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INTRODUCTION AND BACKGROUND

This document outlines transportation and mobility needs and characteristics in the Downtown Station Area Plan (DSAP) influence area (see **Figure 1**). The DSAP will serve as the catalyst for the continued economic development and revitalization of central Merced, which includes the Downtown Core, a planned new rail station, and other areas. The DSAP will be integrated into a larger planning effort for the City of Merced General Plan Update. This report identifies multimodal opportunities and synergies for the City of Merced to consider that will support the rejuvenation of the Downtown Core and other key land use districts as shown in **Figure 2**, and will also complement the viability and operations of the future rail station and its future operators.

Understanding ongoing transportation trends can be beneficial in planning and guiding the future of the transportation network[1]. This Existing Conditions and Needs Report will provide context and basic information about the existing transportation network and characteristics in the City of Merced. As the DSAP is part of the General Plan element, this report supports several General Plan goals and policies. The included sections in this report and relevant General Plan Policies to the DSAP are:

PEDESTRIAN AND BICYCLE LEVEL OF TRAFFIC STRESS:

The pedestrian and bicycle level of traffic stress assessment determines the comfort and usability of facilities within the DSAP area.

Relevant General Plan Policies:

- **T-1.4** Promote traffic safety for all modes of transportation.
- **T-2.4** Encourage the use of bicycles.
- **T-2.5** Provide convenient bicycle support facilities to encourage bicycle use.
- **T-2.6** Maintain and expand the community's existing bicycle circulation system.
- **T-2.7** Maintain a pedestrian-friendly environment.
- **T-2.8** Improve planning for pedestrians.

PEDESTRIAN AND BICYCLE CONNECTIVITY ASSESSMENT:

Based on the pedestrian and bicycle level of traffic stress analysis, the connectivity assessment identifies the low-stress connectivity between the future rail station and key destinations in the DSAP area and its notable sub areas of the City including South Merced and the downtown Core (see **Figure 2**).

Relevant General Plan Policies:

- **T-1.1** Design streets consistent with circulation function, affected land uses, and all modes of
- transportation.

[1] This report is independent of any sequencing changes to the future rail station segmentation.

- **T-1.4** Promote traffic safety for all modes of transportation.
- **T-2.4** Encourage the use of bicycles.
- **T-2.5** Provide convenient bicycle support facilities to encourage bicycle use.
- **T-2.6** Maintain and expand the community's existing bicycle circulation system.
- **T-2.7** Maintain a pedestrian-friendly environment.
- **T-2.8** Improve planning for pedestrians.

COLLISION ANALYSIS:

A five-year collision analysis can reveal collision trends such as crash type and "hot spots" locations of collisions. Collision history and its correlation with pedestrian and bicycle high-stress networks are examined.

Relevant General Plan Policies:

- **T-1.4** Promote traffic safety for all modes of transportation.

PARKING DEMAND:

This section assesses the parking needed for the future rail station. This includes the HSR, ACE, San Joaquins, and regional and local bus services provided by MCAG, YARTS, and CatTracks. Prior parking assessments have not holistically reflected all of the combined services.

Relevant General Plan Policies:

- **T-1.6** Minimize adverse impacts on the environment from existing and proposed road systems.
- **T-1.7** Minimize street system impacts on residential neighborhoods and other sensitive land uses.

CURBSIDE MANAGEMENT:

Curbside management assesses the potential for curbside management strategies that will facilitate pick up and drop off opportunities related to Transportation Network Companies (TNC). This analysis looks beyond the established pick-up and drop-off areas of the future rail station and includes the DSAP influence areas as a whole.

Relevant General Plan Policies:

- **T-1.1** Design streets consistent with circulation function, affected land uses, and all modes of
- transportation.
- **T-1.3** Design major roads to maximize efficiency and accessibility.
- **T-1.5** Minimize unnecessary travel demand on major streets and promote energy conservation.

VEHICLE ANALYSIS:

This section examines origins and destinations of all travel mode users in Merced and the DSAP area. This section also reviews existing network volumes occurring within the DSAP area. Prominent corridors for the movement of vehicles, pedestrians, bicycle, and transit are identified.

Relevant General Plan Policies:

- **T-1.1** Design streets consistent with circulation function, affected land uses, and all modes of
- transportation.
- **T-1.2** Coordinate circulation and transportation planning with pertinent regional, State and Federal
- agencies.
- **T-1.3** Design major roads to maximize efficiency and accessibility.
- **T-1.5** Minimize unnecessary travel demand on major streets and promote energy conservation.

FIGURE 1: DOWNTOWN CORE AND FUTURE RAIL STATION WITHIN THE DSAP AREA.

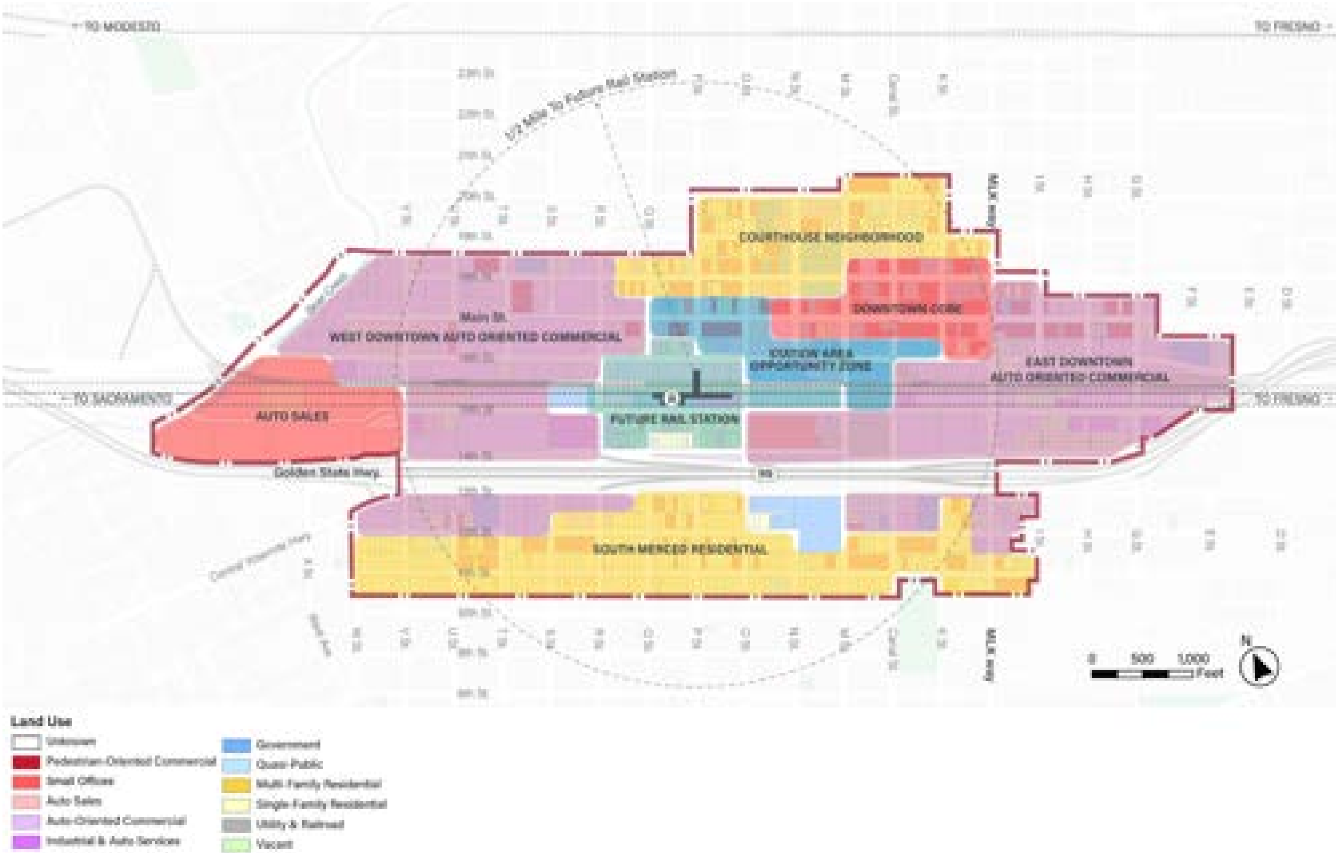

FIGURE 2. DSAP SUB-AREAS WITH FUTURE RAIL STATION LOCATION

KEY TAKEAWAYS:

This section summarizes the key findings from the analysis conducted in prior sections. Key findings are listed by section below.

Pedestrian and Bicycle Analyses:

- Bicycle connectivity for the DSAP area, north, and south Merced is over 70% connected via low-stress networks.
- Existing pedestrian low-stress connectivity is 0% connected, indicating a lack of low-stress pedestrian routes from the future rail station to key destinations.
- 16th Street acts as a high-stress barrier which limits low-stress connectivity between the proposed station and Downtown Merced.
- Assuming implementation of ATP projects[2] (i.e., buffered bike lanes, bicycle boulevards, sidewalk gap closure) and the proposed future rail station improvements:
    - Future low-stress pedestrian connectivity for the DSAP area significantly increases to 45%.

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[2] For a complete list of relevant ATP projects, please see Appendix B.

    - Future low-stress pedestrian connectivity to north Merced significantly increases to 60%.
    - Future low-stress pedestrian connectivity to south Merced remains at 0%.

Collision Analysis:

- Collision hotspots are primarily in the DSAP area.
- Of fatal and severe injury collisions, severe injury account for 86%.
- Nearly half (46%) of fatal collisions involved a pedestrian or bicyclist (see also vehicle speed bullets).
- 78% of bike collisions occurred on the high-stress network.
- 68% of pedestrian collisions occurred on high stress routes.
- Barrier effect by 16th Street, particularly fatal and serious injury of pedestrians and bicyclists
    - Average annual weekday passenger vehicle speed on 16th Street between V Street and G Street was recorded as 53 mph; average annual weekday truck speed was recorded as 47 mph; and average annual weekday speed for passenger vehicles and trucks combined was recorded as 50 mph; all high and above the posted speed limit (35 mph).

Parking Demand:

- Existing parking within the DSAP area is primarily on-street with free and regulated parking spaces. Off-street public parking structures and surface lots existing within the Downtown Core land use context.
- Currently there is ample parking supply with an estimated **5,180** parking spaces in the DSAP area even with parking restrictions on R Street and 16th Street where there is no parking allowed.
- Estimated passenger rail services and rubber-tire transit parking need combined: **2,225** spaces within a 15-minute walk from drop-off to platform.

Curbside Management:

- Curbside Management strategies are primarily feasible in the Downtown Core district of the DSAP area.
- Of the 45 storefront activation locations identified in the Downtown Core district, 40% are considered suitable curbside management planning for TNC activities.
- Approximately 1,977 lineal feet of curbside which is 43% of storefront activation curb area is suitable for curbside management strategies.

Circulation Analysis:

- Private auto is the primary trip mode for regional and the DSAP area trips.
- Bike and walking trips primarily occur within the City, particularly within the DSAP area.
- Based on origin-destination tracking, for all trip modes which include private auto, transit, and biking and walking, there are 1,522 daily trips originating from UC Merced that go to the DSAP area and 1,217 daily trips that originate from the DSAP area destined for UC Merced. Hence, the DSAP area imports less trips from UC Merced than what UC Merced exports to the DSAP area.

- There are a low number of daily walking and biking trips between UC Merced and the DSAP area.
- The DSAP area accommodates a significant amount of short trips that stay within the DSAP and Downtown Core areas. This suggests that active transportation can play an important circulation role in these areas.
- M, N, G, R, and 16th Streets carry the majority of the traffic volume within the DSAP Area.
- DSAP area is a destination attraction for all trips modes.

CIRCULATION NETWORK

ORIGIN-DESTINATION ANALYSIS

This section summarizes the trip modes to and from the DSAP area from census tracts within Merced County and core-based statistical areas. In order to visualize origin-destination for trips from the DSAP area to other locations within Merced County, census tracts is the geography selected in Replica to produce private auto, transit, biking, and walking trips. For regional trips in and out of Merced County, origin-destination pairs were visualized using Census core-based statistical areas. Trips are compiled from Replica for an average fall weekday.

Figure 3 illustrates the number of origin and destination daily trips for all trip modes. As shown in **Figure 3**, there are 50,406 trips originating from the DSAP area with destinations to core cities in neighboring counties. Likewise, areas outside Merced County send 50, 245 daily trips to the DSAP area. This indicates that amount of daily regional trip interchanges between the DSAP and areas outside of Merced are approximately balanced. **Figure 4** illustrates this same distribution for passenger vehicles only.

Figure 5 and **Figure 6** illustrate origin-destination trips between UC Merced and the DSAP area by census tract. As shown, for all trip modes which include private auto, transit, and biking and walking, there are 1,522 daily trips originating from UC Merced that go to the DSAP area and 1,217 daily trips that originate from the DSAP area destined for UC Merced. This interaction with UC Merced for all modes indicates that the DSAP area imports less trips from UC Merced than UC Merced exports to the DSAP area. As shown in **Figure 6**, a very small proportion of these daily trips are made by walking and biking.

Figure 7 to **Figure 9** illustrate the daily origin-destination trips occurring within the DSAP area. As shown in **Figure 7**, there are just slightly more originating trips from the DSAP area than there are destination trips – implying that the DSAP area attracts as many trips as it generates. **Figure 8** and **Figure 9** depict daily origin-destination trips for transit, walking and biking trips, respectively. For all modes and modes individually, the majority of trips are occurring in the future rail station and downtown core subareas of the DSAP area. These results illustrate the DSAP area accommodates a significant amount of short trips that stay within the DSAP and Downtown Corea areas. This suggests that active transportation can play an important circulation role in the DSAP and Downtown Core areas.

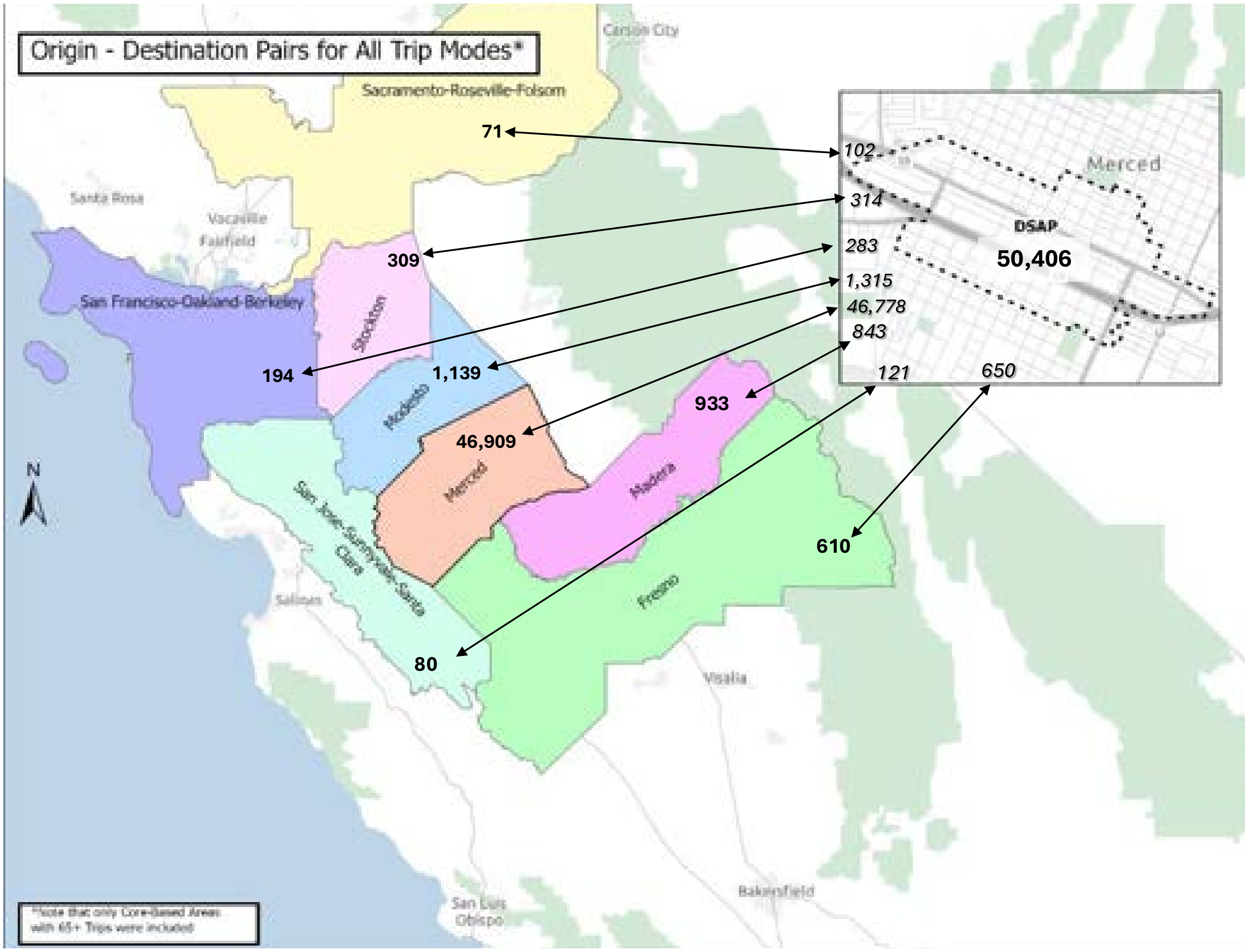

FIGURE 3. ORIGIN-DESTINATION TRIPS FOR ALL MODES

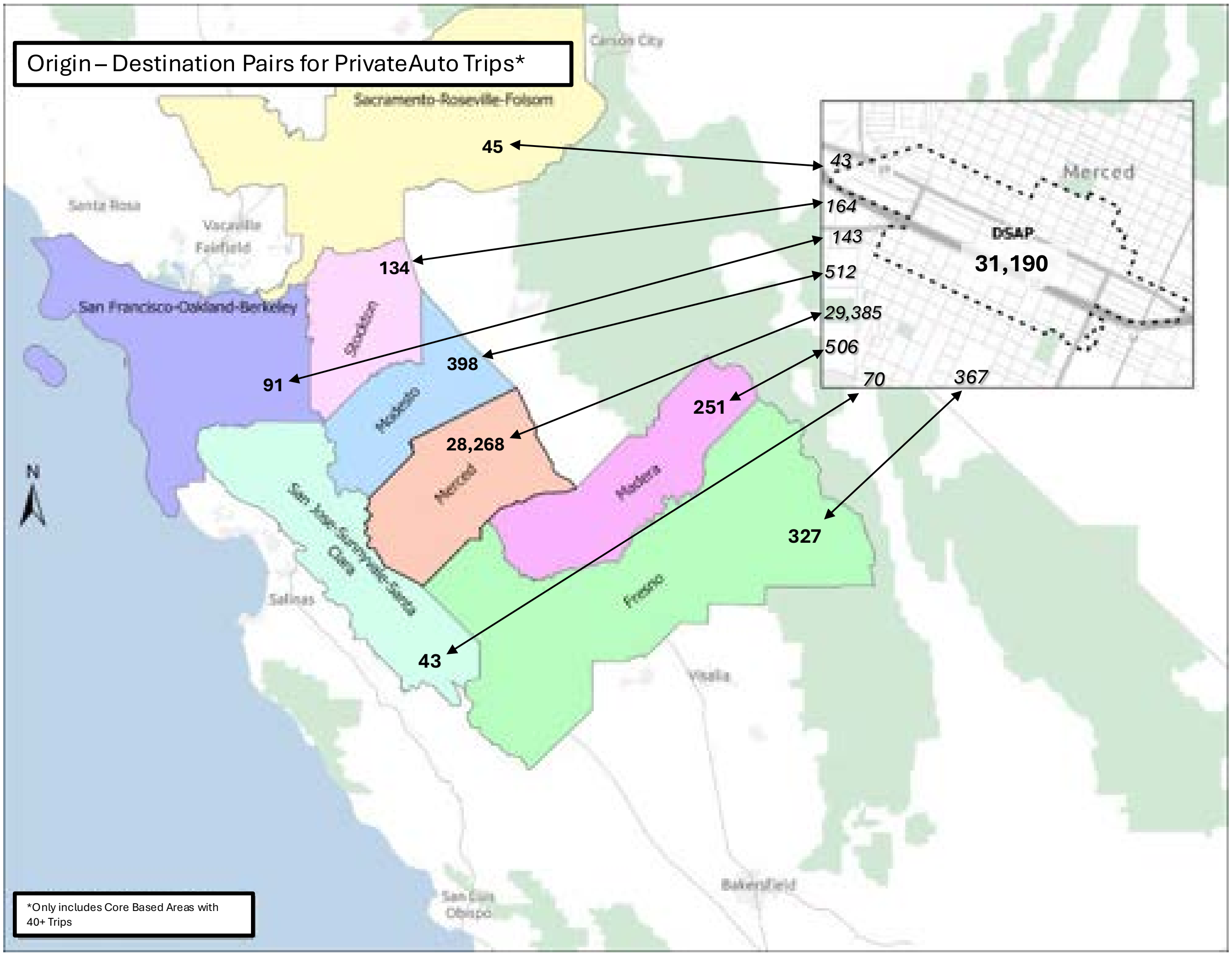

FIGURE 4. ORIGIN – DESTINATION PAIRS FOR PRIVATE AUTO TRIPS

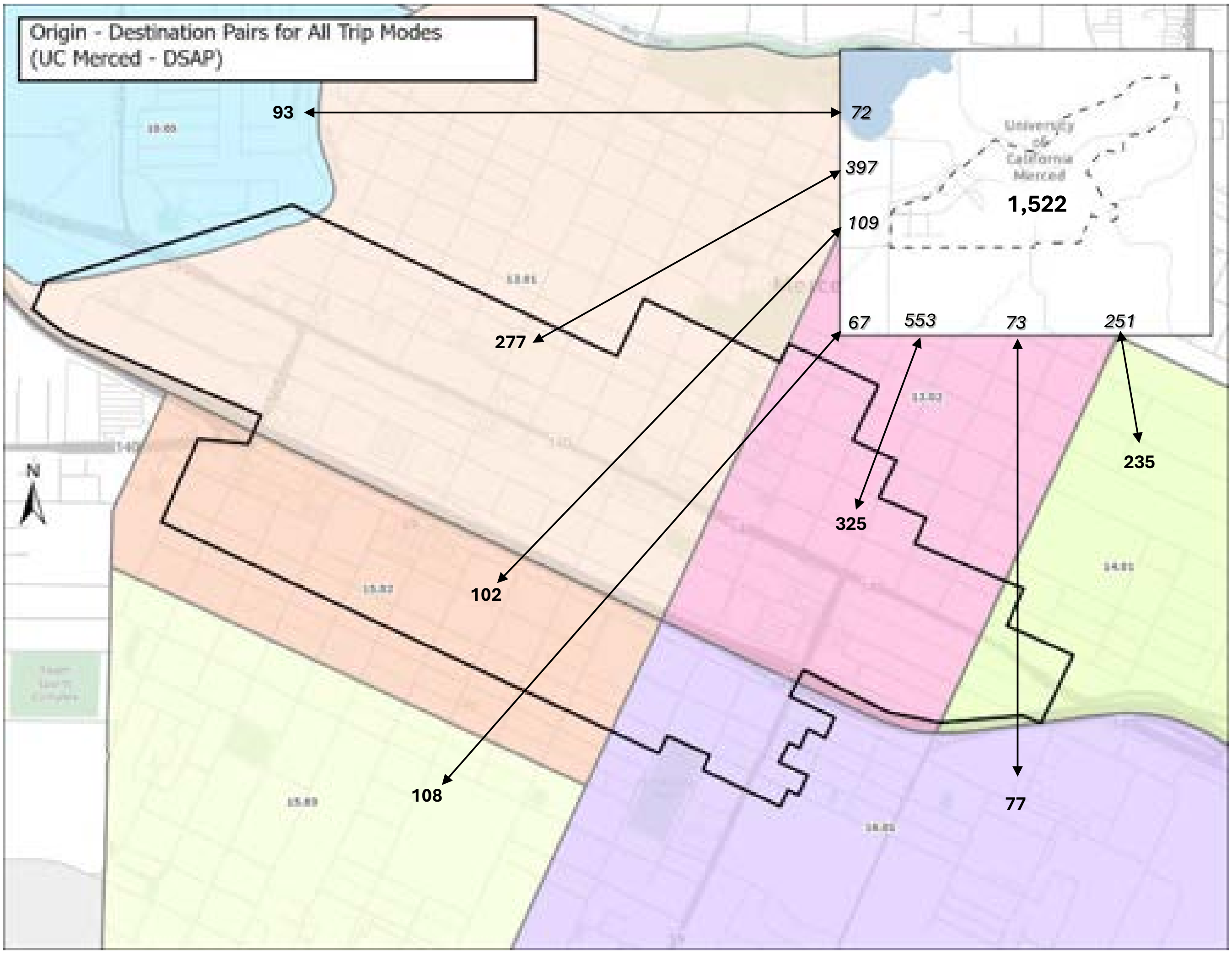

FIGURE 5. ORIGIN DESTINATION PAIRS FOR ALL TRIP MODES UC MERCED – DSAP

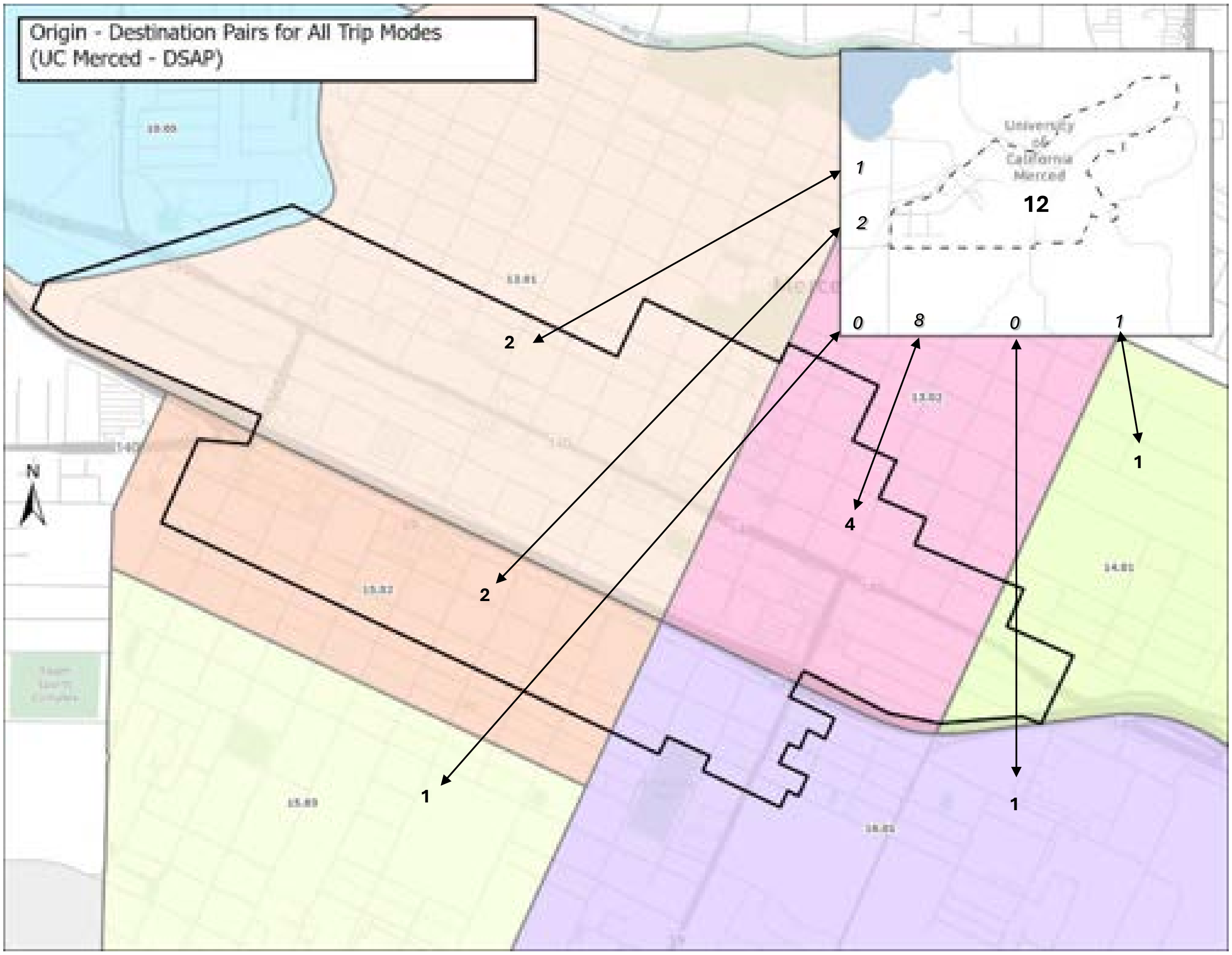

FIGURE 6. ORIGIN – DESTINATION PAIRS FOR WALKING AND BIKING TRIPS

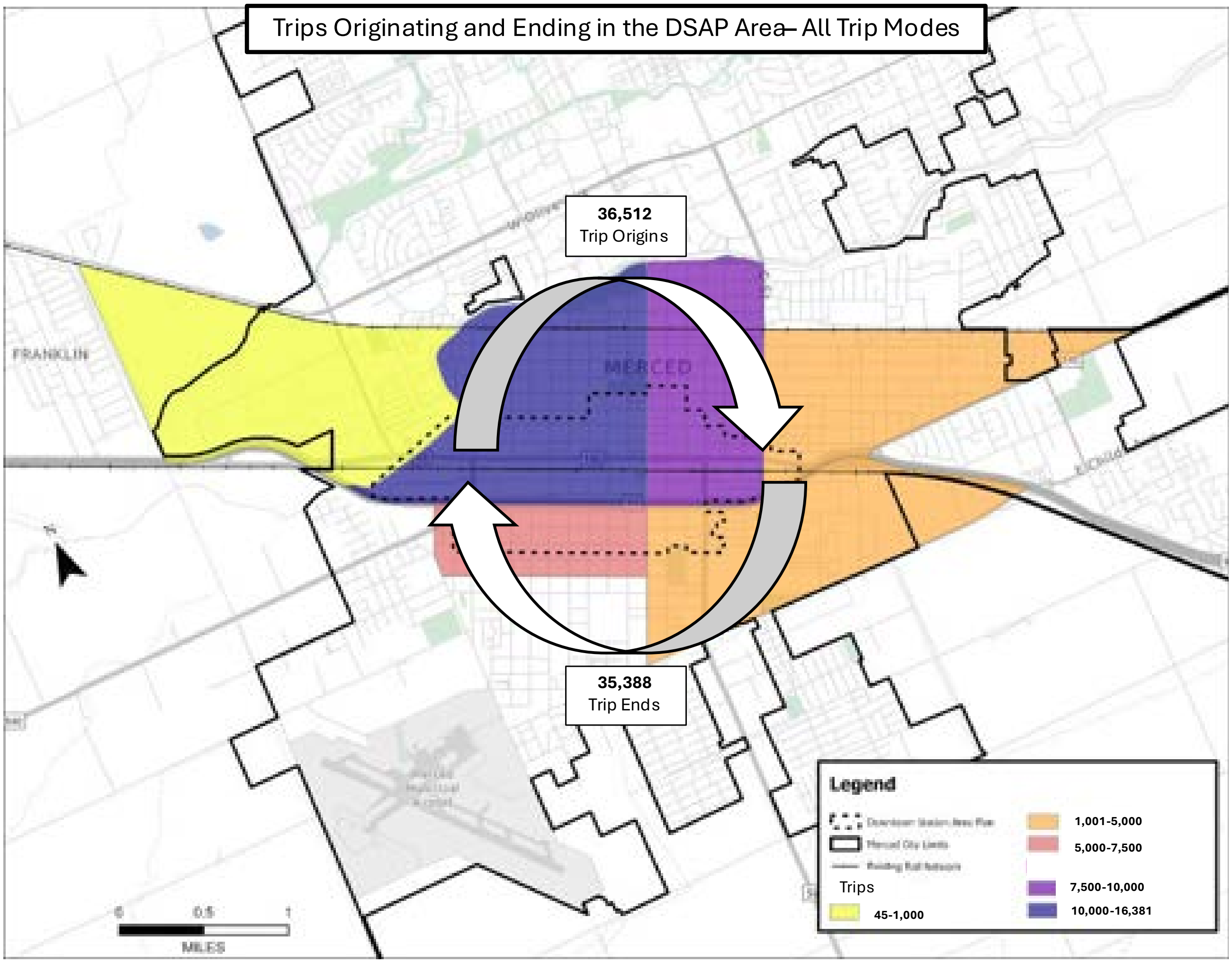

FIGURE 7. TRIPS ORIGINATING AND ENDING IN THE DSAP AREA FOR ALL TRIP MODES

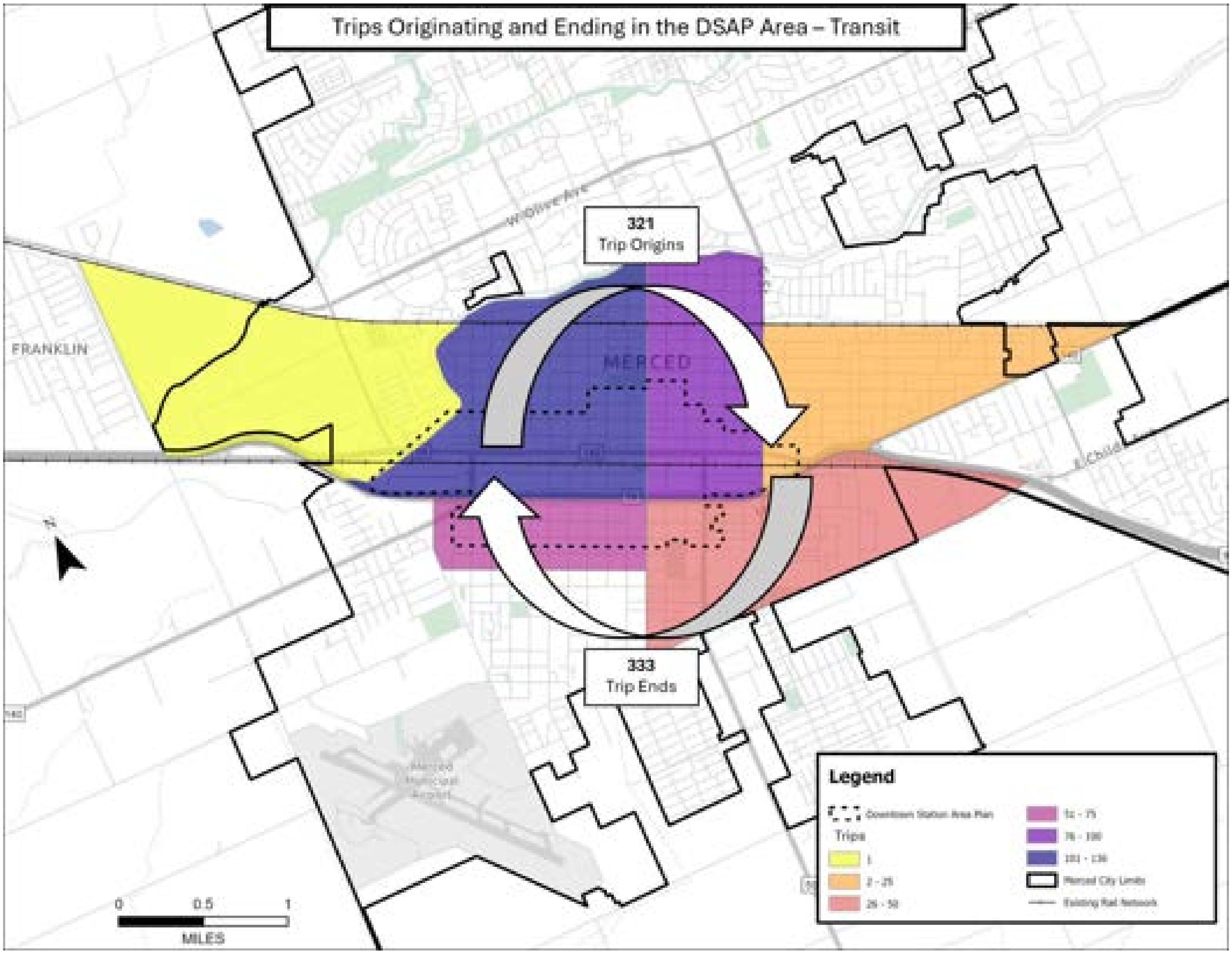

FIGURE 8. TRANSIT TRIPS ORIGINATING AND ENDING IN THE DSAP AREA

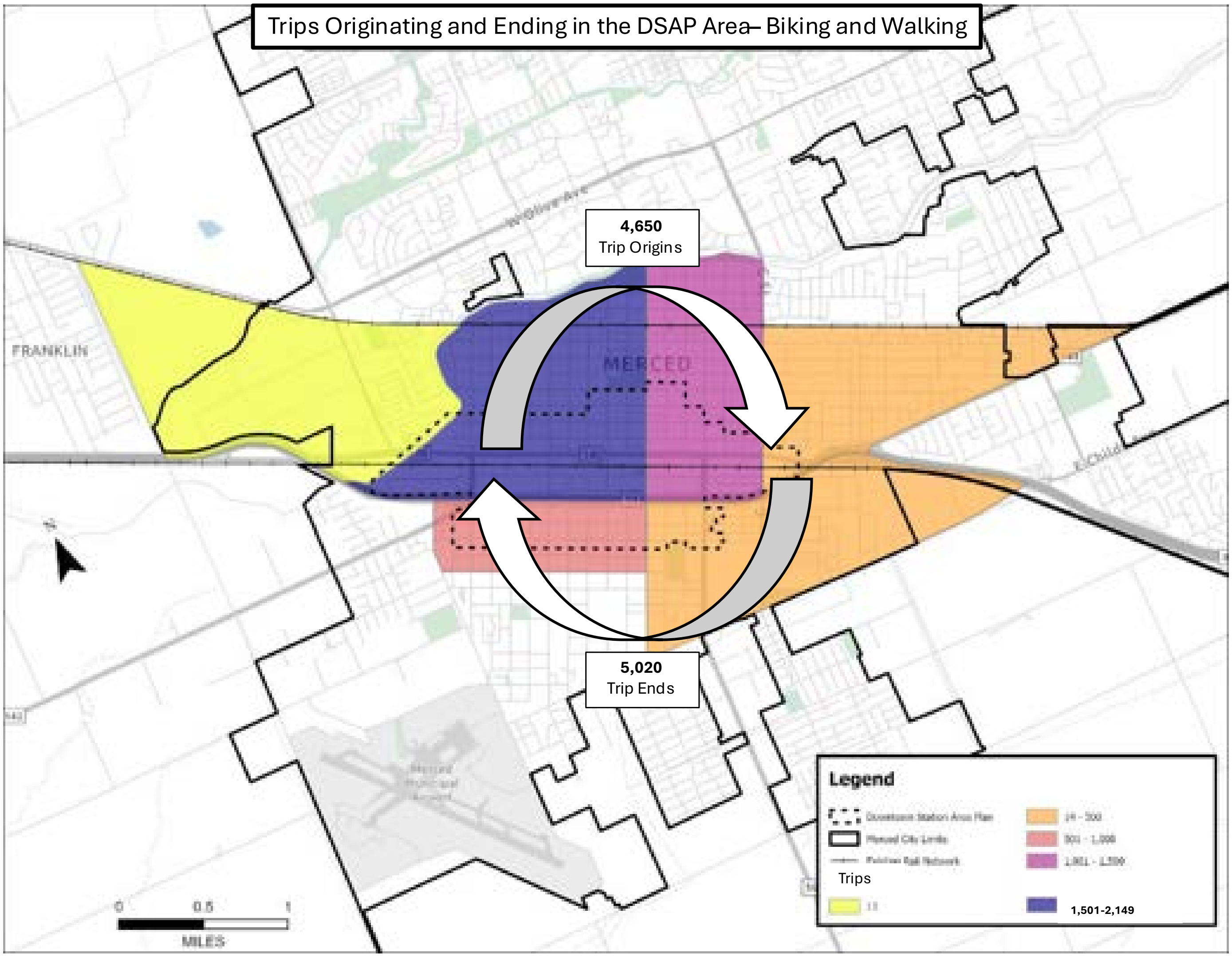

FIGURE 9. BIKING AND WALKING TRIPS ORIGINATING AND ENDING IN THE DSAP AREA

NETWORK VOLUMES

Visualizing network volume can identify key corridors or roadways that are heavily traveled. Heavily traveled roadways can support alternative development by assessing need and points of interest or routes that occur on the key roadways.

Using Replica data, network link volumes were extracted for private auto, bike, and pedestrian trips within Merced, as shown in **Figure 10** and **Figure 11**. Notably, the highest number of trips occurs on G Street, M Street, and R Street which provide connection from south Merced, across Bear Creek and to downtown Merced and residential areas in north Merced. G Street and M Street are the key North-South corridors that provide a direct connection from the DSAP area to UC Merced, contributing to the high volumes. Given that the city has a mature downtown grid system, trips can evenly distribute throughout the Downtown Core and surrounding subareas with multiple routes to achieve the same origin-destination pairs. The established grid system is also ideal for vehicle connectivity and provides alternate routes.

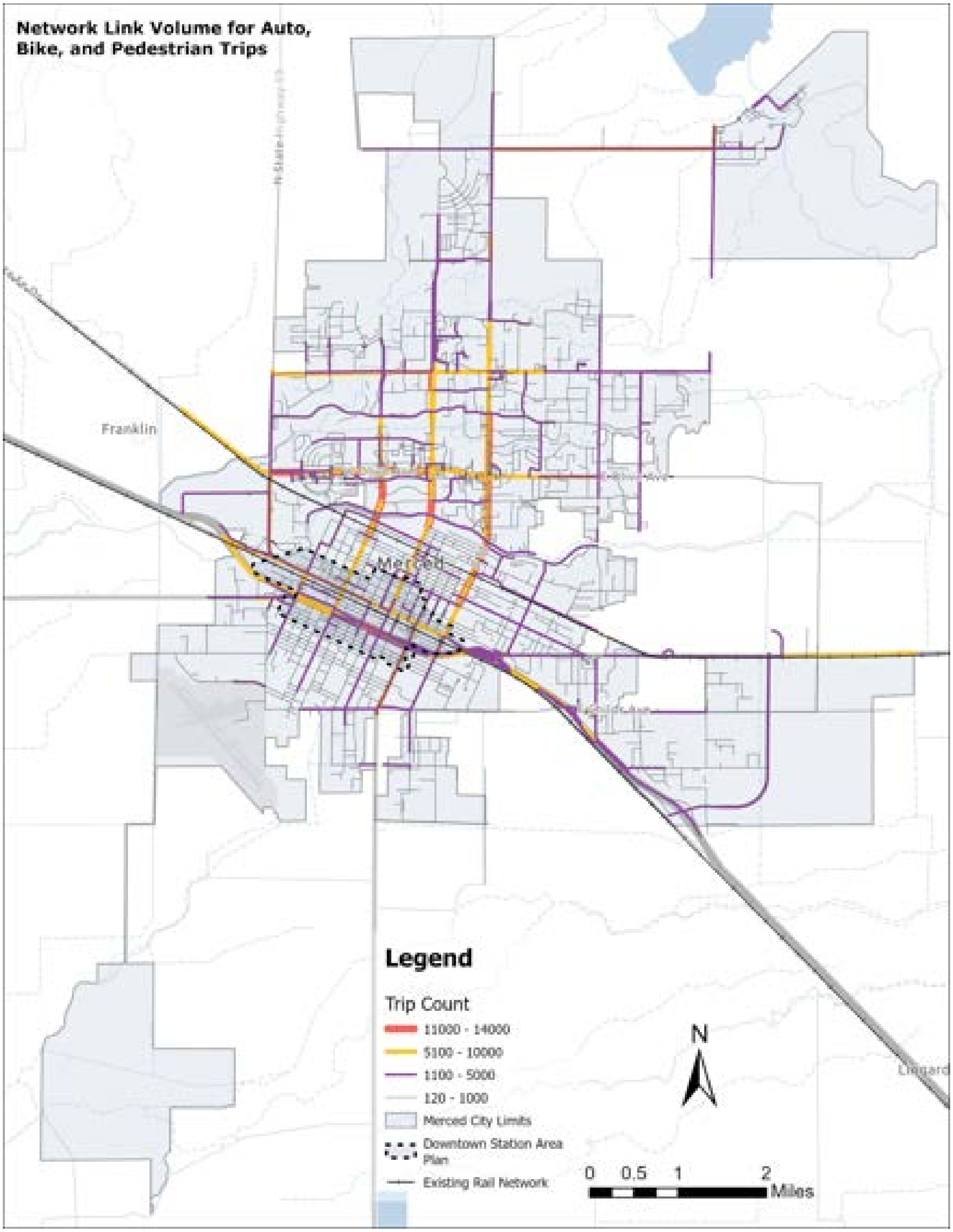

FIGURE 10. MERCED AUTO, BIKE, AND PEDESTRIAN NETWORK VOLUMES

FIGURE 11. NETWORK VOLUMES WITHIN THE DSAP AREA

MODELING FORECAST RESULTS

This section analyzes modeling growth volume results for the DSAP area from 2022 to 2046 under "as-is" conditions. As shown in **Figure 12**, significant increase in daily volume is anticipated to occur on 16th Street, 14th Street, and 13th Street. Currently, 16th Street, R Street, and V Street accommodate a large portion of daily volumes in the DSAP area.

Where the proposed future rail station is located, between R Street and O Street, 16th Street is anticipated to grow by 23%. On R Street between 15th and 16th Streets, the anticipated volume is expected to grow by over 50%. The existing model volumes indicate an underutilization on streets parallel to 16th Street. These results suggest that if 16th Street, R Street, and O Street remain as-is, traffic will continue to increase, thus contributing to higher levels of stress for pedestrians and bicyclists.

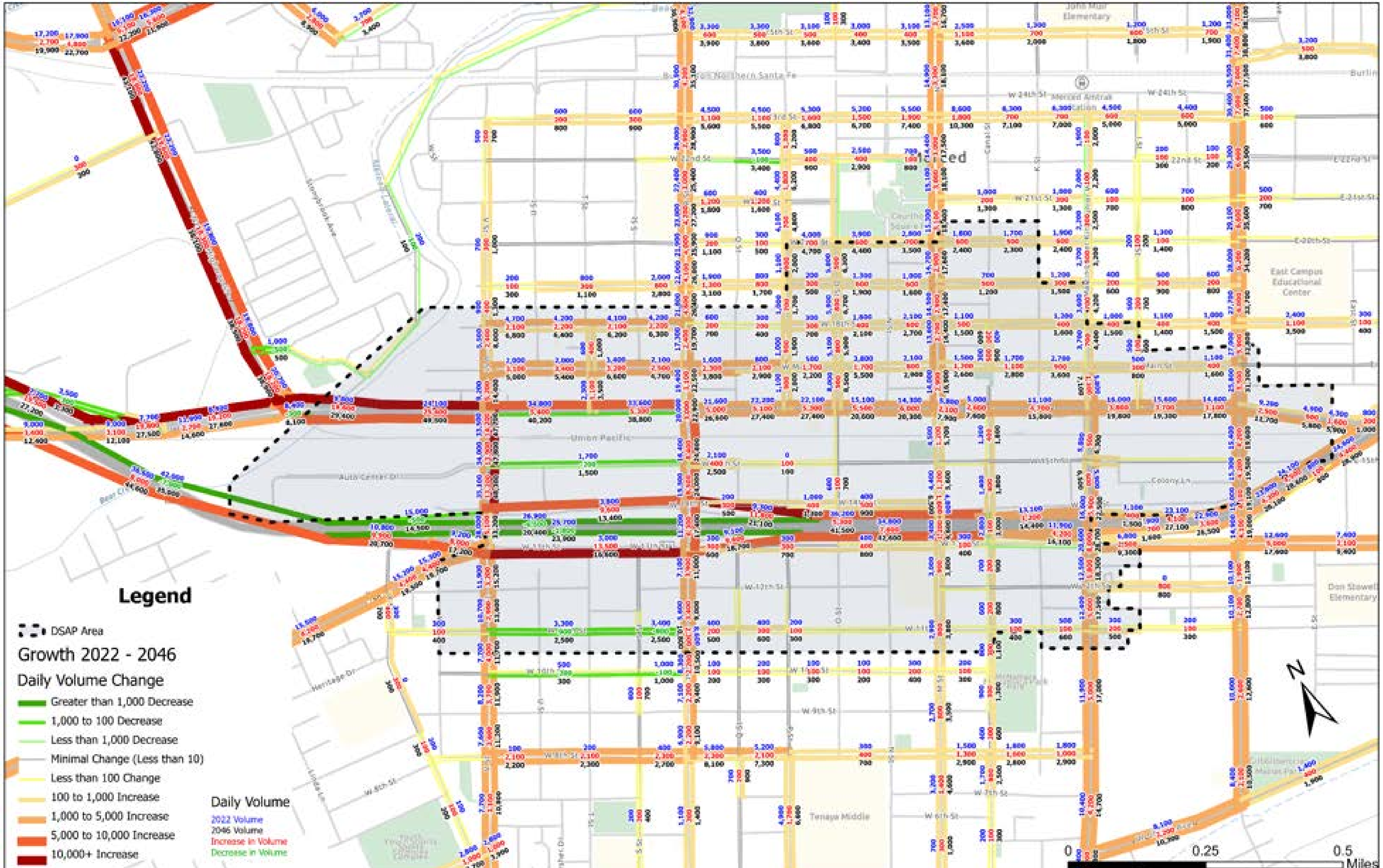

FIGURE 12. VOLUME GROWTH FORECASTS

PEDESTRIAN/BICYCLE LEVEL OF TRAFFIC STRESS (LTS)

Level of Traffic Stress (LTS) is an analysis of the level of stress bicyclists and pedestrians experience on a roadway segment. The Level of Traffic Stress analysis is important to the DSAP area as it indicates user and facility comfortability throughout the DSAP area. LTS is determined through a variety of criteria for both bike LTS and pedestrian LTS analysis. For a complete description of bicycle and pedestrian LTS methodology, see **Appendix A**.

LTS is designated with a score of 1 through 4, with 1 providing the most comfort and 4 providing the highest stress. Generally, an LTS score of 1 indicates that the roadway provides a stress level tolerable by small children, and an LTS score of 4 indicates a stress level tolerable only to strong and fearless individuals as shown in **Figure 13**.

An understanding of bicycle and pedestrian comfort in the DSAP area and its adjacent land uses provide an opportunity to enhance pedestrian and bicycle connectivity between the downtown core, the future rail station, South Merced, and other destinations. This analysis supports existing General Plan policies 1.4, 2.4, 2.5, 2.6, and 2.7.

BICYCLE LTS METHODOLOGY

The bike LTS was conducted using the methodologies described in the Mineta Transportation Institute's Report 11-10 Low-Stress Bicycling and Network Connectivity (2012) (**see Appendix A**).

The Bicycle LTS methodology was conducted for segments (bike lanes, paths, routes). The LTS methodology is data driven[3] (i.e., speed limits, number of lanes, bicycle lane buffer) and are applied separately for each category using the worst (highest) score among the criteria considered and governs the overall LTS score for that category.

For purposes of this analysis, LTS scores of 1 or 2 denote a low-stress experience while LTS scores of 3 or 4 denote a high-stress experience. As such, it is desirable to achieve connectivity of the low-stress network among all points of interest within the city to provide a comfortable experience. By maximizing connectivity of the low-stress network, a greater proportion of the population who are willing and open to biking and walking (estimated to be approximately 60% of people) may consider using a bike or walking for a given trip rather than driving.

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[3] For complete criteria, see Appendix A.

FIGURE 13. BICYCLE LTS DESCRIPTIONS

EXISTING BICYCLE NETWORK

MCAG completed an Active Transportation Plan in 2024 and illustrated the existing bicycle network in Merced (see **Figure 14**). The existing bicycle network in and surrounding the DSAP area is disconnected and primarily Class III bike lanes. **Table 1** describes each bikeway classification and their purpose.

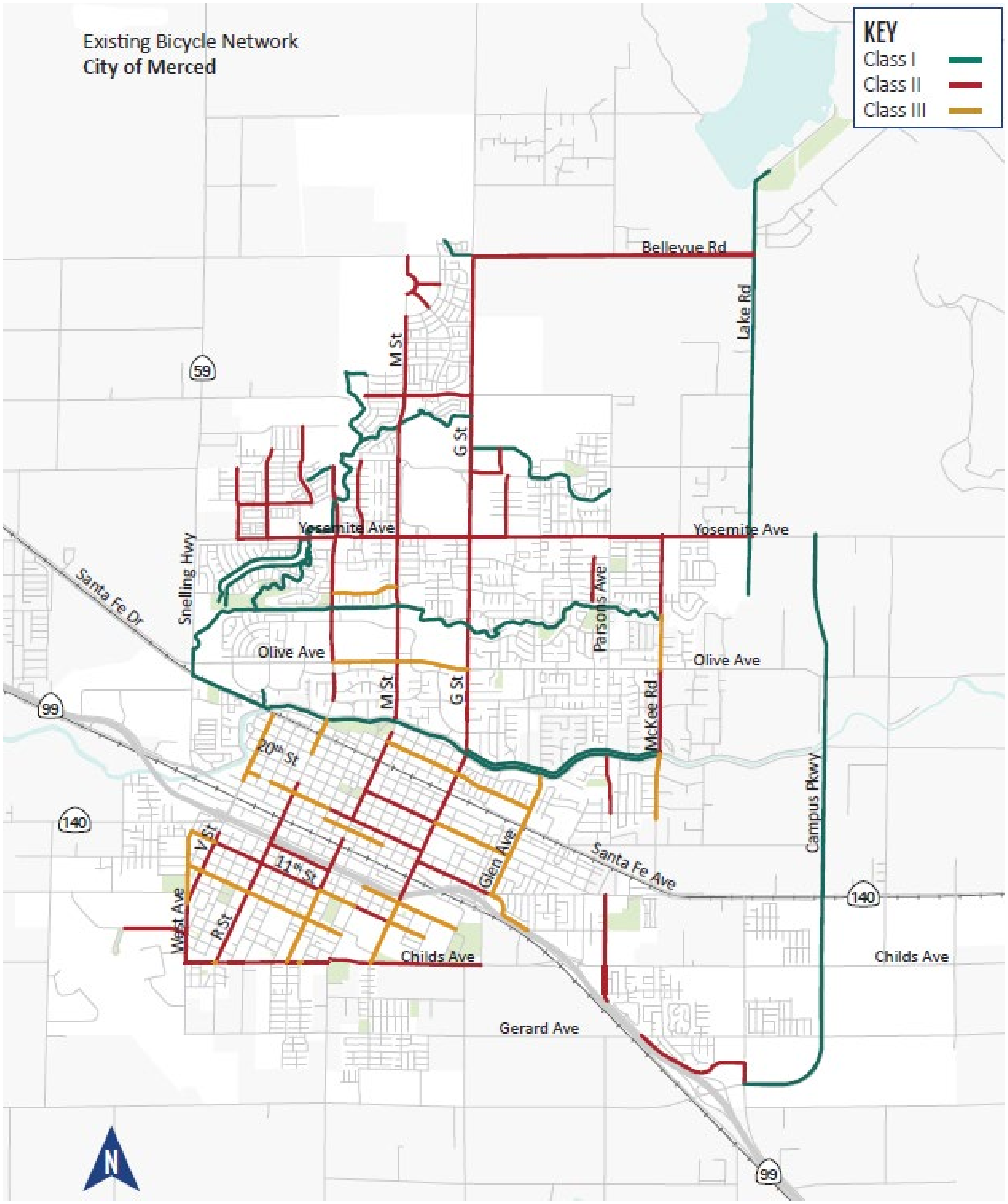

FIGURE 14. EXISTING BICYCLE NETWORK

TABLE 1. BIKEWAY CLASSIFICATIONS

BIKEWAY CLASSIFICATION	DESCRIPTION	FUNCTION
CLASS I (BIKE PATH)	- Exclusive use for bicycles within its own right-of-way, but it can also be utilized by pedestrians - Completely separated from motor vehicles and have minimal cross-flow by motor vehicles - Straight alignment and provides good visibility	- Supports both recreational cyclists and commuters
CLASS II (BIKE LANE)	- Pavement striping and signage are used to delineate a portion of a roadway for bicycle travel - Typically, adjacent to motor traffic traveling in the same direction - Motor vehicles or pedestrian crossflow are allowed to access on-street parking	- One-way travel - Appropriate on busy urban thoroughfares
CLASS III (BIKE ROUTE & SHARED LANE MARKINGS - SHARROWS)	- Established by placing bike route signs and optional shared roadway markings along roadways - Common on residential streets, rural roads, and low-volume highways - Use of sharrows only on low-speed streets	- A designated preferred route for bicyclists on streets shared with motor traffic not served by dedicated bikeways to provide continuity to bikeway network
CLASS III B (BICYCLE BOULEVARD)	- Bicycles and motor-vehicles share the same facility, however, the street has been modified to prioritize bicycle traffic	- A shared roadway intended to prioritize bicycle travel for people of all ages and abilities
CLASS IV (SEPARATED BIKEWAY)	- Physically separated from motor traffic with a vertical feature	- Exclusively for bicyclists - One-way or two-way travel - Can reduce level of stress, improve comfort, and contribute to increasing bicycle volumes

BICYCLE LTS RESULTS

The bicycle LTS analysis was only conducted for the DSAP and its surrounding area, which includes the downtown core, South Merced, the Merced Transportation Center, and the future rail station.

As shown in **Figure 15**, current bicycle LTS is primarily high stress on major roadways while neighborhood streets are low stress. Two adjacent streets to the proposed rail station, R Street and 16th Street, are determined to be high stress networks, indicating an uncomfortable experience for bicyclists and a barrier on 16th Street to the Downtown Core and south Merced. Additionally, the LTS results indicate a high-stress network on R Street and G Street between North Merced, UC Merced, and the DSAP area. These roadways serve as a barrier to many who would consider biking or walking as an alternative to driving.

Consequently, LTS was also determined for future bicycle network conditions, assuming implementation of planned projects. Future conditions were determined based on the ATP project list and are illustrated in **Figure 16**. As reflected in the future LTS conditions, 16th Street would maintain the same LTS score while R Street would increase in user comfortability, received an assumed future LTS score of 2.

For future rail station specific active transportation projects, a separate future LTS analysis was conducted, as shown in **Figure 17**.

For the selection of relevant ATP projects in the DSAP area, see **Appendix B**.

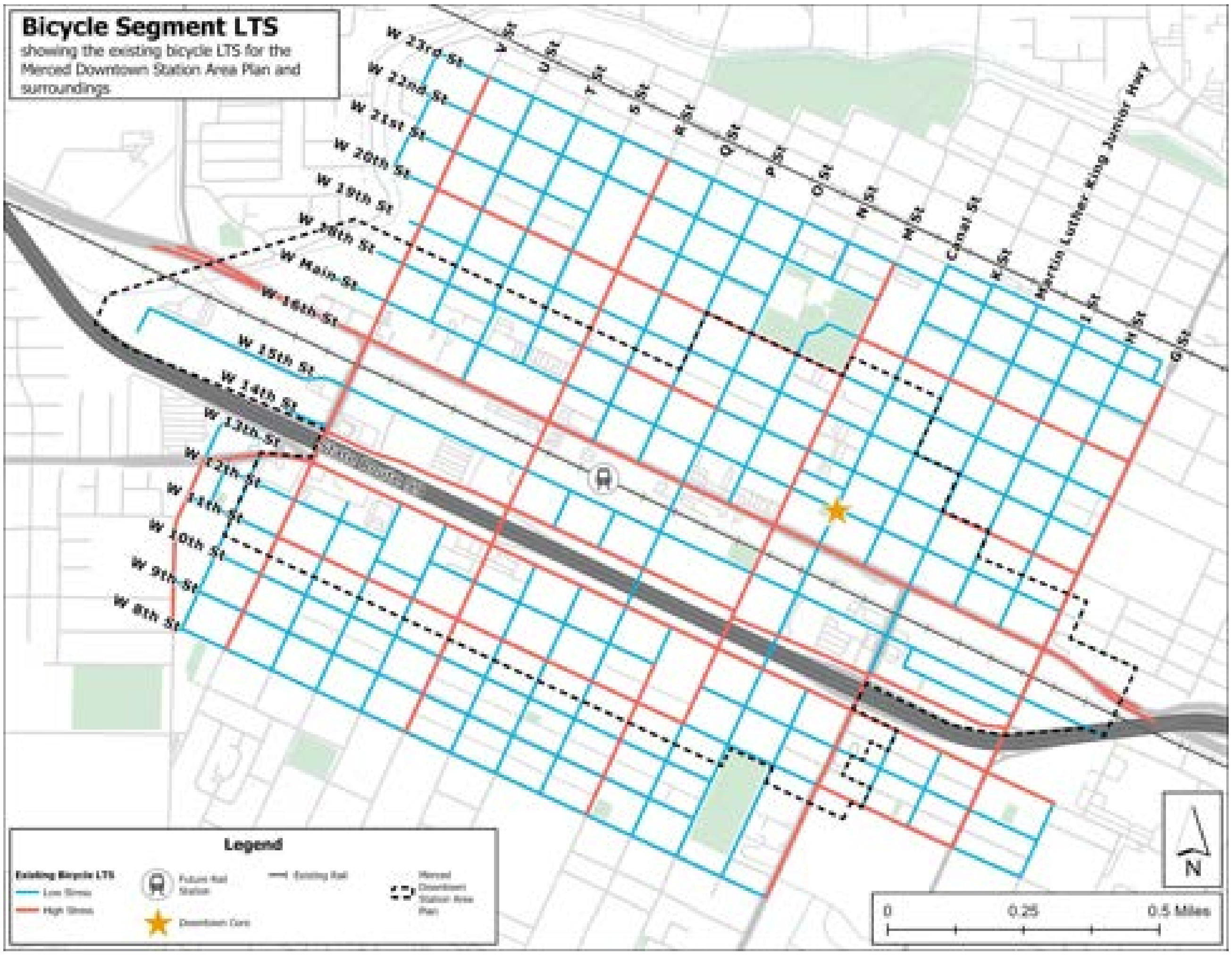

FIGURE 15. EXISTING BICYCLE LTS SCORES

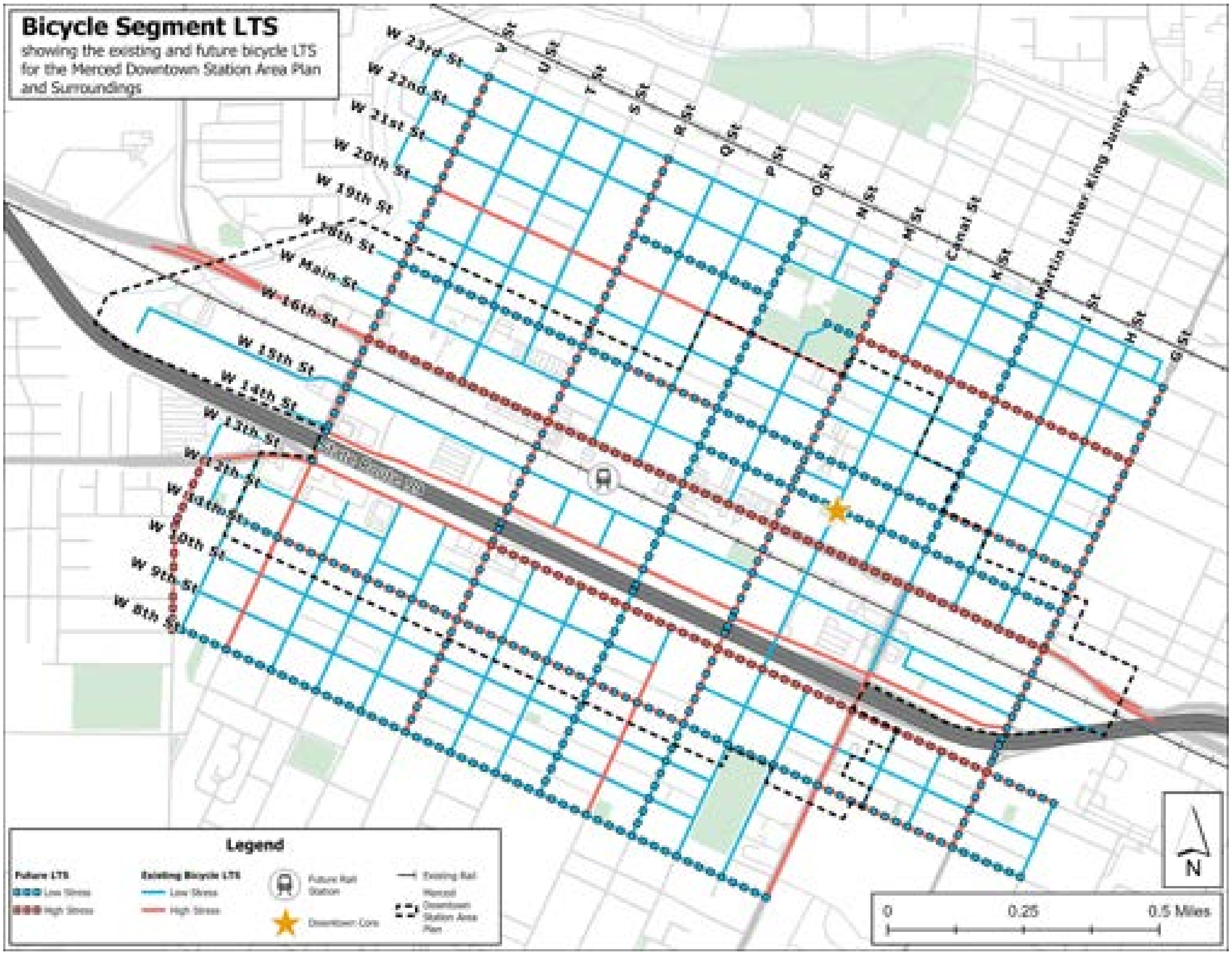

FIGURE 16. EXISTING AND FUTURE BICYCLE LTS SCORES

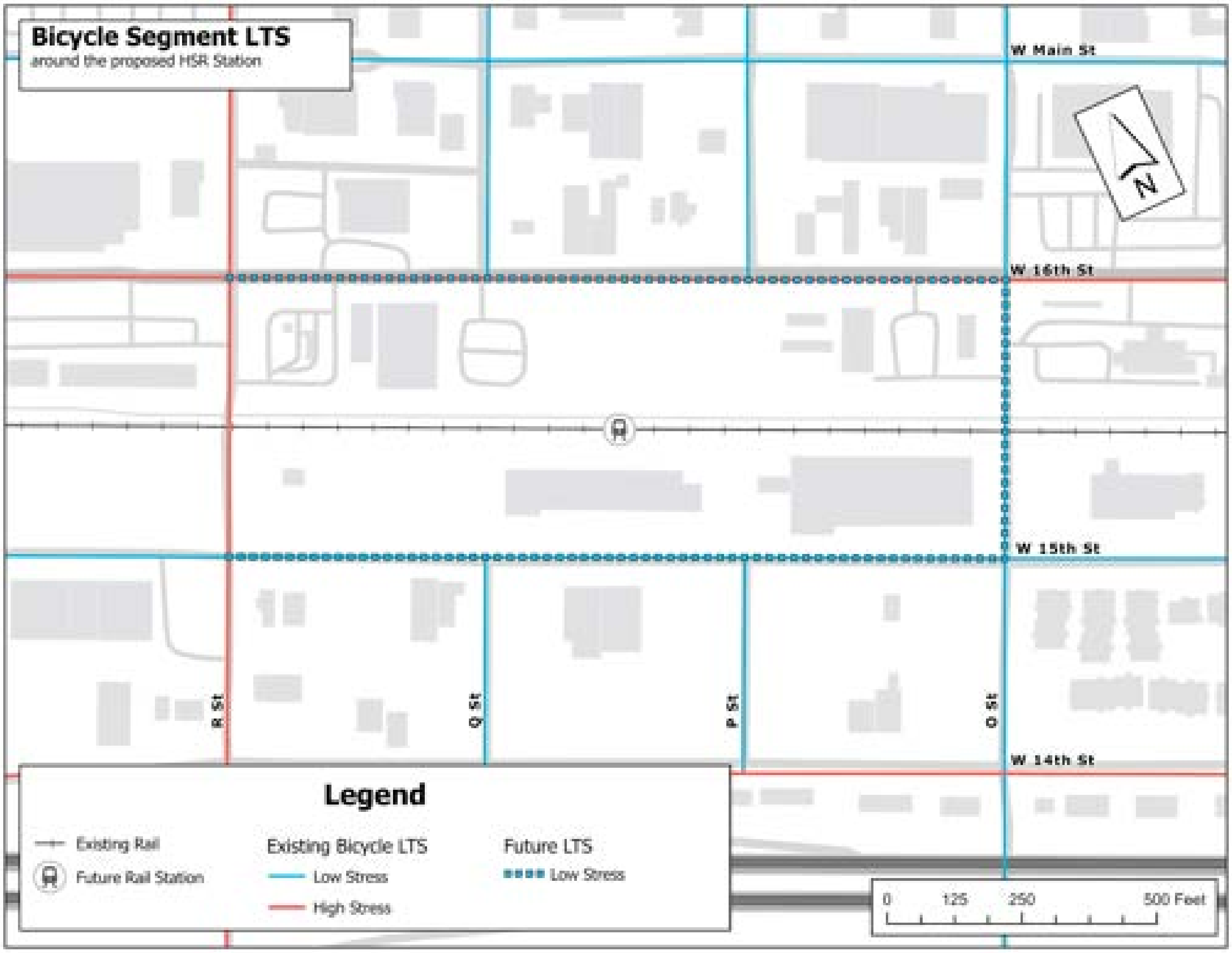

FIGURE 17.EXISTING BICYCLE LTS AND FUTURE RAIL STATION IMPROVEMENT LTS

PEDESTRIAN LTS METHODOLOGY

The Pedestrian Level of Traffic Stress (LTS) methodology was developed by the Oregon Department of Transportation (ODOT) **(see Appendix A).** The pedestrian LTS was conducted for segments (sidewalks, paths, and multi-use paths). Table-based criteria are applied separately for each category using the "worst case principle," meaning the worst (or highest) score among the criteria considered governs the overall LTS score for that facility[4].

Depending on the community context and the detail level desired, the overall methodology may be simplified based on the general consistency of facility types, as certain elements (e.g., median islands, buffer type and width, sidewalk ramps, etc.) may not exist in a particular community.

[4] For complete criteria, see Appendix A.

FIGURE 18. PEDESTRIAN LTS SCORES

The existing pedestrian LTS scores are illustrated in **Figure 19**. Existing pedestrian segments adjacent to the future rail station such as 16th Street, 15th Street, and R Street are currently high stress facilities and indicate an uncomfortable experience for pedestrians. These high stress environments limit pedestrians' ability to traverse on these corridors and forces users to utilize high stress routes to reach their destination.

Additionally, **Figure 20** shows the future pedestrian LTS scores based on proposed pedestrian improvements listed in the ATP. In the ATP, Main Street is proposed to get improved sidewalk facilities, improving and maintaining the low-stress network. For future rail station specific active transportation projects, a separate future LTS analysis was conducted, as shown in **Figure 21**.

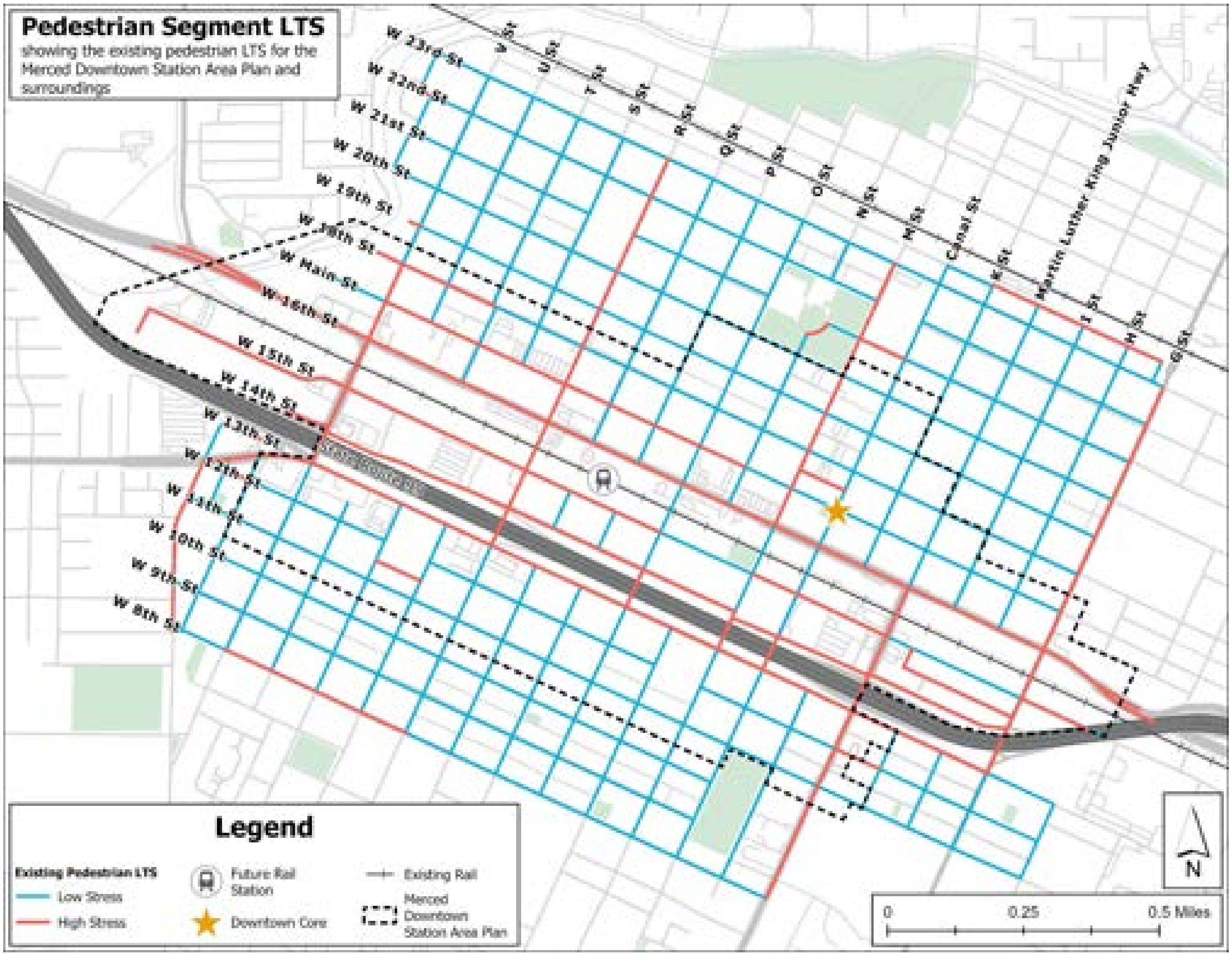

FIGURE 19. EXISTING PEDESTRIAN LTS SCORES

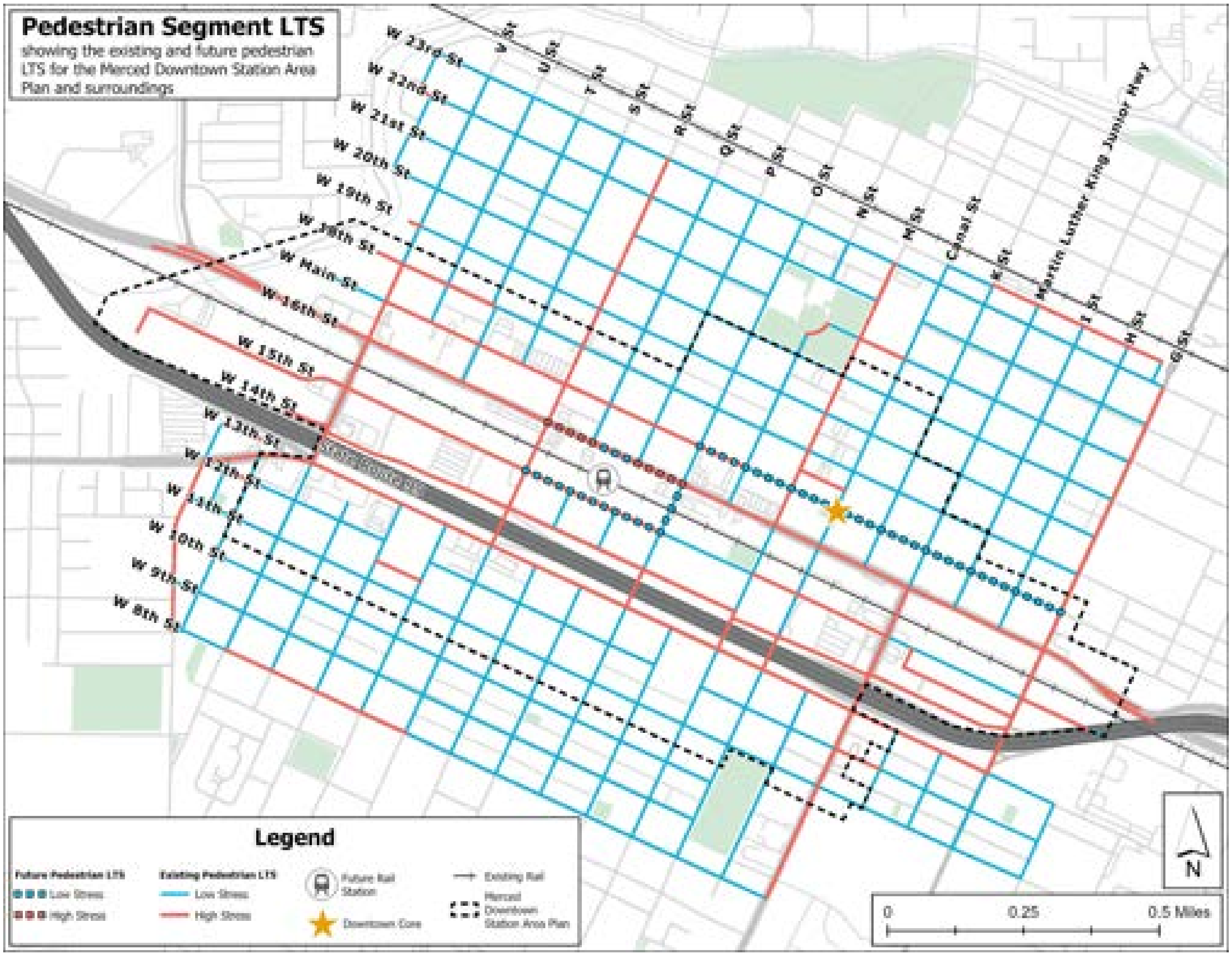

FIGURE 20. EXISTING AND FUTURE PEDESTRIAN LTS SCORES

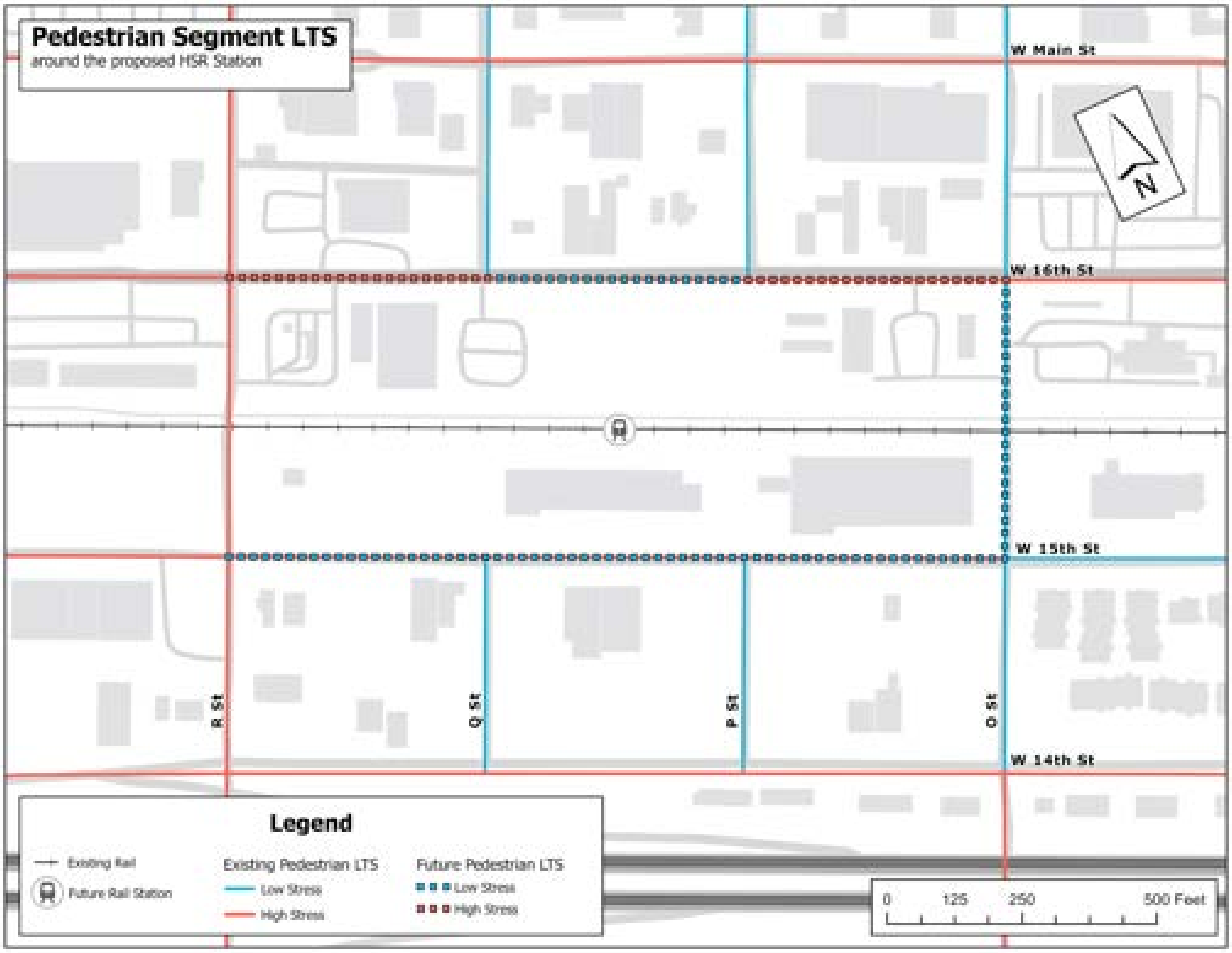

FIGURE 21. EXISTING PEDESTRIAN LTS AND FUTURE RAIL STATION IMPROVEMENT LTS

PEDESTRIAN/BICYCLE CONNECTIVITY ASSESSMENT

Pedestrian and bicycle connectivity is important to identify how high stress segments affect connectivity to prime destinations or points of interest. Essentially, determining connectivity is an indicator of pedestrian and bicycle trips to key destinations and identifies any barriers that deter trips being made by walking or biking.

To identify origins and destinations that are likely to generate bicycle and pedestrian trips, a network analysis was performed. The analysis included identifying key points of interest within the community including the future rail station. This analysis aids in determining overall connectivity between the future station and to key destinations throughout Downtown Merced and south Merced. This analysis is important to the DSAP area as it denotes critical barriers for pedestrians and bicyclists and can aid in determining areas of connectivity improvements. This analysis supports existing General Plan policies 1.1, 2.4, 2.5, 2.6, and 2.7.

IDENTIFICATION OF POINTS OF INTEREST (POI)

A point of interest (POI) is a point representing the geographic center of a polygon shape or cluster of points of interest. POIs were classified as residential or non-residential and then used to analyze the level of connectivity between points of interest within the city. The points of interest for this analysis were derived from the MGPU-DSAP Technical Working Group Presentation[5].

NETWORK CONNECTIVITY AND UNDUE DETOUR ANALYSIS

To estimate the effect that the presence of moderate to high-stress routes have on bicycle connectivity, network connectivity analysis was conducted to calculate the shortest bicycle and walking trip distance between the identified POIs.

Measuring bicycle and pedestrian trip length is critical to determining network connectivity for the following reasons:

- While POIs may be physically connected by the network, barriers and gaps within the network can substantially increase trip distances, resulting in significant detour.
- Based on research by the Mineta Institute, circuitous routing of greater than 25% of the baseline distance is considered "undue detour".
- Additionally, barriers and gaps can completely separate POIs from the surrounding network, making it difficult and unsafe to travel by bicycle or walking.

Figure 22 and **Figure 23** provide a visual of the degree of the existing low-stress bicycle and pedestrian connectivity within the DSAP area and connectivity to the northern DSAP are which includes the Downtown Core and south Merced. **Figure 24** and **Figure 25** provide a visual of the degree of the existing low-stress bicycle and pedestrian connectivity within the DSAP area with regard to the future rail station. POI pairs that are connected via the low-stress network are shown with a

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purple connector (as the crow flies). These connections are performed for all POI pairs. The resulting pattern delineates areas that are well connected via the low-stress network and areas that are isolated (i.e., cut off by the high-stress facilities). As shown in **Figure 22**, total connectivity via the low-stress network is 75.8% percent connected within the DSAP area and its districts. Hence, the presence of high-stress routes results in an approximately 24.2% reduction in overall connectivity between POIs (i.e., approximately 24.2% of trips between POIs are no longer possible unless high-stress routes are utilized). As shown in **Figure 23** pedestrian total connectivity via a low-stress network is 0%, indicating that there are high-stress routes and barriers that make pedestrian trips only possible via high-stress routes.

Figure 24 and **Figure 25** illustrate the degree of future low-stress bicycle and pedestrian connectivity within the DSAP area. The bicycle connectivity results increased by 9%, indicating a 9% increase in bicycle connectivity via a low-stress network. Pedestrian connectivity significantly increased from 0% existing conditions and 45% for future conditions. This result indicates that if future pedestrian improvements are implemented it will support a more connected pedestrian network from the future rail station to the DSAP area districts such as the Downtown Core.

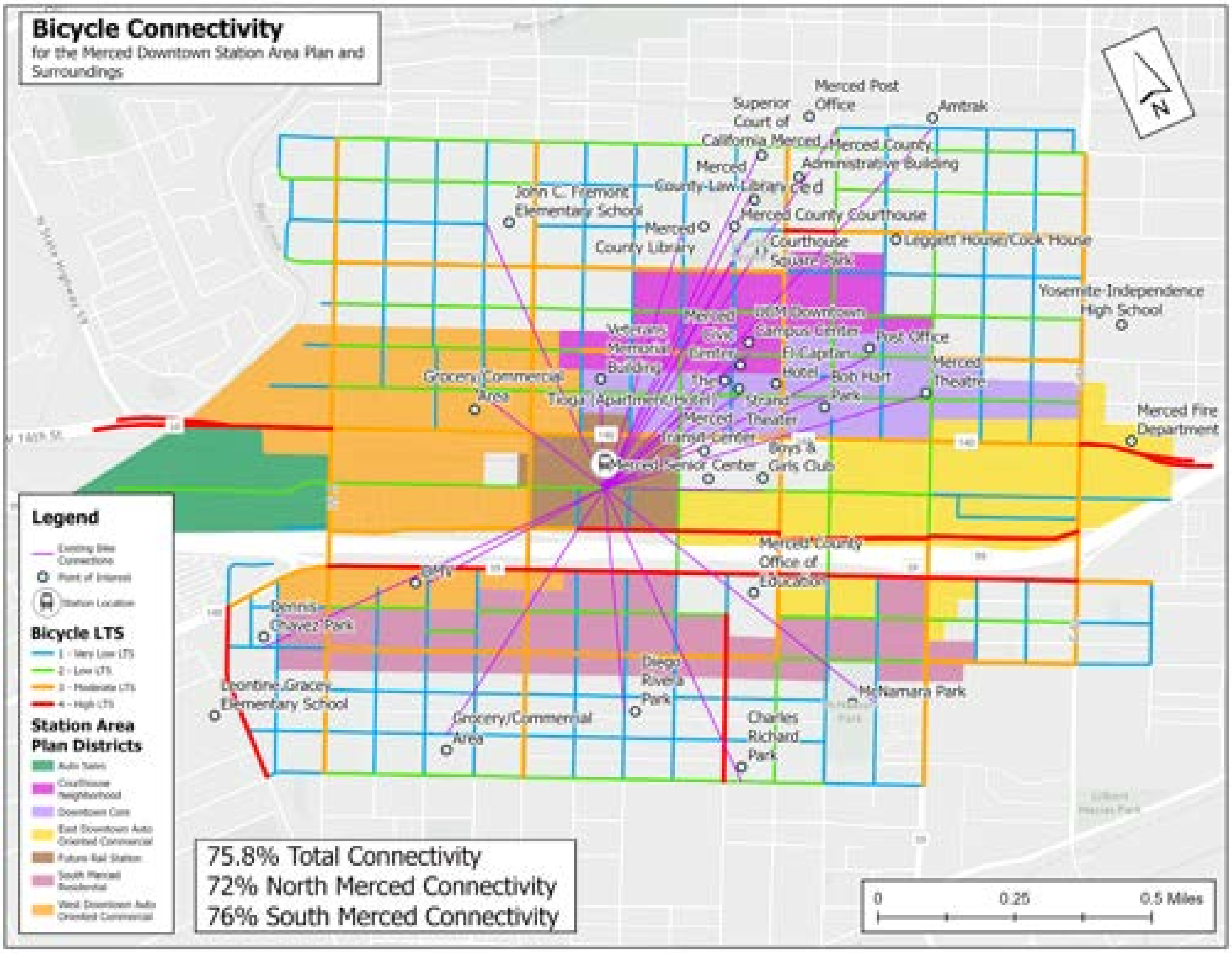

FIGURE 22. EXISTING BICYCLE CONNECTIVITY TO KEY POINTS OF INTEREST

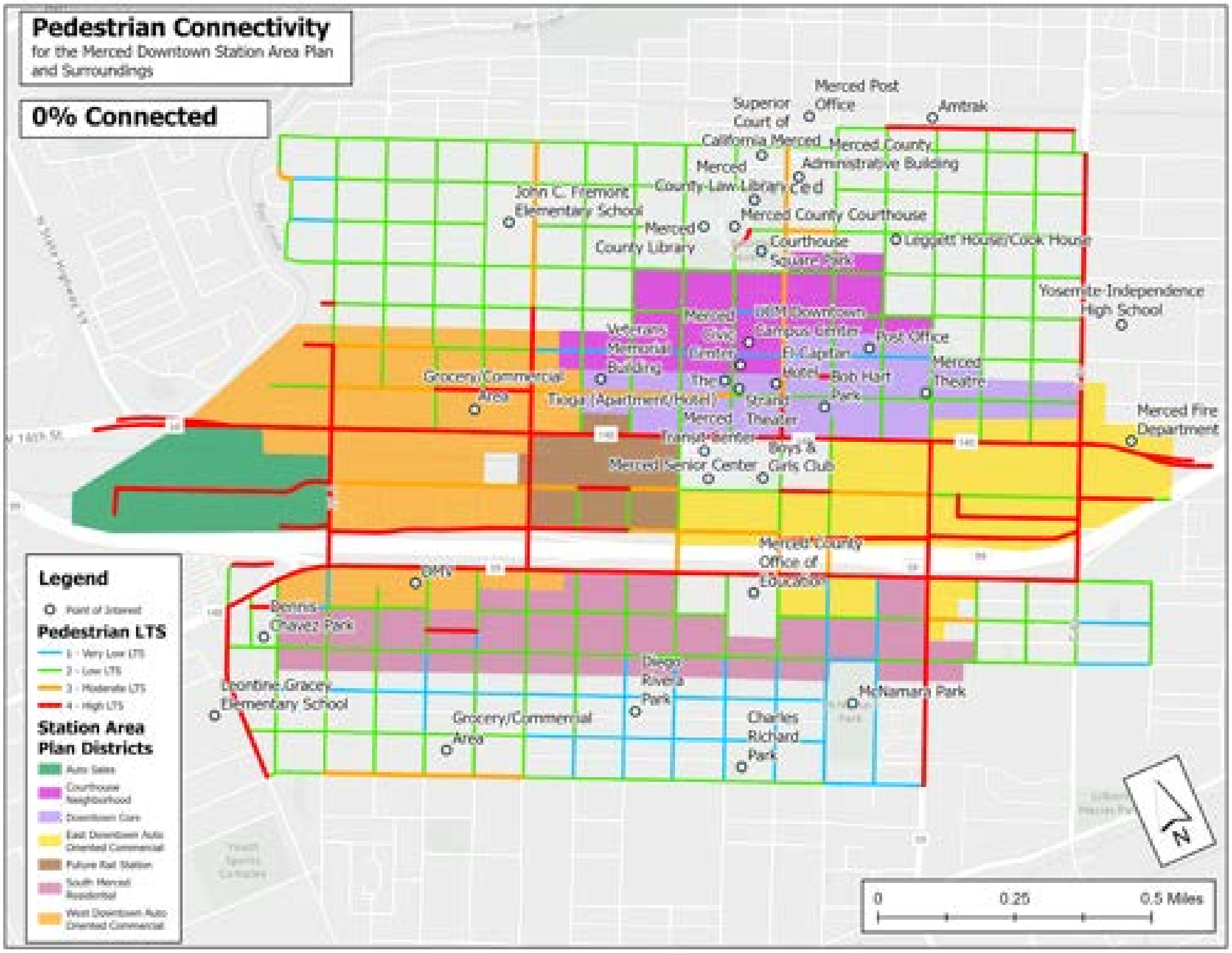

FIGURE 23. PEDESTRIAN CONNECTIVITY TO KEY POINTS OF INTEREST

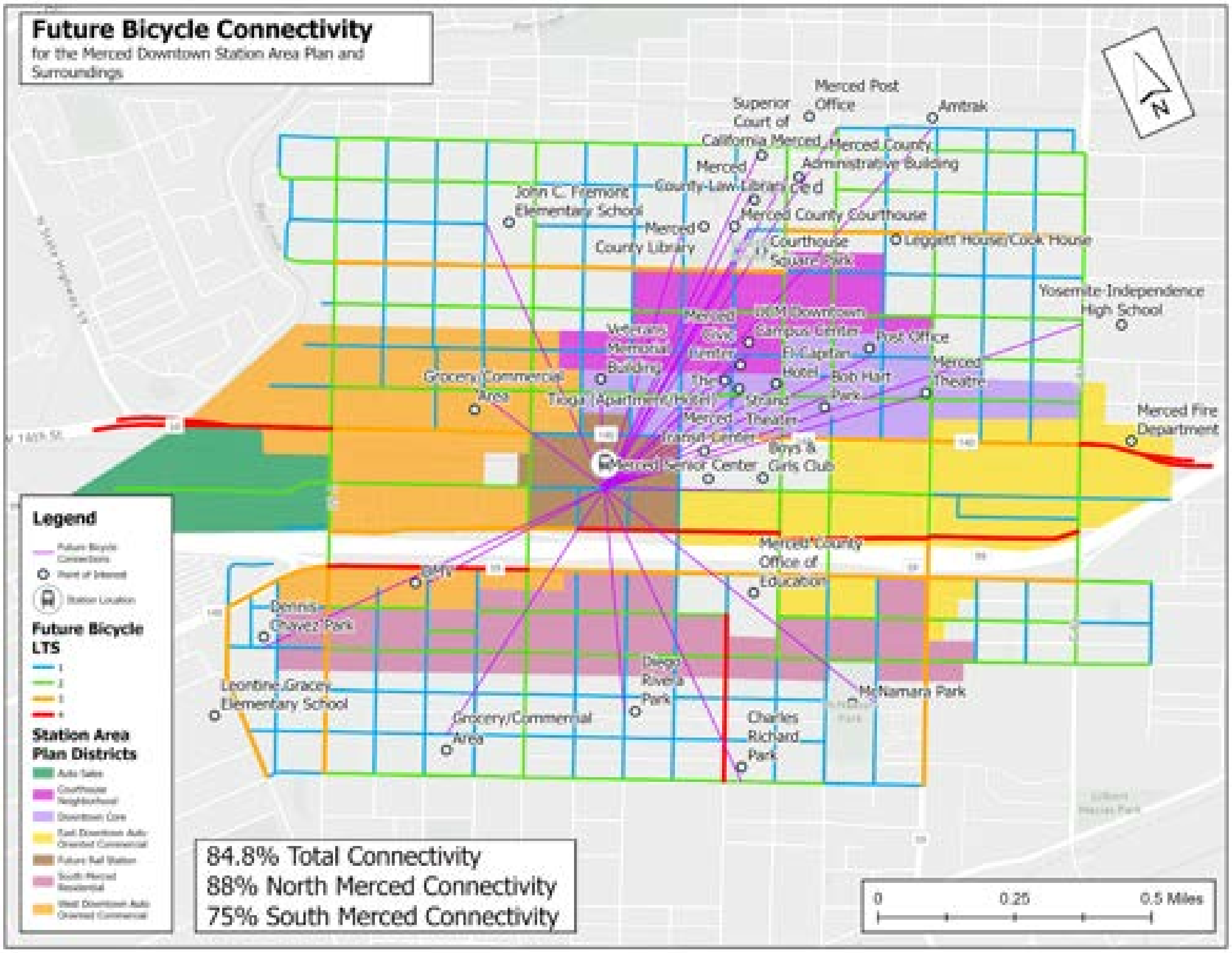

FIGURE 24. FUTURE BICYCLE CONNECTIVITY TO KEY POINTS OF INTEREST

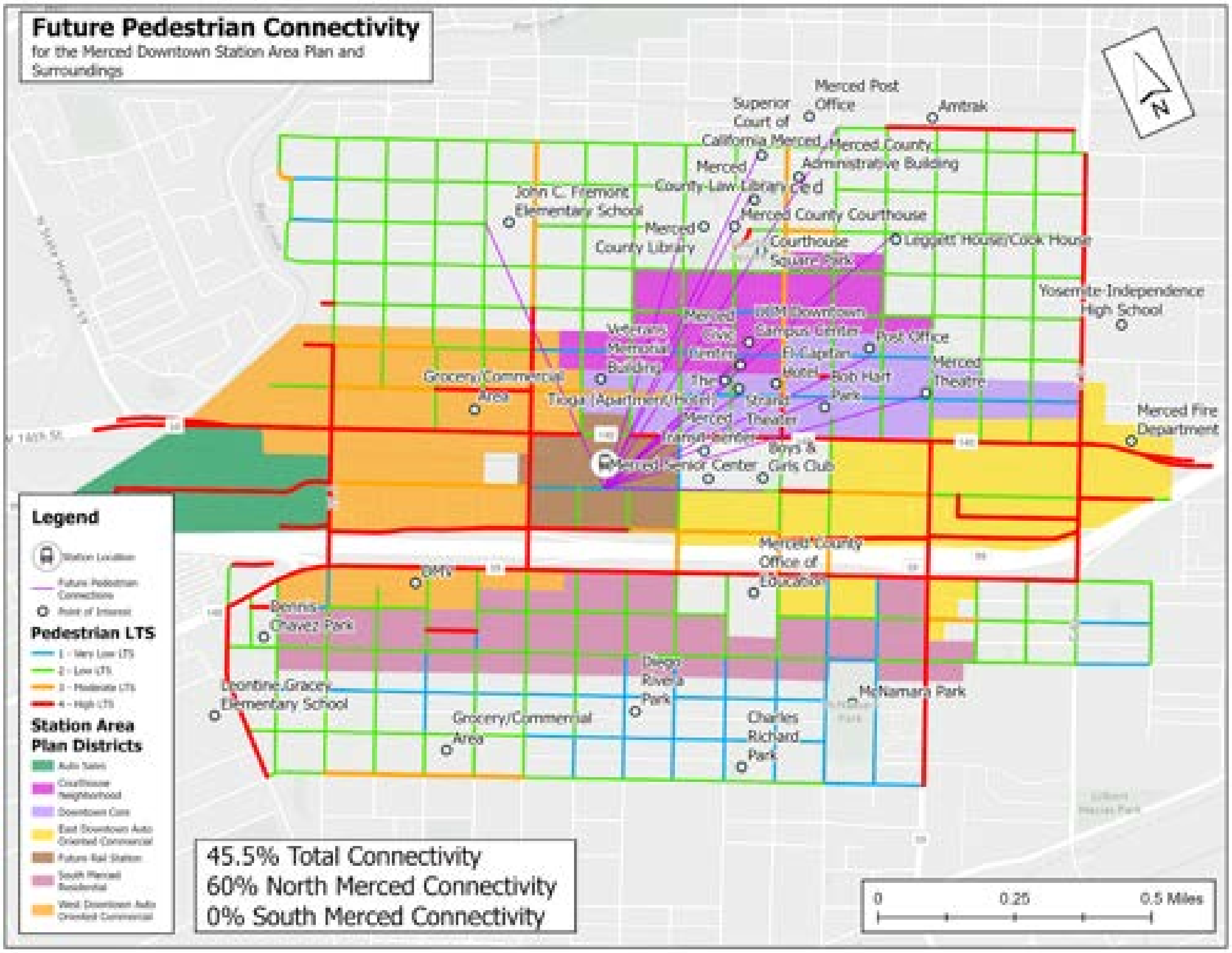

FIGURE 25. FUTURE PEDESTRIAN CONNECTIVITY TO KEY POINTS OF INTEREST

COLLISION ANALYSIS

Reviewing collision history throughout the DSAP area indicates the current safety and most common collision types. Collison history is an indicator of vehicle tendencies and safety of the existing roadway system. An analysis of collision history is relevant to the DSAP area as it indicates where crashes are occurring, why, and who is involved.

A collision analysis was conducted for Merced using the Statewide Integrated Traffic Records System (SWITRS) and Transportation Injury Mapping System (TIMS) data. Collision data from 2019 to 2024 was analyzed, however collision data for 2023-2024 is provisional and subject to change. For focus on the DSAP area, collisions that occurred on SR 99 were excluded from analysis and are therefore not represented in this section. This analysis supports existing General Plan policy 1.4.

Between 2019 to 2024, there were approximately 2,299 collisions in the City of Merced[6]. The collision severity breakdown for all severities is shown in **Figure 26**. Fatal and severe injury collisions accounted for 324 collisions (14%) of all collisions citywide. **Figure 27** illustrates the fatal and severe injury breakdown, severe injury collisions accounted for 279 (86%) of FSI collisions.

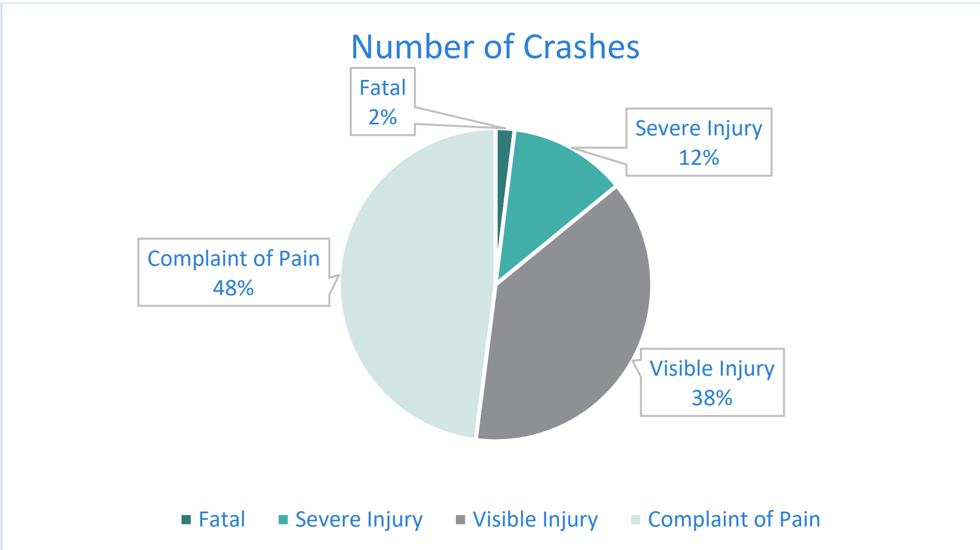

FIGURE 26. NUMBER OF COLLISIONS BY SEVERITY

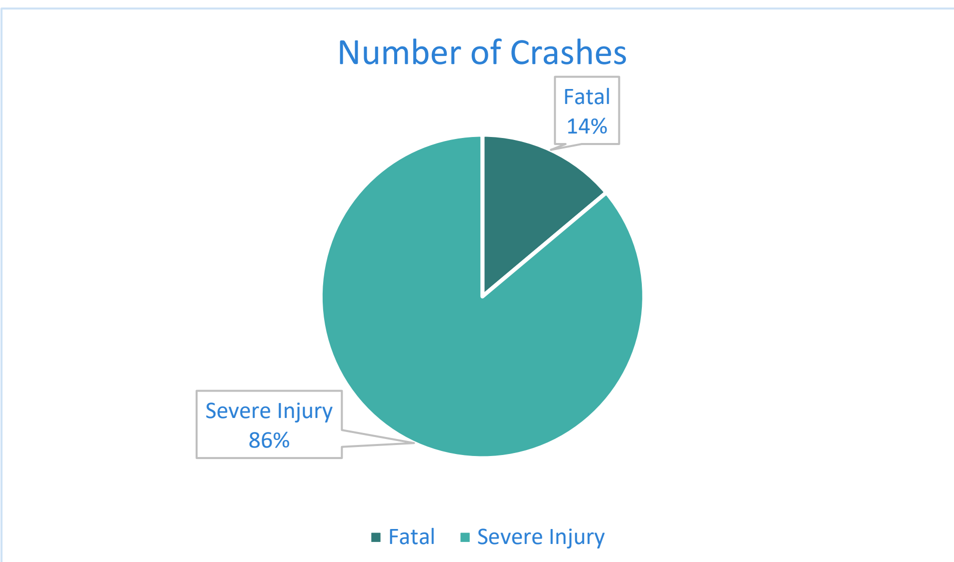

FIGURE 27. NUMBER OF FATAL AND SEVERE INJURY COLLISIONS

Figure 28 and **Figure 29** illustrate the collision density of all severity types in the City of Merced and the DSAP area. As shown, collision density is heavily prevalent in the DSAP area and on North-South streets such as V Street, R Street, and G Street.

[6] In the City, approximate 2,485 collisions occurred including SR 99. Approximately 2,299 occurred that did not include SR 99.

On 16th Street, within the DSAP area there were a total of 125 collisions. Of those 125 collisions, there were 1 fatal, 16 severe injuries (13%), 45 visible injuries (36%), and 63 complaints of pain (50%). Notably, on 16th Street 17 of the 125 collisions involved pedestrians or bicyclists (14%).

Figure 30 and **Figure 31** illustrate the collision density and locations of fatal and severe injury collisions in Merced and the DSAP area.

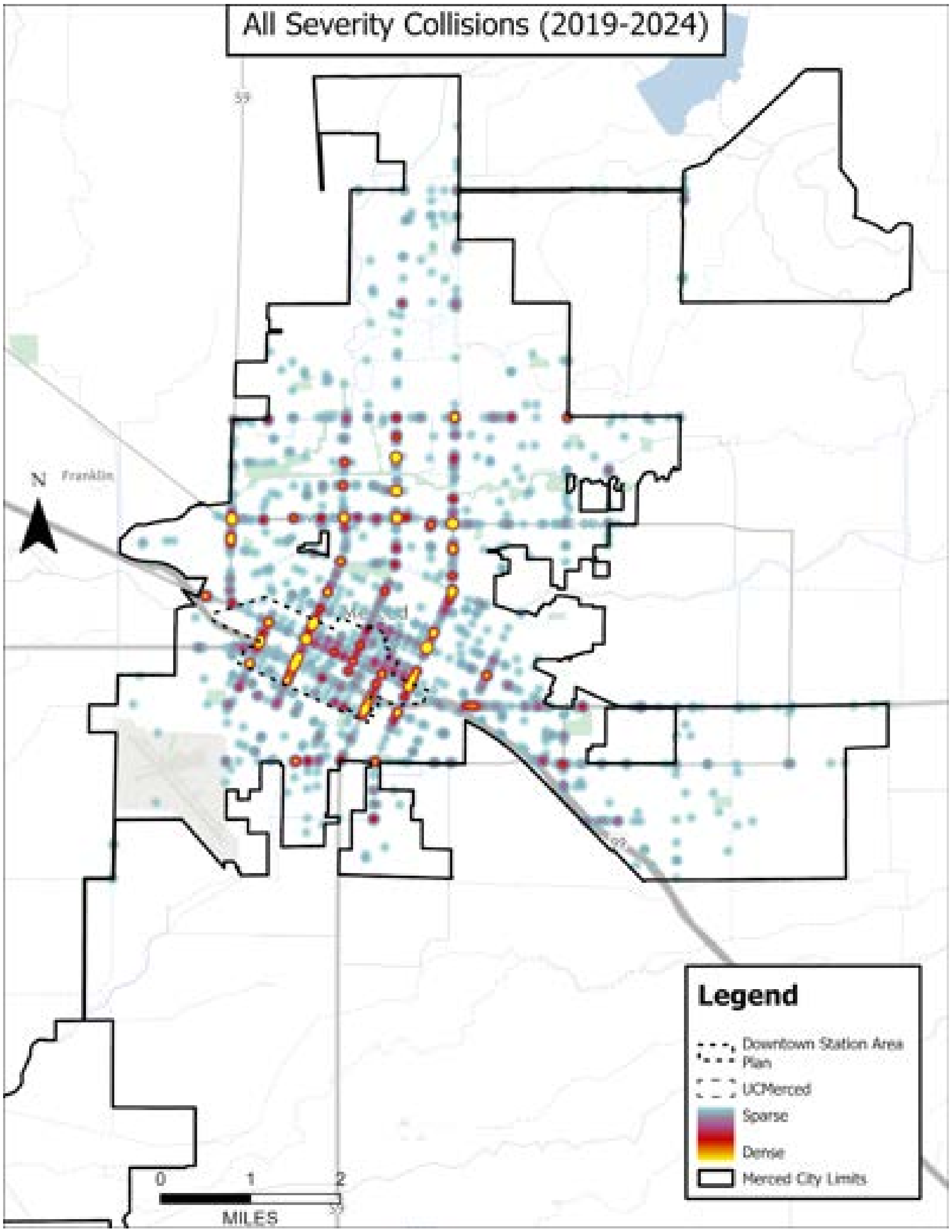

FIGURE 28. ALL SEVERITY COLLISIONS HEAT MAP

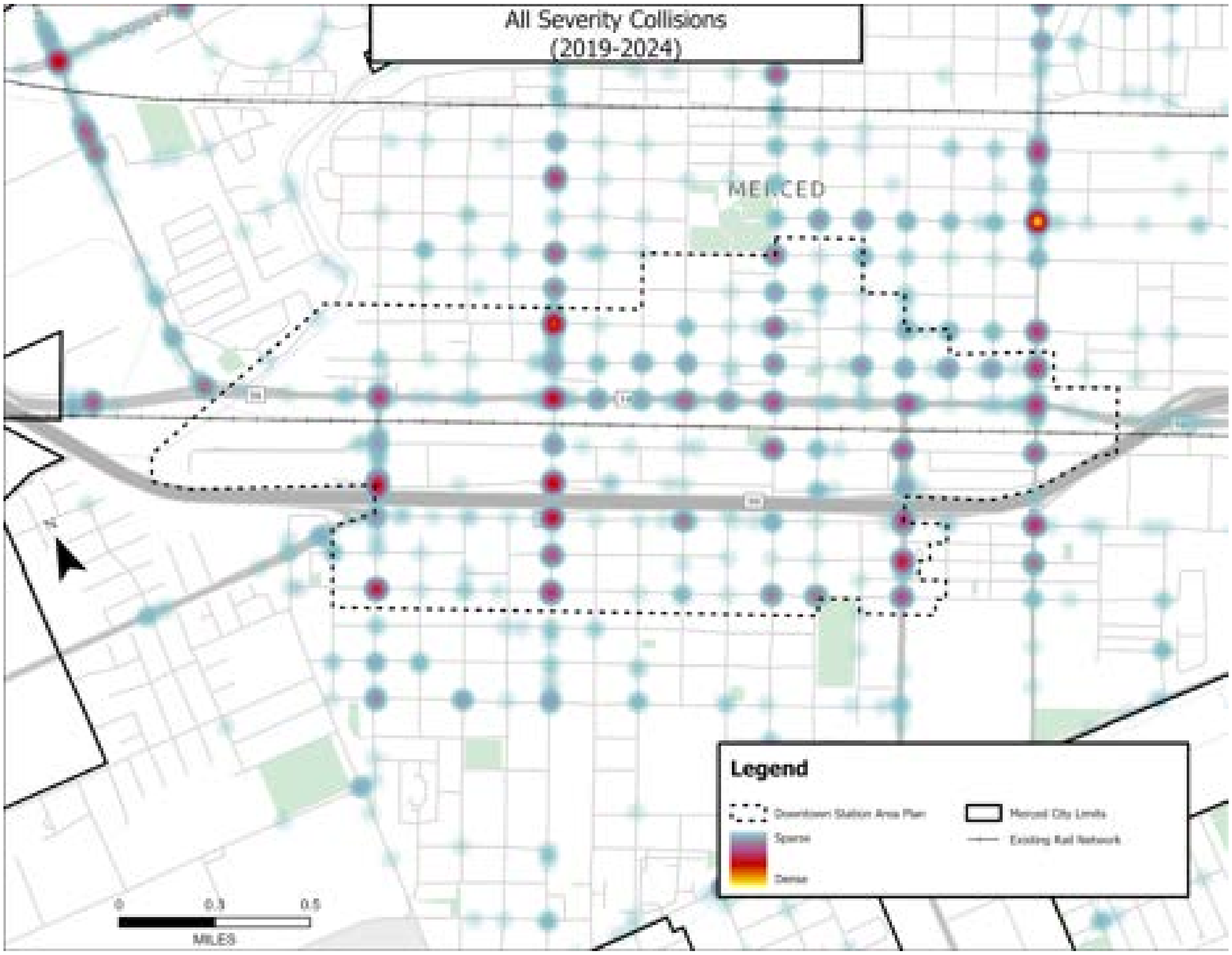

FIGURE 29. ALL SEVERITY COLLISIONS IN/NEAR DSAP AREA

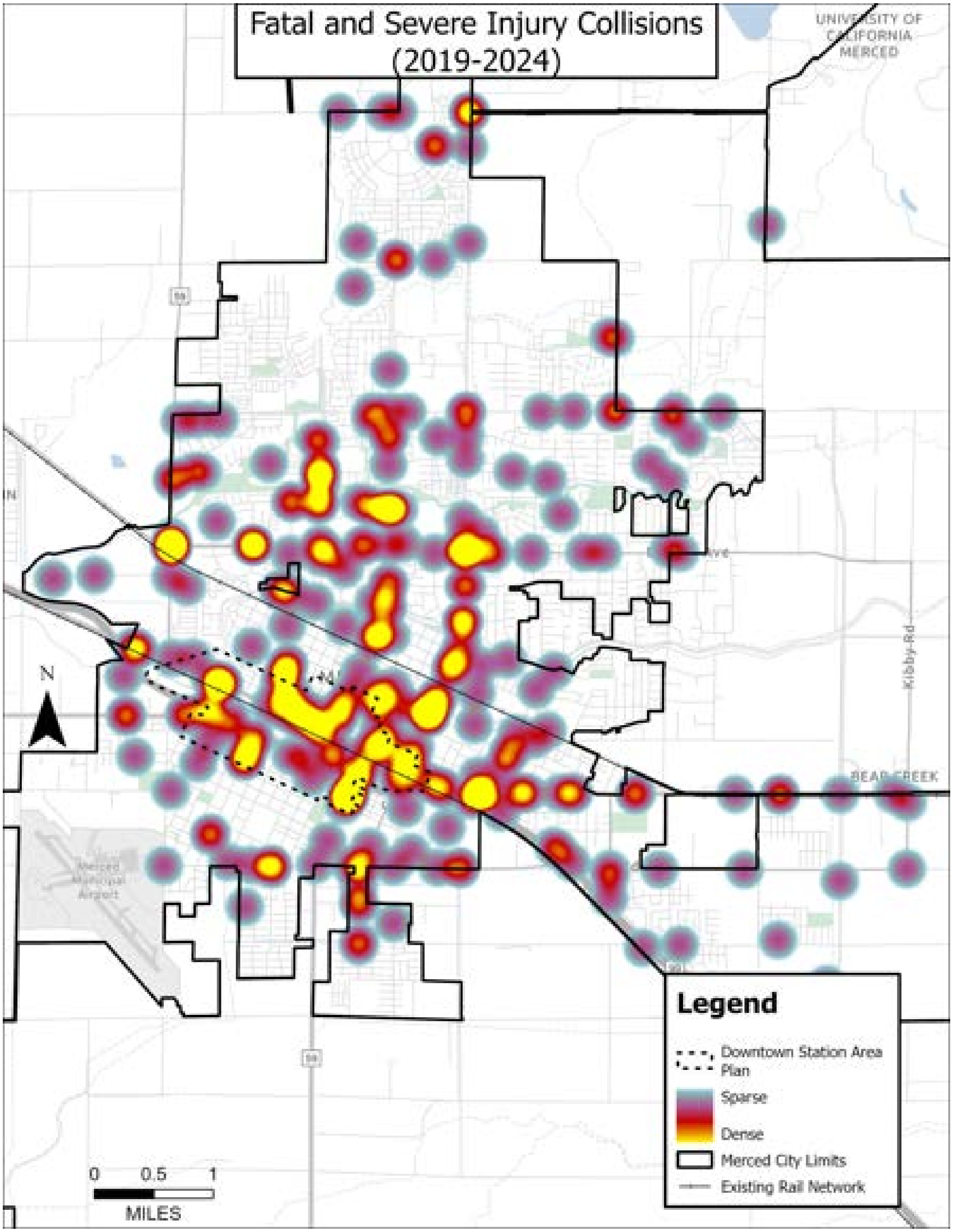

FIGURE 30. FATAL AND SEVERE INJURY COLLISIONS

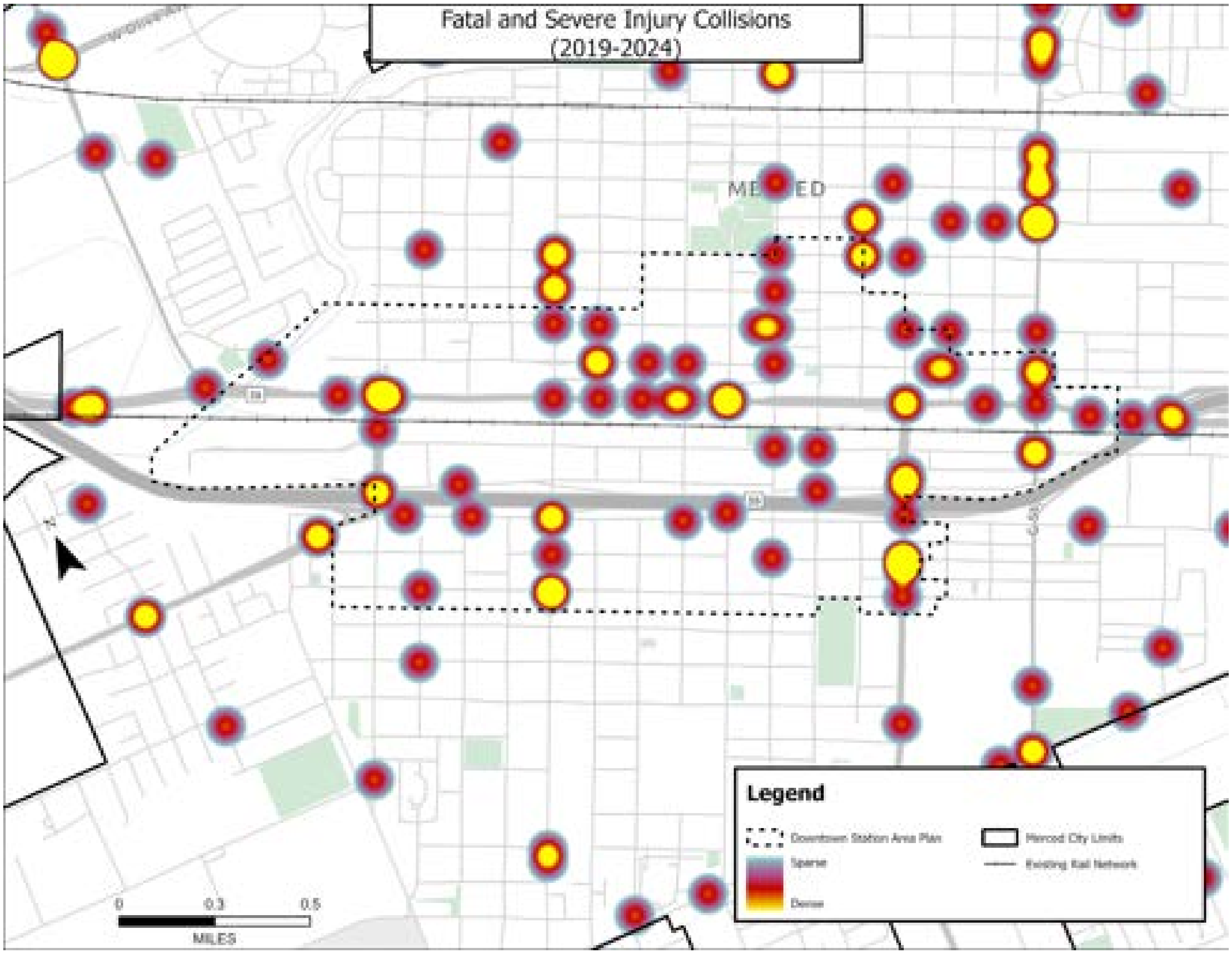

FIGURE 31. FATAL AND SEVERE INJURY COLLISIONS IN/NEAR DSAP AREA

The most common primary collision factors were unsafe speed (20%), auto row (24%), DUI (9%), traffic signals and signs (13%), and improper turning (11%). The primary collision factors are the actions or maneuvers that led to a collision. The primary collision factors are listed in **Figure 32**.

Collision type is the type of collision that was reported such as head-on, sideswipe, or rear-end. Throughout the six-year period, the most common collision types were broadside and rear-end (see **Figure 33**). Rear end collisions are typically an indicator of congestion or sudden stopping.

In the DSAP area, the primary collision factors for fatal and severe injuries were unsafe speed, improper turning, and automobile ROW. Unsafe speed typically is not only speeding but also unsafe speed for conditions, i.e., weather or traffic. An analysis of speeds in the DSAP area reveals that 16th Street consists of high rates of average speed (See Network Speeds).

Fatal and severe injury crash types in the DSAP area were primarily broadside (3%) and vehicle/pedestrian (10%). The vehicle/pedestrian conflicts support the LTS results that the DSAP area is a high-stress environment for pedestrians.

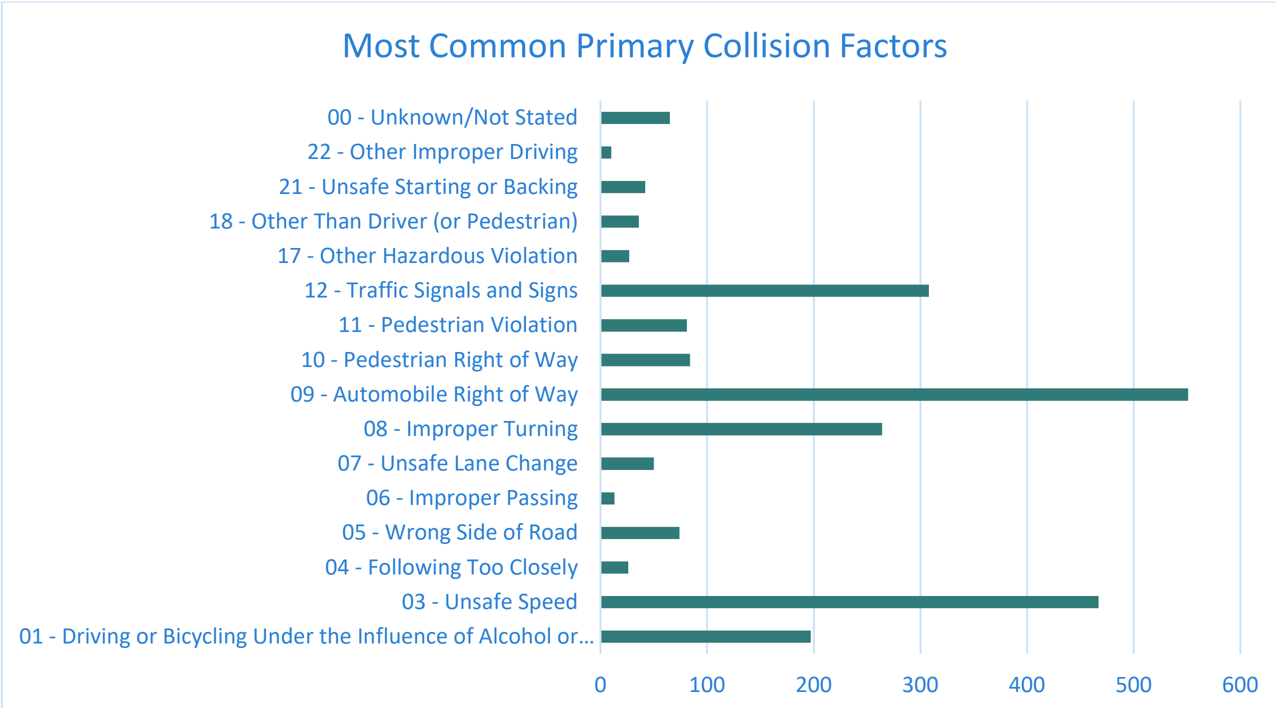

FIGURE 32. COMMON PRIMARY COLLISION FACTORS

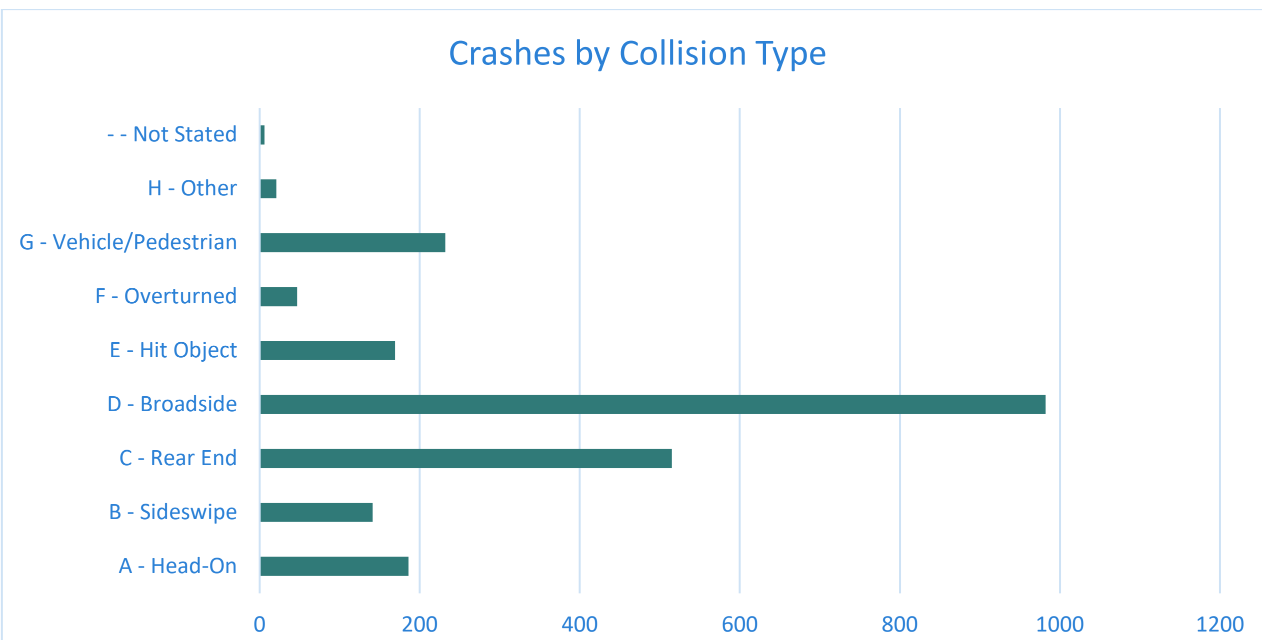

FIGURE 33. NUMBER OF CRASHES BY COLLISION TYPE

PEDESTRIAN AND BICYCLE COLLISIONS

In the City of Merced, there were 432 pedestrian or bicycle involved collisions (243 pedestrian collisions, 189 bicyclist collisions). Of all collisions in the City during the five-year period, 19% involved pedestrians and bicyclists. Notably, nearly half (47%) of fatal collisions involved a pedestrian or bicyclist. **Table 2** describes pedestrian and bicycle collisions citywide by severity.

In the DSAP area, there were 116 bicycle and pedestrian collisions, 27% of all bicycle and pedestrian collisions in the city. **Figure 34** illustrates bicycle and pedestrian collisions in and surrounding the DSAP area for all severities. Fatal and severe injury collisions involving bicyclist or pedestrian in the DSAP area are shown in **Figure 35**.

Of the 69 pedestrian collisions, 38% were fatal or severe injury. Approximately 26% of bike collisions in the DSAP were fatal or severe injury. As shown in **Figure 36** and **Figure 37**, 78% of bike collisions occurred on the high-stress network. Of pedestrian collisions, 68% occurred on high stress routes. These results are supportive of the pedestrian LTS and connectivity results, indicating that there are barriers such as 16th Street in the DSAP area that do not provide a low-stress route or connection for pedestrians.

TABLE 2. CITYWIDE PEDESTRIAN AND BICYCLIST COLLLISIONS

COLLISION SEVERITY	PEDESTRIAN COLLISIONS	BICYCLE COLLISIONS	PEDESTRIANS + BICYCLE COLLISIONS
FATAL	18	3	21
SEVERE INJURY	66	34	100
VISIBLE INJURY	109	95	204
COMPLAINT OF PAIN	50	57	107
TOTAL	**243**	**189**	**432**

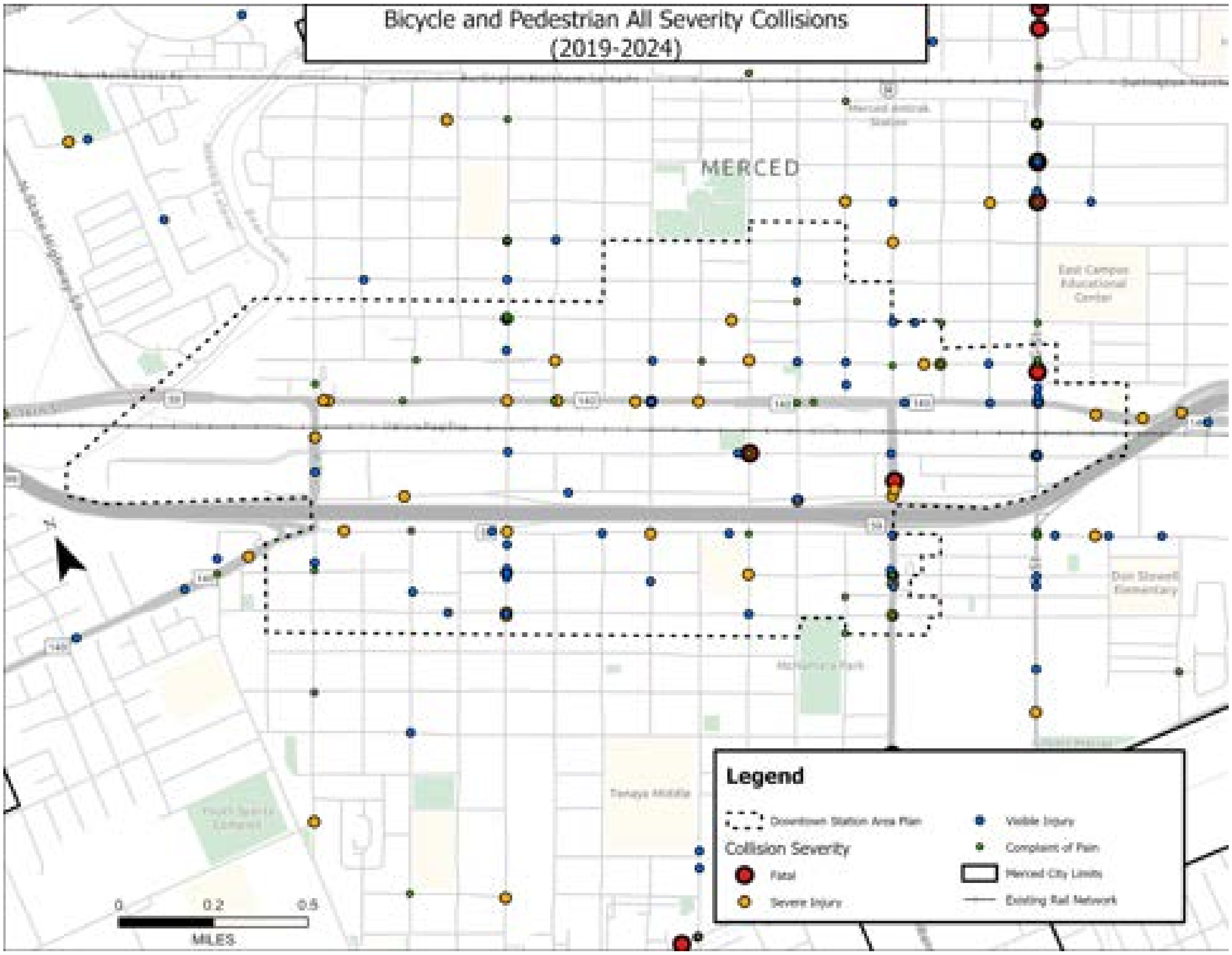

FIGURE 34. ALL SEVERITY PEDESTRIAN AND BICYCLE COLLISIONS IN AND SURROUNDING THE DSAP AREA

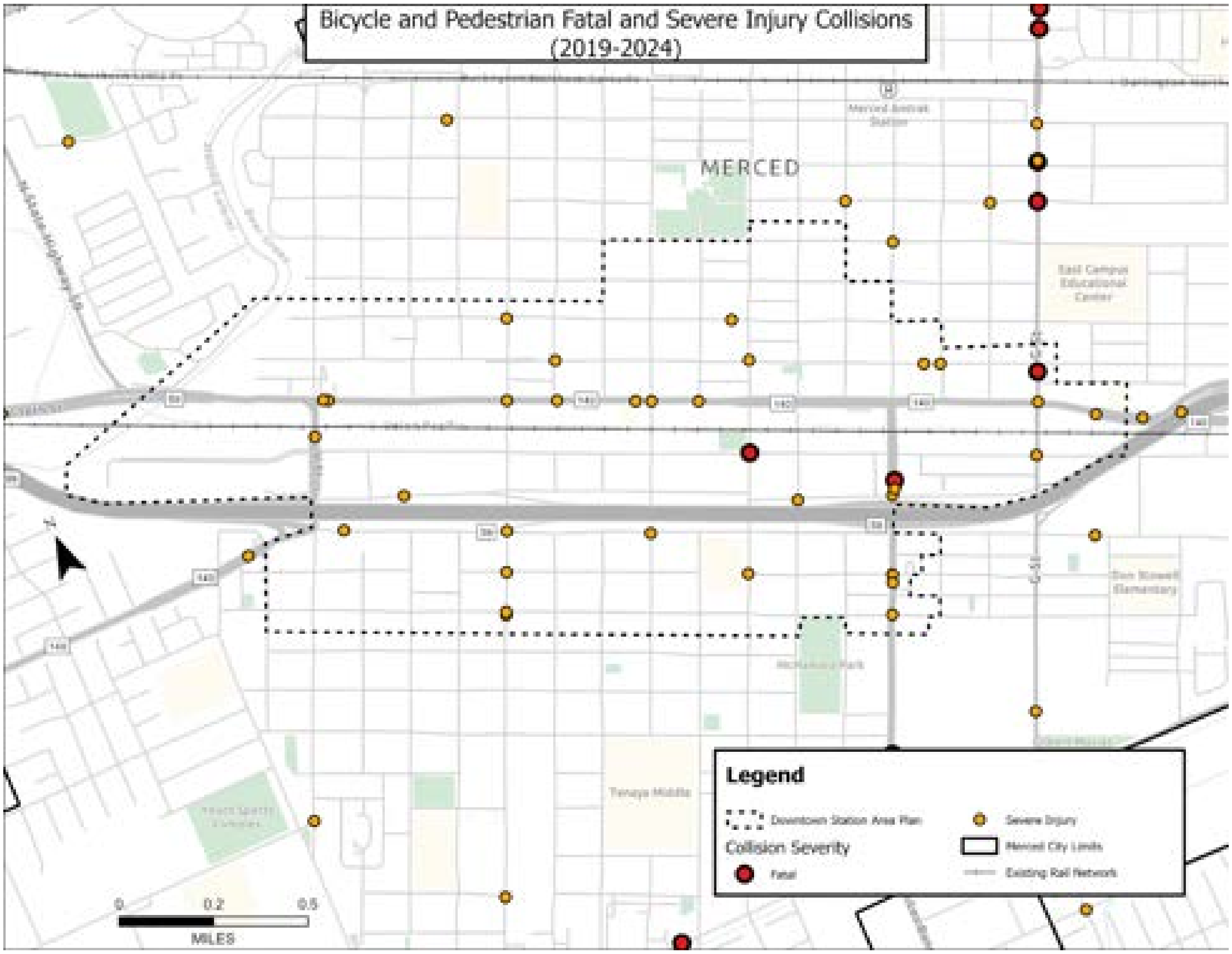

FIGURE 35. FATAL AND SEVERE INJURY BICYCLE AND PEDESTRIAN COLLISIONS WITHIN THE DSAP AREA

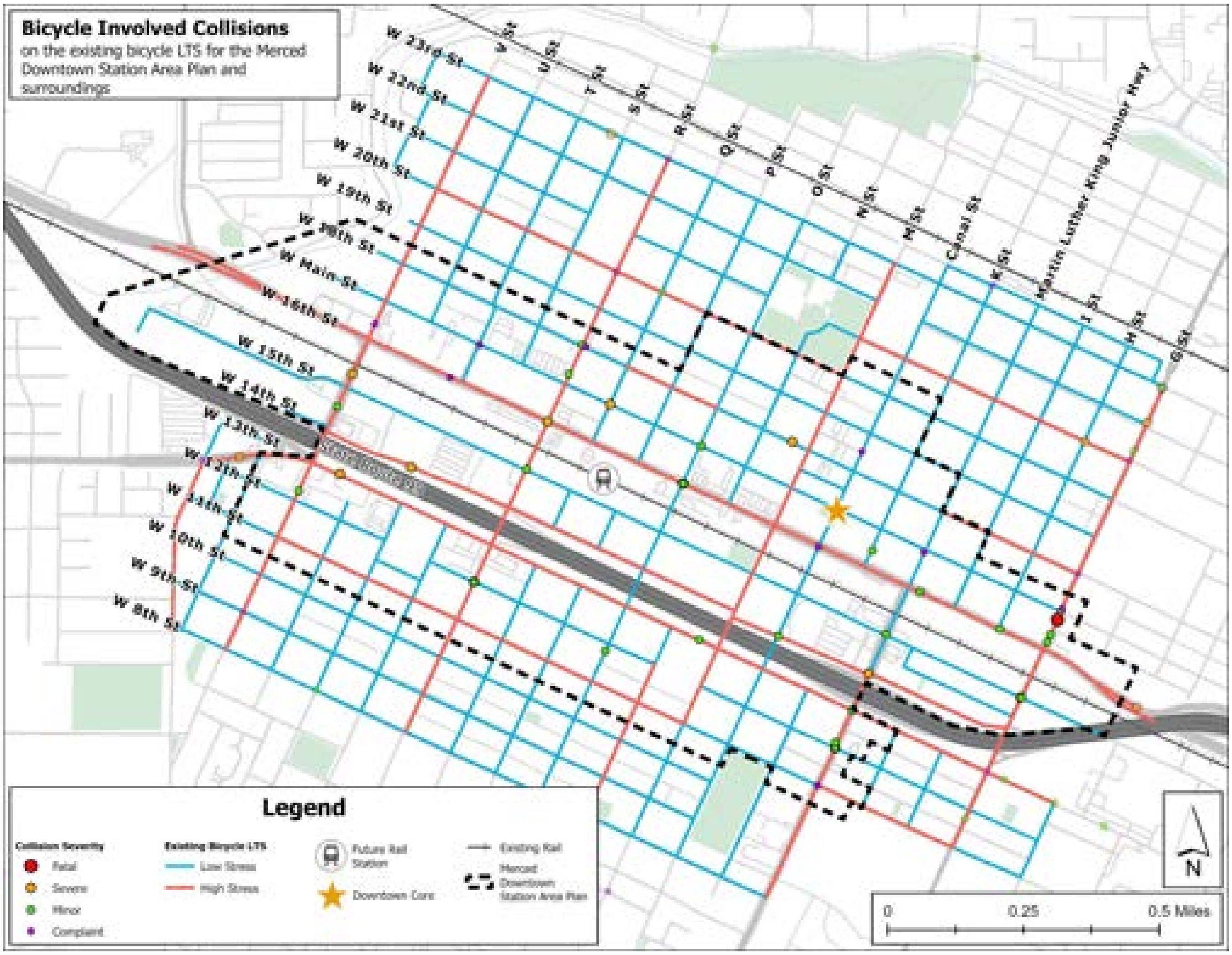

FIGURE 36. HIGH STRESS NETWORK BICYCLE COLLISIONS

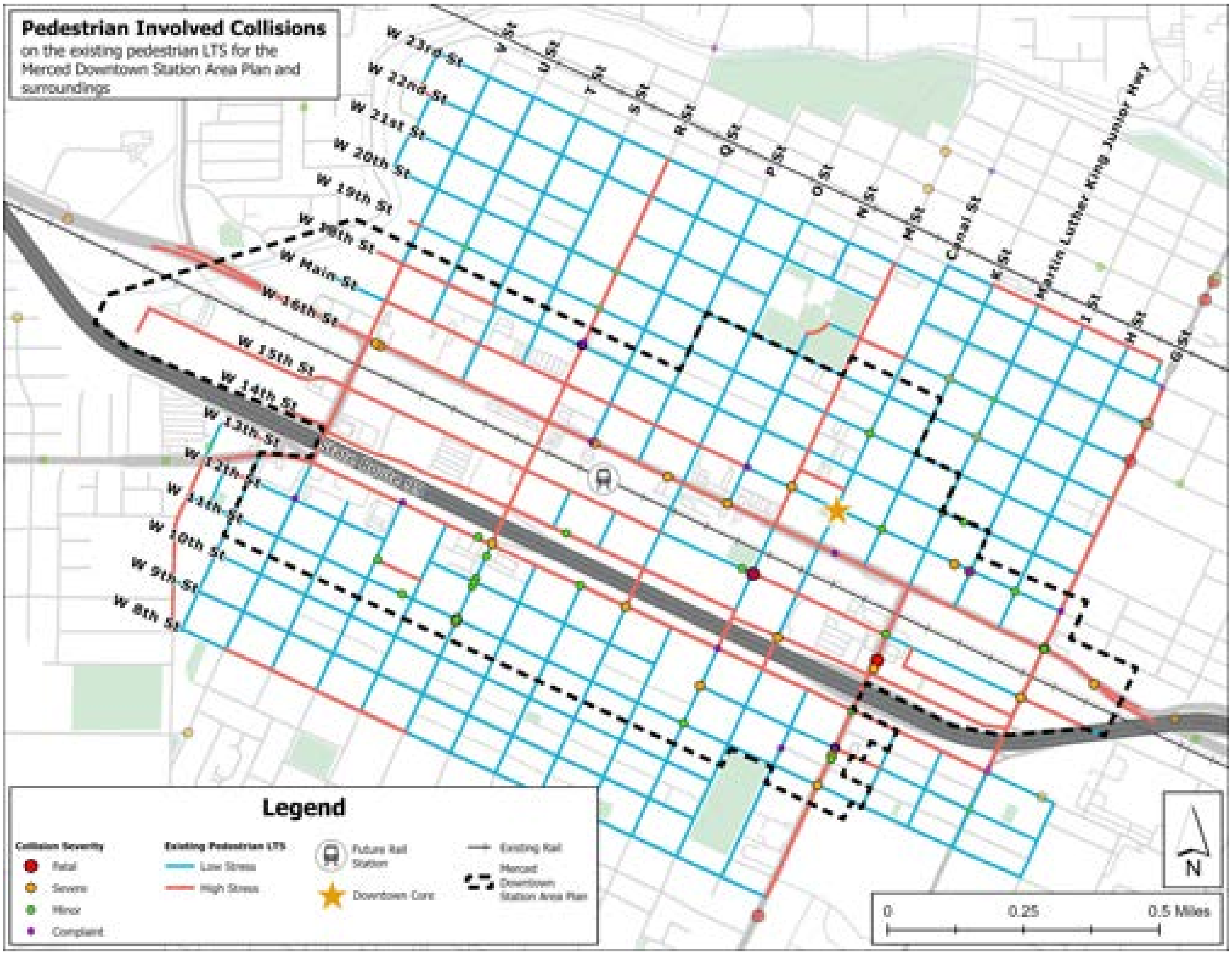

FIGURE 37. HIGH STRESS NETWORK PEDESTRIAN COLLISIONS

Of collisions with a PCF of unsafe speed, 3% involved a pedestrian. Pedestrian collisions that consisted of a PCF of unsafe speed, were primarily severe injury, with one fatal collision occurring. According to ITE, there is a correlation between vehicle speeds and pedestrian safety as explained below.

Based on the speed results in the next section, speeds are an issue on 16th Street and higher than the 40 MPH category shown in Figure 28, therefore suggesting that 80% of pedestrian collisions at would result in a fatality. Pedestrian collisions primarily occurred on high-stress network in the DSAP area and in addition to high speeds, this result indicates that 16th Street is a barrier for pedestrian connectivity and safety.

Pedestrian Safety and Motorist Speed*[7]*. *A motorist's speed is influenced by physical and psychological factors, which can be addressed through urban design. The pedestrian experience is influenced by the dominance of motor vehicles along arterial roadways, particularly their speed. Some pedestrians may intuitively sense risks associated with vehicle speed. 78 The US Department of Transportation indicates that vehicle collisions with pedestrians are twice as likely to result in a fatality when vehicles average speeds 40 miles per hour, than if vehicles average 30 miles per hour.*

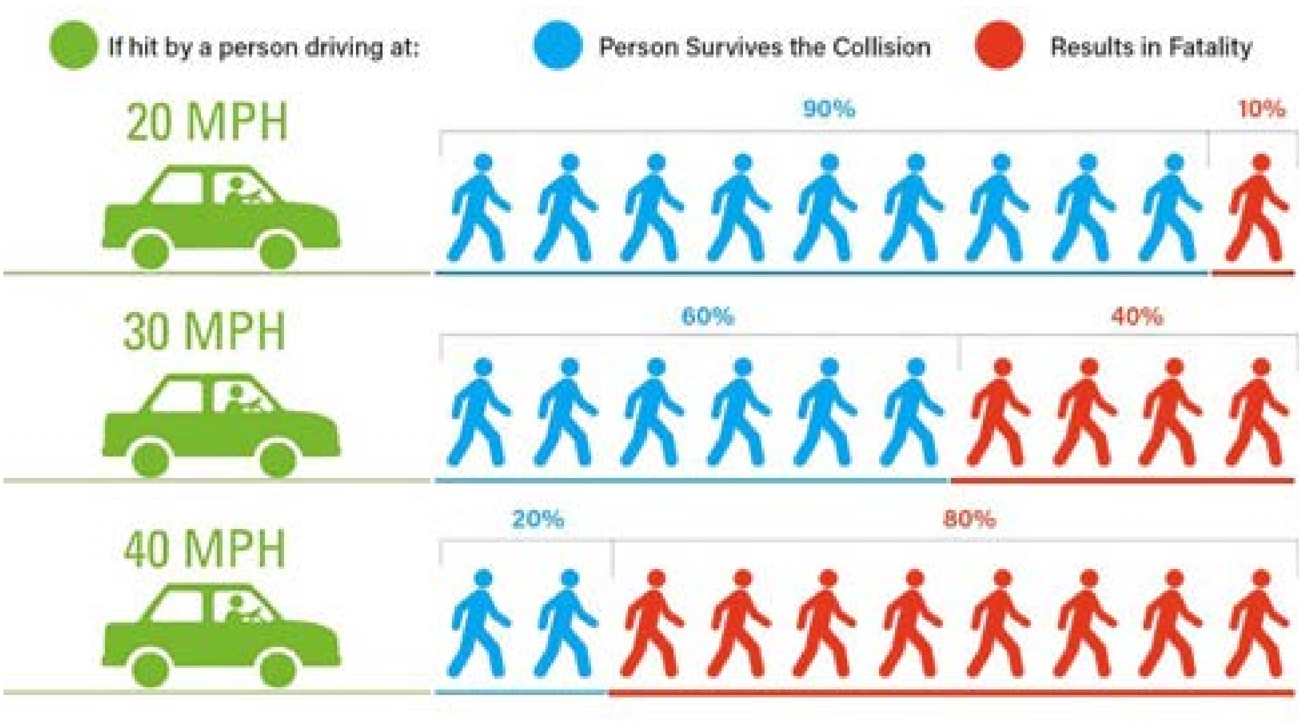

FIGURE 38. VEHICLE SPEED COMPARISON TO CHANCE OF PEDESTRIAN INJURY AND FATALITY

(Source: San Francisco MTA Vision Zero Action Plan, February 2015)

[7] ITE, "Speeds Relation to Safety," accessed September 2024, www.ite.org/technical-resources/topics/speed-management-for-safety/speed-as-a-safety-problem/.

NETWORK SPEEDS

Using the National Performance Management Research Data Set (NPMRDS), the average speeds for the DSAP area was determined. The average speeds were determined by dividing the segment distance by average travel time. **Table 3** through **Table 5** lists the average speed for the identified corridors by mode (i.e., passenger vehicles, heavy trucks, passenger vehicles and heavy trucks). Note that the NPMRDS does not include all streets.

As shown in to **Table 5**, 16th Street between V Street and G Street consists of average speeds that are higher than the posted speed limit of 35 miles per hour. The high rate of speed could be partially attributable to vehicles exiting/decelerating and entering/accelerating SR 99 via 16th Street and the current roadway configuration (i.e., little to no roadway curvature and 12-foot travel lanes).

TABLE 3. AVERAGE SPEEDS FOR PASSENGER VEHICLES

ROAD	EXTENT	AVERAGE SPEED BOTH DIRECTIONS (MPH)
16TH STREET	V Street to G Street	53.37
W 8TH STREET	V Street to MLK Jr Way	20.30
V STREET	West Avenue to 16th Street	20.24
R STREET	8th Street to 16th Street	18.27
G STREET	SR 99 to 16th Street	22.05
MLK JR WAY	Childs Avenue to 16th Street	20.22

TABLE 4. AVERAGE SPEEDS FOR TRUCKS

ROAD	EXTENT	AVERAGE SPEED BOTH DIRECTIONS (MPH)
16TH STREET	V Street to G Street	47.10
W 8TH STREET	V Street to MLK Jr Way	20.16
V STREET	West Avenue to 16th Street	15.93
R STREET	8th Street to 16th Street	23.15
G STREET	SR 99 to 16th Street	21.52
MLK JR WAY	Childs Avenue to 16th Street	26.41

TABLE 5. AVERAGE SPEEDS FOR PASSENGE VEHICLES AND TRUCKS

ROAD	EXTENT	AVERAGE SPEED BOTH DIRECTIONS (MPH)
16TH STREET	V Street to G Street	49.57
W 8TH STREET	V Street to MLK Jr Way	20.10
V STREET	West Avenue to 16th Street	18.69
R STREET	8th Street to 16th Street	17.81
G STREET	SR 99 to 16th Street	21.52
MLK JR WAY	Childs Avenue to 16th Street	17.81

PARKING DEMAND

This section analyzes existing data and analysis to estimate the total future parking needs associated with the planned future rail station.

This section uses existing data and analysis to estimate the total future parking needs associated with the downtown core and the planned future rail station. This estimation primarily relies on two sources, the 2011 Draft Transportation Technical Report for the California High-Speed Train Merced to Fresno Section Project EIR/EIS (CHSRA 2011) and the 2024 Merced Intermodal Track Connection Ridership and Revenue Methodology Memorandum published by the San Joaquin Joint Powers Authority (SJJPA 2024). The former of these documents is for a prior station plan but is the last document available which included station specific demand forecasting. These sources will be used to estimate the total site demand by mode and subsequently total parking demand.

This analysis supports existing General Plan policies 1.6, and 1.7.

PARKING INVENTORY

A parking inventory using geospatial analysis such as ArcGIS, Google Street View, and Google Earth was conducted to determine existing parking spaces within the DSAP area. The parking inventory includes on-street and off-street parking. As shown in **Figure 39**, existing parking within the DSAP area is primarily on-street with free and regulated parking spaces. The presence of on-street parking helps to support easy access to street-frontage commercial uses but tends to slow traffic and require right-of-way and may compete with other roadway demands.

Off-street public parking structures and surface lots existing within the Downtown Core land use context. The DSAP area has an estimated 3,500 free and 260 regulated curbside parking spaces. Most of the free spaces are in the residential area south of the future station, and the regulated spaces are near the offices and businesses in the downtown core – a 15-minute walk. There are three parking garages within the Downtown Core providing a combined estimate of 700 parking spaces. In addition, there are around ten city-owned surface parking lots around the downtown core with a combined estimate of 720 parking spaces. In the DSAP area, the total estimated number of spaces is 5,180.

Figure 40 illustrates the existing parking inventory within one block of the proposed HSR station. Within one block of the future rail station, there is primarily free on-street parking except on R Street and 16th Street where there is no parking allowed. Off-street surface parking lots surrounding the future station are primarily government and commercial spaces. Within one block from the HSR station, there are a total of 380 free and 50 regulated curbside parking spaces. Also, within one block there are around 730 surface parking spaces owned by various commercial businesses and government offices. This is important given the 15-minute service metric consideration for maximizing passenger rail access and ridership.

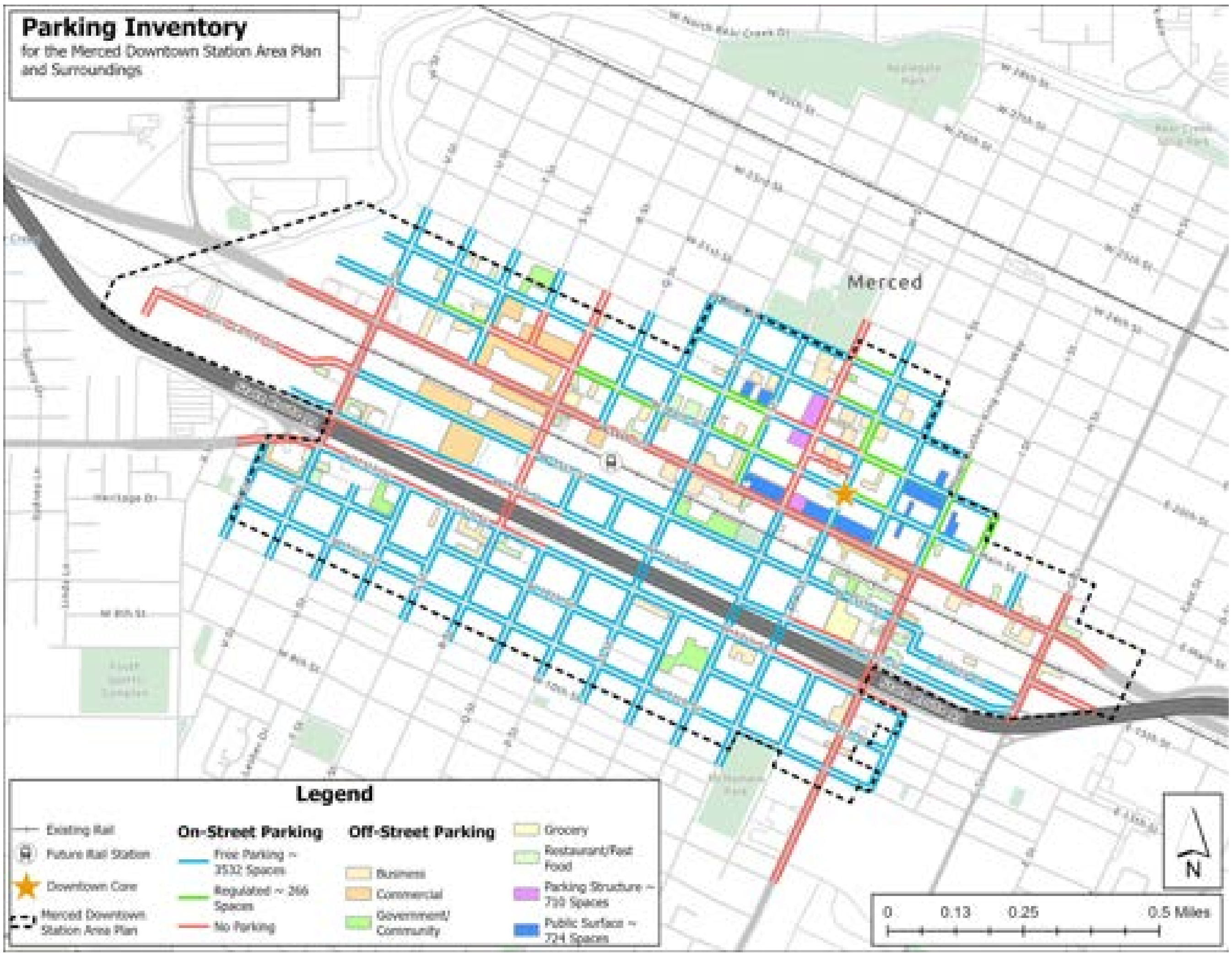

FIGURE 39. EXISTING PARKING INVENTORY WITHIN THE DSAP AREA

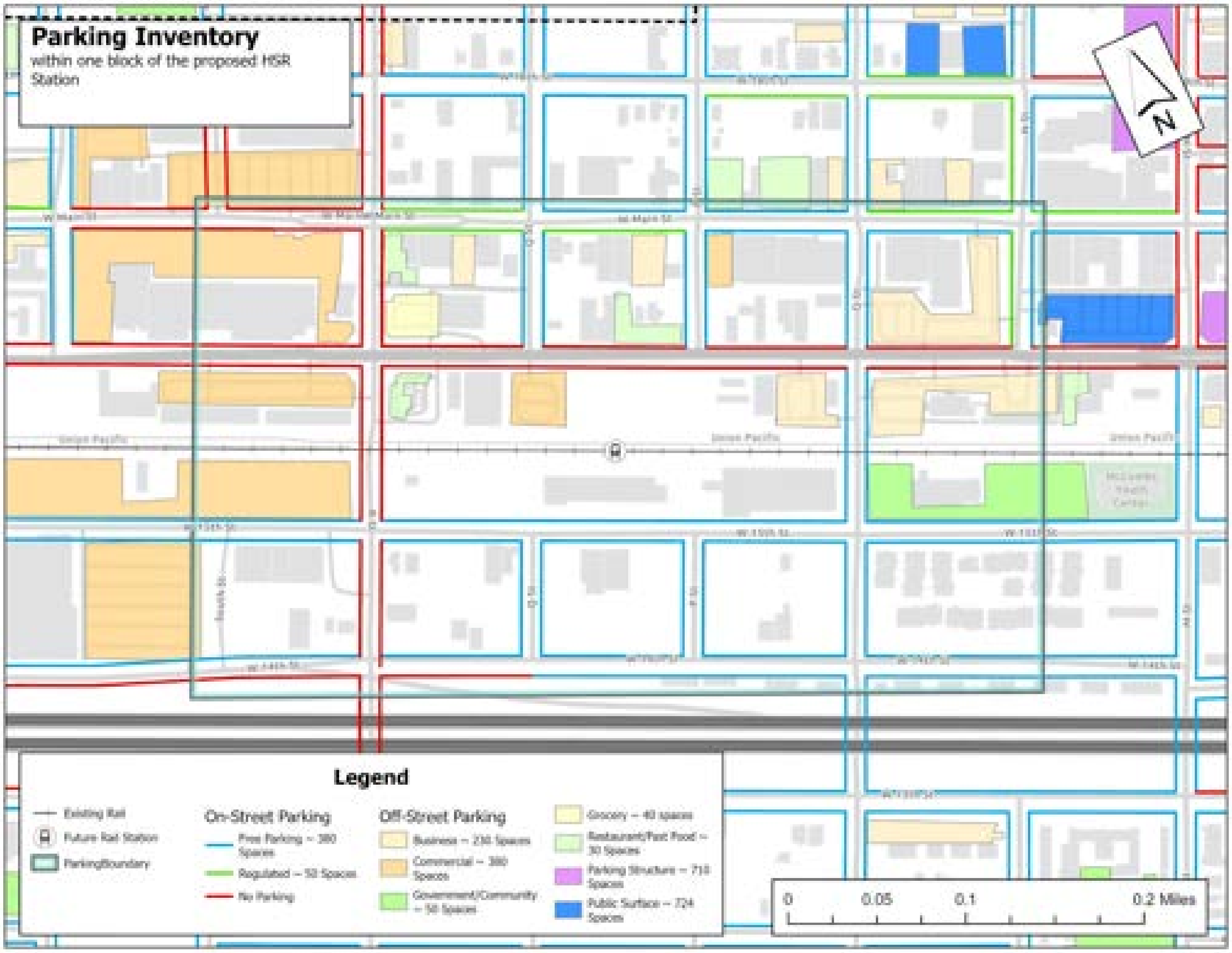

FIGURE 40. EXISTING PARKING INVENTORY, ONE-BLOCK OF HSR STATION

RAIL TRANSIT RIDERSHIP FORECASTS

The 2011 High-Speed Rail Authority (HSRA) Technical Report, did not include an extension of the Altamont Corridor Express (ACE) system to connect with the Amtrak system and did not assume that the California High Speed Rail Station would share a station with the San Joaquins. The CHSRA estimated 7,600 daily passenger boardings by 2035 at the Merced station (CHSRA 2011) under the prior plan. More recent forecasts completed by the SJJPA estimate the new station plan would have approximately 240 daily boardings and alightings from ACE, approximately 430 daily boardings and alighting’s from the Amtrak San Joaquins, and approximately 3,390 daily transfers combined from the ACE and San Joaquins system to the HSR system by 2040 (SJJPA 2024). The SJJPA report noted that co-locating platforms with the San Joaquins service would result in an increase in transfers between the San Joaquins and the HSR of approximately 30%. Based on this estimate, the total passenger boardings for the HSR system increased from the 2011 study by 780 boardings and alighting’s. The resultant boardings and alighting’s assumed for this study are shown in **Table 6**.

TABLE 6: ESTIMATED RAIL RIDERSHIP AT THE FUTURE RAIL STATION BY SYSTEM

DAILY BOARDINGS/ ALIGHTINGS ACE	DAILY BOARDINGS/ ALIGHTINGS SAN JOAQUINS	DAILY BOARDINGS/ ALIGHTINGS HSR	DAILY TRANSFERS	TOTAL DAILY STATION BOARDINGS/ ALIGHTINGS AT MERCED STATION
240	430	12,590	3,390	13,260

MODE SPLIT

The Draft Transportation Technical Report for the California High-Speed Train Merced to Fresno Section Project EIR/EIS (CHSRA 2011) included an estimated mode split for those accessing the Merced station. This mode split is presented in **Table 7** alongside a proposed modification to the assumed percentages. This modification is made in consideration of the increased use of transportation network companies (TNC) that has occurred since the study was prepared and in acknowledgement of modified site plans which will encourage increased transit and active transportation access to the site. This report also estimated the vehicle occupancy for trips accessing the HSR station site. This occupancy estimate is presented in **Table 8**.

The future juxtaposition of HSR relative to the surrounding land uses may promote mode shifts to transit and the number of people traveling by foot and bike into the DSAP area. This is supported by research that found residents of transit-oriented developments are approximately 4.9 times more likely to use transit than non-TOD residents[8].

TABLE 7: MODE SHARE PERCENTAGES ACCESSING THE FUTURE RAIL STATION

Data	MODE PERCENTAGE [A]						
	Pick-Up/ Drop Off	Drive Parked Vehicle	Rental Car	Taxi	Transit/ Shuttle	Walk/ Bike/ Other[B]	Total
Original CHSRA 2011	26%	45%	10%	7%	8%	4%	100%
Revised Mode Share	30%	42%	7%	3%	12%	6%	100%

Notes:

A. **Percentage rounded to the nearest 1%**

B. **Walking and Biking Mode trips are non-sequitur in a vehicle occupancy table.**

[8] Travel Characteristics of Transit-Oriented Development in California, Lund, Cervero, Wilson, 2004.

Data	MODE PERCENTAGE [A]						
	Pick-Up/ Drop Off	Drive Parked Vehicle	Rental Car	Taxi	Transit/ Shuttle	Walk/ Bike/ Other[B]	Total

Source: CHSRA, 2011

TABLE 8: AVERAGE VEHICLE OCCUPANCY ESTIMATE FOR THE MERCED HIGH SPEED RAIL STATION

Station	AVERAGE VEHICLE OCCUPANCY [A]					
	Pick-Up/ Drop Off	Drive Parked Vehicle	Rental Car	Taxi	Transit/ Shuttle	Walk/ Bike/ Other
Merced	1.65	1.48	1.9	1.4	40	1

Notes:

A. **Only includes those using the rail system e.g., excludes taxi drivers and TNC drivers**

Source: CHSRA, 2011

TOTAL PASSENGER RAIL PARKING DEMAND ESTIMATE

Compiled in this report from prior studies, approximately 3,760 trips to and from the site each day would be made where a personal vehicle is parked on site and approximately 490 trips to and from the site would be made where a rental car is used and parked on site. These trips represent both inbound and outbound trips on a daily basis. If 90% of the trips from these two categories are assumed to be daily short-term trips (e.g. entering and exiting the site on the same day), then the total daily peak parking need for the HSR station during the initial project phase where the HSR is operating from Merced to Bakersfield is approximately **2,125** spaces.

TRANSIT SERVICE PARKING DEMAND

Currently, the planning area uses the Merced Transportation Center as its hub for regional and local bus services including The Bus, YARTS, and Greyhound. This is the only transportation center in Merced for local and regional services.

There are three transit providers that currently operate at the existing Transportation Center and would operate at the future rail station. The primary transit agency in Merced is the Merced Transit Authority (MTA) which operates “The Bus”. Additionally, transit options that serve UC Merced (CatTracks) and Yosemite National Park (YARTS) operate and provide transit services to the City of Merced. For further information regarding the transit providers and their ridership, see **Appendix C**.

According to MCAG, parking demand for future services is not anticipated to be significant. Currently, The Bus employees and operators park at The BUS operations and Maintenance Facility; however, there is some need for supervisor, security, and driver exchange parking (approximately eight parking spots). For regional services, MCAG assumes that currently, there are 40 parking spots with approximately 50% utilization. Future rubber tire transit demand is assumed to be 40 parking spaces for local services and 60 parking spaces for regional services, therefore 100 parking spaces is estimated to be needed. If passenger rail and rubber-tire transit services were to be consolidated, based on the parking demand estimates, a total of **2,225** parking spaces is estimated to be needed.

CURBSIDE MANAGEMENT

This section analyzes opportunities for Transportation Network Companies (TNCs) (i.e., Uber, Lyft, food delivery services) activities using curbside management. Opportunity areas for TNC were determined based on **Figure 41** and the identified storefront activation areas.

An assumption was determined that the storefront activation areas identified in **Figure 41**, meet the criteria for curbside management strategies for TNCs and passenger pick up and drop off zones. The storefront activation zones are commonly placed in front of high turnover establishments such as restaurants.

To determine candidate curb area for potential TNC activity, a geospatial and visual review of the activation areas was conducted to determine if it was adequate for exclusive passenger drop off/loading activity. **Table 9** and **Figure 42** identify locations that are feasible for TNC activities. Based on this analysis, 40% of the identified locations area are suitable for TNC activities. This constitutes 1,977 lineal feet of curbside which is 43% of storefront activation curb area.

This section supports existing General Plan Policies 1.1, 1.3, 1.5.

Building Frontage & Pedestrian Activation

FIGURE 41. DSAP BUILDING FRONTAGE AND PEDESTRIAN ACTIVATION

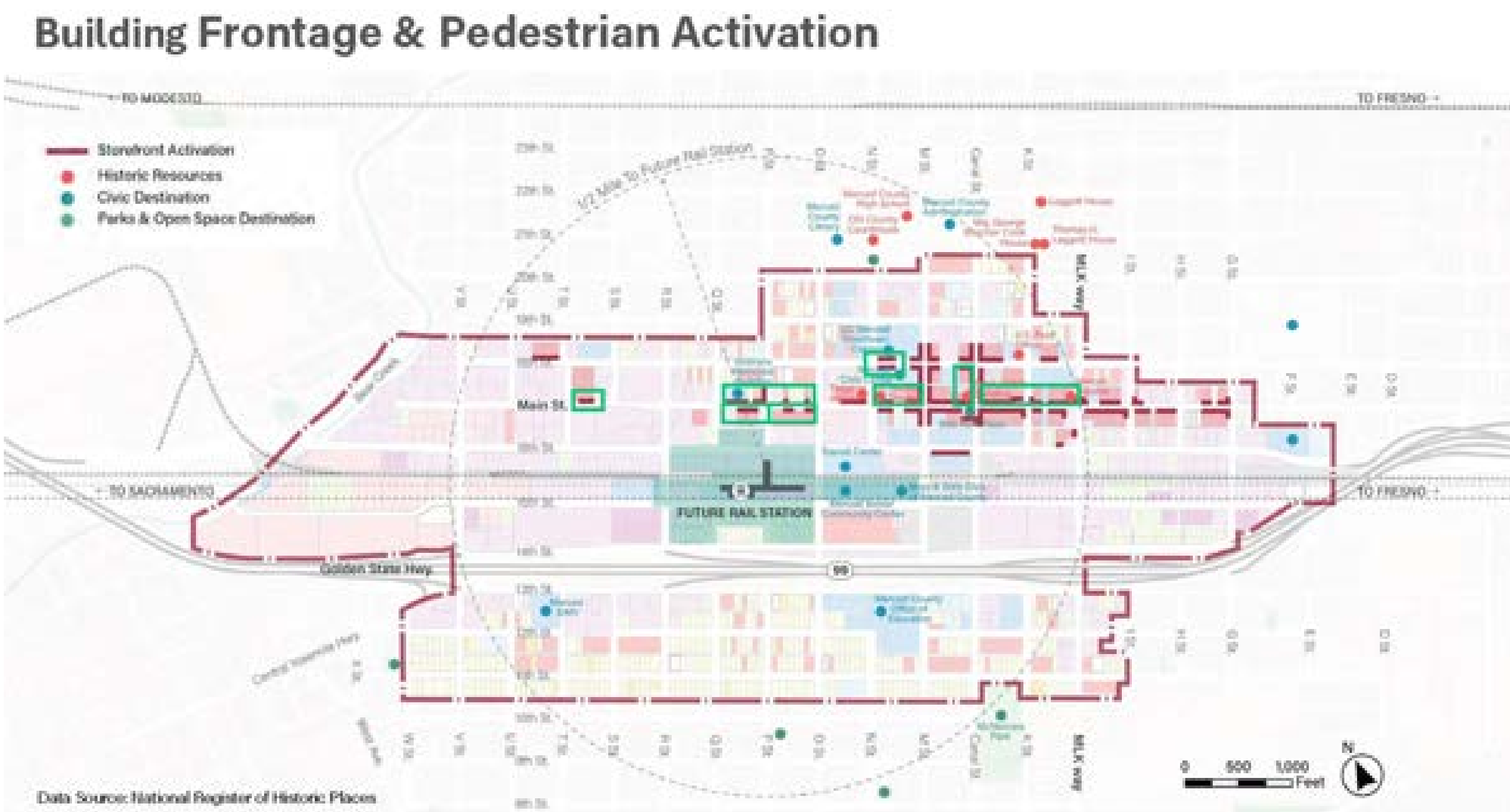

FIGURE 42. POTENTIAL LOCATION FOR TNC ACTIVITIES

TABLE 9. STOREFRONT ACTIVATION AREAS FOR POTENTIAL TNC ACTIVITIES

STREET	DIRECTION	CROSS STREET	BUSINESS TYPE	LENGTH (FT)	ADEQUATE FOR TNC ACTIVITIES	CONSIDERATIONS
MAIN ST	east of	T St	Commercial	140	Yes	N/A
MAIN ST	east of	Q St	Memorial	150	Yes	Existing ADA Curb Parking
MAIN ST	west of	P St	Funeral Home	38	Yes	TNC would need to be west of driveway
MAIN ST	west of	P St	Commercial	98	Yes	N/A
P ST	north of	Main St	Funeral Home	48	Yes	TNC would need to be prevailing to driveway and intersection
MAIN ST	east of	P St	Restaurant	22	Yes	Existing street parking
MAIN ST	west of	O St	Dispensary	48	No	Existing street parking, near driveways and intersection
MAIN ST	west of	O St	Commercial	315	Yes	Existing ADA loading space, on-street parking, merge lane

STREET	DIRECTION	CROSS STREET	BUSINESS TYPE	LENGTH (FT)	ADEQUATE FOR TNC ACTIVITIES	CONSIDERATIONS
MAIN ST	west of	N St	Lodging	88	No	Existing 30-minute parking
MAIN ST	east of	N St	Commercial	82	Yes	Existing 30-minute parking
MAIN ST	east of	N St	Commercial	82	No	Existing on-street parking and not high-turnover
MAIN ST	west of	M St	Lodging	127	Yes	Existing ADA loading, 30-minute parking, Hotel Valet
MAIN ST	west of	M St	Commercial	153	Yes	Existing yellow loading zone
MAIN ST	east of	M St	Commercial	65	No	Existing on-street parking, not high-turnover
MAIN ST	east of	M St	Commercial	106	No	Existing on-street parking, not high-turnover
MAIN ST	west of	Canal St	Commercial	100	No	Existing on-street parking, not high-turnover

STREET	DIRECTION	CROSS STREET	BUSINESS TYPE	LENGTH (FT)	ADEQUATE FOR TNC ACTIVITIES	CONSIDERATIONS
MAIN ST	west of	Canal St	Commercial	140	No	Existing on-street parking, not high-turnover
MAIN ST	east of	Canal St	Restaurant	122	No	Existing 30-minute on-street parking
MAIN ST	west of	K St	Commercial	70	No	Existing on-street parking, not high-turnover
MAIN ST	east of	Canal St	Commercial	130	Yes	Existing on-street parking
MAIN ST	west of	K St	Commercial	108	Yes	Existing on-street parking
MAIN ST	east of	K St	Commercial	61	No	Existing on-street parking, driveways, not high-turnover
MAIN ST	east of	K St	Commercial	18	Yes	Existing 30-minute parking space
MAIN ST	east of	K St	Restaurant	60	Yes	Existing on-street parking

STREET	DIRECTION	CROSS STREET	BUSINESS TYPE	LENGTH (FT)	ADEQUATE FOR TNC ACTIVITIES	CONSIDERATIONS
MAIN ST	west of	MLK Way	Entertainment	128	Yes	Existing on-street parking
MAIN ST	west of	MLK Way	Commercial	125	No	Existing On-street and off-street parking, not high-turnover
MAIN ST	east of	MLK Way	Commercial	192	No	Existing ADA loading, on-street parking, not high-turnover
MAIN ST	east of	MLK Way	Restaurant	50	No	Existing off-street parking, intersection and driveway operations
MAIN ST	west of	I St	Commercial	196	No	Existing on-street and off-street parking, not high-turnover
MAIN ST	east of	I St	Commercial	36	No	Existing on-street and off-street parking, not high-turnover
MAIN ST	east of	I St	Commercial	110	No	Existing on-street parking, vacant building, not high-turnover
MAIN ST	west of	H St	Commercial	145	No	Existing on-street parking, not high-turnover

STREET	DIRECTION	CROSS STREET	BUSINESS TYPE	LENGTH (FT)	ADEQUATE FOR TNC ACTIVITIES	CONSIDERATIONS
MAIN ST	west of	G St	Commercial	38	No	Existing on-street and off-street parking, not high-turnover
MAIN ST	west of	G St	Commercial	85	No	Existing on-street and off-street parking, not high-turnover
CANAL ST	north of	Main St	Public Service	95	No	Existing on-street parking, not high-turnover
CANAL ST	north of	Main St	Commercial	75	Yes	Existing on-street diagonal parking
CANAL ST	south of	18^{th} St	Commercial	95	No	Existing on-street and off-street parking, not high-turnover
CANAL ST	south of	18^{th} St	Commercial	75	Yes	Existing on-street diagonal parking
CANAL ST	north of	18^{th} St	Commercial	71	No	Existing on-street parking, not high-turnover
CANAL ST	north of	18^{th} St	Commercial	95	No	Existing on-street and off-street parking, not high-turnover

STREET	DIRECTION	CROSS STREET	BUSINESS TYPE	LENGTH (FT)	ADEQUATE FOR TNC ACTIVITIES	CONSIDERATIONS
18TH ST	west of	Canal St	Bank	45	No	Existing on-street and off-street parking, not high-turnover
18TH ST	west of	Canal St	Commercial	55	No	Existing on-street and off-street parking, not high-turnover
18TH ST	east of	Canal St	Commercial	135	No	Existing 30-minute parking
18TH ST	east of	K St	Commercial	180	No	Existing on-street and off-street parking, adjacent to public parking lot, not high-turnover
18TH ST	east of	N St	Public Services	210	Yes	Key destinations (Civic Center and UC Merced Downtown Campus)

STATION SITE ACCESS MANAGEMENT

Site access management is considered for the future rail station to ensure that transit providers and passengers have easy and adequate access to boarding and alighting areas.

DKS Associates has reviewed the rail station site access based on the presentation to the High-Speed Rail Authority (HSRA) Board of Directors by its consultants in November 2023, included in Appendix D. The key elements of the design concepts proposed by the HSRA include the station location proposed between 16th and 15th Streets and R and O Streets (see **Figure 43**). The design concepts also propose O Street as a bicycle corridor and a separated facility viaduct from the bike station to M Street with proposed uses of open space and activity activation zones. A SR 99 underpass along O Street would provide a relatively direct and potentially pedestrian/bike-friendly connection to South Merced.

For site access adjacent to the station, HSRA'S design concept proposes maintaining 16th Street to a two-way four-lane facility while adding a passenger drop-off lane adjacent to the station. The HSRA concept also places local bus operations across 16th Street from the station, but this did not reflect input from the local transit agency.

This presentation also illustrates 15th Street as a three-lane one-way westbound corridor with a passenger pick-up lane adjacent to the station. Additionally, the design concepts illustrate the regional bus operations on the southwest corner of 15th Street and R Street, access for which may be encumbered by making 15th Street one-way.

Based on input from MCAG, MCAG would prefer the local bus station to be placed juxtaposed on-site at the future HSR station to reduce pedestrians crossing 16th Street and risk of vehicle/pedestrian conflicts. Previous concerns regarding site access from MCAG include conflicts between cars and buses near the existing Transportation Center, increasing potential for queuing on R Street.

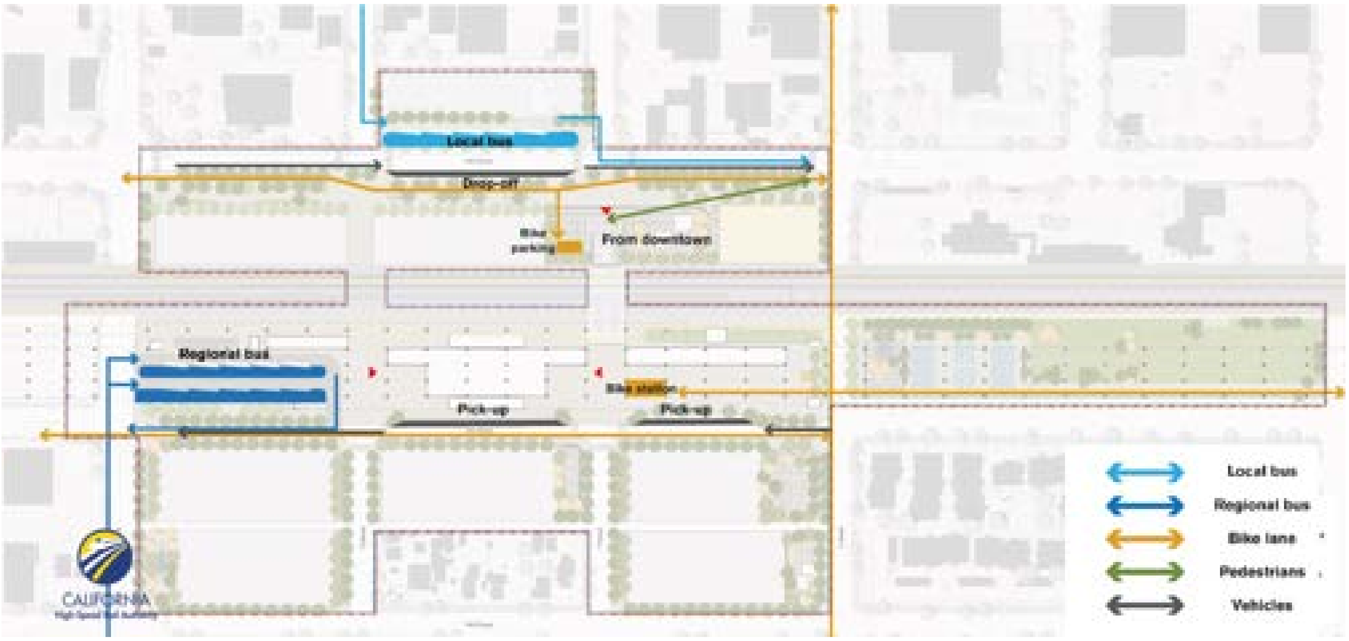

FIGURE 43. MERCED STATION CONCEPT DESIGN

Source: High Speed Rail Authority Presentation, Designed by Fosters+Partners, ARUP.

APPENDIX

CONTENTS

APPENDIX A. BICYCLE AND PEDESTRIAN LTS METHODOLOGY

APPENDIX B. ACTIVE TRANSPORATION PROJECTS

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APPENDIX D: HIGH SPEED RAIL AUTHORITY DESIGN CONCEPT PRESENTATION