ITS and Signal Asset Management Database	2	Update and centralize the existing RTC regional asset management database. Update to combine data of the same type for each agency in the same layer as the RTC moves towards a Regional TMC. Update the inventory database to create an identifier schema and unique identifiers for key elements such as signalized intersections that can then be tied to other ITS device tables such as cabinets, cabinet equipment, and cameras within the database. The identifier schema will be used to promote consistency for items collected as future infrastructure is built. The asset management database should be able to support work order processing, tracking, and time allocation to inventory activities, and training efforts as related to the database. Field inventories should be considered to ensure database accuracy where possible. This is needed in order to be a central database platform for storing information about system assets, including model number, date of installation, GPS location, and other configuration parameters. Important activities for an asset management database include: a health monitoring system that is a central platform to monitor online performance of field devices and infrastructure; a preventative maintenance platform for logging and providing alerts to maintenance staff for required preventative maintenance activities; integrate planning and scheduling in the existing maintenance processes (shift from reactive to planned maintenance); determine effective maintenance activities and frequency; utilize system to organize, track, manage, and analyze maintenance data; leverage maintenance reports to develop a preventative maintenance plan (such as conflict monitors needing testing once per year); develop task-specific, step-by-step instructions and guidance for proactive maintenance; and developing standard operating procedures (SOP)s for the updated processes that the asset management system will perform. All permitted plans, whether on the private developer side or public works projects should have their as-builts sent to the RTC to include all traffic infrastructure data in the database.	2025	6 Months	Lead: RTC Support: All Local Agencies	SMP	One Time: \$250,000 Annual: \$25,000

Table 2 – Strategic Deployment Recommendations (continued)

Strategy Name	Strategy Number	Strategy Description	Implementation Year	Length	Lead/Supporting Agencies	Coordination with Other Projects/Programs	Cost Estimate
Software							
Arterial Traffic Management System C2C	3	It is important for the jurisdictions within the urbanized areas to have their own arterial management software system (or systems) and have the ability to operate and manage the arterial and freeway networks more seamlessly. RTC should connect to the NDOT FMS for use in arterial management systems using center-to-center (C2C) interfaces in order to share viewing and potentially operation of flow detectors, CCTV cameras, DMS, performance data, operational strategies, and other functions. NDOT should also connect to the C2C ATMS network for similar coordination and operational benefits between ATMS and FMS. NDOT operates 24/7 and many of the arterial agencies are on business hour operations (as of 2023), it is important to share the real-time traffic management capability on any facility to be able to support traffic monitoring, situational awareness, and incident response for the traveling public. Physical connection of communications infrastructure between freeway and arterial systems enables operators to monitor conditions across systems and implement operational strategies that may impact other systems and users. When congested traffic conditions occur on one roadway, traffic on adjoining roadways or freeway interchanges in the corridor, are also impacted. ICM is the approach of managing traffic as a network as an origin to destination network of roadways operated by various jurisdictional entities, rather than freeways or arterials. A C2C interface exists in the Reno/Sparks urbanized area. The RTC TMC should keep the C2C interface up and running and make sure other agencies get connected to and utilize the interface.	2023	1 Month	Lead: RTC Support: All Local Agencies and NDOT	N/A	One Time: \$0 Annual: \$25,000 - 50,000 to maintain the network
Regional Performance Dashboard and Reporting	4	Develop a centralized data platform that provides systems monitoring and dashboarding for use by all RTC subgroups and local agencies for different purposes. Visual graphics and data illustrating data analytics, including system performance, real-time operational status, historical operational performance, and health monitoring can be created specifically for operations and maintenance purposes. The platform should have a specific interface, data, and reports for the following uses including traffic incident management, work zone, real-time weather, real-time operations, signals, and ITS device management. This may need to be separated by operations and maintenance platforms. Leverage INRIX and RITIS data to support this effort. The dashboard should link up with CAMPO and NDOT performance dashboards to share information for reporting for the entire region or support statewide performance.	2025	1 Year	Lead: RTC Support: None Required	N/A	One Time: \$150,000 (could vary by amount of information dashboarded) Annual: \$25,000 for maintenance.
Infrastructure							
ITS Upgrades / Lifecycle Replacement Program	5	Establish lifecycle/replacement activities and SOPs that are required to upgrade existing equipment to perform new necessary functions or to replace antiquated equipment that is no longer serving the function for which it was intended. The lifecycle replacement program should include a project list and associated recommendation maps. This will include controller upgrades as required (recognizing that Reno plans to install Cubic Commander controllers, whereas the City of Sparks has Cubic 980 ATCs that were installed within the last five years), ITS device infrastructure, communications infrastructure, and maintenance inventory of infrastructure required to support ongoing maintenance activities. Activities and protocols for salvage and storage of equipment will be established.	2024	6 Months (happens after database)	Lead: RTC Support: All Local Agencies	N/A	Needs to be quantified based on where infrastructure needs to be replaced

Table 2 – Strategic Deployment Recommendations (continued)

Strategy Name	Strategy Number	Strategy Description	Implementation Year	Length	Lead/Supporting Agencies	Coordination with Other Projects/Programs	Cost Estimate
Infrastructure							
ITS New Capital Investments	6	Establish new capital investment activities that are needed around the region to support the active and real-time operations and management of the transportation network regionwide. This includes integrating new equipment within each jurisdiction as recommended and provided by location on a project recommendations map. Existing types of field technologies (such as CCTV, DMS, signal controllers, detectors, network devices, preemption, connected vehicle edge device, etc.) as well as future field technologies (such as wrong way detection, artificial intelligence, other situational awareness technologies, public Wi-Fi, etc.) are included. The installation of ITS devices as part of future capacity and rehabilitation projects should be considered; steps to make this more implementable should be established.	2024	1 Month (as soon as possible)	Lead: RTC Support: None Required	NDOT ITS/ATM Master Plan, Sparks IC (with SMART Grant)	Needs to be quantified based on where we want to recommend infrastructure
Regional Signal Timing Optimization Program	7	Continue and bolster the regular program of regional signal timing optimization including funding as required to gain external support for updating signal timings along major corridors. Establish a universal timing software to ensure consistency across agencies. Strive to update signal timings across the region at minimum once every three years. Continue to track and update the historical reflection of signals that have received updated base signal timings. Utilize Automated Traffic Signal Performance Measures (ATSPM) evaluations and performance metrics to improve signal and corridor timing as well as make adjustments based on regular feedback from these tools. (Linked to Strategy 4: Regional Performance Dashboard and Reporting.)	2023	Ongoing	Lead: RTC Support: All Local Agencies	N/A	One Time: \$0 Annual: \$500,000
ITS Design Standards and Specifications (Section 6)	8	Create a full suite of Regional ITS design standards and specifications for ITS projects that RTC implements. This will build out a uniform network of infrastructure for better ITS implementation including smoother design and construction as well as better for maintenance in the future. Will require adoption from City of Sparks, City of Reno, and Washoe County. Standards for NDOT will be followed within NDOT Right of Way as they will be the maintaining agency. Standards and specifications should be reviewed and updated with feedback from construction, operators and partner agencies every other year. A process for standardizing ITS equipment (CCTV, network switches, traffic signal controllers, etc.) should be implemented to improve interoperability between agencies. Network switches are a critical aspect to the ITS network and selecting a recommended switch with robust customer support to use the full fault tolerant potential are recommended.	2023	Part of the ITS SMP	Lead: RTC Support: All Local Agencies	N/A	One Time: \$75,000 Annual: \$0
Third-Party Data Use	9	Establish and leverage opportunities for the RTC TMC to use third party data (Waze, INRIX, RITIS) to better monitor regional road and travel conditions, slowdowns, and recurring safety hazard locations including incident management. This would involve establishing third party data access on all RTC TMC operator workstations, training on use of the tools to evaluate performance and use of third-party data for insights on real-time condition reporting as well as working with third-party providers directly to develop specific reporting alerts that could serve as triggers for the RTC TMC so as to not need to monitor reporting continuously.	2024	1 Month	Lead: RTC Support: None Required	Sparks Intelligent Corridor	One Time: \$0 Annual: \$100,000 (could vary based on data desired)
Adaptive Timing Feasibility Study	10	Complete an adaptive signal timing feasibility study to include evaluating the benefit and cost of adaptive signal timing along needed corridors. Adaptive signal timing is expensive to implement and it would benefit RTC to evaluate options prior to investment. Corridors that typically have the greatest benefit are used for event traffic.	2025	6 Months	Lead: RTC Support: None Required	N/A	One Time: \$30,000 Annual: \$0

Table 2 – Strategic Deployment Recommendations (continued)

Strategy Name	Strategy Number	Strategy Description	Implementation Year	Length	Lead/Supporting Agencies	Coordination with Other Projects/Programs	Cost Estimate
Infrastructure							
Regional CAV Plan	11	Complete a regional plan for autonomous vehicles/connected vehicles (CAV) to include evaluating the pros and cons and implementation expectations of CAV infrastructure, data collection, public agency versus private sector roles and responsibilities, and trending of where the CAV field is requiring RTC involvement. It would benefit RTC from evaluating options prior to investment. Consider coordination with the UNR LiDAR Living Lab as part of this strategy.	2025	6 Months	Lead: RTC Support: None Required	N/A	One Time: \$50,000 Annual: \$0
Staffing							
Establish RTC TMC	12	Initially, it is recommended that RTC Washoe establish a TMC from which all local arterial networks can be managed for the individual jurisdictions in the urban region. This includes City of Sparks, City of Reno, Washoe County, and NDOT traffic signals within the region. The NDOT District 2 ROC should maintain control and management of freeways and establish center-to-center communication with the new RTC TMC to coordinate ATMS systems and leverage resources to support after-hours operations. The RTC TMC personnel will primarily support the arterial network, although it is anticipated that a RTC liaison physically located at the NDOT District 2 ROC during emergency management or other situations that would warrant face-to-face coordination may be needed. It is anticipated that NDOT would build a new facility in District 2 that could house both the NDOT ROC and the RTC TMC in which case collocation provides additional coordination benefits. Establishing a C2C connection with the RTC TMC and staffing appropriately the NDOT District 2 ROC are priorities before implementing additional ITS infrastructure in the region. A Concept of Operations for a Northern Nevada ROC (also referred to as the Northern Nevada TMC) will be established by the ITS & ATM Master Plan that identifies updated operational strategies for remotely monitoring and managing traffic conditions and highlights the near-term initial and long-term ultimate requirements for such a collocated facility. The Integrated system will enable NDOT, MPOs, and local agencies to provide 24/7 operations staffing across the entire transportation network to support alternate routing signal timing plans, ATSPM, arterial signal coordination with ramp metering, better traveler information, and better incident response support. Coordination with law enforcement and emergency response will be conducted as part of incident responses. Establishing the RTC TMC with existing staff to cover peak periods. RTC is attending coordination meetings for the Northern Nevada ROC. Due to schedule, the RTC TMC may be implemented prior to the Northern Nevada ROC because the regional arterial network needs proactive operations management.	2023 (Interim) 2026-2027 (NDOT)	In Progress	Lead: RTC Support: All Local Agencies	NDOT ITS/ATM Master Plan, NDOT D2 TMC Development Plan	One Time: \$150,000 Annual: \$0

Table 2 – Strategic Deployment Recommendations (continued)

Strategy Name	Strategy Number	Strategy Description	Implementation Year	Length	Lead/Supporting Agencies	Coordination with Other Projects/Programs	Cost Estimate
Staffing							
ITS and Signal Staff Job Descriptions and Career Path Development	13	Establish job descriptions and career path for new types of positions within the RTC to support the new TMC and the need to maintain ITS infrastructure (field devices, software, communications). Specific skill sets and/or appropriate training are required to update signal timing, maintain an IT network, and troubleshoot ITS field devices and job descriptions and hirings need to occur to match the required experience and skill sets required by those types of positions. Specifically, for the RTC TMC positions, peak period monitoring would be required for proactive management of the region's transportation network which will require 2-3 full-time equivalent staff responsible for management and operations of the TMC and may carry additional responsibilities in RTC Engineering. This staff will need to provide at minimum one operator per shift and one supervisor per shift to cover entry level, supervisor level, and manager level career path positions, with career progression offered beyond the manager level to other areas of RTC Engineering. Recognize a burn in period for staff job responsibilities. There are four existing job titles at RTC: Engineer 1, Engineer 2, Engineering Manager, and Director of Engineering.	2024	As Soon As Possible – In Progress	Lead: RTC Support: All Local Agencies	N/A	One Time: \$0 Annual: \$0
RTC TMC Standard Operating Procedures	14	Develop Standard Operating Procedures (SOP)s for the new RTC TMC that includes special event management, work zone management, incident management, integrated corridor management, and alternate routing procedures as well as required coordination with NDOT under each of those circumstances. These SOPs should outline agreed roles and responsibilities as related to each function listed above including, level of service expectations, sharing of data, and performance dashboard thresholds warranting different responses. RTC should be given access to the ATMS for signal coordination and signal timing.	2024	As Soon As Possible – In Progress	Lead: RTC Support: All Local Agencies and NDOT	N/A	One Time: \$100,000 Annual: \$0
TSMO Program Plan	15	Develop an RTC TSMO Program Plan that would be used to guide staffing, resource development, training, maintenance, and roles and responsibilities in the future of the regional operation center management. Align the RTC plan with the NDOT TSMO Plan to leverage coordination and funding for joint efforts or activities that would support the Washoe region.	2026	1 Year	Lead: RTC Support: All Local Agencies and NDOT	NDOT TSMO	One Time: \$100,000 Annual: \$0
Regional Service Patrol Program	16	Establish a Regional Service Patrol during peak periods that can support arterial incident management across the entire region. Leverage lessons learned and investments required from other metropolitan areas that provide arterial regional service patrol programs.	2026	1 Year	Lead: RTC Support: None Required	N/A	One Time: \$0 Annual: \$150,000
Regional Shared Event Tracking Mechanism	17	Create and provide a regional shared event tracking system to allow all agencies in the region as well as the state responding agencies to be aware of incidents, work zones, special events, and proposed routing/response plans for each of the events.	2024	1 Year	Lead: RTC Support: None Required	N/A	One Time: \$100,000 Annual: \$0

Table 2 – Strategic Deployment Recommendations (continued)

Strategy Name	Strategy Number	Strategy Description	Implementation Year	Length	Lead/Supporting Agencies	Coordination with Other Projects/Programs	Cost Estimate
Staffing							
Regional Traveler Information Services	18	Regional traveler information services should leverage NDOT’s new 511 website and current social media presence, which would allow the entire region to be centralized in traveler information services. Capabilities exist within the new 511 website to allow local agencies to input traveler information. Social media presence, provided by RTC on behalf of the local agencies, should also be included. Whichever platform is chosen, these services should be unified, centralized, and publicized to inform the traveling public of their existence and also their reliability of being an information provider that provides timely and comprehensive current conditions information to travelers. Consider mobility applications.	2024	6 Months	Lead: RTC Support: All Local Agencies	NDOT 511	One Time: \$100,000 Annual: \$0
Training							
Staff Training Program	19	Develop standard training program to support the expansion of the existing ITS network across the region and the implementation of new types of technologies and RTC job responsibilities. Any new staff involved in new activities inherently comes with new processes, standard work, and applications to support the new processes. Training should span all users who interface with the devices or their programs and be kept up to date as new technologies are introduced. Consider elements of cross training between signals and ITS. Include skills/training for operators to support signal timing changes. In the near-term, current signal timing staff should be trained to prepare incident/congestion timing plans that can be easily implemented by operators with basic skills and training. RTC should consider any cost associated with training to be external to what RTC can provide. Other training to be conducted as needed leading up to this implementation.	2025	Ongoing	Lead: RTC Support: All Local Agencies	N/A	One Time: \$0 Annual: \$0
Management of Network Switches	20	Arterial network staff at the RTC and/or local agencies need to be trained to manage and configure network switches to use the functionality of a ring topology fiber network (smart network switches).	2023	6 Months	Lead: RTC Support: All Local Agencies	N/A	One Time: \$100,000 Annual: \$0
Funding							
Establish Funding for ITS Upgrades / Lifecycle Replacement Program	21	Establish a specific funding pool within RTC’s ITS funding program that is right-sized specifically to dedicate to lifecycle/replacement activities. This funding pool will be used by RTC to upgrade existing equipment to perform new necessary functions or to replace antiquated equipment that is no longer serving the function for which it was installed. This reflects the project listing of ITS upgrades and lifecycle replacements needed This will include controller upgrades as required (recognizing that Reno is installing Cubic Commanders and Sparks has installed new Cubic 980 ATCs within the last five years), ITS device infrastructure, communications infrastructure, and maintenance inventory of infrastructure required to support ongoing maintenance activities. Consider using the fuel tax to fund this program for RTC to manage.	2023	Immediately and Ongoing	Lead: RTC Support: None Required	N/A	Needs to be quantified based on where infrastructure needs to be replaced

Table 2 – Strategic Deployment Recommendations (continued)

Strategy Name	Strategy Number	Strategy Description	Implementation Year	Length	Lead/Supporting Agencies	Coordination with Other Projects/Programs	Cost Estimate
Funding							
Establish Funding for ITS New Capital Investments	22	Establish a specific funding pool within RTC's ITS funding program that is right-sized specifically to dedicate new capital investment activities that are needed around the region to support the active and real-time operations and management of the transportation network regionwide. This reflects the project listing to install and integrate new equipment within each jurisdiction as recommended by the project recommendations map from the lifecycle costing strategy (Strategy 21). Existing types of field technologies (such as CCTV, DMS, signal controllers, detectors, preemption, connected vehicle edge device, etc.) as well as future field technologies (such as wrong way detection, artificial intelligence, other situational awareness technologies, public Wi-Fi, etc.) are included. All previous recommendations will be incorporated into this Strategic Master Plan to reflect the full intended use of this funding program.	2023	Immediately and Ongoing	Lead: RTC Support: None Required	N/A	Needs to be quantified based on where infrastructure needs to be replaced
Agreements for O&M for ITS and Signals in Region	23	Develop agreements to support a variety of efforts in supporting the regional ITS program. A subset of the agreements required is included here: Initial Memorandum of Understanding (MOU) signed by the RTC, local cities, and Washoe County to formalize coordination with regard to establishing a RTC TMC. Develop an Intergovernmental Agreement (IGA) between RTC, local cities, and Washoe County that outlines the definition between "arterial" and "non-arterial" (example Mt. Rose Highway), agreed upon roles and responsibilities in a high-level (pointing to established SOPs for the RTC TMC so as not to need to require updating a formal agreement any time a minor process is changed), and required data/resource/support sharing amongst the partner agencies. The existing RTC/NDOT signal operations and maintenance agreement can be leveraged to initiate this activity. Develop RTC ITS maintenance contract that covers all ITS maintenance regionwide to supplement where local agencies are already providing those services for their local jurisdiction or other local jurisdictions. Mimic NDOT District ITS Maintenance contract that is currently being revised statewide. Having the RTC coordinate signal timing efforts has worked well to provide a uniform approach, something similar should be considered for the operations and maintenances of the signal system and ITS.	2023	6 Months	Lead: RTC Support: All Local Agencies	N/A	One Time: \$50,000 Annual: \$0
Public Awareness Campaign	24	A public awareness campaign needs to be developed to provide necessary information to a variety of audiences including traveling public, local agencies within the region, operations, management, and within the state. This campaign should include intentional outreach, meetings, and coordination efforts to tell the story as to why RTC and its investments are bettering the community and is a good use of taxpayer dollars toward the goal of addressing the needs of the unique region.	2024	6 Months	Lead: RTC Support: All Local Agencies	N/A	One Time: \$100,000 Annual: \$0

RTC Washoe ITS Strategic Master Plan

A dependency diagram outlining the timeline for deployment of the proposed strategies is provided in **Figure 14**. The dependency diagram shows the tasks that must be completed prior to the initiation of another task. For example, an RTC TMC must be established before TMC Standard Operating Procedures can be implemented, or staff can be hired to operate the TMC. Some strategies will take only a few months to accomplish, while others may take years to be fully implement. The dependency diagram functions as a recommendation for implementation priority, however the RTC can adjust strategy implementation timelines to best fit their needs as those needs evolve. Additional items which have not been identified may become necessary and can be inserted into the diagram at any time.



RTC Washoe ITS Strategic Master Plan

		Near-Term (Anticipated 2023-2024)		Mid-Term (Anticipated 2024-2026)		Mid-Term (Anticipated After 2026)	
		Present	2024	2025	2026		
Deployment Strategies	Software Track	Arterial Traffic Management System C2C	Centralized Regional ATMS	Regional ITS and Signal Asset Management Database Regional Performance Dashboard and Reporting			
	Infrastructure Track	Regional Signal Timing Optimization Program ITS Design Standards and Specifications	ITS Upgrades / Lifecycle Replacement Program ITS New Capital Investments Third-Party Data Use	Adaptive Timing Feasibility Study Regional CV/AV Plan			
	Staffing Track	Establish RTC TMC	ITS and Signal Staff Job Descriptions and Career Path Development RTC TMC Standard Operating Procedures Regional Shared Event Tracking Mechanism Regional Traveler Information Services		TSMO Program Plan Regional Service Patrol Program		
	Training Track	Management of Network Switches		Staff Training Program			
	Funding Track	Establish Funding for ITS Upgrades / ITS Lifecycle Replacement Program Establish Funding for ITS New Capital Investments Agreements for O&M for ITS and Signals in Region	Public Awareness Campaign				

Figure 14 – Deployment Strategies Dependencies Diagram



5. ITS INVESTMENTS

ITS investments for the RTC region include the deployment of an ITS Upgrade/Lifecycle Replacement Program (Strategy 21) and a strategy for ITS New Capital Investments (Strategy 6) proposed for 2024. Deploying the ITS Upgrade/Lifecycle Replacement Program will provide the RTC with valuable information on required upgrades for existing equipment and create a plan for future replacement of equipment once it reaches its service life. Results from the ITS Upgrade/Lifecycle Replacement Program will inform the development of new capital investments for the region including investments for active and real-time operations and management of the transportation network regionwide.

6. ITS DESIGN STANDARD PLANS AND SPECIFICATIONS

Within the region, RTC, NDOT, City of Reno, City of Sparks, and Washoe County each have their own standard plans and ITS specifications, therefore, many of the RTC ITS infrastructure improvements have been developed without a consistent approach across the region. Currently the following local agency sources used for ITS design standard plans and specifications do not adequately address the requirements for consistent construction of an ITS network and device infrastructure within the RTC region:

- *RTC Regional Traffic Guidelines* (Revision September 2021)¹
- *RTC Standard Specifications for Public Works Construction* (“Orange Book” Revision 2012)² (Note, there is a 2016 version, which is not used by local agencies at this time.)
- *City of Reno PW Design Manual* (Revision January 2009)³
- *City of Reno Standard Details for Public Works Construction* (Revision: January 2023)⁴
- *City of Sparks Construction Standard Details* (Revision January 2020)⁵
- *Washoe County Standard Details*⁶

After review of the above sources, it was determined that the *RTC Regional Traffic Guidelines* provide the most information and are the most appropriate document for adding an ITS Standard Design Guidelines, Standard Details, and Standard Specifications. As such, a new DRAFT section titled *Intelligent Transportation Systems* has been added to the *RTC Regional Traffic Guidelines* with the following subsections included to best define the ITS requirements:

- Contractor System Integrator Requirements
- Conduit and Pull Box System Requirements
- Fiber Optic Cabling System Requirements
- Communications Hub Cabinet Requirements

¹https://www.rtcwashoe.com/wp-content/uploads/2017/03/2021_Regional_Traffic_Guidelines.pdf

² <http://rtcwashoe.wpengine.com/wp-content/uploads/2018/01/2016-Version-Revision-No.-9.pdf> and <https://www.rtcwashoe.com/engineering-resource/orange-book/>

³<https://www.reno.gov/home/showpublisheddocument/58638/635942503590470000>

⁴<https://www.reno.gov/government/departments/public-works/forms-publications/construction-standard-details>

⁵<https://cityofsparks.us/resources/resource/construction-standard-details/>

⁶https://www.washoecounty.us/csd/engineering_capitalprojects/information_for_developers/standard_details.php

RTC Washoe ITS Strategic Master Plan

- Field Hardened Network Device Requirements
- Closed-Circuit Television (CCTV) Camera Requirements

The addition of the above listed sections will benefit the design and construction of future ITS projects within the region by being more efficient and promoting consistency and interconnectivity across jurisdictional boundaries within the RTC region. Standardizing the way ITS projects are implemented now will alleviate potential compatibility complications in the future. Additionally, DRAFT standard ITS plan details have also been added to the *RTC Washoe Regional Traffic Guidelines*. A copy of the new ITS Design Guidelines, Standard Details and Standard Specifications are included in **Attachment B**.

7. ESTABLISHMENT OF A RTC TMC

A goal of this ITS SMP is to recommend a regional TMC concept, designed such that a continued and consistent partnered collaboration with each of the regional and local agencies is possible. When this goal is attained, a centralized system for operation and maintenance of regionwide signals and ITS devices on the arterial system will be realized. The development of a regional TMC will take place in two phase. Phase 1 will function as an interim phase and consist of a virtual/hybrid TMC model with a Phase 2 concept for a TMC that is collocated with NDOT in the next three to five years. The proposed TMC concept is a Washoe Region specific concept based on the regional needs heard from stakeholders as part of this project. The proposed concept shown in **Figure 15** puts NDOT and RTC at the same level, with NDOT D2 Roadway Operation Center (ROC) focusing on freeway management and the RTC Traffic Management Center (TMC) focusing on arterial management for the local jurisdictions. The concept also centralizes maintenance activities for the ATMS, a single agency would operate and maintain all the signals and arterial ITS in the region. The concept also proposes a RTC TMC liaison that sits regularly at NDOT D2 ROC to facilitate collaboration between NDOT D2 and the RTC TMC. This role is yet to be refined.

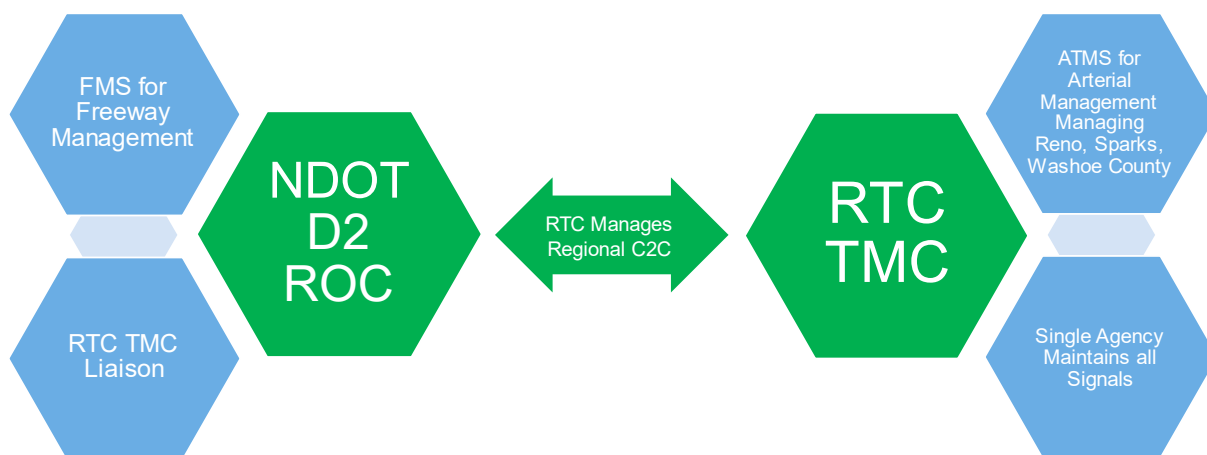


Figure 15 – Proposed TMC Concept

The proposed TMC concept would provide benefits in the following areas:

- Enhanced real-time operations collaboration
 - Coordination between freeway and arterials
 - Coordination in response to incidents
 - Implement a shared regional operations center
 - Provide a shared event (incident) tracking mechanism
 - Provide timely and comprehensive current conditions information to travelers
 - Work zone management
 - Collaborative maintenance
- Provide the ability to proactively operated the arterial transportation network

7.1 Virtual TMC (Interim Concept)

The interim concept for a TMC recommends a virtual or hybrid TMC model where NDOT and RTC would interact regularly virtually. A virtual TMC provides the functions for monitoring, controlling, and managing the elements of a transportation management system with use of computers and computer networks without the need to be present in a physical collocated center. The ability to monitor, control and manage functional ITS devices using software and system applications from any location is a crucial requirement to the success of a virtual TMC. The virtual TMC model provides capital cost savings, eliminates recurring costs like overhead or maintenance fees, and allows TMC operations to occur anywhere. However, this model requires broader staff capabilities, including knowledge surrounding standard operating practices.

To accommodate the Virtual TMC model, operating procedures defining the operating steps, area of responsibility and procedural steps that will be followed must be developed. A modified staffing plan and training regimen shifting away from the in-person setting should be developed. An “Operations and Maintenance” plan should be developed to describe the list of existing ITS devices, as well as how and when those systems will be maintained.

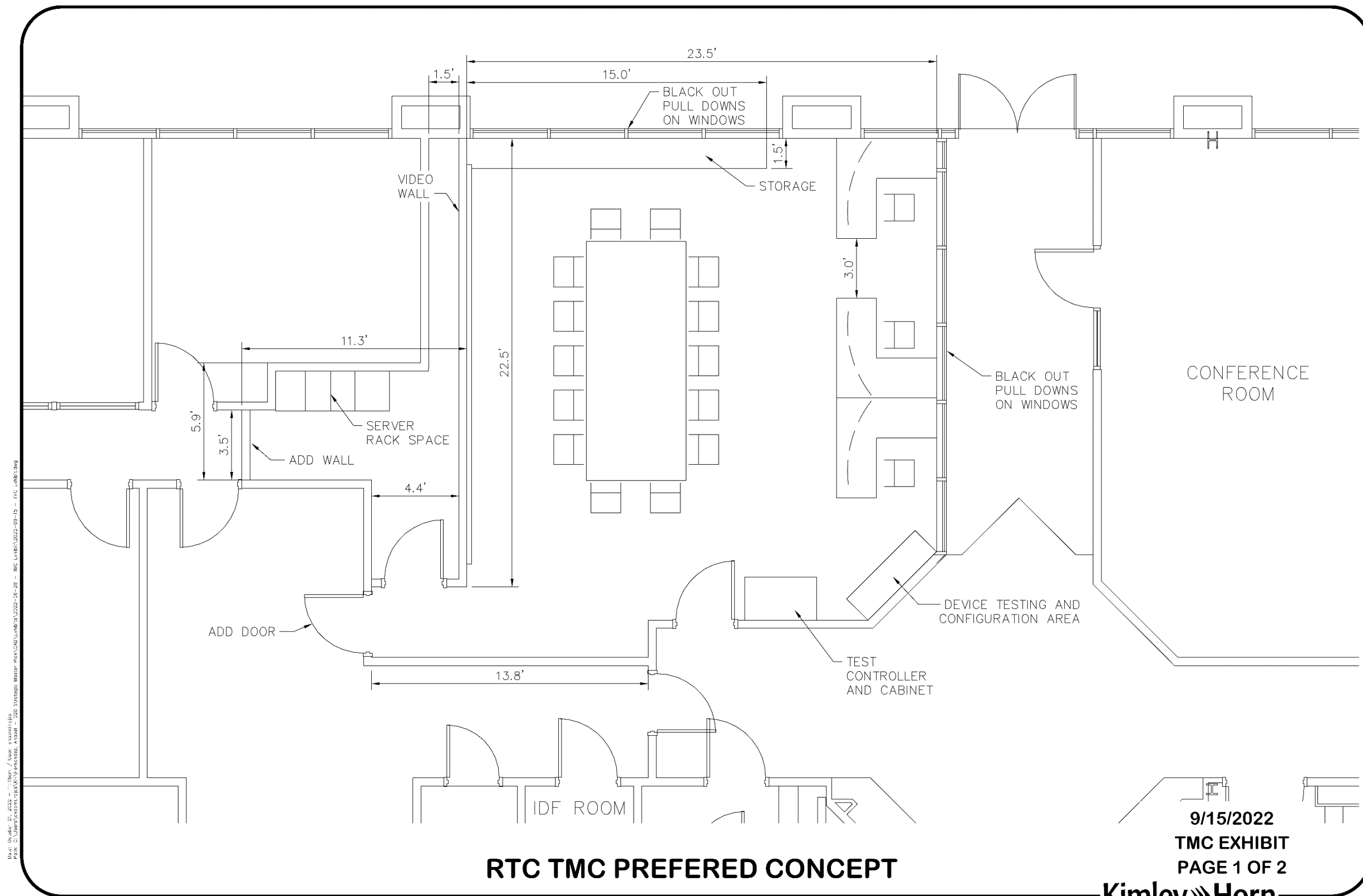
The interim concept will consist of a physical TMC housed at the RTC where all local arterial networks can be managed for all the jurisdictions in the area. The NDOT District 2 Road Operations Center (ROC) should maintain control and management of freeways and establish center-to-center communication with the new RTC TMC to coordinate ATMS systems and leverage resources to support after-hour operations as the ROC is open 24 hours per day 7 days a week. The RTC TMC personnel will primarily support the arterial network, although it is anticipated that a RTC liaison physically located at the NDOT District 2 ROC during emergency management, other situations where face-to-face coordination may be needed, and to build relationships of trust with NDOT operators and personnel. With the creation of a RTC TMC, the cities within the RTC region, and the RTC could significantly increase safety, efficiency, and public relations benefits through monitoring and operating traffic signals and other devices in real-time from a centralized location. Coordination between NDOT and RTC signals and facilities should also be considered as part of the RTC TMC function. With the centralization of traffic controls and coordination into the RTC TMC, agencies within the region will have better opportunity to coordinate and collaborate on traffic operations, management, and planning strategies.

7.1.1 TMC Infrastructure and Systems

The proposed interim TMC layout for the RTC consists of a conference room table, three workstations, video wall, a device testing and configuration area, test controller and cabinet area, and server rack space to house required equipment as shown in **Figure 16** and **Figure 17**. Further details regarding the TMC concept include:

- **Operations floor workstations** (3 Stations) will provide access to TMC-specific systems, such as the ATMS.now and video systems that provide the ability to see CCTV images, and agency systems for email and other intranet applications. The primary purpose of the operators on the floor is to operate/manage the TMC systems that support real-time traffic management, incident management, and information sharing. The Initial Buildout is expected to include:
 - 1 Operations staff workstation
 - 1 Analysis staff workstation
 - 1 Spare/Shared workstation for temporary use by TMC staff, public safety, Public Information Officer, other agency staff, vendors, contractors or for use by Operations/Analysis staff in the event of equipment failures at the primary Operations/Analysis workstation
- A **video wall** will enable operators, managers, and other TMC personnel to share a common view of situational information. Ten 55-inch HDTVs are recommended for the video wall.
- **Common area** items, including storage, library, shelving/filing space, and other amenities that need to be accessible to all staff in the TMC.
 - Common furnishings such as shelving units, counters/review space, locking storage for staff
 - Common office equipment such as a dedicated TMC phone and printer/scanner
 - Device testing and configuration area
 - Test controller and cabinet area
 - A conference table providing seating for up to 14 people for regular meetings with traffic operations stakeholders is also provided
- A **communications/server room** is needed to house the rack and server space needed to support the video wall and other technology equipment in the TMC.

In addition to the costs for these components, TMC construction costs will also include building renovations to the RTC building space to accommodate the RTC interim TMC. It is estimated that these renovations will cost approximately \$100 per square to construct. There are 720 square feet for the new TMC area that will be renovated and furnished. A budget of \$150,000 should be established to build out the interim TMC at the RTC building and set up all the technologies including purchase of equipment, software, servers, and other items and services to complete the system integration (\$78,000) for a fully operational TMC.



RTC TMC PREFERED CONCEPT

9/15/2022
 TMC EXHIBIT
 PAGE 1 OF 2
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Figure 16 – Proposed TMC Concept (Plan View)

7.1.2 ITS and Signal Staff Job Descriptions and Career Path Development

Specific staff roles and a minimum number of staff required to properly operate and maintain the interim TMC and maintain existing and new ITS infrastructure will be needed. To accomplish this a strategy to develop job descriptions and career paths for new positions within the RTC (Strategy 13) should be implemented. Specific skill sets and/or appropriate training are required to update signal timing, maintain an IT network, and troubleshoot ITS field devices. The development of job descriptions needs to match the required experience and skill sets required by those types of positions. Specifically, for the RTC TMC positions, peak period monitoring would be required for proactive management of the region's transportation network which will require two to three full-time equivalent staff responsible for management and operations of the TMC and may carry additional responsibilities in RTC Engineering. This staff will need to provide at a minimum one operator per shift and one supervisor per shift to cover entry level, supervisor level, and manager level career path positions, with career progression offered beyond the manager level to other areas of RTC Engineering. An additional role providing a regional service patrol program during peak hours that functions across arterial boundaries should also be considered.

The following roles may be performed by TMC facility staff or by a combination of existing staff who choose to take on additional TMC-specific roles as part of their current position:

- **Management** – Responsible for overseeing and managing the TMC, the ITS network, and general City/Region traffic and network operations.
- **Analysis** – Responsible for managing and implementing traffic signal timing in the City/Region.
- **Operations** – Responsible for the real-time operation and management of ITS equipment and systems to support real-time and coordinated traffic operations from the TMC.

7.1.3 ITS Device Maintenance Staffing

The RTC should pursue technicians that can support both traffic signal and ITS maintenance by cross training staff to achieve a 25-to-1 ratio per signal. Taking into consideration that there are a total of 429 signals, this means the TMC would require 17 ITS or signal technicians who are cross-trained and available to support ITS device maintenance as well. Only five technicians exist within the region (three from Reno and two from Sparks), therefore an additional 12 technicians would be recommended to proactively maintain the traffic signals and ITS devices in the regional network.

7.1.4 RTC TMC Standard Operating Procedures

Development of Standard Operating Procedures (SOP)s for the new RTC TMC that includes special event management, work zone management, incident management, integrated corridor management, and alternate routing procedures as well as required coordination with NDOT under each of those circumstances should be implemented. These SOPs should outline agreed roles and responsibilities as they related to each function listed above including, level of service expectations, sharing of data, and performance dashboard thresholds warranting different responses.

7.1.5 Staff Training Program

A staff training program to support the expansion of the existing ITS network across the region and the implementation of new types of technologies and RTC job responsibilities should be



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implemented. Any new staff involved in new activities inherently comes with new processes, standard work, and applications to support the new processes. Training should span across all users who interface with the devices or their programs and be kept up-to-date as new technologies are introduced. Consideration for cross training between signals and ITS should be included, with training for operators to support signal timing changes.

In the near-term, current signal timing staff should be trained to prepare incident/congestion timing plans that can be easily implemented by operators with basic skills and training. Arterial network staff at the RTC and/or local agencies need to be trained to manage and configure network switches to use the functionality of a ring topology fiber network (smart network switches).

7.2 TMC Full Build Out (Phase 2)

It is anticipated that NDOT will build a new facility in District 2 that could house both the NDOT ROC and the RTC TMC in which case collocation provides additional coordination benefits. The TMC full build out at NDOT District 2 is planned to be completed in the next three to five years (2026-2027). Establishing a C2C connection with the RTC TMC and staffing the NDOT District 2 ROC appropriately are priorities before implementing additional ITS infrastructure in the region. A Concept of Operations for a Northern Nevada ROC will be established by the *NDOT ITS & ATM Master Plan* that identifies updated operational strategies for remotely monitoring and managing traffic conditions and highlights the near-term initial and long-term ultimate requirements for such a collocated facility. An integrated system will enable NDOT, MPOs, and local agencies to provide 24/7 operations staffing across the entire transportation network to support alternate routing signal timing plans, ATSPM, arterial signal coordination with ramp metering, better traveler information, and better incident response support.



ATTACHMENT A
ITS NETWORK MASTER PLAN INFORMATION



ITS Network Master Plan

December 22, 2021

Prepared for:



Prepared by:

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1. Introduction and Purpose

The Regional Transportation Commission (RTC) of Washoe County has been actively implementing advanced intelligent transportation system (ITS) technologies and communications for many years in the Washoe County region, which incorporates the City of Sparks, City of Reno, Washoe County, and Nevada Department of Transportation (NDOT) roadway facilities. The Regional Transportation Improvement Program (RTIP) is updated each year with projects that are organized by freeway projects, capacity projects, new roadways, or multimodal projects. There is a category for ITS and Traffic Management projects that are included in the RTIP, and RTC is looking to this document to support prioritizing and organizing the use of that funding for the upcoming five-year horizon.

This effort moves forward on previous construction and installation efforts to date and strategizes how the robust existing ITS and communications network could be expanded and utilized to support future regional strategies. The ITS Network Master Plan will document the process undertaken to collect information about the existing environment, assess gaps and needs to support a future network management system, and provides recommendations outlined in a format that RTC can use to apply for funding the recommended ITS communications infrastructure improvements needed in the next five years.

This document serves RTC in helping to set a vision for the next five years on a regional network expansion and recommendations for further development of the center-to-center (C2C) network infrastructure that connects individual agencies together to share data and information to support regional operations. Recommendations are intended to bolster existing infrastructure and standards protocols and practices for ITS networks to create a planned path that will help RTC gain the most value for investments in ITS infrastructure.

2. Data Collection and Inventory

An extensive data collection effort was completed to understand the existing environment that is utilized by the agencies throughout the region in order to develop a comprehensive inventory from which to build toward recommendations.

1.1. Data Collection Process

Records in the form of as-built documents and available GIS-based data files were collected from the City of Reno, the City of Sparks, NDOT, and RTC. Select plan sets and record drawings that provide regional traffic signal communications status, communications infrastructure, and field device locations were used to build the master database. Desired information was individually collected and digitized into GIS, which specifically includes:

- Existing fiber cable paths
- Other communication links
- Fiber splice diagrams
- Communications conduit locations
- RTC 10-year map of CIP projects

Since each individual agency owns and maintains their own ITS communications infrastructure (fiber cable and conduit systems) and devices (generally located at signalized intersections), the



first step in the data collection process was to coordinate with each agency and identify the various project names/numbers that installed this infrastructure. Then these project names/numbers were used to search for the associated design plans & record drawings.

The second step in the data collection process was to update the ITS communications infrastructure database with the infrastructure information shown on the plans and record drawings received. City of Sparks and City of Reno was coordinated with to verify the accuracy of information shown in the GIS database and identify any gaps of information needed. The third step was to update the database with the additional information received from each agency. It is important to keep in mind that the ITS communications infrastructure shown in this database represents the most current data available at the time this inventory was completed. As new infrastructure is built in the years ahead, additional record drawing information will need to be collected from each agency and added to the GIS database.

1.2. Inventory

Data collected from record drawings and database files were consolidated using a specific procedure. Database files collected were aggregated into the master database, which is verified with as-built record drawings gathered. As-built record drawings were divided into plan sets that contain information on traffic signal and communications infrastructure plans, and associated splice details.

Figure 1 displays the signalized intersection communications status. Intersection connections are 1) Cellular Network Routers, 2) Copper Interconnect, 3) Fiber Path Back to the TMC, 4) Fiber Dependent on Wireless Radios, 5) Isolated, 6) Planned, and 7) Wireless Radio. At specific intersections, the signal communications status is shown with a colored cross.

Figure 2 shows the locations of the communications conduit and cable infrastructure. Conduit infrastructure is shown for each jurisdiction and agency specific operation of communications media in each conduit. This includes 1) copper interconnect, 2) fiber optic cables, including Multi-Mode Fiber Optic Cable (MMFO), Single-Mode Fiber Optic Cable (SMFO), and Communication Distribution Cable Assembly (CDCA), and 3) wireless links.

Conduit runs are shown according to the right-of-way it is found in and, according to agreement between NDOT and RTC as well as RTC and local agencies, who is responsible for maintenance. Each conduit has a color code identifying the corresponding type of cable within the conduit and according to which agency it is operated by., The Legend used to define each color code has the following naming convention:

- N = NDOT
- R = City of Reno
- S = City of Sparks
- W = Washoe County

In addition to the operating agency's letter code, the type of known cable is shown as MMFO, SMFO, CDCA, or Interconnect. Conduits with no cables are shown as "Empty" and unverified cables are shown as "Unknown".

Figure 1 – Existing Signalized Intersection Communications Status

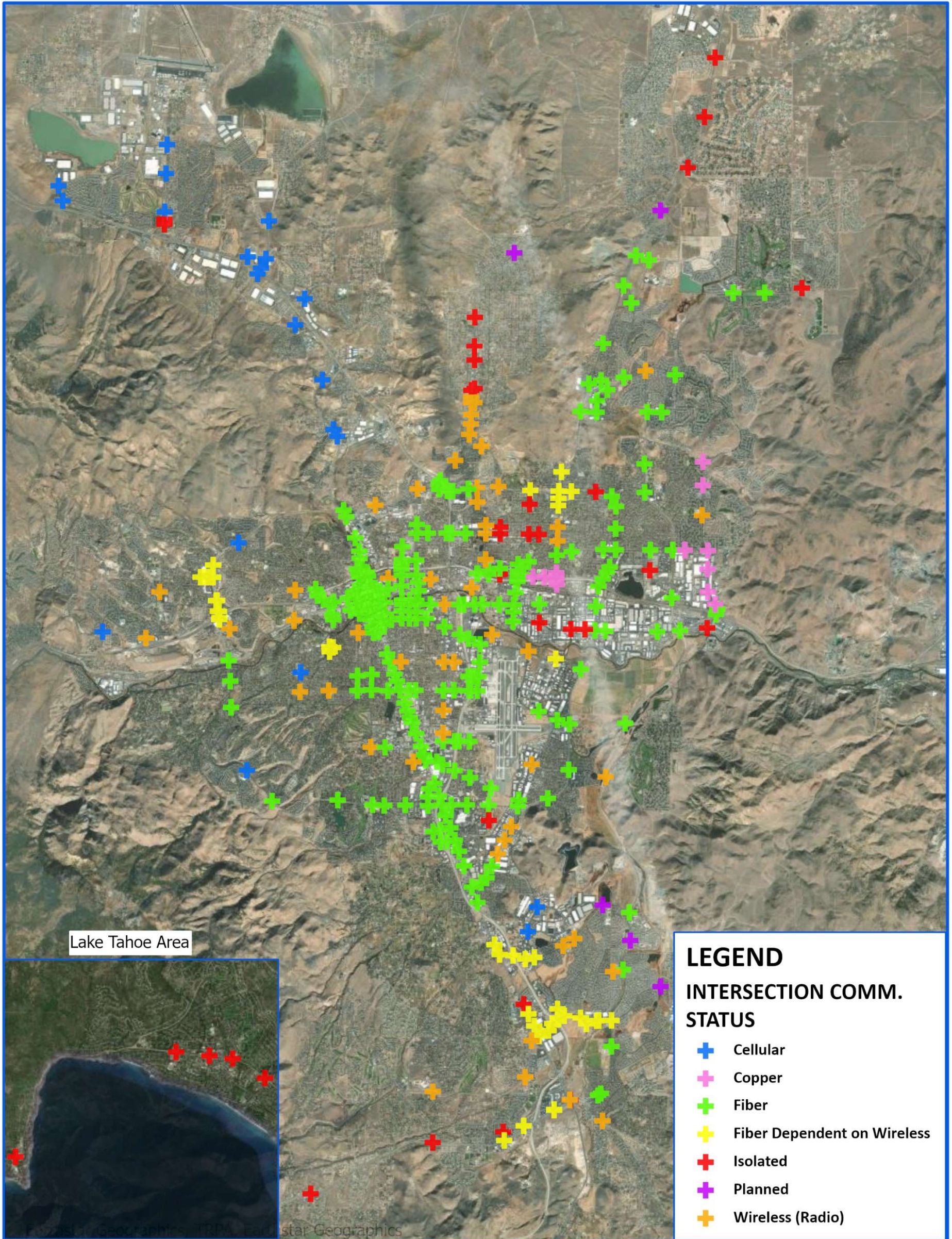
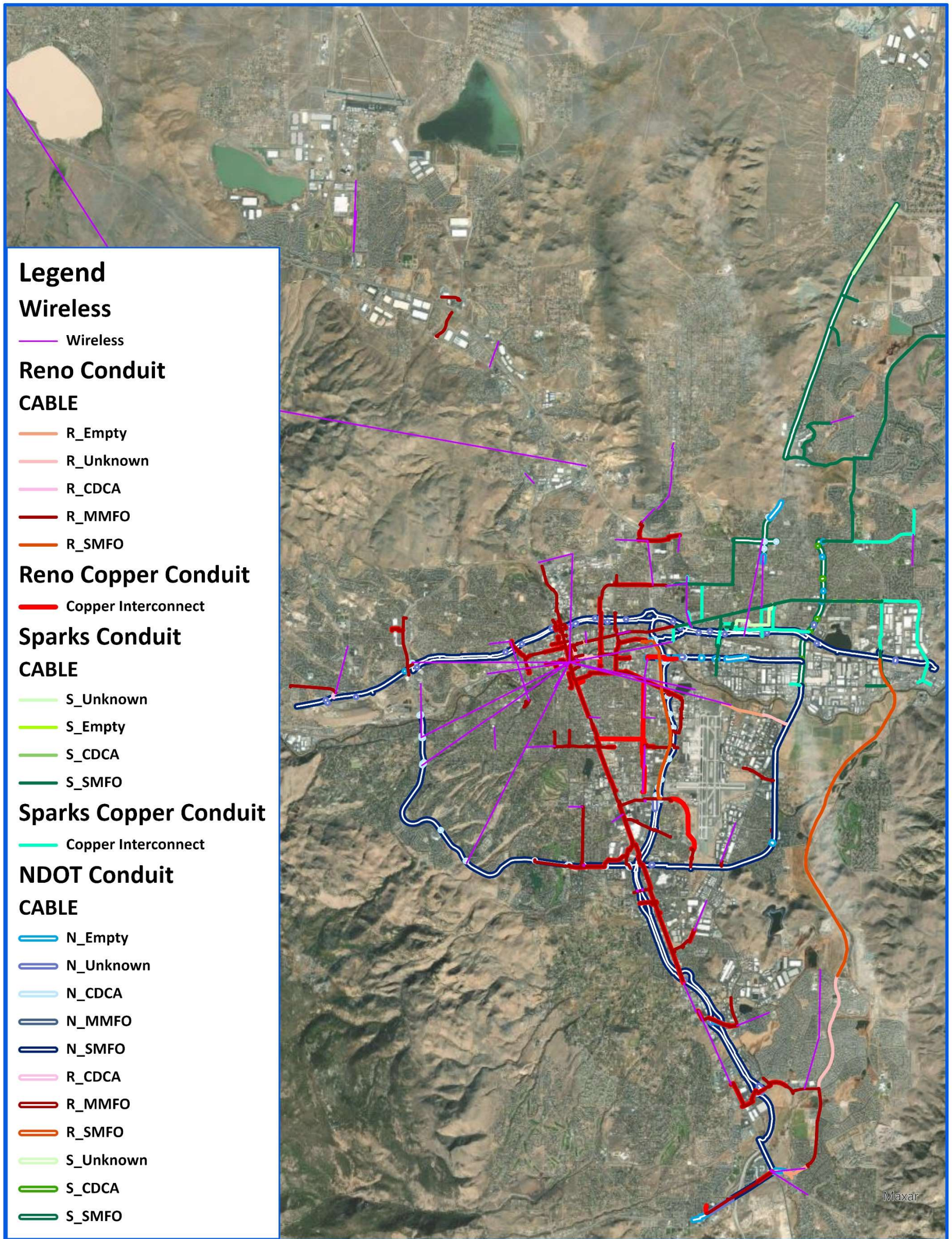


Figure 2 – Existing Conduit & Cable Infrastructure





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Figure 3 shows field devices that include traffic signal cabinets, fiber hub cabinets, NDOT node buildings, and pull boxes. Traffic devices such as cabinets and nodes are in teal-colored boxes. Other devices such as pull boxes and manholes are shown in green. Installed and planned PTZ cameras (not shown) for the City of Sparks are identified in the master database. In addition, splice points are labeled at each corresponding location. The regional data base has been provided to RTC, City of Reno and City of Sparks as a KMZ file attachment to this document. This KMZ file can be used by each agency to zoom into a specific area of interest for more detailed information about the type of infrastructure and its specific location.

To support the need for existing and organized fiber splice detail information, a PDF binder was created as a centralized location, anticipated to be owned and managed by RTC. There is a specific naming convention that has been defined to make splice information correlated within the GIS map. The naming convention is as follows:

1. A letter code for the jurisdiction where each splice point is located:
 - N = NDOT
 - R = City of Reno
 - S = City of Sparks
 - W = Washoe County

2. A four-digit number convention is used, following the jurisdiction code, that uniquely identifies each splice location shown in the GIS database and this unique alpha-numeric number is also used to find the corresponding splice detail within the binder provided. For NDOT arterials, state routes, and highways the four-digit number convention uses the following subsections:
 - N0000 – Interstate 80
 - N0200 – Interstate 580
 - N0400 – McCarran Boulevard
 - N0600 – 2nd St and Glendale Avenue
 - N0700 – Pyramid Boulevard
 - N0800 – Other

For example, all splice locations along Interstate 80 will have a unique number within the N0000 to N0199 range of numbers. Interstate 580 uses the range of N0200 to N0399, and so on.

The splice diagram binder will be updated periodically as additional splice details are collected, designed and become an as-built record.

Most of the fiber infrastructure that is not located in NDOT state-owned facilities has been funded by the RTC. The RTC and individual agencies have agreed to reserve the white (WH) buffer tube, within their fiber cables, for NDOT.

NDOT has existing fiber infrastructure and ITS devices along I-80 and I-580 that are used to manage traffic. NDOT has reserved the slate (SL) buffer tube, within their fiber cables, for the RTC and Cities use. The SL tube is currently being used to support the following:

- Regional center-to-center (C2C) ITS communications network.
- Reno traffic operations network

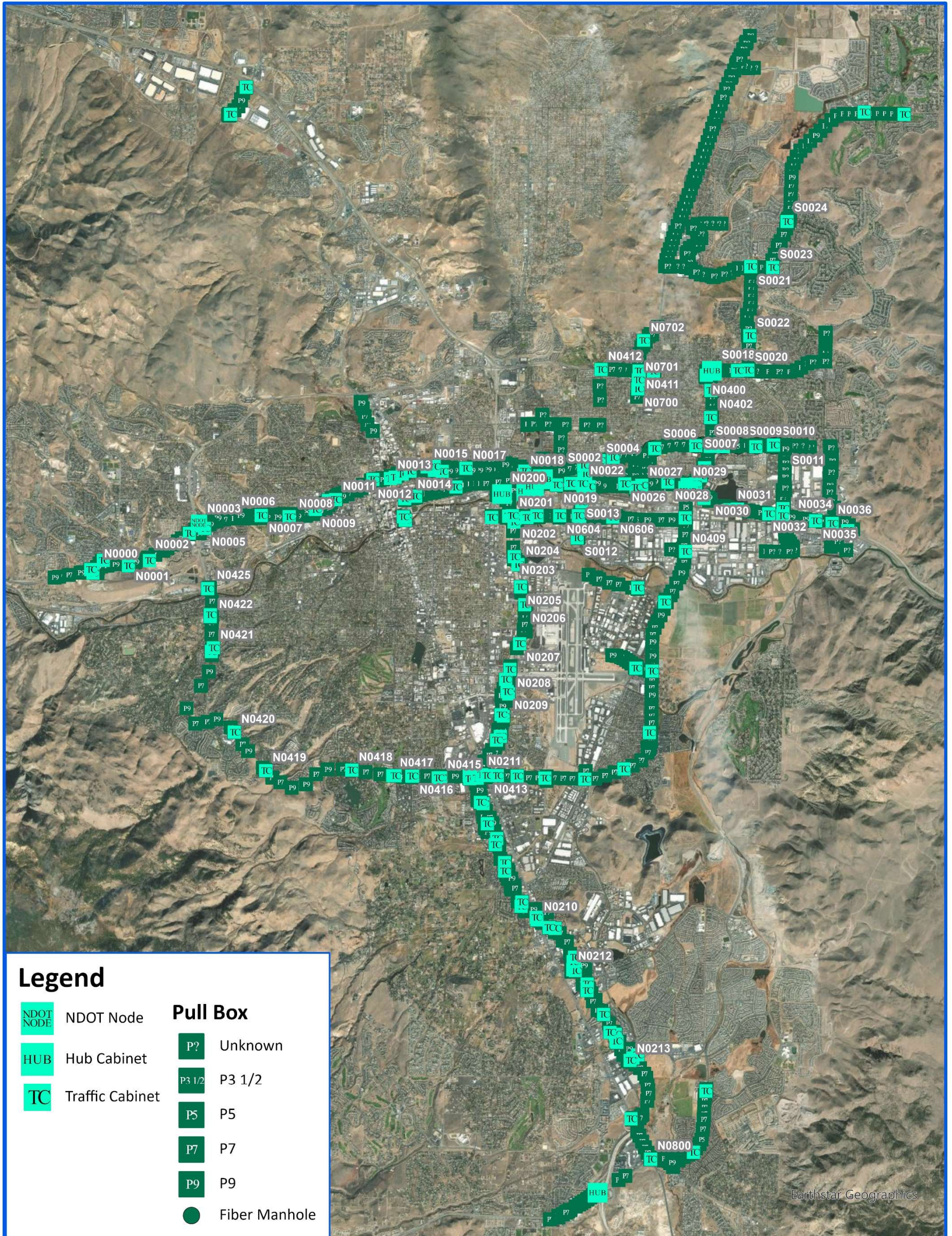


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- Sparks traffic operations network

The construction of ITS communications infrastructure as part of private development off-site improvements is currently limited and there is no regional standard or code requiring ITS communications infrastructure as part of private development off-site improvement.

Figure 3 – Existing Traffic Signal Cabinets, Hubs, Pull Boxes, and Splices



Earthstar Geographics



3. Needs Assessment

Development of the ITS communications infrastructure needs is based on the current infrastructure inventory in addition to discussions with stakeholders. This process identifies gaps in the communications infrastructure and other types of improvements needed for expanding and maintaining the ITS communications infrastructure within the region. Discovery meetings were held with each agency.

City of Reno Needs:

- Operation and maintenance costs are higher priority than redundancy at this point in time, but Reno wants to prepare for the future by:
 - Considering ring topology when designing fiber splices, however the fiber will be lit up in a daisy chain, similar to fiber installation for City of Reno for ITS Phase 2B along the I-580 corridor. For this daisy chain topology approach to be perpetuated, more fiber strands are needed between NDOT District II and City of Reno Traffic Signal Control Room. Currently there are only 12 fibers connecting these locations.
 - Installing No. 9 type pull boxes or ITS splice vaults at all traffic signal controller cabinets receiving new conduit and fiber infrastructure.
 - Providing 200 feet of fiber slack within each of the No. 9 pull boxes and ITS splice vaults for future splicing to bypass cabinets.
- Reno would like to phase out cellular communications to traffic signal cabinets and replace it with fiber when available, or point-to-point wireless radio if available sooner.
 - Incline Village Washoe County signals are currently connected by cellular modems. Reno would like to eliminate the use of these cellular modems by extending the fiber network to these signals. There is a future possibility to connect with fiber using the SL tube on the NDOT Mt. Rose Hwy project to Incline Village. Last mile connections, and long-distance network optics would be required.
- Reno prefers deploying fiber optic cable infrastructure over wireless radio links from an O&M cost perspective.
- Reno prefers to have a back-up communications path for each connection that uses NDOT fiber, because NDOT response times are longer than Reno's response time to fix fiber cable outages impacting Reno traffic signal connections. Policies and procedure need to be established between the agencies on reporting outages and required response time frames.
- City of Reno would need proper training and more maintenance staff resources before they migrate to managed switches that are connected in a ring topology.
 - Deploying managed switches that are connected in a daisy-chain topology could be deployed today without out the need of trained maintenance staff resources. The special training is only needed when Reno is ready to use the ring topology.
 - It was noted that the use of managed switches would also work with a hybrid multi-mode and single-mode fiber infrastructure approach, for both the daisy-chained approach used today and for future migration to a ring topology.



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- City of Reno would require developers to install conduit infrastructure, for future fiber communications cables, as part of permitting for development.

City of Sparks Needs:

- Sparks needs to get staff trained on how to configure managed switches using ring topology. Currently they have disconnected one side of the ring to avoid data storms being caused by managed switches that are not properly configured.
 - Since the IT department is concerned about data storms, the traffic department will need to create VLAN tunnels through the IT department firewall to be able to work on the traffic signal system remotely.
- Getting fiber to traffic signals that are currently not connected is higher priority than converting copper interconnect infrastructure to fiber infrastructure.
- City of Sparks would require developers to install conduit infrastructure, for future fiber cables, as part of permitting for development.
- City of Sparks needs an asset management program to be put in place.
- Install CCTV at intersections that are missing them.
- City of Sparks needs system integration technical support and services to help keep their ITS and signal system functioning properly as technology and software evolves.
- Sparks needs a future staff member to train on taking over management of traffic system and network when the current Traffic Operations Manager retires.

RTC Washoe Needs:

- Expand the C2C network to Washoe County and University of Nevada, Reno.
- The RTC should work with each of the local jurisdiction to build ITS network infrastructure as part of the private development permitting requirements.
- Expand C2C functionality to include Gridsmart software.

Washoe County Needs:

- Traffic signals and network are managed by City of Reno at this time, so Washoe County's ITS communications infrastructure operations and maintenance needs are covered under the City of Reno needs.

Regional ITS Communications Infrastructure Expansion Needs:

Based on the information obtained in the updated GIS database, there are many areas within the region that currently do not have fiber based ITS communications infrastructure (i.e., "Fiber Gaps"). It is understood that it is not practical to close all these fiber gaps within the next five years, so the recommended improvements needed within the next five years represents key areas where the project stakeholders would like to focus regional funds.

Tables 1 and 2 identify the needed communication infrastructure to close gaps within the City of Reno and the City of Sparks, respectively.

Table 1 – City of Reno Communications Network Gap Summary Table

City of Reno					
Project ID	ROW	Primary Street	Start Street	End Street	Description of Work
R1A	Reno	Arrowcreek Parkway	S Virginia Street	Tremolite Drive	New conduit, pull box, and fiber
R1B	Washoe	Arrowcreek Parkway	Tremolite Drive	Thomas Creek Road	New conduit, pull box, and fiber
R2	NDOT	Kietzke Lane	Mill Street	2nd Street	New conduit, pull box, and fiber
R3	Reno	2nd Street	Manuel Street / Pringle Way	Kietzke Lane	New conduit, pull box, and fiber
R4	NDOT	N McCarran Boulevard	7th Street	Clear Acre Lane	New conduit, pull box, and fiber
R5	Reno	Sky Vista Parkway	Lemmon Dr	Silver Lake Road	New conduit, pull box, and fiber
R6A	Reno	Lemmon Drive	US 395	Military Road	New conduit, pull box, and fiber
R6B	Reno	Lemmon Drive	Military Road	Fleetwood Drive	New conduit, pull box, and fiber
R6C	Reno	Lemmon Drive	Fleetwood Drive	Ramsey Way	New conduit, pull box, and fiber
R7	Reno	S Meadows Parkway	Double R Boulevard	Veterans Parkway	New conduit, pull box, and fiber
R8	Reno	Double R Boulevard	Sandhill Road	Double Diamond Parkway	New conduit, pull box, and fiber
R9	Reno	Double Diamond Parkway	Prototype Drive / Double R Boulevard	Double R Boulevard	New conduit, pull box, and fiber
R10	Reno	Double R Boulevard	Double Diamond Parkway	S Meadows Parkway	New conduit, pull box, and fiber
R11	Reno	Veterans Parkway	Steamboat Parkway	Long Meadow Drive	New pull box, and fiber
R12	Reno	Wells Avenue / Oddie Blvd	I-80	El Rancho Drive	New pull box, and fiber
R13	Reno	Pembroke Drive	S McCarran Boulevard	Veterans Parkway	New conduit, pull box, and fiber
R14A	Washoe	Sun Valley Drive	Highland Ranch Parkway	7th Avenue	New conduit, pull box, and fiber
R14B	NDOT	Sun Valley Drive / Clear Acre Lane	7th Avenue	Scottsdale Road	New conduit, pull box, and fiber
R15A	NDOT	N Virginia Street	Stead Boulevard	Panther Drive	New conduit, pull box, and fiber
R15B	NDOT	N Virginia Street	Panther Drive	N McCarran Boulevard	New conduit, pull box, and fiber
R16	Reno	Longley Lane	Maestro Drive	S McCarran Boulevard	New conduit, pull box, and fiber
R17	NDOT	Geiger Grade Road	Virginia St / Mt. Rose Hwy	Veterans Parkway	New conduit, pull box, and fiber
	Reno	Veterans Parkway	Geiger Grade Road	Curti Ranch Road	New pull box, and fiber
R18	Reno	Sharlands Avenue	Mae Anne Ave	Robb Drive	New conduit, pull box, and fiber
R19	Reno	Double R Boulevard	Sandhill Road	S Meadows Parkway	New conduit, pull box, and fiber
R20	Reno	Summit Ridge Drive	S McCarran Boulevard	Sky Mountain Drive	New conduit, pull box, and fiber
R21	Reno	Ramsey Way	Lemmon Drive	Albert Way	New conduit, pull box, and fiber
		Albert Way/ Bravo Avenue	Ramsey Way	Mt Charleston Street	New conduit, pull box, and fiber
		Mt Charleston Street / Stead Boulevard	Bravo Avenue	US 395	New conduit, pull box, and fiber
R22	NDOT	Mt Rose Highway	Wedge Parkway	Joy Lake Road	New conduit, pull box, and fiber
R23	NDOT	Virginia Street	S Meadows Parkway	Bishop Manogue Drive	New conduit, pull box, and fiber
R24	NDOT	S McCarran Boulevard	4th Street	I-80	New conduit, pull box, and fiber
R25	NDOT	Virginia Street	I-580	S Meadows Marketplace Drive	New conduit, pull box, and fiber
R26	Reno	Stead Blvd	Virginia Street	US 395	New conduit, pull box, and fiber
R27	Reno	Veterans Parkway	S Meadows Parkway	Long Meadow Drive	New pull box, and fiber



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Table 2 – City of Sparks Communications Network Gap Summary Table

Project Summary List					
Project ID	ROW	Primary Street	Start Street	End Street	Description of Work
S1	NDOT	N McCarran Boulevard	Baring Boulevard	El Rancho Drive	New conduit, pull box, and fiber
S2	Sparks	Rock Boulevard	N McCarran Blvd	Oddie Boulevard	Repair fiber connection, new pull box and fiber
S3	Sparks	Pyramid Way	Oddie Boulevard	Prater Way	New conduit, pull box, and fiber
S4	Sparks	Oddie Boulevard	El Rancho Drive	Pyramid Way	New conduit, pull box, and fiber
S5	Sparks	Sullivan Lane	Oddie Boulevard	Prater Way	Remove existing conduit, new conduit, new pull box, and fiber
S6A (IC)	Sparks	Baring Boulevard	Sparks Boulevard	Vista Boulevard	Remove copper IC, new pull box and fiber
S6B (IC)	Sparks	Vista Boulevard	Baring Boulevard/ N D'Andrea Pkwy	Los Altos Parkway	Remove copper IC, new pull box, and fiber
S7C	Sparks	Vista Boulevard	Prater Way	I-80	Remove copper IC, new pull box, and fiber
S7B	Sparks	Vista Boulevard	E Prater Way	Baring Boulevard / N D'Andrea Pkwy	New conduit, pull box, and fiber
S7A	Sparks	Vista Boulevard	Los Altos Parkway	Disc Drive	New conduit, pull box, and fiber
S8	Sparks	Greg Street	I-80	Rock Boulevard	Remove copper IC, new conduit, new pull box, and fiber
S9	Sparks	Prater Way	Liliard Drive	Vista Boulevard	Remove copper IC, new pull box, and fiber
S10	Sparks	21st Street	Frazer Avenue / Sparks Public Works Maintenance Yard	Glendale Avenue	New conduit, pull box, and fiber
S11A (IC)	Sparks	Los Altos Parkway	Ion Drive	Sparks Boulevard	New conduit, pull box, and fiber
S11B	Sparks	Los Altos Parkway	Sparks Boulevard	Vista Boulevard	New conduit, pull box, and fiber
S12	NDOT	Pyramid Way	Queen Way / Farr Lane	Disc Drive	New conduit, pull box, and fiber
S13	Sparks	Sparks Boulevard	E Prater Way	I-80	Remove copper IC, new pull box, and fiber
	Sparks		Baring Boulevard	E Prater Way	New conduit, pull box, and fiber
S14	Sparks	Pyramid Way	La Posada / Eagle Canyon Drive	Ingenuity Ave / Horizon View Avenue	New conduit, pull box, and fiber
S15	Sparks	Prater Way	Pyramid Way	Sparks City Hall	New conduit, pull box, and fiber
S16	Sparks	Pyramid Way	C St	Nugget Ave	Remove interconnect, new pull box, and fiber
S17	Sparks	Vista Boulevard	Wingfield Parkway	Homerun Drive / Scorpius Drive	New conduit, pull box, and fiber



4. Standard Specifications and Details Recommendations

Currently the following sources for standard specifications and details do not adequately address the requirements needed for constructing fiber optic communications infrastructure within the region:

RTC Washoe Standard Specifications for Public Works Construction (“Orange Book” Rev 2016):

<http://rtcwashoe.wpengine.com/wp-content/uploads/2018/01/2016-Version-Revision-No.-9.pdf> and

<https://www.rtcwashoe.com/engineering-resource/orange-book/>

City of Reno PW Design Manual (Rev January 2009)

<https://www.reno.gov/home/showpublisheddocument/58638/635942503590470000>

City of Reno Standard Details for Public Works Construction (Revision: January 2023)

<https://www.reno.gov/government/departments/public-works/forms-publications/construction-standard-details>

City of Sparks Construction Standard Details (January 2020):

<https://cityofsparks.us/resources/resource/construction-standard-details/>

Washoe County Standard Details:

https://www.washoecounty.us/csd/engineering_capitalprojects/information_for_developers/standard_details.php

Since the Cities and County use the RTC Washoe Orange Book as their standard specifications, it is recommended that RTC Washoe update the **Traffic Signals, ITS, and Street Lighting (325.00)** section of the Orange Book to include a standard set of minimum requirements for furnishing and installing the following fiber optic communications infrastructure within the region:

- **Communications Conduit:** Since the minimum requirements for furnishing and installing conduit systems for fiber optic cables differ from electrical power conduit systems, it is recommended that Sections 325.01.02.02, 325.02.05, and 325.03.10.03 in the Orange Book be updated to separate the unique requirements associated with each conduit type (electrical vs. communications). Requirements that should be included in the communications conduit subsection are minimum installation depth with CLSM requirements when this depth cannot be achieved, maximum number of total bends between pull point, maximum number of 90-degree bends allowed between pull points, maximum bend radius of elbows, conduit innerduct requirements, locator wire requirements, duct plug requirements, when to use PVC vs. HDPE type underground conduits, and conduit system acceptance testing requirements if microducts are required.
- **Communications Pull Boxes:** It is recommended that Sections 325.02.10, 325.03.10.03.03 and 325.03.10.06 in the Orange Book be updated to include minimum requirements for ITS and communications system pull boxes that need to support fiber optic communications infrastructure. Requirements that should be included are minimum size and type of pull boxes (i.e., No.7 Modified, ITS Vault, and Manholes installed within the travel way), maximum distance between pull boxes, and maximum distance between splice vaults. It is also recommended that Sections 325.02.10 modify the ITS Vault detail within the NDOT standard details (Detail Number TG-16) to have the fiber optic



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communications conduits installed at a lower depth when outside the vault and the deepest depth be the point at which this conduit enters the vault, so water drains into the sump at the bottom of the ITS Vault if the conduit separates/breaks midstream and or the vault temporarily fills with water during a flood event.

- **Fiber Optic Cabling Systems:** It is recommended that new subsections be added to Section 325.00 of the Orange Book (i.e., 325.02.14 and 325.03.14) to cover the material and construction requirements of the fiber optic cabling system components. This would include the backbone, branch, CDCA, and jumper types of cables, underground splice closures with splice trays, fiber distribution panels needed within Hub cabinets and building communications rooms (supporting a minimum quantity of splice trays, color-coded pig tails, connector panels with connector couplers, and a port assignment table), requirements for factory terminated connectors, fusion splices, and connector types, requirements for acceptance testing (i.e., OTDR traces and Power Meter testing), and associated submittal requirements. Additional fiber optic cabling system requirements like minimum length of cable slack (i.e., at pull boxes, vaults, ITS device cabinets, Hub cabinets, and communications rooms), installation of the cables as one continuous cable between full cable splice points identified on the plans, and requirements for cable labels and markings would also be helpful, and network switch requirements.

The above changes would make the design and construction process more efficient on future projects; as well as help to promote consistency and interconnectivity across jurisdictional boundaries.

When making these types of updates to the Orange Book, RTC Washoe should consider adding relevant language from the NDOT Standard Specification and recent “Supplemental General Provisions” on recent RTC Washoe ITS design projects. Currently the Orange Book defines references to the term “*Standard Plans*” as “The Standard Plans for Road and Bridge Construction, available at www.nevadadot.com.” These NDOT standards can be found at the following links:

NDOT Standard Specifications, Standard Plans, and Design Guides general download page:

<https://www.dot.nv.gov/doing-business/contractors-construction/contract-services/standard-specifications-and-plans>

NDOT Standard Specifications for Road and Bridge Construction (2014)

<https://www.dot.nv.gov/home/showpublisheddocument/6916/636257041112930000>

NDOT Standard Plans for Road and Bridge Construction (2020)

<https://www.dot.nv.gov/home/showpublisheddocument/17276/637322602696100000>

When making the recommended updates to the Orange Book try to avoid referencing NDOT standard specific sections, details, and associated revision numbers. It is preferred that the actual language within these NDOT specifications, and information contained with the NDOT details, be added to the Orange Book and then modified to fit the specific needs of RTC Washoe and the associated Cities and County. In doing so, RTC Washoe will avoid unnecessary future updates caused by NDOT issuing a revised set of their standard specifications and details.

In addition to updating the standard specifications in the Orange Book, it is also recommended that the RTC Washoe develop an ITS Design Guidelines document to help build consistency in how the project plans and special provisions are developed and to set a minimum level of



design detail that needs to be established during the design phase of ITS projects moving forward. The following are just a few examples of what should be covered in these ITS Design Guidelines:

- Project limits need to include extending the proposed new backbone fiber cable(s) to existing ITS Vaults in the general area, so they can be spliced together as one continuous system.
- Fiber cable runs need to be from ITS Vault to ITS Vault and should not end within a No.7 Modified Pull Box at the edges of the project limits, so future projects can splice to these cables when extending them as part of the future project.
- Backbone fiber cable runs need to be continuous as they pass through ITS vaults and only the fiber strands that need to be spliced should be accessed (i.e., cut and spliced) as shown in the splice details. This will help to avoid the design flaw that occurred on the SE Connector project where the backbone cable was cut into individual fiber cable segments between splice points.
- Fiber splice details within the project plans need to account for adding full cable splice points when the fiber cable reel lengths available within the industry are shorter than the overall proposed fiber cable run shown on the plans.
- The need for a system block diagram showing how the individual fiber circuits is interconnected to the signal cabinets and existing/proposed hub/node locations.
- Maximum distance between ITS Vaults.
- When No.7 Modified Pull Boxes should be added between ITS Vaults.
- When Manholes should be used in place of an ITS Vault.
- A sample set of ITS Plans that establishes a consistent set of general communications notes symbol legends & abbreviations; what needs to be included on the Detail Sheets (i.e., DT-## sheets) and site location plans (i.e., IC-## sheets) and how this information is ordered/shown.

5. Fiber Network Topology Recommendations

The term network topology refers to the how the various devices within the network are interconnected both physically (i.e., cables between network devices) and logically (i.e., network switch/router configurations). Because the focus of this report is on the fiber optic network infrastructure, the network topologies for consideration for RTC Washoe are focused on the physical arrangement of how the outside plant fiber optic cables are used to interconnect the network switches between various ITS device field cabinets, Hub cabinets, and associated buildings and TMCs where operation and maintenance staff reside. Before the project stakeholders could make an informed decision about the fiber network topology they desire, an overview of the basic types of network topologies was provided.

There are many ways network devices can be interconnected via the fiber optic infrastructure (i.e., many different types of topologies) and each approach has its advantages and disadvantages. The selection considerations described in this section summarizes the factors that were considered when comparing the different network topology options:

a. Fiber Topology Selection Considerations

1) Fiber Count

The number of available fiber strands within each fiber optic cable is often a limiting factor for the types of network topologies that can be supported by outside plant fiber



optic infrastructure. Fiber topologies that minimize the needed fiber count are preferred. This is because there is a much higher cost associated with installing new outside plant fiber optic cable, as compared to the lower cost of installing relatively shorter inside plant cable runs (i.e., cables within buildings).

2) Reliability / Fault Tolerance

The reliability of a network topology is often quantified in terms of fault tolerance. The following are the types of faults that need to be considered when evaluating different outside plant fiber topologies:

- Power Failure: how will a power failure at a field cabinet network switch at one location impact network communications at the other locations?
- Fiber Strand Failure: how will a damaged fiber strand within a fiber cable, or a faulty jumper cable at one location, impact network communications at other locations?
- Fiber Cable Failure: how will a damaged/severed fiber optic cable (with multiple fiber strands inside) at one location impact network communications between network device locations?

Network topologies that can sustain more than one type of fault simultaneously, with minimal impact to network communications, are often referred to as fault tolerant networks. However, the level of fault tolerance supported may vary between different topologies. A topology is considered to have a higher level of fault tolerance if it can sustain more types of faults and multiple simultaneous faults without a significant impact to the network.

3) Network Latency / Number of Hops

Network latency describes the delay that can be introduced on the network traffic that is traveling between field cabinets, hub cabinets, and operations facilities. The delay caused by the fiber optic cable is relatively small (microseconds) when compared to the delay that can be introduced each time the network traffic passes through a network switch and experiences a processing/routing delay and possibly a queuing delay if there is a lot of traffic on the network. A ping test is typically used to determine the overall network latency at any given time, but the general rule of thumb to follow to minimize network latency is to minimize the number of hops (or network switches) that the network traffic needs to pass through within the topology.

4) Aggregated Bandwidth

Each time network traffic needs to make a hop, before it gets to its end destination within the topology, the bandwidth used increases to include both the traffic that is passing through the network switch and the traffic that is being added by the switch it is passing through. For example, if there were three network switches connected by the fiber network (one at building "A", one at building "B", and one at building "C") and the traffic between buildings "A" and "C" needs to pass through building "B", then the aggregated bandwidth on the link between buildings "B" and "C" equals the traffic going from "A" to "C" and the traffic being added by "B" that also needs to go to "C". As with network latency, to minimize concerns with bandwidth aggregation, the number of hops (or network switches) that the network traffic needs to pass through within the topology should be minimized. Aggregated bandwidth concerns can also be addressed by using higher capacity optical transceivers on the network switches that provide greater

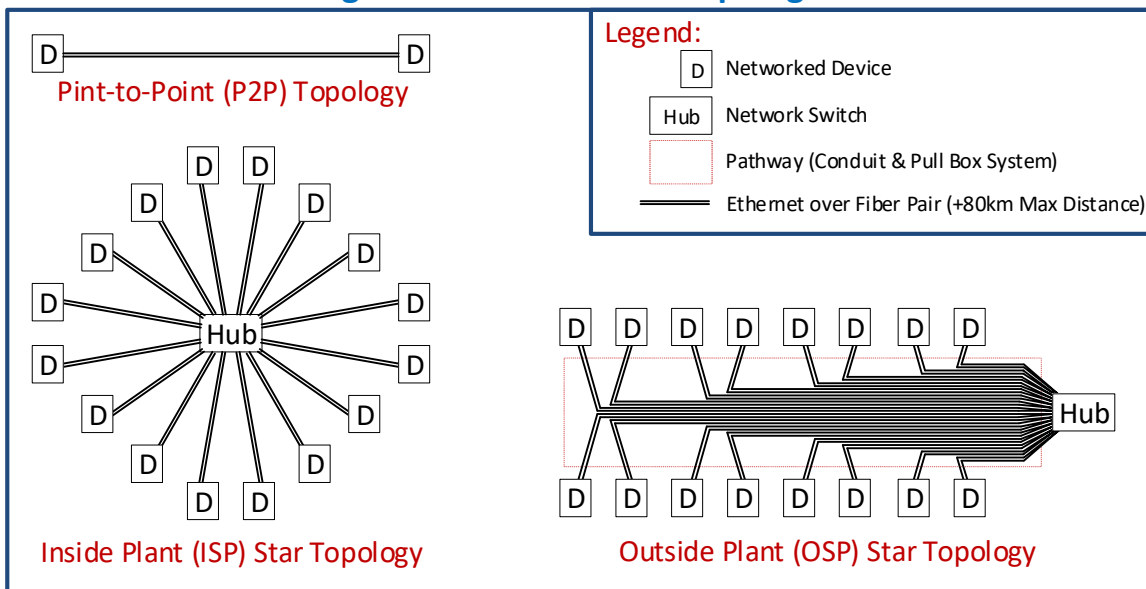
available bandwidth (i.e., Hub Cabinets and TMCs) for the links that need to support the aggregated bandwidth.

b. Basic Types of Topologies

1) Point-to-Point / Star Topology

As illustrated in **Figure 4**, a point-to-point (P2P) topology is the most basic type of topology where there are two devices that need to be connected and the cable between them provides the connection. However, most networks need to interconnect multiple devices, and this is typically accomplished by adding a hub (i.e., a network switch) that is connected to multiple devices and provides connections between devices. This is illustrated by the Star Topology within the figure. Star topologies are very common within an office building where each wall jack has a P2P Copper Twisted Wire Pair (TWP) cable connected back to a network switch in the telecommunications room/closet. Although a star topology works within a building that can support the installation of many individual cables of relatively short lengths (300-ft or less), this is not practical for outside plant installations that need to transverse much longer distances. This is because there are limited available pathways (i.e., underground conduits and pull boxes) that can be used for connecting the devices, as depicted by the Outside Plant (OSP) Star Topology in the figure. These long distance OSP connections typically require two (2) fibers per device: one for the transmit optical path and one for the receiving path.

Figure 4 – P2P and Star Topologies



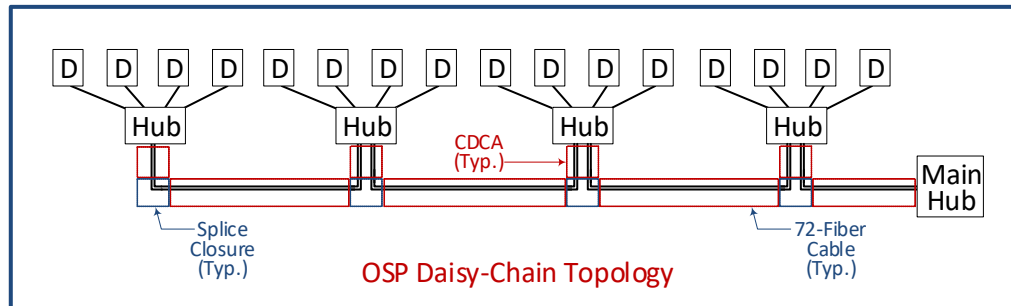
The OSP Star Topology creates a bottleneck as the fibers get closer to the hub location and available conduit/fiber capacity is lost with every new device added. In addition, this creates low fault tolerance / low reliability, so a break in the fiber cable at a point close to the hub will cause the network to lose connectivity to all the devices downstream from the cable break point.

2) Daisy-Chain Topology

As illustrated in **Figure 5**, a daisy-chain topology approach is used to reduce the number of fibers needed to connect many devices along the cable path. This is accomplished by

adding additional hubs, distributing them along the fiber cable path, and using the same pair of fibers to interconnect each of the hubs.

Figure 5 – Daisy-Chain Topology



The daisy-chain topology requires significantly fewer fiber strands as compared to the OSP Star topology, but a fiber cable break near the main hub location (i.e., where the servers and/or the end users get connectivity) will still cause the network to lose connectivity to all the devices downstream from the cable break point. In addition to the added costs of the hubs, the following are potential disadvantages introduced by the daisy-chain topology:

- Need to account for the aggregated bandwidth by making sure the fiber links close to the main hub location can handle the combined bandwidth of all the downstream hubs.
- Network latency is introduced at each hub location, so if latency is a concern, the number of hops the network traffic must pass through should be limited.

3) Ring Topology (Folded and Physical Rings)

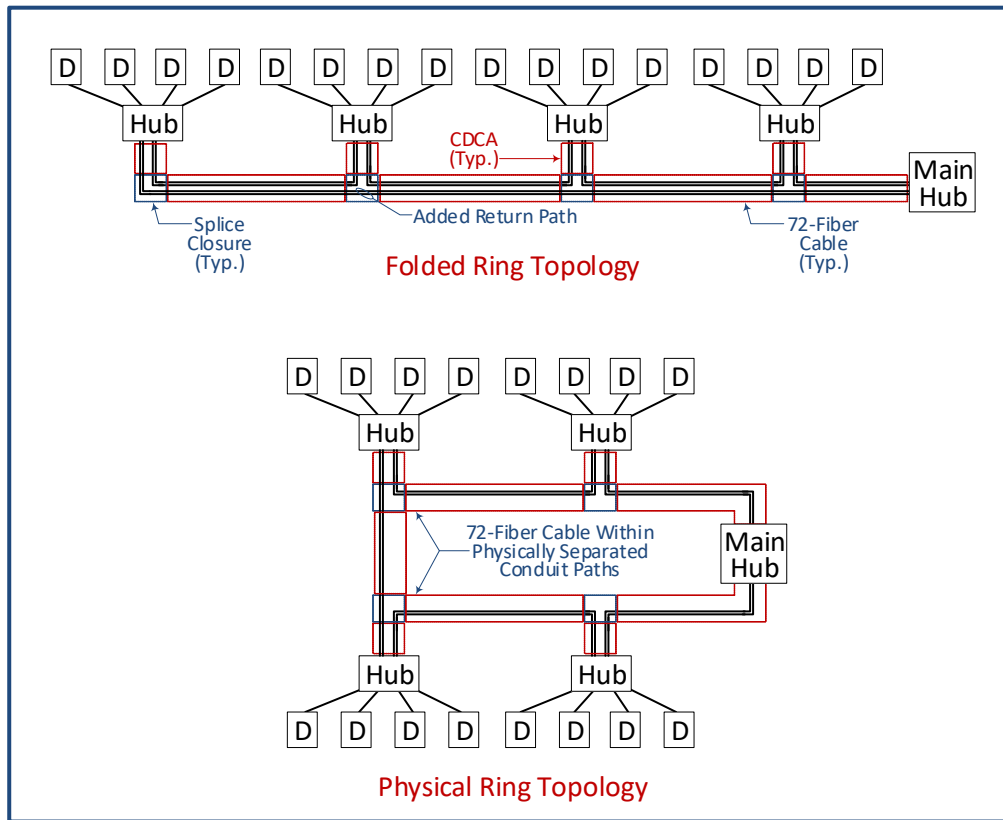
As illustrated in **Figure 6**, a folded ring uses an additional pair of fibers within the cable for a return path back to the main hub. This adds levels of reliability when compared to the daisy-chain topology approach in the following ways:

- A failed network switch or an electrical power outage at one hub location should not impact communications between the other hubs on the network.
- A Communication Distribution Cable Assembly (CDCA) cable break at one hub location should not impact communications between the other hubs on the network.

In a folded ring, a fiber cable break near the main hub location will cause the network to lose connectivity to all the devices downstream from the cable break point.

When a physical ring is deployed, the return path does NOT use the same fiber cable or the same conduit path as the outgoing path. This provides the added benefit of being able to sustain a fiber cable break near the main hub point without losing any network connectivity. Because the ring is technically still folded within each CDCA, the physical ring network is still susceptible to losing connection to a hub when the CDCA to that hub is severed.

Figure 6 – Ring Topologies



With a properly configured ring network (both folded and physical), the latency and aggregated bandwidth concerns of the daisy-chain typology would be reduced by half, as half of the hub locations could use the added return path as their primary path back to the main hub location when the ring is operating within a non-fault condition.

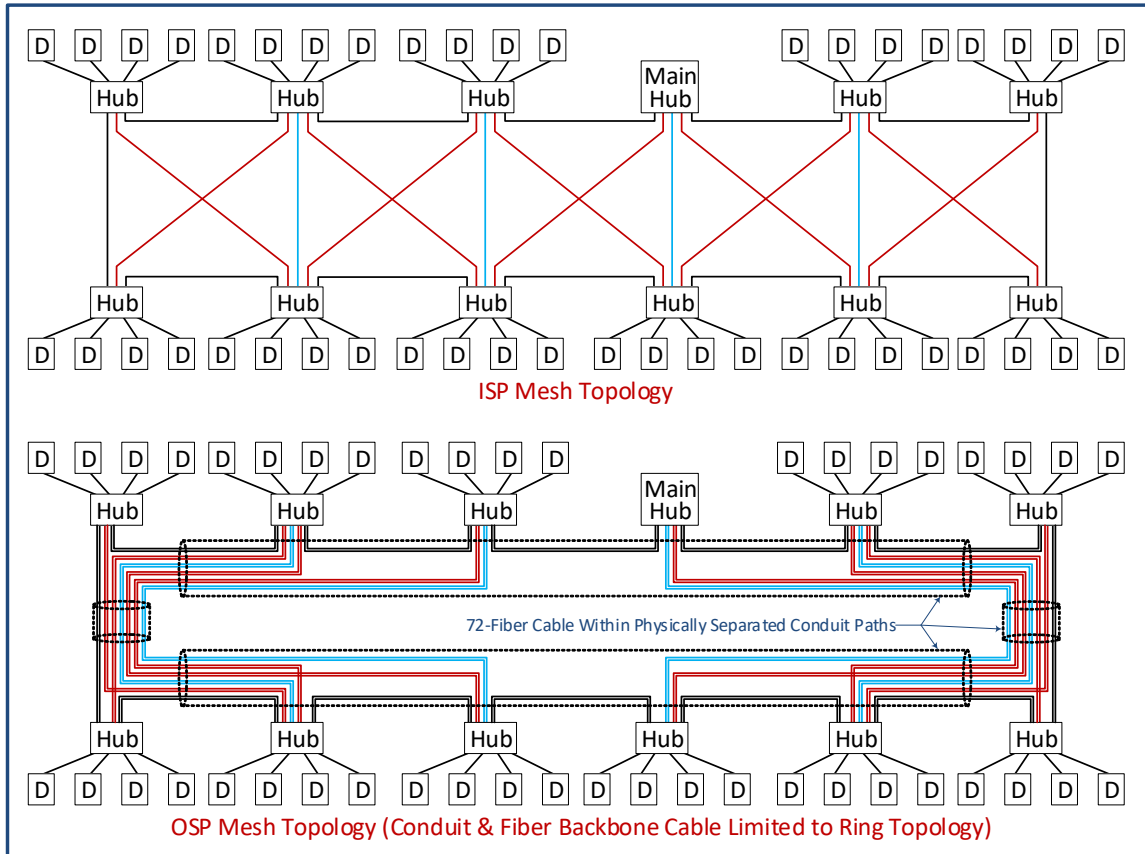
4) Mesh Topology

As illustrated in **Figure 7**, an ISP Mesh Topology adds additional connections between various hubs which reduces the latency on the network and reduces the aggregated bandwidth impact on each path by having more direct cable path options that can be used when routing the network traffic. The overall available bandwidth capacity that the network can support is also increased by each additional cable path that is added between the various hub locations. When these mesh topologies are used within a building that can support many different TWP copper cable paths (i.e., the ISP Mesh Topology) the fault tolerance of the network is significantly increased. This is because it can sustain multiple cable failures and still communicate between all hubs on the network. The disadvantage of the ISP Mesh Topology is the added cost associated with needing more active ports on each network switch at the hubs and the installation of the additional cables.

The OSP Mesh Topology typically *cannot* achieve the same level of fault tolerance as the ISP Mesh Topology because the available fiber pathways are typically limited by the available pathways of the conduit system and the capacity of the backbone fiber cables. If a fiber mesh topology is designed within a single daisy-chained conduit system and backbone fiber cable, then the number of fibers needed within the backbone fiber cable would increase significantly without the added fault tolerance. This is because a fiber

cable break would still result in a loss of connectivity to all downstream hub locations. This point is illustrated in the OSP Mesh Topology at the bottom of **Figure 7 – Mesh Topologies**, where a conduit and backbone cable system is limited to a physical ring topology.

Figure 7 – Mesh Topologies



When an OSP Mesh Topology is limited by the physical ring topology of the conduit and backbone cable infrastructure, the following levels of reliability are also reduced to be the same as a physical ring topology:

- The 72-Fiber backbone cable can sustain a cable break without losing connectivity to any hubs, but a second break in this cable between two different hub locations would impact the ability to communicate between all hubs.
- A CDCA cable break at one hub location should not impact communications between the other hubs on the network.
- A failed network switch or electrical power outage at one hub location should not impact communications between the other hubs within the network topology.

5) Hybrid Topology

Hybrid topology networks combine two or more topologies in such a way that the resulting network does not exhibit one of the standard topologies previously described.

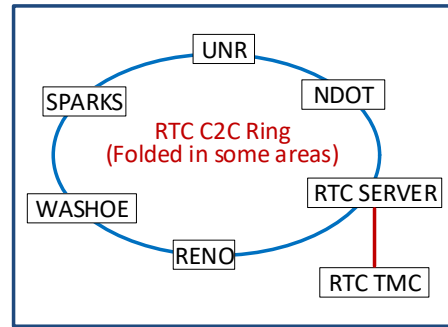
c. Topologies Selected

This section covers the selected topology of each of the following project stakeholders.

1) RTC C2C

The RTC ITS Pilot project built the Center-to-Center (C2C) fiber ring shown in **Figure 8** with the future connections to Washoe County and UNR in mind. Each node location has a dedicated C2C network switch that is connected to the agencies network via a firewall.

Figure 8 – RTC C2C Ring



2) City of Sparks

The City of Sparks started out building their fiber network using a star topology with field hub locations as concentration points but switched to a ring topology a few years ago. Although the recent fiber splice details are set up for a ring topology with managed network switches, an improper network configuration has caused a network data storm that brought down the ITS network and the IT network that it was connected to. In the future when City maintenance/IT staff get proper network configuration training, they would like to re-enable the self-healing ring configuration properties of the managed switches. In the meantime, the City simply disconnects one end of the ring path and if a fiber break occurs they reconnect the disconnected path until the fiber break is repaired.

3) City of Reno

The City of Reno started building their network using multiple daisy chained circuits emanating from their signal control room with multimode fiber cable links. Although the multimode fiber cables consist of 12 strands of fiber, only two of the fiber strands are connected within each signal cabinet, which has limited their ability to add more circuits. As a result, the City now has very long daisy chains, each with many interconnected traffic signal cabinets, which has an inherent network reliability risk of losing connectivity to many signal cabinets along the chain if a fiber break occurs near the signal control room. Furthermore, the City doesn't use managed switches and prefers to light up each link within the daisy chain with P2P Ethernet transceivers at each end and an unmanaged switch in each cabinet to interconnect the incoming & outgoing ends to the daisy chain links with the local ITS devices. Current City staff prefer this approach and don't want to change it because they are okay with their traffic signals operating in standalone mode until maintenance staff has a chance to repair the fiber outage. In support of this continued daisy chain topology approach, the City will need to increase the single mode fiber capacity between Reno's signal shop and NDOT's D2 server room. Doing so will allow the City to add more daisy chains that utilize available NDOT fibers within the slate (SL) tube.

The City of Reno understands that this topology approach that they've been deploying will be very problematic supporting the communications needs of future technologies (i.e., roadside-to-vehicle communications and other smart city technologies). They have agreed to setting up their fiber splices in support of the field distribution rings needed in the future, but they plan on using the P2P transceivers and unmanaged switches to light up the fiber in a daisy chained approach that they currently support today. With this compromise the City can continue to maintain their network as they do today, and they will have a future migration path to a ring topology by adding managed network switches



ITS Network Master Plan

within the traffic signal cabinets, when they are ready to start deploying roadside-to-vehicle communications and other smart city technologies.

To plan for the future, the City has agreed to deploying ITS Vaults near each traffic signal cabinet locations to support splicing fiber cables outside of the cabinets and use a CDCA cable that is factory pre-connectorized at one end for extending the associated fiber circuit into the cabinet. This will allow the City to more effectively manage their fiber strands within the backbone cable and make more efficient use of all the fibers that are available within the cable.

Table 3 – Regional Communications Network Need

Project ID	ROW	Project Location	Work Type	Description of Work
R-A	Reno	City of Reno Corp Yard to NDOT D2 Server Room	Fiber and Conduit	Add new 72 fiber cable to Reno signal shop from NDOT D2 server room to increase capacity for daisy-chain circuits connected over NDOT fiber
R-B	Reno	City Wide	Splice Vaults	Develop plans to install ITS Vaults at each existing signal location where not currently installed to prepare for future ring topology network. Start work closest to TMC. Project could also include developing a plan for future ring topology paths.
S-A	Sparks	Network wide	Network Configuration and Training	Network configuration training of Sparks staff and a pilot project that properly configures the managed switch and prepare Sparks IT staff to be ready to deploy configured rings without taking down the entire network. Includes burn in period.
S-IC	Sparks	Sparks Intelligent Corridor	Software, Data Integrations, and Field Devices	New fiber optic infrastructure at segments S6A, S6B, and S11A. Also includes four new CCTV locations, signal timing plans, and Ingest RITIS info.
RTC A	RTC	Region Wide Specifications and Standard Drawings Update	Standard Specs & Drawings	Per recommendations of Section 4.
RTC B	RTC	Region Wide Development of Standard ITS Design Guidelines	Standard ITS Design Guidelines	Per recommendations of Section 4.
RTC-C1 RTC-C2	RTC	C2C to UNR and to Washoe County	C2C Network Expansion	Expand C2C fiber network into UNR and to Washoe County for their ability to view signal and operations data and potentially assist in operations management. Work consists of new fiber paths, network switch and firewall installations and configurations and installation of C2C software.



6. 5-Year Implementation Plan

This section includes an implementation plan for RTC to pursue in the next five years that has been developed based on the existing conditions and the needs assessment and evaluation of gaps and opportunities to resolve those gaps.

Figures 9 and 10 are the communications network recommendations for projects within each jurisdiction of the RTC regional area. The summary of all recommendations across the region are provided in **Table 4, 5 and 6**, which includes a description of the project, project limits, the recommended fiscal year of implementation, and the estimated project cost. Project costs were developed based on recent local bids and provided administration and engineering services contingencies for planning purposes.

For Fiber optic cable and conduit installation projects pricing was based on the following major construction criteria:

- Whether shoulder or bike lane paving would be required
- Whether the conduit can be installed in existing soil outside of sidewalk or roadway
- Whether fiber optic cables can be installed in existing copper interconnect conduit but pull boxes and conduit sweeps would need to be replaced
- Whether conduit can be installed under a future roadway project that will include the paving under a different funding source, but conduit, cabling, and other fiber services will be required out of the RTC ITS budget.

Table 4 – RTC Washoe Region Wide Network Priority Project Summary Table

Map ID	Agency	Priority Level	Location/Work	Recommend Project Budget
RTC-A	All		Region Wide Specifications and Standard Drawings Update	\$75,000
RTC-B	All		Region Wide Development of Standard ITS Design Guidelines	\$75,000
RTC-C1	All		C2C to Washoe County	\$261,234
RTC-C2	All		C2C to UNR	\$261,234



Table 5 – Communications Network 5-year Priority Project Summary Table

5-Year Implementation Plan									
Project ID	Project Year-Priority	Agency	Primary Street	Start Street	End Street	Length of Segment (LF)	Project Construction Budget	Design Budget	Year Total
R2	1-4	NDOT	Kietzke Lane	Mill Street	2nd Street	2,030	\$ 265,219	\$ 39,783	\$ 3,510,924
R3	1-1	Reno	2nd Street	Manuel Street	Kietzke Lane	1,383	\$ 180,675	\$ 27,101	
R7	1-2	Reno	S Meadows Parkway	Double R Boulevard	Veterans Parkway	11,000	\$ 1,437,518	\$ 215,628	
S-A	1-5	Sparks	City Network Configuration and Training				\$ 100,000		
S-IC	1-3	Sparks	Sparks Intelligent Corridor (project budget per study)				\$ 412,693	\$ 122,404	
S6A (IC)	1-3	Sparks	Baring Boulevard	Sparks Boulevard	Vista Boulevard	5,690	\$ 290,966	\$ 43,645	
S6B (IC)	1-3	Sparks	Vista Boulevard	Baring Boulevard/ N D'Andrea Pkwy	Los Altos Parkway	2,299	\$ 117,563	\$ 17,634	
S11A (IC)	1-3	Sparks	Los Altos Parkway	Ion Drive	Sparks Boulevard	2,046	\$ 208,778	\$ 31,317	
R11	2-3	Reno	Veterans Parkway	Steamboat Parkway	Long Meadow Parkway	7,733	\$ 395,438	\$ 59,316	\$ 3,510,856
R16	2-5	Reno	Longley Lane	Maestro Drive	S McCarran Boulevard	6,091	\$ 796,027	\$ 119,404	
R27	2-4	Reno	Veterans Parkway	S Meadows Parkway	Long Meadow Parkway	2,802	\$ 143,284	\$ 21,493	
S2	2-6	Sparks	Rock Boulevard	N McCarran Blvd	Oddie Boulevard	4,025	\$ 205,812	\$ 30,872	
S3	2-2	Sparks	Pyramid Way	Oddie Boulevard	Prater Way	1,330	\$ 173,807	\$ 26,071	
S7B	2-7	Sparks	Vista Boulevard	E Prater Way	Baring Blvd / D'Andrea Pkwy	6,197	\$ 809,835	\$ 121,475	
S7C	2-1	Sparks	Vista Boulevard	Prater Way	I-80	6,090	\$ 311,427	\$ 46,714	
S9	2-8	Sparks	Prater Way	Liliard Dr	Vista Boulevard	1,698	\$ 86,854	\$ 13,028	
RTC A	2-9	RTC	Agency ITS Standards Update				\$ 75,000		
RTC B	2-10	RTC	Agency ITS Drawing Update				\$ 75,000		
R14B	3-1 (RTIP)	Reno	Sun Valley Drive	Scottsdale Road	7th Avenue	15,420	\$ 788,525	\$ 118,279	\$ 3,495,610
R-B	3-8	Reno	City Wide ITS Vault				\$ 539,400	\$ 80,910	
S5	3-2	Sparks	Sullivan Lane	Oddie Boulevard	Prater Way	3,174	\$ 414,784	\$ 62,218	
S7A	3-4	Sparks	Vista Boulevard	Los Altos Parkway	Disc Drive	9,022	\$ 423,323	\$ 63,498	
S10	3-3	Sparks	21st Street	Frazer Avenue / Sparks PW Maintenance Yard	Glendale Avenue	2,271	\$ 296,778	\$ 44,517	
S16	3-5	Sparks	Pyramid Way	C St	Nugget Ave	1,100	\$ 54,124	\$ 8,119	
RTC C1	3-8	Washoe	Wells	I-80	Washoe County Server Room	2,000	\$ 261,364	\$ 39,205	
RTC C2	3-9	Washoe	UNR	I-80	Engineering Building	2,000	\$ 261,364	\$ 39,205	
R8	4-2	Reno	Double R Boulevard	Sandhill Road	Double Diamond Parkway	2,460	\$ 321,493	\$ 48,224	\$ 3,498,879
R20	4-3	Reno	Summit Ridge Drive	S McCarran Boulevard	Sky Mountain Drive	733	\$ 95,749	\$ 14,362	
R23	4-4	NDOT	Virginia Street	S Meadows Parkway	Bishop Manogue Drive	6,280	\$ 820,678	\$ 123,102	
R25	4-5	NDOT	Virginia Street	I-580	S Meadows Marketplace Drive	2,933	\$ 383,316	\$ 57,497	
R26	4-6	Reno	Stead Blvd	Virginia Steet	US 395	1,234	\$ 161,261	\$ 24,189	
R-A	4-1	Reno	Kietzke Lane	Co-Op Yard	Front Door	1,000	\$ 130,682	\$ 19,602	
R-B	4-7	Reno	City Wide ITS Vault				\$ 739,500	\$ 110,925	
S-11A	4-8	Sparks	Los Altos Parkway	Sparks Boulevard	Vista Boulevard	2,983	\$ 389,824	\$ 58,474	
R-B	5-3	Reno	City Wide ITS Vault				\$ 182,700	\$ 27,405	\$ 3,497,204
S8	5-1	Sparks	Greg Street	I-80	Rock Boulevard	20,011	\$ 2,386,063	\$ 357,909	
S17	5-2	Sparks	Vista Boulevard	N Wingfield Parkway	Homerun Drive / Scorpius Drive	3,614	\$ 472,284	\$ 70,843	

Figure 9 – City of Reno Communications Network Recommendations

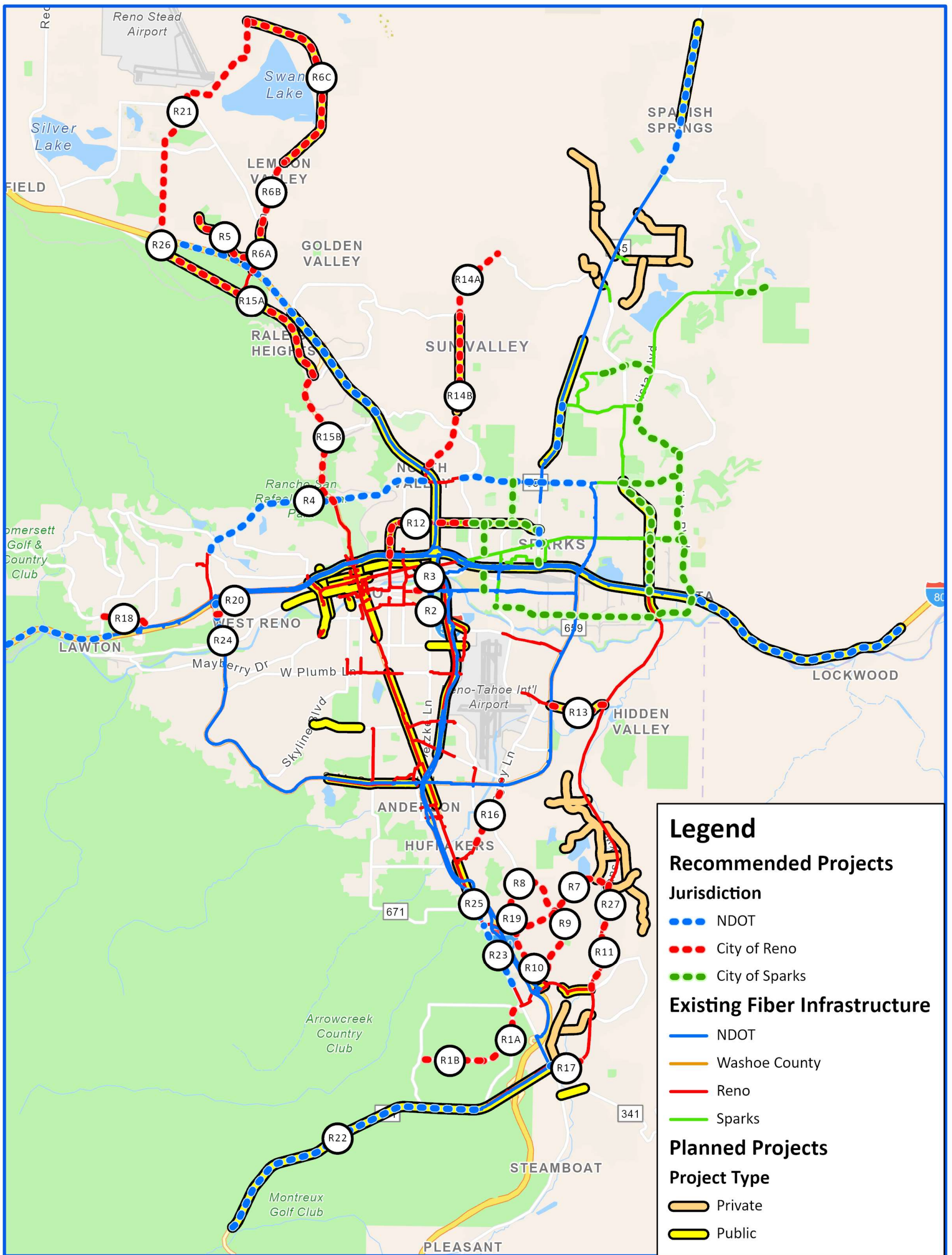
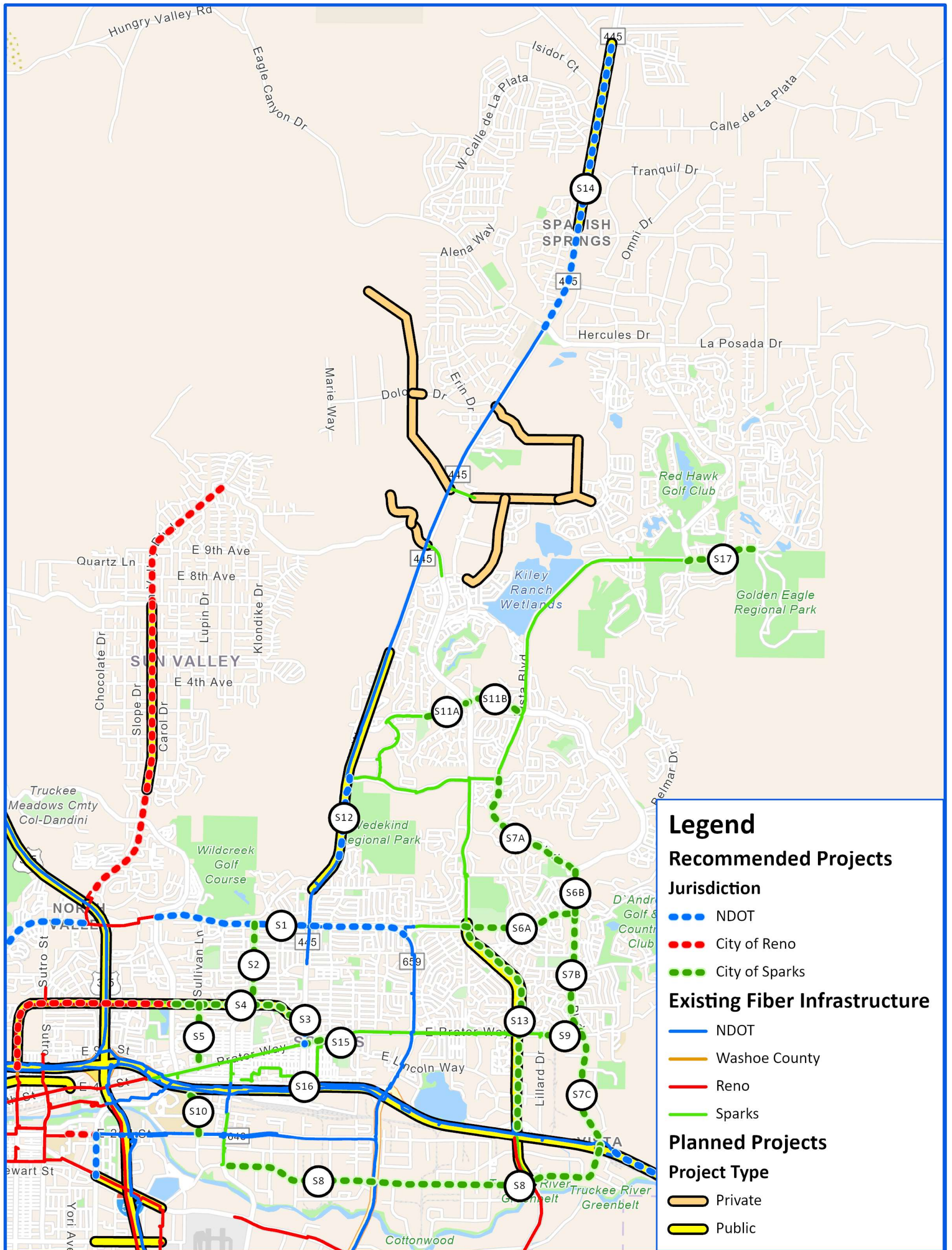


Figure 10 – City of Sparks Communications Network Recommendations



Legend

Recommended Projects

Jurisdiction

- NDOT
- City of Reno
- City of Sparks

Existing Fiber Infrastructure

- NDOT
- Washoe County
- Reno
- Sparks

Planned Projects

Project Type

- Private
- Public

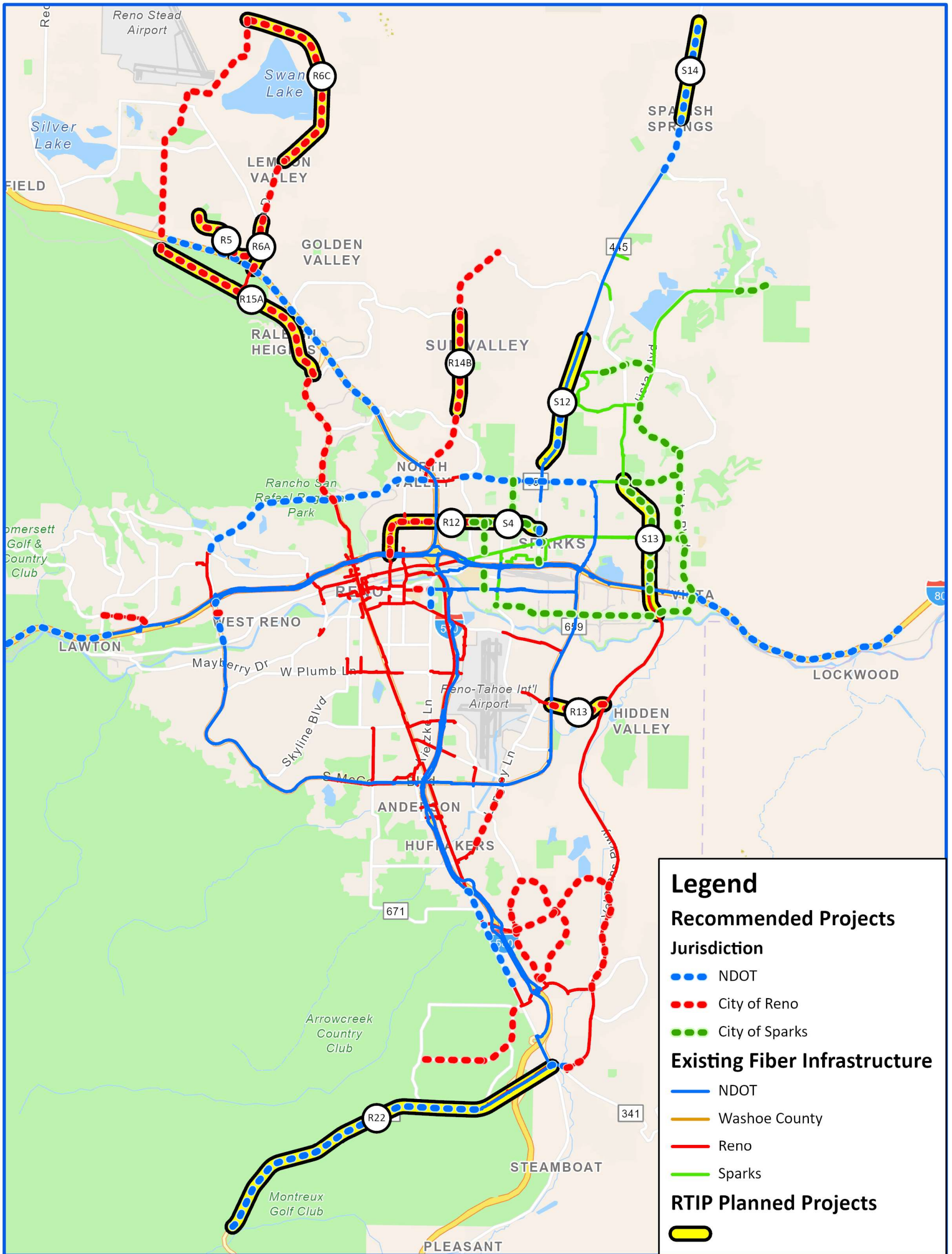


Within the recommended projects for City of Reno and City of Sparks, some RTIP projects should also include fiber infrastructure along with the planned improvements. These projects are included as part of the 5-year implementation plan. Figure 11 identifies the specific RTIP projects that corresponds with the recommended projects. **Table 6** includes a description of the RTIP projects that can potentially include communications network infrastructure.

Table 6 – RTIP Project Table

RTIP Projects							
Project ID	City	Agency	Project Primary Street	Project Start Street	Project End Street	RTIP Project #	RTIP Project Name
R6A	Reno	Reno	Lemmon Drive	US 395	Military Road	WA20190037	Lemmon Drive Widening Segment 1
R6C	Reno	Reno	Lemmon Drive	Fleetwood Drive	Ramsey Way	WA20200070	Lemmon Drive Widening/Reconstruct Segment 2
R12	Reno	Reno	Wells Avenue	Kuenzli Lane	Sutro Street	WA20170135	Oddie Blvd/Wells Ave Corridor Package 2
R13	Reno	Reno	Pembroke Drive	S McCarran Boulevard	Veterans Parkway	WA20210006	Pembroke Drive Widening
R14B	Reno	Reno	Sun Valley Drive	Scottsdale Road	7th Avenue	WA20190042	Sun Valley Boulevard Corridor Improvements – Phase 2
R15A	Reno	NDOT	N Virginia Street	Stead Boulevard	Panther Drive	WA20210005	North Virginia Street Widening
R22	Reno	NDOT	Mt Rose Highway	Geiger Grade Road	Joy Lake Drive		Mt. Rose Highway Improvements
S4	Sparks	Sparks	Oddie Boulevard	Sutro Street	Pyramid Way	WA20170135	Oddie Blvd/Wells Ave Corridor Package 2
S12	Sparks	NDOT	Pyramid Way	Queen Way / Farr Lane	Golden View Drive	WA20190040	Pyramid Highway US-395 Connector Phase 1
S13	Sparks	Sparks	Sparks Boulevard	E Prater Way	I-80 WB Ramps	WA20190041	Sparks Boulevard Corridor – Phase 1
				Baring Boulevard	E Prater Way	WA20150065	Sparks Boulevard Corridor – Phase 2
S14	Sparks	Sparks	Pyramid Way	La Posada / Eagle Canyon Drive	Ingenuity Avenue / Horizon View Avenue	WA20210021	Pyramid Way Lane Addition – Design

Figure 11 – RTIP and Recommended Projects



Tables 7 and 8 identify future project recommendations not included in the RTIP or 5-year ITS Network Master Plan. Table 7 summarizes the recommended projects that are currently in-progress (i.e., planned, under design, or in construction).

**Table 7 – Other Priority Projects that are Planned, Under Design, or in Construction
Identified but not Included in the 5-year Plan**

Project List				
Project ID	Agency	Primary Street	Start Street	End Street
				Fleetwood Drive
R17	NDOT	Geiger Grade Road	Virginia Street / Mt. Rose Highway	Veterans Parkway
	Reno	Veterans Parkway	Geiger Grade Road	Curti Ranch Parkway
				Robb Drive
R19	Reno	Double R Boulevard	Sandhill Road	S Meadows Parkway
				Sparks City Hall

The 5-year implementation plan budget limits the number of projects that can be programmed. Table 8 list the additional projects needed to close ITS network communications gaps, but not included within the 5-year ITS Network Master Plan due to programming budget limitations.

Table 8 – Lower Priority Identified but not Included in the 5-year Plan

Project List							
Project ID	Agency	Primary Street	Start Street	End Street	Length of Segment (LF)	Project Budget	Notes
R1A	Reno	Arrowcreek Parkway	Zolezzi Lane	Tremolite Drive	7,452	\$ 1,119,867	Majority of benefit is to remove wireless (radio) connection for City of Reno. Benefit does not justify cost.
R1B	Washoe	Arrowcreek Parkway	Tremolite Drive	Thomas Creek Road	5,861	\$ 880,875	Majority of benefit is to remove wireless (radio) connection for Washoe County. Benefit does not justify cost.
R4	NDOT	N McCarran Boulevard	7th Street	Clear Acre Lane	22,836	\$ 3,431,815	McCarran ring project to be programmed by NDOT
R5	Reno	Sky Vista Parkway	Lemmon Drive	Silver Lake Road	7,978	\$ 469,138	Project is complete. Fiber infrastructure not included during recent construction
R9	Reno	Double Diamond Parkway	Prototype Drive / Double R Boulevard	Double R Boulevard	12,733	\$ 1,913,515	No signalized intersection to connect on this path, although recommended to close fiber gap and create fiber ring in future. Benefit does not justify cost.
R10	Reno	Double R Boulevard	Double Diamond Parkway	S Meadows Parkway	5,454	\$ 819,612	No signalized intersection to connect on this path, although recommended to close fiber gap and create fiber ring in future. Benefit does not justify cost.
R14A	Reno / Washoe	Sun Valley Drive	7th Avenue	Highland Ranch Parkway	7,552	\$ 1,134,926	Paving project recently completed. No fiber infrastructure installed agencies do not desire to cut pavement during this time. Should recommend fiber infrastructure in future to connect isolated signals.
R15B	NDOT	N Virginia Street	Panther Drive	N McCarran Boulevard	13,634	\$ 2,048,973	US 395/Virginia Street ring project to be programmed by NDOT
R21	Reno	Ramsey Way	Lemmon Drive	Albert Way	25,566	\$ 3,842,217	Recommended to create fiber ring. Suggest future private development to install infrastructure.
		Albert Way/ Bravo Avenue	Ramsey Way	Mt Charleston Street			
		Mt Charleston Street / Stead Boulevard	Bravo Avenue	US 395			
R24	NDOT	McCarran Boulevard	4th Street	I-80		NDOT	McCarran ring project to be programmed by NDOT
R-B	Reno	City Wide ITS Vault				\$ 260,130	Remaining City of Reno ITS Vault upgrade
S1	NDOT	N McCarran Boulevard	Baring Boulevard	El Rancho Drive	12,410	\$ 1,517,046	McCarran project to be programmed by NDOT to close McCarran ring.

ATTACHMENT B
ITS DESIGN STANDARD PLAN AND SPECIFICATION UPDATES



REGIONAL TRANSPORTATION COMMISSION

Regional Traffic Guidelines
Revised September 2023



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STANDARD PAVEMENT MARKINGS

This guideline is intended to provide regional uniformity in the placement of pavement markings. It is intended to be an aid in the preparation of pavement marking plans for projects within Washoe County. Manual of Uniform Traffic Control Devices (MUTCD), latest edition, requirements should be followed in all cases.

Lane Markings

Center Lines:

4" broken yellow line, 10' long with a 30' space.

4" solid double yellow line.

4" solid yellow line around raised center medians – 1' off edge of oil.

Edge Lines:

6" solid white line should be used to separate bike lanes from vehicle travel lanes.

8" solid white edge line to separate bike lane from a right turn lane.

4" solid white line should be used on the right side of the bike lane if no curb exists, to delineate a bike lane or on road segments that do not have bike lanes (Shoulder line).

Lane Lines:

4" broken white line, 10' long with a 30' space.

6" or 8" solid white line.

4" solid double white line.

Dotted Lines:

8" or dotted yellow or white line 2' long with a 4' space for same line width of line extension of lane lines.

Bike Lane:

6" dotted white line 2' long with a 4' space for crossing traffic lane.

6" solid white line should be used to separate bike lanes from vehicle travel lanes.

5' minimum or 6' maximum width unless otherwise approved by maintaining agency this dimension does not include gutter width.

Channelization Lines:

8" solid white line. (Turn pockets)

Lane Drop Markings:

8" dotted white line 3' long with 9' gap.

Auxiliary Pavement Markings

Crosswalks:

Layout per NDOT Standard Detail ST- 7 District 2 & 3.

Stop Bars:

24"- solid white line placed 4' minimum or match existing in advance of a crosswalk at controlled intersections.

City of Reno: 12" solid white line for non-signalized intersections.

Yield Lines:

Isosceles triangles (shark's tooth) per MUTCD Section 3B.16, 20' – 50' (based on maintaining agency and site conditions) in advance of a crosswalk at multi-lane uncontrolled intersections or multi-lane mid-block crossings and prior to dotted line at roundabout entry. The following guidelines should be used for dimensions of the isosceles triangles:

- 1) 12"x18" triangles will be reserved for multi-use paths
- 2) 24"x36" triangles are used for roadways.

Place R1-5 sign on multi-lane roadway and W11-2 with downward arrow plaque (W16-7P) on single lane roadway.

Arrows and "ONLY":

8' high white turn lane arrows and two way left turn lanes (TWLTL). Layout per NDOT Standard Detail ST-6.

"ONLY" marking for use on a trap lane and alternate with arrow pavement markings

Transverse Markings:

Diagonal (45 degrees) white or yellow lines at 10' center to center.

Speed Limit:

"15 MPH" shall not be used in conjunction with School Reduced Speed Limit signage, or at other locations where 15 MPH speed limit is not in effect at all times.

School:

"SCHOOL" shall be used in conjunction with S1-1 School signs, when used to establish a school zone. "SCHOOL" shall not be used at other locations, including but not limited to in conjunction with School Reduced Speed Limit signage.

Bicycle Markings

Check with maintaining agency regarding use of bike lane markings including Sharrow markings.

6' high white bike rider symbol and directional arrow per 2009 MUTCD Fig. 9C-3 NDOT Standard Detail ST-4 placed 65' on the far side of major intersections and spaced 1300' apart in addition to conflict areas. Place a bike lane sign (R7-9) near the bike rider symbol. If needed to accommodate parking, use the (R3-17) sign with an appropriate supplemental sign (see figure 9C-5, 2009 MUTCD) near bike rider symbol.

Sharrow markings could be used on roadway segments with speeds less than 35mph on bike routes with no bike lanes. Signage should be R4-11 "Bikes may use full lane".

Roundabout Markings

See MUTCD current edition

REGIONAL TRAFFIC SIGNAL EQUIPMENT

General

Contact maintaining agency for equipment specifications. New Traffic signal activation shall occur at an off-peak time that minimizes impacts to the traveling public, based on engineering judgement and in consideration of agency staff availability.

Intersection and Midblock Safety Lighting

Where possible separate luminaires shall be provided to supply positive lighting for crosswalk areas use NDOT Detail TS-27. Additional lighting may be required for midblock crossings and other conflict areas (raised island delineation, changes in operations, accel/decel lanes, etc).

City of Sparks LED lighting specifications:

Shall be LED only and placed such that it provides a minimum of 2.0 FC of average illuminance at the sidewalk. All LED style lighting fixtures shall meet the following minimum criteria regardless of manufacturer:

1. The housing shall be all metal with the exception of the lens.
2. The housing shall be silver in color except where heat dissipation components are involved.
3. There shall be a minimum 10 year warranty.
4. The unit shall provide a Type IV Medium optical spread utilizing a minimum of 80 LED units.
5. Each complete and assembled fixture shall require no more than 190 System Watts.
6. The fixture shall be capable of utilizing Universal 120-277V Line Power.
7. The fixture shall have Corrected Color Temperature (CCT) of 4000K.
8. The fixture shall not exceed 700 mA Drive Current.
9. The fixture shall be Illuminating Engineering Society of North America (IESNA) LM-79-08 compliant.
10. The unit shall be constructed in such a manner that it can be mounted to a standard 2" ID horizontal pipe with +/- 5 degree adjustment with no specially constructed mounts or wire splicing methods.
11. No optional shorting cap receptacle allowed.

City of Reno LED lighting specifications:

Luminaire fixtures shall be Cree STR-LWY3MHT08EULSV700 or approved equal

Photocell shall be mounted at the metered service.

Signal Heads

All traffic signal heads shall be dull black in finish, outfitted with louvered back plate with a 2" retro-reflective border, tunnel visors with a ¾ slot, open to the bottom. Plumbizer for mast arm mounts shall be located between the red and yellow signal indication unless noted differently on the plans.

Light Emitting Diodes (LED)

Tinted (City of Sparks indicate no green tinted lenses) XL or XOD. All pedestrian signal indications shall be pedestrian countdown signals that conform with ITE PTCSI -2 requirements, EPACT 2005 compliant and fully MUTCD compliant.

Video Detection & Cameras

Contact maintaining agency for video detection system manufacturer.

Loop Detection

Contact maintaining agency regarding use of preformed loops under PCC or AC pavement.

Emergency Vehicle Detection

Contact maintaining agency.

Prior to acceptance, all preemption equipment shall be field tested in accordance to the manufacture's recommendations.

Signal Poles

Utilize all State of Nevada standard poles including Type 1A, 1B, 7, 28, 30, 30A, 30B, 35, 35A & 35B. All standard poles over 10'0" shall be equipped with three (3) hand holes, one (1) at the base of the pole and one (1) opposite the mast arm on back of pole, and a 27" hand hole terminal compartment on the back side of the pole, with the top of the hole six feet from ground level, placed 180 degrees (180°) from the mast arm. Pedestrian Push Buttons (PPB) shall be placed so as not to conflict with the terminal compartment. PPB shall not

be placed on terminal compartment cover. Signal poles shall be installed in accordance with all State of Nevada specifications and standard plans.

Controller

Contact maintaining agency for controller manufacturer.

Cabinets

The complete controller cabinet shall be delivered to the maintaining agency for testing and burn-in by the supplier no later than two (2) weeks prior to turning on the signal. Refer to ITS section for Communications Hub Cabinet requirements.

Pull Boxes

Use State of Nevada No.3½, No.5, and No.7 within roadway. Refer to Intelligent Transportation System (ITS) section for, ITS Pull Box and ITS Vault which are required to be used for fiber optic cable infrastructure. Utilize a ground-able fully traffic rated (HS 20) pull box with bolt down (steel cover) unless indicated otherwise. Pull box lids shall be label accordingly. Examples include: "County Electrical", "County Traffic Signal," "City Electrical", or "City Traffic Signal". Refer to NDOT standards for NDOT installation within NDOT jurisdictions.

Pedestrian Push Button

PROWAG compliant units, contact maintaining agency for specific model.

Metered Service Cabinet

Metered service cabinets with battery backup shall be separate from the controller cabinet and placed to minimize possibility of accidental knock-down.

Battery Backup

The system shall be a 24-volt or 48-volt system and bear a 508 UL label. The system shall supply a minimum uninterrupted continuous service for a minimum two hours with a minimum 6.5 hours of flash. BBS for signal indications only, no safety lighting.

Traffic Signal Interconnect Options

Refer to Intelligent Transportation System (ITS) section for fiber optic infrastructure requirements for interconnects between multiple traffic signal cabinets. Contact maintaining agency to use other options such as radio or cell modems.

Conduit

Signal conduit shall be a minimum of 3" ID, other conduit (detector lead-in, interconnect, etc) shall be a minimum 3" ID. Utilize "Schedule 40" (PVC) for all underground runs. Utilize rigid metal for exposed conduit to 18" below grade. Rigid metal conduit shall be used under driveway sections, railroad and riser sections. All conduits shall have a single locate wire coated or detectable mule tape. Check National Electric Code (NEC) for maximum number of

wires/cables in conduit.

Internally Illuminated Street Name Signs (IISNS)

All signs shall be single-faced with case-sensitive lettering and rigid mounted directly onto mast arm utilizing an approved method. Contact maintaining agency for "CITY" logo which shall be located on the left side of the sign face with appropriate block numbers, arrows, etc., for all signs. Logo shall not exceed height of upper-case lettering. Signs shall be a 120 volt system.

Conductor/Cable

Utilize IMSA rated color-coated cables and conductors. Each NDOT Type 28, 30, 30A, 30B 35, 35A & 35B signal poles shall be fed, at a minimum, by a single 25 conductor, No. 14 cable. Each Pedestrian Push Button shall be fed by a single 5 conductor, No. 14 cable for each push button installed. NDOT Type 1A and 1B poles shall be fed, at a minimum, by a single 15 conductor, No. 14 cable.

Controller Cabinet

Contact maintaining agency for detailed equipment specifications.

<https://cityofsparks.us/resources/resource/traffic-eng/>

<https://www.reno.gov/government/departments/public-works/forms-publications>

INTELLIGENT TRANSPORTATION SYSTEM (ITS)

General

- A. The purpose of this section is to provide uniform guidelines and design criteria for the project development process in the development of ITS infrastructure. The guideline will facilitate the design of basic ITS elements in document preparation for Plans, Specification, and Engineer's Estimate in the City of Reno, City of Sparks, and Washoe County.
- B. Refer to latest NDOT standard specifications for associated requirements within NDOT right-of-way.

Contractor System Integrator Requirements

- A. This work requires a system Integrator to be responsible for making all the communications and electronic systems, subsystems and individual devices work as a complete and functioning system. The system Integrator shall consist of one person with all the skills listed under the section Requirements for System Integrator. The system integrator is responsible for all hardware and firmware configurations/programming, as well as making sure that all the individual parts and components make a complete and operating system as indicated on the plans and these specifications.
- B. Requirements for System Integrator: System Integrator shall install and configure the complete ITS systems combining new devices and infrastructure associated with this Project with existing ITS components, including hardware and software, resulting in an inclusive end-to-end solution. The System Integrator shall have the following minimum qualifications:
 - 1. B.S. or B.A. degree in Electrical Engineering, Electronic Engineering, Computer Science, Mathematics, or related discipline.
 - 2. Experience implementing intelligent transportation systems involving computer and communications hardware, software, and firmware.
 - 3. Ability to participate directly in the integration of hardware, software, and communications elements.
 - 4. Proficiency in software/hardware implementation, configuration, and troubleshooting.
 - 5. Proficiency in the development of test plans, procedures, and

techniques. Possesses a thorough knowledge of diagnostics techniques specifically relevant to the hardware and software subsystems furnished to this project.

6. Possesses at least a working knowledge of each of the following: computer operating system principles, LAN/WAN network elements, wireline and wireless communications equipment, CCTV camera subsystems, Fiber Optic communications equipment, TCP/IP communications protocols, network architectures, security appliances and data communications equipment.
7. Possesses the ability to provide technical project direction.
8. Proficiency in the use of project management methodologies and techniques.
9. Possesses strong organizational, analytical, and problem-solving skills.
10. The System Integrator shall be available to be contacted by the Engineer during business days from 6am through 6pm for the life of this contract and shall be capable of being on-site within 4 hours of notification.
11. Submit a resume of the qualified System Integrator for approval no more than 14 days from NTP.
12. The system integrator shall configure the Network Switches for signal and ITS field device cabinets per manufacturer's recommendations and compatible with existing connected network architectures to provide the following network characteristics:
 - a) Configure Field Hardened Ethernet Switches within field cabinets, sharing a common fiber path between network switches to share a common subnet (i.e., VLAN) in a multi-drop ring topology, unless otherwise noted on the plans.
 - b) Furnish and install interface cabling and interface standard adapters needed to interconnect the network switches with the existing devices. Provide all jumper cables necessary to complete this requirement.
 - c) Provide all required rack mounting hardware and cabling associated with the interface modules, network switch chassis,

power supplies, and fiber optic connections per the project plans.

13. System integrator is responsible for coordinating with the owning agencies to make all fiber connections through fiber patch panels using fiber jumpers. System integrator is also responsible for coordination with layer three switch installations at each agency where fiber optic cables will be terminated according to project plans.

ITS Conduit Requirements

A. Conduit Material:

1. Fiber optic conduit systems are typically constructed with PVC or HDPE as approved by the City of Reno, City of Sparks. Or the County. All conduits shall have smooth inner and outer walls. PVC conduits are rated by wall thickness and crush resistance. Schedule 40 is typically used for all PVC applications, unless noted otherwise in the Plans.
2. In City of Sparks utilize "Schedule 80" (PVC) for all underground runs. Rigid metal conduit shall be used under driveway sections and riser sections. All spare conduits shall have a single 12 AWG (min) copper tracer wire coated with a 30-mil (min) polyethylene jacket designed specifically for buried use.

B. Conduit Installation:

1. Conduit runs shown on the Plans may be changed to avoid underground obstructions with written approval by the Engineer and at no additional cost to the owner.
2. Only communications cables (i.e., fiber optic, CAT 6A and other copper-based communications cables) are allowed to be installed within ITS conduits, with the associated pull tape and bonding conductor. Power conductors, traffic signal cables, and other types of cable infrastructure shall be installed within a separate conduit for those systems.
3. Conduit bends, except factory bends, shall have a radius of not less than six times the inside diameter of the conduit. Where factory bends are not used, conduit shall be bent, without crimping or flattening, using the longest radius practicable.
4. A 1250-pound pull tape shall be installed in all empty conduits which are to receive future cables. At least 5 feet of pull tape slack shall be coiled up at each termination.
5. A green #8 AWG copper conductor functioning as both a bonding conductor and locator wire shall be installed in all conduits. When cables are being installed within a conduit than this bonding/locator wire shall be installed with the other cable(s). At least 5 feet of bonding/locator wire slack shall be coiled up at

each termination. The bonding/locator wire shall be made mechanically and electrically secure to form a continuous system and shall be effectively bonded to the ground rod within the cabinets, poles, and pull boxes.

6. Existing underground conduit to be incorporated into a new system shall be cleaned with a mandrel or cylindrical wire brush, blown out with compressed air, and capped watertight until ready to connect to the new conduit system.
7. Conduit shall be laid to a depth of not less than 36 inches below finished grade.
8. Conduit runs parallel to curbs shall be placed adjacent to back of curb, except where in conflict with existing facilities. If conduit is to be placed in street the preferred location is at the lip of gutter.
9. Conduit stubs from pole or cabinet bases shall extend at least 6 inches from face of foundation and at least 18 inches below top of foundation.
10. Rigid nonmetallic type conduit shall not be used for drilling or jacking. Installation of rigid nonmetallic type conduit under existing pavement will be permitted if a hole larger than the conduit is predrilled and the conduit installed by hand. Bottom of trenches for rigid nonmetallic conduit shall be relatively free of sharp irregularities which would cause pinching and excessive bending of the conduit. The trench shall be excavated to 4 inches below the invert grade of the conduit and backfilled with a granular material with 100 percent passing the 3/8 inch size sieve except where backfilled with concrete. A cradle shall be shaped in the granular material cushion to support the conduit. The first 6 inches of backfill over the top of the conduit shall be of this granular material. The top 6 inches shall be backfilled and compacted as shown on the Plans or as directed by the Engineer.
11. Where conduit is to be installed between the pole base and the underground pull box the conduit may be nonmetallic.
12. Rigid metallic type conduit shall be used for all conduit runs extending above ground. Underground portions of rigid metallic type conduit shall be spirally wrapped with a corrosion protection polyvinyl chloride or polyethylene pressure sensitive tape, applied with a suitable primer. The wrap shall have a nominal thickness of 20 mils, consisting of either one layer of 20 mil tape or two separate layers of 10 mil tape. A single wrap of 10 mil tape with a half lap will not be acceptable. When the rigid metallic type of conduit extends above ground, the wrapping shall extend to a minimum height of 4 inches above finished ground.
13. Rigid metallic type conduit shall be used for all bridge crossing.

Expansion couplings shall be used when crossing expansion joints within the structure.

14. Conduit terminating in standards or pedestals shall extend not more than 2 inches vertically above the foundation and shall be sloped towards the handhold opening. Conduit entering through the side of nonmetallic pull boxes shall terminate not more than 2 inches inside the box wall and not less than 2 inches above the bottom and shall be sloped toward the top of the box to facilitate pulling of conductors. Conduit entering through the bottom of a pull box shall terminate 1 to 2 inches above the bottom and shall be located near the end walls to leave the major portion of the box clear. At all outlets, conduits shall enter from the direction of the run.
15. Conduit for future use in structures shall be threaded and capped. Conduit leading to soffit, wall, or devices below the grade of the pull box shall be sealed by means of a sealing fitting and sealing compound, except that sealing fitting and sealing compound will not be required where conduit terminates in a structure or pull box. Conduits passing through fire rated walls shall be fire stopped with an approved material. Expansion couplings shall be used when crossing expansion joints within the structure.
16. Where conduits pass through the abutment concrete, the conduits shall be wrapped with two layers of 10-pound asphalt-felt building paper, securely taped or wired in place.
17. Conduit run on the surface of structures shall be secured with galvanized malleable iron clamps spaced not more than 5 feet apart.
18. Where pull boxes are placed in metallic type conduit runs, the conduit shall be fitted with threaded bushings, bonded, made mechanically and electrically secure to form a continuous system, and shall be effectively grounded. The bonding conductor shall be copper wire or copper braid of the same cross-sectional area as a # 8 AWG or larger conductor.
 - a) Bonding of metallic conduit in concrete pull boxes shall be by means of galvanized grounding bushings and bonding jumper.
 - b) Bonding of metallic conduit in metallic pull boxes shall be by means of locknuts, one inside and one outside of the box.
19. Where a metallic conduit system parallels, or crosses, a permanent water system, the bonding jumpers shall be installed at intervals not exceeding 500 feet.
20. At service points, grounding of metal conduit, service equipment, and neutral conductor shall be accomplished as required by the Code and serving utility, except the grounding conductor shall be a #8 AWG minimum size.

21. The location of ends of all conduits in structures, or terminating at curbs, shall be marked by a "Y" at least 3 inches high cut into the face of curb, gutter, or wall, directly above the conduit and above grade line.
22. Conduit Warning Tape: Conduit warning tape shall be installed a minimum of 12-inches above top of conduit. Warning tape shall be a minimum four-mil composite reinforced thermoplastic, with a minimum width of 3 inches and minimum length of 5 feet. Warning tape shall be highly resistant to alkalis, acids, and other destructive agents found in the soil. Warning tape shall have a continuous printed message warning of the location of underground conduits. The message shall be in permanent ink specifically formulated for prolonged underground use and shall bear the words "CAUTION – COMMUNICATION CABLE BURIED BELOW" in black letters on orange background for communication conduits. Where both electric and communications conduits are in a single trench, both warning tapes, as described above, shall be provided.
23. Trench Excavation: Subsection 305.02 - "Maximum Length of Open Trench" of the 2012 Standard Specifications for Public Works Construction (SSPWC) Revision 8 (i.e., Orange Book), is herewith amended to add the following paragraphs:
 - a) Unless otherwise directed by the Design Engineer and approved by the Agency, there shall be no unprotected open trench remaining at the end of the working day. At the end of the working day, any open trench shall be protected by plating or other means approved by the Engineer and the Agency of jurisdiction.
 - b) Refer to latest NDOT standard specifications for associated requirements within NDOT right-of-way.
24. Directional Drill:
 - a) The contractor shall furnish install conduit by trenchless methods as follows:
 - 1) New conduit to be installed under existing pavement, existing box culvert, curbs and gutters, sidewalks, established landscaping or decomposed granite not otherwise impacted by construction at locations only specifically indicated on the project plans as "Directional Drill".
 - 2) The Contractor shall identify the x, y, z coordinates for installations at 50'-foot intervals and at the center of the pull boxes that the conduit passes through.
 - b) Conduit installation methods identified in the plans as "Directional Drill" may be completed by trenching methods, if approved in advance by the Engineer as a means of facilitating installation or mitigating potential damage to

- existing surface and subsurface elements.
- c) Prior to beginning trenchless installation methods, the contractor shall complete the necessary potholing, and submit the proposed profile to the Engineer for approval. Installation shall be performed in accordance with industry standards and as directed by the Engineer.
 - d) The contractor shall pothole where/when crossing existing utilities as identified via USA Dig lines marked in the field during construction. Pothole quantities should be based on plans and utility coordination during design.
 - e) The contractor's installation process shall utilize the "walkover" locating system or other Engineer approved equivalent, for determining the installation profile. The installation equipment shall register the depth, angle, rotation and directional data. At the surface, equipment shall be used to gather the data and relay the information to the equipment operator. Excavation and backfill of excavated pits shall be in accordance with the requirements of the RTC Standard Specifications.
 - f) When enlargement of an installation hole is necessary, the hole shall be at least 25 percent larger than the conduit to be installed, unless otherwise specified by the Engineer. Pulling equipment such as grips, pulling eyes, and other attachment hardware external to the conduit will be permitted as long as a wooden dowel is placed inside the conduit to prevent it from collapsing at the point of attachment when pull tension is at its peak. A swivel shall be used with pulling hardware when pulling back the conduit into the installation path.
 - g) Drilling fluid shall be pumped down the hole to provide lubrication for the conduit as it is pulled in. The pulling tension for installing conduit into the installation path shall not exceed 75 percent of the conduit manufacturer's tensile strength rating in order to prevent the conduit from "necking down" or deforming.
 - h) Final installation profiles shall be submitted to the Engineer along with the surveyed x, y, z Coordinates for approval.
 - i) Further design, permitting, and construction requirements found under City of Reno Guidelines for Horizontal Directional Drilling (HDD) document shall be followed:
<https://www.reno.gov/home/showpublisheddocument?id=81754>
25. Fiber Optic Conduit Installations Requirements:
- a) In addition to the previous requirements, conduits for fiber optic cable installations shall also meet the following minimum requirements, unless approved otherwise by the owning agency:

- 1) A quantity of two 3-inch conduits between an underground ITS Pull Boxes and ITS Vaults (e.g., the typical ITS conduit run).
- 2) A quantity of three 3-inch conduits when installed between an ITS Vault and a signal/ITS cabinet, and between an ITS Vault and a traffic signal homerun pull box.

C. Innerduct Use and Material:

1. If there is limited conduit and there is a desire to allocate spare capacity for adding future cables, the use of innerduct may be required on the design plans.
2. The contractor shall furnish and install innerduct in the conduits as shown on the plans. The innerduct shall be used to separate cables and provide for future addition of cables.
3. Materials

a) 1-Inch Innerduct

- 1) Use 1-inch innerduct made of Polyethylene (PE). The 1 inch innerducts shall have a maximum outside diameter of 1.327 inches and a nominal inside diameter of 1 inch. The duct shall be free of pinholes, voids or other imperfections. The innerduct shall be furnished in one continuous length to complete each run between pull boxes, without splices or couplings.

b) 3 Cell Innerduct

- 1) The 3 Cell Innerduct shall be Maxcell Edge Detectable 3.00", or approved equal. Provide 3 Cell Innerduct with pre-installed 1250LB pull tape in each cell. Use 3 Cell Innerduct that is pre-lubed for lower friction during innerduct and cable installation, and resistant to ground chemicals and petroleum products.

- c) A green #8 AWG copper conductor functioning as both a bonding conductor and locator wire shall be installed in all conduits, either inside or outside the innerduct. The use of a multi-cell innerduct with a sewn-in solid copper wire shall not be used in place of this bonding/locator wire. If this bonding/locator wire needs to be removed when installing cables, then a new bonding/locator wire shall be installed with the cable(s). At least 5 feet of bonding/locator wire slack shall be coiled up at each termination. The bonding/locator wire shall be made mechanically and electrically secure to form a continuous system and shall be effectively bonded to the ground rod within the cabinets, poles, and pull boxes.

- d) A 1250LB pull tape shall be installed within each innerduct and within each cell of a multi-cell innerduct. If this pull tape needs to be removed when installing cables, then a new pull tape shall be installed with the cable(s). At least 5 feet of pull

tape slack shall be coiled up at each termination.

D. Innerduct Installation:

1. The contractor shall provide certification that the innerduct furnished and installed is in conformance with the manufacturer standard and these specifications.
2. Innerduct shall be pulled in new and existing conduit, as shown on the plans. Innerduct shall be pulled with minimum dragging on the ground or pavement. The contractor shall ensure that the tensile load on the innerduct does not exceed the allowed maximum by using a break-away technique and/or a pulley system with numeric readout which includes a means of alerting the installer when the pulling tension approaches the manufacturer's maximum pulling tension.
3. The contractor shall ensure that the innerduct is protected from sharp edges.
4. The contractor shall ensure that the innerduct is protected from excessive bends. The contractor shall not cause the innerduct to violate the minimum bending radius for which the innerduct was designed. The contractor shall be responsible for all damages caused from violations and shall remove and install new innerduct at no additional cost.
5. The contractor shall ensure that a swivel is used when pulling the multi-cell innerduct through a conduit to prevent the multi-cell innerduct from twisting. The contractor shall ensure the factory installed pull tapes within each cell are free-float during installation.
6. During pulling, the innerduct shall be continuously lubricated as it enters the conduit. Pre-lubrication may be necessary. The lubricant used shall be compatible with the innerduct material.
7. The manufacturer's recommended pulling speed and pulling tension shall not be exceeded. Each innerduct shall extend a minimum of 12 inches into the pull box.
8. All unused innerduct and cells shall contain pull tape from pull box to pull box. Each pull tape shall terminate at the end of the innerduct/cell with a minimum of 5 feet of coiled slack in each pull box.
9. The bonding/locator wire traveling through a conduit, innerduct or cell of a multi-cell innerduct shall terminate in the pull box with at least 5 feet of bonding/locator wire slack. The bonding/locator wire shall be made mechanically and electrically secure to form a continuous system and shall be effectively bonded to the ground rod within the cabinets, poles, and pull boxes.
10. Each innerduct shall be secured in the inside of the pull box to reduce the likeliness of recoil into conduit.

ITS Pull Box Requirements

- A. Pull boxes for ITS fiber optic cable installations shall be standard pull boxes as shown on the RTC-ITS standard details, unless the pull box is located within NDOT R/W in which case the NDOT-ITS standard details will be used.
- B. The standard ITS Pull Box is the minimum size pull box that can be used for ITS installations. All No. 7 ITS Pull Boxes shall be a single unit, 24-inches in depth (i.e., no extensions allowed for achieving the 24-inch depth).
- C. The standard ITS Vault or Street Rated ITS Vault is required at the following locations:
 - 1. At existing traffic signal intersections where fiber optic cable is installed after removal of existing copper interconnect cable.
 - 2. At all underground locations requiring splicing of fiber optic cables (i.e., Trunk-to-Trunk, Trunk-to-CDCA, etc.)
 - 3. At the ends of all Trunk fiber optic cable runs to facilitate the installation of a splice closure for protecting the end of the fiber cable and support future splicing needed to extend the fiber optic cable run beyond the project limits.
- D. All standard ITS Vault and Street Rated ITS Vault are required to be installed with two racks and hooks on each of the two long sides.
- E. Covers for ITS Pull Boxes and ITS Vaults shall be permanently marked per the owning agency (e.g., RENO FIBER, SPARKS FIBER, or COUNTY FIBER), unless installed for NDOT where the cover shall be marked per NDOT requirements.
- F. ITS pull boxes shall be installed per the RTC-ITS standard details, unless otherwise directed by the owning agency, except for NDOT owned pull boxes which shall follow the NDOT requirements.
- G. Install ITS pull boxes at the locations shown on the plans, in long runs spaced at not over 1000 ft, and there shall not be more than 360-degrees of conduit bends (horizontal and vertical) between any two connective pull points (i.e., pull box, vault, pole, and cabinet pull points).
- H. Place the tops of pull boxes installed in the ground or in sidewalk areas flush with the surrounding finished grade or top of adjacent curb. Where practical, place pull boxes shown in the vicinity of curbs adjacent

to the back of curb, and adjacent to standards along the side of the foundations as shown on the plans

Fiber Optic Cable Installer Requirements

- A. This work requires a fiber optic cable installer to be responsible for installing all fiber optic cables, performing fiber optic splices, and performing fiber optic cabling system testing to be accepted as a complete and functioning system. The fiber optic cable installer shall consist of one person with all the skills listed under the section Requirements for Fiber Optic Cable Installer.
- B. Requirements for Fiber Optic Cable Installer:
1. Five years of experience implementing fiber optic communications infrastructure for intelligent transportation system.
 2. Ability to support the System Integrator in configuring and connecting to system hardware and communications elements.
 3. Proficiency in end-to-end fiber optic cabling system installations, including fiber optic cable installation, fusion splicing, fiber termination panel configuration, testing, and troubleshooting according to industry standards and these special provisions.
 4. Proficiency in the development of test plans, procedures, and techniques. Possesses a thorough knowledge of diagnostics techniques specifically relevant to fiber optic cabling systems subsystems furnished to this project.
 5. Possesses at least a working knowledge of each of the following: Fiber Optic communications equipment and network architectures.
 6. Possesses the ability to provide technical project direction.
 7. Proficiency in the use of project management methodologies and techniques.
 8. Possesses strong organizational, analytical, and problem-solving skills.
 9. The Fiber Optic Cable Installer shall be available to be contacted by the Engineer during business days from 6am through 6pm for the life of this contract and shall be capable of being on-site within 4 hours of notification.

10. Submit a resume of the qualified Fiber Optic Cable Installer for approval no more than 14 days from NTP.

Fiber Optic Cabling System Requirements

A. Single Mode Fiber Optic (SMFO) Cables (Trunk Cable)

11. Use only dielectric, SMFO cables that are of loose tube gel-free construction, with a waterblocking swellable material, designed for outdoor and limited indoor use and suitable for installation in underground conduit and field cabinets. Use cable that complies with the requirements of RUS 1755.900 and complies with Telcordia GR20-CORE and TIA/EIA-4720000-A standards, except as modified herein.
12. Provide the required slack of 100 feet for each cable direction in each ITS Vault (200 feet if pulling through vault, 100 feet if cable ends in vault) and 30 feet in each ITS Pull Box.
13. Use SMFO cable that complies with the following requirements:

PROPERTY	REQUIREMENT
Number of fibers	Minimum of 72 fiber strands, with 6 buffer tubes of 12 fiber strands each.
Core diameter	8.2 micrometer
Cladding diameter	125 +/- 0.7 micrometer
Core-to-cladding offset	Less than or equal to 0.8 micrometer
Cladding non-circularity	Less than or equal to 0.7%
Maximum attenuation	0.35 dB/km at 1310 nm; 0.25 dB/km at 1550 nm
Attenuation uniformity	No point discontinuity greater than 0.1 dB at either 1310 nm or 1550 nm
Mode-field diameter (matched cladding)	9.3 +/- 0.5 micrometer at 1310 nm; 10.5 +/- 1.0 micrometer at 1550 nm
Maximum chromatic dispersion	3.2 ps/(nm x km) from 1285 nm to 1330 nm and < 18 ps/(nm x km) at 1550 nm
Fiber polarization mode dispersion	0.5 ps/(km) ^{1/2}
Fiber coating	Dual layered, UV cured acrylate applied by the fiber manufacturer
Coating diameter	245 micrometer +/- 5 micrometer
Minimum storage temperature range	- 40 °F to + 158 °F (-40 °F to +70 °C)
Minimum operating temperature range	- 40 °F to + 158 °F (-40 °F to +70 °C)
Rated life	Certify a 20-year life expectancy when installed to manufacturer's specifications

14. Buffer Tubes:

- a) Each buffer tube shall be filled with a non-nutritive to fungus, electrically nonconductive, water-blocking material that is free from dirt and foreign matter.

- b) The water-blocking material shall allow free movement of the fibers, without loss of performance, during installation and normal operation including expansion and contraction of the buffer tubes.
 - c) The water-blocking material shall be readily removable with conventional nontoxic solvents.
 - d) Buffer tubes shall be stranded around a central member using the reverse oscillation or "S-Z" stranding process.
 - e) The use of filler rods in the fiber optic cable when required to lend symmetry to the cable section is mandatory.
15. Central Strength Member: The fiber optic cable shall have a central strength member designed to prevent buckling of the cable.
16. Cable Core: The fiber optic cable shall utilize a dry water-blocking material to block the migration of moisture inside the cables.
17. Tensile Strength Members:
- a) The fiber optic cable shall have tensile strength members designed to minimize cable elongation due to installation forces and temperature variation.
 - b) Underground fiber optic cable shall withstand a 2700N (600 lbf) tensile load where the change in attenuation does not exceed 0.2 dB during loading and 0.1 dB after loading (per EIA-455-33).
 - c) The cable shall be rated for an installed tensile service load of 890N (200 lbf) or more.
18. Cable Jacket:
- a) The fiber optic cable jacket shall be constructed of a high or medium density polyethylene (HDPE/MDPE) jacket that has been applied directly over the tensile strength members and water-blocking material.
 - b) The preferred method for sheath removal is a quick access system. Acceptable jacket systems must consist of at least one ripcord designed for easy sheath removal.
 - c) This cable will be rated for use in both underground and overhead installations.
19. Environmental: The cable shall be capable of withstanding the following conditions without damage or decrease in function:
- a) Total immersion in water with natural mineral and salt contents.
 - b) Salt spray or salt-water immersion for extended periods.
 - c) Insect spray and varmint repellents.
20. Provide the following information on a weatherproof tag firmly attached to the reel:
- a) Factory order number
 - b) Job number

- c) Ship date
 - d) Manufacturer's cable code
 - e) Type of cable (single mode, outdoor, indoor)
 - f) Beginning and ending length markings
 - g) Measured length and attenuation
21. Install SMFO cables continuous and without splices between allowable splice points as identified on the plans and specified herein. Only splice fibers at underground splice closures and fiber optic splice units that are housed in communications hubs and buildings. Perform all final length measurements and order cable accordingly.
 22. When removing cable from the reel prior to installation, place it in a "figure-eight" configuration to prevent kinking or twisting. Take care to relieve pressure on the cable at crossovers by placing cardboard shims (or equivalent method) or by creating additional "figure-eight" loops.
 23. Carefully handle SMFO cable. Do not pull cable along the ground or over or around obstructions. Do not pull cable over edges or corners, over or around obstructions, or through unnecessary curves or bends. Do not bend SMFO cable beyond the 6.22 inch minimum radius under no stress and 9.33 inch minimum radius under stress at any time. Use manufacturer approved pulling grips, cable guides, feeders, shoes and bushings to prevent damage to the cable during installation.
 24. Furnish the SMFO cable manufacturer's recommended procedures, maximum pulling tension, a list of the cable manufacturer's approved pulling lubricants, and the lubricant manufacturer's procedures for use. Adhere to manufacturer's installation procedures when installing fiber optic cable. Use lubricants in quantities and in accordance with the procedures recommended by the lubricant manufacturer.
 25. If the cable is pulled by mechanical means, obtain approval for the cable pulling equipment. Use pulling cable equipment that has a mechanism to ensure that the maximum allowable pulling tension is not exceeded at any time during installation.
 26. Furnish attachment hardware, installation guides, and other necessary equipment, not specifically listed herein, as necessary to install the fiber optic cable.

B. Communications Distribution Cable Assembly (CDCA)

1. The CDCA is to be used between the fiber optic Trunk and controller cabinet (also known as traffic signal cabinet or field device cabinet) at lengths predetermined by the Contractor, with the required slack of 100 feet in each ITS Vault and 25 feet in each No.7 ITS Pull Box, as well as the 20 feet of slack neatly coiled in the field device cabinet.

2. Provide and install Single Mode (OS2) CDCA ITS drop cable or equivalent which is a factory terminated cable with epoxy filled patch panel with 12 fiber optic Lucent Connector (LC) connectors. Additionally, an approved Single-Panel Housing (SPH) pigtailed 12 strand LC duplex, single-mode (OS2), single fiber, 250-micrometer can be approved for specific applications by the owning agency.
3. The CDCA drop cable shall be designed with an Optical Fiber Non-Conductive Riser (OFNR)-rated, all-dielectric cable that is ultraviolet-resistant and fully waterproof for outdoor applications. Cable shall have a single 3.0 mm buffer tube containing 12 color-coded fibers. Cable shall have a maximum attenuation of 0.40 dB/km at a 1310nm wavelength and 0.30 dB/km at a 1550nm wavelength.
4. Each LC connector shall have a maximum insertion loss of 0.4dB, less than -55dB reflectance, and UPC ferrule polish.
5. Adhere to manufacturer's installation procedures when installing the CDCA drop cable. Use lubricants in quantities and in accordance with the procedures recommended by the lubricant manufacturer.
6. Do not bend CDCA drop cable beyond the minimum bend radius of the cable, per the cable manufacturer's recommendations, at any time. Use manufacturer approved pulling grips, cable guides, feeders, shoes and bushings to prevent damage to the cable during installation.
7. Keep protective covers on the ends of connectors at all times until the associated jumper cable is connected to the port.
8. Furnish and install jumper cable to make a complete installation.

C. Fiber Optic Termination Panel

1. At ITS Hub Cabinet and within agency owned building locations, use fiber optic termination panels that are properly sized for the required number of splices and couplers needed to terminate all fibers within the cable, or cables, which are being terminated at the panel.
2. The termination panel housing (also referred to as the Closet Connector Housing, or CCH) shall comply with the following minimum requirements:
 - a) Designed for rack mounting in a standard EIA 19-inch.
 - b) Maximum height = 4 Rack Units (RU) using 1.75-in EIA hole spacing.
 - c) Designed to support 12 connector panels (i.e., cassettes or modules).
 - d) Blank covers installed on unused connector panel slots.
 - e) Removable front and rear enclosure doors with a tinted polycarbonate front door.

- f) Cable strain relief brackets, routing clips and guides.
 - g) Have provisions for minimum of four SMFO cable entries.
3. Connector Panels:
- a) Connector Panels shall be designed to fit within the approved termination panel housing (i.e., the CCH).
 - b) Each connector panel shall provide a minimum of 6 duplex couplers (12-ports per panel) with LC Duplex type UPC connector on each end. Maximum acceptable attenuation per LC connector shall be 0.3 dB per ANSI/TIA-568-C.3 specification.
 - c) Each connector panel shall provide an internal splice tray support a minimum of 12 splices (heat shrink, single fiber type) with splice protectors.
 - d) Each connector panel shall provide a minimum of 12 color coded fiber pigtailed to be connected between the 12 LC couplers and the 12 splice protector slots within each connector panel cassette/module.
 - e) Connector panel shall be provided with port numbers (1 through 12) and connector panel labels that are coordinated with the Fiber Assignment Table that is provided with the termination panel housing (i.e., the CCH).

D. Fiber Optic Jumper Cable

1. Use jumper cables that meet the following requirements:
 - a) 250 μm buffering of each fiber
 - b) 900 μm buffering of each fiber applied after the initial 250 μm buffering
 - c) Maximum factory measured insertion loss of 0.5 dB per EIA/TIA 455-171
 - d) Less than 0.2 dB loss when subjected to EIA/TIA-455-1B, 300 cycles, 0.5 kg
 - e) Aramid yarn strength member
 - f) Rugged 3 mm (approximate) PVC sheathing
 - g) Minimum bend radius of 320 mm following installation, 640 mm during installation
 - h) Minimum tensile strength of 444 N
 - i) LC Connectors factory terminated with strain relief
 - j) Comply with NEC requirements for indoor cable when used indoors
 - k) Rated by the manufacturer for use in outdoor field cabinets
2. Use either single fiber or duplex jumper cables. Provide permanent markings on duplex jumper cables that provide a visual distinction between the two fibers. Provide strain relief for jumper cables at both ends and elsewhere as needed. Adhere to

manufacturer recommended installation and minimum bend radius requirements.

E. Splice Closure

1. Use underground splice closures that have the capacity to accommodate a minimum of 300 single fusion splices each for splice closure receiving one or more 144-SMFO cables. At all other splice closure locations (i.e., locations receiving one or more 72-SMFO cables) use underground splice closures that have the capacity to accommodate a minimum of 156 single fusion splices each.
2. Each splice closure shall be provided with enough splice trays to accommodate the minimum splice capacity referenced (i.e., 300 and 156 single fusion splices respectively). Use splice trays that accommodate heat-shrink fusion splices.
3. Use splice closures that have a reliable dual seal design with both the cable jackets and core tubes sealed, without the use of water-blocking material. Use splice closures that can be opened and completely resealed without loss of performance or need for a resealing kit.
4. Use cylindrical, butt-end style underground splice closures to protect splices that are housed in pull boxes. The unit shall be capable of being opened and resealed without the need to purchase a resealing kit using a dome-to-base clamp with o-ring. Use corrosion resistant, water-tight splice closures that meet the requirements of GR-771-CORE. Ensure that the splice closure seals, bonds, anchors, and provides efficient routing, storage, organization, and protection of fiber optic cable and splices.
5. Use fiber optic splice closures capable of being installed within the standard ITS Vaults at locations where fiber splices are required and at locations where a fiber optic cable ends (e.g., a Trunk cable at the end of the project limits).
6. Use fiber optic splice closures with end cap supporting a minimum of six cable entry ports sized to support 4 Trunk cables (i.e., 72 SMFO or greater) and 2 branch cables (i.e., 12 fiber CDCA) to accommodate splicing per plans and for future trunk and branch cables to be spliced. Use cable entry ports with a compressed gel cable sealing type.
7. Use fiber optic splice closures with 6 cable attachments, six ground feed-through lugs, and valve for flash testing included.
8. Secure splice closures in pull boxes using the racks and hooks. Orient the splice closure such that the end cap is at least 6 inches below the opposite end.

F. Splicing Method

1. Use only fusion splicing for all splices. All splices and connectors shall be prepared in accordance with the manufacturer's recommendations. Each splice between two new fibers shall introduce less than 0.10 dB attenuation. For splices between one new and one existing, or reconnection of two existing fibers, the maximum allowable attenuation shall be 0.30 dB.
2. Protect each splice in a protective sleeve and secure in the splice tray. Completely re-coat bare fibers with a protective heat-shrink coating prior to placement in a sleeve or housing. Install the heat-shrink coating in such a manner as to protect the fiber from scoring, dirt accumulation, moisture intrusion, and micro-bending.
3. Do not deviate from the splice details shown on the plans without approval.
4. Only perform full-cable splices at locations shown on the plans.
5. Perform full-cable terminations at ITS Hub cabinets and agency building locations. Route SMFO cables to the designated fiber optic termination panel and through the rear of the panel. Secure the fiber optic cable sheath and central member outside of the termination panel. Route buffer tubes into the splice tray area of the associated connector panel module using spiral wrap to group and protect buffer tubes. Plug all entry holes not utilized.
6. Within the splice area, separate the buffer tubes and route each buffer tube to a splice tray. Secure buffer tubes in splice trays and splice each fiber of the buffer tube to a corresponding fiber optic pigtail. Route pigtails from the splice tray area to the rear side of the respective fiber optic patch panel area, within each fiber optic distribution panel housing. Use spiral wrap (or similar approved method) to group and protect the pigtails routed from each splice tray to the corresponding patch panel blade.

G. Terminations

1. Ensure that the attenuation at each termination (inclusive of two connectors and coupler) does not exceed 0.7 dB. Keep protective covers on couplers until jumper or pigtails are installed.

H. Labeling

1. Provide labeling in a neat, professional manner using permanent methods and durable products specifically designed for each label scenario. Obtain approval for label method and appearance prior to each label scenario. At a minimum, provide the following labeling:
 - a) Label all cables at pull boxes, cabinets, racks, and other points of entry with the appropriate cable identification

- number. Use permanently marked, removable cable sleeves.
- b) Label both ends of fiber optic jumper cables and pigtails.
- c) Sequentially label the jumper cable (front) side of patch panels in a consistent manner throughout the project.

I. Cable Management

1. Group and neatly tie cables to the sides of racks and pull boxes when applicable. Coil, tie, and stow slack or excess cable. Trim loose ends of cable ties. Provide strain relief for fiber optic cable, jumper cables, and pigtails.
2. At ITS Hub cabinets and agency buildings, horizontally route jumper cables from the front face of the fiber optic termination panel to either side of the rack. Stow jumpers within the horizontal cable rings of the fiber optic termination panel. Next, bundle the jumper cables using spiral wrap, and vertically route them down the side of the rack and through the floor. Beneath the rack, group the jumper cables into sub-bundles for each rack destination. Route sub-bundles beneath the floor to the appropriate equipment rack and up the sides of the rack. Break out individual jumper cables from the sub-bundles and route them horizontally to the equipment. If there is not a raised floor in the agency building, follow the same installation method using cable trays above the racks. Add additional cable trays as necessary to achieve the required connectivity between racks and between wall-mounted equipment and racks.
3. Route bundles of jumper cables between equipment racks as needed.

J. Testing Requirements

1. The Contractor shall be responsible for providing all fiber optic cabling system testing and the fiber optic cabling system shall meet the certification, factory, and stand-alone test requirements specified herein.
2. Contractor shall provide calibration of the Power Meter and OTDR equipment and submit calibration certificates that show the calibration was performed no less than 1 year ago.
3. The Contractor shall use the Power Meter Test Form illustrated below for recording the power meter results:

POWER METER TEST FORM

Total Fibers in Cable: _____ Buffer Tube: _____ String Blinder: _____ Test Date: _____
 Tester Name and Company: _____ Owing Agency Inspector: _____

Strand	Termination Location Descriptions	New Splice		Existing Splice		Cable			Total Allowed Loss dB	Measure Loss dB	Pass/Fail Y/N
		# of Splices = 0.1 dB x # of splices	Allowed loss	# of Connectors = 0.5 dB x # of connectors	Allowed Loss	Cable Length feet	1330nm Allowed Loss = feet x (0.35dB/Km) / (3,281 ft/Km)	1550nm Allowed Loss = feet x (0.25dB/Km) / (3,281 ft/Km)			
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											

4. The contractor may request the Microsoft Excel spreadsheet of this form from the Engineer. If the spreadsheet is not available, then the contract shall create one to use.
5. Fiber optic cable shall meet the following test requirements:
 - a) Pre-Installation Testing:

The contractor shall inspect all cable upon delivery, and prior to installation. Cables that are found to have visual damage shall be tested using an OTDR per the following section prior to installation.

- b) Post-Installation Testing:

Fiber optic cable shall successfully pass the following tests, demonstrating acceptable attenuation and connectivity. The contractor shall make corrective actions for unacceptable losses at no additional cost to the project. Failed splices and connections shall be remade and re-tested for compliance. The contractor shall replace cable in its entirety that is not compliant with these specifications at no additional cost to the project.

Each fiber optic strand, within the SMFO Cables (Trunk Cable), shall introduce less than 0.35 dB/km of attenuation at 1310 nm and 0.25 dB/km of attenuation at 1550 nm.

Each fiber optic strand, within the CDCA Cables, shall introduce less than 0.40 dB/km of attenuation at 1310 nm and 0.30 dB/km of attenuation at 1550 nm.

Each splice between two new fibers shall introduce less than 0.10 dB of attenuation. Each splice between one new and one existing, or two existing fibers, shall introduce less than 0.30 dB of attenuation.

Each fiber connection shall introduce less than 0.30 dB of attenuation (i.e., total for both connectors to the center coupler), and 0.40 dB for CDCA connections. When testing with a launch cable with a fiber connector, the contractor can use the extra loss of this connector in the loss calculations, for example, the connector at the panel and the connector at the launch reel will be .30dB + .30dB, and the splice on the pigtail can allow for .10 dB, giving a .70 dB allowable loss at the panel when testing with the OTDR.

1) Power Meter Test:

Power meter tests shall be conducted by the contractor after installation of the fiber optic cable, splicing, and termination panel connections.

The contractor shall conduct Power Meter Tests for each fiber to measure installed fiber cable attenuation and demonstrate correct panel termination continuity, for example, fiber path #1 at site A matches up with fiber path #1 at site B.

Power Meter Tests shall be performed on each fiber strand path between fiber termination panels. The contractor shall ensure that the light source and meter are calibrated and referenced to a zero reading when directly connected to each other, ensuring an accurate loss reading.

Power Meter Tests shall be performed in accordance with Method A.3 of TIA/EIA-526-7 – “Measurement of Optical Power Loss of Installed Single-Mode Fiber Cable Plant.” Testing shall be conducted at the cable ends in both directions using 1310 and 1550 nm wave lengths.

The contractor shall provide power meter testing results on a Power Meter Test Form that is pre-approved by the Engineer prior to testing.

2) OTDR Tests:

OTDR testing shall be conducted by the contractor after

successful completion of the power meter test. All OTDR traces shall be provided in the test documentation submittal in their native format or "raw" state as they are saved on the OTDR hard drive. For example, the bi-directional .trc files on an EXFO OTDR shall be submitted above and beyond the pdf's generated from the OTDR traces.

OTDR tests shall be performed in accordance with TIA/EIA-455-8 for all fibers, including new fibers, dark fibers, and existing fibers in splice enclosures that the contractor works in.

The contractor shall perform OTDR tests at both 1310 nm and 1550 nm using a launch cable of a length recommended by the OTDR manufacturer. The contractor shall enter the proper OTDR parameters for operation, including wavelength, index of refraction of fiber to be tested, and pulse length. The contractor shall adjust the sensitivity to 0.05 decibel and the resolution to display the complete fiber under test. Each loss event in the OTDR table shall be set to at least 2 decimal places. The contractor shall set the range of the OTDR to capture the complete fiber trace. The contractor shall set the number of averages or time of averages on the OTDR to ensure a smooth trace with no noise at the end of the trace.

The contractor shall submit OTDR traces which clearly annotate the location of each loss event at a minimum of 2 decimal places and identify the maximum allowable loss and the measured loss for each event (i.e., connector, splice, and fiber path length). The contractor shall provide a table of bi-directional splice losses for each fiber at each splice point and the table shall also include the connector losses at each termination panel for each fiber for review. All measured losses that exceed the maximum allowable loss shall be clearly identified on the bi-directional splice loss table until corrective measures have been performed by the contractor and all fiber paths successfully pass the OTDR test criteria. Failed splices shall be remade and re-tested for compliance. Failed connectors shall be cleaned, and replaced if necessary, and re-tested for compliance. Failed cable segments shall be replaced and re-tested for compliance.

OTDR tests shall be performed as follows:

(a) Bi-directional OTDR testing:

The contractor shall test each fiber strand path between fiber termination panels, in both directions, at 1310 nm and 1550 nm utilizing a fiber launch reel to ensure the reflective connector in the patch panel is measured.

In the event that a cable is pulled from point A to point B, with or without splices, but neither end is terminated, rather the ends are in a pull box for a future connection, the contractor shall test each unterminated fiber strand at each end to determine the bi-directional splice losses between the unterminated cables. There will be no front-end connector loss measurements since the cable is not terminated.

(b) Uni-directional OTDR testing:

The contractor shall test each fiber strand connected to a fiber termination panel at one end and unterminated in a splice closure at the other end utilizing a fiber launch reel at the terminated end to ensure the reflective connector in the patch panel is measured.

Communication Hub Cabinet Requirements

- A. See RTC ITS Standard Details attached. These cabinets are to meet the criteria of standard NDOT ITS cabinets including:
1. EIA 19-Inch Rack
 2. Front & Rear Doors
 3. Fiber Optic Termination Panels
 4. Field Hardened Ethernet Switch (Hub)
 5. Power Supply and battery backup shall be per the typical traffic signal cabinet standards.
 6. Jumper cables shall be outdoor rated CAT 6 with RJ-45 connectors or single mode fiber with LC connectors, unless otherwise required by the network appliance being connected.

Field Hardened Network Device Requirements

- A. Furnish, install, and test the Field Hardened Ethernet Switch. The

Ethernet Switch shall consist of an Ethernet switch and any required cables, surge protection, power supplies, Small Form Factor Pluggable (SFPs), connections, mounting hardware, and various accessories as needed. The switches for this project shall be fully compatible and interoperable with the switch(s) installed on previous RTC ITS Projects at the local agency including switches that have SFPs to handle SMFO and Multi-Mode Fiber Optic (MMFO) to tie into existing MMFO locations.

B. Materials

1. Field Hardened Ethernet Switch (Cabinet) shall be a Ruggedcom, RS900G series switch, or approved equal, meeting the following requirements:
 - a) Ruggedcom, RS900G series
 - 1) Switch shall be approved by City of Sparks and Engineer
2. Supply a Field Hardened Ethernet Switch (Hub) from the following or approved equal:
 - a) Ruggedcom, RSG2488
 - 1) SFP quantity as shown on splice details with SFPs to accommodate the distances required between fiber optic switches, with one extra SFP per type provided.
 - 2) A minimum of 6 copper non-blocking ports: 10/100/1000TX
 - 3) A minimum of 16 fiber non-blocking ports: Gigabit Ethernet Ports
 - 4) Switch shall be approved by City of Sparks and Engineer
3. In locations in the field that have equipment that require a serial interface supply an Ethernet switch that also includes a serial port.
4. The field switch shall be a managed switch and comply with the following standards:
 - a) Institute of Electrical and Electronic Engineers (IEEE) 802.IQ Local and Metropolitan Area Networks – Virtual Bridged Local Area Networks.
 - b) IEEE 802.1P: Traffic Class Expediting and Dynamic Multicast Filtering – Draft 8.
 - c) IEEE 802.3X: IEEE Standards for Local and Metropolitan Area Networks; Specifications for 802.3 Full Duplex Operation.
 - d) IEEE 802.1W: IEEE Standards for Local and Metropolitan Area Networks – Common Specifications – Part 3; Media Access Control (MAC) Bridges – Amendment 2 Rapid Configuration.
 - e) Federal Communications Commission (FCC) Rules and Regulations Vol. II, Part 15 for Class A Equipment Electronic Compatibility and Susceptibility (Product electromagnetic compatibility is required).
 - f) National Electronics Manufacturers Association (NEMA) TS – 2

Traffic Control Equipment. The following clauses apply:

- 1) 2.1.2: Operating Voltage.
 - 2) 2.1.3: Operating Frequency.
 - 3) 2.1.4: Power Interruption.
 - 4) 2.1.5: Temperature and Humidity, as modified herein.
 - 5) 2.1.6: Transients, Power Service.
 - 6) 2.1.7: Transients, Input-output terminals.
 - 7) 2.1.8: Non-destruct Transient Immunity.
 - 8) 2.1.12: Vibration.
 - 9) 2.1.13: Shock.
- g) Underwriters Laboratory (UL) 60950 Safety Requirements for Information Technology (IT) Equipment (applicable to equipment safety).
5. The field switch (non hub) shall:
- a) Be 4 port (minimum) 10/100/1000 Base TX RJ-45.
 - b) Have a minimum of (2) 1000 Base FX LC fiber optical ports.
 - c) Have a standard serial port when field conditions warrant
 - d) Operate non-blocking, at full wire speed.
 - e) Support remote reset and remote management.
 - f) Support IGMP snooping.
 - g) Support IP Multicast filtering.
 - h) Support remote turn on/off Base TX ports.
6. The field switch (non hub) shall also meet the following functionality and requirements:
- a) 10/100/1000 Base TX port shall connect via RJ-45 connector. The ports shall operate as half-duplex or full-duplex (IEEE 802.3x) over 100m segment lengths and provide auto-negotiation and crossover detection.
 - b) Each 1000 Base Fiber Transmission (FX) port shall connect via fiber connectors and 9/125um single-mode fiber. Fiber connectors shall be available as LC. The ports shall operate as full duplex (IEEE 802.3x) over 15 km segment lengths.
7. The field switch shall provide the following advanced Layer 2 functions: IEEE 802.1Q VLAN with support for a minimum of 128 Virtual Local Area Networks (VLAN), IEEE 802.1P priority queuing, IEEE 802.1W rapid spanning tree (required), IEEE 802.3X flow control greater than or equal to 1,028, support automatic address learning of a minimum 4,096 Medium Access Control (MAC) addresses and greater than or equal to 1,028 static MAC address.
8. The field switch shall provide the following port security function: ability to configure static MAC addresses, ability to disable automatic address learning per ports; known hereafter as secure port, secure ports only forward statically configured MAC

- addresses, trap and alarm upon any unauthorized MAC address and shutdown for programmable duration.
9. The field switch shall provide the following network management functions: SNMPv3, RMON-MIB (RFC 2819), Port Mirroring, Spanning Tree (IEEE 802.1D), Rapid Spanning Tree (IEEE 802.1W).
 10. The field switch shall support telnet, Trivial File Transfer Protocol (TFTP) or File Transfer Protocol (FTP), Command Line Interface (CLI) and Simple Network Management Protocol (SNMP).
 11. The field switch shall have an integrated web interface. Reset/Reboot and firmware shall be supported via all methods listed above. All parameters and settings (network management, security, Layer 2 features, etc.) shall be user configurable through the maintenance port, web interface Telnet and all other supported remote management tools.
 12. The field switch shall allow for stand-alone shelf mounting unit and DIN rail mounting.
 13. The field switch shall support the following:
 - a) Power: Nominal 120 VAC, 60 Hz. The unit shall be provided with all power conversion and regulation necessary to support electronics operation. The power input circuitry shall be designed to protect the electronics from damage by a power surge or under-voltage condition. Power consumption shall not exceed 20 Watts.
 - b) The field switch shall include a power status indicator.
 - c) Physical Characteristics:
 - 1) A minimum of 4 Ports, 10/100/1000 Base TX, RJ-45.
 - 2) 2 Port, 1000 Base FX, LC.
 - 3) Serial port (when needed).
 - 4) The field switch shall not exceed 7.5 inch high x 3 inch wide or 5 inch deep.
 - 5) The weight shall not exceed 5 lb.
 - 6) Shelf mount in 19 inch standard equipment rack.
 14. Environmental: The field switch shall conform to functional and performance specifications as defined herein when operated in the following environment.
 - a) Temperature: -40 °C to 85 °C.
 - b) Humidity: 5% to 95% relative humidity, non-condensing.
 - c) Cooling shall be by convection with case acting as heat sink. No cooling fan shall be used.
 15. The field switch shall have the following minimum indicators:
 - a) Power: On, Off.
 - b) Alarm
 - c) Network status per port: Transmit, receive, link, and speed.
 16. Status indicators shall be Light Emitting Diode (LED).

17. All connectors, indicators and replaceable components shall be permanently marked and traceable to the supplied documentation, including schematics and parts list. The external markings shall include the product function name, model number, serial number and manufacturer's name.
18. The field switch shall have a minimum Mean Time Between Failures (MTBF) of 40,000 hours.

C. DOCUMENTATION AND WARRANTY

1. Upon delivery, the following minimum documentation shall be provided by the vendor with each switch provided:
 - a) Initial configuration (This document shall provide both hardware and software settings).
 - b) Setup and configuration manual.
 - c) Users manual.
2. All equipment supplied and installed on this project shall be labeled clearly with the project and location designation.
3. Provide a minimum 3 year factory warranty for all Field Hardened Ethernet Switch and all associated cabling. The warranty on equipment and cabling shall be offered by the manufacturer and shall be transferable to the City of Sparks at the time of acceptance. The warranty period for equipment, cabling, and work begins at the time the City of Sparks accepts the system (SAT test)

D. TESTING

1. The Contractor shall be responsible for providing all Field Hardened Ethernet Switch testing requirements specified herein.
2. Demonstrate that the equipment and the systems furnished and installed under this contract function in full compliance with the requirements of the contract documents. Develop and submit test procedures for approval. Conduct tests in the presence of the Engineer using approved test procedures. Submit test results using approved test data forms. The test results will be reviewed for conformance with the requirements of these contract documents. If the equipment or systems fail any part of the test, make necessary corrections and repeat that test.
3. Give notice of the time, date, and place of all tests at least 14 days prior to the date on which a test is planned. Do not conduct tests sooner than 14 days after the associated test procedures are approved. If requested, postpone any test up to seven days in order to accommodate the schedules of the Engineer and Engineer designated representatives. Postponements of tests are not grounds for extension of the contract or for additional compensation. The Engineer may waive the right to witness certain tests.

4. Neither the witnessing of tests, nor the waiving of the right to do so by the Engineer or Engineer designated representatives will relieve the Contractor of the responsibility to furnish and install the work in accordance with the contract documents. Such actions by the Engineer or Engineer designated representatives or approval of any test results by them will not be deemed as acceptance of the equipment or systems tested until successful completion of all the required tests.
5. Ensure that all equipment to be tested is ready for testing prior to the performance of and Engineer witnessing of the tests.
6. Complete and submit approved test data forms containing all of the data taken as well as quantitative results for each test for approval. The test data forms will be the basis for rejection or acceptance of the required test. Have your authorized representative sign all test data forms. When tests are witnessed by the Engineer, obtain the witnessing Engineer's signature on the test data form.
7. The contract period will not be extended for time loss or delays related to testing.
8. Failure of any item to meet the requirements for any test will be counted as a defect and the equipment under test will be subject to rejection. Rejected equipment may be re-tested provided all areas of non-compliance have been corrected and evidence thereof is submitted.
9. For equipment that has failed and subsequently been repaired or modified, prepare and deliver a report that describes the nature of the failure and the corrective action taken. Submit this report for approval prior to shipping the modified equipment. After 3 failing tests remove and replace the faulty equipment.
10. Conduct tests in different stages of the system implementation as follows:
 - a) Stand-Alone Test - verify that after installation but prior to interconnection, the equipment operates as specified in the field. Test should include the following:
 - 1) The Ethernet Switch will be powered up and allowed to initialize, boot and run self- diagnostic tests as defined in the approved test procedures.
 - b) Subsystem Test - For each Ethernet Switch location that is installed and interconnected in a system, conduct approved Subsystem Test from an operator workstation in the traffic management center:
 - 1) All items in the stand-alone test
 - 2) Transmission of data to the switch being tested and other switches and network devices downstream of the switch
 - 3) All networked devices sharing the same fiber path or interconnected into the same network circuit responded to

all central software commands.

- c) System Acceptance Test (SAT) - The SAT consists of a 30-day period of operation without major failure of Contractor-supplied equipment. Demonstrate that the total system (hardware, firmware, materials, and construction) is properly installed, is free from identified problems, exhibits stable and reliable performance and complies with the contract documents.
- d) At least once per week, demonstrate that all Ethernet switches function as tested in the Subsystem Test. During the SAT, control field devices directly connected to the switch and other devices interconnected to the same switch circuit. Obtain access to the Traffic Management Center during normal working hours to conduct this test.
- e) Permission to start the test will only be granted after all subsystem testing has been successfully completed. Request in writing the time and date when the test is to start.
- f) As part of the SAT, owning agency will be utilizing the system, communicating with traffic signal cabinets, posting messages on DMS's, and operating the CCTVs for monitoring purposes as well as operating of the new system devices.
- g) Coordinate all SAT testing activities with the Engineer and City of Sparks operations staff.
- h) Ensure that all equipment is maintained in operable condition during the SAT. Troubleshoot, diagnose, identify, isolate, and resolve all hardware and firmware problems and inconsistencies. Formulate possible solutions and implement all corrections needed for Contractor installed equipment. Identify any problems in equipment furnished by others and assist in correcting problems with such equipment.
- i) Have a System Engineer on-site to operate the system exercising all functions. Prior to assigning an employee to the project in this capacity, provide resumes of any employee proposed for this role and obtain approval. Make available on-site, key technical personnel familiar with the design and construction of each major system component within 48 hours of notification of a problem.
- j) Correct all system documentation errors, omissions, and changes discovered and resulting from the SAT and previous testing. System acceptance will not be considered complete until corrected documentation is submitted.
- k) In the event of a failure of a single piece of equipment during the SAT, replace or repair the equipment and restart the 30-day test only for that piece of equipment. If the failure of the single piece of equipment prevents the proper operation of

other equipment, all devices affected by the failure will have the test extended by however many days they were out of service, whether or not these devices have previously been tested and passed before equipment failure occurred.

- l) The following conditions constitute a minor system failure and will result in suspension of the 30-day test:
 - 1) Interference with project operations due to power failure.
 - 2) Failure to complete the objective of any test scenario due to lack of adequate documentation for equipment supplied by the Contractor. Re-test using revised documentation.
- m) After satisfactory remedial action, the 30-day test shall be resumed and extended one day for each restart.
- n) The following constitutes a major system failure. Any one of the following conditions will result in reinitialization of the SAT from day zero:
 - 1) Failure of any hardware or performance item to meet the operational requirements of the specifications for 72 consecutive hours.
 - 2) Failure of 5% of all field devices or communication equipment within a 14-day period.
 - 3) Intermittent hardware, software, communication, or operation control malfunctions.

CCTV Camera Requirements

- A. Cameras shall be per this specification or approved equal: Advidia - 2.1MP, IP, PTZ, 4.7-94mm (20X) lens, Outdoor, Dome with Pole Mount for Advidia A-200-P (A-200-PM) and CAT 6 Ethernet Cable with distance to reach cabinet. Approved equals shall be integratable into the CCTV viewing software Video Insight Video Management Software (VMS)
- B. Camera Pole outside of mounting to existing signal poles: shall conform to NDOT Details and Specification
- C. Camera lower device: shall conform to NDOT Details and Specification

TRAFFIC SIGNAL ACTIVATION PROCEDURE

Traffic signal activations shall occur at an off-peak time that minimizes impacts to the traveling public, based on engineering judgement and in consideration of agency staff availability.

Place Changeable Message Signs (CMS) a minimum of 5 days in advance of signal activation. When using a single message, put the same message on the second panel to provide emphasis.

The CMS should read:

SIGNAL
ACTIVE
APRIL 5 or THURS (or 10:00 AM)

(The day of the activation, the message can be revised to identify the time the signal will be turned on.)

Determine if law enforcement is needed to control traffic and contact 3 days prior to activation.

Contracting Agency should contact the following (as appropriate) 2 days in advance of signal activation:

	Phone
NHP	688-2500
Washoe County Sheriff	328-3001
Reno Police	334-2175
Sparks Police	353-2428
Truckee Meadows Fire Protection District	328-3650
NDOT PIO	888-7000
NDOT DISTRICT II	834-8300

24 hours in advance of activation, the Contractor and Maintaining agency should test the signal operation, including advanced flashers when present.

The following personnel shall be present at activation:

Contractor
Signal technicians from maintaining agency
Project Manager for construction contract
Local Traffic Engineer
Traffic signal design engineer
Manufacturers' representatives

Unless otherwise directed by the Engineer, traffic signals shall start following MUTCD requirements.

TRAFFIC SIGNAL DESIGN REVIEW GUIDELINES

Base Plan

Traffic signal design plans should include as a minimum the following design elements:

Utilities, underground and overhead, with a note stating "utilities are shown for information only and shall be field verified by the contractor prior to any work by notifying the call before you dig service"

Nearest transformer for power source (check with NV Energy to make sure it can be used). New power source will require a Design Initiation Agreement (DIA) with NVE. Begin DIA at least three months ahead of advertisement.

Right of way

All intersection approaches for 300 feet, particularly for non-tangent approaches

Curb & gutter, ramp, sidewalk, driveway locations

Note unusual vision obstructions: buildings, trees, bushes, etc.

Bus stops, loading zones or on-street parking

Existing lane layouts, pavement markings

Pole locations outside 10-year right-of-way, if feasible

Overhead utilities - may require lateral shift of poles, or no street light

Conduit runs with note "runs are shown for intent, actual locations shall be as direct as possible".

Controller cabinet

Location shall not block the view of entire intersection, signals, signs etc.

Cabinet or open cabinet door does not completely block sidewalk with door facing away from intersection.

Locate on corner near to power source, if possible.

Concrete pad in front of cabinet.

Metered service with battery backup separate from controller cabinet, placed to minimize knock-down.

Wiring/cabling

Pullboxes (#5) every 300 feet (advance loops, interconnect), #9 at cabinet, #7 for all other signal cable, #3½ OK for other locations. Interconnect pullboxes shall be spaced every 600' along a street to facilitate pulling fiber in longer runs.

Pullboxes shall be fully traffic rated with bolt down metal lids with "TRAFFIC" or "INTERCONNECT" stamped or embossed on lids.

Metal lids must be grounded.

Modified pullbox bottom shall be minimum 2' deep with 6" of clear space between cabling/wires and pullbox lid.

Cable/ Conduit

Conduit/ cable schedule should indicate number and size of conduit by run from pull box to pull box or pull box to pole. 3" minimum ID for all conduit containing traffic signal cable. In any case the % fill of any conduit shall not exceed 26%. Each run shall include number of signal cables and how many conductors for each cable.

A spare conduit shall be provided with traceable pull tape installed and sealed with appropriate material at both ends.

Call out interconnect, lighting, ground wire, and video cable as needed.

Conduit shall have bell ends.

Detection

Loops – show typical loop placement relative to striping. Include utilities to verify there is no conflict.

Video (**IF ALLOWED**) – maintaining agency will specify manufacturer if video detection is allowed.

Spacing of advanced loop should comply with Detector Handbook.

Controller

Contact maintaining agency for manufacturer.

Signal displays

12" LEDs for all vehicular faces

Slotted back plates with retro-reflective border on all signal heads.

Tunnel visor with $\frac{3}{4}$ opening (limits nests & ice/snow buildup).

Heads shall be placed per MUTCD requirements.

Pedestrian pushbuttons are indicated by associated phase.

Pedestrian signal head identify phase and quadrant location of mount, typically opposite from mast arm.

Signing

Do not use "LEFT TURN ON GREEN ARROW ONLY" signs (R10-5 & similar)

Use "LEFT TURN YIELD ON (circular green)" for PPLT (R10-12), unless flashing yellow arrow is used.

City of Sparks – install (Yield on Flashing Yellow) for Flashing Yellow Arrow (FYA) adjacent to left turn head.

Internally illuminated signs (IISNS)

Single sided IISNS mounted directly to mast arm (not hanging from bracket).

Green panels with white lettering abbreviated street suffix, such as Blvd, St. shall comply with MUTCD. New installations use "City" logo on left side (Sparks and Reno). Logo shall not exceed height of upper-case lettering. Use block numbering where available.

Interconnect

Interconnect shall be provided when traffic signals are 60 seconds or less travel time apart.

Miscellaneous

Battery backup system (BBS) required for new traffic signals and shall be placed in metered service cabinet, not controller cabinet.

Retrofit BBS can be controller cabinet mounted.

Emergency flash shall be all-red.

Emergency preemption (1 for each approaching leg unless geometry requires more).

Phase diagram should be included depicting signal operation.

All design shall conform to the requirements of the RTC, City of Reno, City of Sparks, Washoe County or Nevada Department of Transportation as applicable.

Geometric design shall conform to AASHTO's "A Policy on Geometric Design of Highways and Streets", latest edition.

Roadway design hourly volumes shall be based upon 20 year traffic projections obtained from the RTC Planning department or from the jurisdictional agency.

Design vehicle shall be WB-67 unless otherwise designated by the jurisdictional agency.

Roadway transitions shall be based on the design speed in accordance with AASHTO and MUTCD design standards.

Within NODT right-of-way reference NDOT Access Management System and Standards, Section 4.4.1.3

See Table E-2 Access Management Standards in the 2040 Regional Transportation Plan for intersection and driveway spacing standards.

TRAFFIC SIGNAL TIMING

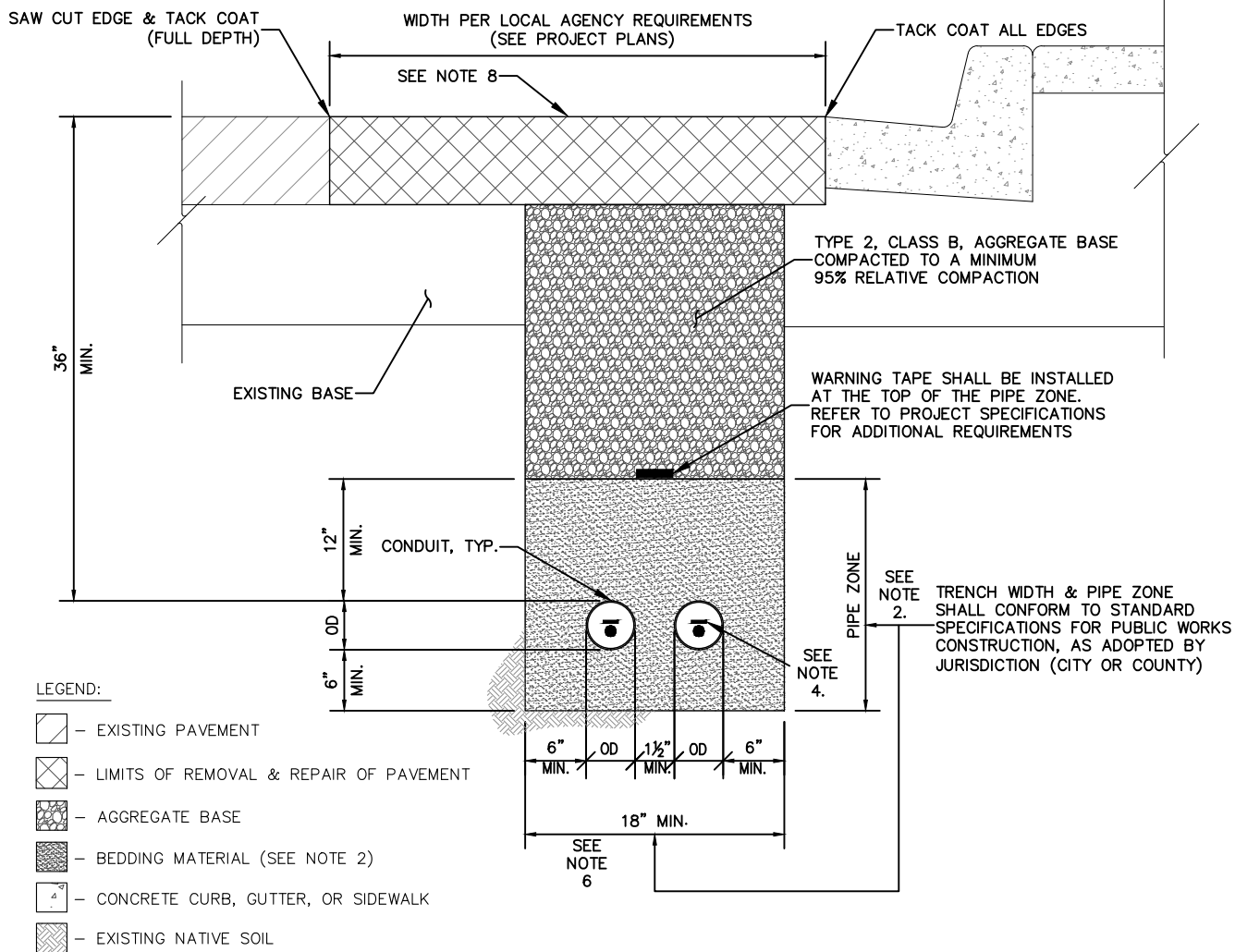
Please Note: Traffic signal timing within Washoe County is designed and developed by internal staff at the RTC, City of Reno, City of Sparks and Washoe County.

APPENDIX

- A. RTC ITS Standard Details
- B. City of Reno Traffic Signal Cabinet Specifications
- C. City of Sparks Traffic Signal Equipment

REFERENCES

Manual on Uniform Traffic Control Devices, 2009
Traffic Control Devices Handbook, 2nd Edition
State of Nevada 2020 Standard Plans for Road and Bridge Construction 2020
Guide for the Development of Bicycle Facilities, AASHTO, 2012
Guide for the Planning, Design and Operation of Pedestrian Facilities, AASHTO, 2004



NOTES:

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2. BEDDING MATERIAL SHALL BE CLASS A. COMPACTED TO MINIMUM 90% RELATIVE COMPACTION, MATERIALS SHALL CONFORM TO SSPWC SECTION 200.
3. CEMENT SLURRY BEDDING/BACKFILL SHALL NOT BE USED.
4. INSTALL LOCATOR WIRE AND PULL TAPE FOR ALL FUTURE, UNUSED, OR FIBER-OPTIC CONDUITS. LOCATOR WIRE SHALL BE GREEN #8 AWG GAUGE COPPER WIRE THAT ALSO FUNCTIONS AS A BONDING CONDUCTOR CONNECTED AT THE PULL BOX & PULLING TAPE SHALL BE RATED FOR 1250 LB.
5. ALL EXCAVATIONS SHALL CONFORM TO THE LATEST O.S.H.A REQUIREMENTS.
6. TOTAL TRENCH WIDTH SHALL BE 6 INCHES WIDER THAN THE OUTSIDE EDGES OF CONDUIT(S) INSTALLED. USE CONDUIT SPACERS TO SEPARATE MULTIPLE CONDUITS IN TRENCH BY AT LEAST 1.5 INCH. PLACE SPACERS AT INTERVALS OF 5 FEET MAXIMUM. CONDUITS SHALL BE CENTERED IN TRENCH.
7. CONDUIT COUPLINGS SHALL BE STAGGERED.
8. MATCH EXISTING STRUCTURAL SECTION (INCLUDING OPEN GRADE) AND REMOVE EXISTING PAVEMENT AND REPLACE WITH NEW LOCAL AGENCY APPROVED MATERIAL OF SAME TYPE EXISTING PAVEMENT DEPTH, BUT NOT LESS THAN 6 INCHES, AND SEAL NEW SURFACE AS DIRECTED BY THE ENGINEER.
9. NEW ASPHALT AND CONCRETE PAVEMENT MATERIAL SHALL CONFORM TO STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION, AS ADAPTED BY JURISDICTION (CITY OR COUNTY).
10. UNLESS OTHERWISE PROVIDED FOR IN THE BASE AND SURFACE SUMMARIES, NEW PAVEMENT MATERIAL AND TRENCHING SHALL NOT BE PAID FOR DIRECTLY BUT INCLUDED IN THE PRICE FOR THE CONDUIT.
11. ENGINEER MAY FOR GOOD CAUSE, REQUIRE WIDER PATCH SECTIONS OR OTHERWISE ALTER THE REQUIREMENTS.
12. IF SAW CUT IS WITHIN 2 FEET OF AN EXISTING PAVEMENT EDGE OR EXISTING PATCH, REMOVE EXISTING PAVEMENT TO THAT EDGE AND REPLACE ENTIRE SECTION. SEE PROJECT PLANS.
13. IF SAWCUT EDGES FOR TRENCH FALL WITHIN A WHEEL PATH, SAWCUT SHALL BE EXTENDED TO, AND REMOVAL MADE TO EDGE OF THE TRAVEL LANE. OPTIONALLY THE ENTIRE TRAVEL LANE CAN BE ROTOMILLED TO A DEPTH OF 2 INCHES AND OVERLAYED WITH 2 INCHES OF BITUMINOUS PLANTMIX AS DIRECTED BY THE ENGINEER.
14. CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACEMENT OF LOOP DETECTORS, ADJUSTMENTS OF UTILITIES AND SURVEY MONUMENTS TO GRADE AND INSTALLATION OF TEMPORARY PAVEMENT MARKINGS.
15. LONGITUDINAL TRENCHING IN SHOULDER: IF SHOULDER IS 4-FOOT WIDE OR LESS, REMOVE ALL SURFACE MATERIAL FROM EDGE OF TRAVEL LANE, OR THE SHOULDER IF IT IS PAVED, MARKED SHOULDER, OR THE BIKE LANE IF IT IS PAVED, MARKED BIKE LANE.



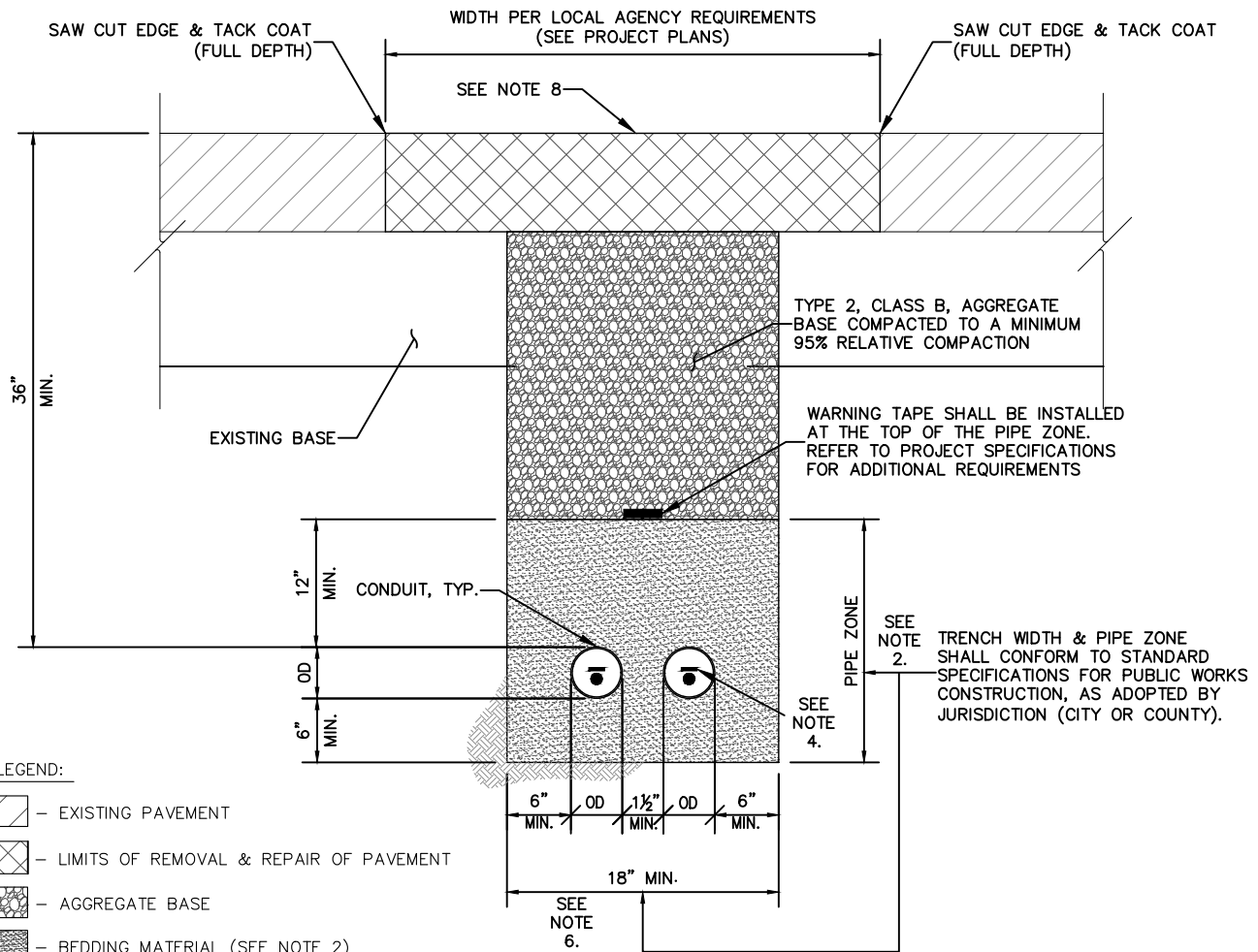
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ITS CONDUIT TRENCH IN
PAVEMENT (LONGITUDINAL)

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




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LEGEND:

-  - EXISTING PAVEMENT
-  - LIMITS OF REMOVAL & REPAIR OF PAVEMENT
-  - AGGREGATE BASE
-  - BEDDING MATERIAL (SEE NOTE 2)
-  - EXISTING NATIVE SOIL

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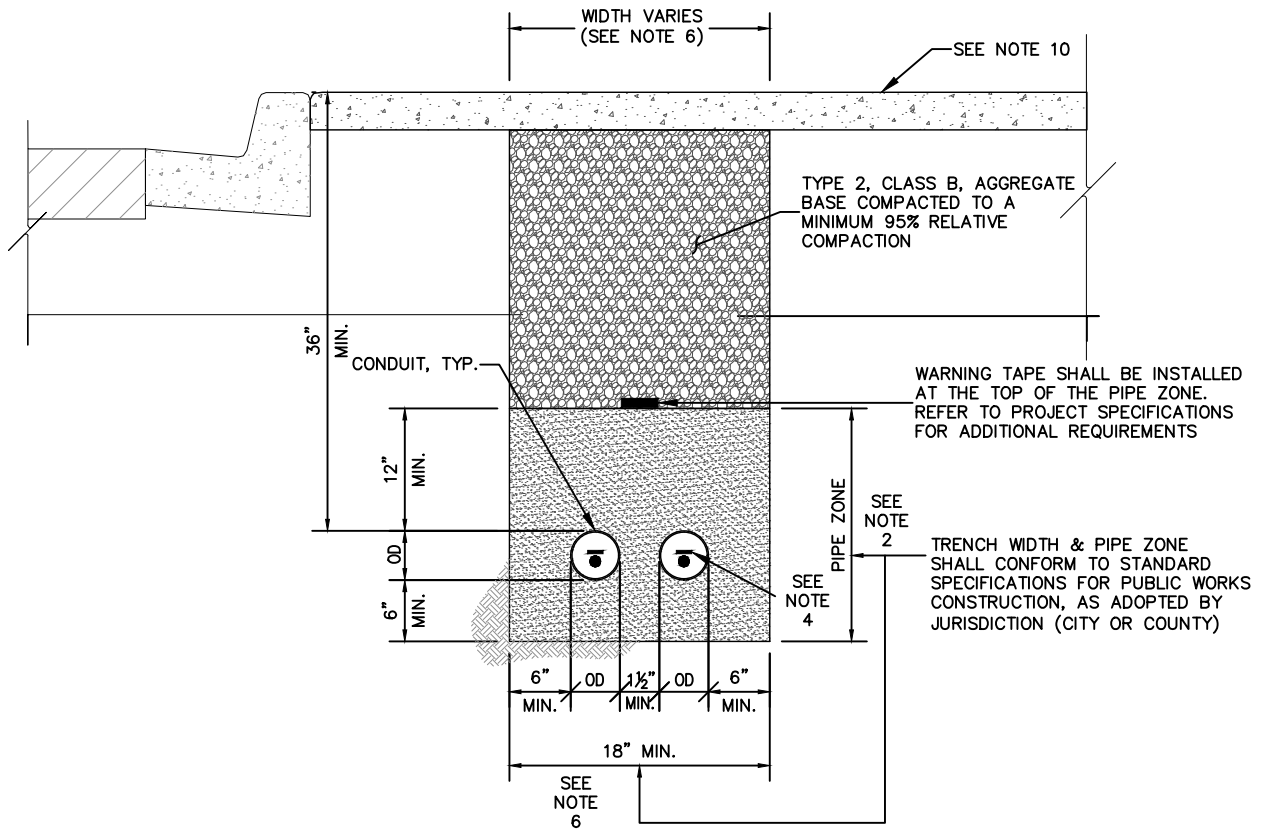
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ITS CONDUIT TRENCHING IN
PAVEMENT (TRANSVERSE)

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
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7. CONDUIT COUPLINGS SHALL BE STAGGERED.
8. RETURN DISTURBED AREA TO MATCH EXISTING GRADE.
9. ENGINEER MAY FOR GOOD CAUSE, REQUIRE WIDER FINISH GRADE RESTORATION IN DISTURBED AREAS. SEE PROJECT PLANS.
10. REFER TO CITY OR COUNTY SPECIFIC STANDARD DETAILS OF CONCRETE PATCH.

LEGEND:

-  - EXISTING PAVEMENT
-  - EXISTING NATIVE SOIL
-  - NATIVE BACKFILL (90% MAX DENSITY)
-  - BEDDING MATERIAL (SEE NOTE 2)
-  - CONCRETE CURB, GUTTER, OR SIDEWALK



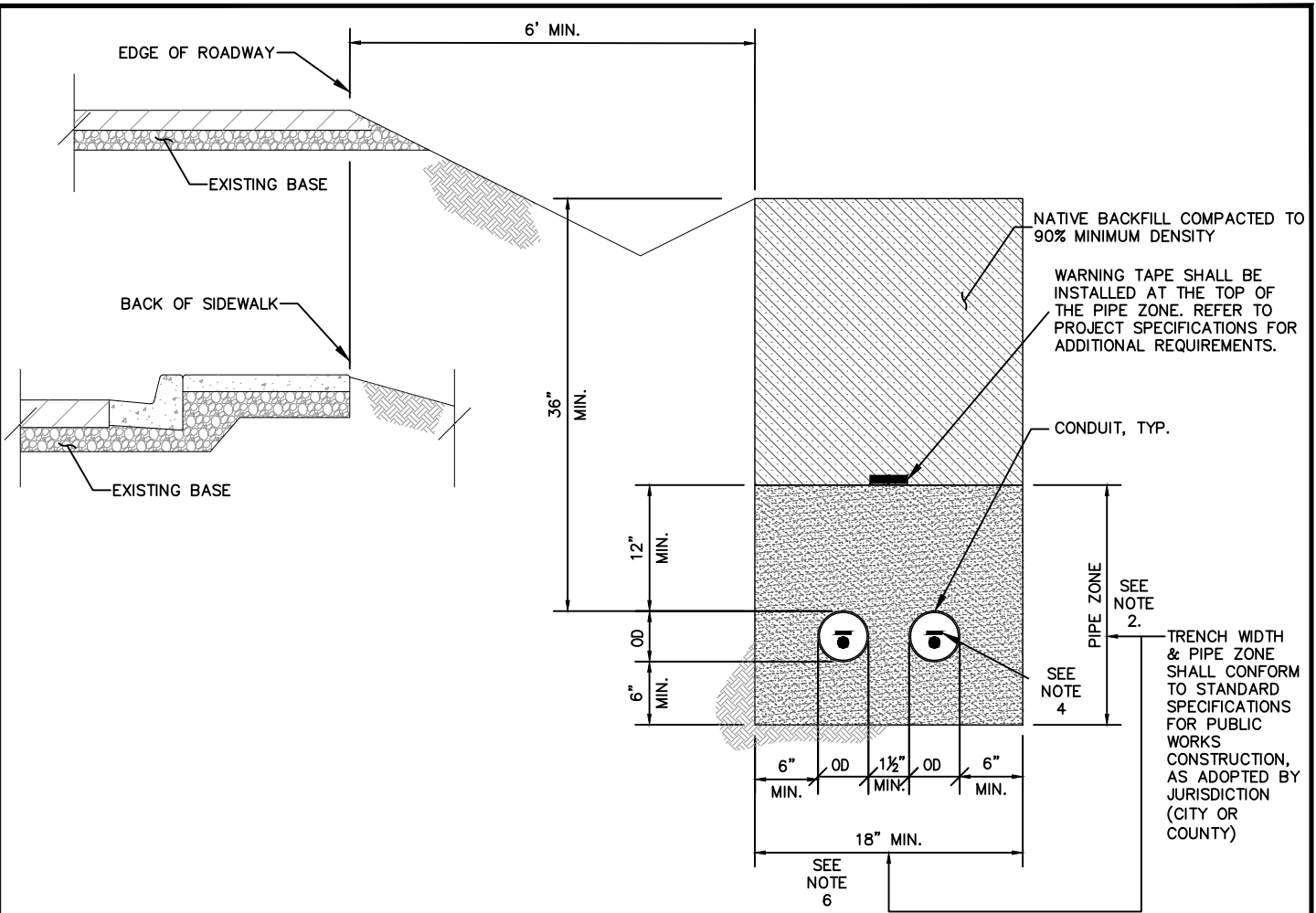
STANDARD DETAILS FOR ITS CONSTRUCTION
**ITS CONDUIT TRENCH BELOW
 SIDEWALK**

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APPROVED BY:

DATE: 2/2023



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7. CONDUIT COUPLINGS SHALL BE STAGGERED.
8. RETURN DISTURBED AREA TO MATCH EXISTING GRADE AND MATERIALS.
9. NATIVE BACKFILL ACCEPTABLE WHEN SPECIFIED ON PLANS OR APPROVED IN WRITING BY THE ENGINEER. NATIVE BACKFILL SHALL NOT CONTAIN ROCKS LARGER THAN 3-INCHES.

LEGEND:

- EXISTING PAVEMENT
- EXISTING NATIVE SOIL
- NATIVE BACKFILL (90% MAX DENSITY)
- BEDDING MATERIAL (SEE NOTE 2)
- CONCRETE CURB, GUTTER, OR SIDEWALK



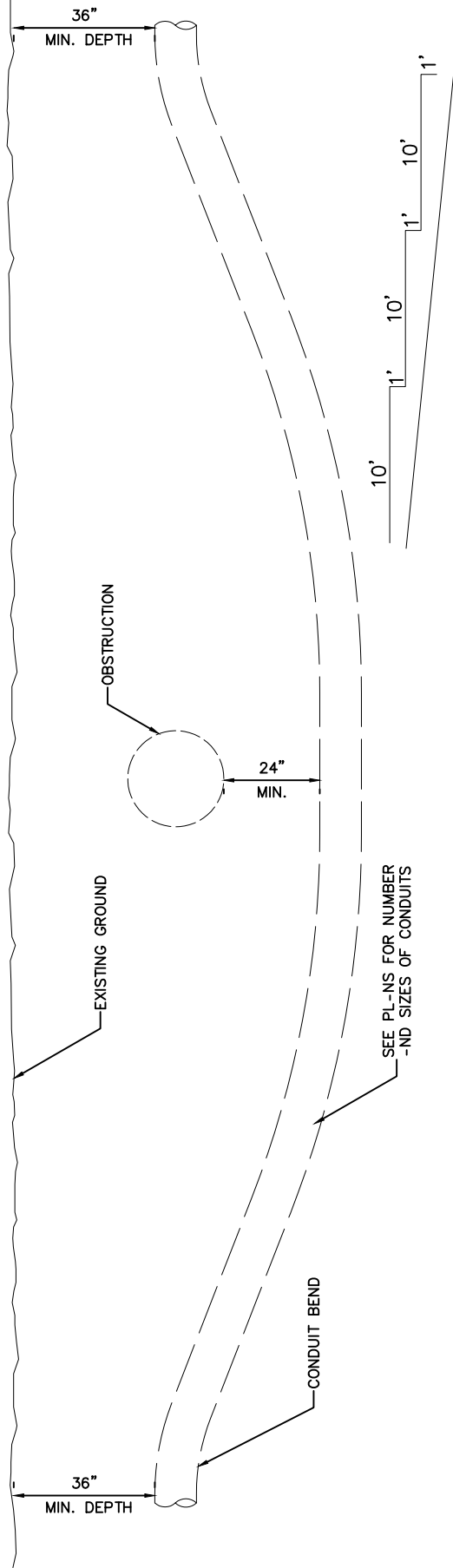
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NATIVE SOIL

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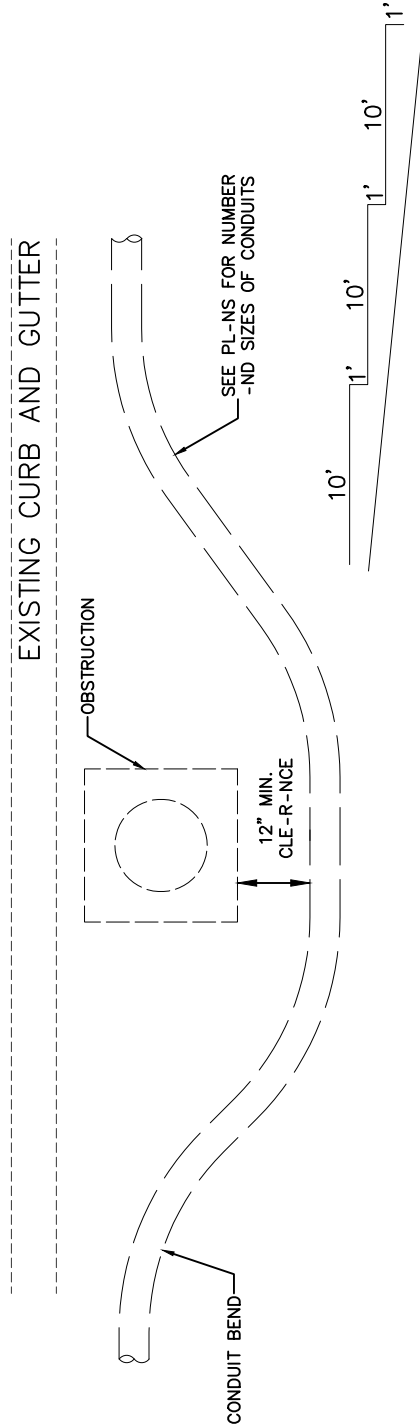
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TYPICAL VERTICAL ROUTING OF CONDUIT UNDER AN OBSTRUCTION



TYPICAL ROUTING OF CONDUIT AROUND AN OBSTRUCTION



ST-ND-RD DET-ILS FOR ITS CONSTRUCTION

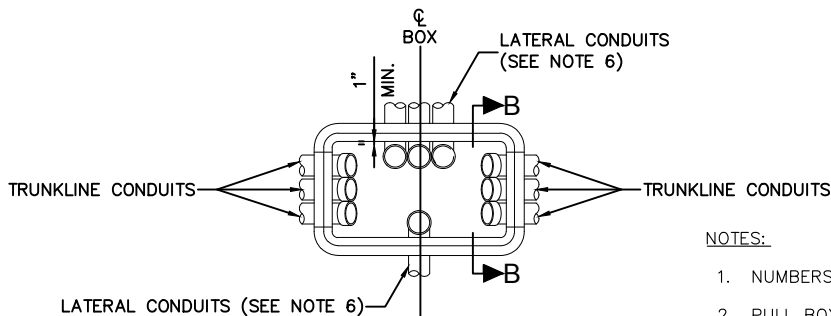
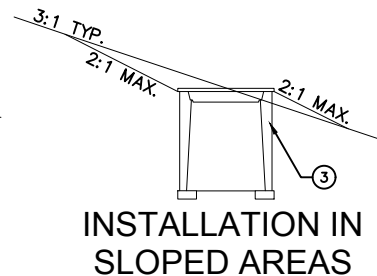
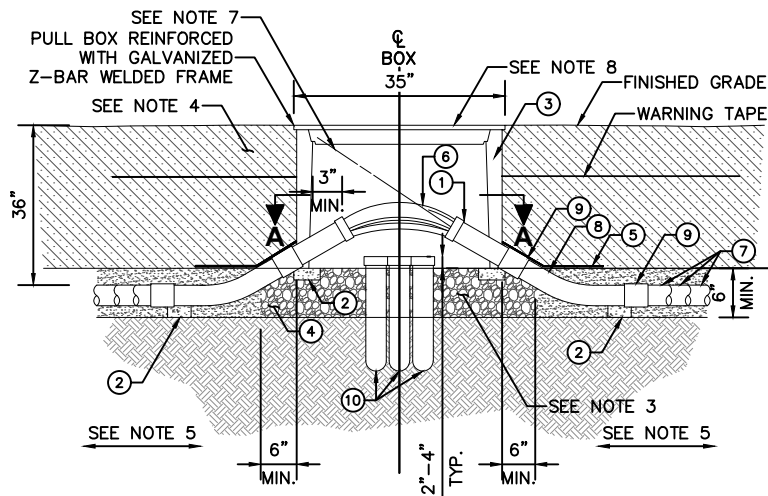
CONDUIT ROUTING
OBSTRUCTION AVOIDANCE

DR-WING No.

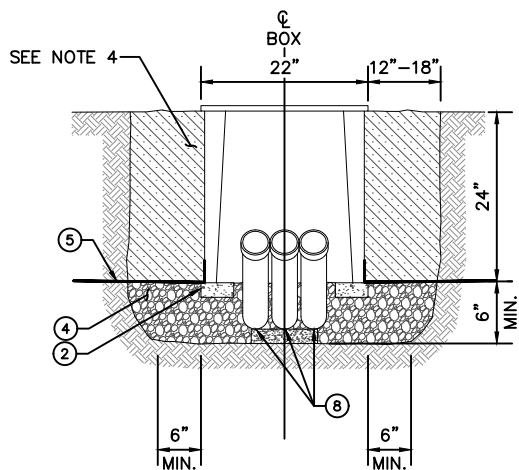
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SECTION A-A



SECTION B-B

MATERIAL LIST	
ITEM	DESCRIPTION
①	BELL END FOR PVC (SEE NOTE 9)
②	CONCRETE BUILDING BLOCK 2"x4"x8"
③	ITS PULL BOX 24" DEEP X 35"L X 22"W
④	AGGREGATE SIZE NO. 57 (SEE NOTE 3)
⑤	30 LB. FELT PAPER (SEE NOTE 10)
⑥	CABLES (SEE NOTE 12)
⑦	CONDUIT QUANTITY AND SIZES PER PLANS
⑧	30 DEGREE ELBOW, 18" RADIUS
⑨	PVC COUPLING
⑩	45 DEGREE PVC ELBOW, 18" RADIUS

NOTES:

- NUMBERS IN CIRCLES REFER TO ITEMS IN MATERIALS LIST.
- PULL BOX EXTENSIONS SHALL NOT BE USED UNLESS APPROVED BY THE OWNING AGENCY.
- BACKFILL WITH NO. 57 AGGREGATE, 6" MINIMUM BELOW PULL BOX AND EXTEND 6" MINIMUM BEYOND PULL BOX EDGES ON ALL 4 SIDES. BACKFILL AROUND SIDES OF PULL BOX WITH SELECT EXCAVATED MATERIAL AND COMPACT AT 95% MAXIMUM DENSITY.
- NATIVE BACKFILL COMPACTED TO 90% MAXIMUM DENSITY AROUND ALL 4 SIDES OF PULL BOX. NATIVE BACKFILL SHALL NOT CONTAIN ROCKS LARGER THAN 3 INCHES.
- CONDUIT FROM THE TYPICAL TRENCH SECTION SHALL NOT DEFLECT BY MORE THAN 1 INCH PER FOOT FROM THE ALIGNMENT PRECEDING OR FOLLOWING THE PULL BOX.
- LATERAL CONDUITS AS REQUIRED. LATERAL CONDUITS SHALL NOT BE USED FOR TRUNKLINE FIBER CABLES (I.E., 72 SMFO OR GREATER STRAND COUNT).
- TRUNK CONDUITS WITH SHALL BE ALIGNED WITH PULL BOX ϕ TO MINIMIZE BENDING DURING CABLE PULLING.
- REINFORCED $\frac{1}{2}$ " MINIMUM STEEL PLATE COVER WITH EMBOSSED NON-SKID PATTERN. GALVANIZE PLATE AFTER FABRICATION, AND BED WELD COVER LEGEND 1" MIN TO 3" MAX IN HEIGHT. COVER LEGEND SHALL BE PER OWNING JURISDICTION (E.G., "RENO ITS", "SPARKS ITS" OR "COUNTY ITS").
- SEAL ALL CONDUIT ENDS WITH CONDUIT PLUGS ON EACH CONDUIT AND SEAL ALL INNERDUCT ENTERING THE PULL BOX WITH A DUCT SEALING COMPOUND.
- USE FELT PAPER TO BLOCK OPENING BETWEEN CONDUITS AND AROUND BASE TO PREVENT BACKFILL MATERIAL FROM ENTERING BOX AND SUMP PIT.
- PULL BOX COVER, METAL Z-BAR FRAME, METAL RINGS, OR ANY OTHER METALLIC COMPONENT OF THE PULL BOX SHALL BE BONDED TO A NO. 8 AWG OR LARGER COPPER EQUIPMENT GROUNDING CONDUCTOR. BONDING JUMPER SHALL BE BRAIDED COPPER EQUIVALENT TO A NO. 8 CONDUCTOR AND A MINIMUM OF 36" IN LENGTH AND SHALL BE ATTACHED WITH EXOTHERMIC WELDING. PROCESS IS A MOLECULAR BONDING WITH HIGH COPPER CONTENT ALLOYS (IN EXCESS OF 90%), HIGH CORROSION RESISTANCE AND HIGH CONDUCTIVITY, AND APPROVED GROUNDING LUG.
- ALL POWER AND COMMUNICATIONS CABLE SHALL BE TAGGED WITH CABLE IDENTIFICATION. REFER TO CABLE SPECIFICATIONS FOR CABLE SLACK REQUIREMENTS.



STANDARD DETAILS FOR ITS CONSTRUCTION

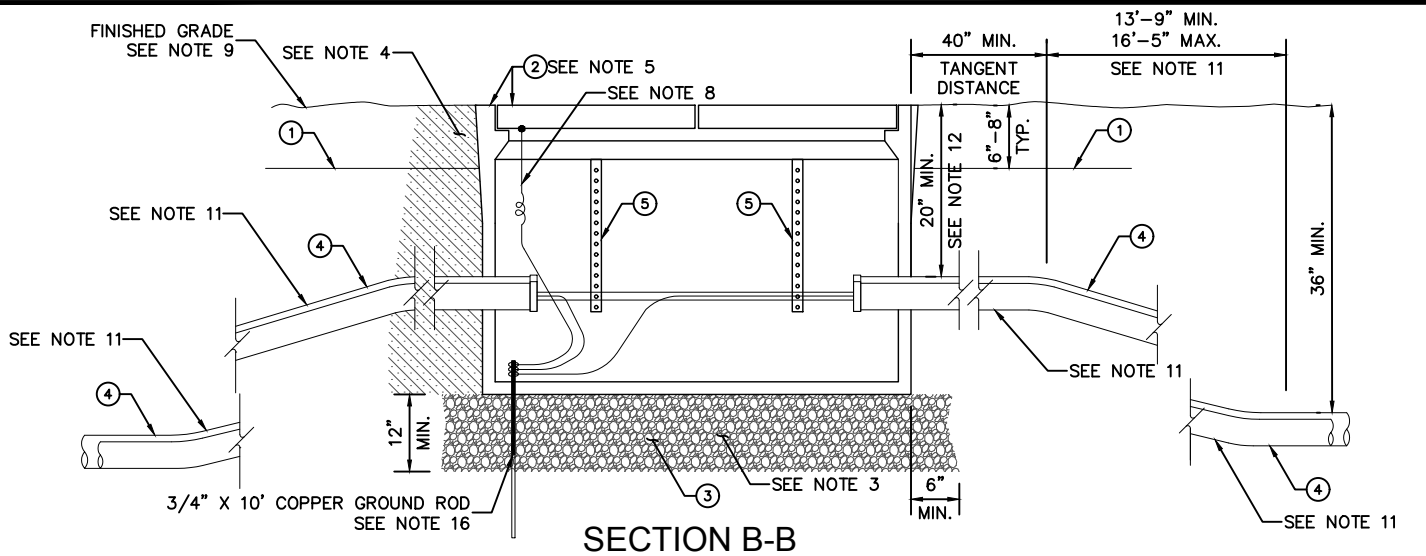
ITS PULL BOX

DRAWING No.

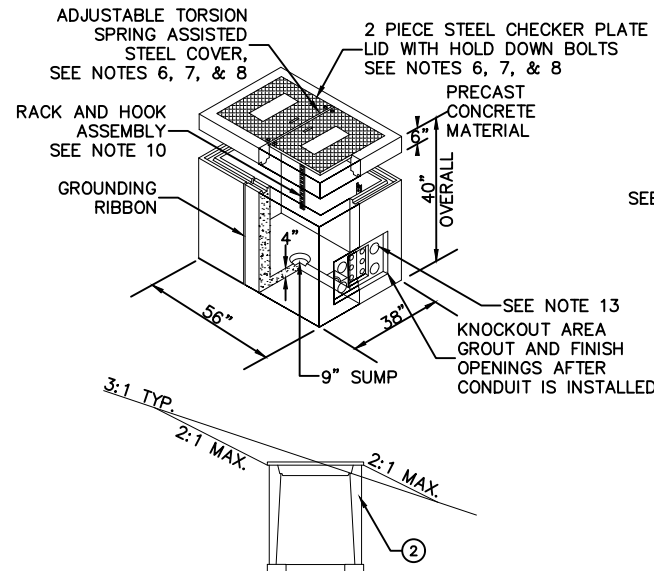
RTC-ITS-03.01

APPROVED BY:

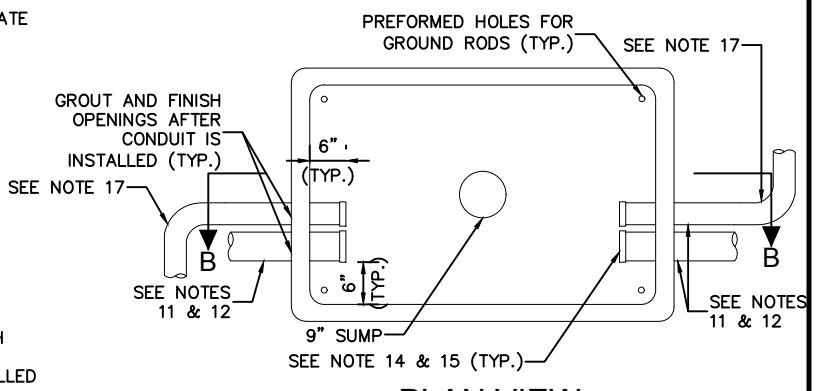
DATE: 2/2023



SECTION B-B



INSTALLATION IN SLOPED AREAS




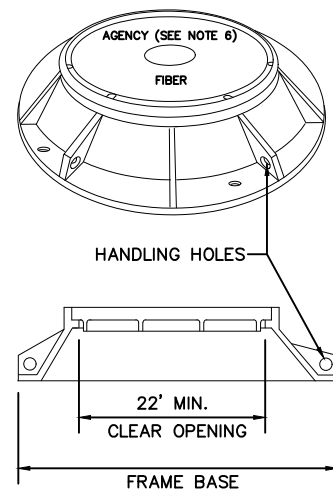
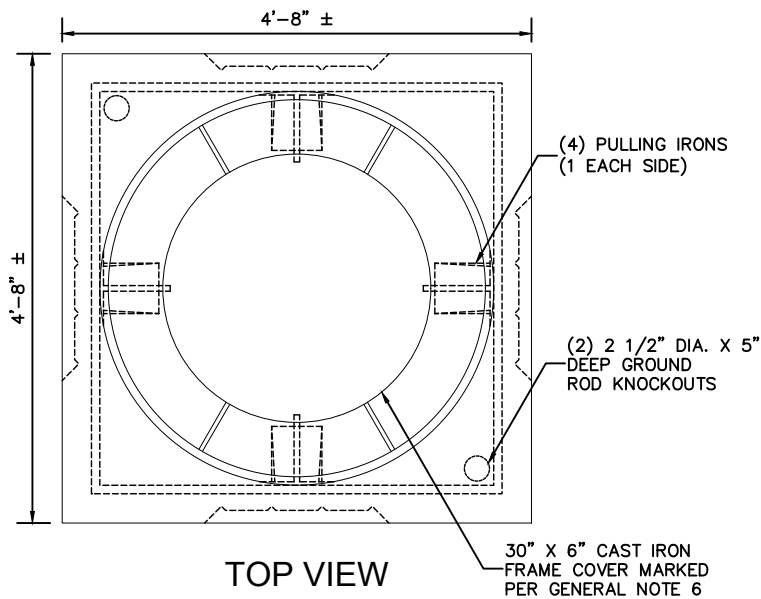
PLAN VIEW

TABLE	
ITEM	DESCRIPTION
①	WARNING TAPE
②	ITS VAULT WITH LID (SEE NOTE 5)
③	AGGREGATE SIZE NO.57 (SEE NOTE 3)
④	CONDUIT QUANTITY AND SIZES PER PLANS
⑤	RACK & HOOK ASSEMBLY (SEE NOTE 10)

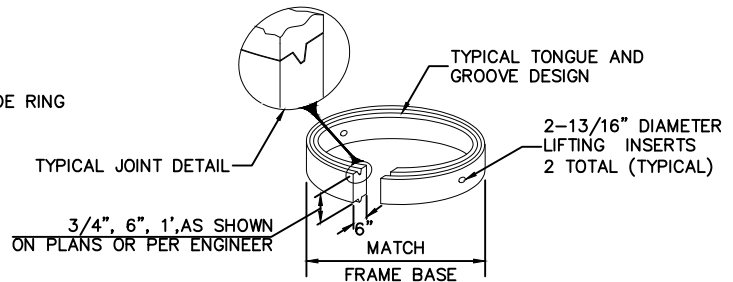
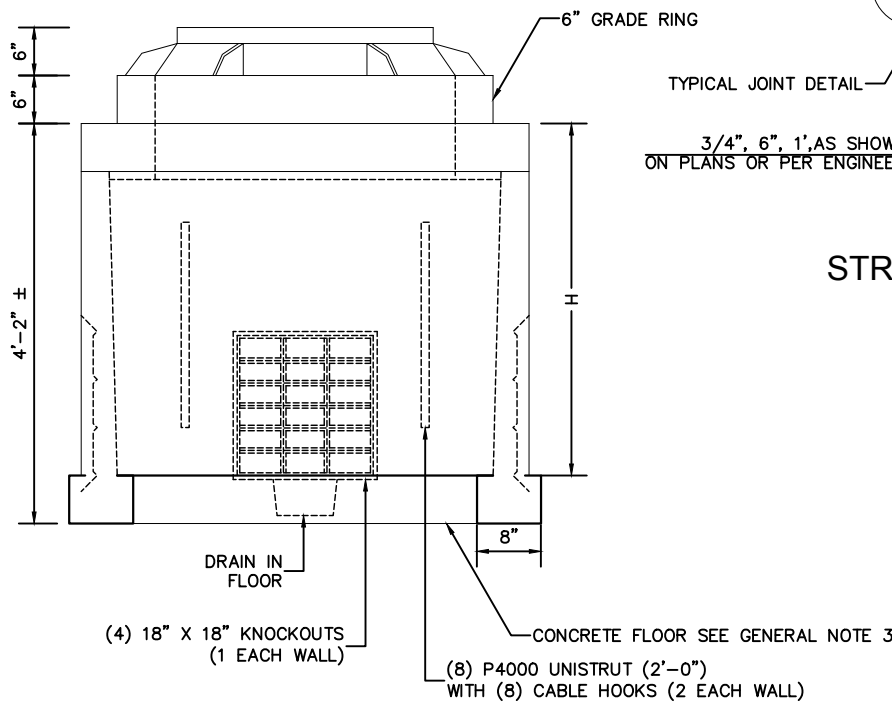
NOTES:

- FOR USE AT FIBER OPTIC SPLICE POINTS.
- SUITABLE FOR USE IN OFF STREET LOCATIONS WHERE NOT SUBJECT TO HIGH DENSITY TRAFFIC. IT SHALL NOT BE USED IN TRAVEL OR PARKING LANES.
- BACKFILL WITH NO. 57 AGGREGATE, 12" MINIMUM BELOW PULL BOX AND EXTEND 6" MINIMUM BEYOND PULL BOX EDGES ON ALL 4 SIDES. BACKFILL AROUND SIDES OF PULL BOX WITH SELECT EXCAVATED MATERIAL AND COMPACT AT 95% MAXIMUM DENSITY.
- NATIVE BACKFILL COMPACTED TO 90% MAXIMUM DENSITY AROUND ALL 4 SIDES OF VAULT. NATIVE BACKFILL SHALL NOT CONTAIN ROCKS LARGER THAN 3 INCHES.
- PULL BOX AND STEEL COVER SHALL SUPPORT AASHTO H20-44 TRUCK LOADING WITH MINIMUM INSIDE DIMENSIONS - 30"H X 48"L X 30"W
- SUPPLY PENTA HEAD BOLTS TO LOCK DOWN LID. ONE PENTA HEAD SOCKET AND RATCHET SHALL BE PROVIDED TO OWNING AGENCY FOR EVERY 10 PULL BOXES.
- COVER MARKED PER OWNING JURISDICTION (E.G. "RENO FIBER", "SPARKS FIBER", OR "COUNTY FIBER")
- ALL METAL PULL BOX LIDS SHALL BE GROUNDED. THE BONDING CONDUCTOR SHALL BE A #8 AWG COPPER WIRE (7-STRAND), OR COPPER BRAID OF THE SAME CROSS-SECTIONAL AREA AS A #8 AWG, 8 FEET IN LENGTH, FROM EACH SIDE OF THE COVER TO THE GROUND ROD. FASTEN THE #8 AWG CONDUCTOR TO THE COVER BY EXOTHERMIC WELDING.
- PULL BOX HEIGHT SHALL MATCH EXISTING FINISHED GRADE.
- ALL PULL BOXES SHALL BE FURNISHED WITH TWO RACKS AND HOOKS INSTALLED ON EACH OF THE TWO LONG SIDES.
- CONDUITS FROM THE TYPICAL TRENCH SECTION SHALL NOT DEFLECT BY MORE THAN ONE FOOT PER 10 FEET FROM THE ALIGNMENT PRECEDING OR FOLLOWING PULL BOX ENTRANCE/EXIT.
- TOP OF CONDUITS ENTERING THROUGH SIDE OF PULL BOX SHALL BE LOCATED AT LEAST 20 INCHES BELOW EXISTING FINISHED GRADE.
- CONDUITS SHALL ENTER THROUGH KNOCKOUTS
- SEAL ALL CONDUIT ENDS WITH CONDUIT PLUGS ON EACH CONDUIT AND SEAL ALL INNERDUCT ENTERING THE PULL BOX WITH A DUCT SEALING COMPOUND.
- ALL CONDUITS SHALL HAVE BELL ENDS.
- GROUND CONDUCTORS SHALL BE BONDED AND GROUNDED PER SPECIFICATIONS AS REQUIRED.
- LATERAL CONDUITS SHALL ENTER THROUGH WALLS WITHIN TWO KNOCKOUT AREAS ONLY.
- ALL POWER CONDUCTORS INSIDE PULL BOX SHALL BE TAGGED "POWER."
- NUMBERS IN CIRCLES REFER TO ITEMS IN TABLE.

	STANDARD DETAILS FOR ITS CONSTRUCTION ITS VAULT	DRAWING No. RTC-ITS-04.01
		APPROVED BY: _____ DATE: 2/2023



**STREET RATED ITS VAULT
FRAME AND COVER**



**STREET RATED ITS VAULT
COLLAR RISER**

STRUCTURAL NOTES:

1. CONCRETE: 28 DAY COMPRESSIVE STRENGTH
 $f_c = 5,000$ PSI
2. REBAR: ASTM A-615 GRADE 60
3. MESH: ASTM A-1064 GRADE 65
4. DESIGN: ACI 316-11 BUILDING CODE
ASTM C-857 "MINIMUM STRUCTURAL DESIGN LOADING FOR UNDERGROUND PRECAST CONCRETE UTILITY STRUCTURES"
5. LOADS: HS20-44 W/30% IMPACT PER AASHTO
80 PSD LATERAL LIVE LOAD
SURCHARGE - UP TO 6'-0" DEPTH
SOILS:
40 PCF LATERAL SOIL PRESSURE ABOVE WATER TABLE
80 PCF LATERAL SOIL PRESSURE ABOVE WATER TABLE
6. SOIL COVER: 0' TO 5' (MAX.)
7. WATER TABLE: 5'-0" BELOW GRADE

GENERAL NOTES:

1. ALL JOINTS SHALL BE SEALED USING CONSEAL CS-101 BUTYL RUBBER ROPE
2. CONTRACTOR TO SUBMIT SHOP DRAWING FOR APPROVAL
3. CONTRACTOR SHALL POUR THE CONCRETE FLOOR, WITH DRAIN, AFTER THE VAULT IS INSTALLED
4. THE CONTRACTOR SHALL GROUT THE KNOCKOUT AREA, AROUND THE CONDUIT, WITH A SMOOTH CONCRETE FINISH AFTER THE VAULT IS INSTALLED
5. MINIMUM TWO (2) FOOT RADIAL CLEARANCE HORIZONTALLY AND VERTICALLY REQUIRED FOR WATER MAINS, SERVICES, AND RELATED WATER FACILITIES
6. COVER MARKED PER OWNING JURISDICTION (E.G., "RENO FIBER", "SPARKS FIBER", OR "COUNTY FIBER")
7. A COMPACTED BASE AND A CONCRETE FOOTING SUPPORT SHALL BE CONSTRUCTED PRIOR TO PLACEMENT OF THE CAST IRON FRAME AS DIRECTED BY ENGINEER.
8. ADJUSTMENTS TO ELEVATIONS SHALL BE MADE WITH COLLAR/RISERS AS REQUIRED. MINIMUM DEPTH 18-INCHES.
9. MINIMUM INSIDE DIMENSION 3'-1"H X 4'-0"W X 4'-0"L



STANDARD DETAILS FOR ITS CONSTRUCTION

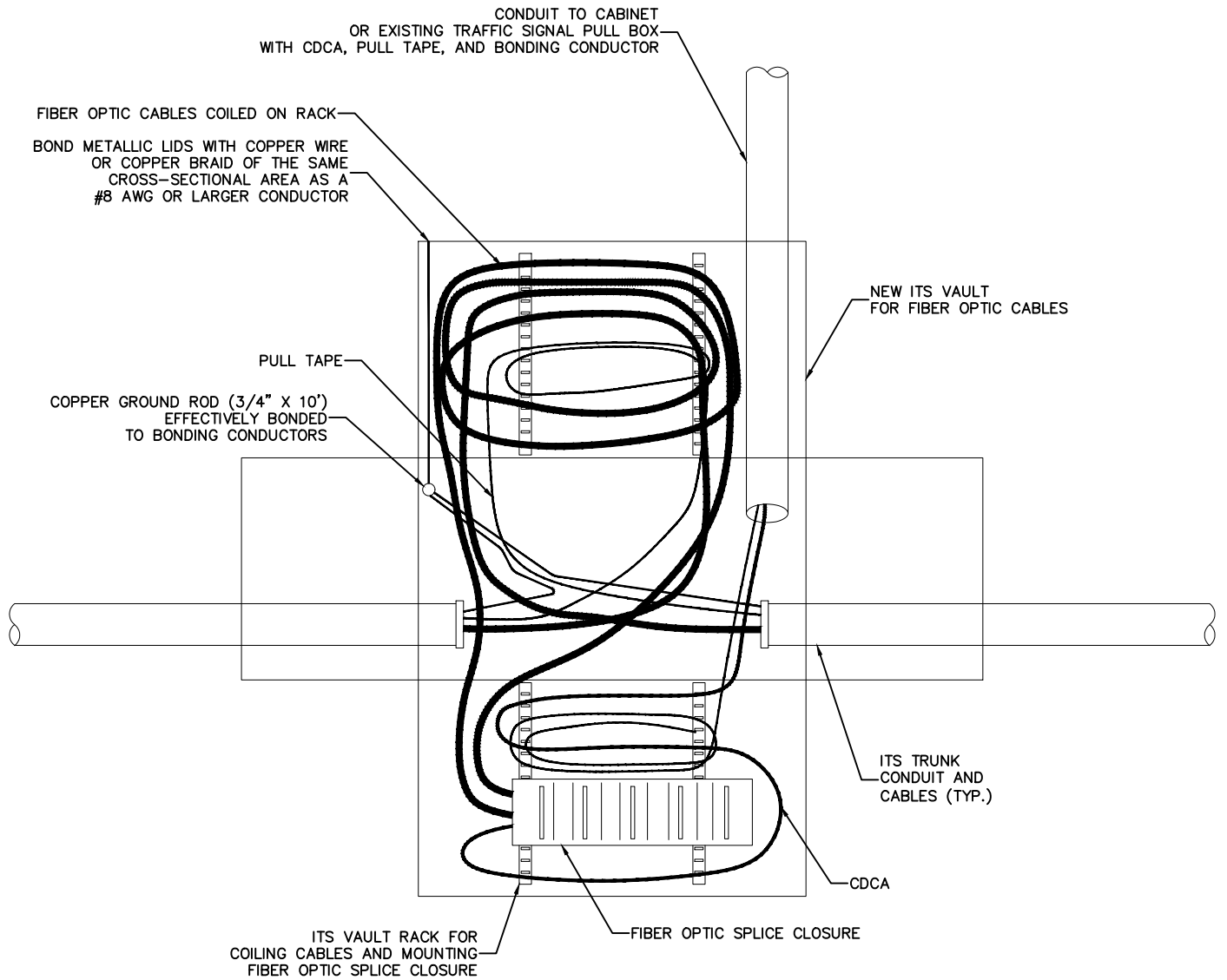
**STREET RATED
ITS VAULT**

DRAWING No.

RTC-ITS-05.01

APPROVED BY:

DATE: 2/2023



NOTES:

1. EACH ITS VAULT SHALL BE EQUIPPED WITH 100 FEET MINIMUM OF SLACK PER CONDUIT ENTRANCE FOR EACH TRUNK CABLE AND CDCA.
2. MINIMUM BEND RADIUS FOR ALL CABLES SHALL NOT EXCEED MANUFACTURER'S REQUIREMENTS.
3. THE CONNECTION OF ALL FIBER CABLES (CDCA & TRUNK CABLES) SHALL BE SECURED IN A SPLICE TRAY HOUSED IN THE SPLICE CLOSURE.
4. LIKE CABLES SHALL BE NEATLY COILED, STRAPPED TOGETHER AND ATTACHED TO THE INSIDE WALL OF THE VAULT. FIBER OPTIC CABLES AND SPLICE CLOSURE SHALL BE ATTACHED TO RACKS AND HOOKS.
5. THE CONTRACTOR SHALL ATTACH THE CABLES TO THE RACKING SYSTEM IN ACCORDANCE WITH THE SPECIAL PROVISIONS WITHIN ALL NEW AND EXISTING ITS VAULTS.



STANDARD DETAILS FOR ITS CONSTRUCTION

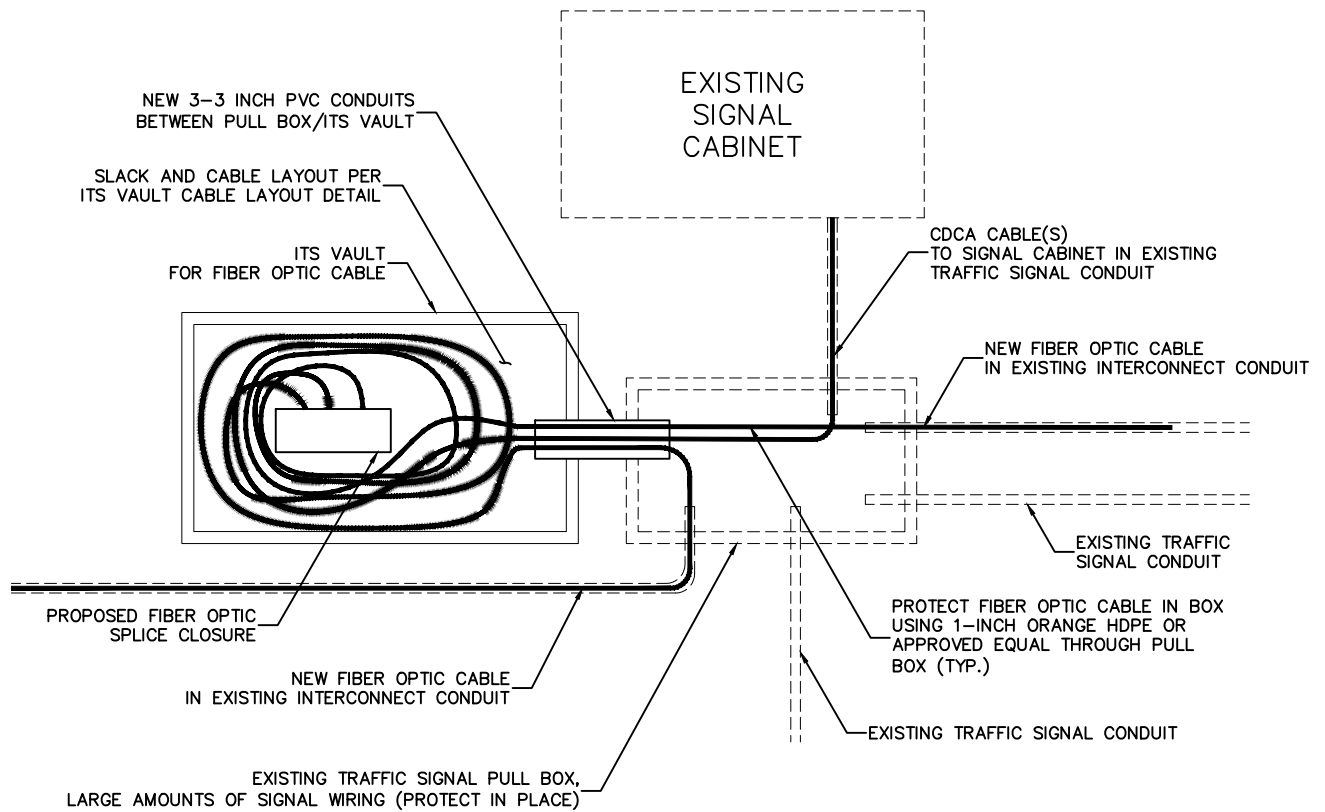
ITS VAULT CABLE LAYOUT

DRAWING No.

RTC-ITS-06.01

APPROVED BY:

DATE: 2/2023



NOTES:

1. CONTRACTOR TO VERIFY LOCATIONS OF EXISTING UTILITIES AND SELECT LOCATION WITHOUT CONFLICT ADJACENT TO EXISTING TRAFFIC SIGNAL PULL BOX.



STANDARD DETAILS FOR ITS CONSTRUCTION

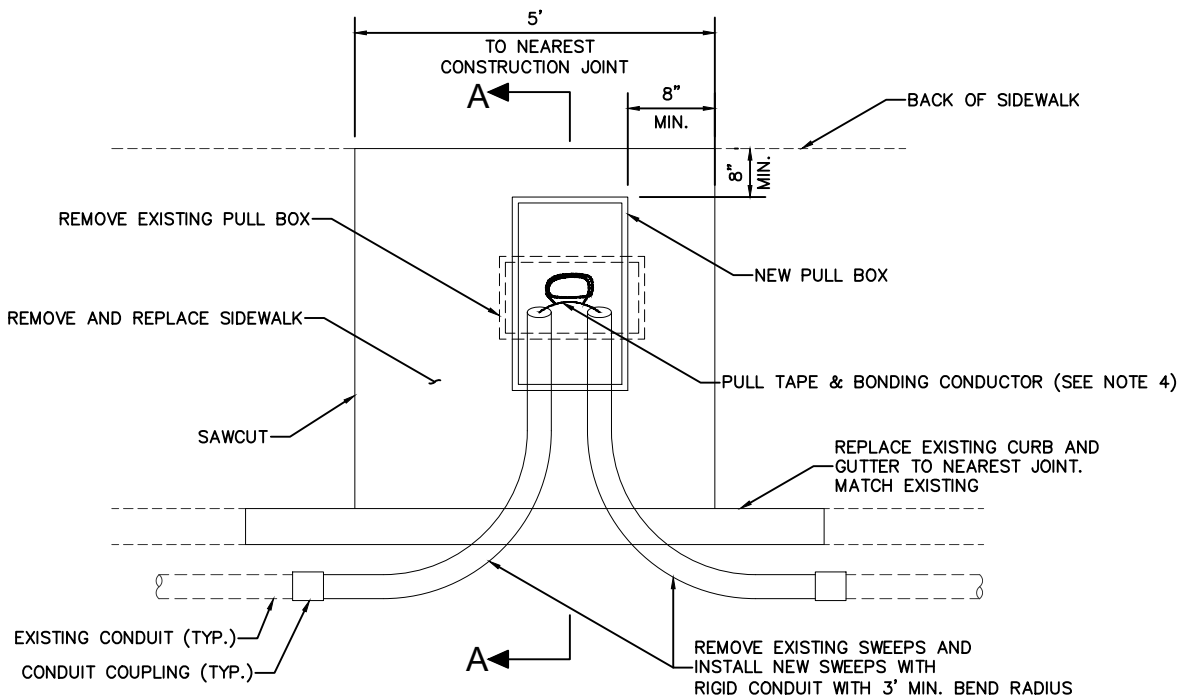
ITS VAULT FOR INTERCONNECT
AT EXISTING SIGNAL LOCATIONS

DRAWING No.

RTC-ITS-07.01

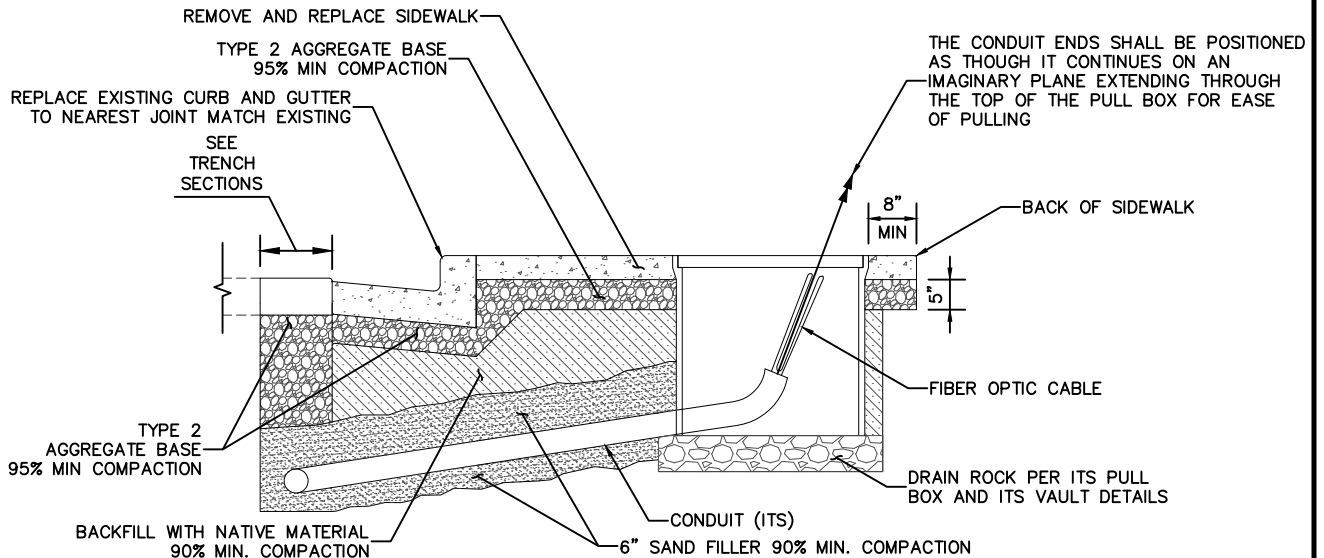
APPROVED BY:

DATE: 2/2023



NOTES:

1. ITS PULL BOX AND ITS VAULTS SHALL BE INSTALLED FOR THE ITS SYSTEM IN ACCORDANCE WITH APPLICABLE STANDARDS.
2. ITS PULL BOX OR ITS VAULT COVER SHALL BE INSCRIBED ACCORDING TO APPLICABLE STANDARDS.
3. APPROXIMATE LOCATIONS OF THE PROPOSED ITS PULL BOXES AND VAULTS ARE SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MARKING THE LOCATIONS OF THE PROPOSED PULL BOXES AND VAULTS IN THE FIELD AND THESE LOCATIONS SHALL BE SUBJECT TO APPROVAL BY THE ENGINEER BEFORE INSTALLATION.
4. A 1250-LB PULL TAPE SHALL BE INSTALLED IN ALL CONDUITS WITH AT LEAST 5- FEET OF SLACK IN THE PULL BOX. A GREEN #8 AWG COPPER BONDING CONDUCTOR SHALL BE INSTALLED IN ALL CONDUITS, WITH 5- FEET OF SLACK IN THE PULL BOX, AND BONDED TO THE GROUND ROD WITHIN THE PULL BOX.
5. REFER TO CITY OR COUNTY SPECIFIC STANDARD DETAILS FOR CONCRETE PATCH OR PERMANENT PAVEMENT PATCH.



SECTION A - A

NOTES:

1. ITS PULL BOX OR ITS VAULT MAY ALSO BE PLACED NEAR THE BACK OF CURB WITH A MIN. 8" CLEARANCE
2. ITS CONDUIT ENDS MAY ENTER THE BOTTOM OF THE PULL BOX IF NECESSARY



STANDARD DETAILS FOR ITS CONSTRUCTION

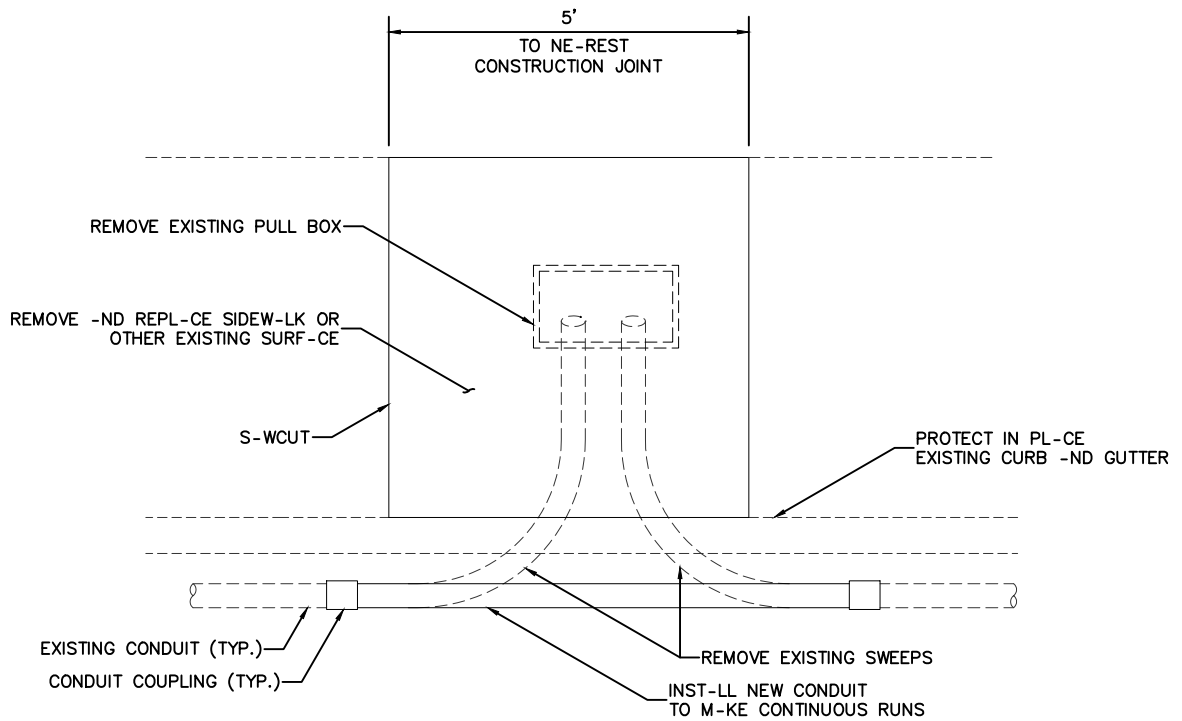
EXISTING PULL BOX REPLACEMENT
WITH NEW ITS PULL BOX/VAULT

DRAWING No.

RTC-ITS-08.01

APPROVED BY:

DATE: 2/2023



NOTES:

1. REFER TO CITY OR COUNTY SPECIFIC STANDARD DETAILS FOR CONCRETE PATCH OR PERMANENT PAVEMENT PATCH
2. INSTALL A 1250-LB PULL TAPE AND A GREEN #8 AWG COPPER BONDING CONDUCTOR IN ALL CONDUITS, WITH 5-FEET OF SLACK IN THE PULL BOXES AT THE ENDS OF EACH CONDUIT RUN, AND BONDED THE GREEN #8 AWG COPPER BONDING CONDUCTOR TO THE GROUND ROD WITHIN THE PULL BOXES AT EACH END.
3. PAVEMENT PATCHING IN STREET TO BE PAID FOR UNDER PAVEMENT BID ITEM.



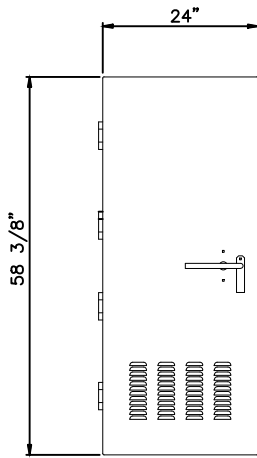
ST-ND-RD DET-ILS FOR ITS CONSTRUCTION
EXISTING PULL BOX REMOVAL
AND PATCHING

DR-WING No.

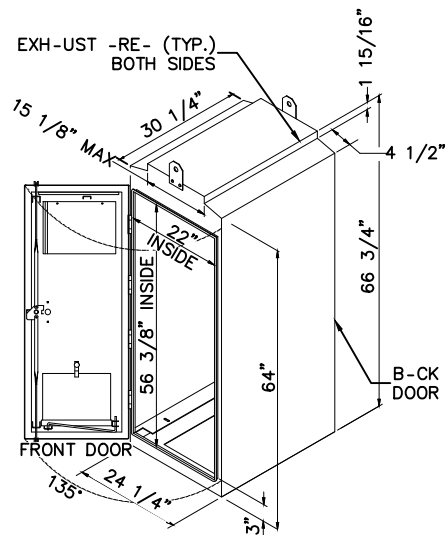
RTC-ITS-09.01

-PPROVED BY:

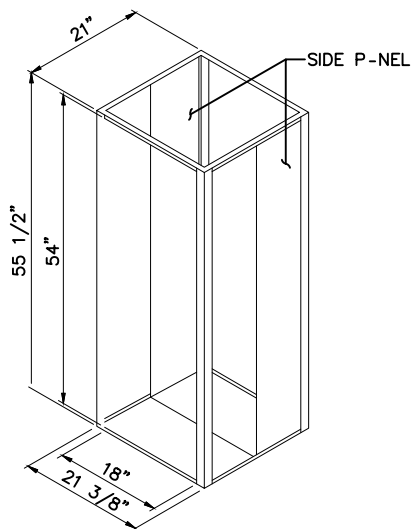
D-TE: 2/2023



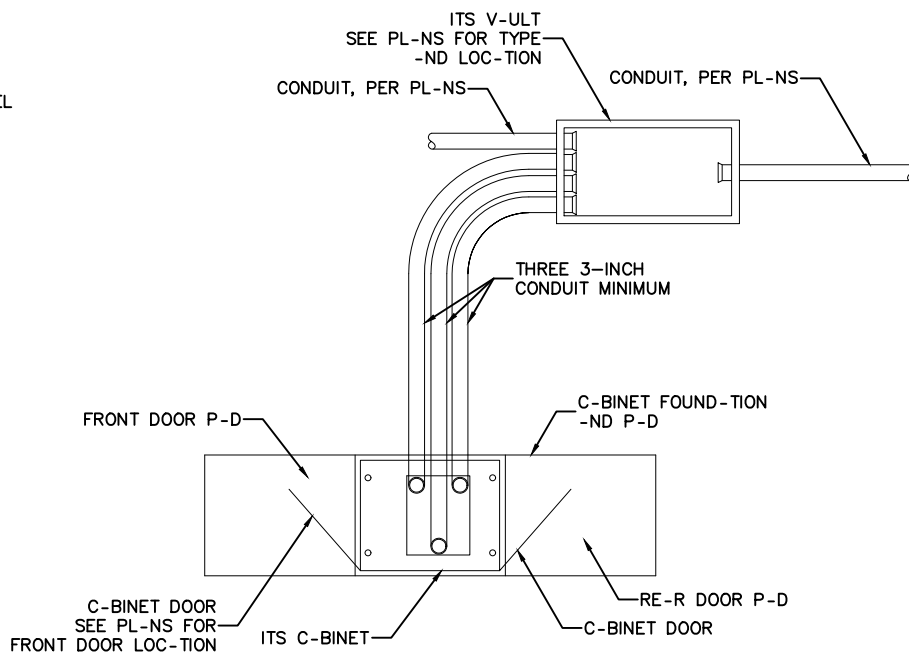
FRONT AND BACK DOOR
FRONT VIEW



ISOMETRIC VIEW



EQUIPMENT RACK
ISOMETRIC VIEW



TYPICAL CONDUIT CONFIGURATION DETAIL
FOR ITS CABINET INSTALLATION

NOTES:

1. CONCRETE SHALL BE 28 DAY COMPRESSION STRENGTH $F_c = 4500$ PSI.
2. ROUGH BROOM TEXTURE ON FRONT AND REAR PADS.
3. INSTALL GROUND ROD WIRE CONDUIT IN ALL CABINET FOUNDATIONS. GROUND ROD WIRE CONDUIT TO BE USED WHEN AN ADDITIONAL GROUND ROD IS REQUIRED.
4. CABINETS SHALL BE PAINTED INSIDE AND OUT.
5. CABINET SHALL HAVE AN ELECTRONIC INDUSTRY ALLIANCE (EIA) 19-INCH RACK.



ST-ND-RD DET-ILS FOR ITS CONSTRUCTION

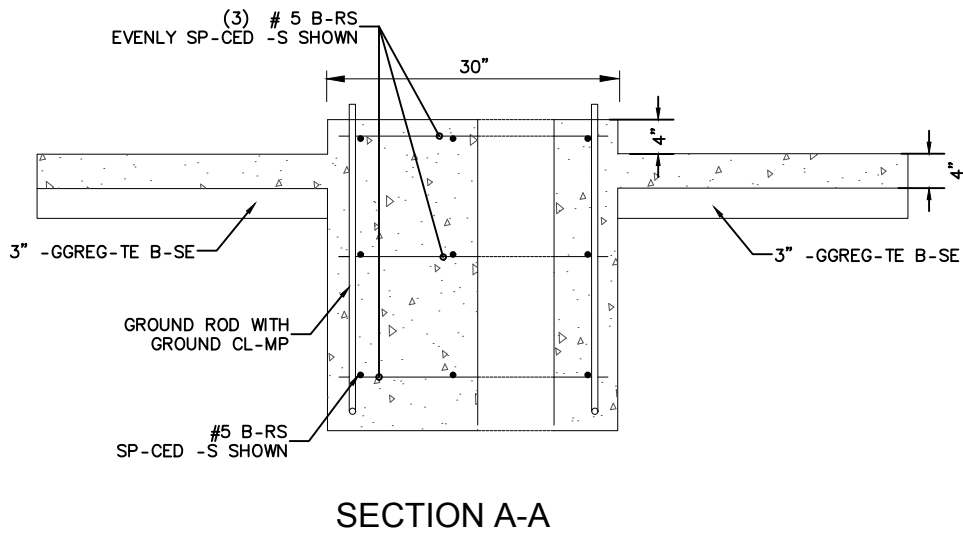
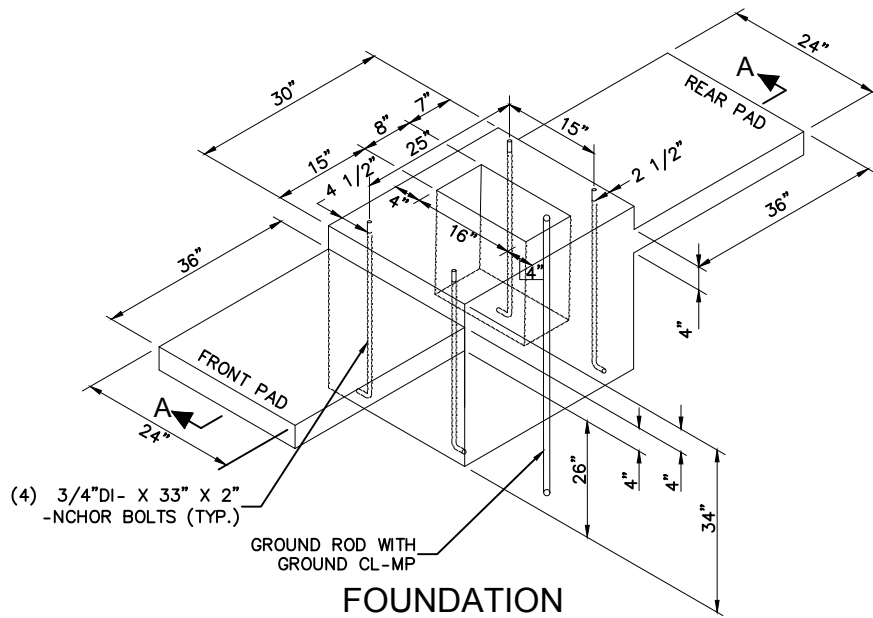
COMMUNICATIONS HUB CABINET

DR-WING No.

RTC-ITS-10.01

-PPROVED BY:

D-TE: 2/2023



ST-ND-RD DET-ILS FOR ITS CONSTRUCTION

COMMUNICATION HUB
CABINET FOUNDATION

DR-WING No.

RTC-ITS-10.02

-PPROVED BY:

D-TE: 2/2023

Memorandum of Understanding for Deployment of the RTC ITS Strategic Master Plan

This Memorandum of Understanding (this “MOU”) is made and entered into on _____, 2024, by and between the following agencies:

- Regional Transportation Commission of Washoe County (“RTC”)
- City of Reno (“Reno”)
- City of Sparks (“Sparks”)
- Washoe County (“Washoe”)

Reno, Sparks, and Washoe may be referred to herein collectively as the “Local Agencies,” and each a “Local Agency”.

RECITALS

WHEREAS, the purpose of this MOU is for RTC and the Local Agencies to collaborate on the deployment of the “2023 RTC Intelligent Transportation Systems (ITS) Strategic Master Plan (SMP),” including the recommendations in “Technical Memorandum #2” attached hereto (**Attachment A**).

WHEREAS, ITS devices, technologies and software are targeted at infrastructure, vehicles, and travelers, as well as integrated applications among them, to enable the development of an intelligent transportation system that improves safety, reliability, mobility and overall performance of the surface transportation system. Successful ITS deployments include, but are not limited to, traffic signal coordination, crash and incident detection, ramp meters, and traveler information systems.

WHEREAS, Reno, Sparks and the Nevada Department of Transportation (“NDOT”) all operate and maintain ITS devices in the region. Washoe has a current agreement with Reno to operate and maintain Washoe’s traffic signals. RTC coordinates with the Local Agencies through the Traffic Operations Management Subcommittee, and collaborates on ITS capital investments and a regional signal timing program.

WHEREAS, the RTC’s Regional Transportation Plan (RTP) includes strategic goals to increase the accessibility and mobility of people and freight, enhance the integration and connectivity of the transportation system across and between modes, and promote efficient system management and operation.

WHEREAS, it is in the interest of the RTC and the Local Agencies to collaborate on deployment of the 2023 RTC ITS Strategic Master Plan deployment recommendations to improve the performance of the regional transportation system.

WHEREAS, this MOU shall not obligate the parties to allocate or transfer funds. Specific projects or activities that involve the transfer of funds or property will require the execution of separate agreements. RTC will be responsible for developing funding plans for each specific deployment recommendation in coordination with the Local Agencies.

WHEREAS, there are other stakeholders that may be or need to be involved with deployment recommendations in the future such as Nevada Department of Transportation (NDOT), University of Nevada, Reno (UNR), emergency services, etc. The goal of this MOU is to unify RTC and the Local Agencies with regard to management of these efforts and the vision for deployment before engaging other

agencies or stakeholders. If and when agreements are necessary, RTC will use direction gained from this MOU to pursue future agreements.

COVENANTS

NOW, THEREFORE, in consideration of mutual covenants and conditions herein contained, the RTC and Local Agencies agree as follows:

1. Decision Making – the authority, accountability, leadership, direction and, control exercised by the RTC and Local Agencies to oversee the development and implementation of SMP deployment recommendations

1.1 The RTC will strive to perform the following tasks and functions in close coordination with the Local Agencies:

- Plan and implement SMP recommendations
- Establish and manage an oversight committee that will be made up of at least one representative from each Local Agency and be responsible for providing direction regarding SMP recommendations
- Measure performance of SMP recommendations and communicate results with all stakeholders

1.2 The Local Agencies will strive to perform the following tasks and functions in close coordination with the RTC:

- Participate in implementation of SMP deployment recommendations and provide oversight as needed
- Provide representation on the oversight committee and participate in decision-making regarding SMP recommendations
- Review and support development of performance measures

2. Operations – the planning and controlling of the movement of all modes of travel on streets and highways with the goal of ensuring maximum safety and efficiency

2.1 The RTC will strive to perform the following tasks and functions in close coordination with the Local Agencies:

- Operate regional traffic signal and ITS network and infrastructure
- Establish and operate a regional Traffic Management Center (TMC)

2.2 The Local Agencies will strive to perform the following tasks and functions in close coordination with the RTC:

- Participate in and provide oversight of regional traffic signal and ITS operations
- Provide control and access to traffic signal and ITS infrastructure as needed to allow for regional TMC operation

3. Maintenance – the systematic process for maintaining, upgrading, and expanding physical assets based on quality data and well-defined objectives in order to ensure the best long-term benefits

3.1 The RTC will strive to perform the following tasks and functions in close coordination with the Local Agencies:

- Establish a regionally consolidated ITS and traffic signal maintenance program

- Provide management, oversight, support, and establish maintenance responsibilities

3.2 The Local Agencies will strive to perform the following tasks and functions in close coordination with the RTC:

- Collaborate with development and implementation of a regionally consolidated maintenance program
- Adopt consolidated approach to maintenance of traffic signals and ITS

4. Standards – the architecture of interrelated systems that work together to deliver dynamic traffic operations in environments that feature changing conditions and demands

4.1 The RTC will strive to perform the following tasks and functions in close coordination with the Local Agencies:

- Develop and implement regional ITS and traffic signal design standards and specifications
- Establish and maintain a regional traffic signal and ITS asset management program

4.2 The Local Agencies will strive to perform the following tasks and functions in close coordination with the RTC:

- Participate in the development and adoption of regional traffic signal and ITS design standards and specifications
- Support and participate in regional traffic signal and ITS asset management

Authorized Representatives

By signing below, each agency indicates that it endorses collaborative efforts to deploy the 2023 RTC ITS Strategic Master Plan deployment recommendations and agrees to maintain its responsibility as listed in this document.

Regional Transportation Commission

_____ *Chair*

_____ *Executive Director*

City of Reno

_____ *Mayor*

_____ *City Manager*

City of Sparks

_____ *Mayor*

_____ *City Manager*

Washoe County

_____ *Chair*

_____ *County Manager*



REGIONAL TRANSPORTATION COMMISSION

Metropolitan Planning • Public Transportation & Operations • Engineering & Construction

Metropolitan Planning Organization of Washoe County, Nevada

Meeting Date: 4/19/2024

Agenda Item: 5.3.

To: Regional Transportation Commission

From: Christian Schonlau, Director of Finance/CFO

SUBJECT: Fuel Tax Indexing (Informational Only)

RECOMMENDED ACTION

Review a report from the RTC's Director of Finance regarding the Fiscal Year 2024 increase in the indexed fuel taxes in Washoe County that will become effective on July 1, 2024, as required by NRS 373.067 and WCC § 20.43416.

BACKGROUND AND DISCUSSION

NRS 373.066 allows counties to impose, by ordinance, taxes on fuel sold in Washoe County that are adjusted to inflation annually. The purpose of the annual adjustments (or "indexing") is to preserve the purchasing power that would otherwise be lost due to inflation in the cost of street and highway construction.

Washoe County imposed the indexed fuel taxes by ordinance at WCC § 20.434 et seq., following voter approval at the 2008 general election of Ballot Question No. RTC-5, and the enactment of Senate Bill 201 (2009), which was codified in NRS 373.066. Washoe County also previously imposed certain indexed fuel taxes pursuant to NRS 373.065(d)(1) and WCC §§ 20.3683, 20.3684 and 20.3685, but those taxes are no longer adjusted annually and are fixed at the amounts that were in effect on January 1, 2010.

The indexed fuel taxes are adjusted each fiscal year pursuant to the formula prescribed by NRS 373.066 and the Washoe County ordinance. The adjustment does not require action by the Board of County Commissioners or the RTC Board to become effective. Washoe County and the State have entered into an agreement pursuant to which the State, through the Department of Motor Vehicles, agrees to perform indexing, collection, and administrative functions with respect to the fuel taxes, including the calculation of each annual increase, as required by NRS 373.070(2) and WCC § 20.43419.

Before the effective date of each increase (i.e., before July 1 each year), the RTC Board is required to review the following at a public meeting pursuant to NRS 373.067(2)(b)(1) and WCC § 20.43416(1):

- a) The amount of that increase and the accuracy of its calculation;
- b) The amounts of any annual increases imposed by [the indexed fuel tax ordinance] in previous years and the revenue collected pursuant to those increases;
- c) Any improvements to the regional system of transportation resulting from revenue collected pursuant to any annual increases imposed by [the indexed fuel tax ordinance] in previous years; and
- d) Any other information relevant to the effect of the annual increases on the public.

RTC is then required to submit to the Washoe County Board of Commissioners “any information [RTC] receives suggesting that the annual increase should be adjusted.” NRS 373.067(2)(b)(2); WCC § 20.43416(2).

Attached is a report from the RTC’s Director of Finance. The report presents the information that the RTC Board is required to review at a public meeting. The adjustment that will become effective on July 1, 2024 is a 3.98% increase in the fuel taxes. RTC’s Director of Finance has confirmed these calculations with the RTC of Southern Nevada. The RTC of Washoe County and RTC of Southern Nevada coordinate, independently verify, and confirm they have the same calculations each year as the same percentage adjustment is made in both counties based on the same statutory formula.

Following this review, the Director of Finance will submit this staff report and the attached report to the Board of County Commissioners, c/o the Washoe County Finance Manager. The RTC’s Director of Finance has already notified the Department of Motor Vehicles of RTC’s calculations. The Department of Motor Vehicles independently confirms those calculations and will begin collecting and administering the increased taxes on July 1, 2024.

FISCAL IMPACT

There is no fiscal impact to the FY 2024 Budget associated with Board this action. The revenues generated in FY 2025 by the indexed fuel taxes will be programmed in the FY 2025 budget.

PREVIOUS BOARD ACTION

3/18/2011 Approved a resolution to use the “Producer Price Index for Other Non- Residential Construction,” instead of the discontinued “Producer Price Index for Highway and Street Construction,” as authorized by NRS 373.066(5)(d).

ATTACHMENT A



REGIONAL TRANSPORTATION COMMISSION

Metropolitan Planning • Public Transportation & Operations • Engineering & Construction

Metropolitan Planning Organization of Washoe County, Nevada

2024 REPORT REGARDING INDEXED FUEL TAXES

This report presents the information that the RTC is required to review at a public meeting pursuant to NRS 373.067(2)(b)(1) and WCC 20.43416(1).

BACKGROUND:

In November 2008, the voters in Washoe County passed ballot question RTC-5 which was a measure to ensure a portion of the funding necessary to implement the 30 year Regional Transportation Plan (RTP). RTC-5 proposed adjusting or “indexing” fuel taxes annually to recapture the purchasing power being lost due to inflation in the cost of street and highway construction. RTC-5 proposed to change the existing indexing basis from the Consumer Price Index (CPI) to the Producer Price Index (PPI). RTC-5 also recaptured the lost purchasing power on the federal and state fuel taxes being paid in Washoe County by indexing the federal and state taxes on gas, alternative fuels, and diesel. The Nevada State Legislature approved enabling legislation for RTC-5 with the passage of Senate Bill 201 (2009), and the Washoe County Commission subsequently enacted the implementing ordinance in August 2009. Collections of the PPI indexed fuel taxes began on January 1, 2010, and the local governments and the RTC received the first proceeds in March 2010.

THE AMOUNT OF THE INCREASE AND THE ACCURACY OF ITS CALCULATION:

On July 1, 2024, an inflationary adjustment of 3.98% will be made to the motor vehicle fuel tax rates in Washoe County, increasing rates on a cents per gallon basis as follows:

Fuel Type	Local		Total
	RTC	Governments	
Gasoline/ Gasohol	3.3397	0.5249	3.8645
Diesel	3.6730	-	3.6730
LPG	2.8384	-	2.8384
CNG	2.7680	-	2.7680
A55 ⁽¹⁾	1.3382	-	1.3382

(1) Emulsion of water based hydrocarbon

Exhibit A shows the rolling ten-year average PPI rates from the U.S. Bureau of Labor Statistics associated with the fuel taxes for local governments (NRS 365.190, 365.560, 365.180, 365.550, 365.192, and 365.562) and the RTC fuel tax (NRS 373.066).

Note, in July of 2010 the Bureau of Labor Statistics modified the publication structure for Material and Supply inputs to the Construction Industry. As a result, the PPI index for Highway and Street Construction (BHWY code) was discontinued and replaced with the PPI index for Other Nonresidential Construction (WPUIP2312301 code). The RTC Board of Commissioners approved a change to the new index in March 2011 as authorized by NRS 373.066(5)(d).

**THE AMOUNTS OF ANY ANNUAL INCREASES IMPOSED IN PREVIOUS YEARS
AND THE REVENUE COLLECTED PURSUANT TO THOSE INCREASES:**

On January 1, 2010, to transition to the PPI index, the CPI indexed amount was frozen at the rate in effect and the new indexing provisions calculated on the PPI rate were implemented on the local, state and federal tax rates for gasoline, and state and federal tax rates for diesel and other special fuels.

The following are the previous rolling ten-year PPI index increases:

<u>Fiscal Year</u>	<u>PPI Rate</u>
2024	4.10%
2023	2.40%
2022	1.32%
2021	2.10%
2020	1.30%
2019	1.98%
2018	2.15%
2017	3.43%
2016	5.25%
2015	6.05%

Prior to that, there were CPI index adjustments in 2004, 2005, 2006, 2007, 2008, and 2009. Note, due to the timing requirement to implement the increases, preliminary index rates are used for the last two months of the calendar year. All indexes from the Bureau of Labor Statistics are subject to revision up to four months after publication. The indexes will be trued up in the calculation of the next year's 10 year average calculations.

The annual incremental changes in Motor Vehicle Fuel Tax in Washoe County due to PPI increases are as follows per WCC 20.43416(1)(a):

Annual Increases in Cents per Gallon

Fiscal Year	10 Yr. Avg. PPI	Gasoline/Gasohol		Washoe County Total	Diesel	LPG	CNG	A55 ⁽¹⁾
		RTC	Local Govt's.		RTC Only			
2025	3.98%	3.3397	0.5249	3.8645	3.3397	3.6730	2.8384	2.7680
2024	4.10%	3.3082	0.5199	3.8281	3.6384	2.8117	2.7419	1.3256
2023	2.40%	1.8897	0.2969	2.1866	2.0783	1.6061	1.5662	0.7572
2022	1.32%	1.0260	0.1612	1.1872	1.1284	0.8720	0.8503	0.4111
2021	2.10%	1.5987	0.2513	1.8499	1.7582	1.3587	1.3250	0.6406
2020	1.30%	0.9769	0.1535	1.1305	1.0744	0.8303	0.8097	0.3915
2019	1.98%	1.4518	0.2281	1.6800	1.5968	1.2339	1.2033	0.5818
2018	2.15%	1.5511	0.2438	1.7949	1.7060	1.3183	1.2856	0.6215
2017	3.43%	2.3925	0.3760	2.7686	2.6314	2.0334	1.9830	0.9587
2016	5.25%	3.4794	0.5468	4.0262	3.8267	2.9571	2.8838	1.3942
2015	6.05%	3.7808	0.5942	4.3750	4.1582	3.2134	3.1336	1.5150
Total		18.1470	2.8518	20.9988	19.9583	15.4232	15.0404	7.2715

(1) Emulsion of water based hydrocarbon

The following are the amounts of PPI indexed revenues collected through FY 2023 per WCC 20.43416(1)(b):

<u>PPI Revenues</u>		
Fiscal Year	RTC⁽²⁾	Local Governments
2023	\$ 78,493,950	\$ 8,987,701
2022	76,956,351	8,687,132
2021	73,708,014	8,290,883
2020	67,503,638	7,680,592
2019	67,780,011	7,824,459
2018	62,519,649	7,300,669
2017	56,953,775	6,629,077
2016	50,409,644	5,827,176
2015	41,564,035	4,850,891
2014	32,534,203	3,804,079
2013	24,740,803	2,888,994
2012	18,075,929	2,092,874
2011	12,288,597	1,419,438
2010 ⁽¹⁾	3,241,425	374,925

(1) Effective January 2010

(2) RTC amounts reported in the FY13 Indexed Fuel Report to the Board of Commissioners included CPI indexed amounts in the reported revenues. This report excludes CPI indexed revenues which were no longer collected after implementation of the PPI index in January 2010.

The estimate for RTC's PPI indexed revenues for FY 2024 is \$85,618,275.

LIST OF IMPROVEMENTS TO THE REGIONAL SYSTEM OF TRANSPORTATION RESULTING FROM REVENUE COLLECTED PURSUANT TO ANY ANNUAL INCREASES IMPOSED IN PREVIOUS YEARS:

The total estimated amount of revenue from indexed fuel taxes distributed to the RTC including CPI since inception is \$716.7 million through December 2023. This entire amount has been programmed along with other fuel tax revenues for road project implementation and as the pledged revenue for debt service of \$296.8 million in outstanding bond debt as of July 1, 2023. The bonds were sold to fund road projects. Indexing serves as major part of the pledged revenue for repayment of the bond debt service. As of August 2016, all the proceeds from the bond sales have been expended and the RTC is back to primarily funding road projects with indexed fuel tax revenues. A complete list of the historical bond funded projects can be found in Exhibit A. A list of the FY 2025 indexed fuel tax funded projects can be found in Exhibit A.

INFORMATION RELEVANT TO THE EFFECT OF THE ANNUAL INCREASE ON THE PUBLIC:

RTC has received and responded to public comment, public inquiries and media inquiries regarding the possibility of repealing or stopping the indexed fuel tax. RTC staff has tried to explain that the PPI increases have been a negligible part of the dramatic increases in the cost per gallon of motor vehicle fuel over the past 12 months. RTC staff will attend the May 2, 2024 Technical Advisory Committee (TAC) meeting to explain the increase that will automatically go into effect on July 1, 2024.

**PRODUCER PRICE INDEX
AVERAGE ANNUAL CHANGE
ROLLING 10 YEARS**

Source: Bureau of Labor Statistics, Other Non-residential Construction Index

10-Year Range	2014-2023
	0.5%
	-5.6%
	-2.0%
	4.1%
	7.1%
	0.2%
	-2.1%
	19.6%
	18.7%
	-0.7%
Rolling Avg	3.98%

Producers Price Index-Commodities

Series Id: WPUIP2312301 - PPI Commodity data for Inputs to other nonresidential construction, goods, not seasonally adjusted



**RTC 5 BOND PROJECTS
EXPENDITURES LIFE-TO-DATE BY BOND ISSUE**

Bond Funded Projects As of December 31,2016

Project Number	Project Termini	Total
Multi	Pre Bond Project expenditures 1/26/09 - 6/26/09	\$ 676,250.00
212025	Bravo	868,552.43
242011	Bridge St. / Caughlin Pkwy	1,082,999.02
212035	Coliseum / Yori	760,551.79
222013	E. Glendale	1,226,316.58
222020	E. Lincoln	927,254.61
212021	Echo Avenue	982,740.74
222008	El Rancho	1,341,018.76
212029	Evans / Highland	1,059,969.42
542023	FY11 Bike/Ped Improvements	168,526.98
532010	Geiger Grade Realignment	930,831.03
542021	I-580 Northbound Widening	20,000,000.00
222016	International Place / Icehouse Rd.	454,427.71
244001	Intersection Corrective Maintenance	1,465,919.94
244002	Intersection Corrective Maintenance 2	1,247,536.73
244003	Intersection Corrective Maintenance 3	908,782.27
222017	Larkin / Madison	709,203.39
212024	Las Brisas	810,415.97
512009	Lemmon Drive	247,890.39
222009	Lillard	1,177,260.90
222021	Linda / Southern	1,201,904.97
212023	Longley	1,068,477.12
222015	Loop / Saloman	629,758.51
212036	Mae Anne	1,578,105.21
212015	Mae Anne	641,500.14
212005	Mae Anne Ave. Rehab.	34,040.09
212047	Mayberry	2,346,436.27
212034	Mayberry	2,628,315.23
540102	McCarran Sidewalk	149,880.50
212009	Military Road	2,780,321.83
212010	Mill Street	1,853,832.71
532005	Moana Lane Widening	35,600,521.94
212017	Moya Blvd	2,143,451.90
212026	Mt. Rose	472,072.02
212011	N. Virginia	2,222,151.95
212038	Neil / Gentry / Terminal	28,733.80
212048	Neil / Gentry / Terminal	367,661.85
221001	Nichols	927,641.90
212012	Parr Boulevard	2,469,679.82
212030	Parr Circle / Catron Drive	1,266,489.18
212044	Peckham	774,380.46
212013	Pembroke	1,716,870.84
532008	Plumb / Harvard	168,196.21
212045	Plumb Lane	6,675,556.78
532012	Plumb/Terminal ITS	289,717.07
540082	Pyramid / McCarran	20,570.64
540082	Pyramid / US395 Connector	69,319.56
212022	Ralston / Fifth	1,854,752.80
343010	Regional Road Maint. Patching 10	1,213.00
343011	Regional Road Maint. Slurry Seal 10	284,974.49
343014	Reg'l Road Maint. Crack Seal 11	124,043.11
343017	Reg'l Road Maint. Crack Seal 12	559,199.20
343012	Reg'l Road Maint. Patching 11	779,063.19
343016	Reg'l Road Maint. Patching 12	610,639.56
343013	Reg'l Road Maint. Slurry Seal 11	5,261,559.60
343015	Reg'l Road Maint. Slurry Seal 12	3,265,362.24
212006	Reno Consolidated 0901	1,486,366.81
212016	Reno Consolidated 0902	1,920,048.49
212018	Reno Consolidated 1001	785,000.04
212028	Reno Consolidated 1002	1,866,519.46
212031	Reno Consolidated 1003	3,168,984.84
212039	Reno Consolidated 1004	4,370,039.33
212040	Reno Consolidated 1005	863,131.10
212032	Reno Consolidated 1101	1,779,397.81
212033	Reno Consolidated 1102	2,850,741.31

**RTC 5 BOND PROJECTS
EXPENDITURES LIFE-TO-DATE BY BOND ISSUE**

Bond Funded Projects As of December 31,2016

Project Number		Project Termini	Total
212041	Reno Consolidated 1103	Gould / Lewis / Prosperity / Sunshine / Kuenzli	1,707,326.79
542019	Reno/Sparks Bike Ped Plan	All jurisdictions	53,697.61
212042	Ridgeview	Plumas / Lakeside	358,493.10
510072	Robb Drive	I80 / Sharlands	117,182.91
222019	Rock Blvd	Glendale / Hymer	841,146.52
532011	SE Connector Phase I	Greg St/Clean Water Way	88,184,041.73
532013	SE Connector Phase II	Clean Water Way/South Meadows	120,524,435.00
530042	SE Connector Plan Alignment		202,034.91
542013	SE McCarran Study	Longley / Greg	96,307.07
542017	SE McCarran Widening Const.	Longley / Greg	39,109,202.14
212027	Security Circle	N. Virginia / N. Virginia	835,226.70
212037	Silver Lake	Stead / Sky Vista	764,518.22
212043	Socrates	McCarran / Sienna	1,914,449.46
222010	Sparks Consolidated 0902	Deming Way / Bergin / Franklin	1,152,135.55
220082	Sparks Consolidated 0903	Freeport / Steneri	2,231,867.08
222011	Sparks Consolidated 1001	Crane / Frazer / Hymer / Pacific / Pittman / Shaber / 15th-21st	5,008,735.59
222022	Sparks Consolidated 1101	Marietta / Snider	1,720,509.21
222025	Sparks Consolidated 1201	Greenbrae/ Merchant	1,724,834.89
222018	Spice Island / United Circle	Greg / Franklin - Spice Island / Spice Island	2,395,074.04
212019	Summit Ridge / Sky Mountain	W. McCarran / 4th	1,545,321.76
232002	Tanburg	7th / Mineral	219,915.75
212020	Taylor Street	Virginia / Kietzke	33,557.58
542025	TE Spot Intersection Project 11/12	All jurisdictions	1,309,401.64
542020	TE Spot Intersection Project 9/10	All jurisdictions	1,354,736.10
5328	US395 / Meadowood Interchange		7,652,863.09
532009	Veterans Parkway / Geiger Grade	Roundabout	5,375,728.77
222012	Victorian Phase II	Pyramid / McCarran	3,351,267.23
522008	Vista / Baring	NB Left turn lane	461,632.80
522007	Vista Boulevard	Los Altos / Wingfield Springs	8,603,385.79
212014	W. 7th Street	Madera Ct. / McCarran	809,705.94
212046	W. Huffaker	Del Monte / Spring Leaf	909,659.64
222014	York	18th / 4th	1,642,597.78
	TOTAL		\$ 441,214,065.93

**Regional Transportation Commission
Reno, Sparks and Washoe County, Nevada**

**SCHEDULE OF CONSTRUCTION PROJECT EXPENDITURES
GENERAL FUND
(Regional Street and Highway Fund)**

Year ended June 30, 2023

	Right- of-way Acquisition	Engineering and Inspection	Construction	Total
All Jurisdictions				
2021 Preventive Maintenance	\$ -	\$ 298,541	\$ 4,998,068	\$ 5,296,609
2022 Preventive Maintenance	-	644,460	4,280,616	4,925,076
2022 Corrective Maintenance	-	62,043	1,309,324	1,371,367
Bus Stop 19-01	4,892	157,812	1,154,930	1,317,634
T/E Spot Intersection Improvements 10	-	19,330	44,350	63,680
Traffic Signal Modification 23-01	-	149,846	-	149,846
Traffic Signal Modification 24-01	-	91,245	-	91,245
SS4 Preliminary Engineering	-	56,893	-	56,893
	<u>4,892</u>	<u>1,480,170</u>	<u>11,787,288</u>	<u>13,272,350</u>
City of Reno				
2023 Bridge Maintenance	-	18,621	-	18,621
2023 Corrective Maintenance - Vine St./2nd St./Ceter St.	-	61,814	-	61,814
1 st. Street Rehab - Virginia St. to Sierra St.	-	67,719	-	67,719
Arlington Bridges	-	1,813,610	-	1,813,610
Arrowcreek Parkway - Rubbleston Dr./S. Virginia St.	22,998	142,637	658,651	824,286
California Ave Rehab - Newlands Cir./Arlington Ave.	-	49,511	335,056	384,567
City of Reno Micromobility Pilot	-	105,397	338,188	443,585
Geiger Grade Road Realignment	-	763	-	763
Golden Valley/Beckwourth	-	85,413	-	85,413
Holcomb Ave Rehab - Liberty St./Burns St.	-	177,565	1,301,276	1,478,841
Keystone Ave. Bridge	-	15,962	-	15,962
Kings Row Phase 2 (Wyoming Ave to McCarran Blvd)	-	120,064	1,672,661	1,792,725
Kietzke Ln. ITS - Mill St. To 2nd St./Pringle Wy. To Kietzke Ln.	-	18,276	-	18,276
Las Brisas and Los Altos Resurfacing	8,000	74,313	-	82,313
Lemmon Dr. - US 395 to Military Rd/Fleetwood to Chickadee	-	199,339	366,801	566,140
LiDAR Living Lab & Imple	-	79,567	-	79,567
Mill Street Capacity & Safety - Kietzke Ln. to Terminal Wy.	134,210	882,402	-	1,016,612
Mill Street Complete Street - E. McCarran Blvd to Terminal Wy.	-	106,263	685,586	791,849
Oddie/Wells Corridor Multi-Modal	-	1,039,836	8,618,935	9,658,771
Peckham Ln. - Baker Ln. to Virginia St.	-	146,659	2,185,185	2,331,844
Pembroke Dr. Capacity & Safety - McCarran Blvd to Veterans Pkwy	-	129,466	-	129,466
Reno Consolidated 20-01 - Mayberry Dr./California Ave/First St.	-	137,387	1,287,198	1,424,585
Reno Consolidated 22-01 - Sky Mountain Dr./Sky Valley Dr.	-	60,429	974,605	1,035,034
Reno Consolidated 23-01 - Sutro St./Enterprise Rd	-	253,823	1,792,852	2,046,675
Reno Sparks Indian Colony Riverside Pathway	-	1,608	-	1,608
S. Virginia St. NB Widening - Longley Ln/ I-580 NB off ramp	26,100	445,925	-	472,025
Semi Dr. Rehab - Sutro St. to Clear Acre Ln.	-	129,591	-	129,591
Sierra St. Bridge	-	10,691	-	10,691
South Meadows Traffic Enhancements	8,000	226,172	-	234,172
N. Virginia St. University Rehab - Lawlor Roundabout to N. McCarran Blvd	-	125,027	-	125,027
Raleigh Heights Rehab - Carlyle Dr./Yorkshire Dr./Lancaster Dr.	-	118,914	-	118,914
Traffic Management 4	-	72,620	861,833	934,453
Traffic Signal Installation 22-01	-	-	1,165,067	1,165,067
Traffic Signal Installation 23-01	-	110,721	1,316	112,037
Traffic Signal Modification 22-01	1,330	8,595	-	9,925
Veterans Roundabout Modifications	-	5,295	-	5,295
Virginia St/ Midtown/UNR	-	7,137	-	7,137
West Fourth St. Downtown- Evans Ave. to Keystone Ave.	-	33,905	-	33,905
West Fourth St. Safety - Keystone Ave. to McCarran Blvd	-	128,217	-	128,217
	<u>200,638</u>	<u>7,211,254</u>	<u>22,245,210</u>	<u>29,657,102</u>

**Regional Transportation Commission
Reno, Sparks and Washoe County, Nevada**

**SCHEDULE OF CONSTRUCTION PROJECT EXPENDITURES
GENERAL FUND
(Regional Street and Highway Fund)**

Year ended June 30, 2023

	<u>Right- of-way Acquisition</u>	<u>Engineering and Inspection</u>	<u>Construction</u>	<u>Total</u>
City of Sparks				
2023 Corrective Maintenance	\$ -	\$ 61,814	\$ -	\$ 61,814
4Tth St. - Greenbrae Dr./Gault Wy.	4,981	154,964	1,081,350	1,241,295
Las Brisas and Los Altos Resurfacing	8,000	74,314	-	82,314
N. McCarran Blvd & Pyramid Hwy Fiber	-	155,323	-	155,323
Oddie/Wells Corridor Multi-Modal	3,500	1,039,836	8,618,936	9,662,272
Pyramid Wy., Sparks Blvd & Pyramid Highland Ranch Intersection	-	127,882	-	127,882
Sparks Blvd Capacity Improvement	-	2,080,384	10,991,152	13,071,536
Stanford Wy Rehab - Glendale Ave. to Greg St.	-	180,550	-	180,550
Traffic Management 4	-	10,374	123,119	133,493
Traffic Signal Installation 23-01	-	110,722	1,317	112,039
Traffic Signal Modification 22-01	9,975	64,465	-	74,440
	<u>26,456</u>	<u>4,060,628</u>	<u>20,815,874</u>	<u>24,902,958</u>
Washoe County				
Geiger Grade Road Realignment	-	1,526	-	1,526
Sun Valley Corridor Multi-Modal	-	199,339	366,801	566,140
	<u>-</u>	<u>200,865</u>	<u>366,801</u>	<u>567,666</u>
NV Department of Transportation				
Geiger Grade Road Realignment	-	5,341	-	5,341
Pyramid Hwy./US 395 connector	-	240,478	1,863,579	2,104,057
Spaghetti Bowl Xpress	-	-	5,000,000	5,000,000
Traffic Management 4	-	20,748	246,238	266,986
Traffic Signal Modification 22-01	1,995	12,893	-	14,888
	<u>1,995</u>	<u>279,460</u>	<u>7,109,817</u>	<u>7,391,272</u>
 Total All Projects	 <u>\$ 233,981</u>	 <u>\$ 13,232,377</u>	 <u>\$ 62,324,990</u>	 <u>\$ 75,791,348</u>



REGIONAL TRANSPORTATION COMMISSION

Metropolitan Planning • Public Transportation & Operations • Engineering & Construction

Metropolitan Planning Organization of Washoe County, Nevada

Meeting Date: 4/19/2024

Agenda Item: 5.4.

To: Regional Transportation Commission

From: Christian Schonlau, Director of Finance/CFO

SUBJECT: Fiscal Year 2025 Tentative Budget

RECOMMENDED ACTION

Acknowledge receipt of the Fiscal Year 2025 RTC Tentative Budget.

BACKGROUND AND DISCUSSION

The FY 2025 Tentative Budget will continue RTC's multi-year road program and transportation services in the community. The Tentative Budget is presented in order for the Board to provide comment and input into the FY 2025 Final Budget. Staff will return to the Board in May with the finalized budget.

The FY 2025 Tentative Budget consists of three major programs: the Street and Highway Program, the Public Transportation Program, and the Metropolitan Planning Organization (MPO)/Transportation Planning Program. The Street and Highway Program consists of pavement preservation and mobility projects, capacity improvement projects, and RRIF cash and offset agreement projects. The Public Transportation Program consists of RTC RIDE, RTC ACCESS, RTC INTERCITY, RTC FlexRide, TART, and Van Pools. The MPO/Transportation Planning Program consists of federally mandated planning activities and other essential planning activities required to guide and support the Public Transportation program and Street and Highway Programs.

Street and Highway Program:

As of January 2024, year-to-date fuel tax revenue has increased 6.44% or \$3.66 million based on indexed fuel tax, but Washoe County has also experienced a 0.69% decrease in gallons sold over the prior year during that same time period. FY 2025 budgeted fuel tax revenues are a 3.1% increase or \$3.2 million over FY 2024 estimate due to the continued implementation of indexing. FY 2025 PPI index ten-year rolling average of 3.98% adjustment results in a 3.34 cent increase Washoe County fuel tax rates. FY 2025 gallons sold are projected to remain flat over FY 2024 based on the forecast from the Nevada Department of Taxation. FY 2025 RRIF cash revenues are budgeted at \$8.5 million as new development construction continues. RRIF cash revenues remain lower than historical levels due to the current availability of impact fee waivers.

Road construction projects are a substantial component of the RTC budget. Pavement preservation, mobility, and capacity projects are budgeted at \$171.2 million for FY 2025. The total Street and Highway Program expenditures for FY 2025 including debt service are \$200.45 million.

Public Transportation Program:

As of January 2024, sales tax revenue has increased 1.6% or \$431,677 over the prior year. FY 2025 estimated sales tax revenue has been increased 1% or \$374,685. FY 2024 ridership for RTC RIDE and RTC ACCESS remain lower than pre-pandemic levels at approximately 65% and 33% respectively resulting in significant reductions in passenger fare revenues. FY 2025 RTC RIDE fare revenues have been increased 5.39% or \$178,113 and RTC ACCESS fare revenues have been increased 45.19% or \$106,323 to adjust for returning ridership and increased marketing efforts to grow new ridership.

FY 2025 RTC RIDE operating costs at \$41.9 million are increasing .02% over FY 2024 due to increased contractor costs. RTC ACCESS operating costs at \$13.22 million are increasing 57.84% over FY 2024 primarily due to increased provision of services, which are also operated by the RTC ACCESS turnkey contractor.

Transit capital projects are critical to the success of the Public Transportation Program, but have a financial impact on local funds required to match the federal funding. Capital projects funded by federal grants include: 4 replacements for Proterra battery electric RIDE buses, 6 more hydrogen fuel cell buses and related facility upgrades, 15 new FlexRide vans, bus shelters and pad improvements, support vehicles, computer hardware and software, and facilities upgrades. The total public transportation and para-transit capital expenditures for the FY 2025 are \$29.99 million.

Total program expenses for the Public Transportation Program are \$85.1 million for FY 2025.

Metropolitan Planning Organization (MPO) Program:

Total program expenses for the MPO Program are \$4.62 million for FY 2025. The program includes the following studies: Regional Transportation Plan (RTP) update, ATP Neighborhood Plans, Regional Travel Characteristics Study, Regional Freight Study, Travel Demand Model, Intersection Studies, TRIC Rail Study, and TOPS Model.

FISCAL IMPACT

The Fiscal Year 2024 Tentative Budget amount, not including depreciation, is \$283,950,650.

PREVIOUS BOARD ACTION

5/19/2023 Approval of the Fiscal Year 2024 RTC Final Budget.



**Regional Transportation Commission
Reno, Sparks, and Washoe County, Nevada**

Annual Budget

Fiscal Year Ending, June 30, 2025

**REGIONAL TRANSPORTATION COMMISSION
ALL FUNDS
THREE YEAR COMPARISON OF REVENUES BY SOURCE
TENTATIVE BUDGET
FOR FISCAL YEAR ENDING JUNE 30, 2025**

	FISCAL YEAR 2023 ACTUAL	FISCAL YEAR 2024 BUDGET	FISCAL YEAR 2024 ESTIMATED	FISCAL YEAR 2025 BUDGET
<u>REVENUES & SOURCES:</u>				
Motor Vehicle Fuel Tax	\$ 96,662,346	\$ 105,290,980	\$ 103,227,877	\$ 106,435,661
Public Transportation Sales Tax	43,872,878	46,760,767	44,962,277	45,636,710
Regional Road Impact Fee (RRIF)	8,566,415	8,000,000	8,000,000	8,500,000
RRIF Offset Agreements	1,662,528	7,350,000	1,000,000	6,250,000
Passenger Fares	3,282,332	3,635,869	3,538,774	3,823,210
Advertising	193,552	195,700	190,000	195,700
Lease Income	402,313	403,140	402,313	403,140
Investment Income	3,872,664	-	5,645,336	5,814,696
Federal Reimbursements	16,775,095	43,458,759	16,853,171	68,402,183
N.D.O.T.	2,501,864	3,822,828	2,850,924	4,069,702
Asset Proceeds	3,121,721	25,000	23,668	50,000
Misc Reimb/Operating Assist.	1,260,121	1,167,000	557,654	1,864,000
TOTAL REVENUES	182,173,829	220,110,043	187,251,994	251,445,002
Beginning Cash & Fund Balance	229,739,688	234,603,197	227,087,323	234,037,729
TOTAL SOURCES AVAILABLE	\$ 411,913,517	\$ 454,713,240	\$ 414,339,317	\$ 485,482,730

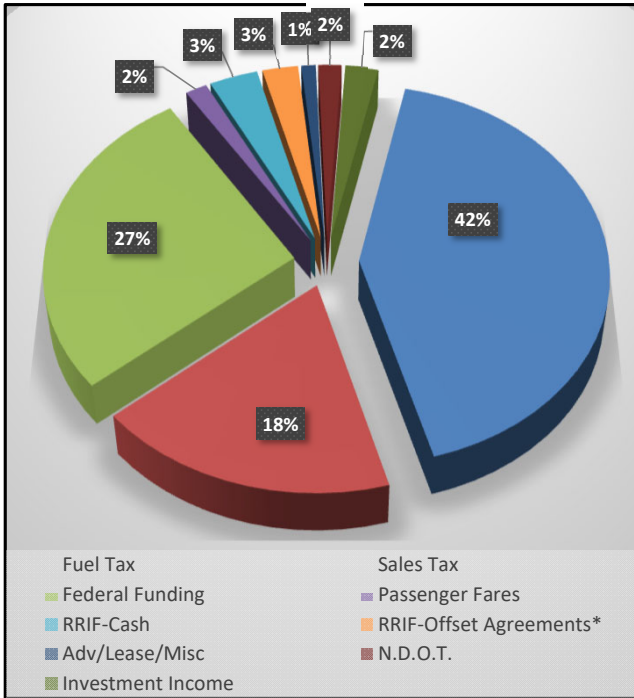
**REGIONAL TRANSPORTATION COMMISSION
ALL FUNDS
THREE YEAR COMPARISON OF EXPENDITURES BY FUNCTION
TENTATIVE BUDGET
FOR FISCAL YEAR ENDING JUNE 30, 2025**

	FISCAL YEAR 2023 ACTUAL	FISCAL YEAR 2024 BUDGET	FISCAL YEAR 2024 ESTIMATED	FISCAL YEAR 2025 BUDGET
<u>EXPENDITURES & USES:</u>				
Preservation & Multitmodal Projects	\$ 86,801,811	\$ 68,129,311	\$ 59,205,719	\$ 84,202,819
Capacity Improvements Projects	10,892,170	69,653,317	46,066,224	87,029,984
RRIF Offset Agreements	1,662,528	7,350,000	1,000,000	6,250,000
Other Finan. Uses - Debt Service	22,967,173	22,961,323	22,961,322	22,966,272
RTC RIDE - Operating	36,785,709	41,813,427	34,301,798	41,896,265
RTC RIDE - Capital	11,055,738	21,307,891	3,500,000	25,518,031
Paratransit - Operating	9,993,294	14,090,659	8,372,447	13,215,274
Paratransit - Capital	2,215,176	5,057,500	2,500,000	4,477,500
MPO - Operating	2,452,595	3,975,394	2,394,078	4,619,511
TOTAL EXPENDITURES	184,826,194	254,338,823	180,301,588	290,175,657
<u>ENDING CASH BALANCE:</u>				
Restricted/Committed/Assigned	227,087,323	200,374,417	234,037,729	195,307,073
TOTAL ENDING CASH/FUND BALANCE	227,087,323	200,374,417	234,037,729	195,307,073
TOTAL USES	\$ 411,913,517	\$ 454,713,240	\$ 414,339,317	\$ 485,482,730

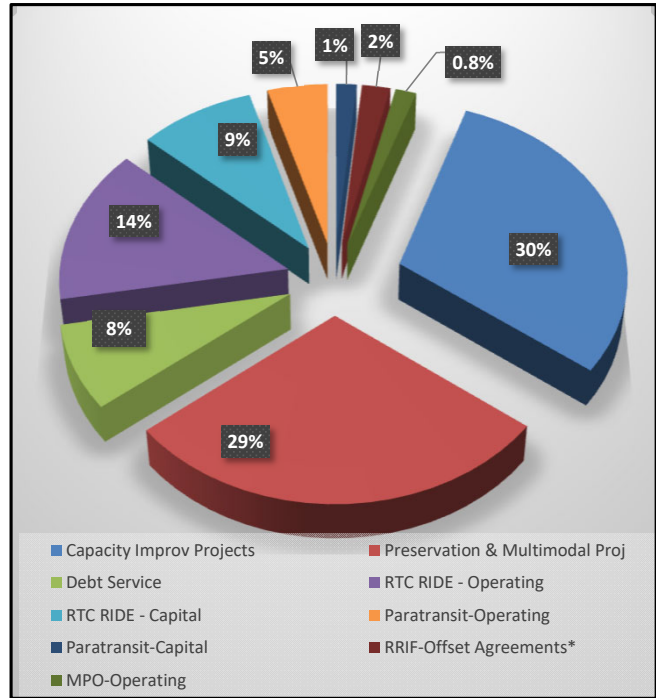
Note: Depreciation is not included in the total expenditure column.
Total expenditures including depreciation of \$9,500,000
are: \$299,675,657

REGIONAL TRANSPORTATION COMMISSION REVENUES & EXPENDITURES BY SOURCE - FY 2025 BUDGET

REVENUES



EXPENDITURES



Total Revenues & Fund Balance
\$485,482,730

Total Expenditures & Ending Fund Balance
\$485,482,730

Fuel Tax	\$106,435,661	21.9%
Sales Tax	\$45,636,710	9.4%
Federal Funding	\$68,402,183	14.1%
Passenger Fares	\$3,823,210	0.8%
RRIF-Cash	\$8,500,000	1.8%
RRIF-Offset Agreements*	\$6,250,000	1.3%
Adv/Lease/Misc	\$2,512,840	0.5%
N.D.O.T.	\$4,069,702	0.8%
Investment Income	\$5,814,696	1.2%

Capacity Improv Projects	\$87,029,984	17.9%
Preservation & Multimodal Proj	\$84,202,819	17.3%
Debt Service	\$22,966,272	4.7%
RTC RIDE - Operating	\$41,896,265	8.6%
RTC RIDE - Capital	\$25,518,031	5.3%
Paratransit-Operating	\$13,215,274	2.7%
Paratransit-Capital	\$4,477,500	0.9%
RRIF-Offset Agreements*	\$6,250,000	1.3%
MPO-Operating	\$4,619,511	1.0%

Beginning Balance \$234,037,729 48.2%

Ending Balance - FY 2024 \$195,307,073 40.2%

Total: \$485,482,730

Total: \$485,482,730

<u>Beginning Balance</u>		
Debt Service	\$24,260,599	
Preservation & Multimodal Proj	\$122,182,985	
Capacity Improv Projects	\$21,269,424	
Public Transportation	\$65,111,736	
MPO	\$1,055,033	
TOTAL	<u><u>\$233,879,778</u></u>	

<u>Ending Balance</u>		
Debt Service	\$24,260,599	
Preservation & Multimodal Proj	\$105,828,607	
Capacity Improv Projects	\$10,163,698	
Public Transportation	\$58,913,221	
MPO	\$654,141	
TOTAL	<u><u>\$199,820,266</u></u>	

*For custodial purposes only, credits are booked as a revenue and expense with net zero effect and have no cash value.

**REGIONAL TRANSPORTATION COMMISSION
STREET AND HIGHWAY PROGRAM
TENTATIVE BUDGET
FOR FISCAL YEAR ENDING JUNE 30, 2025**

	FISCAL YEAR 2023 ACTUAL	FISCAL YEAR 2024 BUDGET	FISCAL YEAR 2024 ESTIMATED	FISCAL YEAR 2025 BUDGET
REVENUES & SOURCES:				
Motor Vehicle Fuel Tax	\$ 96,662,346	\$ 105,290,980	\$ 103,227,877	\$ 106,435,661
Sales Tax	7,312,146	7,793,461	7,493,713	7,793,461
Regional Impact Fee - Cash	8,566,415	8,000,000	8,000,000	8,500,000
Regional Impact Fee - Offset Agreements	1,662,528	7,350,000	1,000,000	6,250,000
Federal Funding	70,561	12,120,300	735,500	37,688,912
NDOT State Gas Tax	-	-	-	-
Project Reimbursements	866,346	905,000	250,000	1,600,000
Investment Income	2,775,010	-	3,650,000	3,759,500
Miscellaneous Reimbursements	93,577	51,000	90,000	51,000
Other Financing Sources - Sale of capital assets	3,338,599	-	-	-
TOTAL REVENUES	121,347,528	141,510,741	124,447,090	172,078,534
Operating Transfers In	24,060,245	23,361,323	23,561,323	23,266,272
Payment to refunded bond escrow agent	-	-	-	-
TOTAL OPERATING TRANSFERS	145,407,773	164,872,064	148,008,413	195,344,806
Beginning Cash/Fund Balance	171,641,611	167,713,009	169,305,457	163,159,282
TOTAL SOURCES	\$ 317,049,384	\$ 332,585,073	\$ 317,313,870	\$ 358,504,088
EXPENDITURES & USES:				
Preservation & Multimodal Projects/Other	\$ 86,801,811	\$ 68,129,311	\$ 59,205,719	\$ 84,202,819
Capacity Projects/Other	10,892,170	69,653,317	46,066,224	87,029,984
RRIF Offset Agreements	1,662,528	7,350,000	1,000,000	6,250,000
Debt Service	22,967,173	22,961,323	22,961,322	22,966,272
Capital expenses	-	-	-	-
TOTAL EXPENDITURES	122,323,682	168,093,952	129,233,265	200,449,075
Operating Transfers Out	25,420,245	24,721,323	24,921,323	24,945,022
TOTAL EXPENDITURES AND OPER. TRANSFERS OUT	147,743,927	192,815,275	154,154,588	225,394,097
ENDING CASH/FUND BALANCE:				
Restricted for Capacity Projects	119,290,214	73,977,476	12,960,014	8,338,672
Restricted for Preservation & Multimodal Projects	25,097,746	41,531,723	124,581,770	98,432,821
Restricted for Debt Service	24,917,497	24,260,599	25,617,498	26,338,498
TOTAL ENDING CASH/FUND BALANCE	169,305,457	139,769,798	163,159,282	133,109,991
TOTAL USES	\$ 317,049,384	\$ 332,585,073	\$ 317,313,870	\$ 358,504,088

**REGIONAL TRANSPORTATION COMMISSION
PUBLIC TRANSIT & PARATRANSIT
TENTATIVE BUDGET
FOR FISCAL YEAR ENDING JUNE 30, 2025**

	FISCAL YEAR 2023 ACTUAL	FISCAL YEAR 2024 BUDGET	FISCAL YEAR 2024 ESTIMATED	FISCAL YEAR 2025 BUDGET
REVENUES & SOURCES:				
Public Transportation Sales Tax	\$ 36,560,732	\$ 38,967,306	\$ 37,468,564	\$ 37,843,249
Passenger Revenues	3,282,332	3,635,869	3,538,774	3,823,210
Investment Income	1,061,399	-	1,978,860	2,038,226
Advertising	193,552	195,700	190,000	195,700
FTA - 5339 (Discretionary)	1,797,815	2,409,538	999,380	4,849,378
FTA - 5307 & CMAQ	6,416,469	13,153,420	8,566,075	12,682,392
FTA - 5309 (Discretionary)	-	8,402,000	-	6,328,000
FTA - 5310	667,745	443,225	611,522	443,225
FTA - Section 5307 Federal Stimulus	1,061,133	-	-	-
FTA - Preventive Maint/ADA Paratransit Svc	5,897,658	5,040,000	4,920,000	4,440,000
NDOT - ETR/TA Grants/Medicaid	2,501,864	3,822,828	2,850,924	4,069,702
INTERCITY (CAMPO)	77,579	77,000	85,654	77,000
Miscellaneous Reimbursements	182,619	133,000	131,000	135,000
Asset Proceeds	(216,878)	25,000	23,668	50,000
Lease Income	402,313	403,140	402,313	403,140
TOTAL REVENUES	59,886,332	76,708,026	61,766,734	77,378,222
Capital Contribution	-	-	-	-
Operating Transfers In	-	-	-	-
SUBTOTAL RESOURCES	59,886,332	76,708,026	61,766,734	77,378,222
Beginning Cash/Fund Balance	57,270,660	65,835,155	56,867,075	69,719,563
TOTAL SOURCES	\$ 117,156,992	\$ 142,543,181	\$ 118,633,809	\$ 147,097,785
EXPENDITURES & USES:				
OPERATING EXPENDITURES				
Public Transit - RTC RIDE	\$ 36,785,709	\$ 41,813,427	\$ 34,301,798	\$ 41,896,265
Paratransit - RTC ACCESS	9,993,294	14,090,659	8,372,447	13,215,274
TOTAL OPERATING EXPENDITURES	46,779,003	55,904,086	42,674,245	55,111,539
NON-OPERATING EXPENDITURES				
Capital Outlay - Public Transit - RTC RIDE	11,055,738	21,307,891	3,500,000	25,518,031
Capital Outlay - Paratransit - RTC ACCESS	2,215,176	5,057,500	2,500,000	4,477,500
TOTAL NON-OPER. EXPENDITURES	13,270,914	26,365,391	6,000,000	29,995,531
TOTAL EXPENDITURES	60,049,917	82,269,477	48,674,245	85,107,070
Operating Transfers Out	240,000	240,000	240,000	296,250
TOTAL EXPENDITURES AND OPER. TRANSFERS OUT	60,289,917	82,509,477	48,914,245	85,403,320
ENDING CASH/FUND BALANCE:				
Restricted for Federal Grant Match	4,500,000	4,500,000	3,100,000	4,500,000
Restricted for Self Insurance	250,000	250,000	250,000	250,000
Restricted for Villanova Facility Replacement	30,000,000	30,000,000	30,000,000	30,000,000
Restricted for Transit Operations	22,117,075	25,283,704	36,369,563	26,944,464
TOTAL ENDING CASH/FUND BALANCE	56,867,075	60,033,704	69,719,563	61,694,464
TOTAL USES	\$ 117,156,992	\$ 142,543,181	\$ 118,633,809	\$ 147,097,785

REGIONAL TRANSPORTATION COMMISSION
MPO
TENTATIVE BUDGET
FOR FISCAL YEAR ENDING JUNE 30, 2025

	FISCAL YEAR 2023 ACTUAL	FISCAL YEAR 2024 BUDGET	FISCAL YEAR 2024 ESTIMATED	FISCAL YEAR 2025 BUDGET
<u>REVENUES & SOURCES:</u>				
Investment Income	\$ 36,255	\$ -	\$ 16,476	\$ 16,970
FTA - Planning	114,981	180,276	120,000	260,276
FTA - 5307 & CMAQ	-	-	-	-
FHWA - Planning	748,733	1,710,000	900,694	1,710,000
NDOT - Planning	-	-	-	-
NDOT - Other	-	-	-	-
Miscellaneous	40,000	1,000	1,000	1,000
Asset Proceeds	-	-	-	-
TOTAL REVENUES	939,969	1,891,276	1,038,170	1,988,246
Operating Transfers In - Sales Tax	240,000	240,000	240,000	296,250
Operating Transfers In - Fuel Tax	1,360,000	1,360,000	1,360,000	1,678,750
TOTAL REVENUES & OPERATING TRANSFERS	2,539,969	3,491,276	2,638,170	3,963,246
Beginning Cash/Fund Balance	827,417	1,055,033	914,791	1,158,883
TOTAL SOURCES	\$ 3,367,386	\$ 4,546,309	\$ 3,552,961	\$ 5,122,129
<u>EXPENDITURES & USES:</u>				
OPERATING EXPENDITURES				
Transportation Services - MPO	\$ 2,452,595	\$ 3,975,394	\$ 2,394,078	\$ 4,619,511
TOTAL OPERATING EXPENDITURES	2,452,595	3,975,394	2,394,078	4,619,511
NON-OPERATING EXPENDITURES				
Capital Outlay - MPO	-	-	-	-
TOTAL NON-OPER. EXPENDITURES	-	-	-	-
TOTAL EXPENDITURES	2,452,595	3,975,394	2,394,078	4,619,511
<u>ENDING CASH/FUND BALANCE:</u>				
Restricted for Federal Grant Match	914,791	570,915	1,158,883	502,618
TOTAL ENDING CASH/FUND BALANCE	914,791	570,915	1,158,883	502,618
TOTAL USES	\$ 3,367,386	\$ 4,546,309	\$ 3,552,961	\$ 5,122,129

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**REGIONAL TRANSPORTATION COMMISSION
FY 2025 CAPITAL & GRANT BUDGET
FOR FISCAL YEAR ENDING JUNE 30, 2025**

PROJECT DESCRIPTION	FEDERAL AMOUNT	LOCAL MATCH	TOTAL BUDGET AMOUNT
RTC RIDE - REPLACEMENT BUSES (4)	\$ 4,151,667	\$ 218,509	\$ 4,370,176
RTC ACCESS - REPLACEMENT VANS (15)	2,173,125	114,375	2,287,500
RTC ACCESS/FLEXRIDE VANS (8)	896,000	224,000	1,120,000
RTC NON-REVENUE TRUCK	60,000	15,000	75,000
MEADOWOOD MALL TRANSIT STATION	4,800,000	1,200,000	6,000,000
VIRGINIA LINE BRT PROJECT	-	1,388,133	1,388,133
VILLANOVA FACILITY UPGRADES	1,096,000	274,000	1,370,000
VILLANOVA FACILITY REPLACEMENT - DESIGN	2,400,000	600,000	3,000,000
TERMINAL FACILITY UPGRADES/REPAIRS	80,000	20,000	100,000
ALL FACILITIES UPGRADES	137,600	34,400	172,000
TRANSIT CENTERS UPGRADES	780,000	195,000	975,000
6TH STREET FACILITIES UPGRADES	256,000	64,000	320,000
SUTRO GENERATOR	600,000	150,000	750,000
HYDROGEN FUEL PROJECT	4,368,000	1,092,000	5,460,000
BUS STOP AMENITIES/BUS MONITOR DISPLAY	200,000	50,000	250,000
COMPUTER HARDWARE & SOFTWARE	1,821,378	455,344	2,276,722
SHOP EQUIPMENT	40,000	10,000	50,000
TOTAL	\$ 23,859,770	\$ 6,104,761	\$ 29,964,531



**FINAL BUDGET FOR FISCAL YEAR ENDING JUNE 30, 2025
REPORTED BY FUND TOTALS BY LINE ITEMS**

*Items Include Agency Wide Funds

ACCT. #	DESCRIPTION	*R.R.I.F. PROGRAM	BOND RESERVE	*FUEL TAX PROGRAM	*PUBLIC TRANSIT	*PARA TRANSIT	* MPO	*TOTAL
LABOR								
501-0-01	Labor - Regular	7,317	-	1,276,343	1,029,759	426,712	475,417	3,215,549
501-0-03	Overtime	-	-	-	2,677	3,462	-	6,139
501-0-05	ER Contribution-457 Plan	-	-	-	1,923	-	-	1,923
502-0-02	Bonuses	-	-	-	5,586	-	-	5,586
502-0-20	Life Insurance	-	-	-	370	-	-	370
502-1-09	Sick Leave - Grants	-	-	-	7,885	-	-	7,885
502-1-11	Vacation - Grants	-	-	-	12,860	-	-	12,860
502-1-15	Fixed Holiday - Grants	-	-	-	4,069	-	-	4,069
	LABOR ALLOCATIONS IN/(OUT)	11,580	-	3,069,005	1,629,706	675,319	752,400	-
	TOTAL LABOR	18,896	-	3,296,296	2,694,835	1,105,494	1,227,817	8,343,338
FRINGE								
502-0-04	F.I.C.A. / Medicare	-	-	23,403	13,041	634	-	37,079
502-0-05	Pension Plan	-	-	-	32,216	-	-	32,216
502-0-01	OPEB Contribution	-	-	-	250,000	-	-	250,000
502-0-17	Health/Vision Insurance	-	-	-	12,105	-	-	12,105
502-0-21	Dependent Health Insuranc	-	-	-	6,828	-	-	6,828
502-0-18	Dental Insurance	-	-	-	696	-	-	696
502-0-19	Life Insurance	-	-	-	90	-	-	90
502-0-16	Disability Insurance	-	-	-	982	-	-	982
502-0-07	S.U.I. Expense	-	-	-	434	-	-	434
502-0-08	Workers Compensation	-	-	-	690	-	-	690
	FRINGE ALLOCATION IN/(OUT)	9,194	-	2,436,650	1,293,912	536,173	597,371	-
	TOTAL FRINGE	9,194	-	1,627,153	1,610,995	536,807	597,371	4,381,520
SERVICES								
503-0-01	Management Service Fees	-	-	-	-	-	-	-
503-0-02	Adv. Development & Prod.	-	-	13,388	547,000	-	-	560,388
503-0-03	Professional & Technical	26,641	15	1,785,409	219,049	23,922	25,304	2,080,340
503-0-04	Temporary Help	-	-	-	6,000	-	-	6,000
503-0-05	Maintenance & Repairs	-	-	94,350	1,355,833	582,000	41,700	2,073,883
503-0-06	Custodial	-	-	-	549,000	12,300	-	561,300
503-0-07	Security & Fire Systems	-	-	38,000	1,073,418	-	-	1,111,418
503-0-08	Printing	-	-	200	79,200	8,500	500	88,400
503-0-09	Consulting/Spec. Studies	-	-	825,000	10,000	-	1,952,823	2,787,823
503-0-10	ROW Property Maint. Costs	-	-	10,000	-	-	-	10,000
503-0-11	SEC Wetland Maintenance	-	-	125,000	-	-	-	125,000
503-0-99	Other Services	-	-	422,610	317,600	33,000	11,500	784,710
	SERVICES ALLOCATION IN/(OUT)	5,939	-	1,574,080	835,869	346,368	385,903	-
	TOTAL SERVICES	32,580	15	4,349,982	4,992,970	1,006,090	2,417,730	12,799,367

MATERIALS & SUPPLIES								
504-0-01	Fuel & Lube	-	-	11,000	2,000,000	100,000	-	2,111,000
504-0-03	Fuel - CNG	-	-	-	-	350,000	-	350,000
504-0-08	CNG Parts & Supplies	-	-	-	-	10,000	-	10,000
504-0-99	Other Materials/Supplies	-	-	100,000	38,000	49,000	5,000	192,000
	OTHER M & S ALLOC IN/(OUT)	401	-	106,171	56,379	23,362	26,029	-
	TOTAL MATERIALS & SUPPLIES	401	-	180,879	2,094,379	532,362	31,029	2,839,050
UTILITIES								
505-0-02	Electricity & Natural Gas	-	-	-	250,000	-	-	250,000
505-0-03	Fuel - Electric	-	-	-	250,000	-	-	250,000
505-0-04	Water & Sewer	-	-	-	-	60,000	-	60,000
505-0-05	Garbage	-	-	-	90,000	-	-	90,000
	UTILITIES ALLOCATIONS IN/(OUT)	225	-	59,722	31,714	13,142	14,642	-
	TOTAL UTILITIES	225	-	39,308	621,714	73,142	14,642	749,030
INSURANCE COSTS								
506-0-01	Physical Damage Ins.	-	-	-	25,000	-	-	25,000
506-0-03	P.L. & P.D. Insurance	-	-	35,079	228,011	70,157	17,539	350,786
506-0-06	P.L. & P.D. Settlements	-	-	-	1,816	-	-	1,816
506-0-08	Other Insurance Costs	-	-	1,826	30,940	3,652	913	37,331
	TOTAL INSURANCE	-	-	36,905	285,767	73,809	18,452	414,933
MISCELLANEOUS EXPENSES								
507-0-04	Taxes & Licenses	-	-	6	18,514	5,161	-	23,681
509-0-01	Dues & Subscriptions	-	-	15,750	69,225	785	10,175	95,935
509-0-08	Miscellaneous Advertising	-	-	-	5,000	500	130,600	136,100
509-0-20	Training & Meetings	-	-	60,000	73,150	17,500	25,000	175,650
509-0-25	Postage & Express Mail	-	-	-	-	2,000	-	2,000
509-0-99	Other Misc. Expense	-	-	102,500	75,206	748	1,000	179,454
511-0-02	Interest Exp. - Retention	200,000	-	-	-	-	-	200,000
512-0-06	Leases/Rentals - Capital	-	-	103,068	29,500	-	45,828	178,396
	MISC EXP ALLOCATIONS IN/(OUT)	1,213	-	321,418	170,680	70,726	78,799	-
	TOTAL MISCELLANEOUS EXPENSES	201,213	-	492,874	441,275	97,420	291,402	1,524,184
PURCHASED TRANSP'N SERVICES								
520-0-00	RIDE Purch Trans Svc	-	-	-	27,402,332	-	-	27,402,332
520-0-01	ACCESS Purch Trans Svc	-	-	-	-	5,693,275	-	5,693,275
520-0-03	Gerlach Purch Trans Svc	-	-	-	-	7,500	-	7,500
520-0-04	Pyramid Purch Trans Svc	-	-	-	-	20,000	-	20,000
520-0-05	Incline Purch Trans Svc	-	-	-	-	17,000	-	17,000
520-0-08	Washoe Sr Purch Trans Svc	-	-	-	-	590,039	-	590,039
520-0-10	TART Purch Trans Service	-	-	-	-	275,000	-	275,000
520-0-14	Van Pool Purch Trans Svc	-	-	-	1,752,000	-	-	1,752,000
520-0-15	Microtransit Flex Service	-	-	-	-	2,508,064	-	2,508,064
	TOTAL PURCHASED TRANSPORTATION	-	-	-	29,154,332	9,110,877	-	38,265,209
510-0-03	Pass Thru Grant Fund Exp	-	-	-	-	679,273	-	679,273
	TOTAL PASS THRU GRANT	-	-	-	-	679,273	-	679,273

OPERATING BUDGET BEFORE DEPRECIATION:		262,509	15	10,023,398	41,896,265	13,215,274	4,598,443	69,995,904
525-0-09	Principal - SER2018	-	6,565,000	-	-	-	-	6,565,000
525-0-10	Principal-SER2019	-	2,150,000	-	-	-	-	2,150,000
530-0-06	Interest-Bond SER2010DEF	-	5,107,849	-	-	-	-	5,107,849
530-0-07	Interest-Bond SER2010H	-	1,490,200	-	-	-	-	1,490,200
530-0-09	Interest-Bond SER2018	-	7,516,450	-	-	-	-	7,516,450
530-0-10	Interest-Bond SER2019	-	2,319,450	-	-	-	-	2,319,450
530-1-06	BAB Credits-SER2010EF	-	1,725,835	-	-	-	-	1,725,835
530-1-07	BAB Credits-SER2010H	-	491,841	-	-	-	-	491,841
540-0-01	Fiscal Agent Fees	-	31,045	-	-	-	-	31,045
TOTAL DEBT SERVICES		-	22,962,318	-	-	-	-	22,962,318
513-0-01	Depreciation	-	-	-	9,500,000	-	-	9,500,000
TOTAL OPERATING BUDGET		262,509	22,962,333	10,023,398	51,396,265	13,215,274	4,598,443	102,458,222
CAPITAL PROJECTS								
GOVERNMENT FUND CAPITAL								
600-0-80	Building Improv - Sutro	-	-	-	-	120,000	-	120,000
600-0-10	Revenue Vehicles	-	-	-	-	3,407,500	-	3,407,500
600-0-36	Other Fixtures & Equip.	-	-	-	-	750,000	-	750,000
600-0-38	Shop Equipment	-	-	-	-	200,000	-	200,000
TOTAL GOVMT. FUND CAPITAL		-	-	-	-	4,477,500	-	4,477,500
STREET & HIGHWAY PROJECTS								
700-9-90	Fuel Tax Proj Bud-Preserv	-	-	74,179,421	-	-	-	74,179,421
700-9-91	Fuel Tax Proj Bud-Capacit	-	-	72,444,142	-	-	-	72,444,142
700-9-95	RRIF Direct Budget-Multi	8,073,333	-	-	-	-	-	8,073,333
700-9-99	RRIF Credit Budget-Multi	6,250,000	-	-	-	-	-	6,250,000
TOTAL STREET & HIGHWAY		14,323,333	-	146,623,563	-	-	-	160,946,897
CAPTIAL BUDGET BEFORE ENTERPRISE FUND CAPITAL		14,323,333	-	146,623,563	-	4,477,500	-	165,424,397
ENTERPRISE FUND CAPITAL								
105-2-02	Undesignated	-	-	-	172,000	-	-	172,000
105-2-25	Hydrogen Fuel Cell Proj.	-	-	-	4,910,000	-	-	4,910,000
111-1-10	Coaches	-	-	-	4,370,176	-	-	4,370,176
111-1-12	Support Vehicles	-	-	-	75,000	-	-	75,000
111-1-18	Safety & Security Equip.	-	-	-	75,000	-	-	75,000
111-1-20	Passenger Amenities	-	-	-	175,000	-	-	175,000
111-1-21	Passenger Shelters	-	-	-	7,388,133	-	-	7,388,133
111-1-31	Computer Hardware	-	-	-	2,312,722	-	-	2,312,722
111-1-36	Other Fixtures & Equip.	-	-	-	595,000	-	-	595,000
111-1-38	Shop Equipment	-	-	-	-	50,000	-	50,000
111-1-81	Bldg Improv - Villanova	-	-	-	4,270,000	-	-	4,270,000
111-1-82	Bldg Improv - Terminal	-	-	-	100,000	-	-	100,000
111-1-83	Bldg Improv - Centennial	-	-	-	215,000	-	-	215,000
111-1-84	Bldg Improv - 4SS	-	-	-	860,000	-	-	860,000
TOTAL ENTERPRISE FUND CAPITAL		-	-	-	25,518,031	50,000	-	25,568,031
TOTAL CAPITAL BUDGET		14,323,333	-	146,623,563	25,518,031	4,527,500	-	190,992,428
TOTAL FY 2025 BUDGET		14,585,842	22,962,333	156,646,961	76,914,296	17,742,774	4,598,443	293,450,650

**REGIONAL TRANSPORTATION COMMISSION
STREET & HIGHWAY PROGRAM PROJECTS
FY 2025 BUDGET**

	TOTAL FY 2025 BUDGET
PROJECT NAME	
PAVEMENT PRESERVATION PROGRAM	
Total Pavement Preservation Projects	31,718,733
MULTIMODAL	
Moya Blvd Widening	500,000
Vista Blvd Widening	500,000
0713001-West Fourth Street Safety (Keystone Ave to McCarran Blvd)	8,000,000
0211006-West Fourth Street Downtown (Evans Ave to Keystone Ave)	8,013,964
0512013-Oddie / Wells Corridor Multi-Modal Improvements	2,000,000
0211007-Mill Street Capacity & Safety	8,000,000
0211005-Center Street Multi-Modal Improvements (Moran Street to 9th Street)	-
0221002-Sun Valley Boulevard Corridor Improvements - Phase 2	1,200,000
0311002-Truckee River Shared Use Path (E 2nd St to Giroux St)	489,826
0245007-SS4A Preliminary Engineering	-
0211009-Downtown Reno Micromobility Project	500,000
0712001-Sixth Street - Safety for All	1,631,319
0611001-Peppermill BRT (2890 S Virginia St and 2930 S Virginia St)	-
0611003-Virginia Line BRT Improvements	5,000,000
0711001-Sierra Street Bridge Replacement	1,594,378
0212061.01-Arlington Avenue Bridges NEPA/Design/EDC	10,031,201
Total Multimodal Projects	42,460,688
CAPACITY	
0215007-Buck Drive Circulation	1,500,000
0217002-S Virginia Street & I580 Exit 29 Capacity & Safety	6,495,064
0520062.01-Pyramid Improvement Phase 1 (Queen Wy to Golden View Dr)	7,050,000
0744001-Geiger Grade Road Realignment	500,000
0237002-Pyramid Highway Operations Improvements	2,000,000
0217001-Lemmon Drive Segment 2 Traffic Improvements and Resiliency	3,500,000
0245008-McCarran Boulevard Safety and Operational Improvements	300,000
0217010-North Valleys North Virginia Street Capacity (Panther Dr to Stead Blvd)	1,409,982
0235001-Butch Cassidy Drive Extension	1,650,000
0711002-Keystone Avenue Bridge Replacement	3,785,848
0211008-US 395 and Virginia Street North Valleys	200,000
0227001.01-Sparks Boulevard Capacity Improvement (Greg St to I-80 WB Ramps) Early Action Cons	-
0245009-McCarran/Leadership/Keystone Signal	784,000
Mt. Rose Highway Operational Improvements	1,000,000
0217005-Pembroke Drive Capacity & Safety	3,522,911
0247006-Lemmon Drive (US 395 to Military Rd)	-
0227001-Sparks Boulevard Capacity Improvement (Greg St to Baring Blvd)	17,471,069
0227002-Pyramid Way, Sparks Boulevard, Highland Ranch Intersection	2,500,000
Pyramid Highway SB Lane	500,000
Total Capacity	54,168,874
TRAFFIC ENGINEERING	
0217006-Veterans Roundabout Modifications	3,989,799

**REGIONAL TRANSPORTATION COMMISSION
STREET & HIGHWAY PROGRAM PROJECTS
FY 2025 BUDGET**

	TOTAL FY 2025 BUDGET
PROJECT NAME	
0217007-Veterans Parkway ITS	1,790,010
0227005-Vista Boulevard/Prater Way ITS	706,130
0245010-Traffic Signal Modifications 25-01	1,729,420
0247012-Traffic Signal Modifications 24-01	1,190,975
0245006-Traffic Signal Installations 23-01	842,405
0247013-Vista Boulevard/Disc Drive Intersection Improvement	622,487
0215006-Golden Valley Road/Beckwourth Drive Traffic Signal	-
0215006.01-Traffic Signal Installations 22-01 (Mill at Telegraph & S Meadows	-
0217003-South Meadows Traffic Enhancements	-
0217008-Kietzke Lane ITS	100,000
0235002-Eagle Canyon Safety and Operations	1,142,683
0247014-Traffic Signal Fiber 25-01	3,475,357
0217009-University Way One-Way Traffic Study	-
0218001-LiDAR Living Lab and Implementation	-
0227003-N McCarran Boulevard & Pyramid Hwy Fiber	-
0227004-Sparks Intelligent Corridors	-
0247009-ITS Traffic Management 4	-
0247010-Traffic Signal Modifications 22-01	-
0247011-Traffic Signal Modifications 23-01	1,686,002
TE/ITS FY25 Design	1,000,000
Variance	
Total Traffic Engineering	18,275,268
Total S&H Construction Projects	146,623,563
<u>RRIF FUUNDED PROJECTS</u>	
0512017-Sky Vista Pkwy Widening and Rehabilitation (Lemmon Dr to Silver Lake Rd)	
0512019-Military Road Capacity & Safety	2,500,000
0532015-4th Street and Woodland Avenue Roundabout	
0531014-Steamboat Parkway Improvement (Damonte Ranch Pkwy to Veterans	5,573,333
Variance	
700-9-95 Total RRIF Funded Projects	\$ 8,073,333
Total S&H & RRIF Funded Projects	\$ 154,696,897
<u>RRIF WAIVER PROJECTS</u>	
<u>North</u>	
Pyramid/Stonebrook Pkwy. Intersection Improvements	300,000
N. Virginia Street Widening	450,000
Parr/Dandini/US 395 Signalization	1,500,000
Lemmon Drive/Vista Knolls Pkwy Intersection	500,000
Future Projects	500,000
<u>South</u>	
Daybreak Improvements	1,500,000
Future Projects	1,500,000
700-9-99 Total RRIF Waivers	\$ 6,250,000

REGIONAL TRANSPORTATION COMMISSION

STREET & HIGHWAY PROGRAM PROJECTS

FY 2025 BUDGET

	PROJECT NAME	TOTAL FY 2025 BUDGET
700-9-90	Capacity	72,444,141.96
700-9-91	Preservation/Multimodal	74,179,421.49



REGIONAL TRANSPORTATION COMMISSION

Metropolitan Planning • Public Transportation & Operations • Engineering & Construction

Metropolitan Planning Organization of Washoe County, Nevada

Meeting Date: 4/19/2024

Agenda Item: 6.1.

To: Regional Transportation Commission

From: Bill Thomas, Executive Director

SUBJECT: Executive Director Report

RECOMMENDED ACTION

Monthly verbal update/messages from RTC Executive Director Bill Thomas - No action taken.

FISCAL IMPACT

There is no fiscal impact related to this action.

PREVIOUS BOARD ACTION

There has been no previous Board action taken.



REGIONAL TRANSPORTATION COMMISSION

Metropolitan Planning • Public Transportation & Operations • Engineering & Construction

Metropolitan Planning Organization of Washoe County, Nevada

Meeting Date: 4/19/2024

Agenda Item: 6.2.

To: Regional Transportation Commission

From: Paul Nelson, Government Affairs Officer

SUBJECT: Federal Report Discussion

RECOMMENDED ACTION

Monthly verbal update/messages from Paul Nelson, RTC Government Affairs Officer on federal matters related to the RTC - No action will be taken.

FISCAL IMPACT

There is no fiscal impact related to this action.

PREVIOUS BOARD ACTION

There has been no previous Board action taken.



REGIONAL TRANSPORTATION COMMISSION

Metropolitan Planning • Public Transportation & Operations • Engineering & Construction

Metropolitan Planning Organization of Washoe County, Nevada

Meeting Date: 4/19/2024

Agenda Item: 6.3.

To: Regional Transportation Commission

From: Tracy Larkin Thomason, NDOT Director

SUBJECT: NDOT Report

RECOMMENDED ACTION

Monthly verbal update/messages from NDOT Director Tracy Larkin Thomason or designated NDOT Deputy Director - No action will be taken.

FISCAL IMPACT

There is no fiscal impact related to this action.

PREVIOUS BOARD ACTION

There has been no previous Board action taken.
