



Appendix D

Vehicle Miles Traveled Analysis

Memorandum

To: Steve Quintanilla, Moreno Valley City Attorney

CC: Angelica Frausto-Lupo, City of Moreno Valley Community Development Director

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Subject: Vehicle Miles Traveled Analysis – Proposed Citywide Truck Routes Modifications

Date: July 22, 2026

Introduction and Background

Senate Bill (SB) 415 and Assembly Bill (AB) 98 require a county or city that is located in a warehouse concentration region to amend the Circulation Element of its General Plan, on or before January 1, 2026. The purpose of the amendment is to identify and establish specific truck routes in order to safely accommodate logistics warehouse truck traffic, which avoid sensitive receptors and maximize the use of interstate or State divided highways, or maximize use of arterial roads, major thoroughfares, and predominantly commercially oriented local streets. SB 415 defines “sensitive receptors” to include the following: (1) a residence, including, but not limited to, a private home, apartment, condominium unit, group home, dormitory unit, or retirement home; (2) a school, including, but not limited to, a preschool, prekindergarten, or school maintaining kindergarten or any of grades one to 12, inclusive; (3) a daycare facility, including, but not limited to, in-home daycare; (4) publicly owned parks, playgrounds, and recreational areas or facilities primarily used by children, excepting parks and recreation areas included as a condition of approval for the logistics use development; (5) nursing homes, long-term care facilities, hospices, convalescent facilities, or similar live-in housing; and (6) hospitals, as defined in Section 128700 of the California Health and Safety Code.

The California Office of the Attorney General (AGO) is aware of the City of Moreno Valley’s (City) plan to defer the amendment of its Circulation Element, as mandated by AB 98, to a later date which will coincide with the proposed adoption of a new truck routes map that includes the elimination of a multitude of truck routes that do not currently comply with the “truck routes” provisions of AB 98. In coordination with the AGO, the City is working on preparing the necessary amendment to the General Plan’s Circulation Element along with a Truck Routes Ordinance, which adopts a new Truck Routes Map that eliminates a multitude of truck routes or portions thereof to avoid sensitive receptors to the extent feasible. This memorandum documents proposed modifications to the existing Citywide designated truck routes and the analysis conducted to evaluate the change in truck-related Vehicle Miles Traveled (Truck VMT) as a result of the proposed truck routes modifications.

The overall objective of the analysis was to quantify how the City’s proposed truck routes modifications, which will prohibit truck travel on certain internal Citywide routes or portions thereof to avoid sensitive receptors,

would affect truck travel patterns and Truck VMT. In order to identify the Truck VMT that is likely to change as a result of the proposed truck routes modifications, five major studied routes and route choices were selected in coordination with the City for “With Project” and “No Project” scenarios. These routes were selected because they will potentially have the highest truck traffic volume and trip origins within industrial areas identified in the Industrial iMap tool (see **Methodology and Assumptions** below). The analysis focused on isolating Truck VMT changes under the With Project Scenario, by only selecting the most impacted routes and truck trip origins with the proposed truck routes modifications. This memorandum is intended to:

- Document study scenario definitions and key assumptions;
- Describe the analytical framework and modeling process used to estimate Truck VMT changes; and
- Provide conclusions regarding anticipated Truck VMT changes attributed to the proposed truck routes modifications.

As discussed in further detail below, the proposed truck routes modifications would result in a Citywide increase in daily Truck VMT by 2.8 percent, as some of the trucks are rerouted to a longer path using both State Route 60 (SR 60) and Interstate 215 (I-215) instead of shorter internal City streets and routes.

Methodology and Assumptions

The analysis was limited to the major routes and truck trip origins within and outside the City that would be affected by the truck routes modifications. In order to isolate the Truck VMT changes attributable to the truck routes modifications, Truck VMT analysis is carried out on only the selected studied routes and truck trip origins using the truck routes under the “With Project” and “No Project” Scenarios. The analysis is carried out in four primary phases:

1. Existing Truck Routes Identification
2. Truck Routes Scenario Definition for Selected Routes
3. Travel Demand Model Route Choice Analysis for Selected Routes
4. Truck VMT Computation for Selected Routes

On February 3, 2026, Kimley-Horn met with City staff to discuss the scope of the study, the City’s proposed Truck Routes Map, and existing truck travel patterns within the City. As part of this analysis, Kimley-Horn identified major truck routes in the City using the City’s Industrial iMap tool and Replica’s commercial vehicle traffic data.^{1,2} Replica’s commercial vehicle traffic data indicates that the following routes have the highest commercial vehicle daily truck traffic volume. As a result, the routes identified in **Table 1: Daily Truck Traffic on Major Routes** below were selected as part of the studied routes because they have the highest truck traffic volume within the industrial areas identified in the Industrial iMap tool. The table shows the highest daily truck volume on a given segment on the corridor.

¹ City of Moreno Valley, Industrial iMap, <https://gis-moval.opendata.arcgis.com/apps/4f7581a99d1b4030ae25c116a65863f5/explore>. Accessed February 26, 2026.

² Replica (2024), <https://studio.replicahq.com/>. Accessed February 26, 2026

Table 1: Daily Truck Traffic on Major Routes

Routes	Maximum Truck Traffic Volume
Perris Boulevard	1,671
Alessandro Boulevard	1,494
Frederick Street	1,362
Heacock Street	1,360
Cactus Avenue	1,297
Source: Replica, 2024.	

The City confirmed these truck routes for the Truck VMT analysis. It should be noted that there are few other routes affected in the City with the proposed truck routes modifications. While traffic shifts on some of these routes are accounted for in the multi-path analysis, the primary focus of this analysis is on the five major studied routes and route choices assumed under both the “With Project” and “No Project” Scenarios defined below.

Figure 1: Existing Truck Routes and Sensitive Receptors Within 1,000 Feet shows the City’s existing truck routes, **Figure 2: Proposed Truck Routes and Sensitive Receptors Within 1,000 Feet** shows the City’s remaining truck routes after modifications, and **Figure 3: Proposed Existing Truck Routes to be Eliminated and Sensitive Receptors Within 1,000 Feet** shows the City’s Truck Routes to be eliminated within the City’s boundaries. As shown in **Figure 3**, the City would remove segments of the designated truck routes along Frederick Street, Sunnymede Boulevard, Heacock Street, Ironwood Avenue, Perris Boulevard, Cactus Avenue, Alessandro Boulevard, Moreno Beach Drive, and a portion of World Logistics Center Parkway North. Therefore, trucks would have to seek a different route of travel than currently permitted when various segments of the currently designated truck routes are no longer permitted for truck travel. These newly modified truck routes were recommended by the City to redirect truck traffic away from sensitive receptors along internal City routes to the SR 60 and I-215 freeways to the extent feasible. It is assumed that several trucks serving local commercial uses within the City would continue using the most direct routes because there are no other designated truck routes available to reach the destination, as permitted under applicable law. In light of the foregoing, only selected truck trip origins within the City and March Joint Powers Authority (March JPA) that will be impacted by the City’s truck routes modifications and potentially have the highest truck traffic volume were included in this analysis. These trip origins are shown in **Figure 9**.

The World Logistics Center Specific Plan (WLC Specific Plan) includes a circulation network intended to move large vehicles efficiently between the regional highway network and businesses within the Specific Plan Area while directing heavy truck traffic away from nearby residential neighborhoods and other sensitive receptors. Heavy truck traffic associated with the WLC Specific Plan is directed to State Route (SR) 60, Gilman Springs Road, the segment of Redlands Boulevard between SR 60 and Eucalyptus Avenue, and Eucalyptus Avenue between Redlands Boulevard and World Logistics Center Parkway. These roadways, together with the WLC Specific Plan Area’s internal roadway network that has yet to be fully constructed, are designated as truck routes within the Specific Plan and will be designated as such on the City’s Truck Routes Map. Development and occupancy of the WLC Specific Plan area are anticipated to occur over the next 10 years.

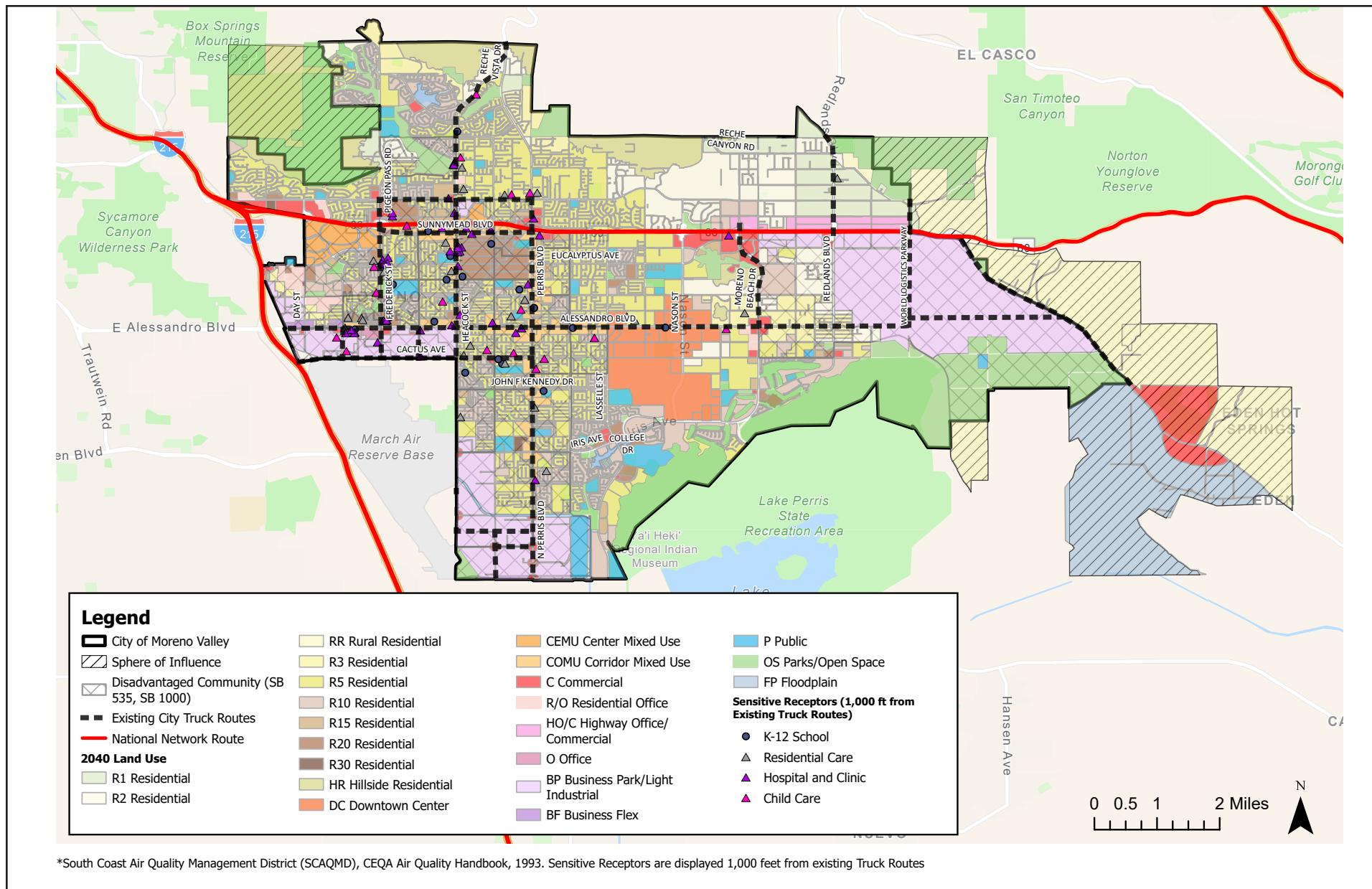


FIGURE 1: Existing Truck Routes and Sensitive Receptors Within 1,000 Feet

TRUCK ROUTE VMT ANALYSIS

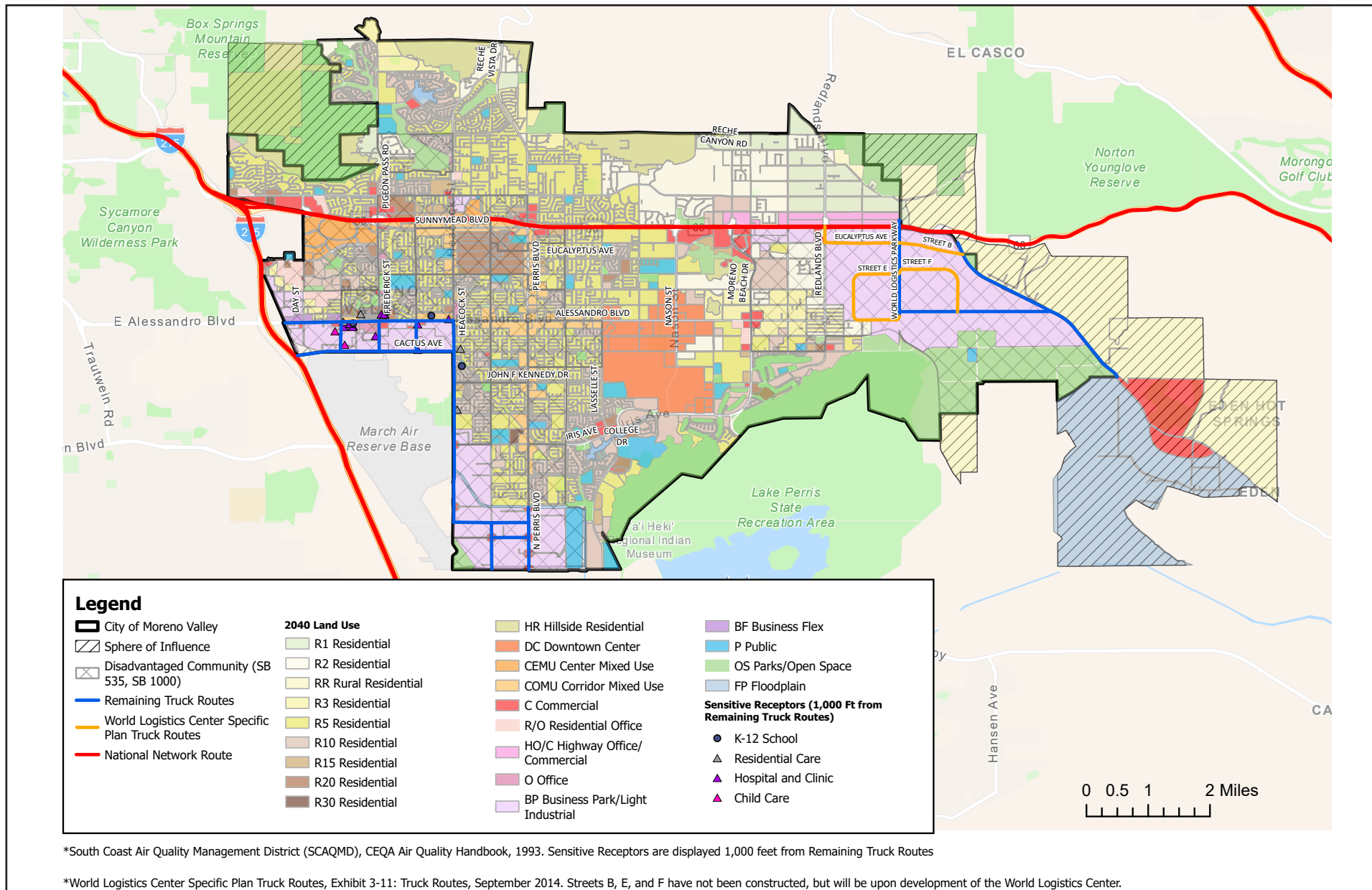


FIGURE 2: Proposed Truck Routes and Sensitive Receptors Within 1,000 Feet

TRUCK ROUTE VMT ANALYSIS

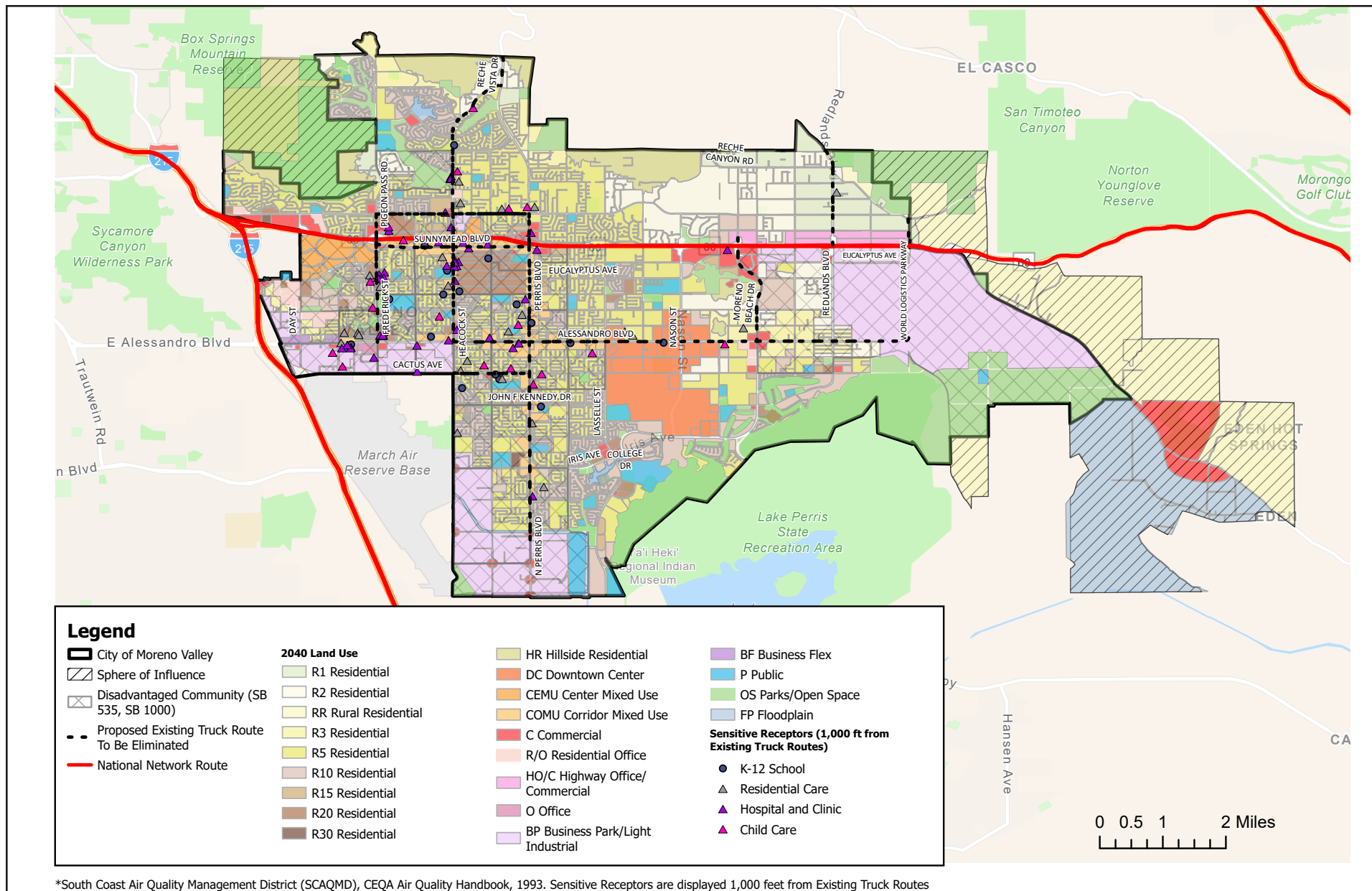


FIGURE 3: Proposed Existing Truck Routes to Be Eliminated and Sensitive Receptors Within 1,000 Feet

TRUCK ROUTE VMT ANALYSIS

Study Scenarios

While there are multiple route choices available with slight variations for each studied route, this analysis focuses on the route choices that are directly affected by the proposed elimination of certain truck routes or portions thereof, and alternate routes recommended by the City. For the purposes of this analysis, one proposed route (under the With Project Scenario) for each modified truck route identified above was determined to assess traffic diversion from the existing truck routes used on the selected routes. These routes choices are described below with illustrations.

Perris Truck Route Analysis Scenario

Existing Route (No Project Scenario)

The Perris No Project Scenario currently designates most of Perris Boulevard as a truck route. Trucks traveling from the southern end of the City travel north on Perris Boulevard to SR 60 and to I-215.

Proposed Route (With Project Scenario)

As demonstrated in **Figure 4: Perris Boulevard Truck Route Analysis Scenario**, the Perris With Project Scenario would divert truck traffic to San Michelle Avenue, Heacock Street, Cactus Avenue, I-215, and then SR 60.

Alessandro Boulevard Truck Route Analysis Scenario

Existing Route (No Project Scenario)

The Alessandro Boulevard No Project Scenario currently designates all of Alessandro Boulevard as a truck route. Under the No Project Scenario, trucks move along Alessandro Boulevard to the I-215 and the SR 60.

Proposed Route (With Project Scenario)

As demonstrated in **Figure 5: Alessandro Boulevard Truck Route Analysis Scenario**, the Alessandro Boulevard With Project Scenario illustrates that trucks on the eastbound lanes of Alessandro Boulevard would be required to travel east to Gilman Springs Road which intersects with SR 60, whereas, trucks on the westbound lanes of Alessandro Boulevard would be required to travel west to the I-215. As such truck traffic would be required to travel along SR 60 and I-215 to be able to reach the opposite side of Alessandro Boulevard, which will significantly reduce truck traffic along Alessandro Boulevard.

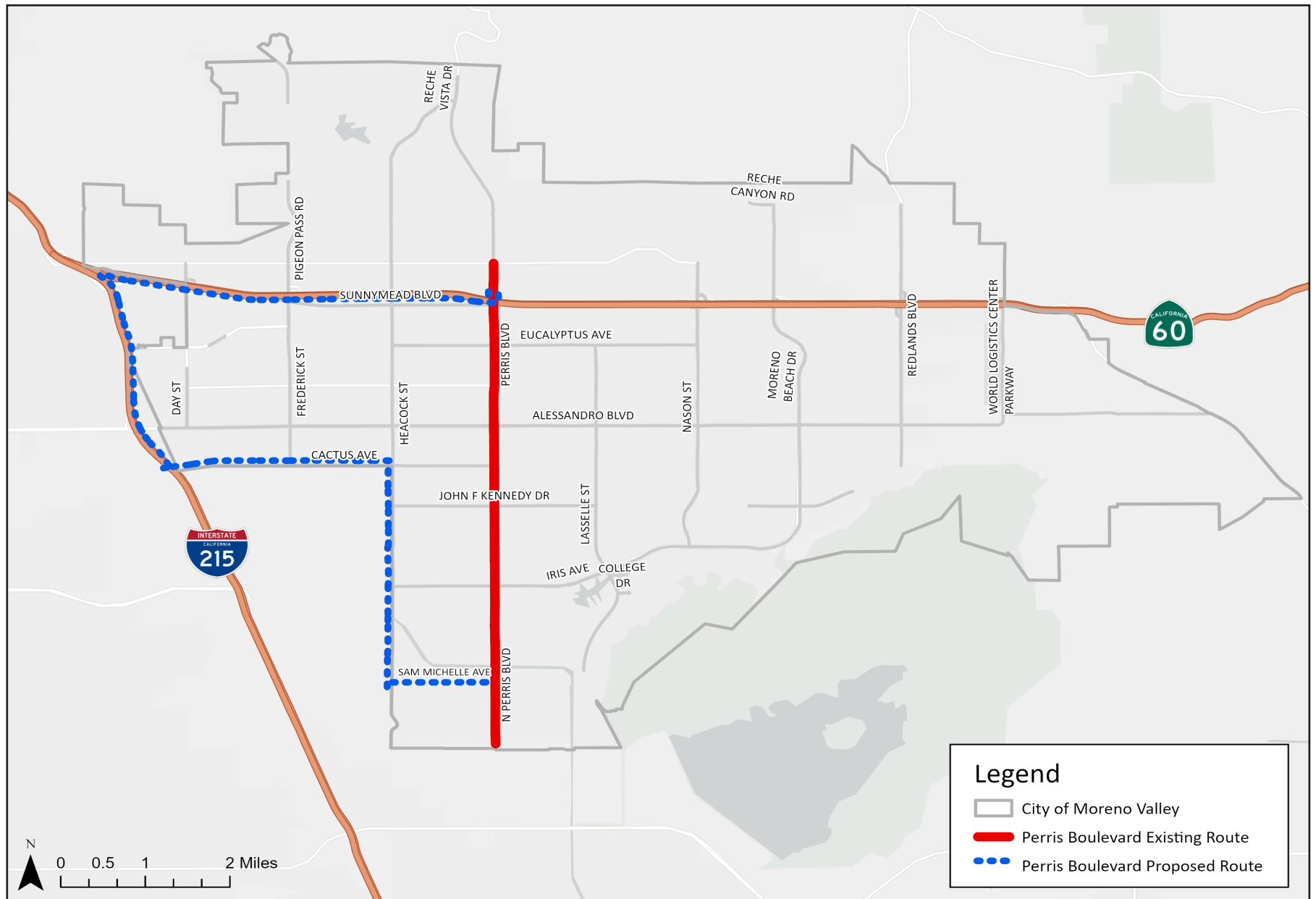


FIGURE 4: Perris Boulevard Truck Route Analysis Scenario

TRUCK ROUTE VMT ANALYSIS

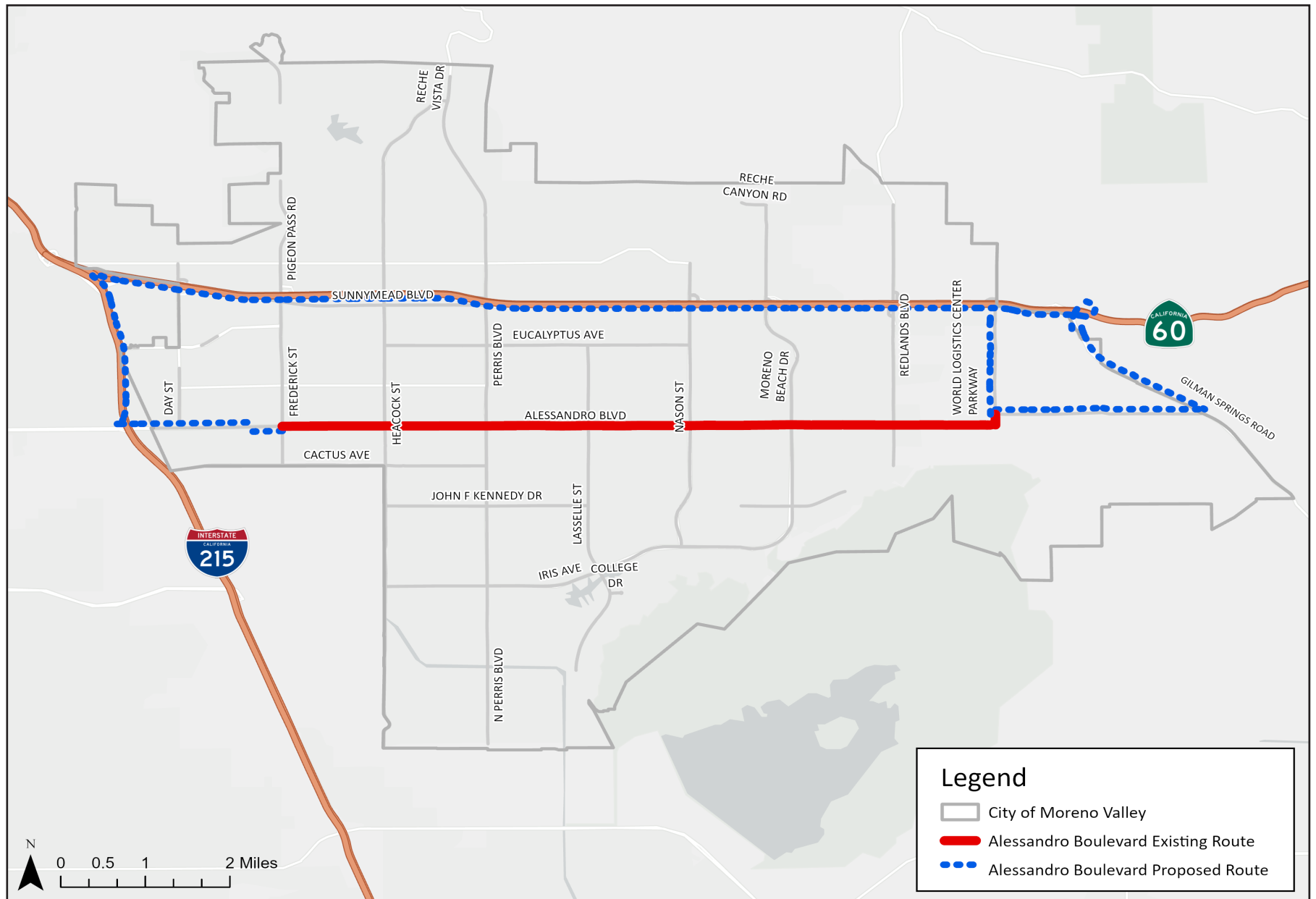


FIGURE 5: Alessandro Boulevard Truck Route Analysis Scenario

TRUCK ROUTE VMT ANALYSIS

Frederick Street Truck Route Analysis Scenario

Existing Route (No Project Scenario)

The Frederick Street No Project Scenario currently designates Frederick Street from Cactus Avenue to Ironwood Avenue as a truck route. Under the No Project Scenario, trucks traveling along Frederick Street are required to travel north to SR 60 or south to Cactus Avenue and west to I-215 to reach industrial and commercial areas.

Proposed Route (With Project Scenario)

Figure 6: Frederick Street Truck Route Analysis Scenario demonstrates how the With Project Scenario would require trucks to travel south on Frederick Street to Cactus Avenue, then west on Cactus Avenue to I-215, then north on the I-215 to the SR 60, and then east of SR 60 to reach industrial and commercial areas. Therefore, truck traffic would be significantly reduced along Frederick Street.

Heacock Street Truck Route Analysis Scenario

Existing Route (No Project Scenario)

The Heacock Street No Project Scenario currently designates the entirety of Heacock Street as a truck route. Trucks traveling along Heacock Street may currently travel west to large industrial and commercial areas within the City's boundaries or east using SR 60.

Proposed Route (With Project Scenario)

As illustrated in **Figure 7: Heacock Street Truck Route Analysis Scenario**, trucks traveling on Heacock Street would be required to use Alessandro Boulevard, I-215, and SR 60 to reach industrial and commercial areas within the City boundaries. Therefore, truck traffic on Heacock Street would be significantly reduced.

Cactus Avenue Truck Route Analysis Scenario

Existing Route (No Project Scenario)

The Cactus Avenue No Project Scenario designates Cactus Avenue from Perris Boulevard to I-215 as a truck route. Trucks traveling along Cactus Avenue can travel west along Cactus Avenue to I-215 and north to SR 60 or west using Heacock Street and Perris Boulevard.

Proposed Route (With Project Scenario)

As seen in **Figure 8: Cactus Avenue Truck Route Analysis Scenario**, trucks would be required to travel west on Cactus Avenue, to I-215, and then SR 60. Therefore, with the With Project Scenario, truck traffic would be reduced between Cactus Avenue and Perris Boulevard.

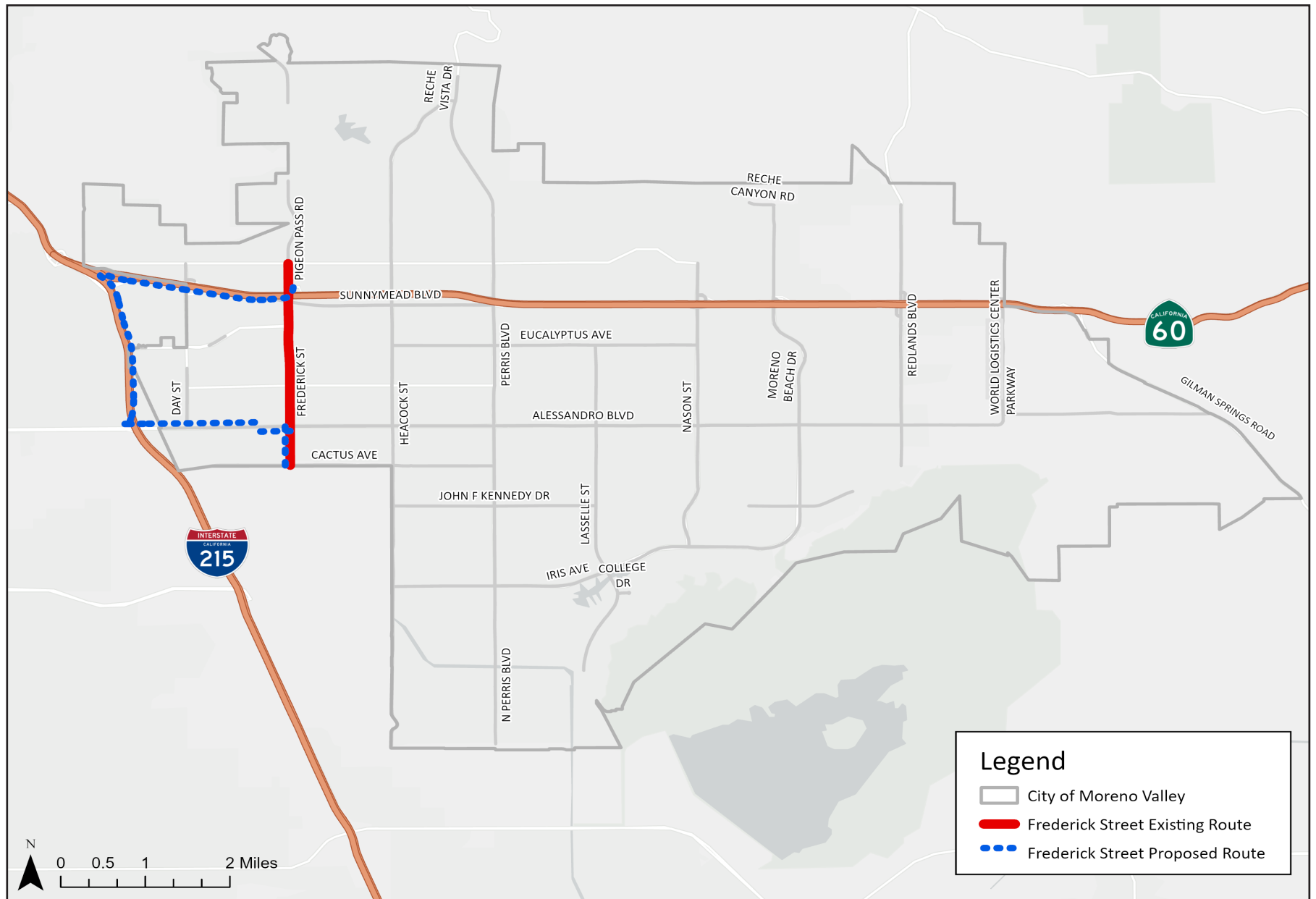


FIGURE 6: Frederick Street Truck Route Analysis Scenario

TRUCK ROUTE VMT ANALYSIS

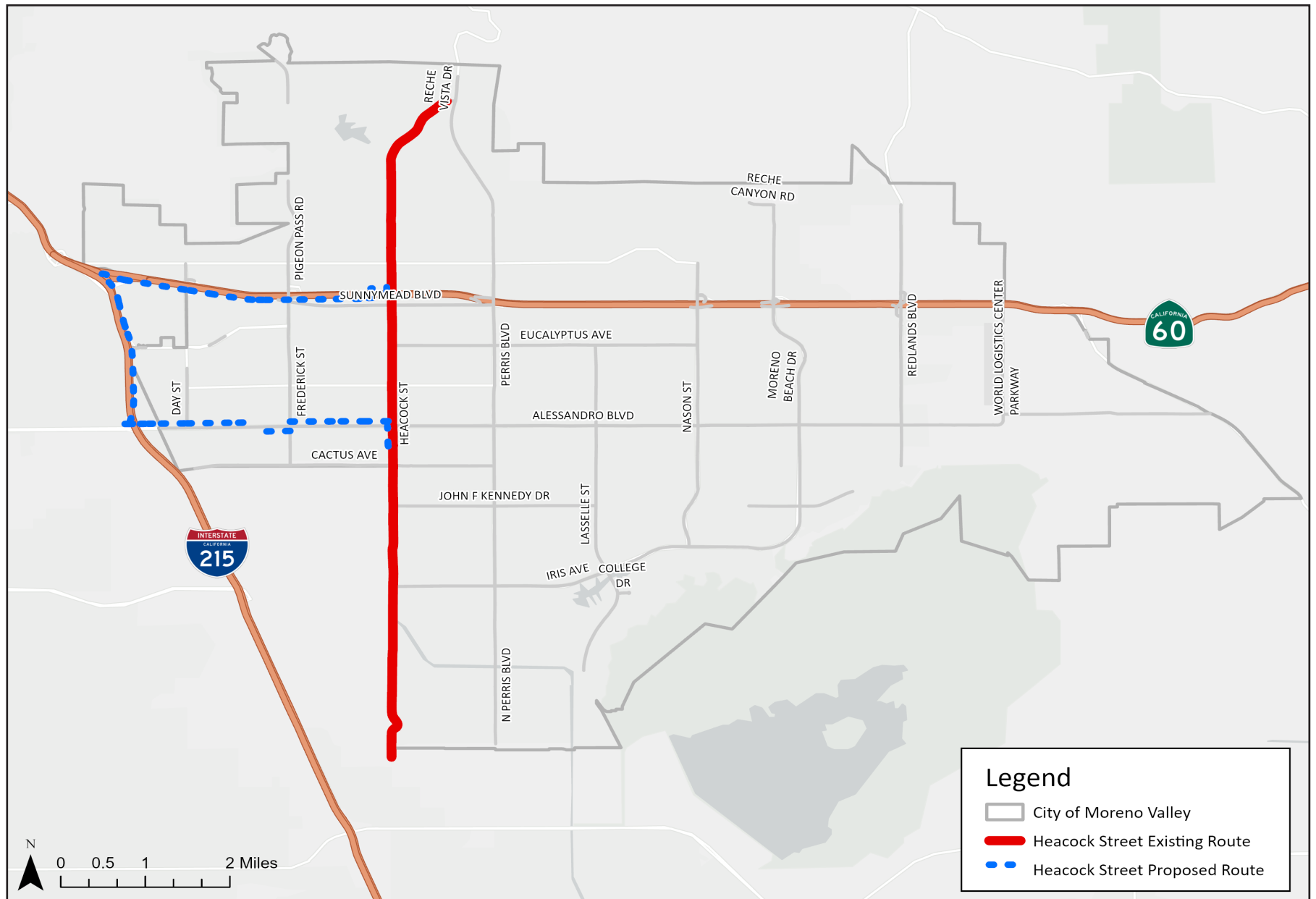


FIGURE 7: Heacock Street Truck Route Analysis Scenario

TRUCK ROUTE VMT ANALYSIS

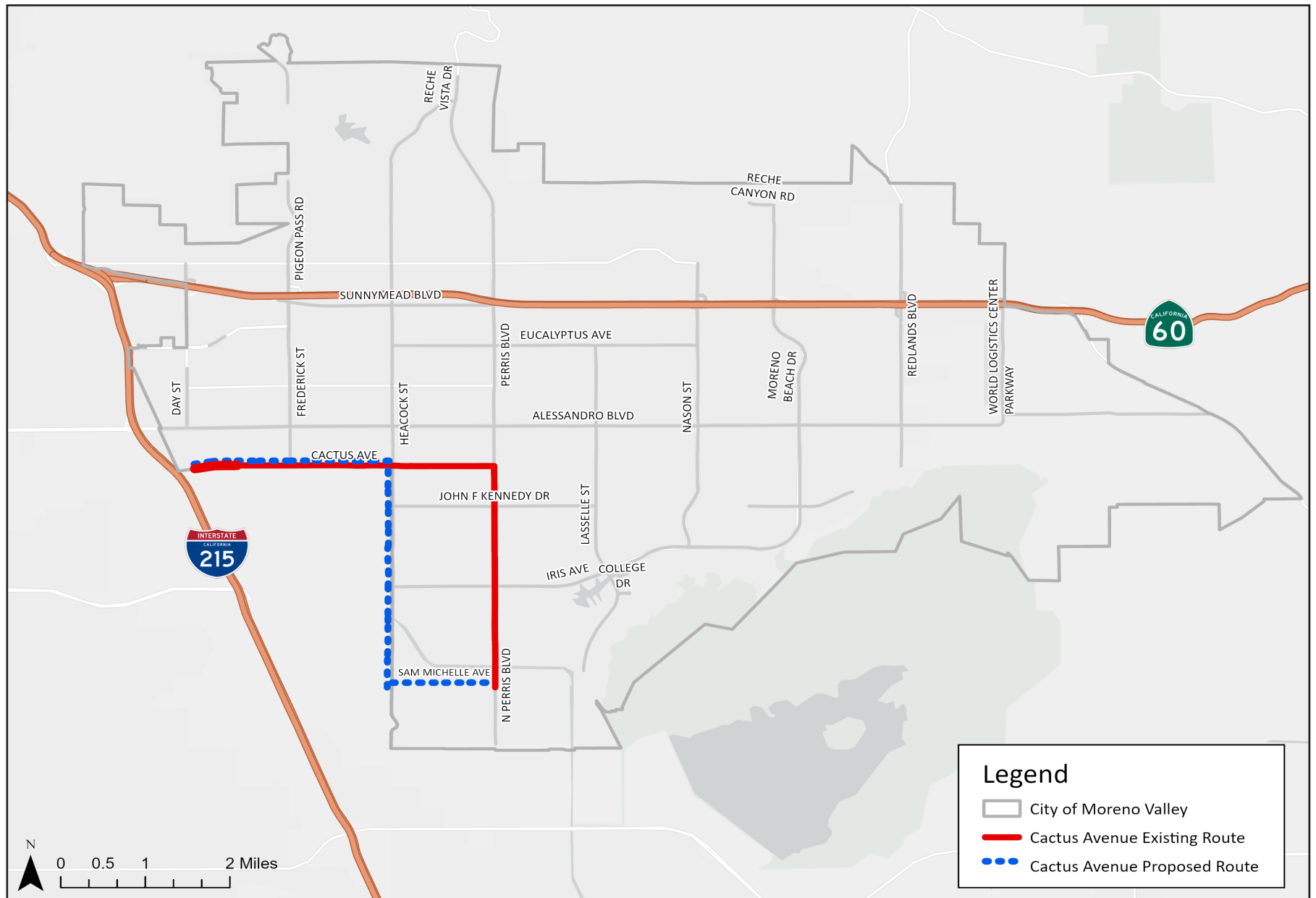


FIGURE 8: Cactus Avenue Truck Route Analysis Scenario

TRUCK ROUTE VMT ANALYSIS

VMT Analysis

As discussed above, truck trips would have to seek a different route than current practice when those streets or portions thereof are no longer designated as truck routes. These modified truck routes were recommended by the City to redirect truck traffic away from sensitive receptors along internal City roadways and on to SR 60 and I-215 freeways to the extent feasible. For this analysis, only selected routes and truck trip origins within the City and March JPA that will be impacted by the City's truck routes modifications and which will potentially have the highest truck traffic volume were included to isolate net changes in Truck VMT due to the proposed truck routes modifications. These trip origins are shown in **Figure 9: 2040 Daily Heavy Truck Trips for Selected Study Routes and Truck Origins**. The latest version of the Riverside County Travel Demand Model (RIVCOM) (Version 4.0.1) was utilized to model isolated truck trips for the five truck route scenarios selected for this analysis. As part of the analysis, RIVCOM 2040 Horizon General Plan scenario was used to determine all truck origins-destinations (OD) trips used by the current designated routes (No Project Scenario) using the select-link analysis conducted for each study route. The OD trips were then isolated for the study by selecting the zones illustrated in **Figure 9** to be included in the Truck VMT analysis.

A With Project Scenario model network was prepared by applying truck routes modifications to internal Citywide streets as directed by the City (truck-restricted links coded to prohibit truck assignment). The route-specific truck Origin Destination (OD) trip matrix developed earlier through select-link analysis was assigned to the modified network. The resulting daily truck traffic volumes by link were extracted from the model outputs. Total daily Truck VMT was computed for all the study area links included in the studied routes and route choices for both the With Project and No Project Scenarios. **Table 2: Change in 2040 Daily Truck VMT on Selected Routes Truck Trip Origins** summarizes the isolated Truck VMT results for the studied routes included in the analysis. As shown in the table, the proposed truck routes modifications will result in an increase in 2040 daily Truck VMT from the truck trip origins and truck routes subject to the proposed route modifications that were selected for this analysis. Local serving truck trips were not accounted for as they would continue to use local routes to serve commercial uses and Truck VMT on these routes would remain the same and would not be affected and are therefore not included in this analysis.

Table 2: Change in 2040 Daily Truck VMT on Selected Routes & Truck Trip Origins

Study Route	VMT No Project Scenario	VMT With Project Scenario	Change
I-215 Freeway	7,972	22,380	+14,408
SR 60 Freeway	2,149	6,419	+4,270
Perris Boulevard	2,274	113	-2,161
Alessandro Boulevard	2,651	531	-2,119
Frederick Street	265	49	-217
Heacock Street	1,677	1,507	-169
Cactus Avenue	1,997	2,744	+747
Total	18,984	33,743	+14,758

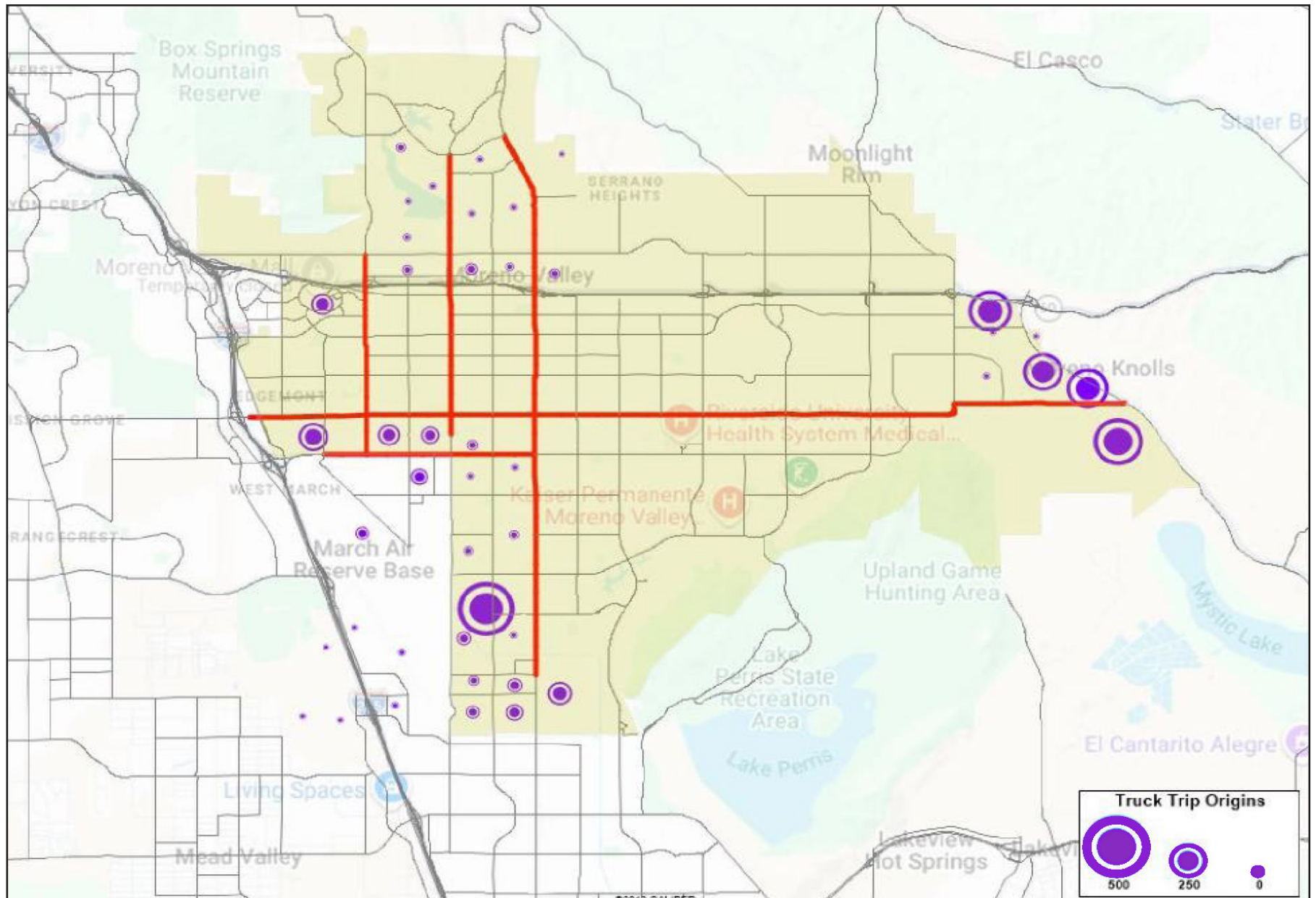


FIGURE 9: 2040 Daily Heavy Truck Trips for Selected Study Routes and Truck Origins

TRUCK ROUTE VMT ANALYSIS

This increase in Truck VMT for the selected studied routes and trip origins was then applied to the Citywide total Truck VMT to determine the net change in overall Citywide Truck VMT. **Table 3: Net Change in Total Citywide Daily Truck VMT** summarizes the Truck VMT results for base year and horizon year conditions. The base year Truck VMT estimates were derived by applying the proportional change in total Citywide Truck VMT estimates between base year and future year Truck VMT results derived as part of the 2024 General Plan Update. As shown in the table, the proposed truck routes modifications are expected to result in a net increase in Citywide Truck VMT by approximately 2.8 percent.

Table 3: Net Change in Total Citywide Daily Truck VMT

Analysis Year	VMT No Project Scenario	VMT With Project Scenario	Net Change
2024 Base Year	296,288	304,584	+8,296 (2.8%)
2040 Horizon Year	527,078	541,836	+14,758 (2.8%)

Note: Citywide VMT results were derived as part of 2024 General Plan Update

Conclusion

Based on the adopted methodology and assumptions, the analysis provides a route specific as well as overall network assessment of how the City’s proposed truck routes modifications will affect truck routing and Truck VMT for the City’s major routes used for truck travel. By the 2040 Horizon Year, the proposed truck routes modifications will result in a Citywide increase of 14,758 daily Truck VMT, which is approximately 2.8 percent above the daily trip VMT projected without the Project. This marginal increase would occur as some of the trucks will have to be rerouted using longer pathways along either SR 60 and I-215 instead of shorter pathways using internal City roadways where trucks will be prohibited. The proposed modifications are intended to reduce truck travel near sensitive receptors to the extent feasible by shifting truck activity to designated regional facilities.