City of FRESNO

SOUTH CENTRAL FRESNO AB 617 COMMUNITY TRUCK REROUTE STUDY

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in partnership with Katherine Padilla & Associates

July 2024
Final Plan

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PLAN OVERVIEW

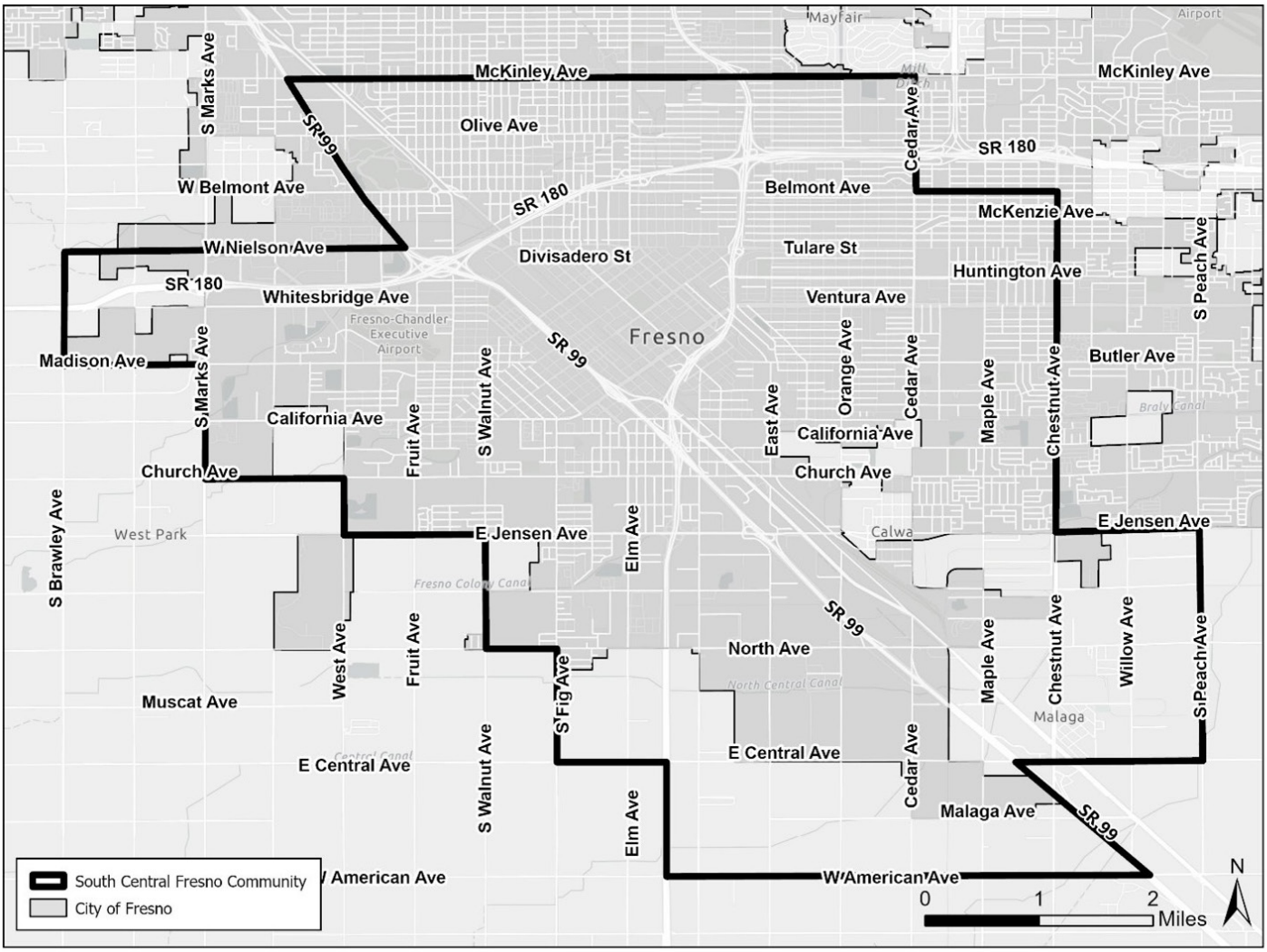
In 2022, the City of Fresno, partnered with the San Joaquin Valley Air Pollution Control District, began the South Central Fresno AB 617 Community Truck Reroute Study (hereafter "Truck Reroute Study") to identify, analyze, and evaluate potential strategies that could abate the two types of truck impacts experienced by communities in South Central Fresno:

1. **Freight truck emissions causing air pollution**
2. **Non-emissions impacts such as noise, traffic crashes, congestion, pedestrian and bicyclist conflicts, and excess wear and tear on local roadways.**

In the same year, the City also commissioned the UC Merced Community and Labor Center to conduct a Health Impact Assessment to assess the impact of air pollution on health outcomes citywide and explore residents' health needs. The results of this study were intended to inform the Truck Reroute Study.

The objective of the Truck Reroute Study is to decrease truck impacts and improve community safety in South Central Fresno while maintaining, or increasing, goods movement productivity.

Figure ES.1: *South Central Fresno Community Study Area*



EXISTING CONDITIONS FINDINGS

Community conditions:

Sociodemographic indicators can provide insight regarding not only who lives in the study area, but also who is experiencing a disproportionate burden of truck impacts based on where they live.

- **Population and Employment:** As of the 2020 Census, South Central Fresno is home to approximately 122,547 residents. This is a slight decrease of 1.7% from the 2010 Census, as opposed to a city-wide increase of 8.7% during the same time. Approximately 85.3% of all employed residents work primarily in the service, sales, construction, and transportation industries.
- **Low-Income Households and Housing Cost Burden:** The median household income in South Central Fresno is approximately $35,000, compared to a city-wide median of $53,000. Cost-burdened households spending more than 50% of their income on housing costs was also higher at 29.4%, compared with a city-wide average of 20.9%. Households experience housing cost burden are often most affected by freight traffic and emissions as they are often located along high traffic volume corridors.
- **Communities of Color:** 70.7% of South Central Fresno residents identify as Hispanic or Latino, while Non-Hispanic Asian alone residents comprise 8.9% of the population, and Black or African-American residents comprise 8.17%. Negative environmental impacts and poor air quality is historically most prominent in communities of color.
- **High Particulate Matter Concentrations:** Census tracts in South Central Fresno have some of the highest concentrations of particulate matter in the state, with all tracts scoring above the 90th percentile. Particulate matter is a by-product of transportation vehicle emissions, as well as industrial combustion processes. It is associated with a high risk of asthma and cardiovascular disease.
- **Disproprortionate Health Outcomes:** The UC Merced Health Assessment found that asthma rates, pre-term birth, and infant mortality outcomes were significantly higher in South Central Fresno as compared to the rest of the City. Two in five residents reported having at least one chronic health condition. These conditions were higher among residents who reported having less education, less income, or being a person of color.
- **Effects of Proximity to Pollution Sources:** Residents who live less than 1000 feet from air pollution sources, including freeways, truck routes, or major roads, experienced a higher prevalence of chronic health conditions, such as pre-term birth and infant mortality risks.

Transportation conditions:

- Currently, commercial vehicles exceeding 12,000 pounds in the City of Fresno are allowed to travel on the 328-mile network of designated truck routes that was adopted by the City of Fresno in 2005. In South Central Fresno, there are a total of 127 miles of designated truck routes.
- South Central Fresno has a high concentration of truck-generating uses, including manufacturing, warehousing, logistics businesses, and vacant sites for future development. In addition to SR 99, SR 41, and SR 180, portions of Cesar Chavez Boulevard, Church, Jensen, West, Walnut, and Elm Avenues are important corridors for truck travel and experience high volumes of traffic.
- Areas surrounding SR 99, and the interchange of SR 41 and SR 180, generate the greatest number of vehicle miles traveled. Higher levels of vehicle miles traveled translate to a higher level of greenhouse gas emissions, which is correlated with adverse health effects.

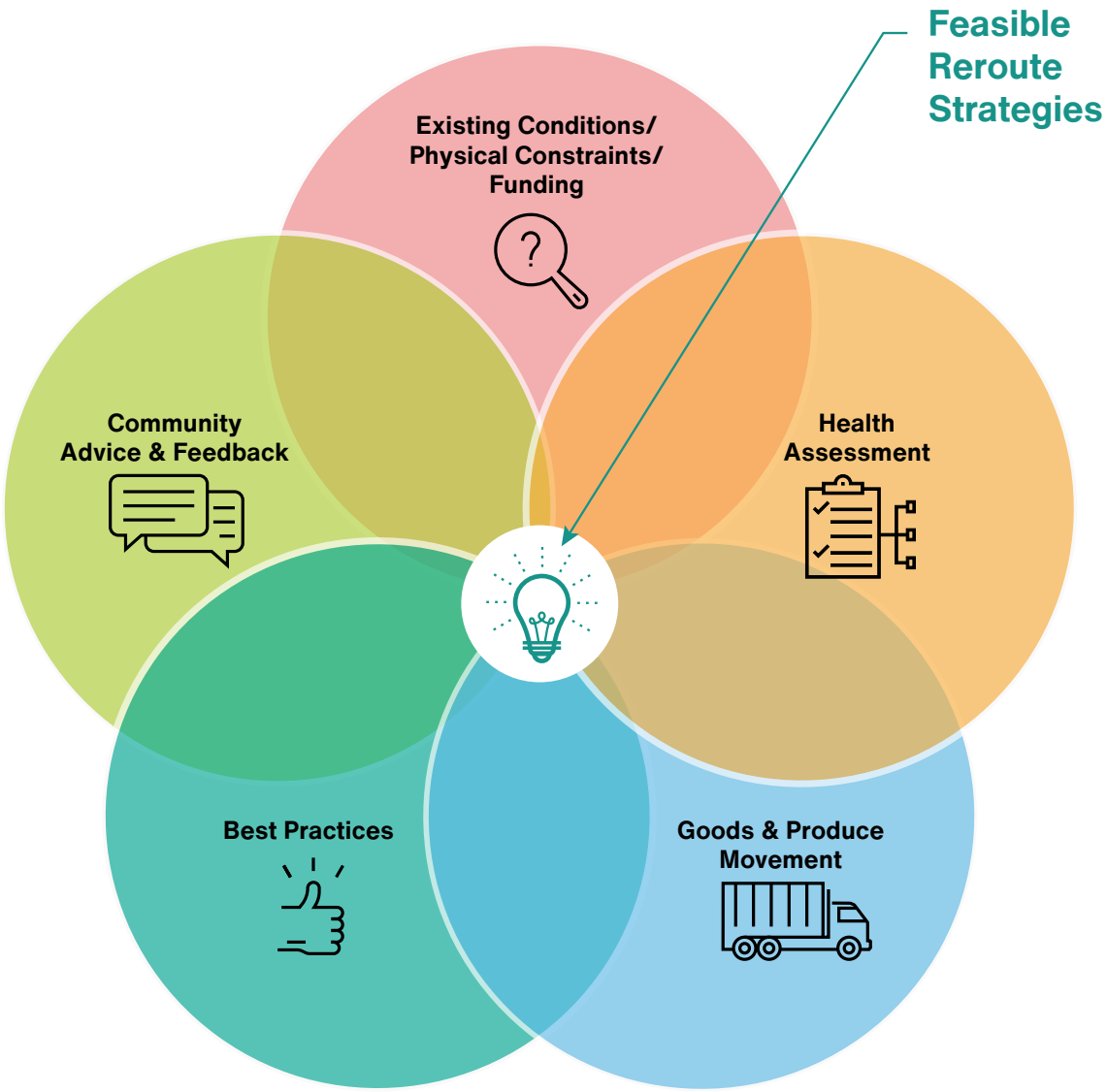
STAKEHOLDER AND COMMUNITY ENGAGEMENT

The project team conducted a robust stakeholder and community engagement strategy to gather feedback from technical experts and community members who live and work in the South Central Fresno AB 617 community and experience impacts from truck travel every day. Project Advisory Groups were established to provide critical input at project milestones. Multilingual community engagement was conducted in the form of pop-up events, surveys, community meetings, and digital outreach.

Key concerns from community members included negative health impacts and transportation safety issues from truck travel in the highly industrialized study area, as well as the need for businesses to maintain access to the various industrial sites and truck-generating uses for goods movement.

DEVELOPING RECOMMENDATIONS

The five key considerations below determined the feasible reroute strategies that the study could recommend.



RECOMMENDATIONS

Infrastructure Strategy Recommendations

- Removal of approximately 43 miles of existing truck routes, mapped and listed in Section 5
  - Includes removal of truck routes that are currently within 1000 ft of residential areas and near other sensitive receptors where possible, while providing alternative routes as needed
- Approximately 3.6 miles of designated truck reroutes are proposed as additions along Cesar Chavez Boulevard, West Avenue, H Street, Fresno Street, E Street, and Central Avenue to provide alternative connections
- Thirteen (13) (covering 16 square miles) Truck Bypass Restriction Zones designated to remove bypass travel for heavy-duty trucks along local roadways near sensitive receptors, such as residential areas and schools.
  - Includes 4.75 of the 7.3 square miles (65%) of residential areas in South Central Fresno
- One hundred thirty-eight (138) improvements to make walking, biking, and rolling (for people using strollers, wheelchairs and walkers) safer, easier and less stressful, such as new sidewalks, crosswalks, and bike lanes.
- Thirty-two (32) or over 36 miles of roadway and highway improvements such as traffic-calming, roadway repaving, and roadway reconfigurations.
- Forty-one (41) truck-focused signage and signalization improvements.

Non-Infrastructure Strategy Recommendations

- Education, technology, and enforcement strategies to address non-infrastructure issues and assist in implementing new strategies such as Truck Bypass Restriction Zones.

NEXT STEPS

As this is a planning study, the plan provides implementation strategies, including a prioritized list of the recommended strategies, with policy considerations and funding opportunities for implementation. The intent of this document is to serve as a planning-level analysis and guide for the City with which to evaluate and determine the feasibility of implementing the study's recommendations.

1 Introduction & Background

The City of Fresno and the San Joaquin Valley Air Pollution Control District (SJVAPCD) are seeking to develop innovative and implementable mobility solutions and strategies to support the South Central Fresno community. There is a significant industrial presence operating in the central and south portions of the Fresno community, which includes a fossil fuel electric power generation facility along with several other industrial sources. Industrial uses in the South Central Fresno community have created a high cumulative air pollution exposure burden. This has in turn impacted a considerable number of census tracts that have been designated as disadvantaged communities, as well as sensitive locations including schools, community centers, and hospitals.

The community was prioritized by the San Joaquin Valley's Assembly Bill (AB) 617 Community Steering Committee (CSC). The San Joaquin Valley has been the focus of numerous air quality studies which lay the necessary foundation for the development of an emissions reduction program in this urban community. The community also has high asthma rates and cardiovascular disease impacts, along with high rates of poverty, unemployment, and limited English-speaking households.

The Truck Reroute Study identifies, analyzes, and evaluates potential strategies that freight impacted communities in the AB 617 area might take in cooperation with the City of Fresno to abate truck impacts, including:

- **Mobile source emission impacts, such as air pollution**
- **Non-emission impacts, such as noise, polluted runoff, traffic congestion, active transportation conflicts, residential and school impacts, and excess wear for local pavements and bridges.**

In parallel to the Truck Reroute Study, the City also commissioned the UC Merced Community and Labor Center to conduct a Health Impact Assessment (HIA) to assess the impact of air pollution on health outcomes citywide and explore residents' health needs. The results of the HIA were intended to inform the Truck Reroute Study.

The overall study has determined reroute strategies for heavy-duty trucks travelling within the community to reduce the negative effects of excess truck traffic for South Central Fresno community residents.

1.1 PAST EFFORTS

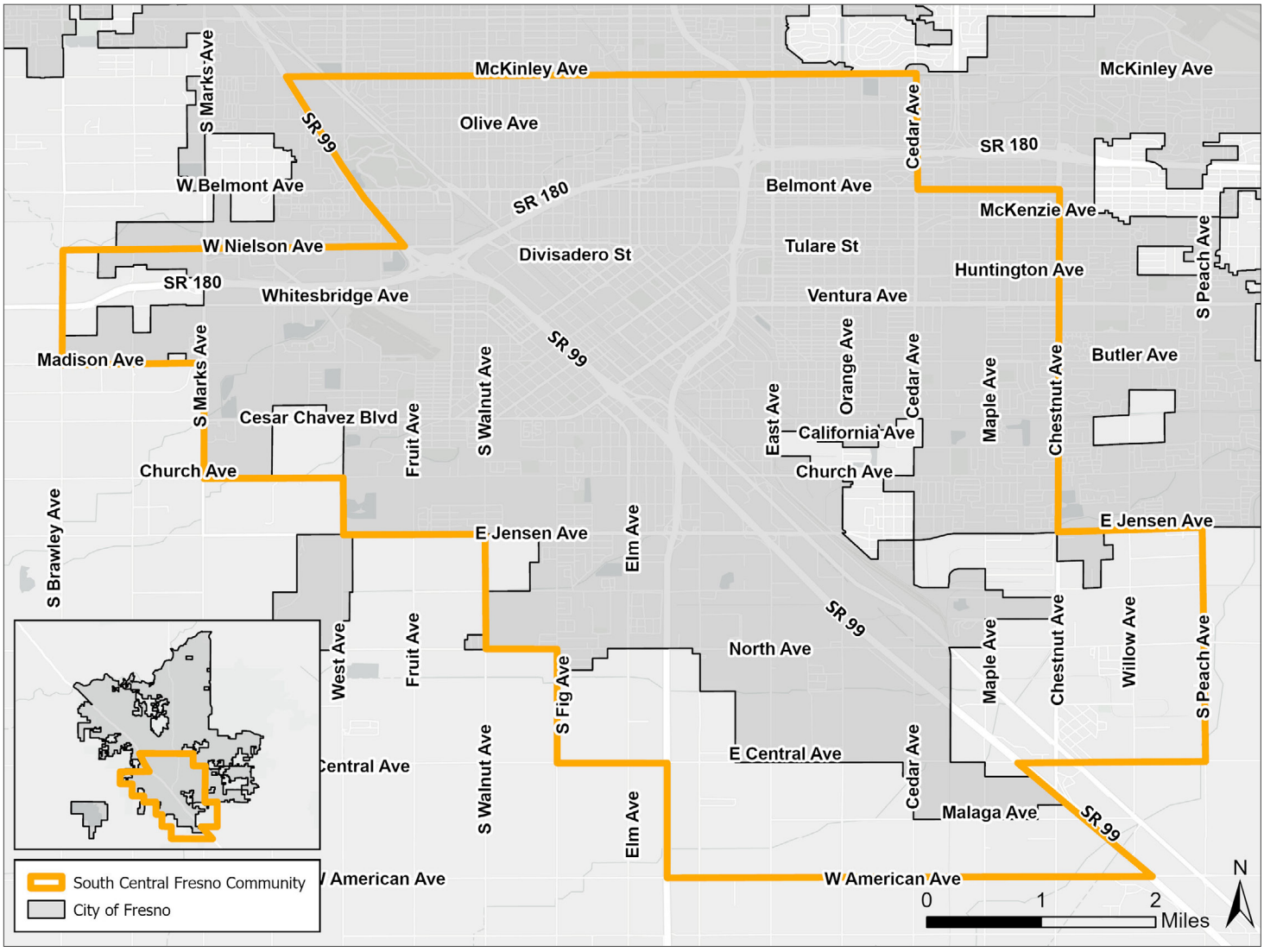
The California Air Resources Board (CARB) has been a leader in legislative action to promote and protect public health, welfare, and ecological resources through effective reduction of air pollutants. Legislative and regulatory efforts by the State of California have helped advance technology that reduces the emissions of diesel combustion engines over the past several decades. The Truck and Bus Regulation, in effect since 2008, requires heavy-duty diesel vehicles to reduce toxic air contaminants (TACs) emissions from their exhaust. In the latest installment of the regulation, all trucks and buses will be required to have 2010 or newer model year engines to further reduce particulate matter and NOx emissions.

Other CARB efforts include the Advanced Clean Fleets regulation (adopted in April 2023), a part of a broader strategy to deploy medium- and heavy-duty zero-emission vehicles (ZEV) everywhere feasible. This Advanced Clean Fleets regulation mandates that manufacturers can only sell zero-emission medium-and heavy-duty vehicles starting in 2036. Additionally, the regulation includes a one-time reporting requirement for large entities and fleets. Emission reductions regulations will continue to expand over the next decade due to various regulations and legislative efforts.

1.2 STUDY AREA

The South Central Fresno community is located in the southernmost portion of the City of Fresno and is approximately 29 square miles. The study area encompasses Downtown Fresno and 1,208 acres in unincorporated Fresno County, including the communities of Calwa and Malaga (Figure 1.1). The South Central Fresno community is also an AB 617 community, which is recognized by the California Air Resources Board as an environmental justice community that is severely impacted by air pollution. Poor air quality in South Central Fresno is largely attributed to high traffic volumes and freight traffic traveling along several highways. The community is traversed by State Routes (SR) 99, 41, and 180. SR 99 runs diagonally across the study area, while SR 41 runs north-south and SR 180 runs east-west through the community.

Figure 1.1: *South Central Fresno Community Study Area*



2 Existing Conditions

To set a baseline for the study, the technical team evaluated existing conditions that are relevant to truck rerouting. The subsections below contain general descriptions of the demographics, transportation infrastructure, and land uses found in the study area.

2.1 DEMOGRAPHIC CONDITIONS

The South Central Fresno AB 617 Community is home to approximately 122,500 residents (2020 U.S. Census), which is approximately 22.5% of the total population of the City of Fresno. The population in the South Central community has faced a slight decline of 1.7% since 2010, whereas the City of Fresno has experienced an 8.7% population growth over the same period. The decline in population can be attributed to the heavy industrial sector located in the area. Population density is highest in Downtown Fresno, as well as in the Roosevelt community located just south of SR 180 and east of SR 41.

South Central Fresno has a labor force participation rate (55.6%) lower than that of the overall City of Fresno (61.5%), as well as a higher unemployment rate (12.8%) compared to the city-wide average (9.5%). The most common jobs within the study area are healthcare/social assistance, manufacturing, transportation/warehousing, and wholesale trade. These jobs match the existing land use character within the area, which features zones for light and heavy industrial and agricultural uses. The majority of residential land use within the study area is characterized as medium density.

The median household income is approximately $35,000 compared to the citywide median of $53,000. Within the community, renter occupied households have a median income of $28,300, while owner-occupied households have a median household income of $57,500. Over 50% of households experience housing burden (defined as a percent threshold of income spent on housing), and approximately 37.5% of households receive nutrition assistance.

Fresno is the third largest city in the United States for cities with a majority Hispanic population. Within South Central Fresno, 70.7% of its residents identify as Hispanic. In South Central Fresno, 17.8% of residents identify as linguistically isolated, defined as speaking English either “not well” or “not at all.”

All tracts within the AB 617 community identify in the top 90th percentile statewide in annual mean particulate matter (PM) 2.5 concentration, with most tracts ranking in the top 95th percentile statewide. Particulate matter is a by-product of emissions from transportation vehicles, including freight vehicles, as well as industrial processes, especially those that involve combustion. High particulate matter is associated with higher risks of asthma and cardiovascular disease. The South Central Fresno community has an age-adjusted emergency department visit rate of 116 per 10,000 for asthma and 19 per 10,000 for cardiovascular disease.

2.2 TRANSPORTATION CONDITIONS

The South Central Fresno area is a regional hub for goods movement and the freight industry for the Central Valley Region, given its proximity to rail and highways. SR 99, 41, and 180 are all truck routes identified on the City of Fresno’s Designated Truck Routes Map (2005). In addition to these routes, other existing truck routes running north-south through this community include Elm Avenue, East Avenue, Cedar Avenue, and Walnut Avenue. Existing east-west truck routes running through the study area include Cesar Chavez Boulevard (formerly California Avenue, Ventura Street, and Kings Canyon Boulevard), Jensen Avenue, North Avenue, and Golden State Boulevard. There are also several shorter segments identified as County-permitted routes and future truck routes. Transit is limited in this portion of the City, with only three Fresno Area Express (FAX) routes operating in this area, including routes 32, 34, and 38. Route 32 only operates during the week and route 38 provides 15-minute headways during weekdays.

In addition to providing access for goods movement and freight vehicles, SR 99 and these designated truck corridors are utilized as an alternative to I-5 for regional passenger travel. The addition of passenger travel on these corridors

combined with limited multimodal access within South Central Fresno contributes to significant traffic congestion. This leads to delays for freight delivery schedules, commuters arriving to work late, and an accumulation of greenhouse gas (GHG) emissions from freight and passenger vehicles idling in traffic. Additionally, heavy truck volumes within South Central Fresno can impair the community's character for residents, creating unsafe bicyclist and pedestrian conditions, and poor air quality conditions for residents living along truck routes.

The Caltrans California Truck Network for State highways is the official source for legal truck access routes in the State. State Route 99 through Fresno is identified as a Surface Transportation Assistance Act (STAA) National Network facility. Other highways in Fresno, including State Routes 180, 41, and 168 are identified as Terminal Access routes through greater Fresno.

The City of Fresno's Designated Truck Routes (adopted in 2005) identifies the routes on which commercial vehicles exceeding 12,000 pounds are permitted to travel. Within the study area, portions of Cesar Chavez Boulevard, as well as Church, Jensen, West, Walnut, and Elm Avenues, among other streets, are listed as truck routes. Figures 2.1-2.5 show the City of Fresno's 2005 designated truck routes map for the study area.

Figure 2.1: *City Of Fresno Designated Truck Routes (2005)*

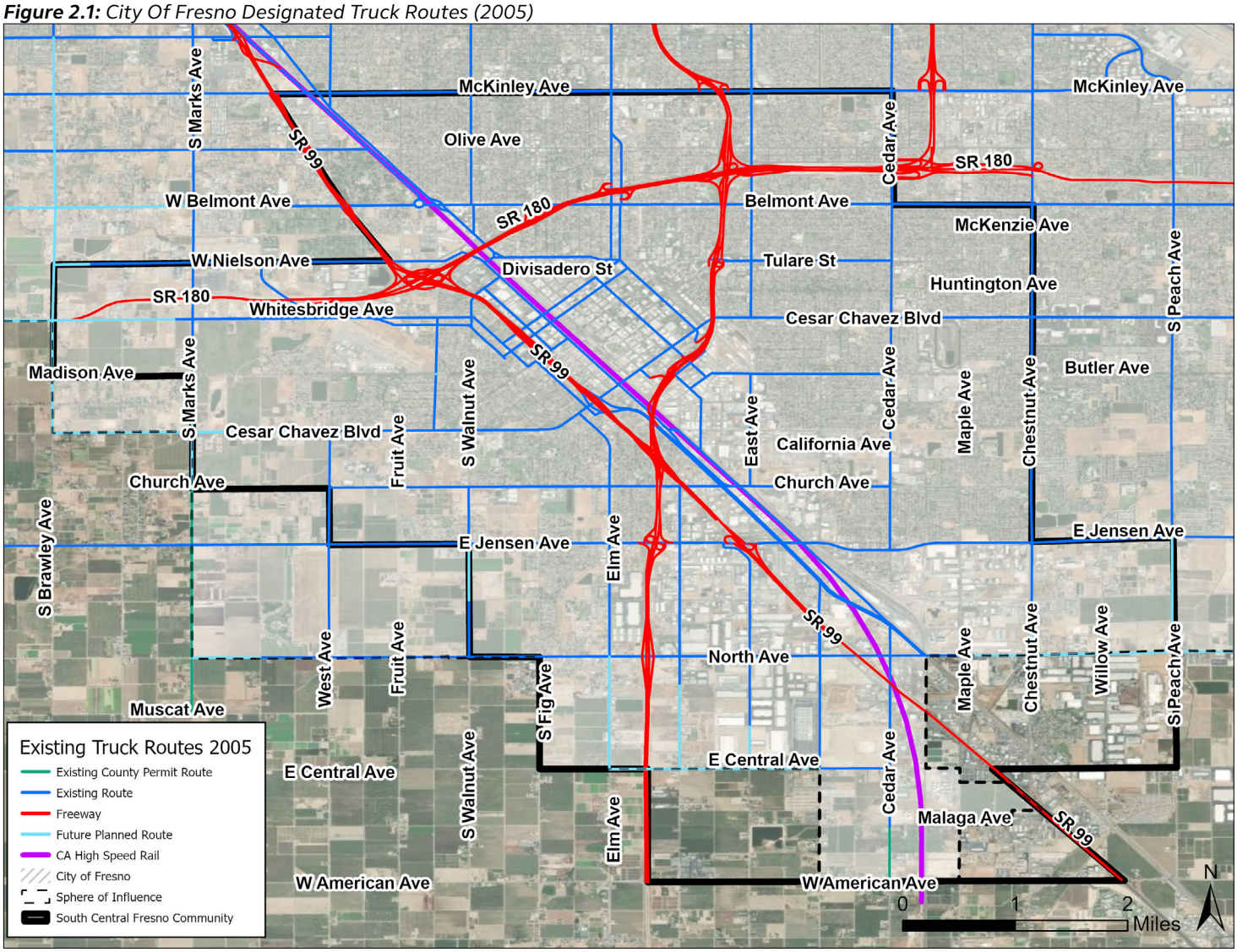


Figure 2.2: *City Of Fresno Designated Truck Routes (2005) – Northeast Quadrant*

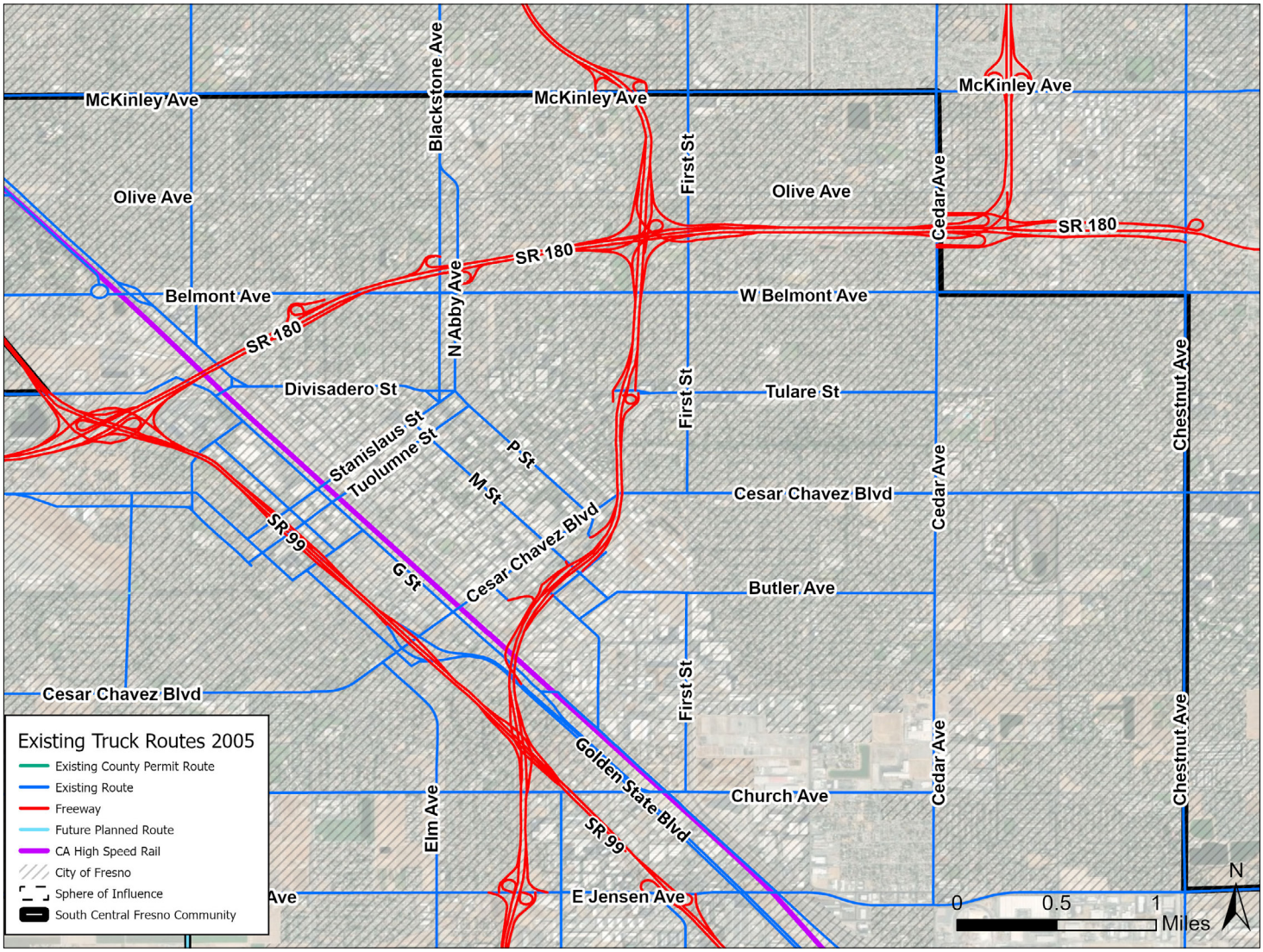


Figure 2.3: *City Of Fresno Designated Truck Routes (2005) – Northwest Quadrant*

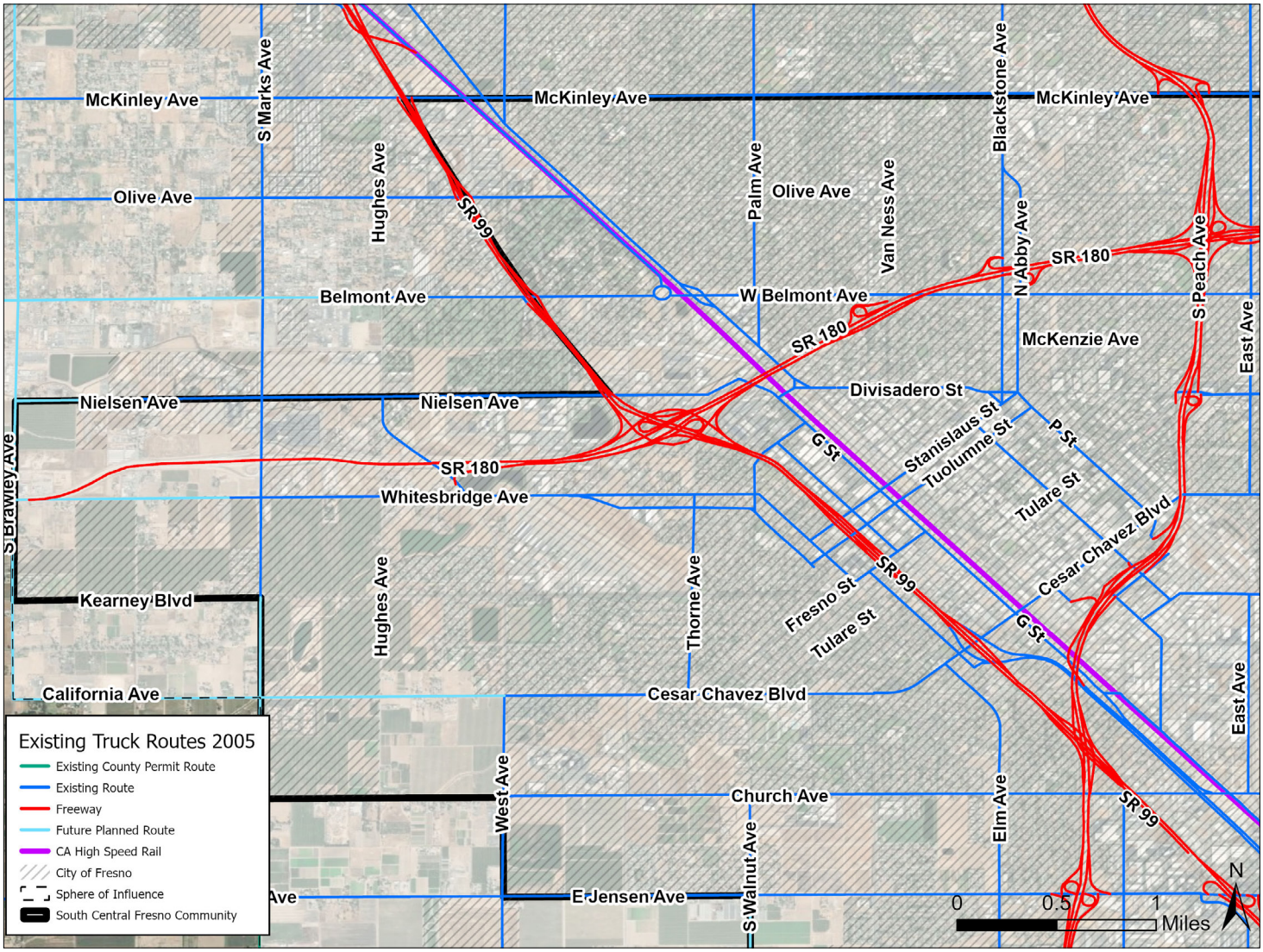


Figure 2.4: *City Of Fresno Designated Truck Routes (2005) – Southwest Quadrant*

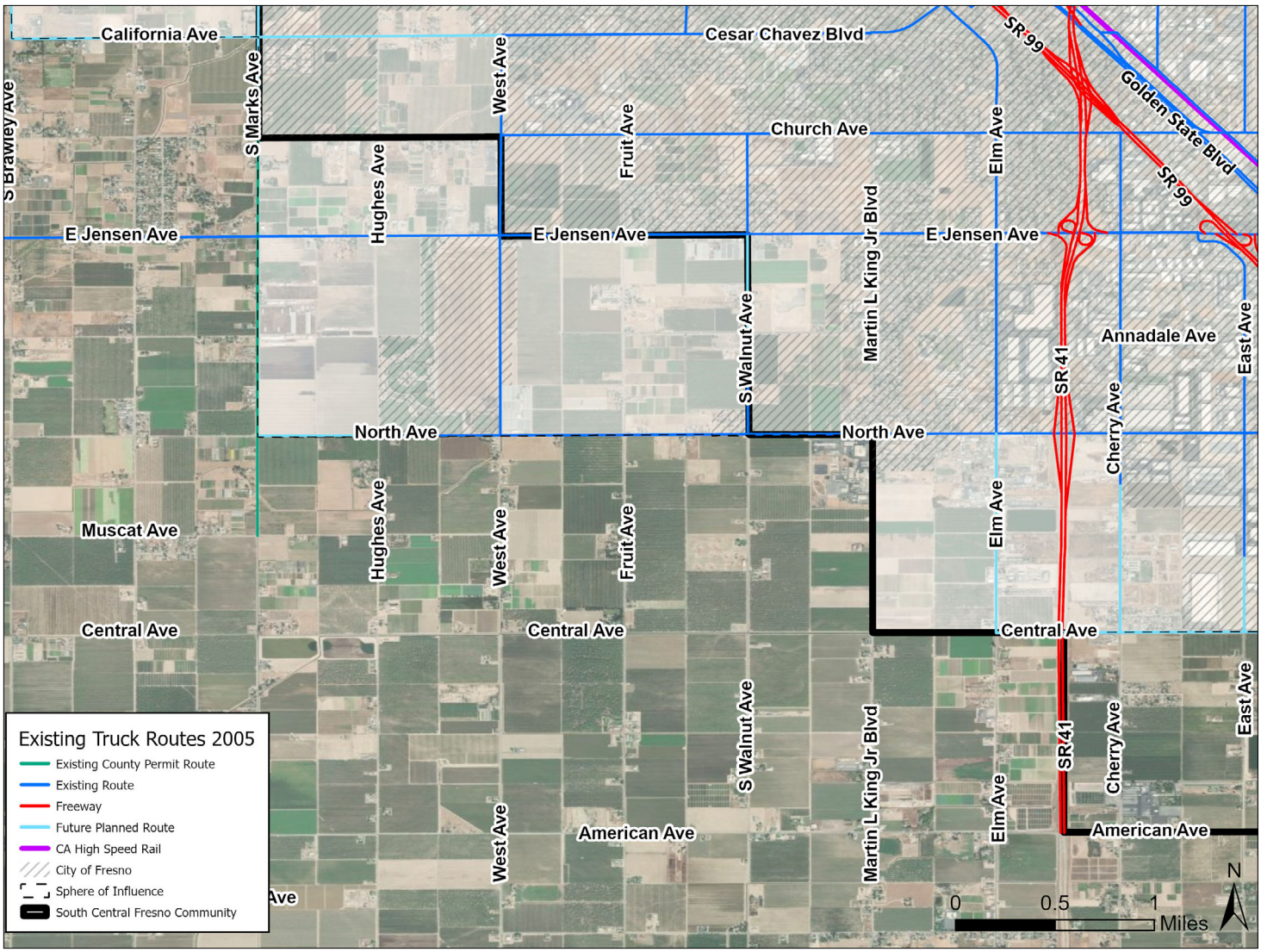
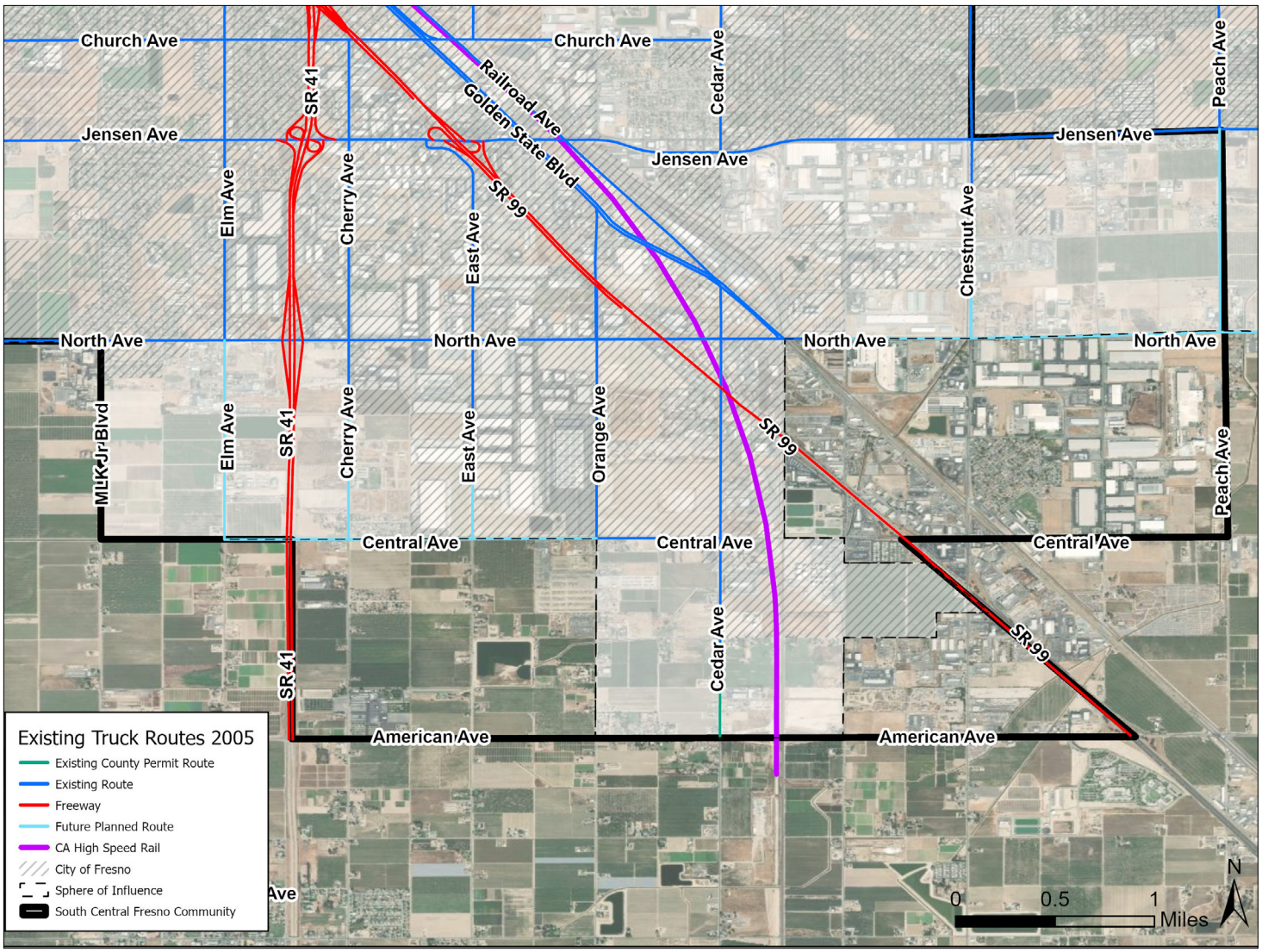


Figure 2.5: *City Of Fresno Designated Truck Routes (2005) – Southeast Quadrant*



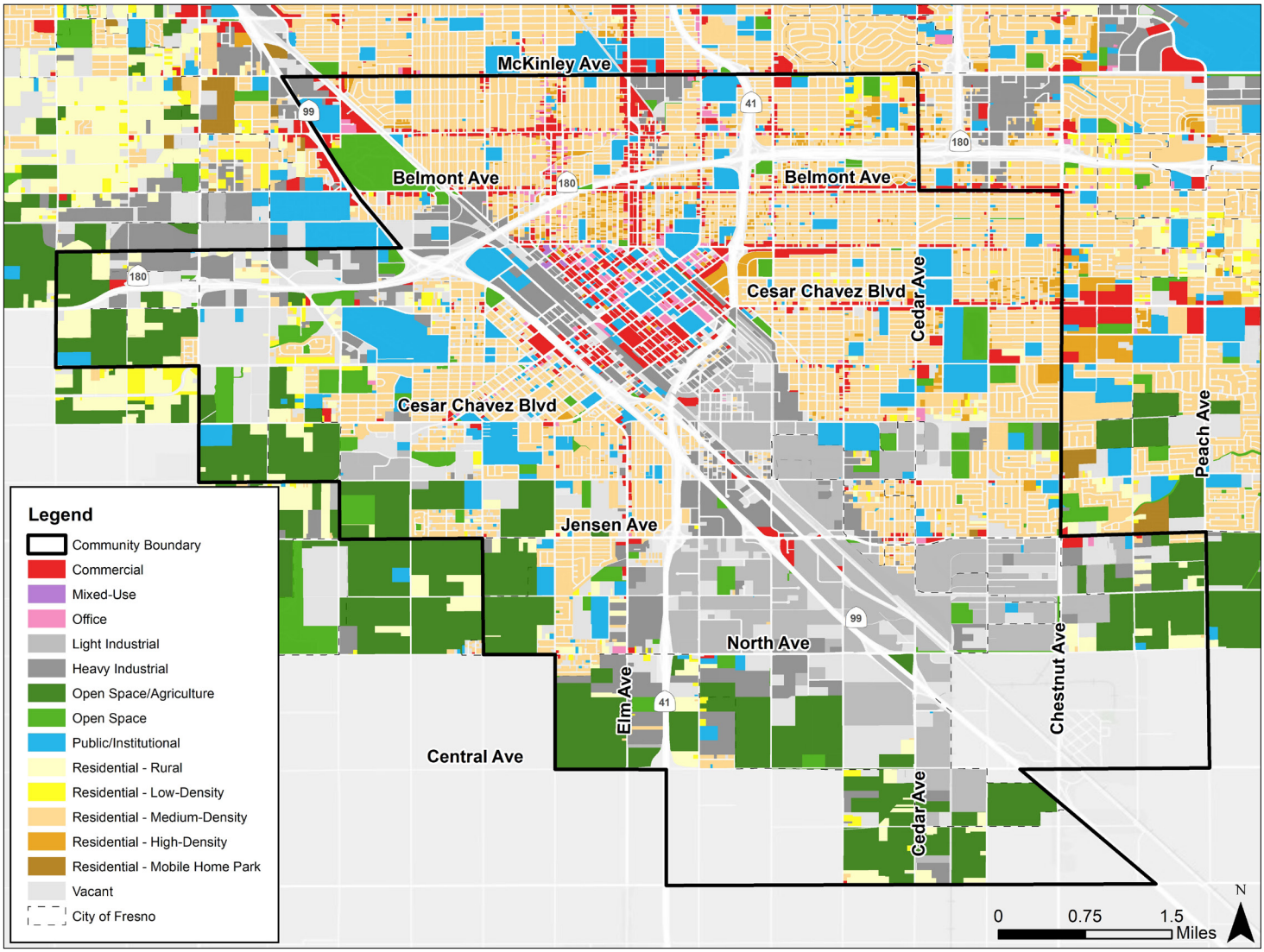
The County of Fresno is built on a "farm-to-market" highway system, linking cities and unincorporated communities together though rural and suburban roadways. Critical freight, agricultural, and resource product movement take place not only on State Highways, but on these rural connectors. The 2013 San Joaquin Valley Interregional Goods Movement Study states that 90% of freight exports and imports into the San Joaquin Valley are by truck, and these volumes are anticipated to increase to 93% by 2040. An increase in truck movements will likely contribute to the deterioration of roadway surfaces, especially on connector roadways.

The 2018 California Statewide Local Streets and Roads Needs Assessment Report notes that the average weighted Pavement Condition Index (PCI) in the South Central region is within 50-60, placing the roadways "at higher risk," just above the condition of "poor". Many arterials and collector streets in the South Central Fresno community experience fatigue and transverse cracking, and have been rated under 50 within the "poor" category.

2.3 LAND USE CONDITIONS

The study area includes a range of existing manufacturing, warehousing, logistics businesses, and vacant sites. Notably, most light and heavy industrial uses that are often major producers of truck demand are located along SR 99, SR 41, and SR 180. As illustrated in the figure below, these uses are bordered by mostly residential uses, as well as agricultural uses in the southern portion of the study area. The heavy influence of industrial land uses has influenced both the quantity and location of truck routes in the South Central Fresno community. Many of these industrial land uses are located in the southwestern and southeastern quadrants of the study area. Many of the businesses located in this area require frequent truck visits both for picking up and delivering goods and materials. The California Vehicle Code (CVC) prohibits local authorities from restricting truck routes that allow them to access businesses in this area. More specifically, CVC 35701, 35702, 35703, 35712, 35714 state that restrictions to truck access cannot impede truck access to state highways or from making pick-ups or deliveries. These regulations inform the alternative strategies discussed later in this report, including Truck Bypass Restriction Zones and proposed truck re-routes. These alternative strategies aim to regulate truck activity in areas where residential areas are collocated with industrial land uses, without impeding the needs of businesses.

Figure 2.6: *Existing Land Use*



2.4 RELEVANT PLANNING DOCUMENTS & PROJECTS

As part of gaining an in-depth understanding of the South Central Fresno community, the project team reviewed a total of 32 planning documents relevant to the study area. Documents reviewed for this project discussed a broad variety of topics from a comprehensive list of agencies, including the California Department of Transportation (Caltrans), the City of Fresno, Fresno County, Fresno Council of Governments (Fresno COG), and UC Merced. Topics discussed in the plans are summarized in the Existing Conditions report and were related to regional travel patterns, environmental and air quality conditions, land use and development, transit, and active transportation.

Fresno Community Environmental Health Impact Assessment (UC Merced Community and Labor Center, April 2024)

In addition to reviewing documents related to past and ongoing planning efforts, the project team coordinated with the UC Merced Community and Labor Center during the development of the HIA and reviewed the study, which was published in April 2024. The study found that asthma rates, pre-term birth, and infant mortality outcomes were significantly higher in South Central Fresno as compared to the rest of the City. These conditions were higher among residents who reported having less education, less income, or being a person of color. Residents who live less than 1000 feet from air pollution sources, including freeways, truck routes, or major roads, experienced a higher prevalence of chronic health conditions, such as pre-term birth and infant mortality risks.

When surveyed as part of the HIA, residents expressed high concerns regarding environmental issues such as poor street conditions, air quality, and climate change. 43% of residents reported having at least one chronic health condition, and about 25% of reproductive-aged women reported having experienced an adverse pregnancy outcome such as miscarriage, stillbirth, infant death, or birth defects. A significant portion of the population also reported an inability to rest or work effectively because of heat, air pollution, or truck traffic noise.

As a result, the HIA included recommendations to be considered for the Truck Reroute Study:

1. The South Central Fresno AB 617 Community Truck Reroute Study should propose options that minimize, to the greatest degree possible, truck routes and traffic within 1,000 feet of residential areas. A more conservative buffer should be considered, given that residents within the South Central Fresno AB 617 Community and communities of color bear higher health risks for the same exposures to pollution.
2. Implement season-specific strategies to mitigate truck emissions. Acute exposure was shown to have significant health impacts.
3. The use of zero-emission commercial trucks is also recommended to reduce population exposures to air pollution.

The recommendations from the HIA were incorporated into the Truck Reroute Study's process for selecting routes to propose for removal or reroute, the development of Truck Bypass Restriction Zones, and the development of non-infrastructure strategies to abate truck impacts, which are all discussed in Section 5.

3 Community Engagement

During development of the Truck Reroute Study, the City of Fresno provided community members and stakeholders with multiple opportunities and avenues to participate in the planning process and provide input that would be incorporated into the plan. This section highlights the strategies used to engage with community members and stakeholders across South Central Fresno and summarizes the input received from participants. As the study's objective is to abate truck travel impacts on South Central Fresno residents, input from residents was critical in influencing the study's recommendations.

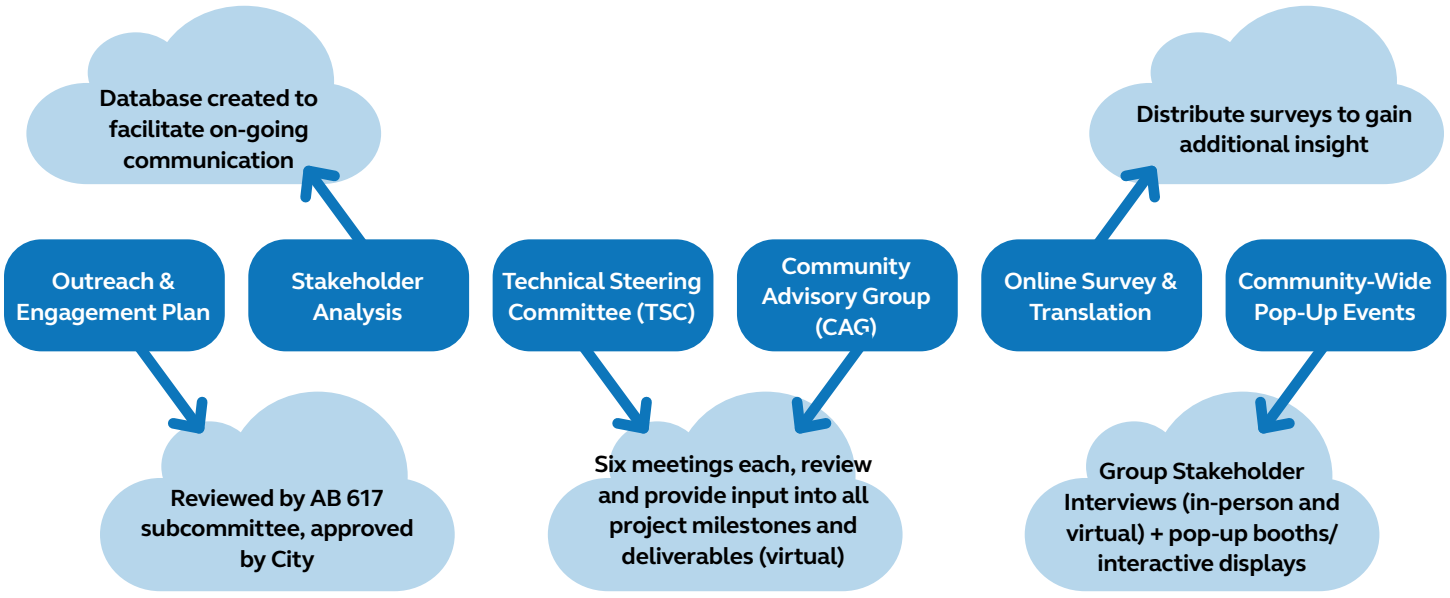
3.1 ENGAGEMENT APPROACH

Conducting community engagement across the study area requires the use of a variety of strategies to reach stakeholders from a variety of communities, backgrounds, and abilities to participate. To achieve this objective, an Outreach and Engagement Plan was developed to detail the various in-person and online elements of the project's engagement. The Plan included a strategic stakeholder analysis to identify key stakeholders and how to best engage each stakeholder, with input from the AB 617 Community Steering Committee.

The strategies implemented throughout the study are listed below and summarized in the figure that follows:

- Formation of a Community Advisory Group (CAG), consisting of community member and local stakeholder representatives
- Formation of a Technical Steering Committee (TSC), consisting of relevant agency representatives
- Multilingual online and paper surveys
- Group stakeholder interviews
- Pop-up events and community meetings
- Digital outreach via the project web page, e-blasts, social media, and a project-specific email address for public comment submittalHosting project milestone documents on the project web page for public review and providing hardcopies at public venues, such as libraries and community centers

Figure 3.1: *Engagement Activities*



The variety of engagement tactics and activities offered throughout the development of the Truck Reroute Study was intended to not only broaden the reach of the engagement effort across the study area, but to also provide stakeholders with a range of avenues and opportunities to engage with the planning process designed to fit varying schedules and abilities to participate. Several points of contact and feedback loops were offered at every project milestone to solicit feedback from stakeholders. Project team members recorded both general and detailed concerns throughout the entire study process to ensure that input was built upon over time and incorporated into the study recommendations, regardless of when the input was received.

3.2 COMMUNITY ADVISORY GROUP (CAG) AND TECHNICAL STEERING COMMITTEE (TSC) MEETINGS

With input from the AB 617 Community Steering Committee, two groups were formed to meet with the project team virtually six times throughout the duration of the project, aligning with project milestones. The Community Advisory Group was comprised of people who live or work within the AB 617 community. The goal was to have a diverse group who will provide input and be representative of the various voices throughout the study area. The Technical Steering Committee was comprised of staff from relevant agencies who could serve as peer advisors to the technical team, advising on technical considerations and design standards as needed, related projects planned or currently underway, and the feasibility of policies and recommendations. The groups and their roles are described in the table below.

Table 3.1: *CAG and TSC Roles and Responsibilities*

GROUP	MEMBERS	ROLE
Community Advisory Group (CAG)	AB 617 CSC Sub-Committee Members, Businesses, Community-Based Organizations, Residents, and School District Representatives	• Represent the views of the community • Provide on-the-ground input and feedback • Project champions • Balance technical issues and community values
Technical Steering Committee (TSC)	Fresno County, Fresno Council of Governments, Caltrans, City Department of Public Works, SJVAPCD, UC Merced	• Peer reviewers and advisors on technical items • Provide critical input regarding issues, concerns, and feasibility

While most meetings were scheduled separately to accommodate group member schedules, the content presented to each group was the same, with specific asks customized to the group members' expertise. The content and key takeaways from each meeting are summarized below.

Table 3.2: *CAG and TSC Meeting Summaries*

MEETING #	CAG MEETING DATE	TSC MEETING DATE	KEY TAKEAWAYS
1	March 23, 2023	February 21, 2023	• The project team introduced the study background, description of key milestones, project schedule, and the roles of the CAG and TSC at both meetings. The TSC was intended to provide technical expertise on recommendations brought by the CAG and project team. • CAG members provided recommendations for distribution of the first community survey and general project outreach. • The TSC was advised that a formal data request for the existing conditions analysis would follow the meeting.
2	June 1, 2023	May 23, 2023	• The project team provided an outline of the Existing Conditions report, highlighted key findings, and presented the results of the first community survey. • Following the meetings, CAG and TSC members received a copy of the Existing Conditions report for review and comment.
3	July 19, 2023	July 18, 2023	• The project team discussed the 250 comments received on the Existing Conditions report with the CAG and TSC, including feedback on technical analyses, the community engagement process, and updates on current studies and projects in the study area, • The project team also presented the outline for the Best Practices report and solicited input from the groups.
4	August 24, 2023	August 22, 2023	• The project team presented the findings from the Best Practices report and case studies to consider for the City of Fresno. • UC Merced presented preliminary findings from their ongoing health assessment study. • The CAG provided recommendations for pop-up event locations. • Following the meetings, CAG and TSC members received a copy of the Best Practices report for review and comment.
5	November 16, 2023 (held as a joint meeting)		• The project team summarized outreach findings from the existing conditions phase and presented an overview of the draft strategies being developed for the recommendations report and solicited input from the group. • Following the meeting, the project team provided a link to the community survey regarding the draft strategies.
6	May 9, 2024	May 8, 2024	• The project team provided a preview of the Draft Truck Routing and Implementation Strategies report in advance of public release and solicited feedback from both groups. • Additional community meeting dates to present the report and the UC Merced Health Impact Assessment findings were announced, along with a timeline for public review.

3.3 COMMUNITY OUTREACH: EXISTING CONDITIONS PHASE

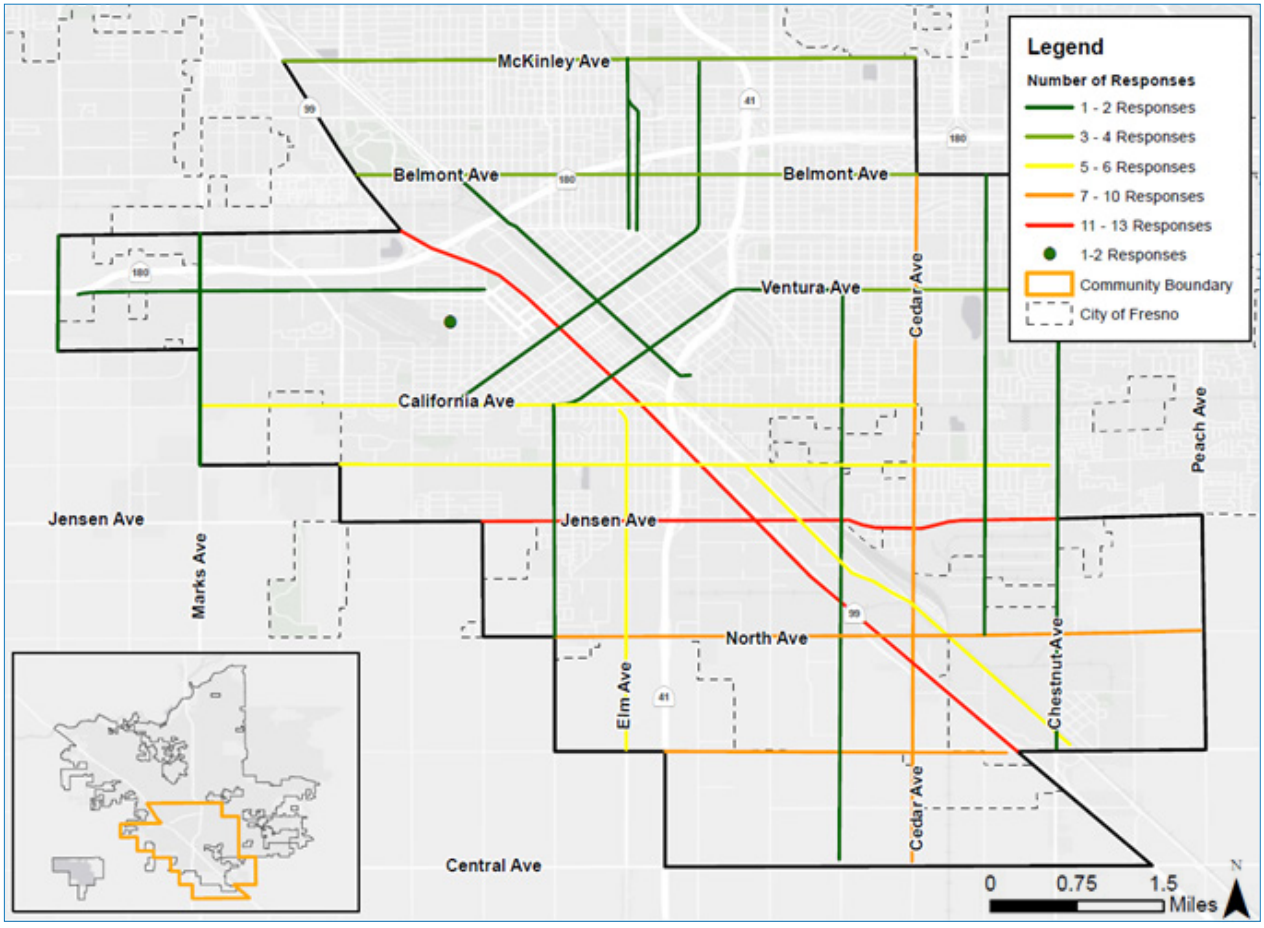
Community outreach was designed to align with two main phases of the project. The first was the Existing Conditions phase, where the project team sought to understand the community issues that currently exist in the study area to complement the technical analysis described in Section 1 of this report. As a part of this phase, the team distributed a survey, interviewed stakeholders, and held pop-up booths at events in the community to engage residents.

3.3.1 GROUP STAKEHOLDER INTERVIEWS AND COMMUNITY SURVEY

The outreach team held one-hour stakeholder interviews with seven people in March 2023 to gather opinions related to the existing conditions analysis. They were promoted through email blasts, the CAG, the City's website, and through the City's channels of information. The interviews were held on a Friday and Saturday at locally accessible locations.

As turnout was low, the team distributed a survey in English, Spanish, and Hmong to solicit input on issues regarding truck travel that residents experience in the study area. The survey was promoted again through email blasts, the City's website and social media channels, the CAG, and distribution at community centers, council district-sponsored meetings, community meetings. The survey was available between March 13 and April 25, 2023. 60 respondents completed the survey, identifying where they lived or worked, which streets felt the least safe to travel along, what conditions make streets feel unsafe, how air and noise pollution impacts respondents, how truck driver behavior impacts respondents' daily lives, and what kinds of improvements respondents would like to see be made. Results were mapped to illustrate residents' areas of concern – as an example, streets where respondents experience heightened noise and heavier fumes from truck traffic are shown in the figure below. The most frequently mentioned streets included North Avenue, Jensen Avenue, Cedar Avenue, California Avenue (now Cesar Chavez Boulevard), Elm Avenue, Golden State Boulevard, SR 99, and Church Avenue. These streets are all existing truck routes.

Figure 3.2: *Streets Where Residents Experience Higher Truck Noise and Emissions*



3.3.2 POP-UP EVENTS

To expand outreach following the completion of the Existing Conditions report, pop-up events were held in September and October 2023 at the City's Fiestas Patrias event and Trunk or Treat at Maxie L. Parks Community Center. Participants were asked to confirm or add areas of concern identified from the first community survey and existing conditions analysis. They were also asked to specify treatments they wanted to see, based on their concerns with truck travel in the study area. Between the two events, there were a total of over 600 interactions with the project team.

Figure 3.3: *Pop-up Event Photos*

Key feedback themes heard from participants included:

- Pedestrian and bicyclist safety issues
  - Missing sidewalks and crosswalks near important destinations
  - Insufficient separation between trucks and other users
  - Lack of bike lanes
  - Queueing at freeway onramps causing unsafe conditions
- Truck behavior issues
  - Trucks drive at unsafe speeds and don't observe signs, especially near schools
  - Idling due to unsynchronized traffic signals
- Roadway infrastructure issues
  - Damaged street surfaces, potholes

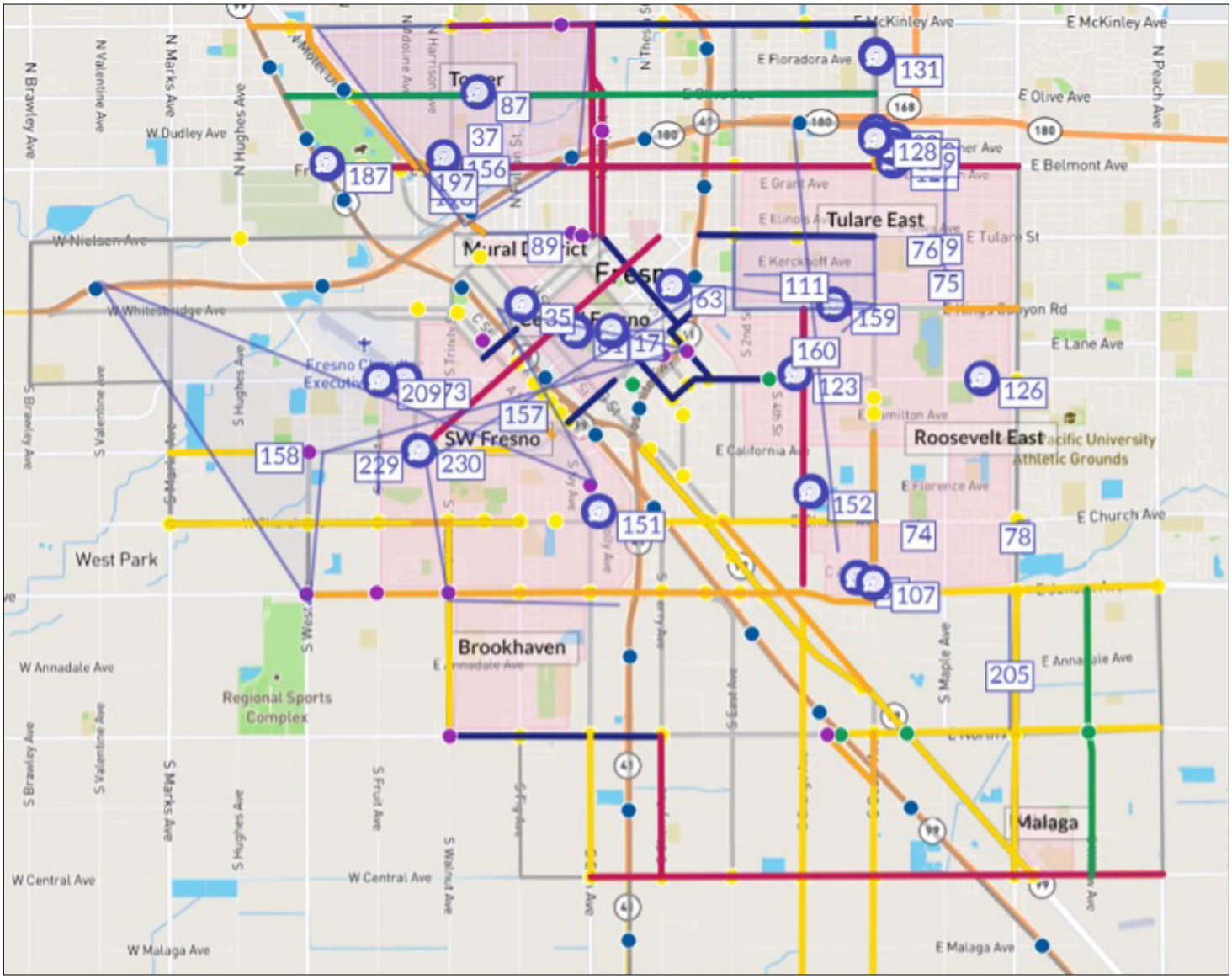
3.4 COMMUNITY OUTREACH: DRAFT STRATEGIES PHASE

The second phase of the project was the Draft Strategies Phase, where the team solicited feedback on in-progress draft strategies and recommendations that were developed to address the issues identified during the Existing Conditions phase. As a part of this phase, the project team distributed a survey and held in-person and virtual community meetings.

3.4.1 COMMUNITY SURVEY

An online survey was distributed in November 2023 after the first round of draft strategies were developed. The survey was hosted on the Maptionnaire platform in order to provide residents with an interactive map experience and was available in English, Spanish, and Hmong. Respondents were asked to view the strategies and their locations, prioritize strategies, express concern with a strategy, or add a strategy. There were a total of 256 visitors to the survey, 85 completed surveys, and 468 individual votes, comments, and additions to the strategies map.

Figure 3.4: *Maptionnaire Survey Results*



3.4.2 COMMUNITY MEETINGS

To address concerns from the community regarding online accessibility to the survey, time restraints due to the holiday season, and lack of responses from the south and southeast part of the study area, the project team held additional community meetings.

January 2024

The first community meeting was held in person at the Malaga Community Center in January 2024 to address the abovementioned concerns heard after the online survey. It also allowed the team to present findings from the UC Merced Health Impact Assessment as they were available to be integrated into the study at that time.

Figure 3.5: *Community Meeting at Malaga Community Center*

29 community members attended the meeting, and truck travel impact concerns included:

- Impact of High Speed Rail on truck circulation
- Congestion on Central Avenue and Golden State Boulevard, around schools on Front Street
- Concerns about industrial sites and truck parking next to schools and residential areas
- Car accidents on American Avenue and North Street
- High speeds of truck driving near Orange Center Elementary
- Truck routes on Jensen Avenue and Church Avenue should be removed
- Integrating the HIA results into the Truck Reroute Study

May 2024

Following the revision of the draft strategies, the project team developed the Draft Rerouting and Implementation Strategies report and released it to the public for a 30-day comment period from May 10 - June 10, 2024. The team added three community meetings to present the Draft Truck Rerouting and Implementation Strategies report in person and virtually during the public comment period and conducted another revision of the strategies. Key comments received by attendees during each meeting are summarized below. Comments received during the public comment period were recorded for incorporation into the Final Plan.

MEETING #	DATE	LOCATION	KEY TAKEAWAYS
1	May 16, 2024	Virtual	• Concern about truck route access for businesses along Elm Avenue
2	May 21, 2024	Maxie L. Parks Community Center	• Effective enforcement of Truck Bypass Restriction Zones will be a challenge • Planning studies focusing on land use should be coordinated with the Truck Reroute Study recommendations • The Kinder Morgan Fresno Terminal is an important fueling station for trucks, so Central Avenue should be designated or maintained as a truck route
3	May 22, 2024	Ted C. Wills Community Center	• Olive Avenue does not have space for bike lanes due to traffic and parking • Concern about impacts from High Speed Rail, Tower District lane reduction, bike lanes, bottle necks in Downtown, Palm, and Belmont • Desire for mailers to notify residents of planning studies

3.5 DIGITAL OUTREACH

Flyers, email blasts, social media messages, and press releases were produced and distributed for all outreach activities. The City of Fresno set up a project webpage on their website to provide information on the study, host report documents for public review, recordings of the CAG/TSC meetings, and advertise upcoming pop-up events and community meetings.

Across social media platforms (Facebook, Instagram, Twitter, Nextdoor, LinkedIn), Truck Reroute Study content was displayed over 21,000 times, and there were over 260 likes, comments, shares, and saves. On Facebook only, over 10,000 people saw the study's content.

Figure 3.6: *Sample Social Media Post*

4 Best Practices

The South Central Fresno community can benefit from implementation of truck rerouting and roadway modification best practices that were reviewed to inform this study's recommendations. This section covers best practices in safety improvement and environmental impact reduction that were informed by subject matters experts as well as case study reviews of improvements done in communities like Fresno.

4.1 SAFETY AND GEOMETRIC ROADWAY IMPROVEMENTS

Safety improvements for truck drivers and other transportation users—especially pedestrians and bicyclists—were a key part of the best practices review. Safety improvements can come in the form of geometric improvements to the roadway (such as turning radii, lane widths, and site distances), parking and loading improvements, and signage and wayfinding.

4.1.1 TURNING RADII

The turning radius of a truck defines the minimum dimensions or radius of available space required to make a turn, such as left-turns, right-turns, and U-turns. Establishing minimum turning radii on roadways and intersections is a tool often utilized to minimize the conflict of truck traffic with automobiles, bicyclists, and pedestrians on designated routes.

The Design and Access Management Guidelines for Truck Routes: Planning and Design Guide (2020) establishes the minimum turning radii of design vehicles, shown in Table 4.1 below.

Table 4.1: *Minimum Turning Radii of Design Vehicles*

Design Vehicle Type	Single-Unit Truck	Single-Unit Truck (Three Axle)	Articulated Bus	Intermediate Semitrailer
Symbol	SU-30	SU-40	A-BUS	WB-40
Minimum Design Turning Radius (ft)	41.8	51.2	39.4	39.9
Centerlinea Turning Radius (CTR) (ft)	38.0	47.4	35.5	36.0
Minimum Inside Radius (ft)	28.4	36.4	21.3	19.3

Design Vehicle Type	Interstate Semitrailer		"Double-Bottom" Combination	Rocky Mtn Double	Triple-Semitrailer-trailers	Turnpike Double-Semitrailer-trailer
Symbol	WB-62*	WB-67**	WB-67D	WB-92D	WB-100T	WB-109D*
Minimum Design Turning Radius (ft)	44.8	44.8	44.8	82.0	44.8	59.9
Centerline[a] Turning Radius (CTR) (ft)	41.0	41.0	40.9	78.0	40.9	55.9
Minimum Inside Radius (ft)	7.4	1.9	19.1	55.6	9.7	13.8

** Design vehicle with 48-ft trailer as adopted in 1982 STAA (Surface Transportation Assistance Act).*

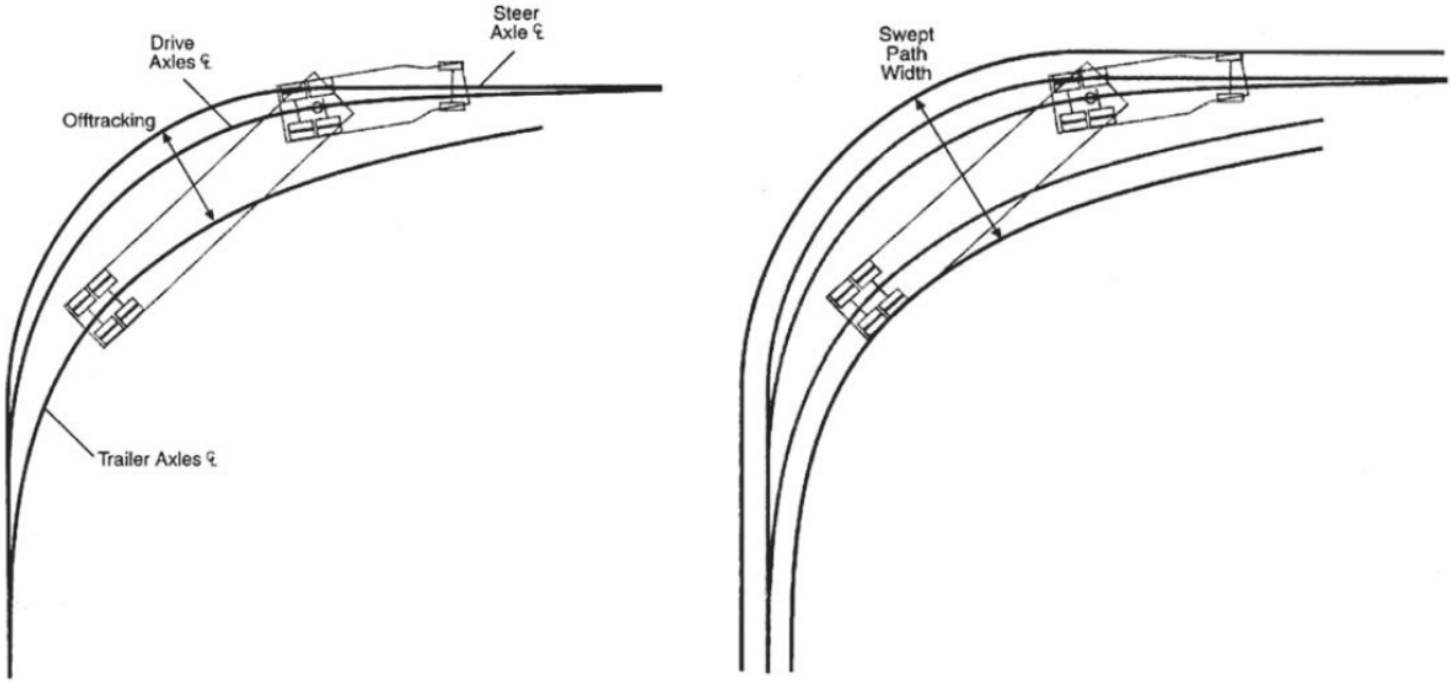
*** Design vehicle with 53-ft trailer as grandfathered in with 1982 STAA.*

[a] *The turning radius assumed by a designer when investigating possible turning paths and set at the centerline of the front axle of a vehicle. If the minimum turning path is assumed, the CTR equals the minimum design turning radius minus one-half the front width of the vehicle.*

Off-tracking refers to the situation where axles or axle sets located towards the rear of a truck do not follow the same path as the front axle. When a truck is traveling at low speeds, particularly at intersections, the rear axles tend to follow a path that is inside the path of the front axles. The space between the innermost and outermost edges of the truck's body during a turn is called the swept path, which is slightly wider than the space between the inside front axle and the outside rear axle. The maximum width of the swept path during a turn is known as the swept path width. In intersection design, both the minimum turning radius and the swept path width are considered to determine if a specific

truck design vehicle can navigate through the intersection without encroaching on curbs, shoulders, adjacent lanes, or opposing traffic. Figure 4.1 shows the general turning maneuver patterns of a 5-axle semi-trailer truck, one of the most prevalent trucks used in the study area.

Figure 4.1: *Illustration of truck offtracking (left) and swept width (right) during a turning maneuver (source: NCHRP Report 505 Review of Truck Characteristics as Factors in Roadway Design https://nacto.org/docs/usdg/nchrprpt505_harwood.pdf)*



In many cases, there are intersections along truck routes in where it is challenging to design the intersection in a way that minimizes encroachment on adjacent or opposing lanes without widening the roadway and disrupting the surrounding development. Acquiring additional land and demolishing important community structures solely to accommodate large trucks is not preferred due to its impact on the community and prohibitive cost associated with right-of-way acquisitions. In such situations, there are three alternatives to consider:

1. Reconfigure the intersection to allow trucks to make turns within the current right-of-way.
2. Maintain the current intersection layout and accept occasional instances of trucks encroaching on adjacent or opposing lanes during turns. While this approach may reduce the operational efficiency of the intersection, other drivers can usually adapt to occasional truck encroachments without significant safety concerns. Use of cat tracks or guidelines should be considered with this alternative.
3. If there are a substantial number of large trucks making turning movements that frequently disrupt traffic operations, it may be necessary to consider redirecting truck traffic to different routes.

4.1.2 LANE WIDTH

The design of truck roadways involves the use of specific travel lane widths and may include use of barriers to separate truck lanes from other lanes. It is common to have a minimum of two lanes on truck roadways to accommodate passing maneuvers, though capacity analyses can determine if additional lanes are necessary. The FHWA adopts a total pavement width of the truck roadway consisting of two 13-foot lanes, a 12-foot outside shoulder, and a 6-foot inside shoulder, totaling 44 feet. The pavement itself is constructed with 14-inch thick continuously reinforced concrete on both roadways.

The Design and Access Management Guidelines for Truck Routes: Planning and Design Guide (2020) provides flexibility in selecting lane widths, particularly for urban arterial streets, allowing for lane widths ranging from 10 to 12 feet. Many transportation agencies are opting for narrower lanes (10-11 feet) to accommodate additional features like medians, turn lanes, bicycle lanes, and shorter pedestrian crossings. However, due to the width of large trucks (up to 8.5 feet or 10.5 feet including mirrors), wider lanes are preferable on truck routes. Providing 12-foot lanes on truck routes or using differential lane widths, with a 12-foot outside or curb lane and narrower center or left lanes, is recommended. Additional considerations of narrow lanes are covered in the Traffic Calming measures section below.

4.1.3 SIGHT DISTANCE

Sight distance refers to the length of the road visible to a driver, unobstructed by any physical obstacle. Roadways should be designed to provide sufficient sight distances for drivers, and to perceive potential hazards and act if needed to avoid conflicts. Drivers should have sufficient unobstructed views at intersection approach from all directions. At mid-block road segments unobstructed sight distance allows drivers the opportunity to see other vehicles entering their lane and stop in time to avoid collision. Conversely, appropriate sight distance allows stopped drivers to see vehicles approaching and to make informed decisions on the best time to enter the roadway safely.

When looking left and right, a sight triangle is formed, which is the total unobstructed view of an oncoming intersection. Longer curb turn radii can have an impact on intersection sight distance by moving the stop line further from the curb line, potentially reducing visibility.

The Design and Access Management Guidelines for Truck Routes: Planning and Design Guide (2020) outlines design criteria for intersection sight distance (ISD) and provides seven cases based on the type of traffic control. For three of these cases (B, C, and F) involving truck acceleration, alternative parameter values are considered for trucks. The sight distances for these cases are based on a gap-acceptance model, with increased gap values of 2 seconds and 4 seconds for single-unit trucks and combination trucks, respectively. Case B specifically addresses accommodating trucks at intersections with stop-control on the minor road, emphasizing the necessary sight distance for a 73.5-ft truck to cross a set of tracks from a stopped position. It highlights the distance between the grade crossing and adjacent intersections, which should allow trucks to pass through both without stopping, and the vertical profile of the crossing, ensuring trucks can traverse it without contacting the road surface.

4.1.4 ACCESS MANAGEMENT

Access management describes methods and strategies to allow or restrict specific types of vehicles from utilizing a roadway. The objective is to enable access to specific land uses while maintaining roadway safety through controlling access location, design, spacing, and operation. Access management features include preventing left or right turns at intersections, or clearance bars so trucks are deterred from taking non-truck routes.

Within access management, truck routes must be identified that provide efficient access to freight facilities, such as ports, rail yards, intermodal terminals, and distribution centers. This ensures that truck routes are optimized to support the freight network and effective cargo movements. Alternatively, other streets must be identified that restrict access to trucks, such as those that connect to residential neighborhoods.

For truck routes, considerations should be made for evaluating the capacity and condition of transportation infrastructure, including roads, bridges, and other crucial components. Recognizing sections that may necessitate enhancements or maintenance to support the movement of heavy truck traffic effectively and prevent any disruptions.

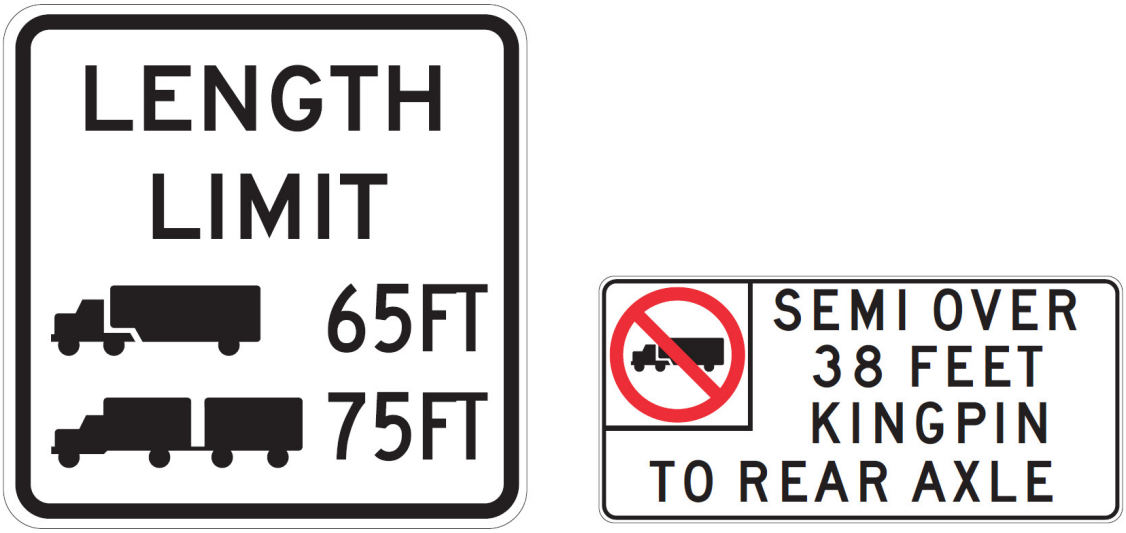
Time-of-day restrictions should be considered, particularly in congested areas. Some municipalities enforce restrictions on truck traffic during certain hours to minimize congestion and improve safety. Planning routes to avoid these restricted periods whenever possible and promoting off-peak delivery schedules can help minimize truck traffic during peak residential hours, thus reducing the impact on residents and improving overall traffic flow.

To address concerns in residential areas, restrictions on truck traffic can be implemented to minimize noise, congestion, and potential safety issues for pedestrians and residents. This can involve measures such as weight restrictions, time-of-day restrictions, or even outright bans on truck traffic in residential zones. By implementing these restrictions, the aim is to create quieter and safer environments for residents while ensuring smooth traffic flow on designated truck routes.

Figure 4.2: *Dividers Restricting Turns (source: Qwick Kurb https://qwickkurb.com/work-zone-lane-separator/)*

Figure 4.3: *Clearance Bar*

Figure 4.4: *Signs Restricting Truck Access (source: 2014 California Manual of Uniform Traffic Control Devices https://dot.ca.gov/-/media/dot-media/programs/safety-programs/documents/ca-mutcd/rev8/camutcd2014-rev8-summary-changes-a11y.pdf)*



4.1.5 TRAFFIC CONTROL

Traffic control deals with the use and manipulation of traffic control devices. Controlling traffic helps establish a high efficiency for truck routes, while limiting the effectiveness for trucks on non-truck routes.

Traffic control includes elements for signalized and non-signalized intersections. For signalized intersections, traffic control devices included signal improvements, such as timing, signal synchronization, and traffic phasing. For non-signalized intersections, stop signs, yield signs, and two-way stop intersections all help orchestrate traffic. These traffic control devices all help to improve truck flow on identified truck routes. In turn, traffic control can help steer truck drivers away from non-truck routes by establishing new stop signs, adding mid-block crossings, changing traffic phasing, and more.

Figure 4.5: *Traffic Control Stop Sign (source: Caltrans, https://dot.ca.gov/ctnews/archive/2020-02/gallery-idyllwild)*

4.1.6 TRAFFIC CALMING MEASURES

Traffic calming measures are used to slow down or disincentivize truck traffic on specific streets. To implement traffic calming, it is important to identify and prioritize streets that are suitable for traffic calming measures such as streets that have sensitive land uses and that may be used as shortcut between designated truck routes.

Once candidate roadways are identified, measures such as speed bumps, roundabouts, chicanes, or narrower lanes can be employed to reduce truck speed, encourage safer driving behavior, or reroute truck traffic altogether. Slower speeds not only mitigate noise levels but also enhance safety for residents.

Speed bumps are one of the most common and recognizable features, and are common in residential areas and locations with a high number of pedestrians or vehicle turning movements. Speed bumps reduce vehicle speeds and are restrictive to trucks often are most efficient maintaining constant speeds. Speed bumps are the easiest and most affordable way to slow vehicles in between intersections.

Roundabouts are utilized in the center of intersections to promote a continuous, circular flow of traffic without stopping. Roundabouts are typically located in residential neighborhoods but can also be implemented on higher speed roadways that have little cross-traffic interference. In certain circumstances, roundabouts are restrictive to trucks because of the tight radius and accurate turning movements necessary to operate within a roundabout intersection. Roundabouts are the best solution to slow vehicles at an intersection.

Figure 4.6: *Speed Hump (source: NACTO https://nacto.org/publication/urban-street-design-guide/street-design-elements/vertical-speed-control-elements/speed-cushion/)*

Figure 4.7: *Roundabout (source: NACTO https://nacto.org/publication/urban-street-design-guide/intersections/minor-intersections/mini-roundabout/)*

Figure 4.8: *Chicane (source: NACTO https://nacto.org/publication/urban-street-design-guide/street-design-elements/curb-extensions/chicane/)*

4.1.7 PARKING & LOADING

Sufficient truck parking can benefit a truck network by safely reducing congestion, roadway hazards and drive fatigue. To address these concerns, it is crucial to identify rest areas, truck stops, and designated parking areas along the route.

Providing appropriate places for truck drivers to rest is essential for their well-being and compliance with hours-of-service regulations. Rest areas offer facilities specifically designed to accommodate trucks and provide drivers with spaces to park and rest. Truck stops are commercial facilities that cater to the needs of truck drivers, offering fuel, food, restrooms, and parking. Designated parking areas, which can include parking lots or dedicated spaces, ensure that drivers have suitable places to park their vehicles safely.

By considering the availability of truck parking, planners and stakeholders can mitigate potential problems caused by inadequate parking. It allows for better management of truck traffic, reduces congestion, enhances road safety, and promotes driver well-being by preventing fatigue. Adequate truck parking infrastructure is crucial for supporting the efficient and safe operation of the trucking industry and maintaining the integrity of the transportation network.

Trucks often need to make pickups and deliveries along roads and streets where off-road loading and unloading areas are unavailable. Transport agencies have the option to establish roadside loading zones and mark them according to the FHWA guidelines. Due to the growing demand for truck deliveries driven by e-commerce, companies are adopting strategies such as off-peak or nighttime deliveries to minimize their impact on traffic, pedestrians, and cyclists. However, challenges arise, including the need for receivers to staff up during non-business hours, availability of truck staging parking, and increased costs due to added waiting time.

When planning bicycle lanes, it is important to consider frequent truck delivery locations to avoid conflicts. Trucks require more space to maneuver and have different operational characteristics, necessitating specific site layout considerations. Different types of sites, such as shopping centers, industrial areas, and urban cores, each have unique characteristics that impact truck operations and usage. The site layout should support efficient circulation and accommodate truck-specific needs, including wider lanes, larger turning radii, and storage areas for queuing without obstructing traffic or pedestrians.

Furthermore, there is a nationwide shortage of truck parking places for rest. Drivers must find parking within specific time limits to comply with hours-of-service regulations. Illegal parking on highway shoulders or ramps has become a preferred option for some drivers. While the responsibility for resolving the parking shortage lies with commercial facilities, collaboration between transportation agencies and commercial operators is needed to address this issue and mitigate its undesirable effects on the highway system.

Case Study: City of Oakland Truck Management Plan

The West Oakland Truck Management Plan (TMP) encompasses several measures to address truck-related challenges in the city. It proposes the establishment of new truck parking locations, the prohibition of parking in heavily populated areas, the elimination of unattached trailer parking, and the creation of truck-prohibited streets and new truck routes. These strategies collectively aim to improve traffic flow, reduce congestion, enhance safety, and create a more organized and efficient trucking environment in Oakland.

Firstly, it suggests the establishment of new truck parking locations to ensure sufficient parking availability for trucks. By identifying and designating these areas, the plan aims to alleviate congestion and safety hazards caused by trucks parking in inappropriate locations. This step is crucial in promoting efficient traffic flow and reducing the risks associated with improper parking.

Additionally, the plan focuses on regulating truck parking in heavily populated areas. It prohibits parking in these areas to minimize disruptions to residents and businesses. To provide clarity and guidance, the plan suggests implementing signage explicitly allowing truck parking in designated areas. This approach helps drivers identify appropriate parking spots, reducing confusion and improving compliance with parking regulations.

Furthermore, the plan aims to address unattached trailer parking by implementing a city-wide prohibition. This measure seeks to eliminate the issue of unattended trailers occupying parking spaces unnecessarily and obstructing traffic flow. By strictly outlawing unattached trailer parking, the plan aims to create a more organized and efficient parking environment throughout the city.

Lastly, the plan proposes the creation of truck-prohibited streets and new truck routes. This initiative aims to optimize traffic flow by diverting trucks away from congested areas or sensitive locations. By designating truck-prohibited streets and establishing new truck routes, the plan seeks to improve overall traffic safety, reduce congestion, and enhance the quality of life for residents in affected areas.

4.1.8 SIGNAGE, WAYFINDING, AND NAVIGATION

Clear and visible signage along truck routes guides drivers and provides information about restrictions, turns, and access points. Wayfinding measures help drivers navigate the city and reduce the likelihood of truck drivers getting lost or entering restricted areas. These measures improve navigation and overall safety for truck drivers.

To enhance truck routing and improve efficiency, several key strategies can be implemented. First, the use of GPS systems and advanced routing software designed for commercial vehicles can optimize routes by considering factors such as truck specifications, weight restrictions, road conditions, and traffic patterns. These tools ensure that the most efficient and safe routes are generated.

Monitoring and updating routes in real-time is crucial. By incorporating real-time traffic information and incident alerts, adjustments can be made on-the-fly to avoid congestion or delays. Regular review and updates should also be conducted to account for changes in infrastructure, road conditions, or traffic patterns.

Periodic review and optimization of truck routing plans help identify areas for improvement. Analyzing data on travel times, fuel consumption, and other relevant metrics can provide insights into efficiency. Utilizing route optimization software and algorithms based on current data can further enhance routing efficiency.

U.S. Department of Transportation GPS Visor Card

Not all GPS systems are suitable for commercial trucks and bus drivers, as they may not provide crucial route restrictions and information. Using the wrong GPS system can lead to costly mistakes, such as encountering low bridge overpasses or other route restrictions that can result in delays, additional expenses, and potential safety hazards. Therefore, it is essential for professional truck and bus drivers to select a GPS navigation system specifically designed for their vehicles.

To ensure safe and efficient navigation, drivers should input accurate vehicle information, including length, width, height, axle weights, and any hazardous materials being transported. It is important to follow the recommended route provided by the GPS system, while also obeying traffic signs and advisories that may include additional restrictions not indicated by the navigation system. Drivers should avoid distracted driving by refraining from typing or entering information into the GPS while driving. Additionally, keeping the GPS maps updated regularly is crucial to access the most current and accurate route planning information. By following these tips, commercial truck and bus drivers can enhance their safety and efficiency on the road.

4.2 ENVIRONMENTAL IMPACT REDUCTION

In addition to safety improvements, efforts to reduce or mitigate the environmental impact of truck travel were reviewed during the study. Best practices reviewed below can support healthier outcomes for community members who live, work, study, and play in the study area.

4.2.1 EMISSIONS & NOISE REDUCTIONS

To reduce emissions from trucks operating in residential areas, it is important to implement and enforce stringent emission standards. Regular vehicle inspections should be conducted to ensure compliance with these regulations and identify any high-emitting vehicles. Encouraging regular maintenance and upgrades is crucial to ensure trucks operate efficiently and produce fewer emissions.

Integrating green infrastructure elements into truck routes in residential areas, such as planting trees and vegetation, can help mitigate air pollution, dampen noise, and enhance the overall environment. Additionally, promoting the use of alternative fuel vehicles like electric or natural gas-powered trucks can be incentivized. These vehicles emit fewer pollutants and contribute to improved air quality in residential areas. By combining these strategies, it is possible to reduce emissions from trucks, enhance air quality, and create more sustainable and pleasant residential environments.

To reduce diesel pollution and associated health impacts, best practices include decreasing the average age of the fleet, reducing idle and creep time, participating in the EPA SmartWay Program, considering complementary rail operations, and designating truck routes that avoid at-risk populations. Strategies such as appointment systems, automated gates, extended gate hours, and off-peak operations can be employed to decrease truck turn times, emissions, and congestion at ports.

Lowering the average age of the fleet by replacing older trucks with newer models equipped with improved emission control technologies is an effective way to reduce pollution. Proper maintenance and selecting trucks with aerodynamic features and low rolling resistance tires also contribute to fuel efficiency and emissions reduction. Installing diesel oxidation catalysts and low-rolling resistance tires can be considered for older trucks that will not be replaced.

Designating truck routes that avoid residential areas and at-risk populations is crucial for mitigating air pollution and improving safety. Collaborating with community leaders and implementing physical barriers like sound walls and vegetative barriers can further reduce exposure to air pollutants. Evaluating existing and alternative truck routes, considering distances to sensitive locations, and consulting air quality experts can guide decision-making.

In addition to emission reductions, noise reduction measures can mitigate the environmental impact of noise generated by trucks to improve the quality of life for nearby residents. Strategies include installing noise barriers that block or absorb sound along truck routes, implementing restrictions on engine braking, and establishing regulations for truck noise levels, especially during nighttime hours. These regulations can be enforced through sound monitoring and compliance checks to ensure that trucks adhere to the specified noise standards.

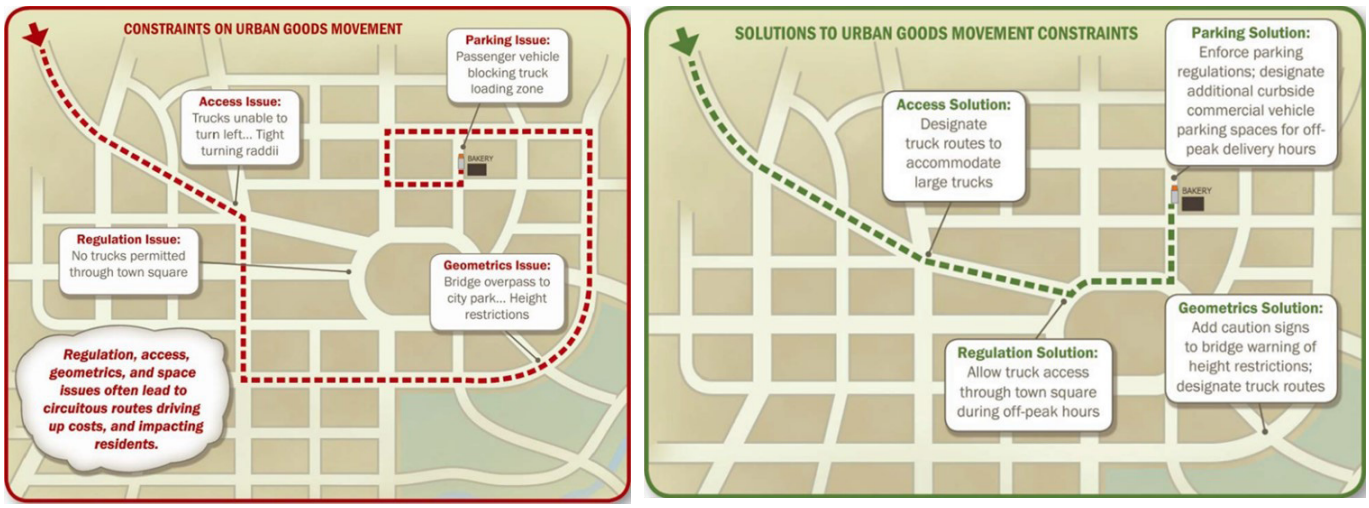
4.2.2 INFRASTRUCTURE CAPACITY

Where rerouting is being considered, new routes must accommodate trucks with roadways designed to accommodate heavier vehicle weight, wider lanes, suitable turning radii, and other physical limitations. The route should avoid low bridges, weight restrictions, and other physical limitations. The route should also avoid sensitive receptors, such as schools, hospitals, and residential areas, to reduce negative impacts.

The increase in truck traffic on a chosen reroute corridor must also be studied. The roadway must have capacity to accommodate an increase in truck traffic. A traffic study may be necessary to ensure that the reroute maintains a high level of service on all corridors, and that total community VMT remains the same or is reduced.

The U.S. Environmental Protection Agency created a truck reroute scenario that aims to identify common constraints and solutions in truck rerouting. These include constrains and solutions related to access, regulations, geometrics and turning, and parking. A truck reroute aims to create better outcomes that benefit both truck drivers and the community.

Figure 4.9: *Examples of Truck Route Access*



Source: EPA

4.2.3 COMPLIANCE & ENFORCEMENT

Enforcement and compliance play a crucial role in ensuring the effectiveness of truck route regulations. Establishing clear mechanisms for enforcement and penalties for non-compliance helps maintain order and safety on the roads. City staff and relevant stakeholders work closely with law enforcement agencies to ensure adherence to the established rules and regulations, aiming to deter violations that could jeopardize safety or disrupt communities.

By outlining enforcement mechanisms, such as regular patrols and inspections, authorities can actively monitor truck routes and identify any instances of noncompliance. This proactive approach helps to maintain the integrity of the regulations and mitigate potential risks associated with noncompliant behavior. Penalties for violations are established to discourage non-compliance and reinforce the importance of adhering to the designated truck routes.

5 STRATEGIES

This study identified a host of truck routing strategies to implement throughout South Central Fresno. The strategies were developed through a comprehensive process by combining findings from the assessment of existing conditions, community input from outreach events and stakeholder meetings, previous plan and study goals and objectives, as well as truck routing best practices. Once implemented, the strategies aim to enhance health, safety, and mobility conditions for residents throughout South Central Fresno, as well as streamline truck routing in the region.

5.1 STRATEGY TOOLKIT

In development of the truck routing strategies, a truck reroute strategies toolkit was created. The truck reroute strategies toolkit introduces nine unique strategy categories that utilize treatments to promote resident safety or divert truck traffic along existing truck routes. The chosen strategy categories originated from any one or multiple sources, including assessment of existing conditions, community input from outreach events and stakeholder meetings, previous plan study goals and objectives, as well as truck routing best practices. The nine strategy categories in the truck reroute strategies toolkit, their descriptions, and the origin of the toolkit strategies are shown in Table 5.1 below.

Table 5.1: *Strategy Descriptions and Sources*

Number	Strategy	Description	Community Input	Mentioned in a Relevant Planning Document	Conditions Analysis	Best Practices	UCM Health Study
1	**New Sidewalks**	Close gaps in the existing sidewalk network, enhancing degraded or narrow portions of existing sidewalks, and ADA improvements	✓	✓	✓		
2	**New Crosswalks**	Additional crosswalks to enhance pedestrian mobility and connectivity, restriping of existing crosswalks, or improvements that increase visibility at existing crosswalks	✓	✓	✓		
3	**New Bike Lanes**	Dedicated travel lanes for bicyclists either through on-street, off-street or protected facilities to enhance bicycle accessibility and safety	✓	✓	✓		
4	**Roadway Repaving**	Removing potholes and cracks reduces truck maintenance and levels of GHG emissions	✓		✓		
5	**Traffic Calming**	Implements measures to reduce truck speeds or divert trucks altogether through roadway narrowing, speed bumps, and roundabouts	✓		✓	✓	✓
6	**Truck-Focused Signage**	Informs and provides confirmation to truck drivers on truck routes and regulated areas				✓	✓
7	**Traffic Signalization Improvement**	Improves the signalization of an intersection to improve safety and the flow of vehicular movements	✓				

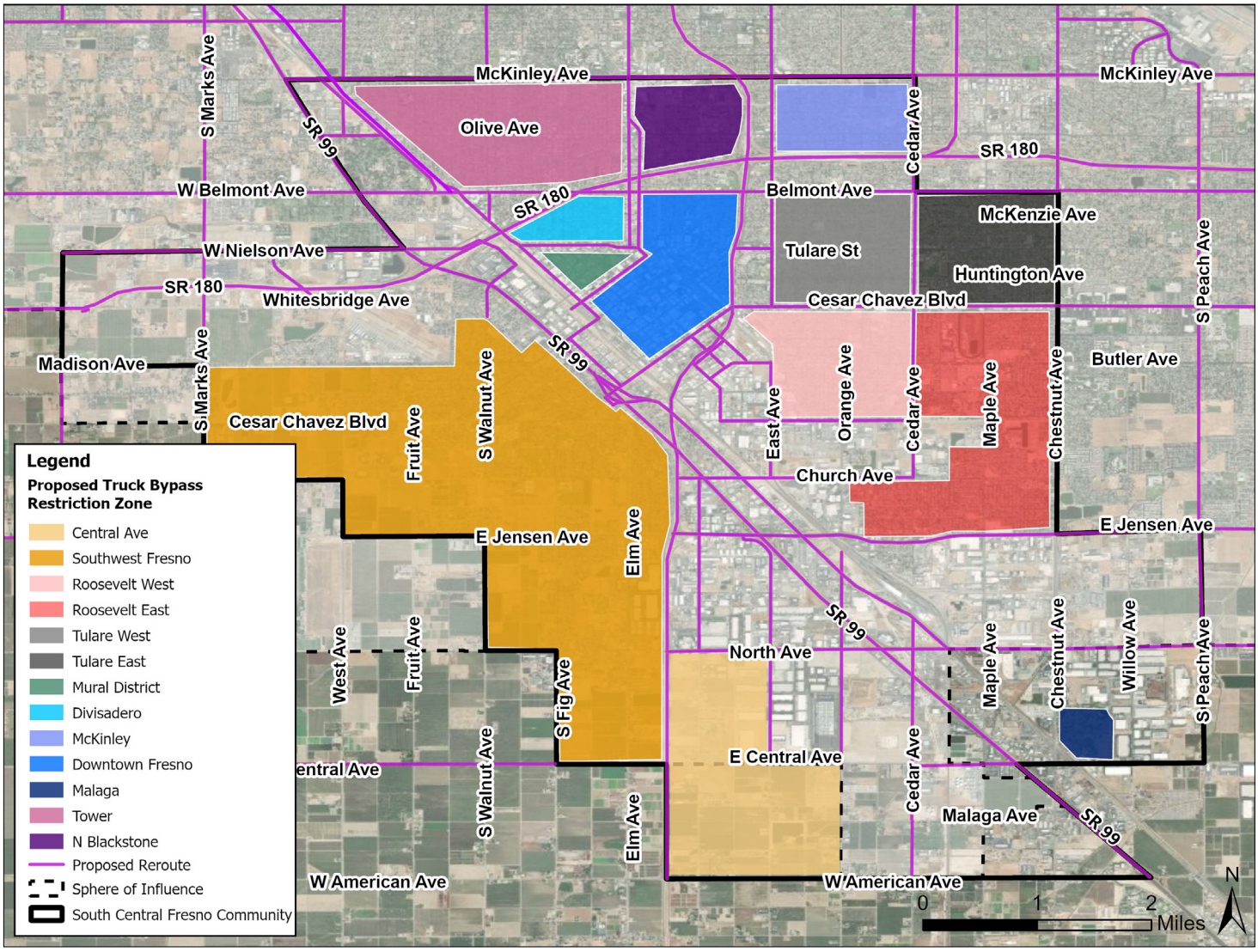
Number	Strategy	Description	Community Input	Mentioned in a Relevant Planning Document	Conditions Analysis	Best Practices	UCM Health Study
8	**Roadway Reconfiguration**	Reconfigures a roadway or intersection to accommodate vehicle, pedestrian, and bicyclist access or alter truck movements	✓	✓			
9	**Truck Bypass Restriction Zone**	Creates a boundary around sensitive receptors that can be used to limit truck bypass, either by time-of day, or at all times. The regulation may still allow trucks to enter or exit if their origin or destination resides within the boundary.	✓		✓	✓	✓

The City is also developing an updated Active Transportation Plan (ATP), which will expand upon the high-level bicyclist and pedestrian connectivity improvements recommended in this study. While improvements recommended in this study aim to improve bicyclist and pedestrian connectivity, the upcoming ATP will provide more specific recommendations related to pedestrian amenities and bikeway types. The City should also coordinate their upcoming ATP efforts with their Active Transportation Resource Center GoHuman Kit of Parts Pilot Project Post-Deployment Analysis for Southwest Fresno (2022) for potential pilot projects.

5.1.1 TRUCK BYPASS RESTRICTION ZONES

As mentioned in Table 1, the Truck Bypass Restriction Zones create a boundary around sensitive receptors that can be used to limit truck bypass, either by time-of-day, or at all times. The regulation may still allow trucks to enter or exit if their origin or destination resides within the boundary. The Truck Bypass Restriction Zones effectively limits some designated truck routes established under the 2005 Fresno Truck Route map and plan. The proposed Truck Bypass Restriction Zones are reflected below in Figure 5.1.

Figure 5.1: *Proposed Truck Bypass Restriction Zones*



The Truck Bypass Restriction Zones do not limit any freeway entry or exit access point on any freeway, including SR 41, SR 99, and SR 180. Nevertheless, the Truck Bypass Restriction Zones may result in diversion of trucks on specific arterial and collector streets that carry any number of sensitive receptors. Though the Truck Bypass Restriction Zones were recommended to reduce truck bypass near sensitive receptors, they are designed in a way to maintain major truck connections without heavily disrupting throughput.

Truck Bypass Restriction Zones would be regulated through signage, education campaigns, truck GPS updating, and proper enforcement. A system of penalties would need to be established for violation of these regulations. If the Truck Bypass Restriction Zones were time-of-day specific, there would be no penalty if routes are used outside of the time limits. More discussion on enforcement is found in Section 4.

Major diversion streets and sensitive receptors within each Truck Bypass Restriction Zones are described below:

Downtown Fresno Truck Bypass Restriction Zones

- Reduces truck traffic on Van Ness Avenue, Fulton Street, and Tulare Street
- Reduces truck traffic near Courthouse Park, businesses on Fulton Street, and Chukchansi Park
- Trucks may divert to E Street, Tuolumne Street, Ventura Avenue, and M Street

Mural District Truck Bypass Restriction Zones

- Reduces truck traffic on Fulton Street, and Van Ness Avenue
- Reduces truck traffic near the Cultural Arts District Park, and residences
- Trucks may divert to Divisadero Street, and Tuolumne Street

Tower Truck Bypass Restriction Zone

- Reduces truck traffic on Olive Avenue, Palm Avenue, and Wishon Avenue
- Reduces truck traffic near Muir Elementary School, Susan B Anthony Elementary School, businesses in Olive Avenue, and residences
- Trucks may divert to McKinley Avenue, Weber Avenue, Belmont Avenue, and Blackstone Avenue

Southwest Fresno Truck Bypass Restriction Zone

- Reduces truck traffic on Cesar Chavez Boulevard, Church Avenue, B Street/ Elm Avenue, and Thorne Avenue
- Reduces truck traffic near Franklin School, Edison High School, Frank H Ball Center, Lincoln Elementary School, Columbia Elementary School, Cecil C Hinton Community Center, Fresno City College, Rutherford B Gaston Middle School, Computech Middle School, King Elementary School, Maxie L. Parks Community Center, Kirk Elementary School, and residences
- Trucks may divert to Whitesbridge Avenue/ Amador Street, Marks Avenue, West Avenue, and Jensen Avenue

Brookhaven Truck Bypass Restriction Zone

- Reduces truck traffic on MLK Jr Boulevard, Annadale Avenue
- Reduces truck traffic near W.E.B. DuBois Academy, Mary Ella Brown Center and Park, West Fresno Middle/ Elementary Schools, residences
- Trucks may divert to Jensen Avenue, Walnut Avenue, North Avenue, Elm Avenue

Tulare East Truck Bypass Restriction Zone

- Reduces truck traffic on Tulare Avenue, Huntington Boulevard, and Maple Avenue
- Reduces truck traffic near Roosevelt High School, Rowell Elementary School, Burroughs Elementary School, and residences
- Trucks may divert to Belmont Avenue, First Street, Ventura Avenue/ Kings Canyon Road, and Chestnut Avenue

Roosevelt East Truck Bypass Restriction Zone

- Reduces truck traffic on Butler Avenue, Maple Avenue, and Church Avenue
- Reduces truck traffic near Winchell Elementary School, Vang Pao Elementary School, Sequoia Middle School, Baldera Elementary School, Aynesworth Elementary School, Calwa Elementary/ Preschool, Mosqueda Complex, and residences
- Trucks may divert to Railroad Avenue, Jensen Avenue Bypass, Chestnut Avenue, East Avenue, and Ventura Avenue/ Kings Canyon Road

Malaga Truck Bypass Restriction Zone (County of Fresno)

- Reduces truck traffic on Ward Avenue, Calvin Avenue, Hardin Avenue
- Reduces truck traffic near Malaga Elementary School, Malaga Community Park and Recreation Center, and residences
- Trucks may divert to Golden State Boulevard, Chestnut Avenue, and Central Avenue

Central Avenue Truck Bypass Restriction Zone

- Reduces truck traffic on Ward Avenue, Calvin Avenue, Hardin Avenue
- Reduces truck traffic near Malaga Elementary School, Malaga Community Park and Recreation Center, and residences
- Trucks may divert to Golden State Boulevard, Chestnut Avenue, and Central Avenue

5.2 STRATEGY LIST

The toolkit strategies are paired with a comprehensive project list that specifies the locations where each improvement is recommended to be implemented within South Central Fresno. Due to the nature of the strategies, they are either projected as a single point (such as an intersection), a corridor (such as a roadway), or a polygon (representing a neighborhood). The project list includes an ID, strategy ID, strategy name, a street/ cross street, start and end boundary, or neighborhood name, depending on the type of strategy. Corridor strategies also show their length in miles, and polygon strategies in the project list show their area in square miles.

In total, there are just under 200 individual proposed improvements that can be used to enhance the transportation network in South Central Fresno, especially related to truck movements. Of these improvements, 126 are “point” improvements, 62 are “corridor” improvements, and eight (8) are represented as “polygons”. A full breakdown of strategies by toolkit strategy type are denoted in Table 5.2 below.

Table 5.2: *Truck Reroute Strategies Summary*

Number	Strategy	Type	Total	Total Length/ Area
1	**New Sidewalks**	Line	16	32.2 miles
2	**New Crosswalks**	Point	99	N/A
3	**New Bike Lanes**	Line	23	33.5 miles
4	**Roadway Repaving**	Line	13	11.6 miles
5	**Traffic Calming**	Line	10	18.8 miles
6	**Truck-Focused Signage**	Point	26	N/A
7	**Traffic Signalization Improvement**	Point	15	N/A
8	**Roadway Reconfiguration**	Point/ Line	9	6.2 miles + intersections
9	**Truck Bypass Restriction Zone**	Polygon	13	16 square miles

The table below lists each category of strategies and the funding categories that grants typically feature, with marks to denote which improvements may be applicable to different grant funding types. A full list of the specific improvements

and the grant funding categories for which they are likely eligible is listed in Appendix A. Appendix A also includes distance and area estimates for improvements to assist in cost estimating.

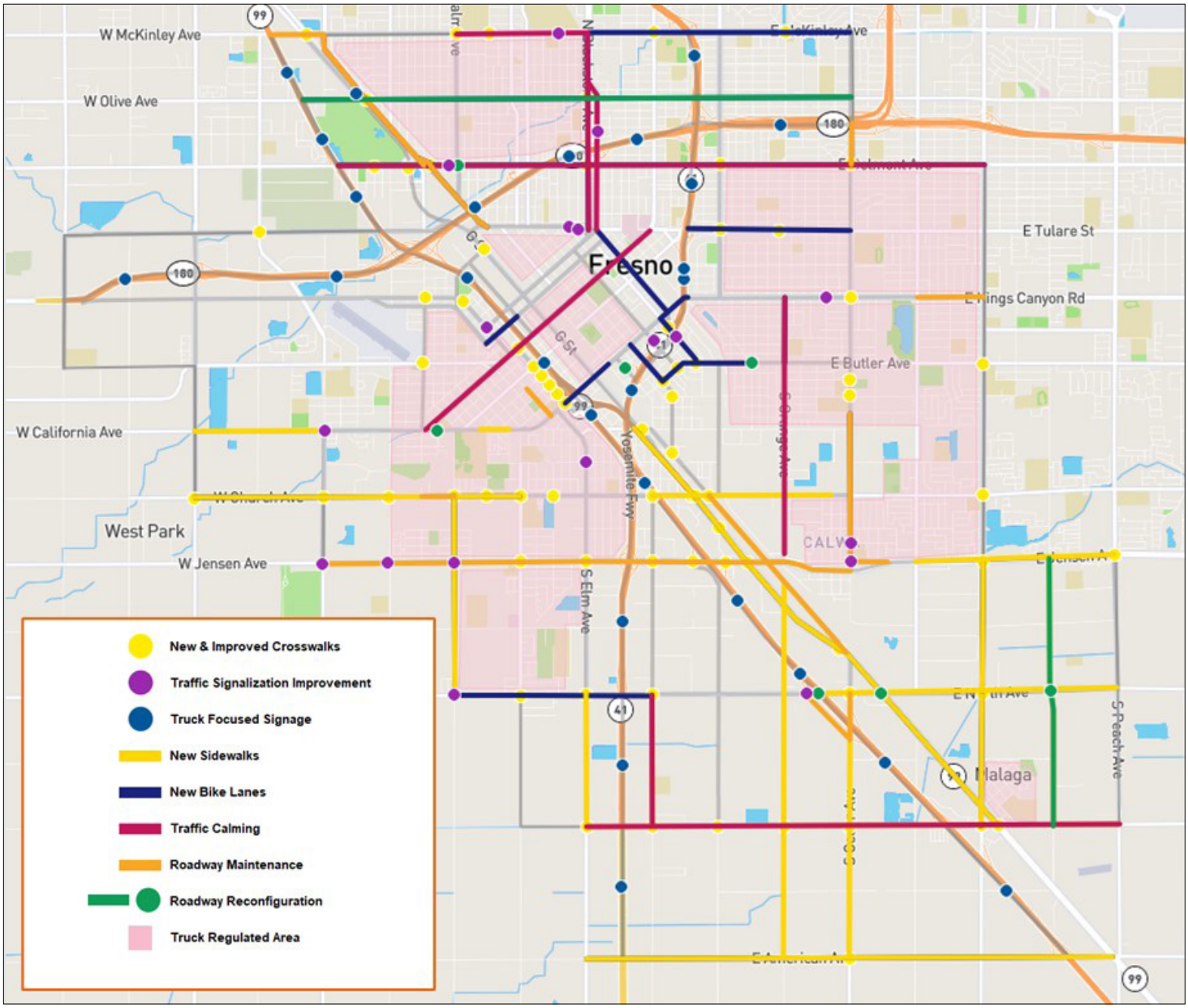
Table 5.3: *Improvement Strategy by Grant Funding Category*

Strategy	Highway/ Roadway	Active Transportation	TSM	TSM	Sustainability	Freight
New Crosswalks		●				
New Sidewalks		●			●	
Roadway Reconfiguration	●					●
Traffic Signalization Improvement	●		●			●
Truck Focused Signage	●					●
New Bike Lanes		●			●	
Roadway Repaving	●					●
Traffic Calming	●			●		
Truck Bypass Restriction Zone	●					●

5.3 STRATEGY MAP

During the course of the study the technical team developed an interactive map that showed the locations of each of the proposed strategies, with strategies categorized by color and the ability to toggle them on and off so that community members and the project advisory team could see connections between options. For instance, the corridor for Chestnut Avenue from Jensen Avenue to Central Avenue features two separate strategies for New Sidewalks as well as New Bike Lanes. A static image of the interactive strategy map is shown in Figure 5.2 below.

Figure 5.2: *Strategy Locations Maps*



Figures 5.3 through 5.7 reflect a closeup of the proposed strategies in the northeast, northwest, southwest, and southeast quadrants of the study area.

Figure 5.3: *Proposed Strategies*

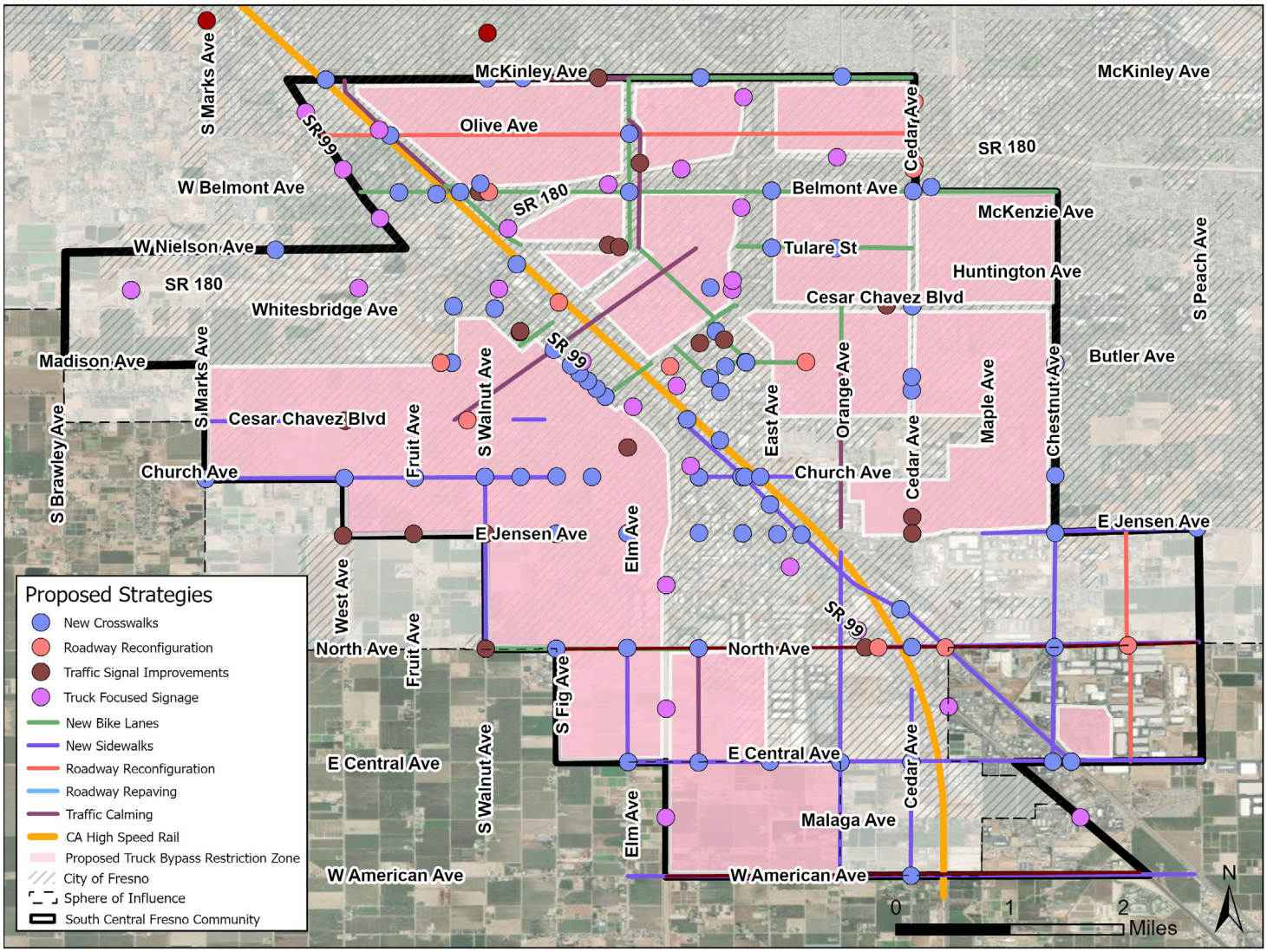


Figure 5.4: *Proposed Strategies – Northeast Quadrant*

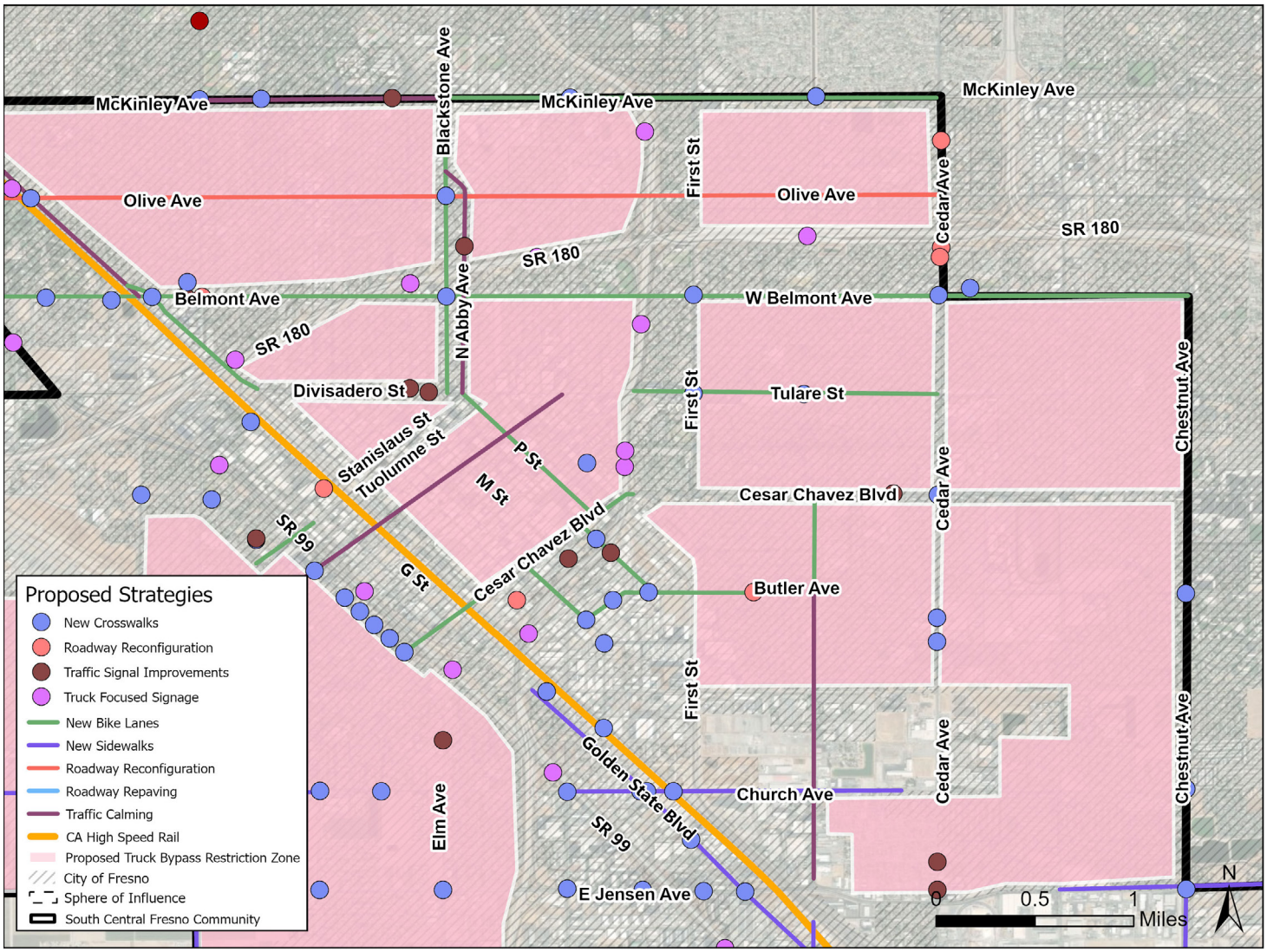


Figure 5.5: *Proposed Strategies – Northwest Quadrant*

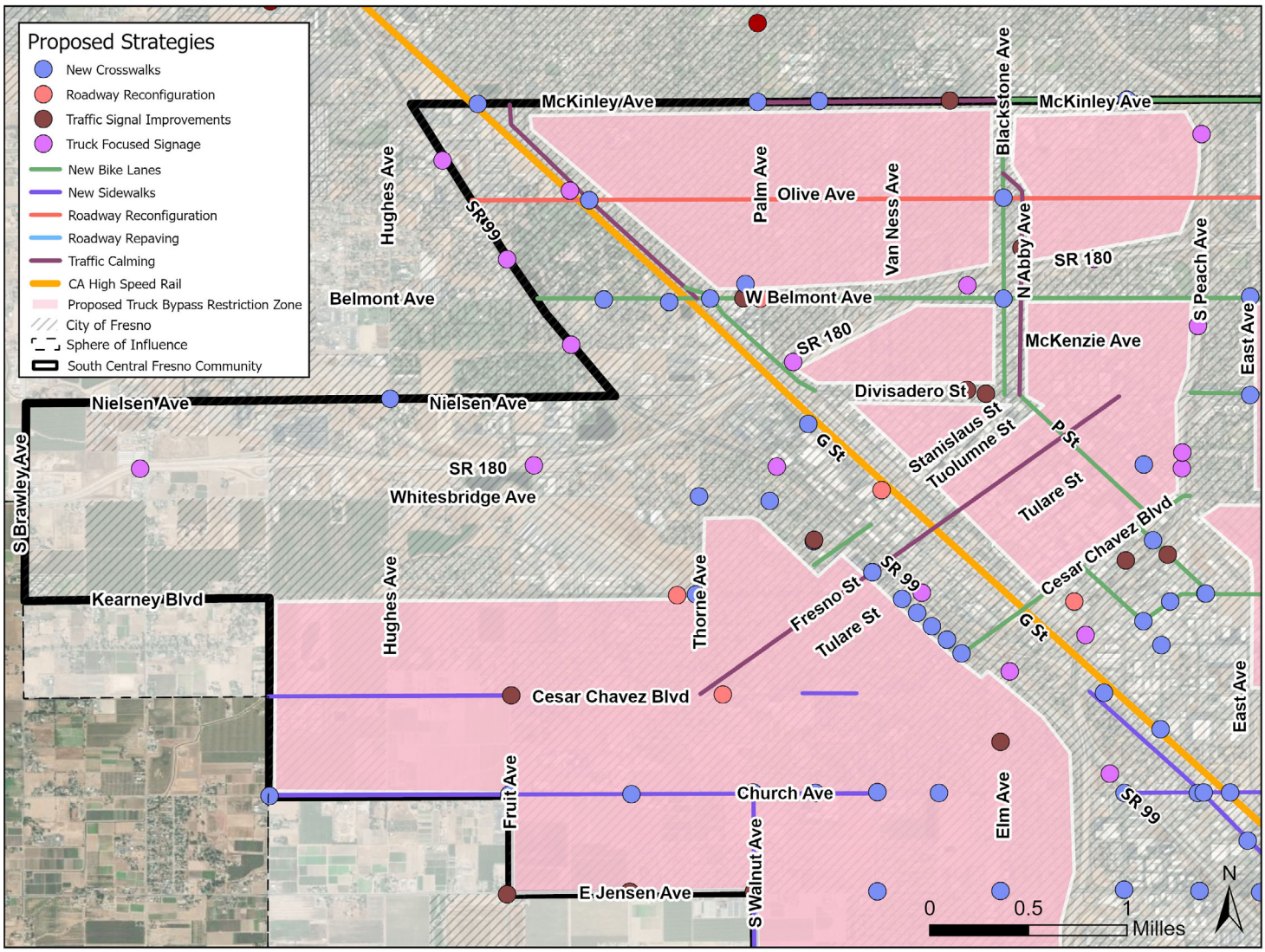


Figure 5.6: *Proposed Strategies – Southwest Quadrant*

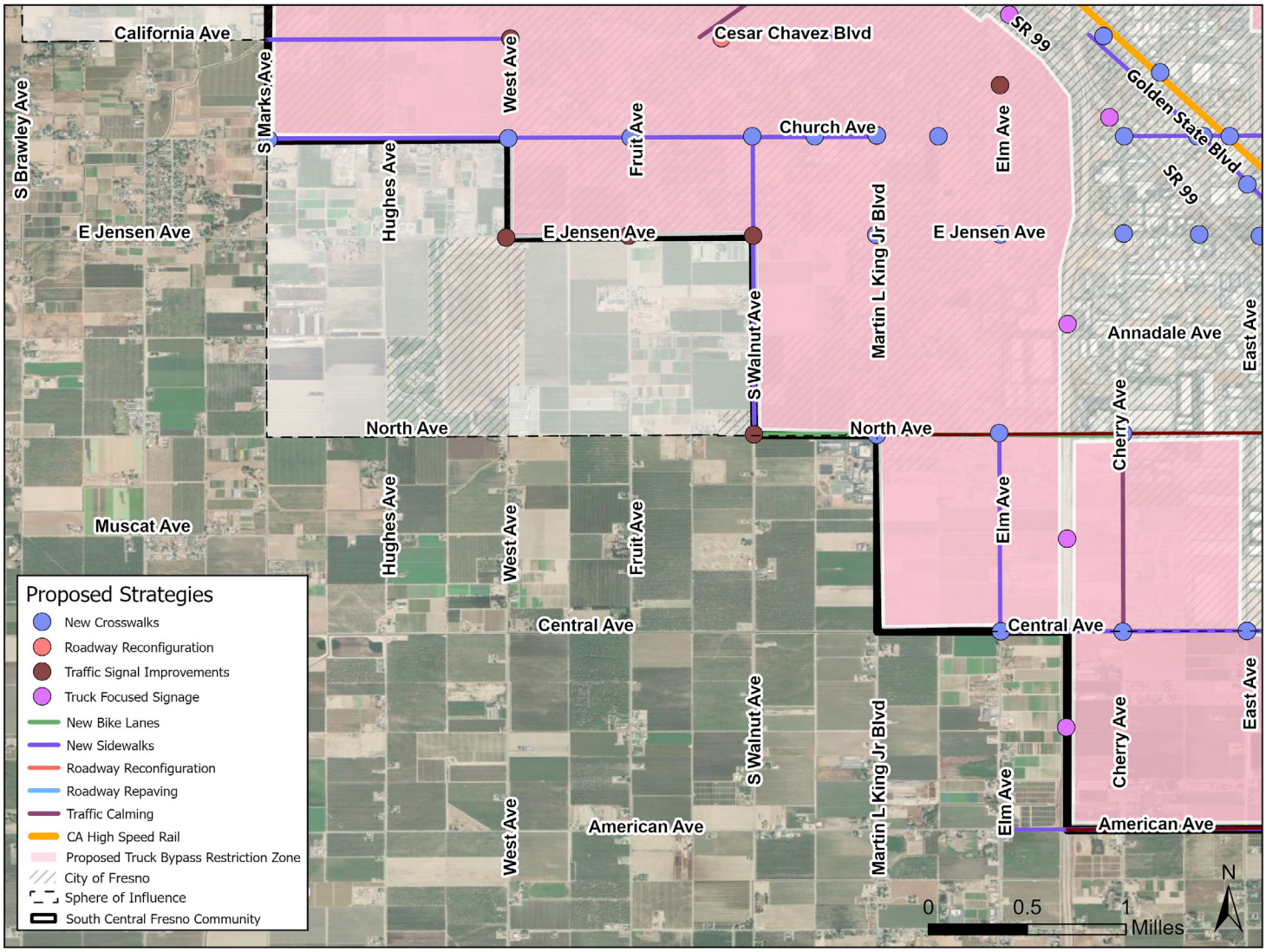
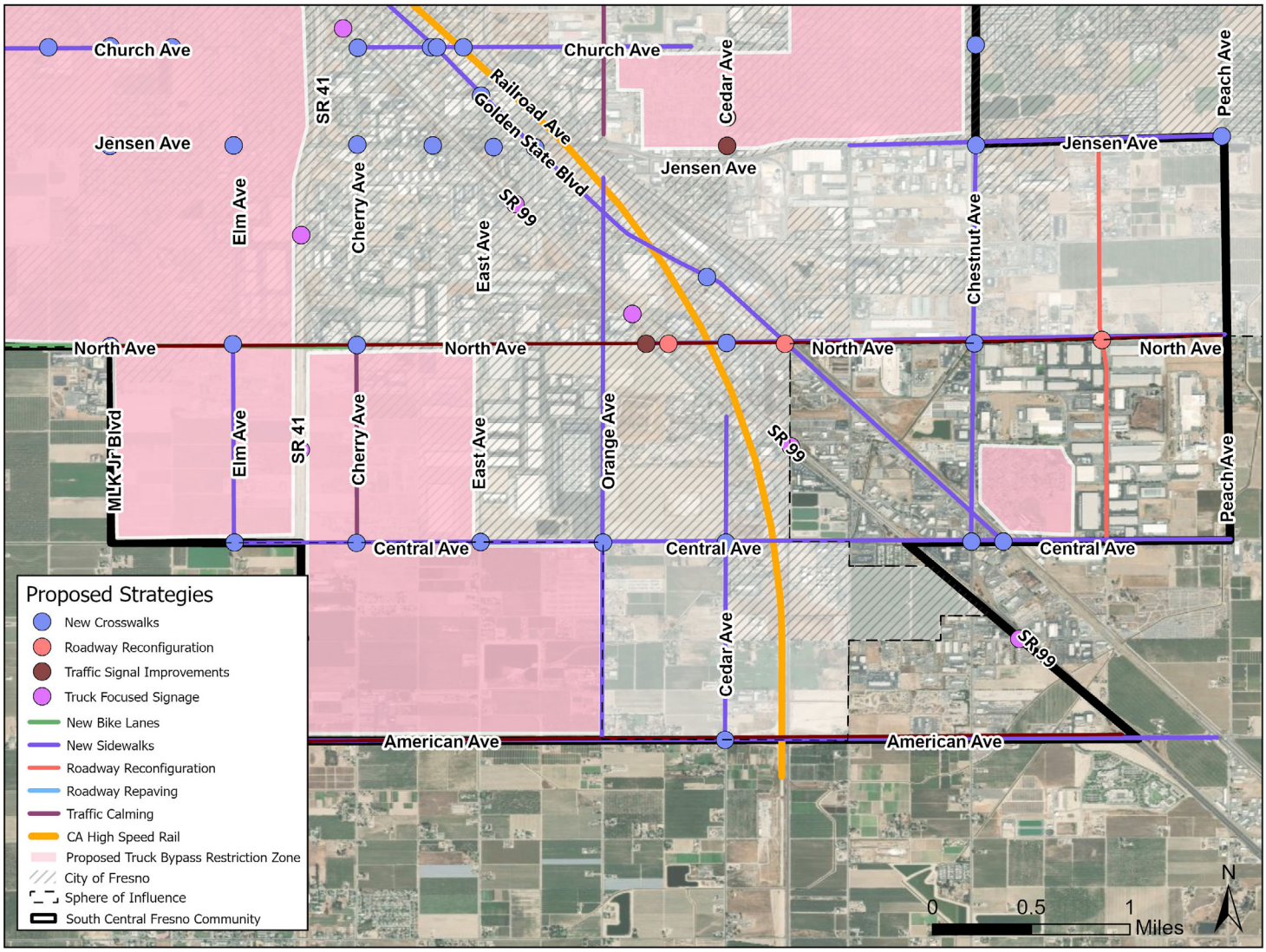


Figure 5.7: *Proposed Strategies – Southeast Quadrant*



5.4 PROPOSED 2024 CITY OF FRESNO DESIGNATED TRUCK ROUTE MAP

Based upon the strategies presented, it is recommended to update the 2005 City of Fresno Designated Truck Routes Map to acknowledge Truck Bypass Restriction Zones within the South Central Fresno community. This study's proposed 2024 City of Fresno Designated Truck Route Map removes previously designated truck routes from bypassing sensitive receptors. Truck routes outside of the study area are largely left unchanged and should be reconsidered in future studies amongst the appropriate agencies. The 2024 City of Fresno Designated Truck Route map is shown Figures 5.8 -5.12 below. Following the figures, Table 5.4 details the changes proposed on a street-by-street basis, as compared to the 2005 Designated Truck Route Map.

It should also be noted that two freeway interchanges are planned to be closed along SR 99, located at Belmont Avenue and McKinley Avenue. This will have an impact on trucks travel throughout the study area and onto truck corridors. This will likely cause more trucks to divert onto Olive Avenue, west of Weber Ave. Additionally, the Caltrans truck route restriction process should be followed wherever trucks are restricted access through freeway ramps.

Figure 5.8: *Proposed 2024 City of Fresno Designated Truck Route Map*

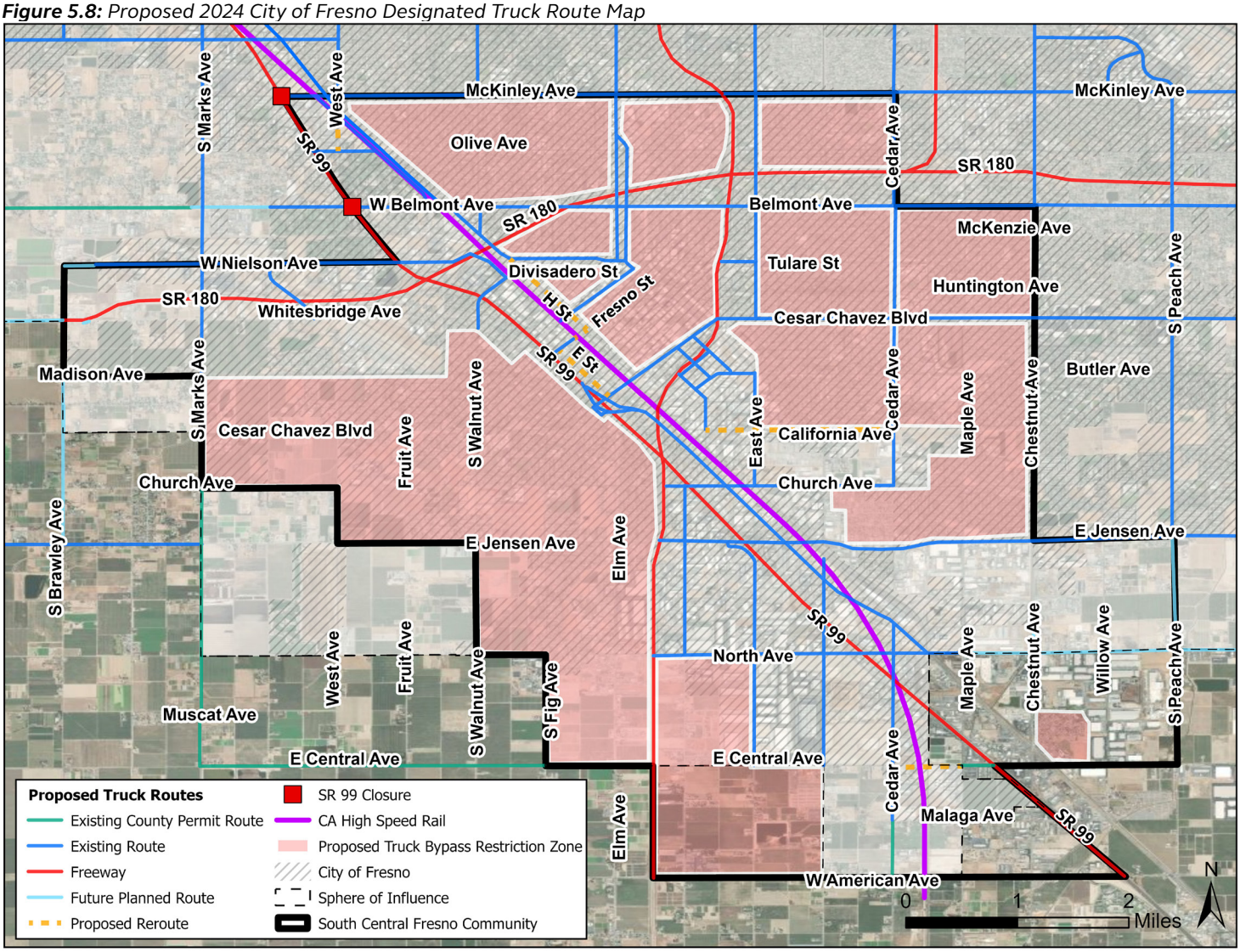


Figure 5.9: *Proposed 2024 City of Fresno Designated Truck Route Map – Northeast Quadrant*

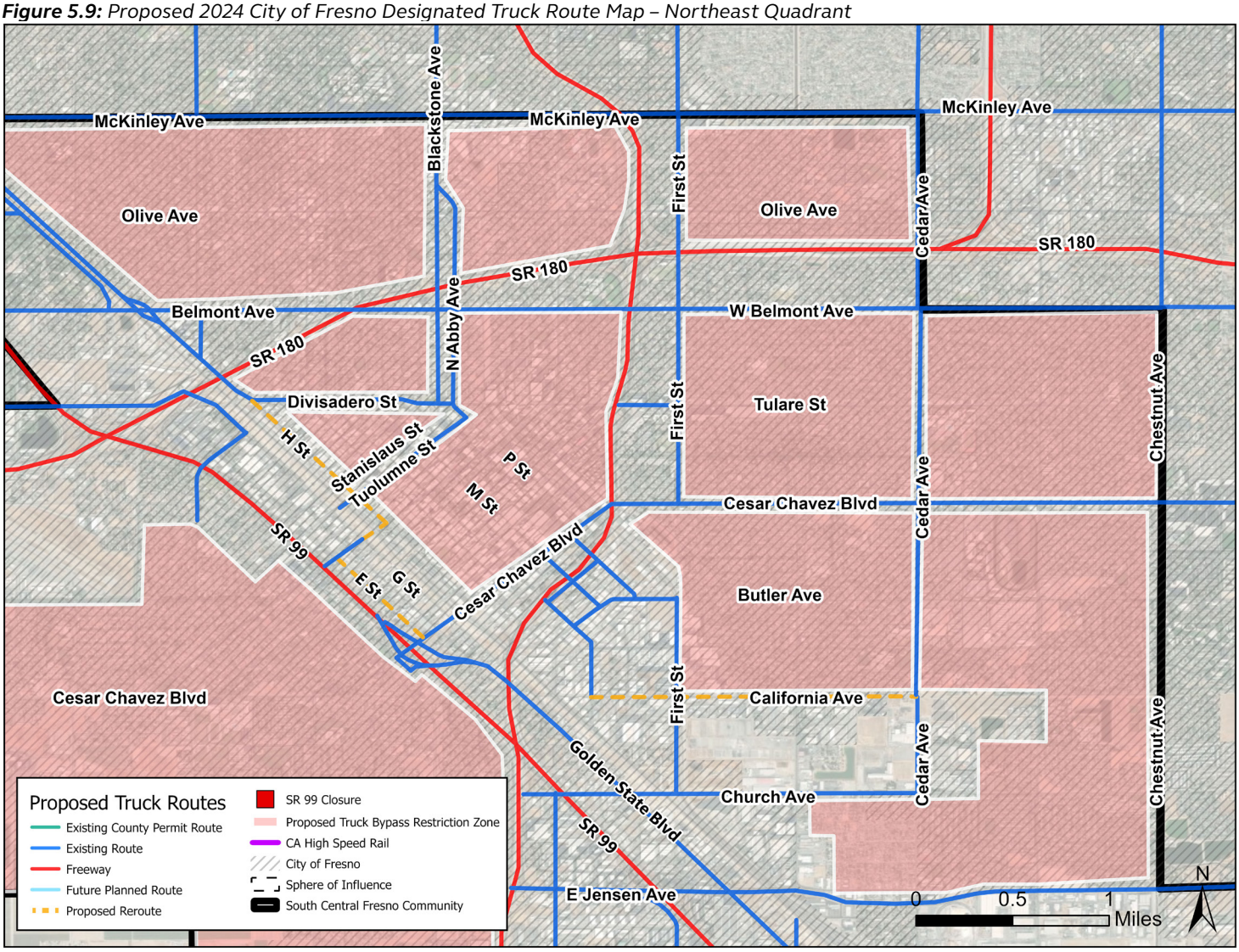


Figure 5.10: *Proposed 2024 City of Fresno Designated Truck Route Map – Northwest Quadrant*

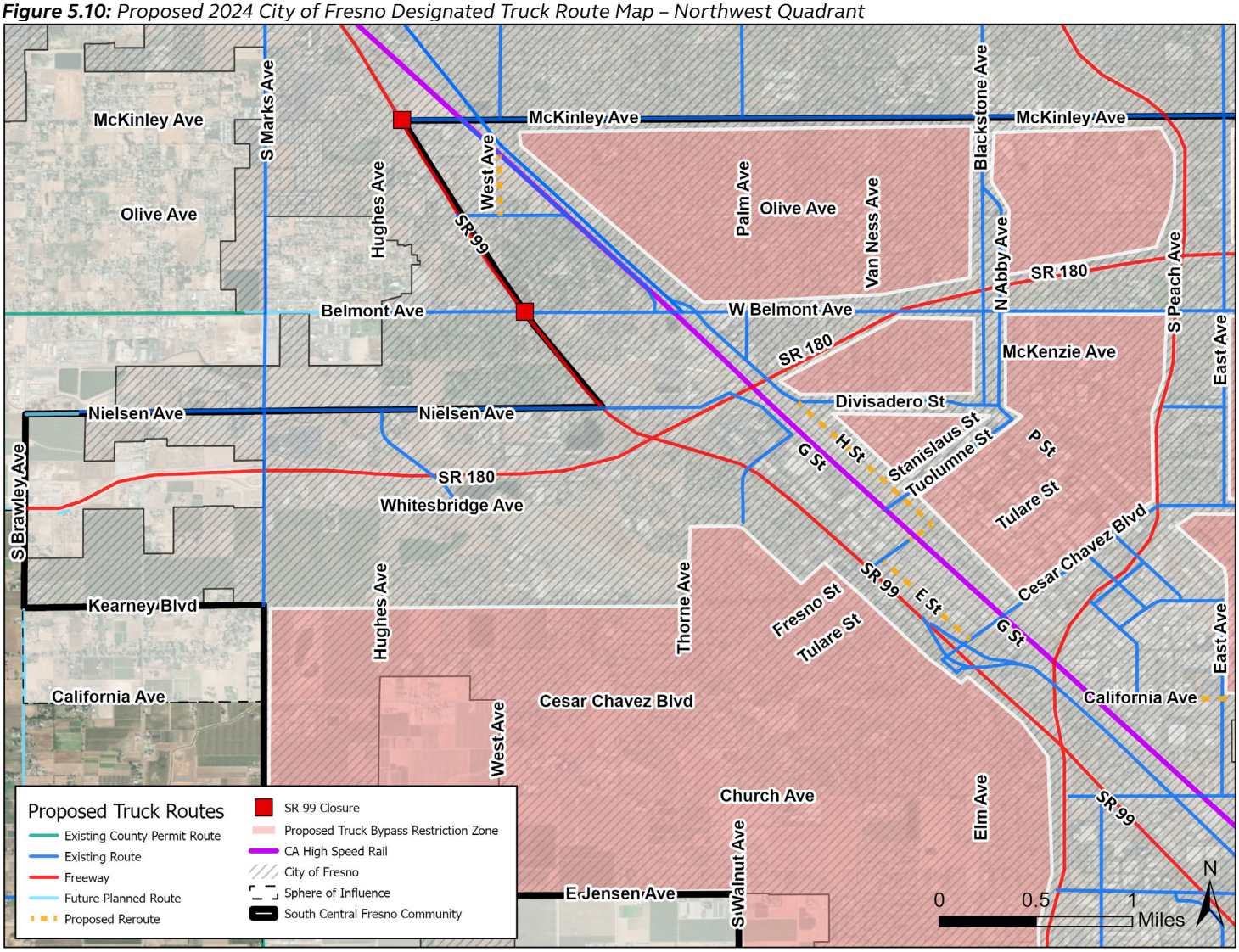


Figure 5.11: *Proposed 2024 City of Fresno Designated Truck Route Map – Southwest Quadrant*

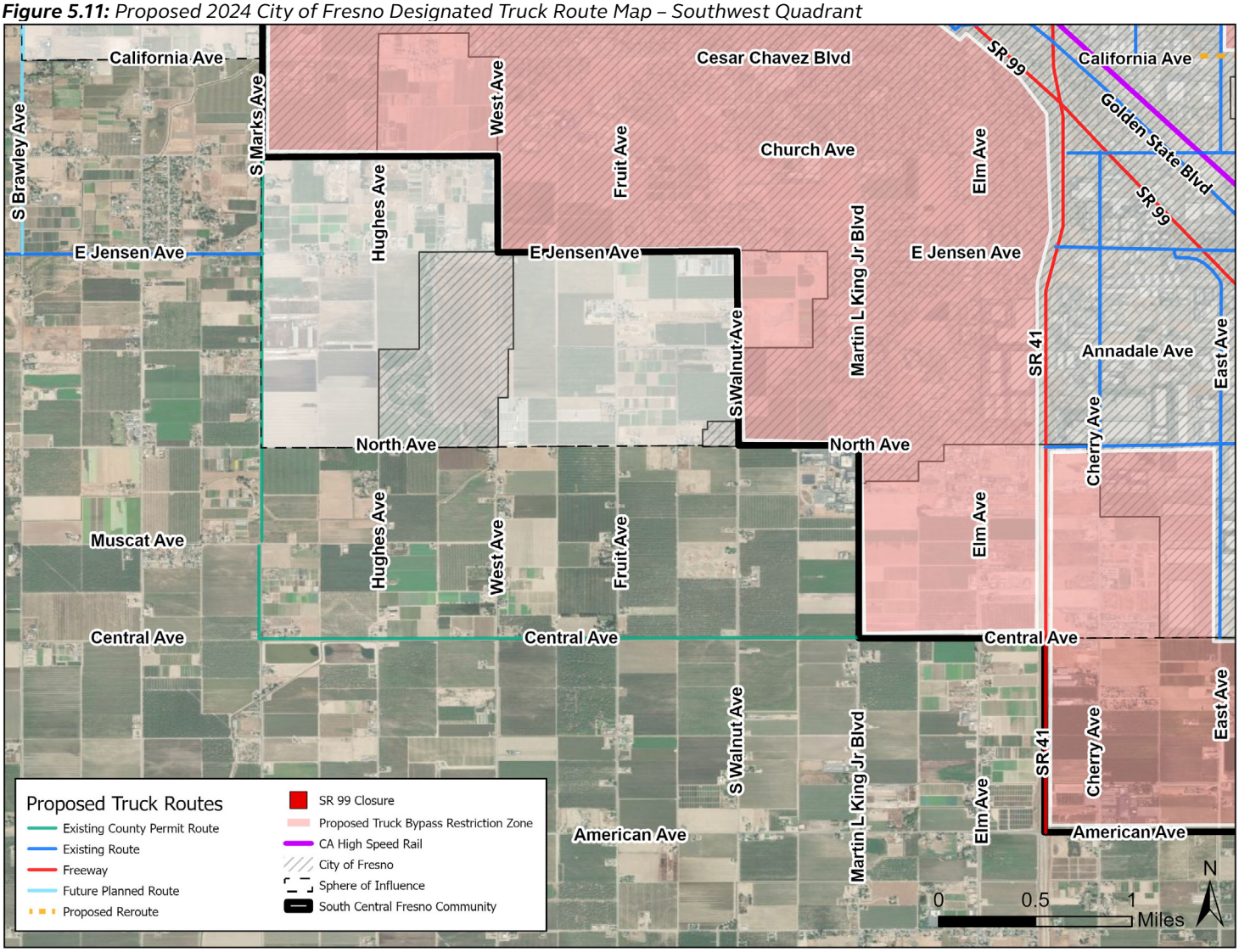


Figure 5.12: *Proposed 2024 City of Fresno Designated Truck Route Map – Southeast Quadrant*

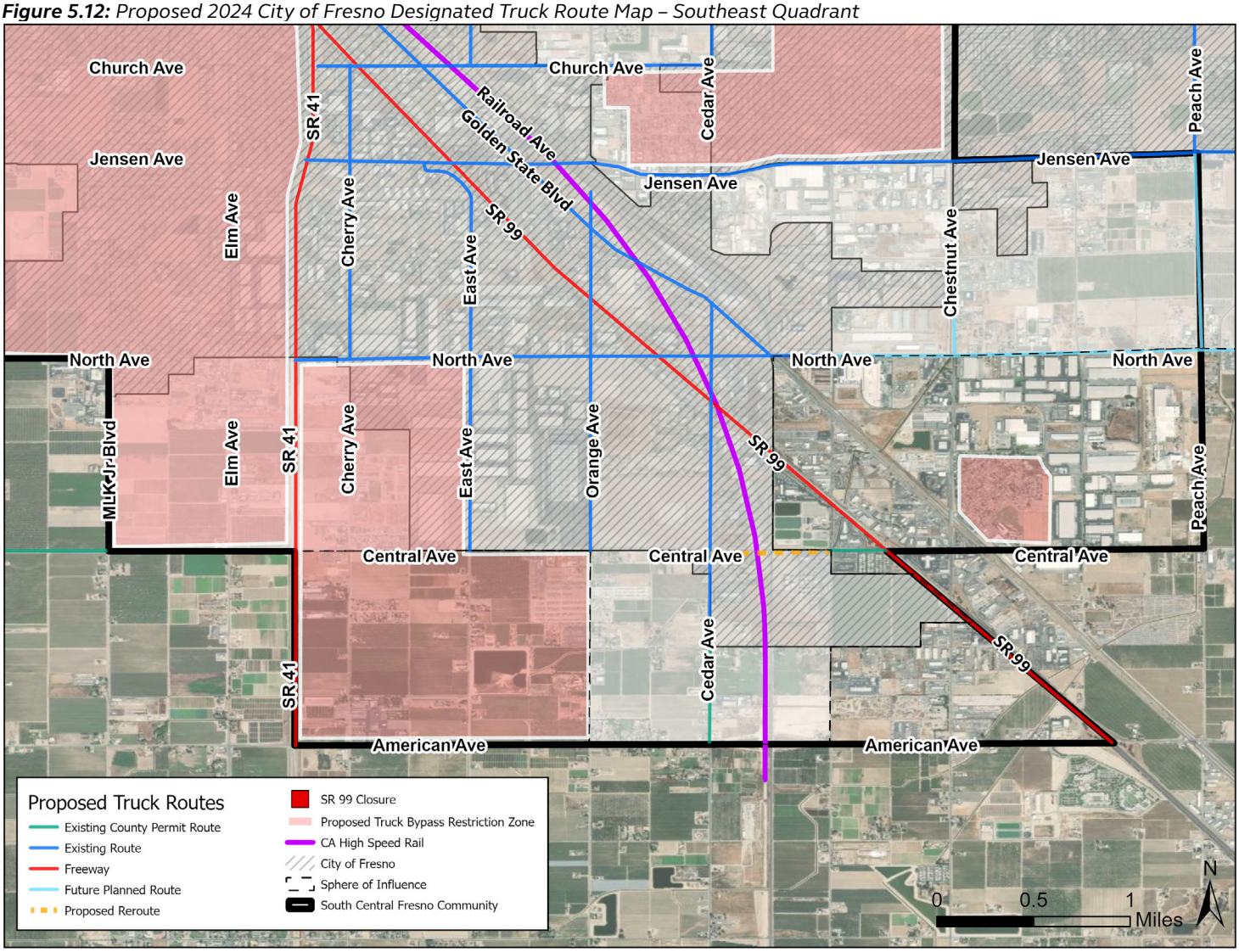


Table 5.4 includes a complete list of the truck routes proposed to be removed and added as reroutes as compared to the 2005 designated truck route network, including each segment's length. A total of approximately 43 miles are proposed to be removed, with a total of 3.6 miles of reroutes added in the areas where alternative routes were needed to complete the network.

Table 5.4: *2024 City of Fresno Proposed Truck Route List*

Road Segment	Limits	Proposed Status	Length (Miles)
A ST	Trinity St - Snow Ave	Remove	0.368
AMADOR ST	Whitesbridge Ave - Trinity St	Remove	0.791
B ST	Trinity Ave - Fresno St	Remove	0.585
B ST	Cesar Chavez Blvd - California Ave	Remove	0.258
BRAWLEY AVE	Nielsen Ave - SR 180	Remove	0.495
BROADWAY ST	Cesar Chavez Blvd - Santa Clara St	Remove	0.195
BUTLER AVE	East Ave - Cedar Ave	Remove	1.001
C ST	Fresno St - Cesar Chavez Blvd	Remove	0.547
CESAR CHAVEZ BLVD	Marks Ave - C St	Remove	2.815
CALIFORNIA AVE	G St - Railroad Ave	Remove	0.298
CALIFORNIA AVE	Van Ness Ave - Cedar Ave	New Reroute	1.351
CEDAR AVE	Jensen Bypass - Church Ave	Remove	0.564
CENTRAL AVE	Elm Ave - Cedar Ave	Remove	2
CENTRAL AVE	Cedar Ave - Maple Ave	New Reroute	0.504
CHERRY AVE	Central Ave - North Ave	Remove	0.999
CHESTNUT AVE	North Ave - Belmont Ave	Remove	3.985
CHURCH AVE	SR 41 - West Ave	Remove	2.501
DIVISADERO ST	SR 41 On Ramp - SR 41 Off Ramp	Remove	0.09
DIVISADERO ST	Echo Ave - G St	Remove	0.147
E ST	El Dorado St - Fresno St	Remove	0.729
E ST	Fresno St - Cesar Chavez Blvd	New Reroute	0.552
ELM AVE	California Ave - Central Ave	Remove	2.978
FRESNO ST	B St - SR 99	Remove	0.226
FRESNO ST	G St - H St	New Reroute	0.126
G ST	Divisadero St - Church Ave	Remove	2.676
H ST	Divisadero St - Fresno St	New Reroute	0.838
JENSEN AVE	SR 41 - West Ave	Remove	2.004
M ST	Stanislaus St - Cesar Chavez Blvd	Remove	0.826
MARKS AVE	Kearney Blvd - Cesar Chavez Blvd	Remove	0.501
NORTH AVE	Walnut Ave - SR 41	Remove	1.270
NORTH AVE	Maple Ave - Peach Ave	Remove	1.52
O ST	Divisadero St - Stanislaus St	Remove	0.083
P ST	Tuolumne St - O St	Remove	0.853
PALM AVE	McKinley Ave - Belmont Ave	Remove	1.004
RAILROAD AVE	California Ave - Golden State Blvd	Remove	2.25
ROOSEVELT	H St - Divisadero St	Remove	0.045
STANISLAUS ST	B St - Divisadero St	Remove	1.12
THORNE AVE	Whitesbridge Ave - Kearney Blvd	Remove	0.501
TULARE ST	1st St - Cedar Ave	Remove	1.002
TUOLUMNE ST	A St - G St	Remove	0.454

Road Segment	Limits	Proposed Status	Length (Miles)
WALNUT AVE	Church Ave - North Ave	Remove	1.507
WEST AVE	McKinley Ave - Weber Ave	Remove	0.131
WEST AVE	Golden State Blvd - Olive Ave	New Reroute	0.311
WEST AVE	Cesar Chavez Blvd - Jensen Ave	Remove	1.004
WHITESBRIDGE AVE	Brawley Ave - Trinity St	Remove	2.688

5.5 NON-INFRASTRUCTURE STRATEGIES

There are numerous truck-related improvements that can be implemented within South Central Fresno that cannot be placed on a map but are as equally important. These improvements can include education and outreach programming, truck fuel-type, emissions, and idling standards, truck-specific GPS administration, time-of-day restrictions, and enforcement. These strategies are beneficial in maximizing the benefit of the draft strategies presented previously.

Education and Outreach Programming

Education and outreach programming is a critical element in ensuring road safety is maximized while accidents are minimized. Proper education and outreach allows drivers to adapt efficiently to changes, optimizing their routes and supply chain management. The education component allows drivers to understand the wider benefits of rerouting and actively support these initiatives. Education could be administered at local driving schools, California Trucking Association Central Valley Unit email lists and events, and trucking businesses, perhaps using dynamic variable-message signs at strategy initiation, and online fact sheets. The City would be responsible for disseminating information.

Truck Fuel-type, Emissions, and Idling Standards

These standards allow trucks to operate efficiently to produce fewer emissions, promoting improved air quality in residential areas. This can be achieved through enforcement of stringent maintenance and emission control technologies.

CARB has stated that their goal is for more of the state's heavy duty truck fleet to be zero-emission vehicles. More specifically, by 2035, zero-emission truck/chassis sales must be 55% of class 2b to class 3 truck sales, 75% of class 4 to class 8 straight truck sales, and 40% of truck tractor sales[1]. Although the City of Fresno does not have direct jurisdiction over this initiative, the City should coordinate with CARB and SJVAPCD, who have the jurisdiction to enforce and regulate emissions in the region. The City should also consider potential drawbacks of implementing a larger fleet of ZEVs, including heavier trucks having a negative impact on road quality, the need to deploy charging infrastructure, and currently available technology that only allow ZEVs to travel a certain distance.

Truck-specific GPS Administration

Truck-specific GPS devices provide information for crucial route restrictions that allow drivers to avoid sensitive receptors while ensuring safe and efficient navigation.

Time-of-Day Restrictions

Time-of-day restrictions, especially near sensitive receptors, are useful during peak times to minimize congestion and improve safety. For example, near schools, these restrictions would be implemented around school arrival and departure times when students and parents are more likely to be walking outside. This will help to minimize students and parents' exposure to truck emissions. The City can also coordinate with SJVAPCD to incorporate air quality monitors at schools to help with monitoring and identifying key times of day when truck travel should be minimized.

Additionally, time-of-day restrictions can be paired with clear considerations for off-peak truck schedules, as to avoid an impact on residents during peak times of personal vehicle traffic. This would require the City to undertake an outreach campaign to inform businesses, drivers, and other stakeholders of the new Truck Bypass Restriction Zones as described under Education and Outreach programming above.

Enforcement

Clear mechanisms and penalties for non-compliance helps maintain safety on roadways. Regulations and rules should aim to deter violations that could jeopardize safety or disrupt sensitive receptors. Enforcement can be issued from businesses through GPS truck tracking, or by conducting enforcement near boundary hotspot locations.

When paired with on-the-ground improvements, implementation of these proposed strategies would result in an efficient and cohesive truck routing program that minimizes excessive and disproportionate negative impacts to South Central Fresno residents and sensitive receptors.

Additionally, once the updated truck route map and Truck Bypass Restriction Zones are implemented, trucking companies can incorporate the new routes and regulations into their GPS systems. The project team has had continuous coordination with trucking companies about what tools would help them to follow new truck regulations throughout the duration of the study. Truck generating companies highlighted that incorporating new GPS routes that indicate the revised truck routes are fairly easily implementable and would be the most efficient way to ensure they abide by the new regulations.

In the event that the public observes trucks violating posted truck regulations, the City of Fresno has a “Code Enforcement” Hotline called “FresGO 311”. Residents can call this number to report trucks that are violating the Municipal Code, which is recommended to include the updated truck route ordinance.

[1] *“Advanced Clean Trucks Regulation”. California Air Resources Board. 2024.*

6 IMPLEMENTATION

This section provides an overview of next steps for implementation of the strategies identified during the study. It begins with a discussion of funding sources and is followed by a framework that was used to evaluate the strategies identified above. The information in these two sections can then be used to pursue grant funding that matches high-scoring, effective transportation improvements that match the focus areas of the grant requirements.

6.1 POLICY STRATEGIES

It is in the best interest of the City of Fresno to adopt an amended truck route ordinance in order to implement the recommendations of the study, namely the proposed modifications to truck routes and Truck Bypass Restriction Zones. Residents of the AB 617 Community have highlighted their concern that high volumes of truck traffic have imposed negative air quality, noise, and traffic impacts.

Section 14-1303 of the City of Fresno Municipal Code establishes the designation of an official list of truck routes by City Council. The proposed amended truck ordinance should further regulate truck routes by establishing the Truck Bypass Restriction Zones proposed by this study. As discussed above, the thirteen recommended Truck Bypass Restriction Zones will regulate truck traffic through the most vulnerable neighborhoods within the South Central Fresno community, including residential areas, communities near schools and community spaces, and areas prioritized for non-truck travel. Specific truck traffic regulations within each Truck Bypass Restriction Zones will be recommended based on the needs of the community within each Truck Bypass Restriction Zones. More specifically, trucks should be restricted from entering truck regulated areas unless trying to reach their origin or destination point, but it should not be used for pass through traffic. Where this approach is not feasible, we recommend implementing alternative strategies like speed and time of day limitations to help mitigate truck impacts to the Truck Bypass Restriction Zones. For example, in Truck Bypass Restriction Zones near schools, truck access should be confined to non-school hours. The regulation of truck access in Truck Bypass Restriction Zones will reduce truck emissions, volumes, and idling of heavy-duty trucks near sensitive receptors.

The amended truck ordinance is in alignment with the California Vehicle Code, which provides the legal basis for restricting truck access and providing alternate routes. California Vehicle Codes 35701, 35702, 35703, 35712, 35714 refer to local authorities' abilities to regulate truck access on local roads. These codes also state that restrictions to truck access cannot impede truck access to state highways or from making pick-ups or deliveries. These requirements are in alignment with the recommended Truck Bypass Restriction Zones, which only encompass local roads.

The ordinance should specify that truck access within these Truck Bypass Restriction Zones will be regulated through signage placed at regular intervals along corridors within Truck Bypass Restriction Zones and enforced by law enforcement. Enforcement will occur through occasional patrolling and issuing of tickets from the Fresno Police Department for violations. As part of this new regulation, the City of Fresno will coordinate with the Police Department to conduct enforcement training on the new regulations to ensure law enforcement is aware of the new restrictions. The City should also consider a "grace period" for ticketing while businesses and enforcement staff adjust to the truck regulations. Additionally, the City and law enforcement should meet at the 1-year mark to re-evaluate the truck traffic ticket data and understand if the amended truck ordinance needs modification.

6.2 FUNDING

The following section summarizes a comprehensive list of potential funding sources for project implementation. The list includes the agency, funding source, description, eligible projects, eligibility requirements, and application due dates. The list does not preclude the potential for Public-Private Partnerships (P3) as a funding strategy to deliver certain projects.

It should also be noted that due to the recent signing of the Surface Transportation Authorization along with the Infrastructure Investment and Job Act (IIJA), several of the descriptions, project types, eligibility requirements, and application deadlines for the funding sources listed below may be altered. More specifically, federal funding sources associated with the FAST Act may differ with the future implementation of this authorization. These funding sources are listed below:

- RAISE Grant
- Highway Safety Improvement Program (HSIP) – FAST Act
- Surface Transportation Block Grant (STBG)
- INFRA Grant
- New Starts and Small Starts (FTA Section 5309)
- Congestion Mitigation & Air Quality Improvement (CMAQ)
- EPA Office of Sustainable Communities Greening America's Communities Program

State funding source descriptions, project types, eligibility requirements and application deadlines are provided based on the most recent information available, but details are subject to change over time and should be verified as part of the grant application process. These funding sources are listed below:

- Active Transportation Program – Cycle 5
- Cap & Trade: Low Carbon Transit Operations Program (LCTOP)
- State Transportation Improvement Program (STIP)
- State Highway Operations Protection Program (SHOPP)
- SB 1 – State of Good Repair
- Trade Corridor Enhancement (TCEP)
- Local Partnership Program (LPP)

Transit & Intercity Rail

- Solutions for Congested Corridors Program
- Measure C – Regional Transportation Program
- San Joaquin Valley Air Quality District – Public Benefit Grant Program

Figure 6.1 below presents a summary of potential federal, state, regional, and local funding sources that could be explored to fund implementation of recommendations. As noted previously, any recommendations that progress into project development would be subject to rigorous traffic impact analysis, engineering and design, associated environmental studies, and permitting.

Figure 6.1: *Recommended Funding Strategies*

FUNDING SOURCE	DESCRIPTION	PROJECT TYPES	ELIGIBILITY REQUIREMENTS
RAISE Grant	Provides a unique opportunity for the DOT to invest in road, rail, transit, and port projects that promise to achieve national objectives.	• Highway/ Roadway • Transit • Active Transportation	• Activities eligible for funding under RAISE are related to the planning, preparation, or design – including environmental analysis, feasibility studies, and other pre-construction activities – of surface transportation projects, research, demonstration, or pilot projects are eligible only if they will result in long term, permanent surface transportation infrastructure that has an independent utility. • Applications from lead applicant agencies are limited to three projects
FTA Research & Innovation Program	Provides funding for safety and mobility innovation research that improves operations, enhances the travelers' experience, and drives economic growth in America's communities through research in safety, mobility innovation, and infrastructure. Programs include the "Safety Research and Demonstration" Program, the "Accelerating Innovative Mobility" Program, and the "Integrated Mobility Innovation" Program.	• Transit Signal Synchronization/ TSM	**Safety Research and Demonstration:** • Operations that will improve the operational safety of rail transit services; • Proposals to prevent and mitigate suicide and trespassing hazards on rail transit systems, and proposals to improve the operational safety of shared corridor fixed guideway systems, including highway-rail grade crossing safety. **Accelerating Innovative Mobility:** • Activities leading to the development and testing of innovative mobility, such as planning and developing business models, obtaining equipment and service, acquiring or developing software and hardware interfaces to implement the project, operating or implementing the new service model, and evaluating project results. **Integrated Mobility Innovation:** • Activities leading to the demonstration, such as planning and developing business models, obtaining equipment and service, acquiring, or developing software and hardware interfaces to implement the project, operating the demonstration, and providing data to support performance measurement and evaluation

FUNDING SOURCE	DESCRIPTION	PROJECT TYPES	ELIGIBILITY REQUIREMENTS
Highway Safety Improvement Program (HSIP) – FAST Act	Provides funding for projects that focus on safety improvements. These include installation of pedestrian hybrid beacons, medians, pedestrian crossing islands, and other physical infrastructure projects.	• Highway/ Roadway • Active Transportation	• Any strategy, activity or project on a public road that is consistent with the data-driven State Strategic Highway Safety Plan (SHSP) and corrects or improves a hazardous road location or feature or addresses a highway safety problem, including active transportation projects • Funding is prohibited for the purchase, operation, or maintenance of an automated traffic enforcement system; workforce development, training, and education activities are eligible uses of HSIP funds.
Surface Transportation Block Grant (STBG)	Provides flexible funding that may be used by States and localities for projects to preserve and improve the conditions and performance on any Federal-aid highway, bridge and tunnel projects on any public road, pedestrian and bicycle infrastructure, and transit capital projects, including intercity bus terminals.	• Highway/ Roadway • Transit • Rail • Active Transportation	• Construction, reconstruction, rehabilitation, resurfacing, restoration, preservation, or operational improvements for highways • Capital costs for transit projects eligible under chapter 53 of Title 49, including vehicles and facilities used to provide intercity passenger bus service. • Carpool projects, fringe and corridor parking facilities and programs including electric and natural gas vehicle charging, bicycle and pedestrian walkways, and Americans with Disabilities Act (ADA) sidewalk modification. • Highway and transit safety infrastructure improvements and programs, hazard eliminations, railroad/ highway grade crossings. • Transportation alternatives, intersections with high accident rates or levels of congestion, infrastructure based ITS capital improvements, congestion pricing projects and strategies, and truck parking facilities. • Environmental

FUNDING SOURCE	DESCRIPTION	PROJECT TYPES	ELIGIBILITY REQUIREMENTS
INFRA	Advance the Administration's priorities of rebuilding America's infrastructure and creating jobs by funding highway and rail projects of regional and national economic significance that position America to win the 21st century.	• Highway/ Roadway • Transit • Rail	• National Highway Freight Network (NHFN) • National Highway System (NHS) • Railway-highway grade crossing or grade separation projects • Construction of intermodal or freight rail, freight projects within the boundaries of a public or private freight rail, water (including ports), or intermodal facility • NFRA grants may not exceed 60% of the total eligible project costs. An additional 20% of project costs may be funded with other Federal assistance, bringing total Federal participation in the project to a maximum of 80%. • For a larger project (project cost exceeding $100 million), an INFRA grant must be at least $25 million. For a smaller project, the grant must be at least $5 million.
New Starts & Small Starts (FTA Section 5309)	This FTA discretionary grant program funds transit capital investments, including heavy rail, commuter rail, light rail, streetcars, and bus rapid transit. For New Starts and Core Capacity projects, the law requires completion of two phases in advance of receipt of a construction grant agreement – Project Development and Engineering. For Small Starts projects, the law requires completion of one phase in advance of receipt of a construction grant agreement – Project Development.	• Rail • Transit	• New fixed-guideways or extensions to fixed guideways; • Bus rapid transit projects operating in mixed traffic that represent significant investment in the corridor; • Projects that improve capacity on an existing fixed-guideway system • Core capacity projects that expand capacity by at least 10% in existing fixed guideway transit corridors that are at or above capacity today or will be at or above capacity within 5 years
Congestion Mitigation & Air Quality Improvement (CMAQ)	Provides funding to areas in nonattainment or maintenance for ozone, carbon monoxide, and/or particulate matter to help meet the requirements of the Clean Air Act. Funds may be used for any transit capital expenditures otherwise eligible for FTA funding as long as they have an air quality benefit.	• Highway/ Roadway • Transit • Signal Synchronization/ TSM • Active Transportation • TDM	• Funds must be invested in a State's nonattainment or maintenance areas, on projects that reduce ozone precursors, volatile organic compounds, nitrogen oxides, carbon monoxide, or particular matter; • CMAQ projects must come from a transportation plan and transportation improvement program (TIP); • Include quantified emission benefits; • Include emission tradeoffs

FUNDING SOURCE	DESCRIPTION	PROJECT TYPES	ELIGIBILITY REQUIREMENTS
EPA Office of Sustainable Communities Greening America's Communities Program	Greening America's Communities (formerly known as Greening America's Capitals) is an EPA program to help cities and towns develop an implementable vision of environmentally friendly neighborhoods that incorporate innovative green infrastructure and other sustainable design strategies.	• Sustainability	• Dependent on grant available
California Transportation Committee – Active Transportation Program – Cycle 7	The Active Transportation Program (ATP) is a competitive statewide program created to encourage increased use of active modes of transportation, such as biking and walking. Funds can be used to fund the development of communitywide active transportation plans within or, for area-wide plans, encompassing disadvantaged communities, including bicycle, pedestrian, safe routes to schools, or comprehensive active transportation plans.	• Active Transportation	**Active Transportation Program Cycle 7 Guidelines** • Consistency with an adopted regional transportation plan • Use of appropriate application • Supplanting funds • Eligibility of project (infrastructure projects, plans, non-infrastructure projects, infrastructure projects with non-infrastructure components, and quick-build project pilot programs) • Note exceptions listed in Cycle 7 Policy Guidelines • Request of at least the minimum request amount as outline in the Cycle 7 Policy Guidelines • Projects that are already fully funded or projects that are a capital improvement required as a condition for private development approval or permits are not eligible for ATP funding; • A project applicant found to have purposefully misrepresented information that could affect a project's score may result in the applicant being excluded from the program
Cap & Trade: Low Carbon Transit Operations Program (LCTOP)	Provides funding for projects that have a goal of reducing GHG emissions, improving mobility, and prioritize disadvantaged communities. This program uses funding from 5 percent of cap-and-trade auction proceeds deposited to the Greenhouse Gas Reduction Funds (GGRF).	• Transit	• Projects that increase transit mode share • Projects that replace conventional vehicles with zero emission vehicle projects • Projects that support new or expanded bus or rail services; • Projects that support expansions to intermodal transit facilities, equipment acquisition, fueling, and maintenance and other costs to operate above services or facilities.

FUNDING SOURCE	DESCRIPTION	PROJECT TYPES	ELIGIBILITY REQUIREMENTS
State Transportation Improvement Program (STIP)	Provides funding for capital improvements on and off the State Highway System that increase the capacity or improve the state of good repair of the transportation system. The STIP consists of two broad programs – the regional program (RIP) funded from 75% of new STIP funding and the interregional program (IIP) funded from 25% of new STIP funding.	• Active Transportation	• The CTC must approve each County's STIP in its entirety; • CTC allocation is required by the end of the fiscal year that the project is listed in the STIP
State Highway Operations Protection Program (SHOPP)	Provides funding to maintain the safety and integrity of the State Highway System. Most of the projects are for pavement and bridge rehabilitation and traffic safety improvements. CTC allocates to the individual projects.	• Highway/ Roadway • Transit	• Capital improvements relative to maintenance and safety of state highways and bridges; • Rehabilitates state highways and bridges that do not add a new traffic lane
SB 1 – State of Good Repair		• Roadway • Active Transportation • Sustainability	• Transit capital projects or services to maintain or repair a transit operator's existing transit vehicle fleet or transit facilities, including the rehabilitation or modernization of the existing vehicles or facilities • The design, acquisition and construction of new vehicles or facilities that improve existing transit services; • Transit services that complement local efforts for repair and improvement of local transportation infrastructure. • Replacement or rehabilitation of rolling stock, passenger stations and terminal, security equipment and systems, maintenance facilities and equipment, ferry vessels, and rail • Preventative maintenance • New maintenance facilities or maintenance equipment if needed to maintain the existing transit service

FUNDING SOURCE	DESCRIPTION	PROJECT TYPES	ELIGIBILITY REQUIREMENTS
Trade Corridor Enhancement (TCEP)	Provides funding for infrastructure improvements along corridors with high volumes of freight movement.	• Highway • Freight	• Freight System Factors – Throughput, Velocity, and Reliability, • Transportation System Factors – Safety, Congestion Reduction/Mitigation, Key Transportation Bottleneck Relief, Multi-Modal Strategy, Interregional Benefits, and Advanced Technology; • Community Impact Factors – Air Quality Impact, Community Impact Mitigation, and Economic/Jobs Growth; • The overall need, benefits, and cost of the project • Project Readiness – ability to complete the project in a timely manner; • Demonstration of the required 30% matching funds; • The leveraging and coordination of funds from multiple sources; and jointly nominated and/or jointly funded.
Local Partnership Program (LPP)	Provides local and regional agencies that have passed sales tax measures, tolls, or fees or that have imposed fees which are dedicated solely to transportation improvements with a continuous appropriation of $200 million annually (Statewide) to fund road maintenance and rehabilitation, sound walls, and other transportation improvement projects.	• Highway/ Roadway • Transit • Active Transportation • Paratransit	• Improves the state highway system • Improves transit facilities that expand transit facilities; • Increases ridership; • Improves safety; • Acquisition of new or rehabilitation of rolling stock, buses, or other transit equipment; • Improves the local road system; • Improves bicycle and pedestrian safety or mobility; • Mitigates the environmental impact of new transportation infrastructure on a locality's or region's air quality or water quality; • Road maintenance and rehabilitation

FUNDING SOURCE	DESCRIPTION	PROJECT TYPES	ELIGIBILITY REQUIREMENTS
Transit and Intercity Rail	Provides grants for capital improvements and operational investments that will modernize California's transit systems and intercity, commuter, and urban rail systems to reduce emissions of greenhouse gases by reducing vehicle miles traveled throughout California.	• Transit	• Enhances and improves existing rail systems, includes new rail cars to increase ridership and service levels; • Improves transit reliability • Improves existing and future rail systems; • Includes high speed rail; • Increases integration of rail and transit services; • Includes integrated ticketing and bus transit investments that increase ridership and reduce GHG emissions
Solutions for Congested Corridors Program	The Sustainable Communities Program provides direct technical assistance to SCAG member jurisdictions to complete planning and policy efforts that enable implementation of the regional SCS. Call for applications for smart cities & mobility innovations, housing & sustainable development, active transportation & safety.	• Highway/ Roadway • Transit • Active Transportation • Goods Movement	• Projects that reduce congestion to highly traveled and congested corridors through performance improvements that balance transportation improvements, community impacts, and provide environmental benefits; • Projects must be included in a qualifying Comprehensive Multimodal Corridor Plan consistent with the CTC's Comprehensive Multimodal Corridor Plan Guidelines
Measure C – Regional Transportation Program	The core or vision of the Measure C plan is to provide mobility options for all of Fresno County's residents, helping to maintain Fresno County's quality-of-life in its amenities and transportation options.	• Transit • Sustainability	• Projects must be made to one of the following categories: • State highways • County roadways • City streets
San Joaquin Valley Air Quality District – Public Benefit Grant Program		• Sustainability	• Mobile source projects. Eligibility continues through either the Moyer Program or the Proposition 1B Program, with a focus on zero-emission equipment. • Zero-emission charging infrastructure projects. Eligibility continues with a focus on medium- and heavy-duty vehicle infrastructure. • Stationary source projects. New eligibility for the replacement of equipment at locations of stationary sources of air pollution not subject to the Cap-and-Trade Program, which will result in direct reductions of TACs or criteria air pollutants.

6.3 PRIORITIZATION FRAMEWORK

To understand the potential benefits of the projects and programs presented, each strategy was analyzed using a set of performance metrics that are derived from the project goals identified in earlier tasks. Performance metrics used to evaluate the strategies are summarized in the table below:

Table 6.1: *Evaluation Criteria Summary*

Design Vehicle Type	Single-Unit Truck
Reduced VMT	The project is expected to reduce the number of vehicle miles traveled (VMT) within the study area. Reduced VMT is also used as a proxy for identifying reduced greenhouse gas (GHG) emissions from vehicles. More specifically, if a project is successful at reducing the number of VMT, then it is likely to also reduce GHG emissions. Additionally, VMT can also correlate with traffic congestion, as more vehicles travel more miles over the transportation network, the potential for traffic congestion can increase.
Improves Air Quality	The project will reduce emissions from transportation vehicles to improve air quality for communities living within the study area.
Improved V/C Ratio	The project is expected to improve the volume/capacity (V/C) ratio, thus indicating that the project will reduce traffic congestion.
Intersection Improvement	The project is an intersection improvement that will streamline traffic flows for freight trucks, personal vehicles, bicycles, and pedestrians. Ultimately, this intersection improvement will minimize queuing and reduce traffic congestion along corridors.
Targeted Safety Projects	The project specifically aims to improve safety at a location that has been identified by the public or through existing conditions. The project has the potential to reduce the number of collisions occurring at this location.
Complete Streets Project	The project will help to create a “complete street” where all modes can travel safely along.
Pedestrian Safety Project	The project specifically aims to improve the safety of pedestrians along corridors or at intersections by reducing crossing distances, adding protected infrastructure, and ultimately reducing the number of collisions between pedestrians and motorists.

The performance metrics listed above were then given a score ranging from one to three based on the project’s anticipated impact. The score assigned to each project was intended to reflect a high-level evaluation. For example, a traffic signalization improvement is assigned a score of ‘Moderate (2)’ and is expected to have a moderate impact on air quality. This project is expected to streamline truck efficiency and reduce idling on truck routes. Therefore, it is expected to have a greater impact on minimizing truck emissions than a new crosswalk, which will not impact truck emissions, but will have a smaller impact than Truck Bypass Restriction Zones which will effectively prohibit truck bypass travel in a given area.

The project’s impact may be localized to the recommended intersection, corridor, or Truck Bypass Restriction Zones. However, the cumulative impact of the recommended strategies is expected to produce a more significant positive impact for the South Central Fresno Community. Descriptions for potential scores are summarized below in Table 6.2.

Table 6.2: *Evaluation Criteria Scoring Summary*

Level of Impact	Description
High (3)	Project produces moderate to significant benefits.
Moderate (2)	Project produces moderate benefits.
Low or No (1)	Project produces low or no benefits.

Each of the proposed strategies was then evaluated against the criteria to generate a score. Higher-scoring projects can be included in grant funding applications and planning efforts to support safe and efficient freight movement. A selection of strategies and their evaluation scores are included in the table below for illustration purposes, and the full evaluation matrix is included in Appendix B.

Figure 6.2: *Example Strategies Evaluation Scores*

ID	Strategy	Location	Cross Street	Potential Reduction in VMT	Improves Air Quality	Potential Reduction in Traffic Congestion	Intersection Improvement	Targeted Safety Projects	Complete Streets Project	Pedestrian Safety Project	Total
1	New Crosswalks	Cedar	Kaviland	1	1	1	3	3	3	3	15
103	Roadway Reconfiguration	North	Willow	2	2	2	3	2	2	1	14
124	Traffic Signalization Improvement	Abby	Harvey	2	3	3	3	3	3	3	20
143	Truck Focused Signage	Fwy180	Fwy99	1	1	1	3	3	3	1	13
178	New Bike Lanes	Belmont	Fwy99 - Chestnut	3	3	2	2	3	3	2	18

6.4 NEXT STEPS

The strategies recommended in this document aim to mitigate the negative impacts from truck travel on people living and working in the South Central Fresno AB 617 Community. The strategies were developed after a thorough review of existing demographic, transportation, land use, and health impact conditions, as well as an evaluation of best practices, guidance from technical experts, and comprehensive community engagement efforts,

It is intended that the City of Fresno utilize the findings, recommendations, and implementation strategies identified in this document to update policy and truck route designations, evaluate and prioritize projects to address a range of truck travel issues for residents, and determine feasible funding options for implementation. This will require a coordinated effort between the City of Fresno, SJVAPCD, and agencies such as Caltrans, the County of Fresno, and the Fresno Council of Governments, as future relevant planning efforts and projects are identified for the South Central Fresno AB 617 community.

APPENDIX A:
STRATEGIES AND FUNDING CATEGORIES

ffID	Strategy ID	Strategy	Location	Cross Street	Project Type					
					Highway/ Roadway	Active Transportation	TSM	TDM	Sustainability	Freight
1	NC1	New Crosswalks	Cedar	Kaviland		X				
2	NC2	New Crosswalks	Rowell	Kaviland		X				
3	NC3	New Crosswalks	Jensen	Cedar		X				
4	NC4	New Crosswalks	Jensen	Holloway		X				
5	NC5	New Crosswalks	Jensen	Rowell		X				
6	NC6	New Crosswalks	Jensen Bypass	Cedar		X				
7	NC7	New Crosswalks	Jensen	Golden State		X				
8	NC8	New Crosswalks	Jensen	East (South)		X				
9	NC9	New Crosswalks	Jensen	East (North)		X				
10	NC10	New Crosswalks	Jensen	Cherry		X				
11	NC11	New Crosswalks	Jensen	Elm		X				
12	NC12	New Crosswalks	Jensen	MLK Jr		X				
13	NC13	New Crosswalks	Jensen	Walnut		X				
14	NC14	New Crosswalks	Jensen	Fruit		X				
15	NC15	New Crosswalks	Jensen	West		X				
16	NC16	New Crosswalks	North	Walnut		X				
17	NC17	New Crosswalks	North	MLK Jr		X				
18	NC18	New Crosswalks	North	Elm		X				
19	NC19	New Crosswalks	North	Cedar		X				
20	NC20	New Crosswalks	North	Maple		X				
21	NC21	New Crosswalks	North	Chestnut		X				
22	NC22	New Crosswalks	North	Peach		X				
23	NC23	New Crosswalks	Central	Peach		X				
24	NC24	New Crosswalks	Central	Willow		X				
25	NC25	New Crosswalks	Central	Golden State		X				
26	NC26	New Crosswalks	Central	Maple		X				
27	NC27	New Crosswalks	Central	Cedar		X				
28	NC28	New Crosswalks	Central	Orange		X				
29	NC29	New Crosswalks	Central	East		X				
30	NC30	New Crosswalks	Central	Cherry		X				
31	NC31	New Crosswalks	SR 41	Central		X				
32	NC32	New Crosswalks	Central	Elm		X				
33	NC33	New Crosswalks	Central	MLK Jr		X				
34	NC34	New Crosswalks	SR 41	American		X				
35	NC35	New Crosswalks	American	Cedar		X				
36	NC36	New Crosswalks	North	Cherry		X				
37	NC37	New Crosswalks	Golden State	Railroad		X				
38	NC38	New Crosswalks	Golden State	Orange		X				
39	NC39	New Crosswalks	Golden State	East		X				
40	NC40	New Crosswalks	Golden State	Church		X				

ffID	Strategy ID	Strategy	Location	Cross Street	Project Type					
					Highway/ Roadway	Active Transportation	TSM	TDM	Sustainability	Freight
41	NC41	New Crosswalks	G	Church		X				
42	NC42	New Crosswalks	Church	Railroad		X				
43	NC43	New Crosswalks	Church	Cedar		X				
44	NC44	New Crosswalks	Church	Chestnut		X				
45	NC45	New Crosswalks	Church	East		X				
46	NC46	New Crosswalks	Church	Cherry		X				
47	NC47	New Crosswalks	Church	MLK Jr		X				
48	NC48	New Crosswalks	Church	Clara		X				
49	NC49	New Crosswalks	Church	Fairview		X				
50	NC50	New Crosswalks	Church	Walnut		X				
51	NC51	New Crosswalks	Church	Fruit		X				
52	NC52	New Crosswalks	Church	West		X				
53	NC53	New Crosswalks	Church	Marks		X				
54	NC54	New Crosswalks	Jensen	Chestnut		X				
55	NC55	New Crosswalks	Jensen	Peach		X				
56	NC56	New Crosswalks	Chestnut	Butler		X				
57	NC57	New Crosswalks	Cedar	Cesar Chavez Blvd		X				
58	NC58	New Crosswalks	Cedar	Hamilton		X				
59	NC59	New Crosswalks	Cedar	Heaton		X				
60	NC60	New Crosswalks	Butler	East		X				
61	NC61	New Crosswalks	Butler	O		X				
62	NC62	New Crosswalks	Los Angeles	M		X				
63	NC63	New Crosswalks	Los Angeles	Van Ness		X				
64	NC64	New Crosswalks	Van Ness	Hamilton		X				
65	NC65	New Crosswalks	Van Ness	Cesar Chavez Blvd		X				
66	NC66	New Crosswalks	Van Ness	Railroad		X				
67	NC67	New Crosswalks	Railroad	G		X				
68	NC68	New Crosswalks	Cesar Chavez Blvd	C		X				
69	NC69	New Crosswalks	C	Mono		X				
70	NC70	New Crosswalks	C	Inyo		X				
71	NC71	New Crosswalks	C	Kern		X				
72	NC72	New Crosswalks	C	Tulare		X				
73	NC73	New Crosswalks	C	Fresno		X				
74	NC74	New Crosswalks	B	Stanislaus		X				
75	NC75	New Crosswalks	B	Amador		X				
76	NC76	New Crosswalks	Whitesbridge	Thorne		X				
77	NC77	New Crosswalks	Thorne	Kearney		X				
78	NC78	New Crosswalks	G	El Dorado		X				
79	NC79	New Crosswalks	O	Santa Clara		X				
80	NC80	New Crosswalks	O	Butler		X				

ffID	Strategy ID	Strategy	Location	Cross Street	Project Type					
					Highway/ Roadway	Active Transportation	TSM	TDM	Sustainability	Freight
81	NC81	New Crosswalks	Nielsen	Hughes		X				
82	NC82	New Crosswalks	Cesar Chavez Blvd	Cedar		X				
83	NC83	New Crosswalks	Belmont	1st		X				
84	NC84	New Crosswalks	Tulare	6th		X				
85	NC85	New Crosswalks	Tulare	1st		X				
86	NC86	New Crosswalks	Belmont	Cedar		X				
87	NC87	New Crosswalks	Belmont	Blackstone		X				
88	NC88	New Crosswalks	Blackstone	Olive		X				
89	NC89	New Crosswalks	Belmont	Weber		X				
90	NC90	New Crosswalks	Belmont	Wesley		X				
91	NC91	New Crosswalks	Belmont	Butler		X				
92	NC92	New Crosswalks	Olive	Weber		X				
93	NC93	New Crosswalks	Golden State	McKinley		X				
94	NC94	New Crosswalks	McKinley	Echo		X				
95	NC95	New Crosswalks	McKinley	Palm		X				
96	NC96	New Crosswalks	McKinley	Fresno		X				
97	NC97	New Crosswalks	McKinley	Millbrook		X				
98	NC98	New Crosswalks	Central	Chestnut		X				
99	RR1P	Roadway Reconfiguration	North	Willow	X					X
100	RR2P	Roadway Reconfiguration	Butler	Hazelwood	X					X
101	RR3P	Roadway Reconfiguration	Cesar Chavez Blvd	Plumas	X					X
102	RR4P	Roadway Reconfiguration	Belmont	Palm	X					X
103	RR5P	Roadway Reconfiguration	SR 99	North	X					X
104	RR6P	Roadway Reconfiguration	North	Golden State Frontage	X					X
105	RR7P	Roadway Reconfiguration	Broadway	Santa Clara	X					X
106	TS1	Traffic Signalization Improvement	Central	Chestnut	X		X			X
107	TS2	Traffic Signalization Improvement	B	Stanislaus	X		X			X
108	TS3	Traffic Signalization Improvement	Cesar Chavez Blvd	West	X		X			X
109	TS4	Traffic Signalization Improvement	B	Rev Chester Riggins	X		X			X
110	TS5	Traffic Signalization Improvement	Divisadero	Glenn	X		X			X
111	TS6	Traffic Signalization Improvement	Divisadero	Calaveras	X		X			X
112	TS7	Traffic Signalization Improvement	M	Santa Clara	X		X			X
113	TS8	Traffic Signalization Improvement	O	San Benito	X		X			X
114	TS9	Traffic Signalization Improvement	Cesar Chavez Blvd	10th	X		X			X
115	TS10	Traffic Signalization Improvement	Abby	Harvey	X		X			X
116	TS11	Traffic Signalization Improvement	Belmont	Stafford	X		X			X
117	TS12	Traffic Signalization Improvement	McKinley	San Pablo	X		X			X

ffID	Strategy ID	Strategy	Location	Cross Street	Project Type					
					Highway/ Roadway	Active Transportation	TSM	TDM	Sustainability	Freight
118	TS13	Traffic Signalization Improvement	Golden State	Church	X		X			X
119	TS14	Traffic Signalization Improvement	North	Parkway	X		X			X
120	TS15	Traffic Signalization Improvement	C	Walnut/ Martin	X		X			X
121	SN1	Truck Focused Signage	SR 99	Chestnut	X					X
122	SN2	Truck Focused Signage	SR 99	North	X					X
123	SN3	Truck Focused Signage	SR 99	Orange	X					X
124	SN4	Truck Focused Signage	SR 99	Jensen	X					X
125	SN5	Truck Focused Signage	SR 99	SR 41	X					X
126	SN6	Truck Focused Signage	SR 99	Cesar Chavez Blvd	X					X
127	SN7	Truck Focused Signage	SR 99	Fresno	X					X
128	SN8	Truck Focused Signage	SR 99	SR 180	X					X
129	SN9	Truck Focused Signage	SR 99	Belmont	X					X
130	SN10	Truck Focused Signage	SR 99	Olive	X					X
131	SN11	Truck Focused Signage	SR 99	McKinely	X					X
132	SN12	Truck Focused Signage	SR 180	Marks	X					X
133	SN13	Truck Focused Signage	SR 180	SR 99	X					X
134	SN14	Truck Focused Signage	SR 180	SR 99	X					X
135	SN15	Truck Focused Signage	SR 180	Abby	X					X
136	SN16	Truck Focused Signage	SR 180	SR 41	X					X
137	SN17	Truck Focused Signage	SR 180	Cedar	X					X
138	SN18	Truck Focused Signage	SR 41	Central	X					X
139	SN19	Truck Focused Signage	SR 41	North	X					X
140	SN20	Truck Focused Signage	SR 41	Jensen	X					X
141	SN21	Truck Focused Signage	SR 41	San Benito	X					X
142	SN22	Truck Focused Signage	SR 41	O	X					X
143	SN23	Truck Focused Signage	SR 41	Tulare	X					X
144	SN24	Truck Focused Signage	SR 41	SR 180	X					X
145	SN25	Truck Focused Signage	SR 41	SR 180	X					X
146	SN26	Truck Focused Signage	Golden State	Olive	X					X

ID	Strategy ID	Strategy	Location	Extents	Length	Project Type					
						Highway/ Roadway	Active Transportation	TSM	TDM	Sustainability	Freight
147	NS1	New Sidewalks	Willow	Jensen - Central	2.0		X			X	
148	NS2	New Sidewalks	Cherry	North - Central	1.0		X			X	
149	NS3	New Sidewalks	Chestnut	Jensen - Central	2.0		X			X	
150	NS4	New Sidewalks	American	SR 41 – SR 99	3.4		X			X	
151	NS5	New Sidewalks	Central	SR 41 - Peach	3.8		X			X	
152	NS6	New Sidewalks	Orange	Railroad - American	2.8		X			X	
153	NS7	New Sidewalks	Golden State	Cesar Chavez Blvd - Central	4.1		X			X	

ID	Strategy ID	Strategy	Location	Extents	Length	Project Type					
						Highway/ Roadway	Active Transportation	TSM	TDM	Sustainability	Freight
154	NS8	New Sidewalks	Cesar Chavez Blvd	Kern - Mono	0.2		X			X	
155	NS9	New Sidewalks	Church	Marks - MLK Jr	2.5		X			X	
156	NS10	New Sidewalks	Elm	North - Central	1.0		X			X	
157	NS11	New Sidewalks	Cedar	Parkway - American	1.6		X			X	
158	NS12	New Sidewalks	North	Parkway - Peach	2.4		X			X	
159	NS13	New Sidewalks	Jensen	Maple - Peach	1.5		X			X	
160	NS14	New Sidewalks	Cesar Chavez Blvd	Marks - West	1.0		X			X	
161	NS15	New Sidewalks	Church	Cherry - 10th	1.4		X			X	
162	NS16	New Sidewalks	Walnut	Church - North	1.5		X			X	
163	BL1	New Bike Lanes	Chestnut	Jensen - Central	2.0		X			X	
164	BL2	New Bike Lanes	American	SR 41 – SR 99	3.4		X			X	
165	BL4	New Bike Lanes	Orange	Cesar Chavez - Butler	0.5		X			X	
166	BL5	New Bike Lanes	Golden State	Cesar Chavez Blvd - Central	4.1		X			X	
167	BL6	New Bike Lanes	Belmont	SR 99 - Chestnut	4.9		X			X	
168	BL7	New Bike Lanes	Palm	McKinley - H	1.2		X			X	
169	BL8	New Bike Lanes	Tulare	SR 41 - Cedar	1.2		X			X	
170	BL9	New Bike Lanes	Church	Marks - MLK Jr	2.5		X			X	
171	BL10	New Bike Lanes	North	Walnut - Peach	1.5		X			X	
172	BL11	New Bike Lanes	Cedar	Woodward - Jensen	1.1		X			X	
173	BL12	New Bike Lanes	McKinley	Blackstone - Cedar	2.0		X			X	
174	BL13	New Bike Lanes	First	Tulare - Hazelwood	0.8		X			X	
175	BL14	New Bike Lanes	Abby	Blackstone - Divisadero	1.1		X			X	
176	BL15	New Bike Lanes	Blackstone	McKinley - Divisadero	1.5		X			X	
177	BL16	New Bike Lanes	H	Belmont - Divisadero	0.8		X			X	
178	BL17	New Bike Lanes	Cesar Chavez	C - H	0.4		X			X	
179	BL18	New Bike Lanes	Cesar Chavez	O - Parallel	0.3		X			X	
180	BL19	New Bike Lanes	P	Divisadero – Cesar Chavez	0.8		X			X	
181	BL20	New Bike Lanes	O	Cesar Chavez - Butler	0.4		X			X	
182	BL21	New Bike Lanes	Los Angeles/ Butler	Van Ness - Hazelwood	0.7		X			X	
183	BL22	New Bike Lanes	Van Ness	Cesar Chavez - Los Angeles	0.4		X			X	
184	BL23	New Bike Lanes	Tuolumne	A - E	0.3		X			X	
185	BL24	New Bike Lanes	Walnut	Church - North	1.5		X			X	
186	RR1L	Roadway Reconfiguration	Willow	Jensen - Central	2.0	X					X
187	RR2L	Roadway Reconfiguration	Olive	SR 99 - Cedar	4.2	X					X

ID	Strategy ID	Strategy	Location	Extents	Length	Project Type					
						Highway/ Roadway	Active Transportation	TSM	TDM	Sustainability	Freight
188	RP1	Roadway Repaving	Railroad	Church - Golden State	1.6	X					
189	RP2	Roadway Repaving	Jensen	Cedar - Barton	0.3	X					
190	RP3	Roadway Repaving	Cesar Chavez	Maple - Chestnut	0.5	X					
191	RP4	Roadway Repaving	Jensen	West - Cedar	4.0	X					
192	RP5	Roadway Repaving	KcKinley	SR 99 - West	0.4	X					
193	RP6	Roadway Repaving	A	Kern – Cesar Chavez	0.3	X					
194	RP7	Roadway Repaving	Church	Thorne - Walnut	0.2	X					
195	RP8	Roadway Repaving	Parkway	North - Cedar	0.5	X					
196	RP9	Roadway Repaving	Cedar	North - Parkway	0.3	X					
197	RP10	Roadway Repaving	Cedar	Woodward - Jensen	1.1	X					
198	RP11	Roadway Repaving	Cedar	SR 180 - Belmont	0.3	X					
199	RP12	Roadway Repaving	Weber	McKinley - Belmont	1.3	X					
200	RP13	Roadway Repaving	H	Belmont - Divisadero	0.8	X					
201	TC1	Traffic Calming	Cherry	North - Central	1.0	X			X		
202	TC2	Traffic Calming	Central	SR 41 - Peach	3.8	X			X		
203	TC3	Traffic Calming	Orange	Cesar Chavez - Butler	0.5	X			X		
204	TC4	Traffic Calming	Orange	Butler - Jensen	1.4	X			X		
205	TC5	Traffic Calming	Belmont	SR 99 - Chestnut	4.9	X			X		
206	TC6	Traffic Calming	McKinley	Palm - Blackstone	1.0	X			X		
207	TC7	Traffic Calming	Weber	McKinley - Belmont	1.3	X			X		
208	TC8	Traffic Calming	Abby	Blackstone - Divisadero	1.1	X			X		
209	TC9	Traffic Calming	Blackstone	McKinley - Divisadero	1.5	X			X		
210	TC10	Traffic Calming	Fresno	Cesar Chavez Blvd - Divisadero	2.3	X			X		

ID	Strategy ID	Strategy	Location	Area	Project Type					
					Highway/ Roadway	Active Transportation	TSM	TDM	Sustainability	Freight
211	RA1	Truck Bypass Restriction Zone	Downtown Fresno	0.4	X					X
212	RA2	Truck Bypass Restriction Zone	Mural District	0.1	X					X
213	RA3	Truck Bypass Restriction Zone	SW Fresno	6.1	X					X
214	RA4	Truck Bypass Restriction Zone	Tower	1.3	X					X
215	RA5	Truck Bypass Restriction Zone	Tulare East	0.9	X					X
216	RA6	Truck Bypass Restriction Zone	Tulare West	0.9	X					X
217	RA7	Truck Bypass Restriction Zone	Roosevelt East	1.8	X					X
218	RA8	Truck Bypass Restriction Zone	Roosevelt West	0.9	X					X
219	RA9	Truck Bypass Restriction Zone	Malaga	0.2	X					X
220	RA10	Truck Bypass Restriction Zone	Divisadero	0.2	X					X
221	RA11	Truck Bypass Restriction Zone	McKinley	0.5	X					X

ID	Strategy ID	Strategy	Location	Area	Project Type					
					Highway/ Roadway	Active Transportation	TSM	TDM	Sustainability	Freight
222	RA12	Truck Bypass Restriction Zone	N Blackstone	0.5	X					X
223	RA13	Truck Bypass Restriction Zone	Central Ave	1.8	X					X

APPENDIX B: PRIORITIZATION MATRIX OF PROPOSED STRATEGIES

ID	Strategy ID	Strategy	Location	Cross Street	Potential Reduction in VMT	Improves Air Quality	Potential Reduction in Traffic Congestion	Intersection Improvement	Targeted Safety Projects	Completed Streets Project	Pedestrian Safety Project	Total
1	NC1	New Crosswalks	Cedar	Kaviland	1	1	1	3	3	3	3	15
2	NC2	New Crosswalks	Rowell	Kaviland	1	1	1	3	3	3	3	15
3	NC3	New Crosswalks	Jensen	Cedar	1	1	1	3	3	3	3	15
4	NC4	New Crosswalks	Jensen	Holloway	1	1	1	3	3	3	3	15
5	NC5	New Crosswalks	Jensen	Rowell	1	1	1	3	3	3	3	15
6	NC6	New Crosswalks	Jensen Bypass	Cedar	1	1	1	3	3	3	3	15
7	NC7	New Crosswalks	Jensen	Golden State	1	1	1	3	3	3	3	15
8	NC8	New Crosswalks	Jensen	East (South)	1	1	1	3	3	3	3	15
9	NC9	New Crosswalks	Jensen	East (North)	1	1	1	3	3	3	3	15
10	NC10	New Crosswalks	Jensen	Cherry	1	1	1	3	3	3	3	15
11	NC11	New Crosswalks	Jensen	Elm	1	1	1	3	3	3	3	15
12	NC12	New Crosswalks	Jensen	MLK Jr	1	1	1	3	3	3	3	15
13	NC13	New Crosswalks	Jensen	Walnut	1	1	1	3	3	3	3	15
14	NC14	New Crosswalks	Jensen	Fruit	1	1	1	3	3	3	3	15
15	NC15	New Crosswalks	Jensen	West	1	1	1	3	3	3	3	15
16	NC16	New Crosswalks	North	Walnut	1	1	1	3	3	3	3	15
17	NC17	New Crosswalks	North	MLK Jr	1	1	1	3	3	3	3	15
18	NC18	New Crosswalks	North	Elm	1	1	1	3	3	3	3	15
19	NC19	New Crosswalks	North	Cedar	1	1	1	3	3	3	3	15
20	NC20	New Crosswalks	North	Maple	1	1	1	3	3	3	3	15
21	NC21	New Crosswalks	North	Chestnut	1	1	1	3	3	3	3	15
22	NC22	New Crosswalks	North	Peach	1	1	1	3	3	3	3	15
23	NC23	New Crosswalks	Central	Peach	1	1	1	3	3	3	3	15
24	NC24	New Crosswalks	Central	Willow	1	1	1	3	3	3	3	15
25	NC25	New Crosswalks	Central	Golden State	1	1	1	3	3	3	3	15
26	NC26	New Crosswalks	Central	Maple	1	1	1	3	3	3	3	15
27	NC27	New Crosswalks	Central	Cedar	1	1	1	3	3	3	3	15
28	NC28	New Crosswalks	Central	Orange	1	1	1	3	3	3	3	15
29	NC29	New Crosswalks	Central	East	1	1	1	3	3	3	3	15
30	NC30	New Crosswalks	Central	Cherry	1	1	1	3	3	3	3	15
31	NC31	New Crosswalks	SR 41	Central	1	1	1	3	3	3	3	15
32	NC32	New Crosswalks	Central	Elm	1	1	1	3	3	3	3	15
33	NC33	New Crosswalks	Central	MLK Jr	1	1	1	3	3	3	3	15
34	NC34	New Crosswalks	SR 41	American	1	1	1	3	3	3	3	15
35	NC35	New Crosswalks	American	Cedar	1	1	1	3	3	3	3	15
36	NC36	New Crosswalks	North	Cherry	1	1	1	3	3	3	3	15
37	NC37	New Crosswalks	Golden State	Railroad	1	1	1	3	3	3	3	15
38	NC38	New Crosswalks	Golden State	Orange	1	1	1	3	3	3	3	15
39	NC39	New Crosswalks	Golden State	East	1	1	1	3	3	3	3	15

ID	Strategy ID	Strategy	Location	Cross Street	Potential Reduction in VMT	Improves Air Quality	Potential Reduction in Traffic Congestion	Intersection Improvement	Targeted Safety Projects	Completed Streets Project	Pedestrian Safety Project	Total
40	NC40	New Crosswalks	Golden State	Church	1	1	1	3	3	3	3	15
41	NC41	New Crosswalks	G	Church	1	1	1	3	3	3	3	15
42	NC42	New Crosswalks	Church	Railroad	1	1	1	3	3	3	3	15
43	NC43	New Crosswalks	Church	Cedar	1	1	1	3	3	3	3	15
44	NC44	New Crosswalks	Church	Chestnut	1	1	1	3	3	3	3	15
45	NC45	New Crosswalks	Church	East	1	1	1	3	3	3	3	15
46	NC46	New Crosswalks	Church	Cherry	1	1	1	3	3	3	3	15
47	NC47	New Crosswalks	Church	MLK Jr	1	1	1	3	3	3	3	15
48	NC48	New Crosswalks	Church	Clara	1	1	1	3	3	3	3	15
49	NC49	New Crosswalks	Church	Fairview	1	1	1	3	3	3	3	15
50	NC50	New Crosswalks	Church	Walnut	1	1	1	3	3	3	3	15
51	NC51	New Crosswalks	Church	Fruit	1	1	1	3	3	3	3	15
52	NC52	New Crosswalks	Church	West	1	1	1	3	3	3	3	15
53	NC53	New Crosswalks	Church	Marks	1	1	1	3	3	3	3	15
54	NC54	New Crosswalks	Jensen	Chestnut	1	1	1	3	3	3	3	15
55	NC55	New Crosswalks	Jensen	Peach	1	1	1	3	3	3	3	15
56	NC56	New Crosswalks	Chestnut	Butler	1	1	1	3	3	3	3	15
57	NC57	New Crosswalks	Cedar	Cesar Chavez	1	1	1	3	3	3	3	15
58	NC58	New Crosswalks	Cedar	Hamilton	1	1	1	3	3	3	3	15
59	NC59	New Crosswalks	Cedar	Heaton	1	1	1	3	3	3	3	15
60	NC60	New Crosswalks	Butler	East	1	1	1	3	3	3	3	15
61	NC61	New Crosswalks	Butler	O	1	1	1	3	3	3	3	15
62	NC62	New Crosswalks	Los Angeles	M	1	1	1	3	3	3	3	15
63	NC63	New Crosswalks	Los Angeles	Van Ness	1	1	1	3	3	3	3	15
64	NC64	New Crosswalks	Van Ness	Hamilton	1	1	1	3	3	3	3	15
65	NC65	New Crosswalks	Van Ness	Cesar Chavez	1	1	1	3	3	3	3	15
66	NC66	New Crosswalks	Van Ness	Railroad	1	1	1	3	3	3	3	15
67	NC67	New Crosswalks	Railroad	G	1	1	1	3	3	3	3	15
68	NC68	New Crosswalks	Cesar Chavez	C	1	1	1	3	3	3	3	15
69	NC69	New Crosswalks	C	Mono	1	1	1	3	3	3	3	15
70	NC70	New Crosswalks	C	Inyo	1	1	1	3	3	3	3	15
71	NC71	New Crosswalks	C	Kern	1	1	1	3	3	3	3	15
72	NC72	New Crosswalks	C	Tulare	1	1	1	3	3	3	3	15
73	NC73	New Crosswalks	C	Fresno	1	1	1	3	3	3	3	15
74	NC74	New Crosswalks	B	Stanislaus	1	1	1	3	3	3	3	15
75	NC75	New Crosswalks	B	Amador	1	1	1	3	3	3	3	15
76	NC76	New Crosswalks	Whites Bridge	Thorne	1	1	1	3	3	3	3	15
77	NC77	New Crosswalks	Thorne	Kearney	1	1	1	3	3	3	3	15
78	NC78	New Crosswalks	G	El Dorado	1	1	1	3	3	3	3	15

ID	Strategy ID	Strategy	Location	Cross Street	Potential Reduction in VMT	Improves Air Quality	Potential Reduction in Traffic Congestion	Intersection Improvement	Targeted Safety Projects	Completed Streets Project	Pedestrian Safety Project	Total
79	NC79	New Crosswalks	O	Santa Clara	1	1	1	3	3	3	3	15
80	NC80	New Crosswalks	O	Butler	1	1	1	3	3	3	3	15
81	NC81	New Crosswalks	Nielsen	Hughes	1	1	1	3	3	3	3	15
82	NC82	New Crosswalks	Cesar Chavez	Cedar	1	1	1	3	3	3	3	15
83	NC83	New Crosswalks	Belmont	1st	1	1	1	3	3	3	3	15
84	NC84	New Crosswalks	Tulare	6th	1	1	1	3	3	3	3	15
85	NC85	New Crosswalks	Tulare	1st	1	1	1	3	3	3	3	15
86	NC86	New Crosswalks	Belmont	Cedar	1	1	1	3	3	3	3	15
87	NC87	New Crosswalks	Belmont	Blackstone	1	1	1	3	3	3	3	15
88	NC88	New Crosswalks	Blackstone	Olive	1	1	1	3	3	3	3	15
89	NC89	New Crosswalks	Belmont	Weber	1	1	1	3	3	3	3	15
90	NC90	New Crosswalks	Belmont	Wesley	1	1	1	3	3	3	3	15
91	NC91	New Crosswalks	Belmont	Butler	1	1	1	3	3	3	3	15
92	NC92	New Crosswalks	Olive	Weber	1	1	1	3	3	3	3	15
93	NC93	New Crosswalks	Golden State	McKinley	1	1	1	3	3	3	3	15
94	NC94	New Crosswalks	McKinley	Echo	1	1	1	3	3	3	3	15
95	NC95	New Crosswalks	McKinley	Palm	1	1	1	3	3	3	3	15
96	NC96	New Crosswalks	McKinley	Fresno	1	1	1	3	3	3	3	15
97	NC97	New Crosswalks	McKinley	Millbrook	1	1	1	3	3	3	3	15
98	NC98	New Crosswalks	Central	Chestnut	1	1	1	3	3	3	3	15
99	RR1P	Roadway Reconfiguration	North	Willow	2	2	2	3	2	2	1	14
100	RR2P	Roadway Reconfiguration	Butler	Hazelwood	2	2	3	3	3	3	1	17
101	RR3P	Roadway Reconfiguration	Cesar Chavez	Plumas	2	2	3	3	3	3	2	18
102	RR4P	Roadway Reconfiguration	Belmont	Palm	2	2	3	3	3	3	1	17
103	RR5P	Roadway Reconfiguration	SR 99	North	2	2	3	3	3	2	1	16
104	RR6P	Roadway Reconfiguration	North	Golden State Frontage	2	2	3	3	3	3	1	17
105	RR7P	Roadway Reconfiguration	Broadway	Santa Clara	2	2	3	3	3	3	1	17
106	TS1	Traffic Signalization Improvement	Central	Chestnut	2	2	3	3	3	3	2	18
107	TS2	Traffic Signalization Improvement	B	Stanislaus	2	2	3	3	3	3	3	19
108	TS3	Traffic Signalization Improvement	Cesar Chavez	West	2	2	3	3	3	3	2	18
109	TS4	Traffic Signalization Improvement	B	Rev Chester Riggins	2	2	3	3	3	3	1	17
110	TS5	Traffic Signalization Improvement	Divisadero	Glenn	2	2	3	3	3	3	3	19
111	TS6	Traffic Signalization Improvement	Divisadero	Calaveras	2	2	3	3	3	3	3	19

ID	Strategy ID	Strategy	Location	Cross Street	Potential Reduction in VMT	Improves Air Quality	Potential Reduction in Traffic Congestion	Intersection Improvement	Targeted Safety Projects	Completed Streets Project	Pedestrian Safety Project	Total
112	TS7	Traffic Signalization Improvement	M	Santa Clara	2	2	3	3	3	3	2	18
113	TS8	Traffic Signalization Improvement	O	San Benito	2	2	3	3	3	3	2	18
114	TS9	Traffic Signalization Improvement	Cesar Chavez	10th	2	2	3	3	3	3	3	19
115	TS10	Traffic Signalization Improvement	Abby	Harvey	2	2	3	3	3	3	3	19
116	TS11	Traffic Signalization Improvement	Belmont	Stafford	2	2	3	3	3	3	1	17
117	TS12	Traffic Signalization Improvement	McKinley	San Pablo	2	2	3	3	3	3	3	19
118	TS13	Traffic Signalization Improvement	Golden State	Church	2	2	3	3	3	3	3	19
119	TS14	Traffic Signalization Improvement	North	Parkway	2	2	3	3	3	3	3	19
120	TS15	Traffic Signalization Improvement	C	Walnut/ Martin	2	2	3	3	3	3	1	17
121	SN1	Truck Focused Signage	SR 99	Chestnut	1	1	1	3	3	3	1	13
122	SN2	Truck Focused Signage	SR 99	North	1	1	1	3	3	3	1	13
123	SN3	Truck Focused Signage	SR 99	Orange	1	1	1	3	3	3	1	13
124	SN4	Truck Focused Signage	SR 99	Jensen	1	1	1	3	3	3	1	13
125	SN5	Truck Focused Signage	SR 99	SR 41	1	1	1	3	3	3	1	13
126	SN6	Truck Focused Signage	SR 99	Cesar Chavez	1	1	1	3	3	3	1	13
127	SN7	Truck Focused Signage	SR 99	Fresno	1	1	1	3	3	3	1	13
128	SN8	Truck Focused Signage	SR 99	SR 180	1	1	1	3	3	3	1	13
129	SN9	Truck Focused Signage	SR 99	Belmont	1	1	1	3	3	3	1	13
130	SN10	Truck Focused Signage	SR 99	Olive	1	1	1	3	3	3	1	13
131	SN11	Truck Focused Signage	SR 99	McKinely	1	1	1	3	3	3	1	13
132	SN12	Truck Focused Signage	SR 180	Marks	1	1	1	3	3	3	1	13
133	SN13	Truck Focused Signage	SR 180	SR 99	1	1	1	3	3	3	1	13
134	SN14	Truck Focused Signage	SR 180	SR 99	1	1	1	3	3	3	1	13
135	SN15	Truck Focused Signage	SR 180	Abby	1	1	1	3	3	3	1	13
136	SN16	Truck Focused Signage	SR 180	SR 41	1	1	1	3	3	3	1	13
137	SN17	Truck Focused Signage	SR 180	Cedar	1	1	1	3	3	3	1	13
138	SN18	Truck Focused Signage	SR 41	Central	1	1	1	3	3	3	1	13
139	SN19	Truck Focused Signage	SR 41	North	1	1	1	3	3	3	1	13
140	SN20	Truck Focused Signage	SR 41	Jensen	1	1	1	3	3	3	1	13
141	SN21	Truck Focused Signage	SR 41	San Benito	1	1	1	3	3	3	1	13
142	SN22	Truck Focused Signage	SR 41	O	1	1	1	3	3	3	1	13
143	SN23	Truck Focused Signage	SR 41	Tulare	1	1	1	3	3	3	1	13

ID	Strategy ID	Strategy	Location	Cross Street	Potential Reduction in VMT	Improves Air Quality	Potential Reduction in Traffic Congestion	Intersection Improvement	Targeted Safety Projects	Completed Streets Project	Pedestrian Safety Project	Total
144	SN24	Truck Focused Signage	SR 41	SR 180	1	1	1	3	3	3	1	13
145	SN25	Truck Focused Signage	SR 41	SR 180	1	1	1	3	3	3	1	13
146	SN26	Truck Focused Signage	Golden State	Olive	1	1	1	3	3	3	1	13

ID	Strategy ID	Strategy	Location	Extents	Length	Potential Reduction in VMT	Improves Air Quality	Potential Reduction in Traffic Congestion	Intersection Improvement	Targeted Safety Projects	Completed Streets Project	Pedestrian Safety Project	Total
147	NS1	New Sidewalks	Willow	Jensen - Central	2.0	1	1	1	3	3	3	3	15
148	NS2	New Sidewalks	Cherry	North - Central	1.0	1	1	1	3	3	3	3	15
149	NS3	New Sidewalks	Chestnut	Jensen - Central	2.0	1	1	1	3	3	3	3	15
150	NS4	New Sidewalks	American	SR 41 - SR 99	3.4	1	1	1	3	3	3	3	15
151	NS5	New Sidewalks	Central	SR 41 - Peach	3.8	1	1	1	3	3	3	3	15
152	NS6	New Sidewalks	Orange	Railroad - American	2.8	1	1	1	3	3	3	3	15
153	NS7	New Sidewalks	Golden State	Cesar Chavez - Central	4.1	1	1	1	3	3	3	3	15
154	NS8	New Sidewalks	Cesar Chavez	Kern - Mono	0.2	1	1	1	3	3	3	3	15
155	NS9	New Sidewalks	Church	Marks - MLK Jr	2.5	1	1	1	3	3	3	3	15
156	NS10	New Sidewalks	Elm	North - Central	1.0	1	1	1	3	3	3	3	15
157	NS11	New Sidewalks	Cedar	Parkway - American	1.6	1	1	1	3	3	3	3	15
158	NS12	New Sidewalks	North	Parkway - Peach	2.4	1	1	1	3	3	3	3	15
159	NS13	New Sidewalks	Jensen	Maple - Peach	1.5	1	1	1	3	3	3	3	15
160	NS14	New Sidewalks	Cesar Chavez	Marks - West	1.0	1	1	1	3	3	3	3	15
161	NS15	New Sidewalks	Church	Cherry - 10th	1.4	1	1	1	3	3	3	3	15
162	NS16	New Sidewalks	Walnut	Church - North	1.5	1	1	1	3	3	3	3	15
163	BL1	New Bike Lanes	Chestnut	Jensen - Central	2.0	3	3	2	2	3	3	2	18
164	BL2	New Bike Lanes	American	SR 41 - SR 99	3.4	3	3	2	2	3	3	2	18
165	BL4	New Bike Lanes	Orange	Cesar Chavez - Butler	0.5	3	3	2	2	3	3	2	18
166	BL5	New Bike Lanes	Golden State	Cesar Chavez - Central	4.1	3	3	2	2	3	3	2	18
167	BL6	New Bike Lanes	Belmont	SR 99 - Chestnut	4.9	3	3	2	2	3	3	2	18
168	BL7	New Bike Lanes	Palm	McKinley - H	1.2	3	3	2	2	3	3	2	18
169	BL8	New Bike Lanes	Tulare	SR 41 - Cedar	1.2	3	3	2	2	3	3	2	18
170	BL9	New Bike Lanes	Church	Marks - MLK Jr	2.5	3	3	2	2	3	3	2	18
171	BL10	New Bike Lanes	North	Walnut - Peach	1.5	3	3	2	2	3	3	2	18
172	BL11	New Bike Lanes	Cedar	Woodward - Jensen	1.1	3	3	2	2	3	3	2	18
173	BL12	New Bike Lanes	McKinley	Blackstone - Cedar	2.0	3	3	2	2	3	3	2	18
174	BL13	New Bike Lanes	First	Tulare - Hazelwood	0.8	3	3	2	2	3	3	2	18
175	BL14	New Bike Lanes	Abby	Blackstone - Divisadero	1.1	3	3	2	2	3	3	2	18

ID	Strategy ID	Strategy	Location	Extents	Length	Potential Reduction in VMT	Improves Air Quality	Potential Reduction in Traffic Congestion	Intersection Improvement	Targeted Safety Projects	Completed Streets Project	Pedestrian Safety Project	Total
176	BL15	New Bike Lanes	Blackstone	McKinley - Divisadero	1.5	3	3	2	2	3	3	2	18
177	BL16	New Bike Lanes	H	Belmont - Divisadero	0.8	3	3	2	2	3	3	2	18
178	BL17	New Bike Lanes	Cesar Chavez	C - H	0.4	3	3	2	2	3	3	2	18
179	BL18	New Bike Lanes	Cesar Chavez	O - Parallel	0.3	3	3	2	2	3	3	2	18
180	BL19	New Bike Lanes	P	Divisadero - Cesar Chavez	0.8	3	3	2	2	3	3	2	18
181	BL20	New Bike Lanes	O	Cesar Chavez - Butler	0.4	3	3	2	2	3	3	2	18
182	BL21	New Bike Lanes	Los Angeles/ Butler	Van Ness - Hazelwood	0.7	3	3	2	2	3	3	2	18
183	BL22	New Bike Lanes	Van Ness	Cesar Chavez - Los Angeles	0.4	3	3	2	2	3	3	2	18
184	BL23	New Bike Lanes	Tuolumne	A - E	0.3	3	3	2	2	3	3	2	18
185	BL24	New Bike Lanes	Walnut	Church - North	1.5	3	3	2	2	3	3	2	18
186	RR1L	Roadway Reconfiguration	Willow	Jensen - Central	2.0	2	3	3	3	3	3	3	20
187	RR2L	Roadway Reconfiguration	Olive	SR 99 - Cedar	4.2	2	3	3	3	3	3	1	18
188	RP1	Roadway Repaving	Railroad	Church - Golden State	1.6	1	1	1	2	2	3	1	11
189	RP2	Roadway Repaving	Jensen	Cedar - Barton	0.3	1	1	1	2	2	3	1	11
190	RP3	Roadway Repaving	Cesar Chavez	Maple - Chestnut	0.5	1	1	1	2	2	3	1	11
191	RP4	Roadway Repaving	Jensen	West - Cedar	4.0	1	1	1	2	2	3	1	11
192	RP5	Roadway Repaving	KcKinley	SR 99 - West	0.4	1	1	1	2	2	3	1	11
193	RP6	Roadway Repaving	A	Kern - Cesar Chavez	0.3	1	1	1	2	2	3	1	11
194	RP7	Roadway Repaving	Church	Thorne - Walnut	0.2	1	1	1	2	2	3	1	11
195	RP8	Roadway Repaving	Parkway	North - Cedar	0.5	1	1	1	2	2	3	1	11
196	RP9	Roadway Repaving	Cedar	North - Parkway	0.3	1	1	1	2	2	3	1	11
197	RP10	Roadway Repaving	Cedar	Woodward - Jensen	1.1	1	1	1	2	2	3	1	11
198	RP11	Roadway Repaving	Cedar	SR 180 - Belmont	0.3	1	1	1	2	2	3	1	11
199	RP12	Roadway Repaving	Weber	McKinley - Belmont	1.3	1	1	1	2	2	3	1	11
200	RP13	Roadway Repaving	H	Belmont - Divisadero	0.8	1	1	1	2	2	3	1	11
201	TC1	Traffic Calming	Cherry	North - Central	1.0	1	1	1	3	3	3	3	15
202	TC2	Traffic Calming	Central	SR 41 - Peach	3.8	1	1	1	3	3	3	3	15
203	TC3	Traffic Calming	Orange	Cesar Chavez - Butler	0.5	1	1	1	3	3	3	3	15
204	TC4	Traffic Calming	Orange	Butler - Jensen	1.4	1	1	1	3	3	3	3	15
205	TC5	Traffic Calming	Belmont	SR 99 - Chestnut	4.9	1	1	1	3	3	3	3	15
206	TC6	Traffic Calming	McKinely	Palm - Blackstone	1.0	1	1	1	3	3	3	3	15
207	TC7	Traffic Calming	Weber	McKinley - Belmont	1.3	1	1	1	3	3	3	3	15
208	TC8	Traffic Calming	Abby	Blackstone - Divisadero	1.1	1	1	1	3	3	3	3	15

ID	Strategy ID	Strategy	Location	Extents	Length	Potential Reduction in VMT	Improves Air Quality	Potential Reduction in Traffic Congestion	Intersection Improvement	Targeted Safety Projects	Completed Streets Project	Pedestrian Safety Project	Total
209	TC9	Traffic Calming	Blackstone	McKinley - Divisadero	1.5	1	1	1	3	3	3	3	15
210	TC10	Traffic Calming	Fresno	Cesar Chavez - Divisadero	2.3	1	1	1	3	3	3	3	15

ID	Strategy ID	Strategy	Location	Area	Potential Reduction in VMT	Improves Air Quality	Potential Reduction in Traffic Congestion	Intersection Improvement	Targeted Safety Projects	Completed Streets Project	Pedestrian Safety Project	Total
211	RA1	Truck Bypass Restriction Zone	Downtown Fresno	0.4	3	3	3	3	3	3	1	19
212	RA2	Truck Bypass Restriction Zone	Mural District	0.1	3	3	3	3	3	3	1	19
213	RA3	Truck Bypass Restriction Zone	SW Fresno	6.1	3	3	3	3	3	3	1	19
214	RA4	Truck Bypass Restriction Zone	Tower	1.3	3	3	3	3	3	3	1	19
215	RA5	Truck Bypass Restriction Zone	Tulare East	0.9	3	3	3	3	3	3	1	19
216	RA6	Truck Bypass Restriction Zone	Tulare West	0.9	3	3	3	3	3	3	1	19
217	RA7	Truck Bypass Restriction Zone	Roosevelt East	1.8	3	3	3	3	3	3	1	19
218	RA8	Truck Bypass Restriction Zone	Roosevelt West	0.9	3	3	3	3	3	3	1	19
219	RA9	Truck Bypass Restriction Zone	Malaga	0.2	3	3	3	3	3	3	1	19
220	RA10	Truck Bypass Restriction Zone	Divisadero	0.2	3	3	3	3	3	3	1	19
221	RA11	Truck Bypass Restriction Zone	McKinley	0.5	3	3	3	3	3	3	1	19
222	RA12	Truck Bypass Restriction Zone	N Blackstone	0.5	3	3	3	3	3	3	1	19
223	RA13	Truck Bypass Restriction Zone	Central Ave	1.8	3	3	3	3	3	3	1	19