



Nevada's Critical Urban and Rural Freight Corridors

APRIL 11, 2023
NDOT AGREEMENT:
P128-21-802



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1. Statutory Requirements

The National Highway Freight Program (NHFP) under the Infrastructure Investment and Jobs Act (IIJA) – also known as the “Bipartisan Infrastructure Law” or BIL (§ 11114(2); 23 U.S.C. 167(f)(4)¹) – is focused on improving the condition and performance of the National Highway Freight Network (NHFN). An important component of the Nevada Freight Plan and precursor to aligning prioritized projects with available funding sources from the NHFP is defining NHFN in Nevada. The NHFN includes Primary Highway Freight System (PHFS), other Interstate portions not on the PHFS, Critical Urban Freight Corridors (CUFC), and Critical Rural Freight Corridors (CRFC).

The BIL determines the state’s mileage allocation of CRFCs and CUFCs based on factors such as the state’s population density and shares of PHFS mileage. State transportation agencies – in coordination with the Metropolitan Planning Organizations – are responsible for defining the CRFCs and CUFCs, based on a statewide mileage cap.

1.1 Requirements for Critical Rural Freight Corridors

Prior to the passage of the BIL, states were limited to the greater of 150 miles of highway or 20% of the PHFS. For Nevada, this resulted in 150 miles of rural corridors that could be identified and added to comprise the NHFN. The BIL amended 23 USC 167 to include an increase in the number of miles allocated to rural states (states with a population per square mile that is less than the national average).

Specifically, rural states were allocated the greater of 600 miles or 25% of the PHFS. As a result, Nevada Department of Transportation (NDOT) can designate up to 600 miles of CRFCs. The designation of a roadway as a CRFC and therefore its inclusion in the NHFN establishes the roadway’s eligibility for NHFP funding.

Title 23 USC 167 states that a CRFC must be a public road that is not located in an urban area and meets at least one of the following criteria:

- A rural principal arterial with 25% trucks measured by passenger car equivalent units.
- Providing access to areas with energy exploration, development, or production.
- Provides a connection between the PHFS or Interstate System and a facility that handles 50,000 20-foot equivalent units or 500,000 tons of bulk commodities per year.
- Provides access to a grain elevator or an agricultural, mining, forestry, or intermodal facility.
- Provides a connection to an International Port of Entry.
- Provides access to a significant freight facility, such as air, rail, or water.
- Is determined by that state to be vital to improving the efficient movement of economically important freight.

¹ <https://www.fhwa.dot.gov/bipartisan-infrastructure-law/nhfp.cfm>

1.2 Requirements for Critical Urban Freight Corridors

According to the BIL, a state may designate CUFC the greater of: 150 miles or 10% of the State's Primary Highway Freight System mileage. Nevada may designate a total of 150 miles of CUFC. Title 23 USC 167 states that a CUFC must be a public road that is in an urban area and meets at least one of the following criteria:

- The corridor connects an intermodal facility to the PHFS, the Interstate System, or an intermodal freight facility;
- The corridor is located within a corridor of a route on the PHFS and provides an alternative highway option important to goods movement;
- The corridor serves a major freight generator, logistic center, or manufacturing and warehouse industrial land; or,
- The corridor is important to the movement of freight within the region, as determined by the Metropolitan Planning Organization (MPO) or the State.

2. Nevada Designated Critical Freight Corridors

Table 1 and Table 2 include Nevada's CRFC and CUFC designations, respectively. The approach for designation of these corridors and the supporting data will be provided in the following sections of this document.

Table 1 – Nevada Designated Critical Rural Freight Corridors (CRFCs)

No.	County/Counties	Corridor	From	To	Mileage	CRFC ID
1	Clark, Nye, Esmeralda	US 95	Kyle Canyon Rd (SR 157)	US 95 PM 42 in Esmeralda County (near Tonopah)	189.7	G
2	Esmeralda, Mineral, Churchill	US 95	US 6 (at Coaldale)	US 50	135.4	G
3	Humboldt	US 95	I-80	SR 140	31.3	D
4	Elko	US 93	I-80	ID/NV border line	67.9	G
5	White Pine	US 93	US 50	US 93 Alt	59.5	D
6	Churchill	US 50	US 95 (S Maine Street in Fallon)	US 50 (Leetville Junction)	9.3	B
7	Lyon, Churchill	US 50A	US 50 (Leetville Junction)	I-80	20.3	B
8	Lyon	US 50	SR 439 (USA Parkway)	SR 341	24.8	B
9	Douglas, Carson City	US 395	US 50/US 395 intersection south of Carson City	CA/NV border	34.3	B

No.	County/COUNTIES	Corridor	From	To	Mileage	CRFC ID
10	Storey, Lyon	SR 439 (USA Parkway)	I-80	US 50	19	B
11	Elko	SR 225 (Elko)	Jennings Way	SR 535	1.6	F
12	Elko	SR 535 (Elko)	SR 225	5th Street	0.8	F
13	Elko	Idaho Street (Elko)	SR 535 and 5th Street	Old Highway 40 East	6.1	F

Nevada's Total CRFC Mileage: 600 Miles

Table 2 – Nevada Designated Critical Urban Freight Corridors (CUFCs)

No.	County	Metropolitan Planning Organization	Corridor	From	To	Mileage	CUFC ID
1	Clark	RTCSNV	Frontage Road 07/ Highway 91	US 93	I-15	6.1	I
2	Clark	RTCSNV	Las Vegas Boulevard North	Cheyenne Avenue	I-15	10.3	I
3	Clark	RTCSNV	Range Road	CC 215	Las Vegas Boulevard	2.4	J
4	Clark	RTCSNV	Tropical Parkway	Range Road	Lamb Boulevard	1	J
5	Clark	RTCSNV	Donovan Way	Tropical Parkway	Southern terminus	3.1	J
6	Clark	RTCSNV	Hollywood Boulevard	Speedway Parkway	Las Vegas Boulevard	1.6	J
7	Clark	RTCSNV	Lamb Boulevard	Tropical Parkway	Lake Mead Boulevard	5.2	J
8	Clark	RTCSNV	Losee Road	Washburn Road	Lake Mead Boulevard	4.4	J
9	Clark	RTCSNV	Nellis Boulevard	Craig Road	Lake Mead Boulevard	3.1	K
10	Clark	RTCSNV	Craig Road	North 5 th Street	Las Vegas Boulevard	4.6	J
11	Clark	RTCSNV	Cheyenne Avenue	MLK Boulevard	Nellis Boulevard	5.5	J
12	Clark	RTCSNV	Valley View Boulevard	I-215	Tropicana Avenue	2.4	I
13	Clark	RTCSNV	Sunset Road	Eastern Avenue	Rainbow Boulevard	7	J
14	Clark	RTCSNV	Eastern Avenue	Tropicana Avenue	Sunset Road	2	J

No.	County	Metropolitan Planning Organization	Corridor	From	To	Mileage	CUFC ID
15	Clark	RTCSNV	Tropicana Avenue	Decatur	Eastern Avenue	5	J
16	Clark	RTCSNV	Russell Road	Paradise	Eastern Avenue	1.6	H
17	Clark	RTCSNV	Blue Diamond Road	I-15	Rainbow Boulevard	3.8	J
18	Clark	RTCSNV	Koval Lane	Sands Avenue	Tropicana Ave	1.5	K
19	Clark	RTCSNV	Industrial/Sammy Davis Jr.	Charleston Boulevard	Frank Sinatra Drive	2.9	I
20	Clark	RTCSNV	Frank Sinatra Drive	Sammy Davis Jr	Russell Road	2.9	I
21	Clark	RTCSNV	Dean Martin Drive	Sammy Davis Jr	Blue Diamond Road	5.8	I
22	Clark	RTCSNV	St. Rose Parkway	I-215	I-15	6.2	K
23	Clark	RTCSNV	Raiders Way	St. Rose Parkway	Volunteer Boulevard	1.7	J
24	Clark	RTCSNV	Volunteer Boulevard	Raiders Way	Las Vegas Boulevard	1.9	J
25	Clark	RTCSNV	Lake Mead Parkway	I-11	Boulder Highway	1.7	K
26	Washoe	RTCWC	Red Rock Road	Osage Road	US 395	2.1	J
27	Washoe	RTCWC	Moya Boulevard	Echo Avenue	Red Rock Road	2.4	J
28	Washoe	RTCWC	Military Road	Echo Avenue	Lemmon Drive	2.5	J
29	Washoe	RTCWC	Lemmon Drive	Ramsey Way	US 395	5.8	J
30	Washoe	RTCWC	North Virginia Street	Stead Boulevard	Panther Drive	3.7	J
31	Washoe	RTCWC	US 395	Red Rock Road	I-80	10	K
32	Washoe	RTCWC	North McCarran Boulevard	US 395	I-80	4.5	I
33	Washoe	RTCWC	South McCarran Boulevard	I-80	Mill Street	1.5	J
34	Washoe	RTCWC	Pyramid Way	Ingenuity Avenue	I-80	10.6	J
35	Washoe	RTCWC	Terminal Way	Vassar Street	Greg Street	0.3	H
36	Washoe	RTCWC	Greg Street	Mill Street	Vista Boulevard	4.6	H
37	Washoe	RTCWC	Vista Boulevard	Greg Street	E. Prater Way	1.1	J
38	Washoe	RTCWC	Sparks Boulevard	I-80	E. Prater Way	1	J
39	Carson City, Lyon	CAMPO	US 50	SR 341	I-580	6.2	K

Nevada's Total CUFC Mileage: 150 Miles

RTCSNV = Regional Transportation Commission of Southern Nevada

RTCWC = Regional Transportation Commission of Washoe County

CAMPO = Carson Area Metropolitan Planning Organization

Table 3 includes the CRFC and CUFC IDs and corresponding route/facility descriptors used in Table 1 and Table 2.

Table 3 – Critical Rural Freight Corridor (CRFC) and Critical Urban Freight Corridor (CUFC) IDs and Facility/Route Descriptors

CRFC ID	Route/Facility Descriptor (Rural)
A	Rural principal arterial roadway with a minimum of 25% of the annual average daily traffic of the road measured in passenger vehicle equivalent units from trucks.
B	Provides access to energy exploration, development, installation, or production areas.
C	Connects the Primary Highway Freight System (PHFS) or the Interstate System to facilities that handle more than: <ul style="list-style-type: none"> • 50,000 20-foot equivalent units per year or • 500,000 tons per year of bulk commodities.
D	Provides access to a grain elevator, an agricultural facility, a mining facility, a forestry facility, or an intermodal facility.
E	Connects to an international port of entry.
F	Provides access to significant air, rail, water, or other freight facilities.
G	Corridor that is vital to improving the efficient movement of freight of importance to the economy of the state.
CUFC ID	Route/Facility Descriptor (Urban)
H	Connects an intermodal facility to the PHFS, the Interstate System, or an intermodal freight facility.
I	Located within a corridor of a route on the PHFS and provides an alternative highway option important to goods movement.
J	Serves a major freight generator, logistic center, or manufacturing and warehouse industrial land.
K	Corridor that is important to the movement of freight within the region, as determined by the Metropolitan Planning Organization or the state

In addition to the CRFCs and CUFCs, the NHFN in Nevada also includes the PHFS and other interstates not on the PHFS. Table 4 shows the current PHFS corridors in Nevada followed by Table 5 that shows the additional interstates that are not currently listed on the Nevada PHFS. NDOT is requesting that the 68.56 miles of existing interstates shown in Table 5 be considered for addition to the PHFS.

Table 4 – Current Primary Highway Freight System in Nevada

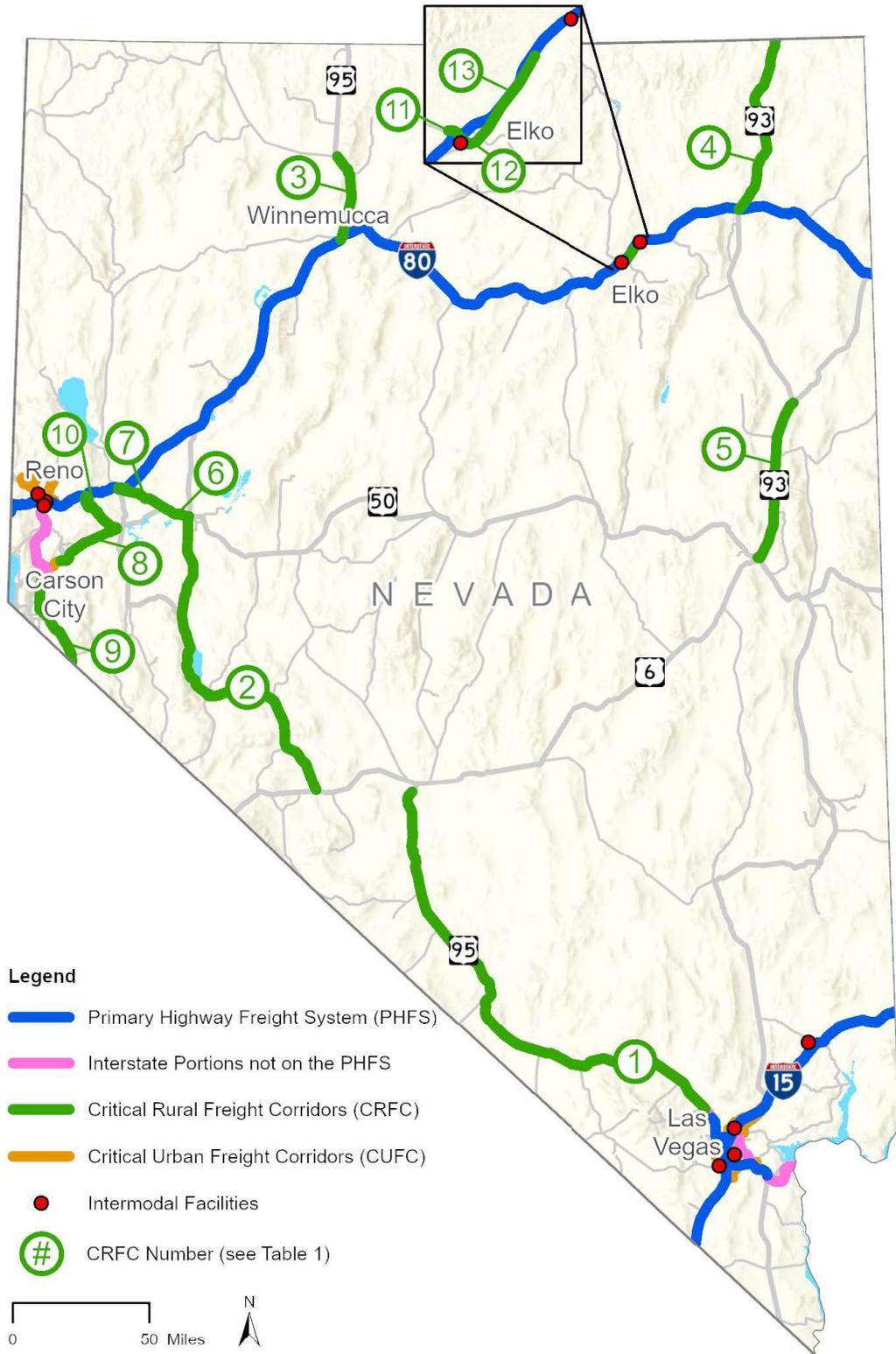
Corridor	From	To	Mileage
I-15	CA/NV border	NV/AZ border	123.75
I-80	CA/NV border	NV/UT border	410.52
I-11	Boulder City Parkway	I-11/I-215 interchange in Henderson	7.49
I-11	I-15	I-11/CC 215 interchange in Centennial Hills	12.44
I-215	I-15	I-11/I-215 interchange in Henderson	11.17
Nevada's Total Primary Highway Freight System:			565.37 Miles

Table 5 – Interstates not on the Primary Highway Freight System in Nevada

Corridor	From	To	Mileage
I-11	NV/AZ border line	Boulder City Parkway Pkwy	15.00
I-11	I-11/I-215 interchange in Henderson	I-15	14.44
I-11	I-11/Clark County 215 interchange in Centennial Hills	Kyle Canyon Road (SR 157)	4.10
I-580	I-80	US 50/US 395 intersection south of Carson City	35.02
Nevada's Total (other Interstates not on the Primary Highway Freight System):			68.56 Miles

Figure 1 to Figure 3 depict the NHFN in Nevada that includes CRFC and CUFC designations.

Figure 1 – Nevada’s Highway Freight Network: Statewide



Source: NDOT

Figure 2 – Nevada’s Highway Freight Network: Las Vegas Area

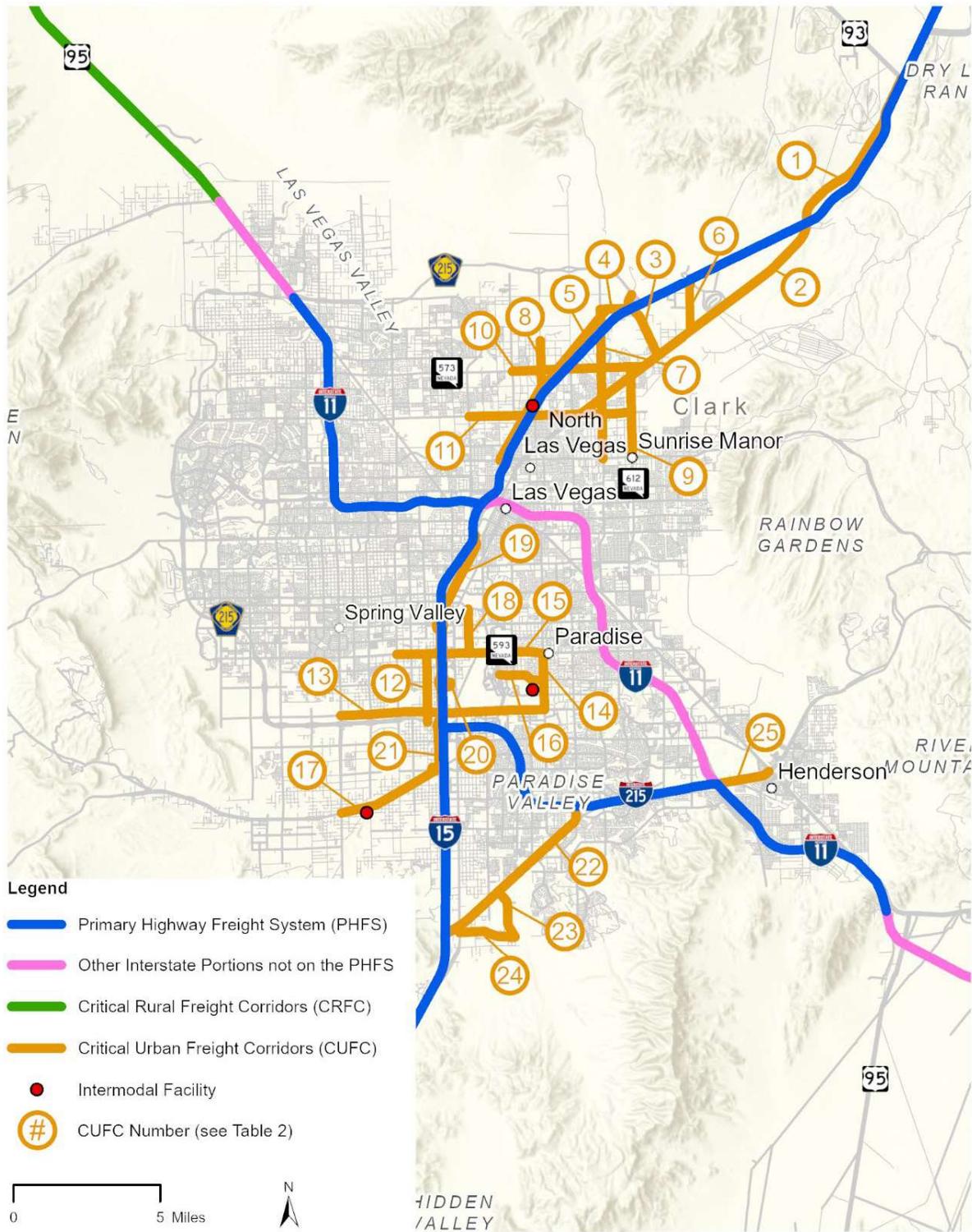
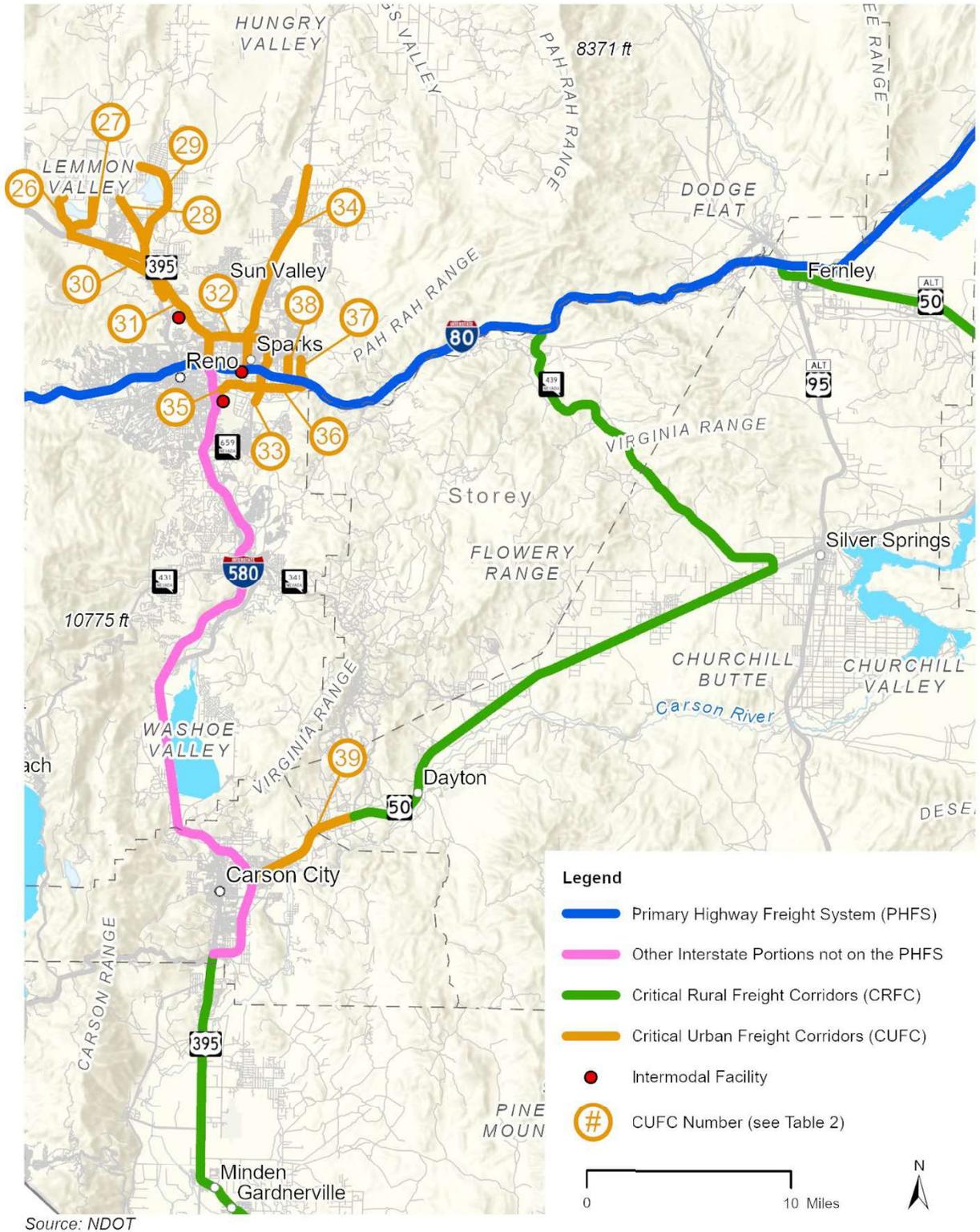


Figure 3 – Nevada’s Highway Freight Network: Northwestern Nevada Area



States may designate public roads as CRFCs that are within the state and not in the urbanized area as part of the NHFN. However, for Nevada, the mileage is limited to 600 miles. The limited mileage means that not all corridors that are important to freight will be included as a CRFC. It is important to keep in mind that although a roadway may have relatively high freight traffic versus other roadways in the area, roadways are being compared statewide. It may appear from the designation on the maps that a CRFC may abruptly end on a particular corridor. The CRFC designation may stop at a certain location to ensure the requirements listed in 23 U.S.C. 167 are met for CRFCs, making it eligible for the use of NHFP funding. While the lack of the CRFC designation does mean that NHFP funds cannot be used, it does not prohibit state funds or other federal funding sources to be utilized on those segments.

In urbanized areas, states coordinate with metropolitan planning organizations to designate public roads for CUFCs as part of the NHFN. Mileage for CUFCs in Nevada is limited to 150 miles. The limited mileage means that not all corridors that are important to freight will be included as a CUFC. It is important to keep in mind that although a roadway may have relatively high freight traffic versus other roadways in the area, roadways are being compared in urbanized areas statewide. It may appear from the designation on the maps that a CUFC may abruptly end on a particular corridor. The CUFC designation may stop at a certain location to ensure the requirements listed in 23 U.S.C. 167 are met for CUFCs, making it eligible for the use of NHFP funding. While the lack of the CUFC designation does mean that NHFP funds cannot be used, it does not prohibit state funds or other federal funding sources to be utilized on those segments.

The CUFCs and CRFCs are a federal designation and though they do not provide adequate mileage for freight network comprehensiveness, they are a subset of Nevada's overall NHFN. Some states have chosen to create a state-specific network to highlight freight routes that fall outside the CRFC/CUFC designation but better reflects the reliance of regional businesses on local freight corridors.

3. The Approach for Designation of Critical Freight Corridors

The development of the list of CUFCs and CRFCs in Nevada was accomplished using a multi-tiered data-driven approach. This involved the utilization of truck mobility data acquired from the American Transportation Research Institute (ATRI) as well as the Highway Performance Management System (HPMS) data. The purpose of these data sources was to pinpoint the most heavily utilized truck corridors in Nevada.

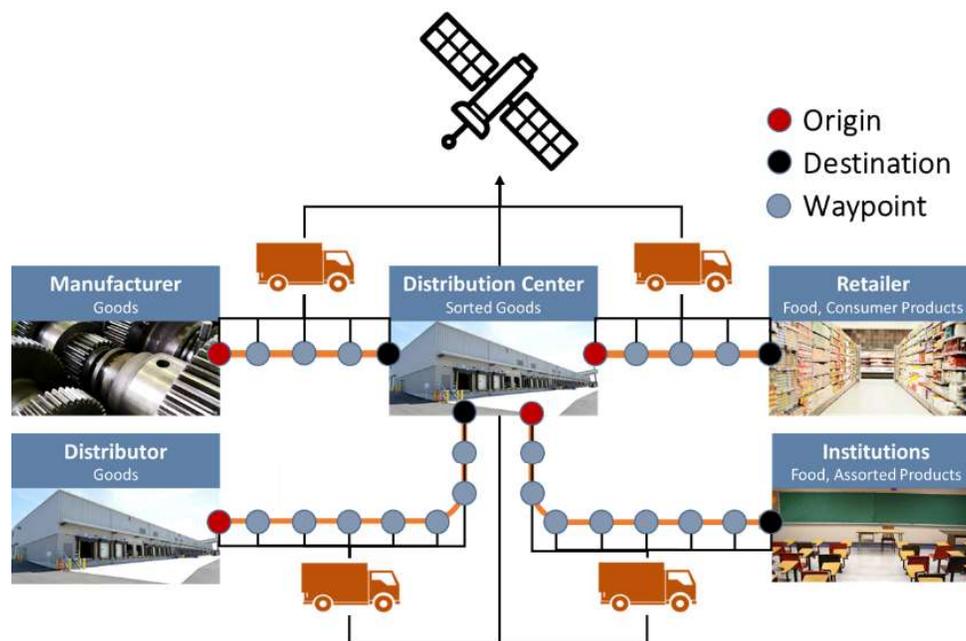
3.1 Data Sources

The following data sources were used to differentiate the roadways with concentrated truck traffic and thereby focus CRFC and CUFC designations on roadways that support the efficient movement of freight within the state.

3.1.1 Truck GPS Data

Truck GPS data was the main data source for identification of truck mobility patterns and designation of CRFCs and CUFCs in Nevada. The ATRI collaborates with the American Trucking Association (ATA) to gather billions of GPS data points per week from several hundred thousand of the total 2.8 million trucks registered in the US. The GPS data is collected from the communications and navigation equipment on-board commercial trucks. NDOT purchased a license to utilize truck GPS data from ATRI to support the development of Critical Urban and Rural Freight Corridors and to provide insights on truck parking needs in Nevada. As shown in Figure 4, GPS technology tracks vehicles between origins and destinations using a series of waypoints that are reported back to a centralized system and assembled into a single database for later analysis.

Figure 4 – Truck GPS Data Schematic



The truck GPS data NDOT purchased represents a sample of large truck fleets in Nevada covering the following time periods in 2021:

- Winter season: January 29 – February 12
- Spring Season: April 30 – May 14
- Summer Season: July 30 – August 14
- Fall Season: October 22 – November 5

Three different forms of the truck GPS data was utilized in the analyses for designation of CRFCs and CUFCs:

- **Density of Truck Stopping Locations:** To identify the most frequent origins and destinations of truck trips within Nevada, density of truck parking locations was analyzed

using a threshold for speeds (5 miles per hour) and where GPS waypoints are within 100 feet for over 45 minutes.

- **Density of Moving Truck Waypoints:** Density of truck moving locations were analyzed to identify the most utilized corridors by trucks. High densities of moving waypoints indicate lower speeds and higher number of trips along a corridor.
- **Routed Truck GPS Data:** The waypoints associated with each trip were then used to route the truck from origin to destination and the number of trucks using a segment was counted. This form of ATRI data was used for rural areas (in addition to density of waypoints) because low speeds in rural areas may not necessarily indicate congestion, e.g., roads with steep slopes.

3.1.2 HPMS Data

A combination of the most current version of the HPMS data (2020) and a year not affected by COVID-19, was used to both triangulate with the ATRI data and add medium-duty trucks into the analysis. ATRI GPS data are almost entirely from heavy-duty trucks. Therefore, single-unit and combination-unit trucks were added together and the roadway segments that had high truck counts were identified.

3.1.3 Other Data Sources

In addition to the ATRI and HPMS data, the project team used several other data sources to add additional context to the selection of CRFCs and CUFCs, and to validate the designations. These sources include the Freight Analysis Framework (FAF) version 5 network assignment, the FHWA's Freight Mobility Trends Tool, the NDOT's 2021 Vehicle Classification Distribution Report, and the FHWA's truck travel time reliability index.

3.2 Freight Advisory Committee and MPO Coordination

The designation of 150 miles of CUFCs and 600 miles of CRFCs was conducted in close collaboration with the Freight Advisory Committee (FAC) and the MPOs.

NDOT is committed to a robust outreach and engagement program for the development of the Nevada Freight Plan. The BIL, which became effective on November 15, 2021, expanded the list of representation for FACs and established qualifications for committee members. In response to these changes, NDOT added the Nevada Department of Conservation and Natural Resources to the FAC, which houses the Nevada Division of Environmental Protection and is responsible for stewardship of the natural resources and air quality. Nevada Operation Lifesaver, a community organization dedicated to transportation safety at railroad crossings, was also added to the FAC.

The FAC met on November 2, 2021; February 1, 2022; May 4, 2022; August 3, 2022; November 2, 2022; and February 1, 2023. NDOT shared the approach, data sources, and status of CRFC/CUFC designations with the FAC at all of these meetings to identify and evaluate any concerns, suggestions, and comments, and received feedback.

To inform the development of CUFCs, NDOT held a series of coordination meetings with the four major Nevada MPOs including the Regional Transportation Commission of Southern Nevada (RTC SNV), the Regional Transportation Commission of Washoe County (RTCWA), the Carson Area Metropolitan Planning Organization (CAMPO), and the Tahoe Regional Planning Agency (TRPA). The initial meetings were held to discuss the purpose of the freight plan, the existing freight network, and individual MPO needs. Follow-up meetings were held to share the results of the truck GPS data analysis for each MPO planning area, receive their initial list of proposed corridors and project priorities, and coordinated with each agency to make sure the statewide mileage limits for CUFCs and all other requirements are met.

These MPO coordination meetings were held on the following dates:

RTC of Southern Nevada

- July 25, 2022
- October 31, 2022
- Additional coordination and correspondence regarding the RTC's Freight Plan Update

RTC of Washoe County

- July 28, 2022
- October 17, 2022
- November 2, 2022, presentation to the Citizens Multimodal Advisory Committee
- November 3, 2022, presentation to the Technical Advisory Committee
- November 18, 2022, presentation at the RTC Board meeting

CAMPO

- August 28, 2022
- December 19, 2022

TRPA

- August 24, 2022
- Additional coordination and correspondence regarding freight data

3.3 Coordination with FHWA

Coordination meetings with NDOT and FHWA were held to ensure compliance with applicable freight plan requirements. Meetings with the Nevada Division of FHWA and NDOT were conducted on January 27, March 17, and June 30, 2022. Also, FHWA representatives are invited to the FAC. In addition, NDOT submitted comments on December 10, 2021, to the USDOT concerning the re-designation of the PHFS.

4. Nevada Truck Freight Clusters

The ATRI's truck GPS data was used to identify the most frequent parking locations of truck trips within Nevada. Table 6 shows the freight origin and destinations by county.

At the county level, approximately 82% of all truck trips identified in the truck GPS data occurred in Clark or Washoe Counties. Using the traffic analysis zone structure from the Nevada Statewide Travel Demand Model, a freight cluster analysis was conducted, and the top ten freight clusters in Nevada were identified. Eight of the top 10 freight clusters in Nevada based on truck trips per square mile are also primarily in Clark and Washoe Counties. The two locations not in these two counties are located along I-80 with one location in Elko and another location in Carlin. Figure 5 shows the location of these freight clusters in Nevada. Figure 6 to Figure 15 shows the geographic boundaries of each of these clusters in greater detail along with the densest locations of truck activity within each cluster. Additionally, each cluster map displays the number of truck trips associated with origins and destinations within the cluster that have been routed over the roadway network based on ATRI truck GPS data. The count of truck trips is based on the 8 weeks of truck GPS data that NDOT purchased for this project.

Table 6 – Freight Origins and Destinations by County

County	Percent of Total Truck Trip Origins and Destinations
Clark	62.3%
Washoe	19.6%
Storey	3.7%
Elko	2.9%
Humboldt	2.7%
Lyon	1.9%
Nye	1.5%
Eureka	1.1%
Churchill	0.9%
White Pine	0.7%
Carson City	0.6%
Lander	0.5%
Douglas	0.5%
Mineral	0.5%
Pershing	0.4%
Lincoln	0.2%
Esmeralda	0.1%
Total	100.0%

The insight from the truck cluster analysis was an important component of designation of CRFCs and CUFCs in Nevada. Several corridors within the top eight clusters (out of the ten clusters shown in Figure 5) were designated as either CRFC or CUFC, including:

- **Cluster 1 – Northeastern Las Vegas (Figure 6):** Frontage Road 07/Highway 91, Las Vegas Boulevard North, Range Road, Tropical Parkway, Donovan Way, Hollywood Boulevard, Lamb Boulevard, Losee Road, Nellis Boulevard, Craig Road, and Cheyenne Avenue (No.1 to No. 11 in Table 2)
- **Cluster 2 – Southern Las Vegas (Figure 7):** Valley View Blvd, Sunset Road, Eastern Avenue, Tropicana Avenue, Russell Road, Blue Diamond Road, Koval Lane, Industrial/Sammy Davis Jr, Frank Sinatra Drive, Dean Martin Drive (No. 12 to No. 21 in Table 2)
- **Cluster 3 – East of Reno (Figure 8):** USA Parkway (No. 8 in Table 1)
- **Cluster 4 – Reno (Figure 9):** North McCarran Boulevard, South McCarran Boulevard, Pyramid Way, Terminal Way, Greg Street, Vista Boulevard, Sparks Boulevard (No. 32 to No. 38 in Table 2)
- **Cluster 5 – Northwest Reno (Figure 10):** Red Rock Road, Moya Boulevard, Military Road, Lemmon Drive, North Virginia Street, US 395 (No. 26 to No. 31 in Table 2)
- **Cluster 6 – Carson City (Figure 11):** US 395 (No. 9 in Table 1) and US 50 (No. 39 in Table 2)
- **Cluster 7 – Elko (Figure 12):** SR 225, SR 535, and Idaho Street (No. 11 to No. 13 in Table 1)
- **Cluster 8 – Henderson (Figure 13):** Lake Mead Parkway (No. 39 in Table 2)

Figure 5 – Freight Clusters in Nevada

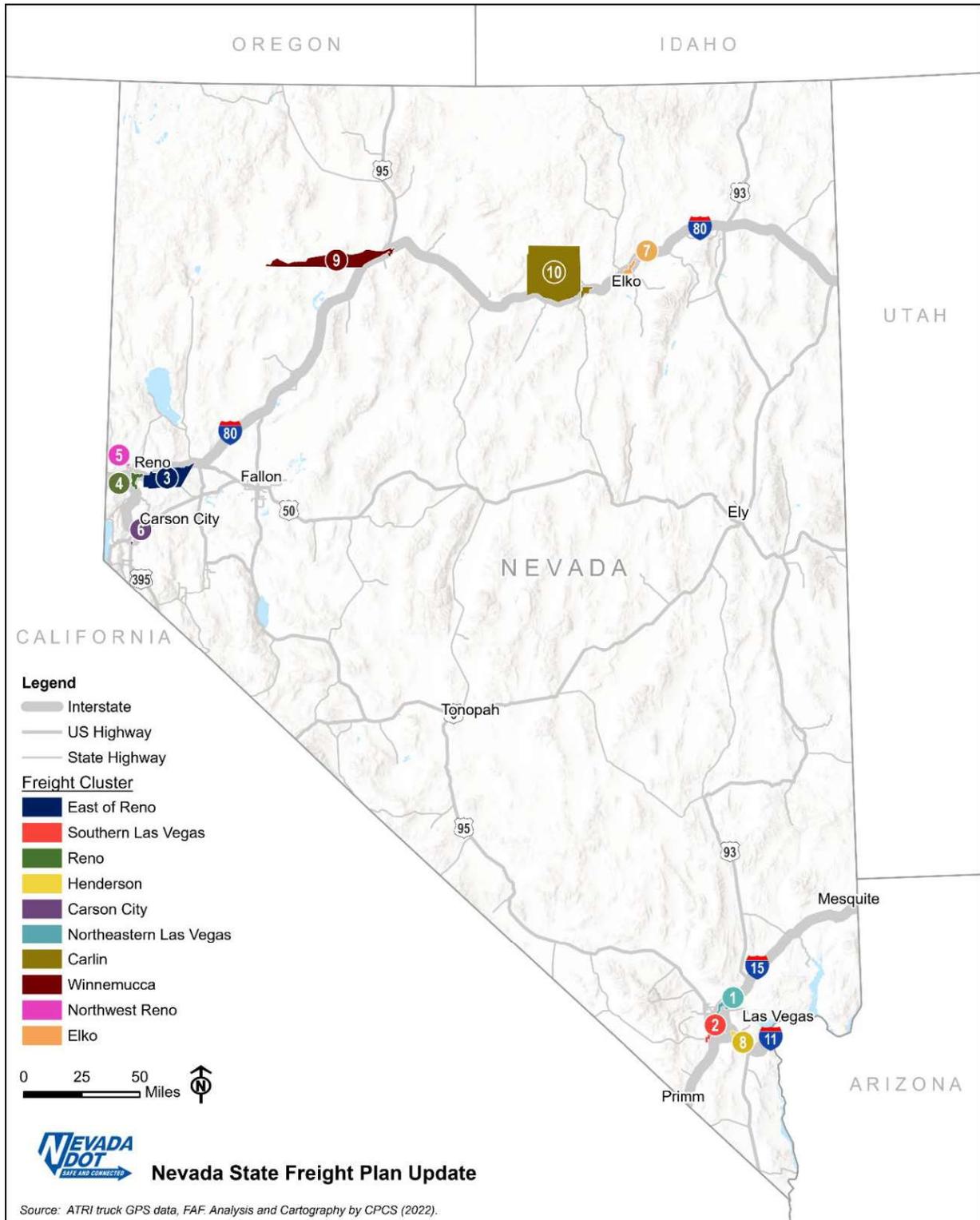


Figure 6 – Cluster 1 – Northeastern Las Vegas along I-15

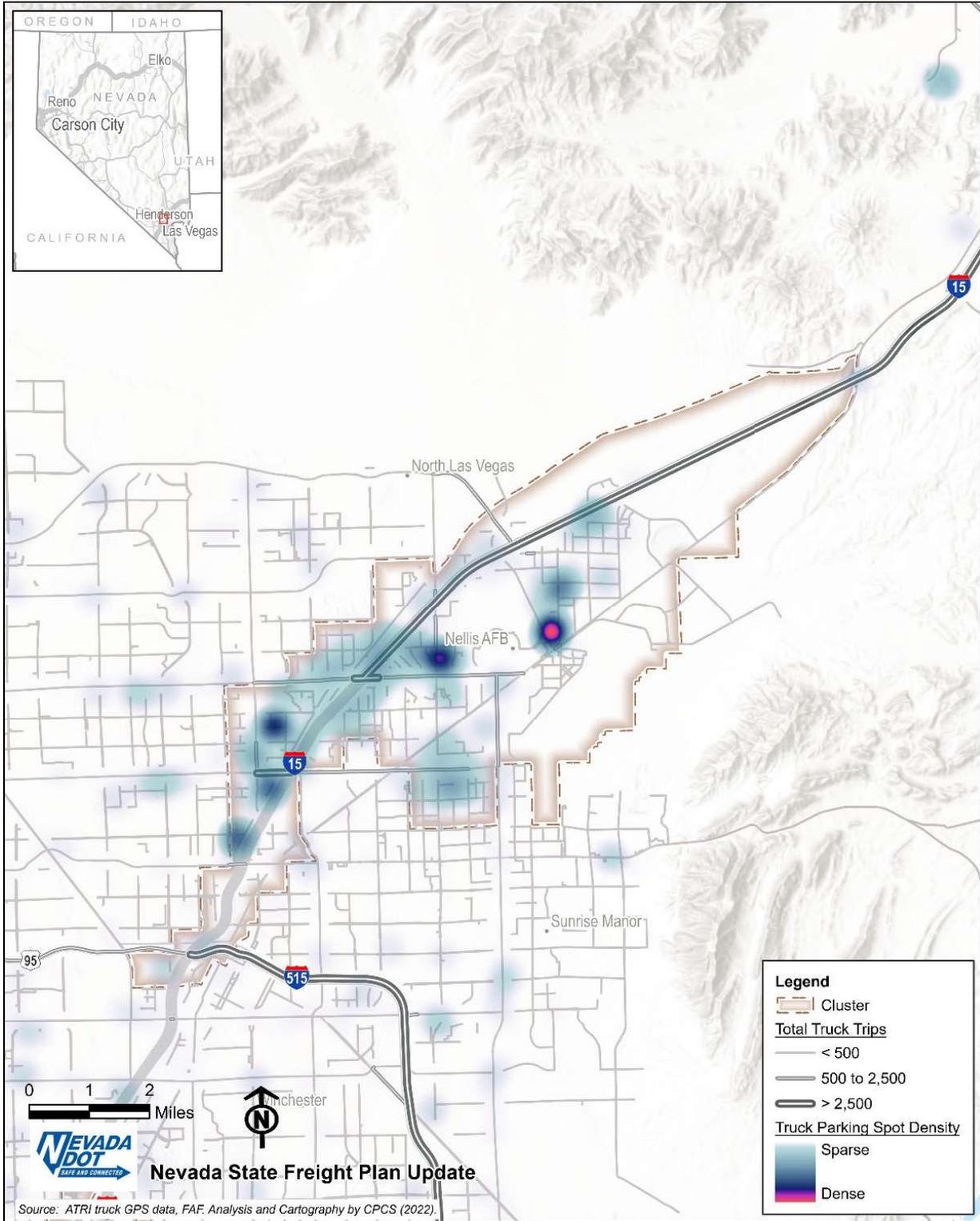


Figure 7 – Cluster 2 – Southern Las Vegas

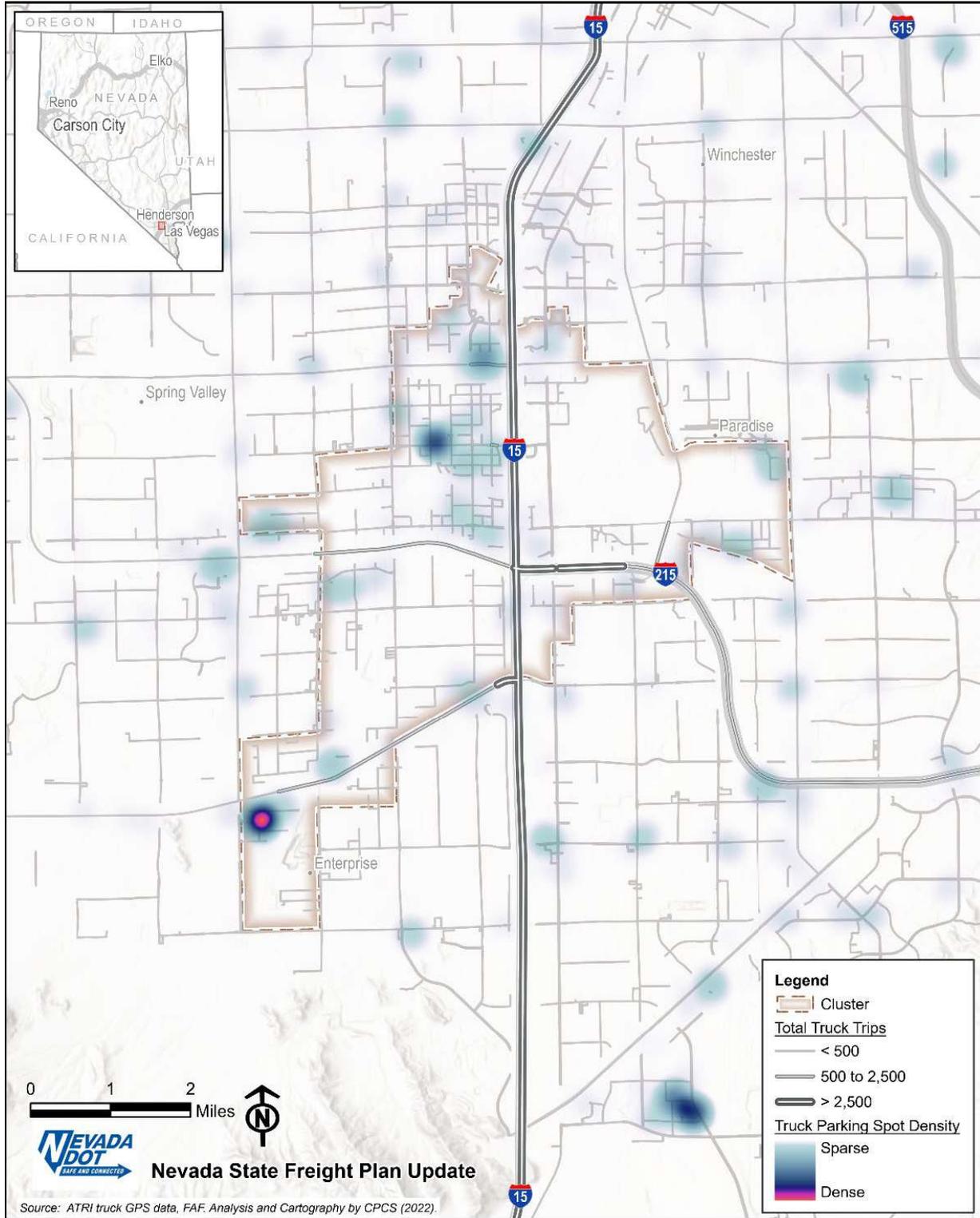


Figure 8 – Cluster 3 – East of Reno

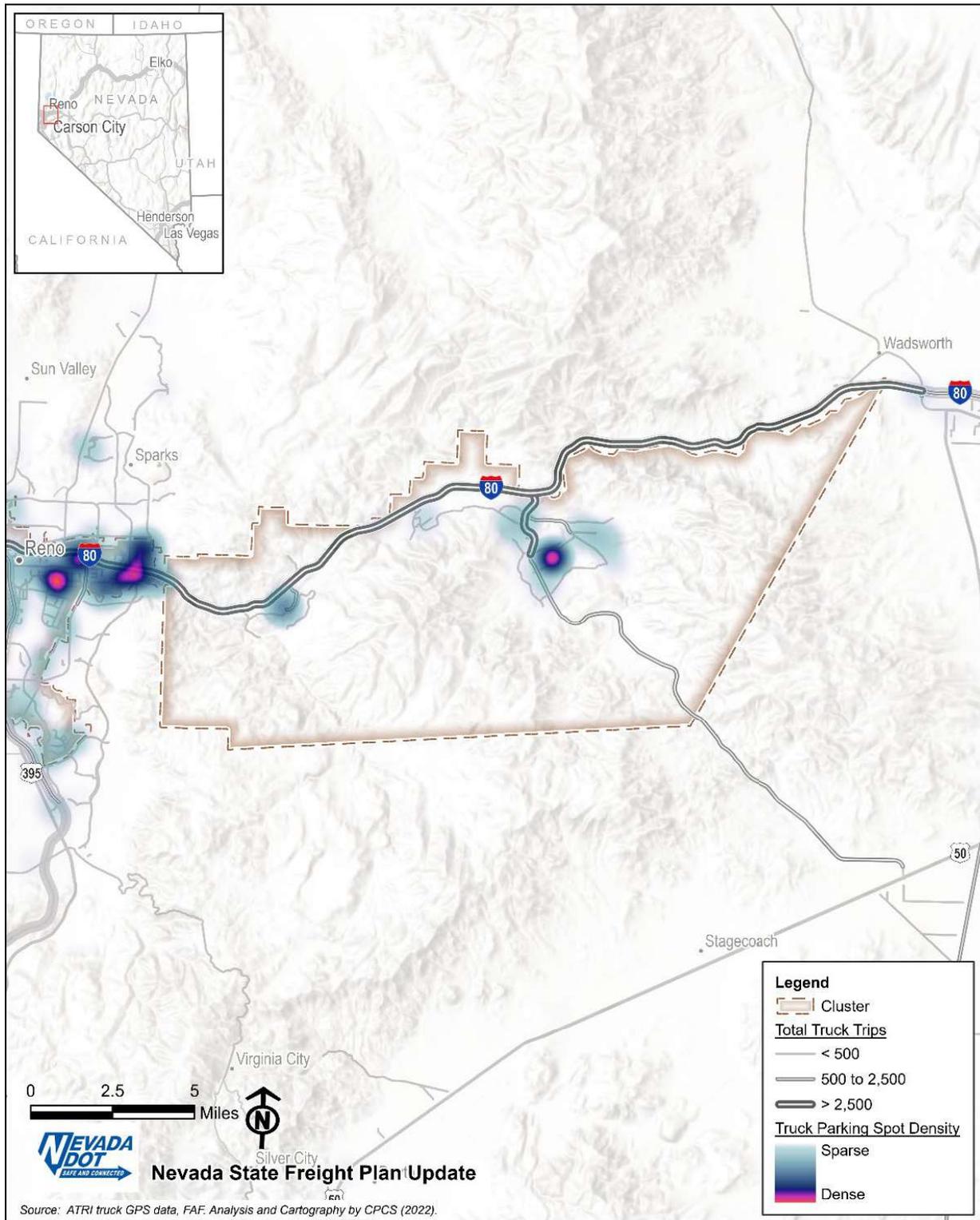


Figure 9 – Cluster 4 – Reno

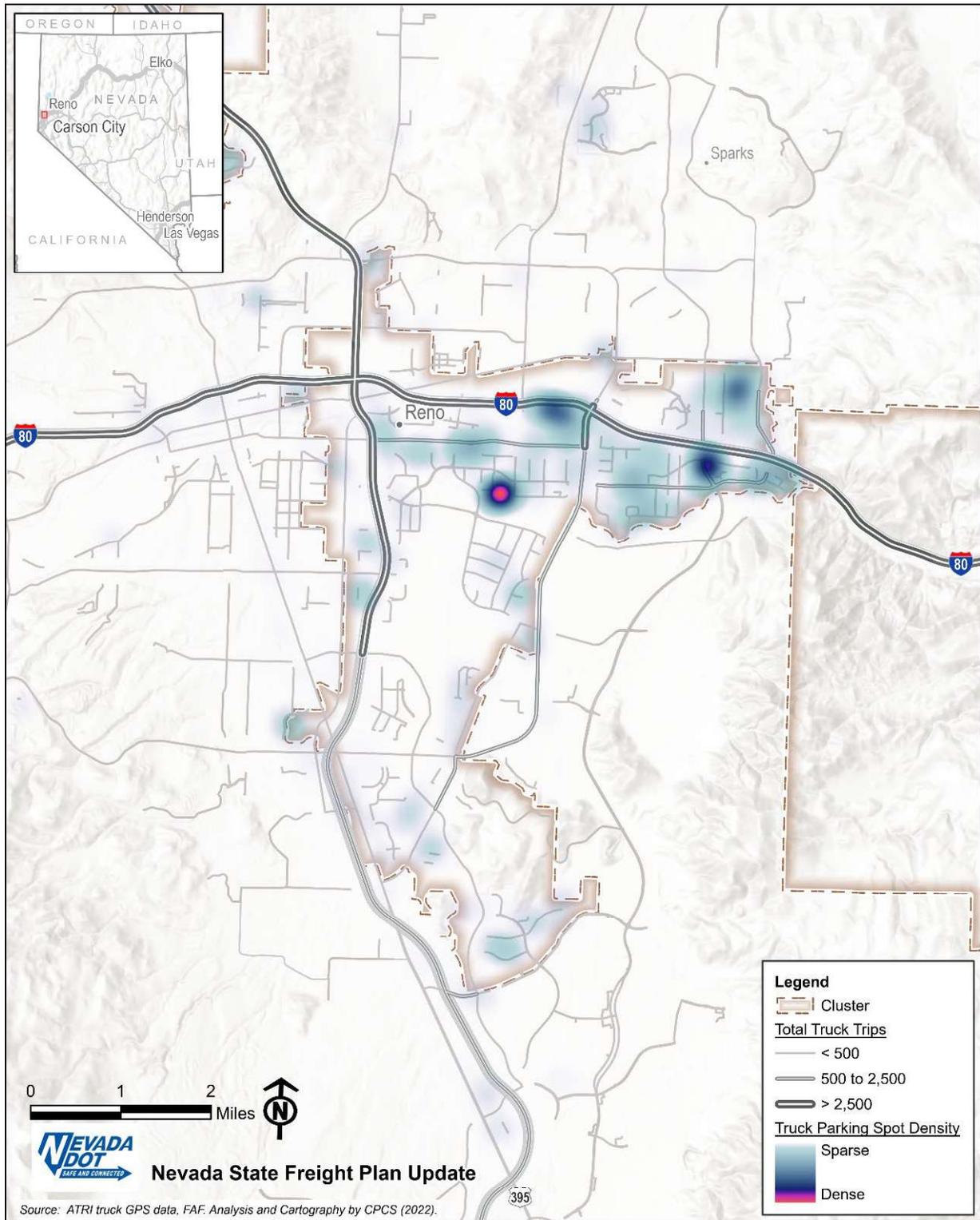


Figure 10 – Cluster 5 – Northwest Reno

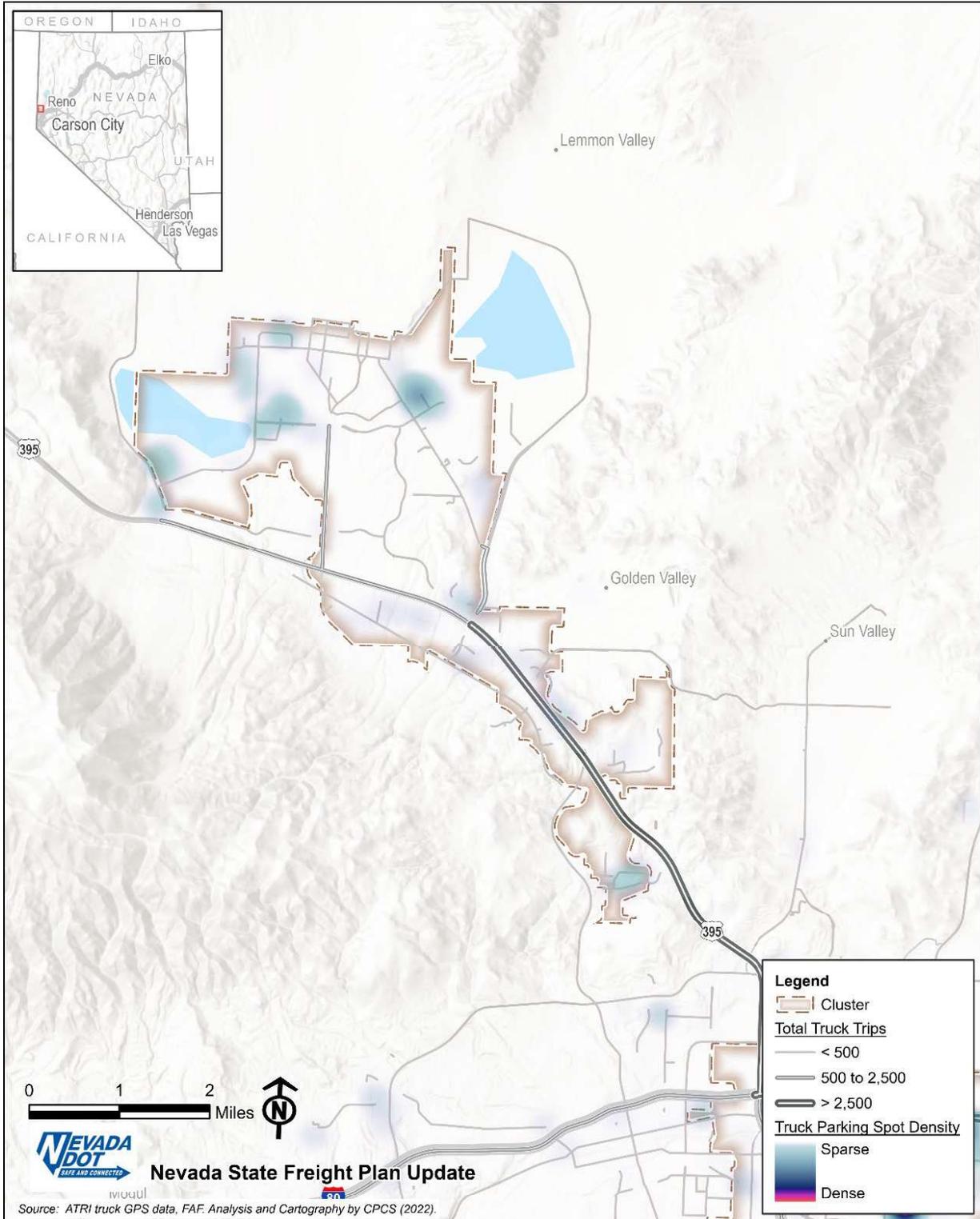


Figure 11 – Cluster 6 – Carson City

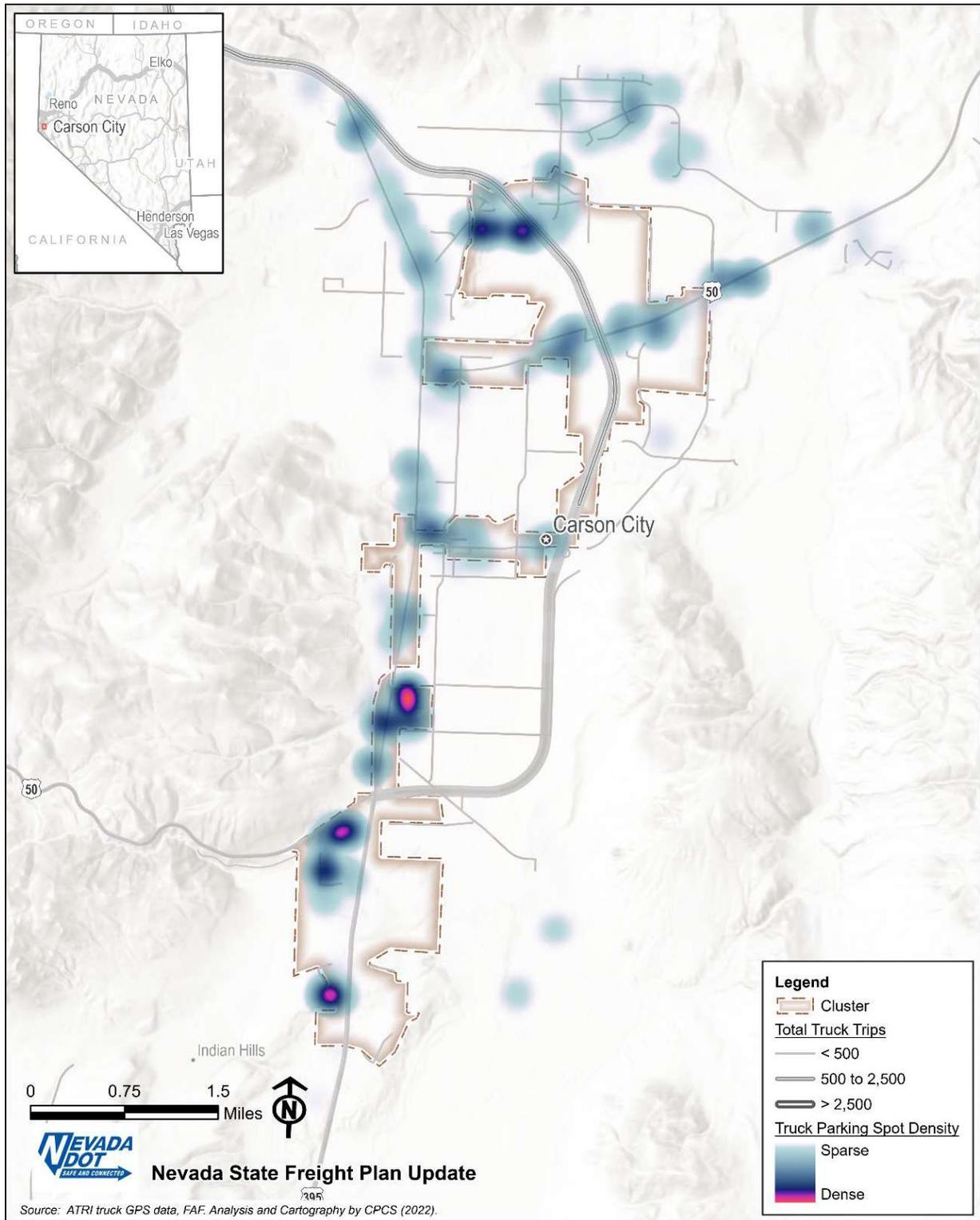


Figure 12 – Cluster 7 – Elko

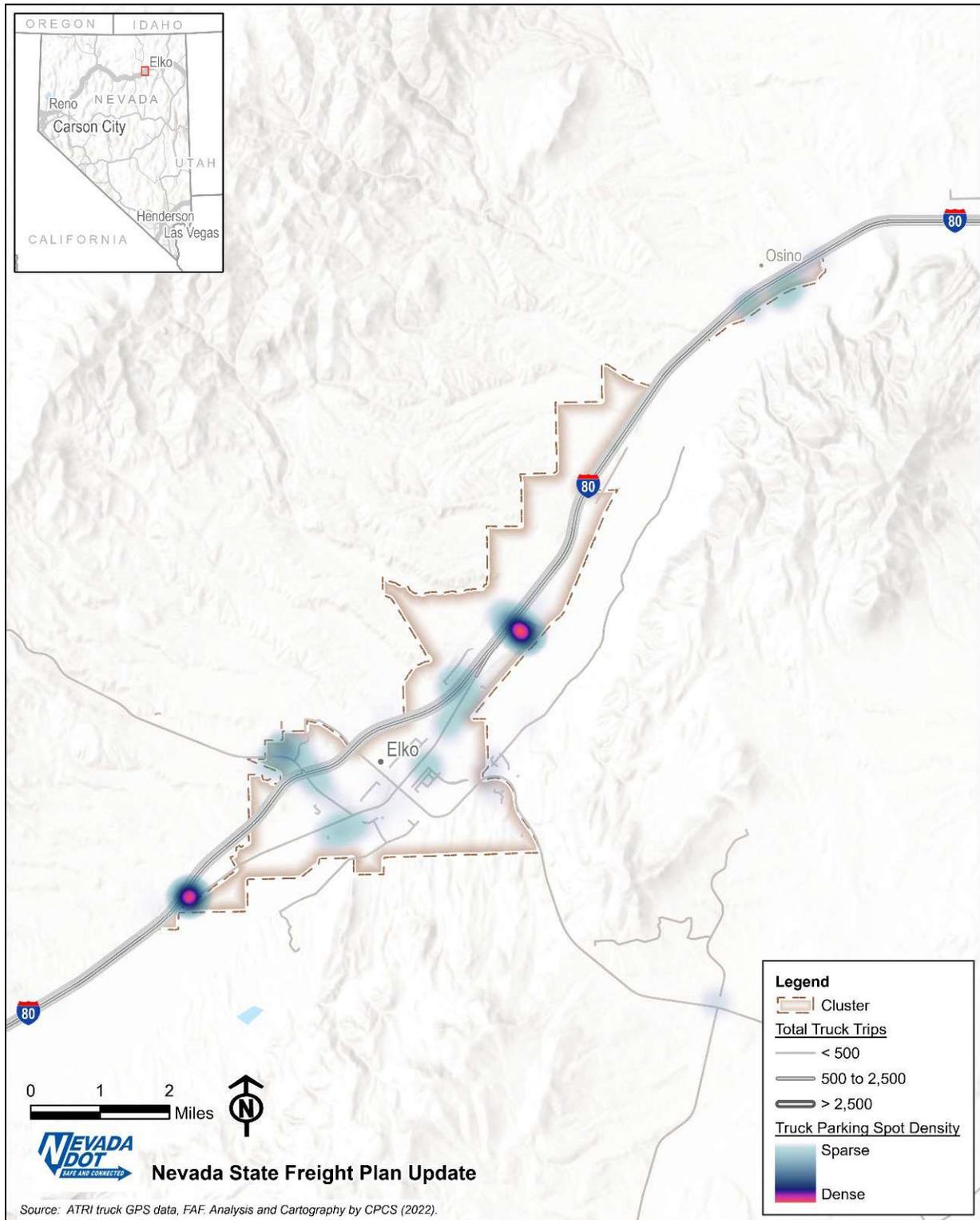


Figure 13 – Cluster 8 – Henderson

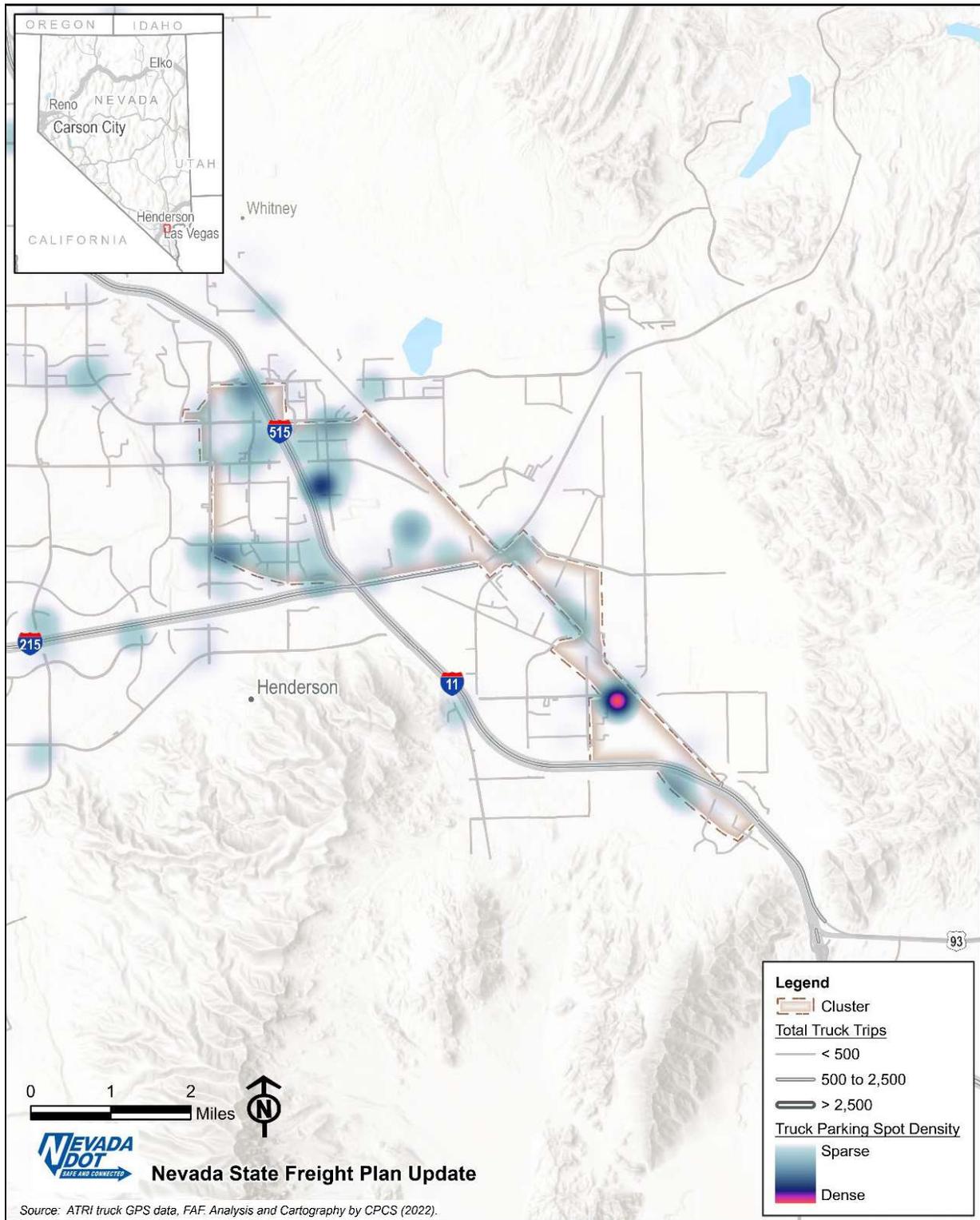


Figure 14 – Cluster 9 – Winnemucca

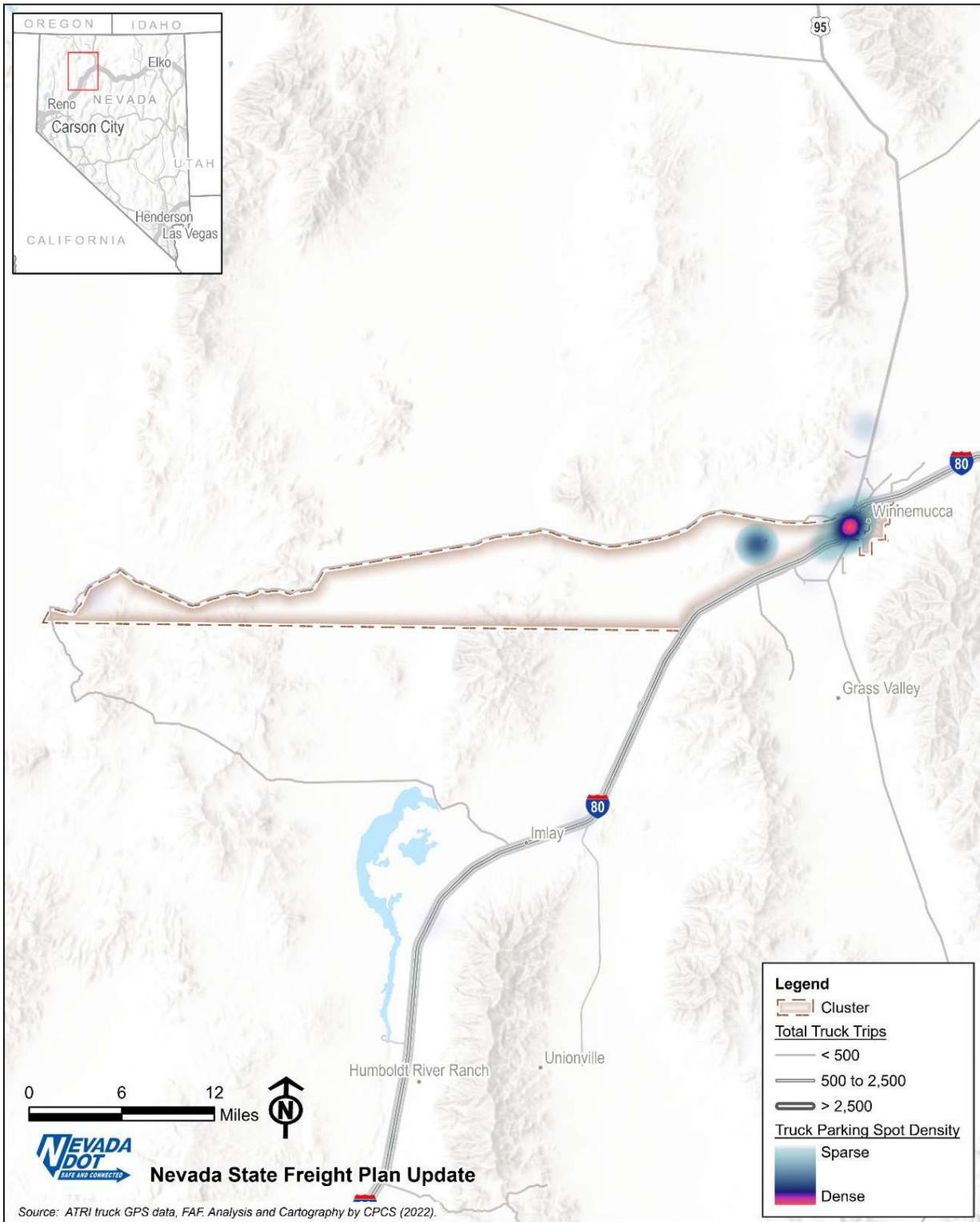
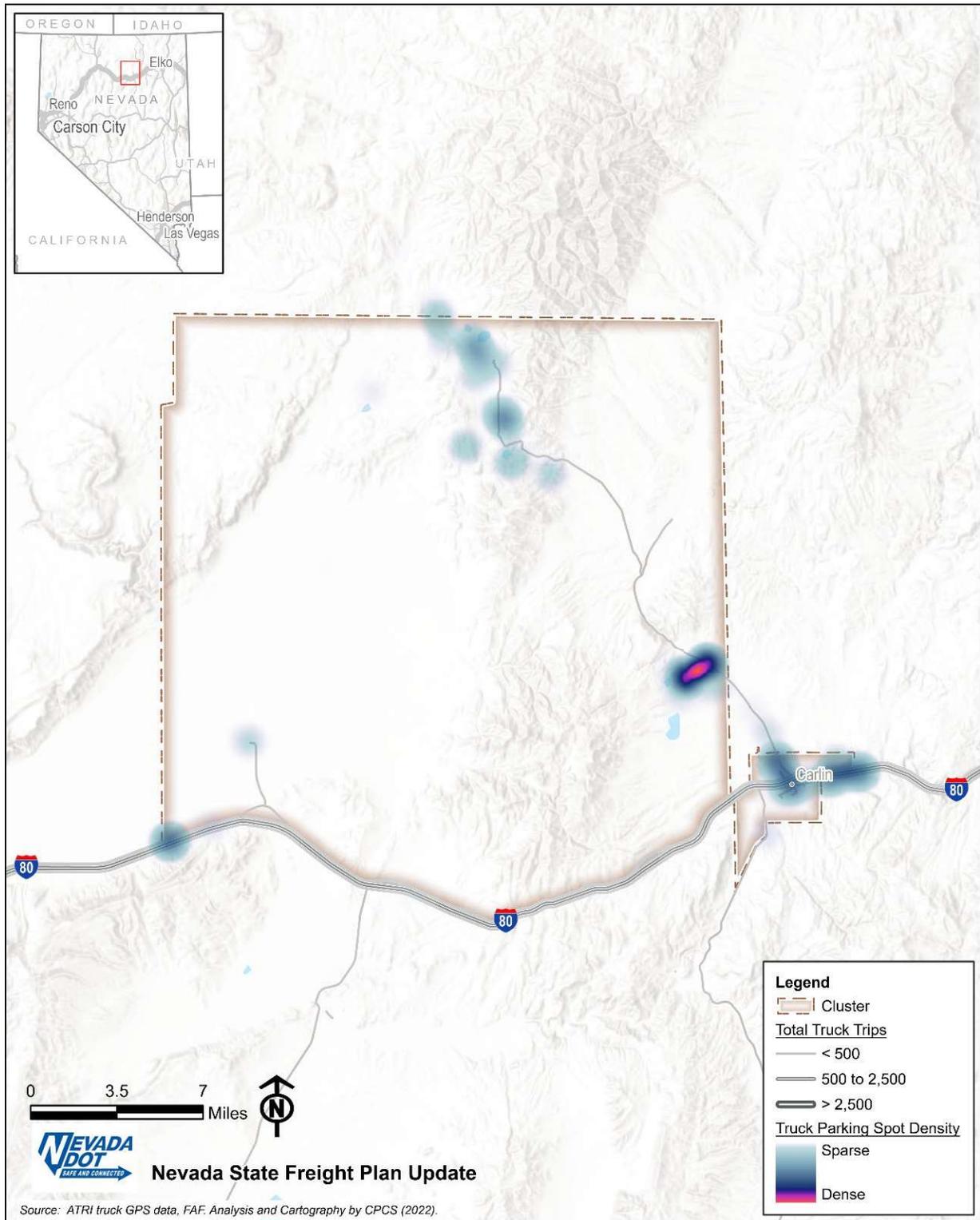


Figure 15 – Cluster 10 – Carlin



5. Implications for Critical Rural Freight Corridors

Figure 16 displays the concentration of moving truck GPS waypoints along roadways that were classified as rural in the HPMS data and were not located on an interstate. Although Figure 16 prominently displays many of Nevada’s critical corridors, the project team also routed the waypoints to account for the impact of speed on the likelihood that a waypoint is clustered in a particular area.

Figure 16 – Density of Truck GPS Waypoints



Figure 17 and Figure 18 display about 600 miles of rural non-interstate roadway segments using the routed ATRI truck GPS data and the 2019 HPMS, respectively. Although there is overlap in the top 600 miles of roadways according to the number of ATRI truck trips using a particular segment and HPMS truck counts, some roadways are in the top 600 miles in only one of the data sets.

Considering the cluster analysis, density of moving truck waypoints, routed GPS data, and the HPMS data, the following corridors were identified as CRFC:

- **US 95:** With the exception of the area around Tonopah, much of US 95 is within the top 600 miles based on both the ATRI and HPMS data.
- **US 95 Winnemucca:** The area north of I-80 starting at Winnemucca had segments that were in the top 600 miles for both ATRI and HPMS data.
- **US 93 in Northeastern Nevada:** The majority of US 93 from I-80 to the Idaho border is in the top group of ATRI trip and HPMS truck counts.
- **US 93 north of Ely:** Portions of US 93 north of Ely have segments within the 600 miles that had high HPMS and/or ATRI counts.
- **US 50 and US 50 Alt:** The majority of US 50 and US 50 Alt from US 95 in Fallon to I-80 is in the top 600 miles in both ATRI and HPMS data. The section of US 50 between USA Parkway and Carson City also shows high truck volumes.
- **SR 439 (USA Parkway):** NV 439 had high truck counts in the 2019 and 2020 HPMS and a portion near I-80 was in the top 600 miles in the ATRI routing data. Finally, SR 439 has warehousing development near the connection between SR 439 and I-80, and SR 439 was designated as CRFC in the previous Nevada Freight Plan.
- **US 395:** The rural sections of US 395 from the Nevada/California border to US 50 in Carson City area were added due to the high truck counts in the HPMS data.
- **SR 225, SR 535, and Idaho Street (Elko):** A review of the HPMS and ATRI data also identified these connectors in Elko that had high truck counts, provided a connection between a rail-truck intermodal facility to I-80. They are also considered as the main corridor in the Elko freight cluster, providing connection to a Walmart Supercenter and a Home Depot facility.

The limited mileage and only marginal differences in the data required the project team to make a judgement about which corridors to include and not include. Additionally, to get to contiguous sections of roadways, some of the CRFC miles were used to fill in gaps.

Figure 17 – Routed ATRI Trips Data

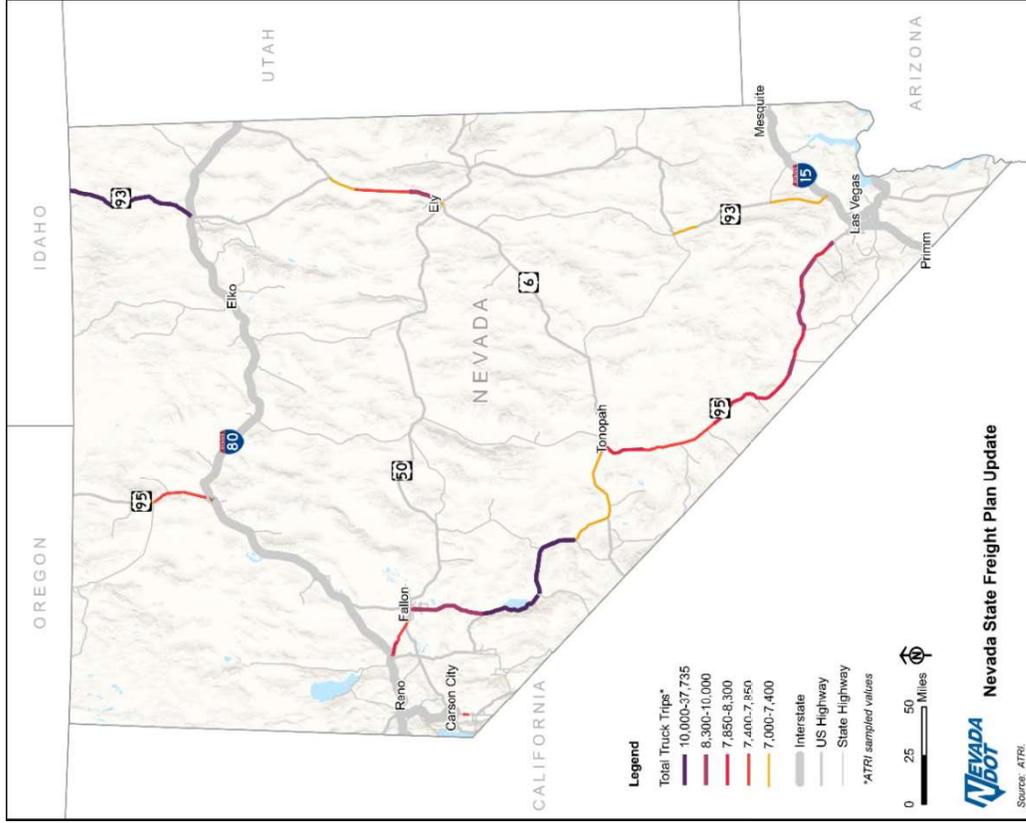
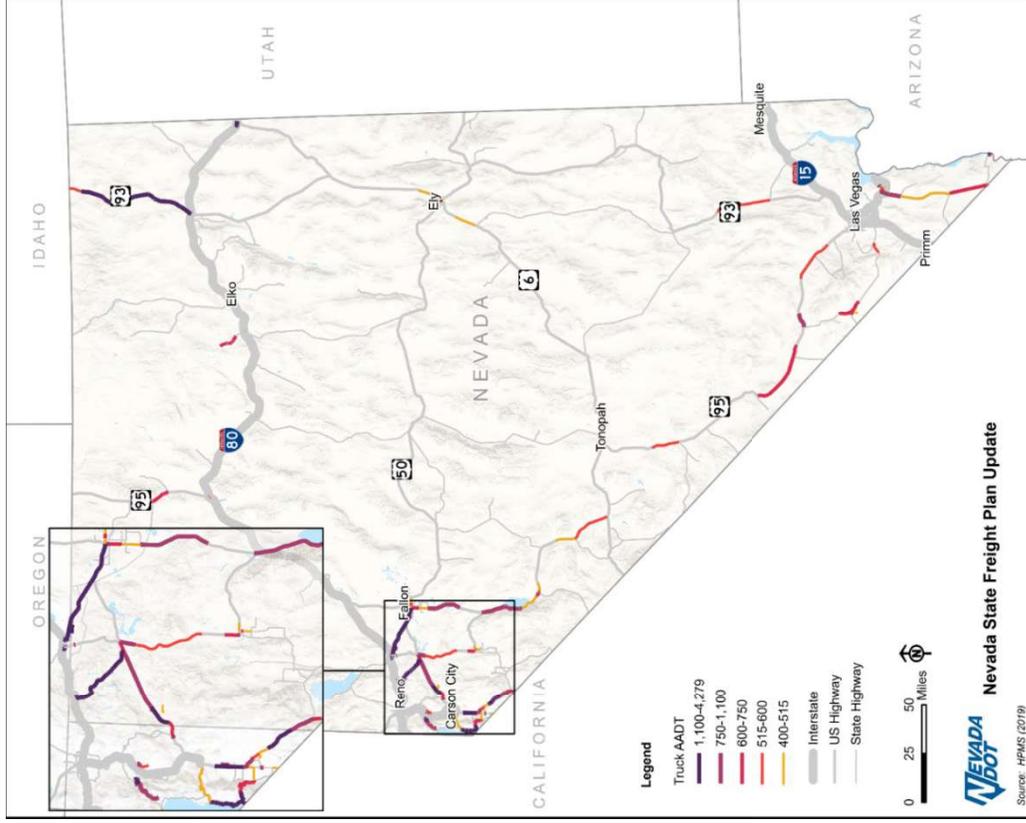


Figure 18 – 2019 HPMS Truck Counts



6. Implications for Critical Urban Freight Corridors

Most CUFC designations were initially proposed by the MPOs. NDOT validated the MPO recommendations using truck GPS data and coordinated with the MPOs to maintain the statewide 150 mileage limit for CUFCs. Figure 19 through Figure 21 show CUFCs in Southern Nevada, Reno/Sparks area and Carson City area, respectively. The figures also show truck utilization along the corridors within the MPO area utilized as a validation layer for MPO recommendations. The truck utilization heatmaps show density of moving waypoints calculated from truck GPS data.

Figure 19 – Density of Truck GPS Waypoints and Critical Urban Freight Corridors in Southern Nevada

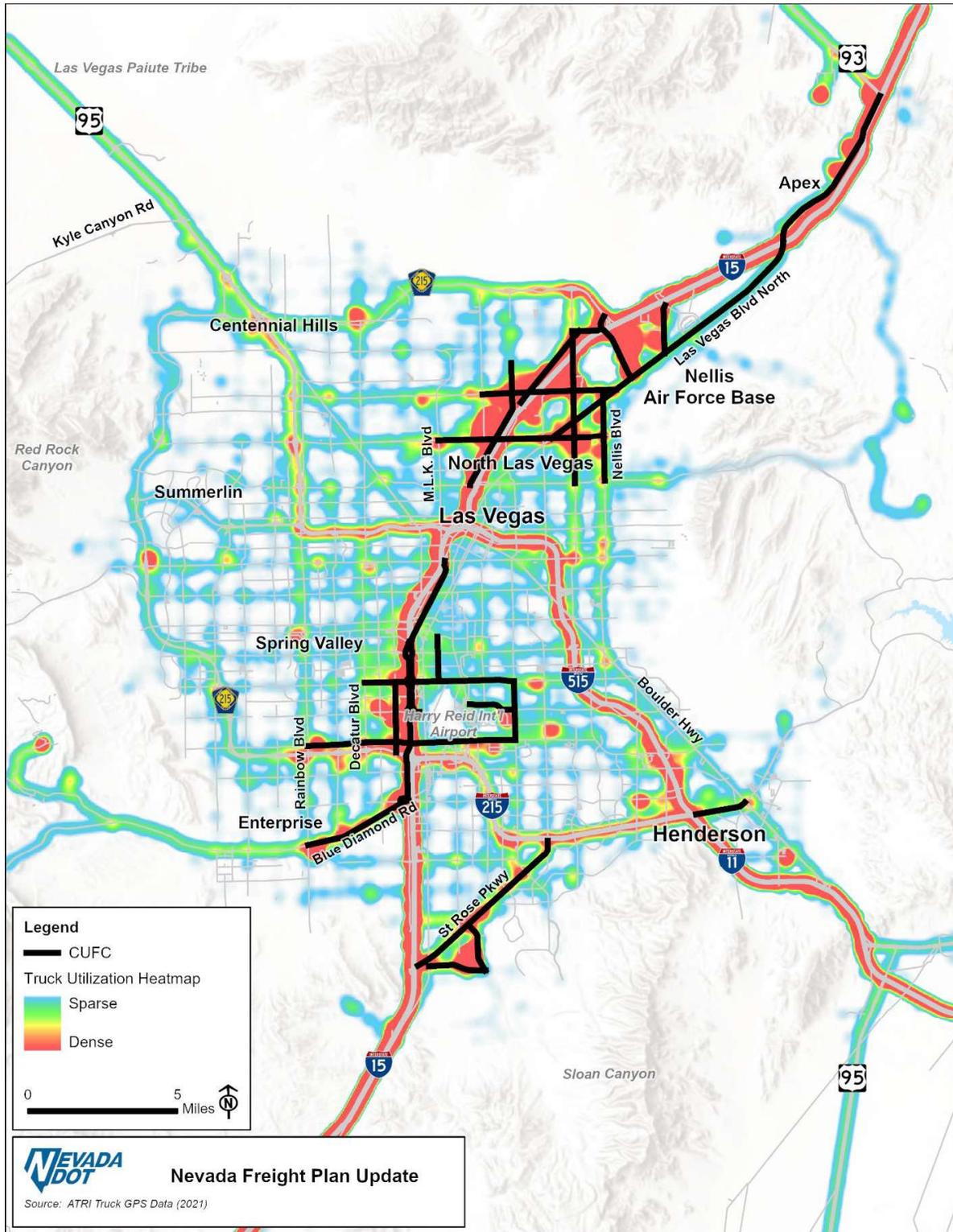


Figure 20 – Density of Truck GPS Waypoints and Critical Urban Freight Corridors in Reno/Sparks Area

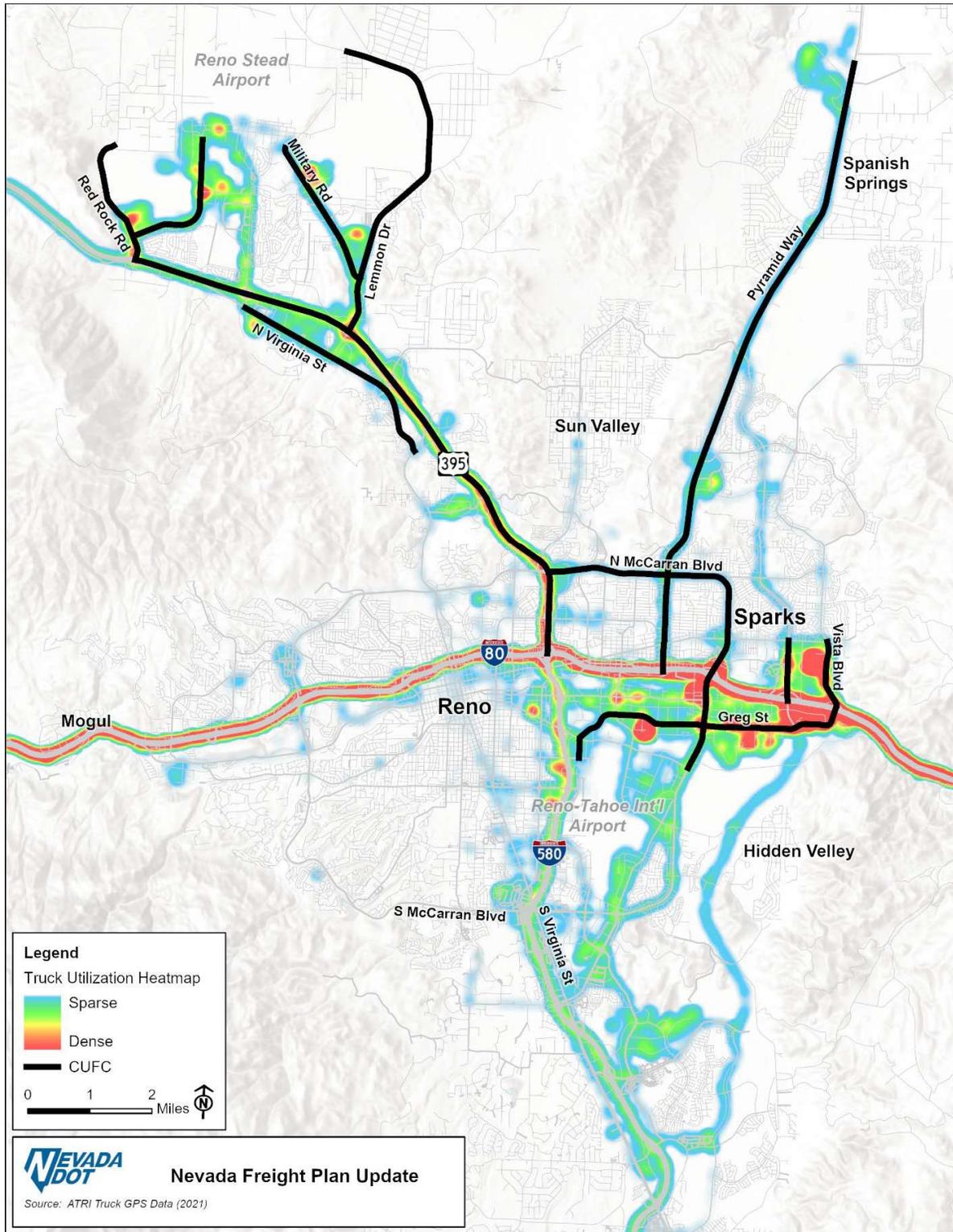


Figure 21 – Density of Truck GPS Waypoints and Critical Urban Freight Corridors in Carson City Area

