AccessMV—Comprehensive Modal Plan
Summary of Data Collection and Analysis

AccessMV aims to identify the City's primary transportation network serving all modes, with a focus on major corridors and first-/last-mile connections. In order to identify the primary transportation network, AccessMV is synthesizing existing conditions and planned improvements from more than 30 different City and regional plans affecting each mode of transportation in Mountain View.

Below is a summary of the data collection and analysis completed to date.

Pedestrian Infrastructure

AccessMV has developed or updated Geographic Information System (GIS) layers for pedestrian and bikeway facilities in the City. The new Citywide inventory of pedestrian facilities is presented in Figure 1.

It should be noted that there are currently around 8 miles of unimproved or partially unimproved streets remaining in the City. Unimproved streets are typically streets that were built by the County of Santa Clara and later annexed into the City. These streets generally do not have standard pavement sections, vertical curb, gutter, sidewalk, adequate drainage facilities, or City standard streetlights. Right-of-way widths may also vary along these streets. The lack of standard pavement sections and drainage facilities limits the ability to add sidewalks with curb and gutter. The City has historically relied on the formation of assessment districts to help fund the major investment necessary to bring these streets up to fully improved City street standards.

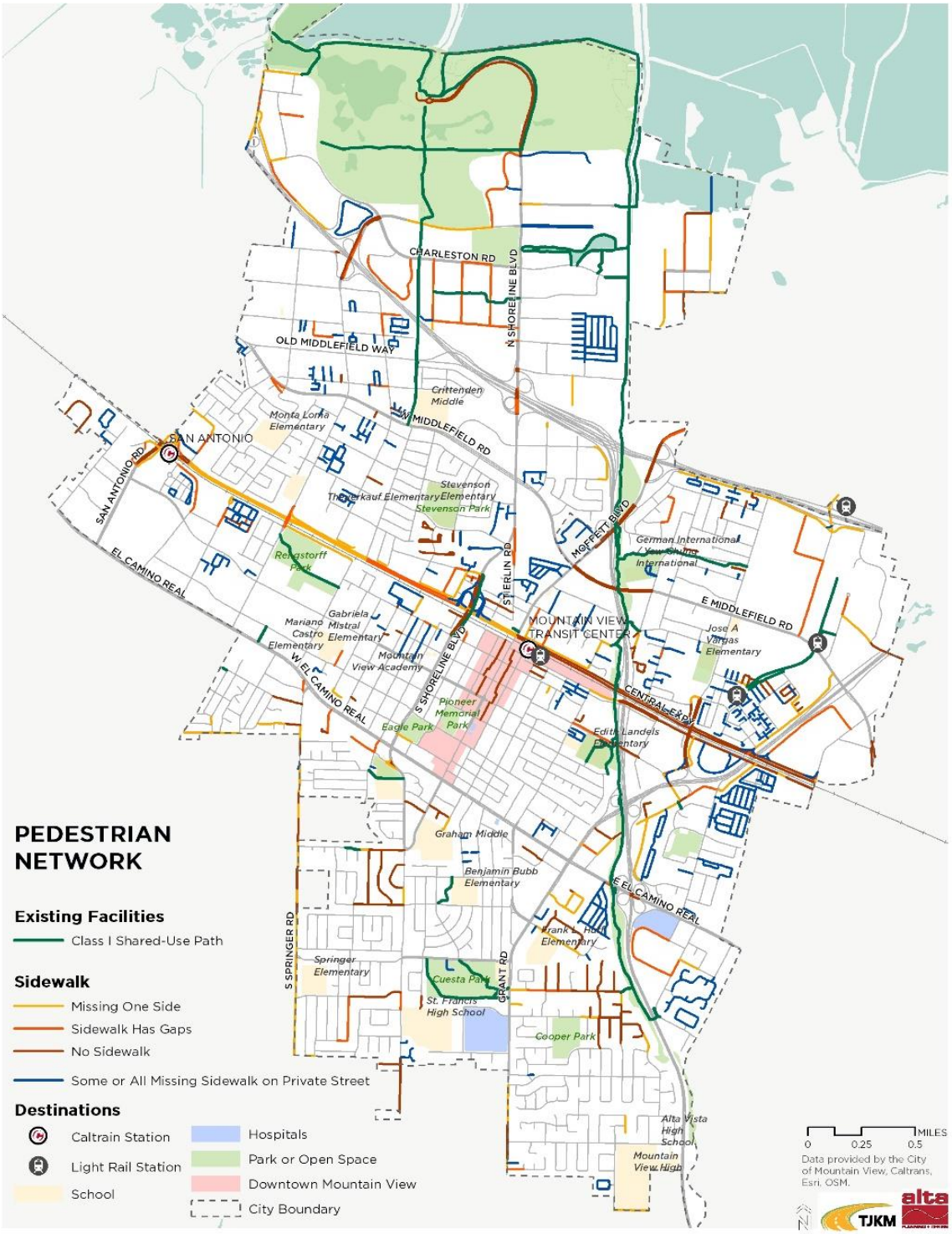

Figure 1: Existing Citywide Pedestrian Facilities

Planned pedestrian facilities, including sidewalks along new streets that are planned under various precise plans, are provided in Figure 2.

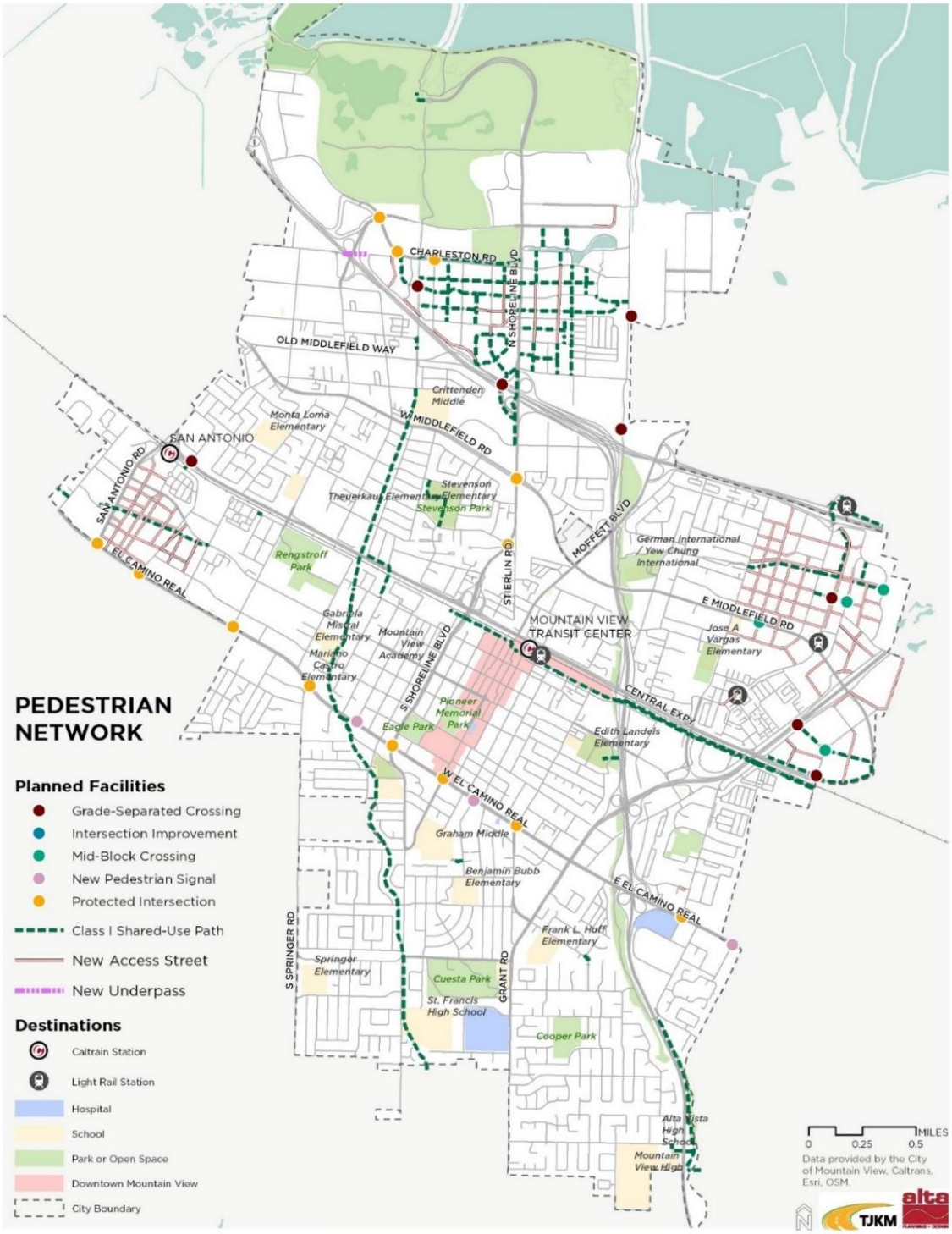

Figure 2: Planned Citywide Pedestrian Facilities

Pedestrian Quality of Service (QOS)

The Pedestrian QOS metric was developed to equate information on the pedestrian network facilities to user experience. The methodology used for this work incorporates data on land use density and mix, street connectivity, sidewalk continuity, traffic speed, and street width. Findings from the Pedestrian QOS analysis are presented in Figure 3.

Key findings that emerged from the Citywide analysis of Pedestrian QOS include the following:

- Mountain View's most walkable conditions, as measured by Pedestrian QOS, exist in the downtown and Old Mountain View neighborhood, where there are mixed land uses, higher densities, and a fine-grained grid of relatively narrow, low-speed streets.

- Areas along higher-speed auto-oriented corridors, such as Central Expressway, Shoreline Boulevard, and Middlefield Road, were found to be less walkable.

- Of all the higher-speed auto-oriented corridors, El Camino Real has the highest walkability based on contextual factors such as density, land use diversity, and surrounding street network connectivity before accounting for conditions of the street itself.

- Formerly industrial areas with large block sizes and/or disconnected street networks, such as North Bayshore and East Whisman, are less walkable. However, this will be addressed with build-out of the Precise Plans for these areas.

- The Waverly Park residential neighborhood also had lower walkability due to limited street connectivity and a lack of nonresidential land uses, which make it difficult to reach everyday activities on foot.

- The City's largest park, Shoreline at Mountain View, is located in an area of very low walkability, which means that the park is unlikely to be reached on foot.

Figure 3: Citywide Pedestrian Quality of Service

Bicycle Infrastructure

The City's existing and planned bicycle facilities network is shown in Figure 4. This information is also available on the Citywide bikeway map available via the City's GIS portal.

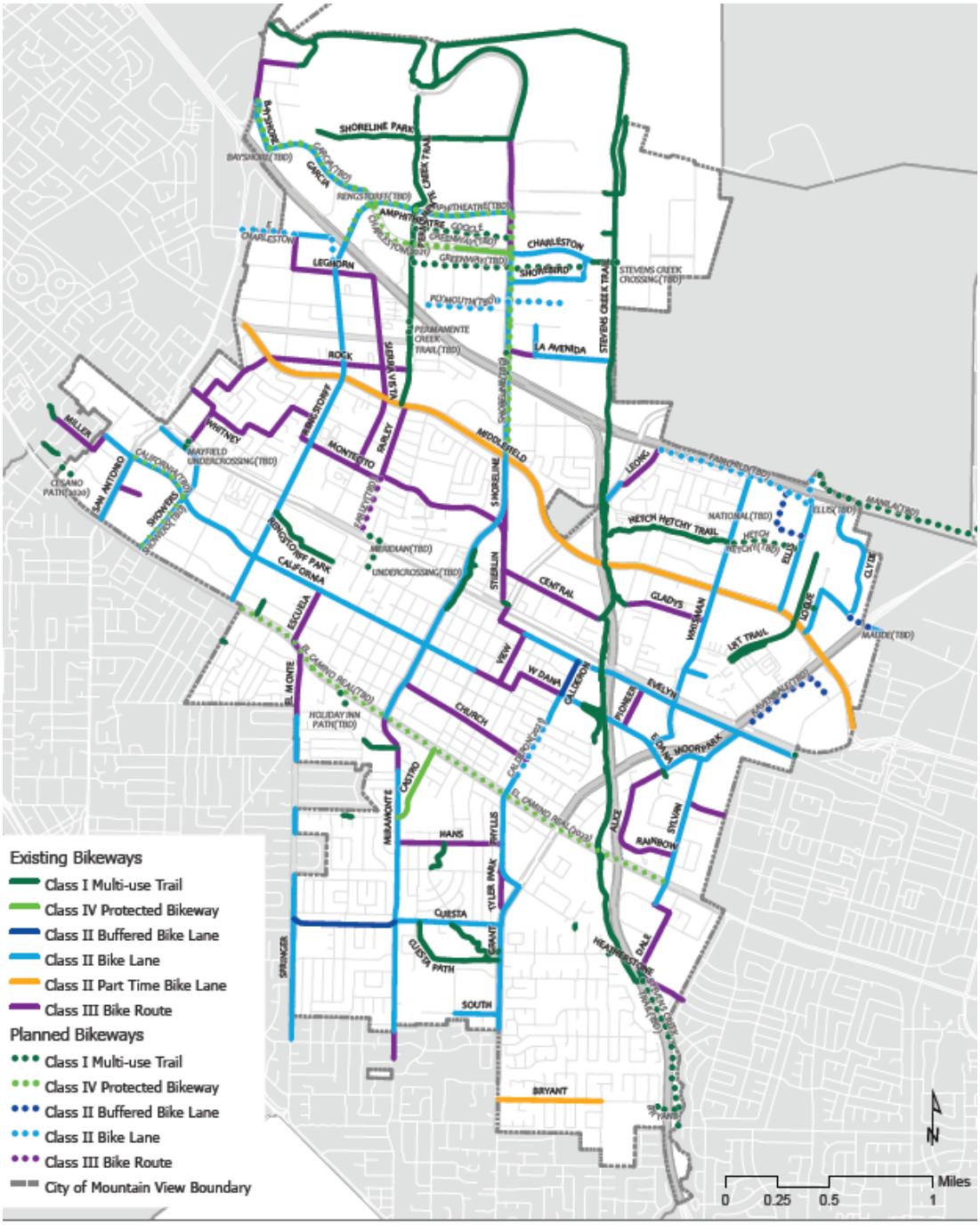

Figure 4: Existing and Planned Citywide Bicycle Facilities

Bicycle Level of Traffic Stress (LTS)

The Bicycle LTS analysis was conducted using a modified version of the Mineta Transportation Institute (MTI)'s methodology. The Bicycle LTS methodology incorporated data on street width (number of lanes) and configuration, posted speed limit, presence and type of bicycle facilities. LTS includes the following four scores based on the rider's comfort levels:

- LTS 1—All Ages and Abilities (AAA)
- LTS 2—Interested but Concerned
- LTS 3—Somewhat Confident
- LTS 4—Highly Confident

Results from the Bicycle LTS analysis for the existing and planned network are presented in Figures 5 and 6, respectively. The planned network represents the complete bicycle network after accounting for all projects listed in the 31 plans under analysis. This includes several bicycle projects already in design or construction, including protected bikeways on Shoreline Boulevard, Charleston Road, and El Camino Real and bike lanes on Calderon Avenue and Stierlin Road. However, the planned network overall may represent a somewhat optimistic perspective for cyclists since many planned projects have not undergone feasibility assessment.

Figure 5: Citywide Bicycle Level of Traffic Stress for the Existing Network

Figure 6: Citywide Bicycle Level of Traffic Stress for the Planned Network

The resulting Bicycle LTS results were used to help visualize the network of "All Ages and Abilities" facilities (LTS 1) as shown in Figure 7.

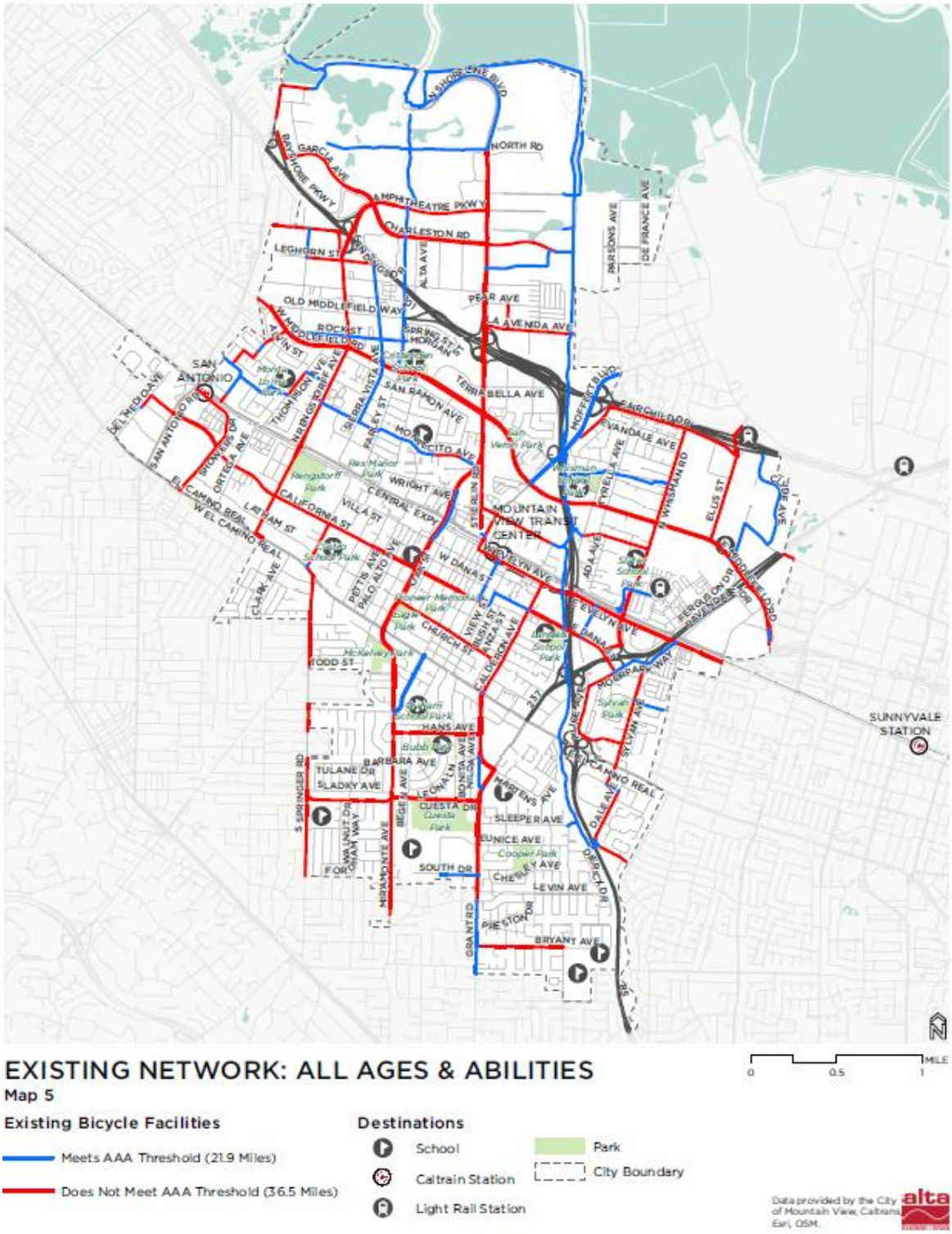

Figure 7: Citywide All Ages and Abilities Network

The results of the LTS analysis also identify the connected "islands" of low-stress bicycle network facilities, which are facilities with an LTS score of 1 (suitable for All Ages and Abilities) or 2 (suitable for Interested but Concerned cyclists). Each color grouping of streets in Figures 8 (Existing Network) and 9 (Planned Network) indicate how far a bicyclist could travel without having to use a higher LTS facility or cross a major barrier. This analysis therefore provides insight on what could be considered a comfortable bikeable range for Interested but Concerned cyclists, who typically represent more than 50 percent of the population, including a large proportion of potential riders.

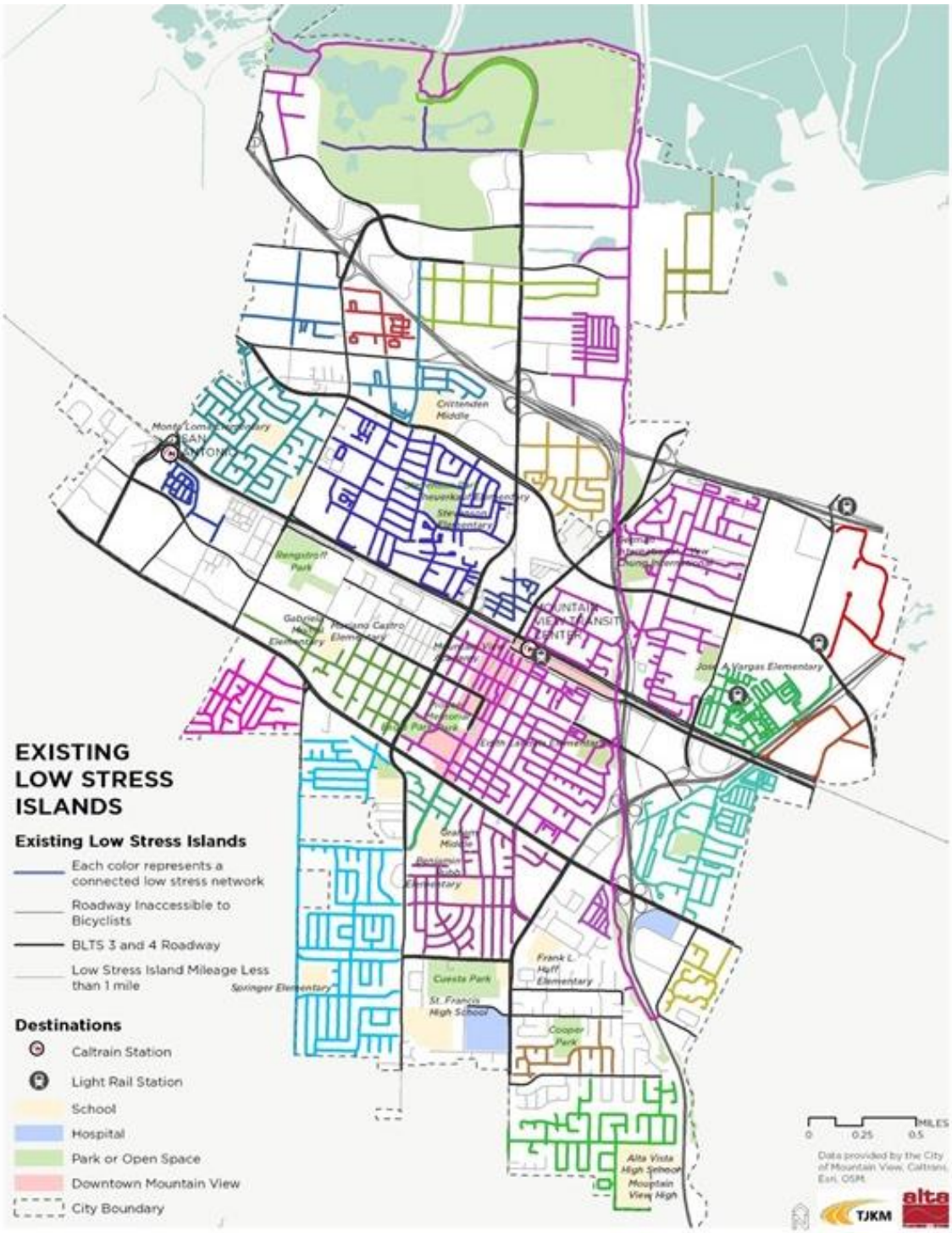

Figure 8: Citywide Low-Stress Bikeable Islands in the Existing Network

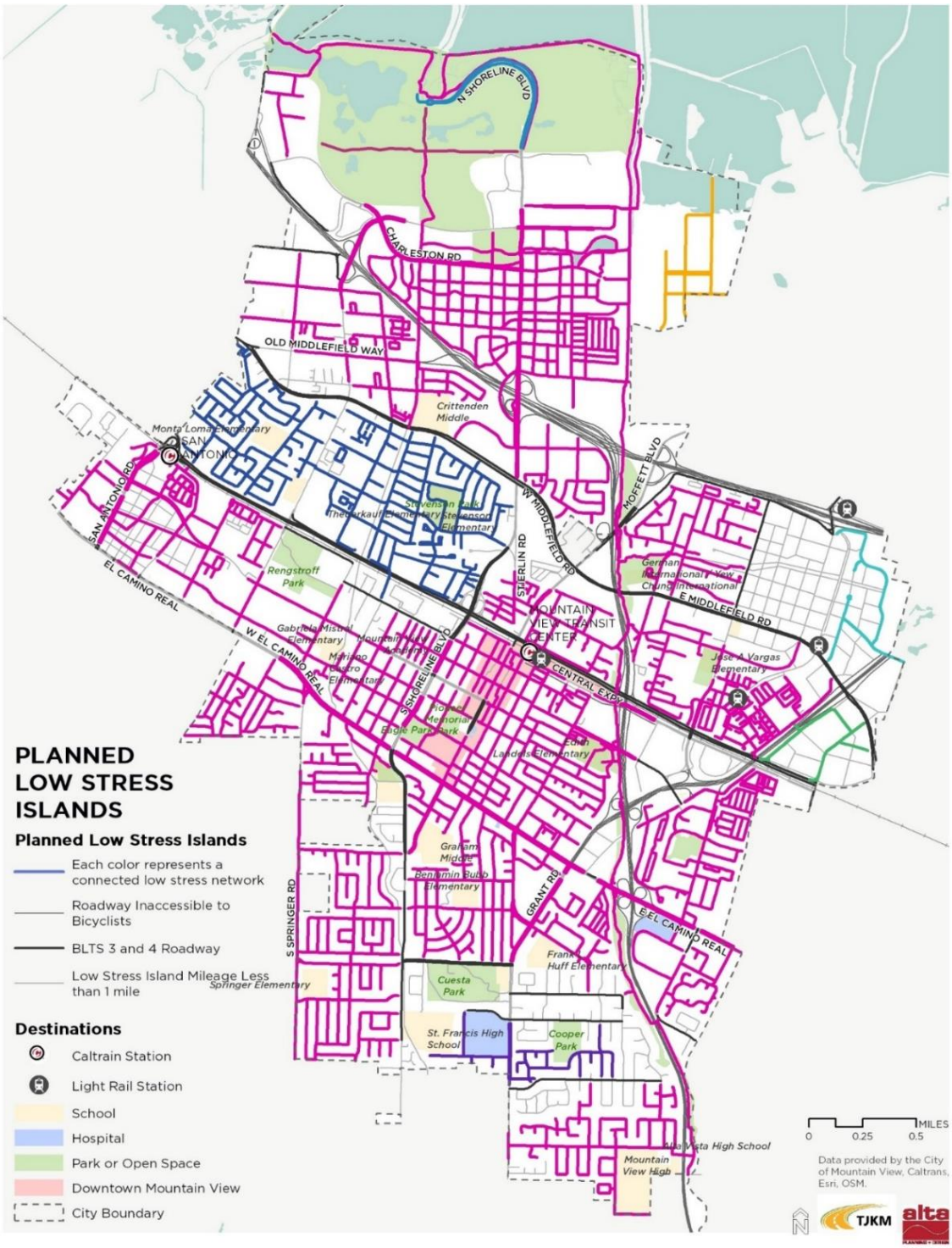

Figure 9: Citywide Low-Stress Bikeable Islands for the Planned Network

Key findings from the Citywide analysis include the following:

- While the City has a network of bicycle facilities, many of these facilities do not meet the standard of an "All Ages and Abilities" network.

- For "Interested but Concerned" cyclists, Mountain View's streets and bicycle facilities currently function like an archipelago of 26 different bikeable islands that are completely separated by physical barriers or high-stress straits of auto-oriented roads.

- The City is planning for substantial bike infrastructure improvements which would reduce the number of bikeable islands from 26 small (4.9-mile) islands to 14 larger (11.3-mile) islands of low-stress bikeable range.

- Key corridors with planned improvements that benefit the creation of a connected low-stress network of bike facilities include El Camino Real, Shoreline Boulevard, and Moffett Boulevard.

- Key streets that hinder a connected low-stress network of bike facilities include Miramonte Avenue/Shoreline Boulevard, Rengstorff Avenue, and Middlefield Road.

Transit and Shuttle Services

On February 24, 2020, the City Council reviewed the Mountain View Shuttle Study, which was undertaken in conjunction with AccessMV. The Shuttle Study analyzed public transit and shuttle service operations and demand in Mountain View. Existing transit facilities and services (as of January 2020) are displayed in Figure 10.

A transit propensity index is displayed in Figure 11 and demonstrates the potential for transit ridership that could be expected within an area. The transit propensity index is based on characteristics of Mountain View residents and incorporates information on youths per acre, seniors per acre, population per acre, low-income population per acre, and number of zero-vehicle households per acre. The score is based on natural breaks, with a score of 1 representing an area with the lowest transit propensity and 5 representing an area with highest transit propensity.

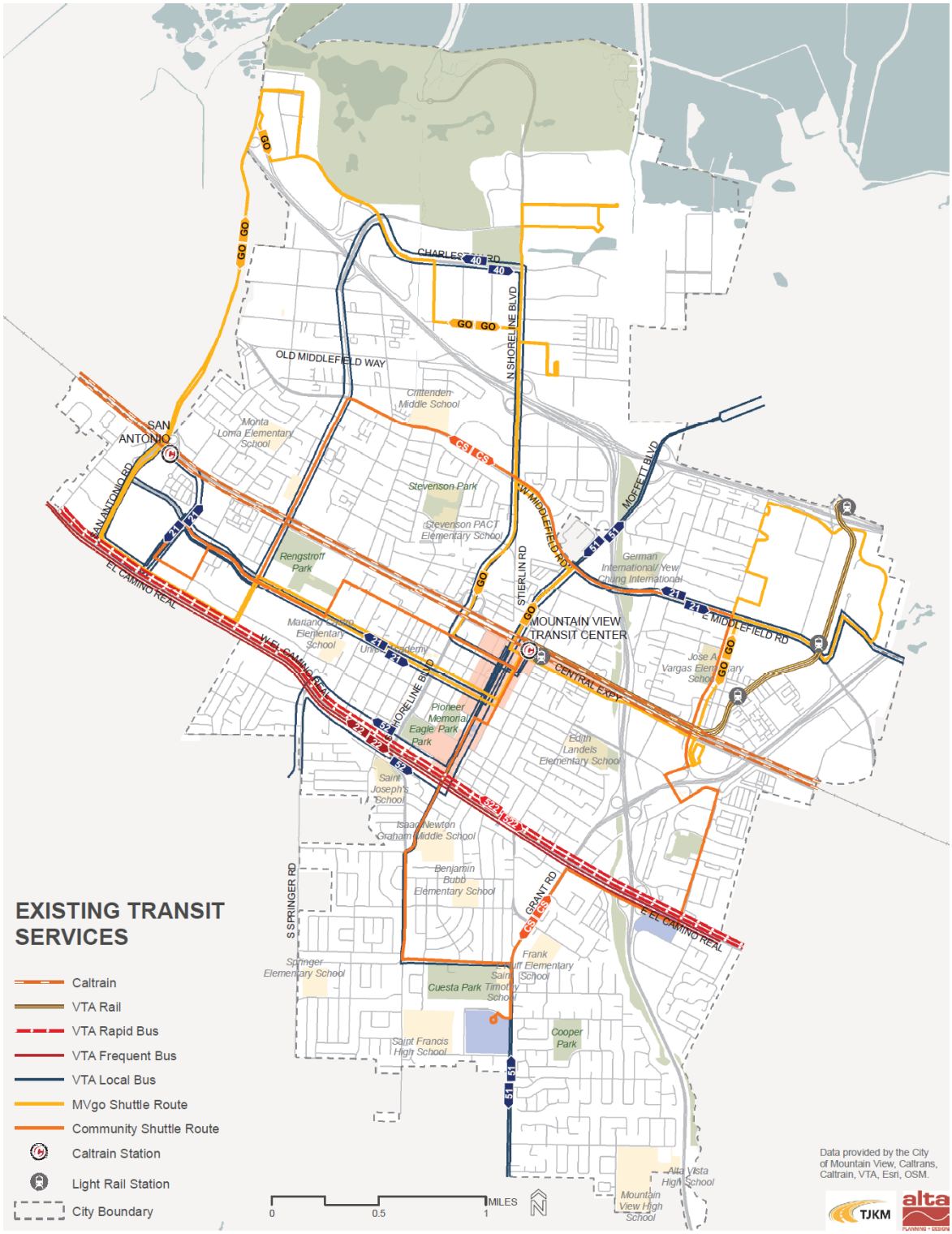

Figure 10: Citywide Transit Facilities and Services, January 2020

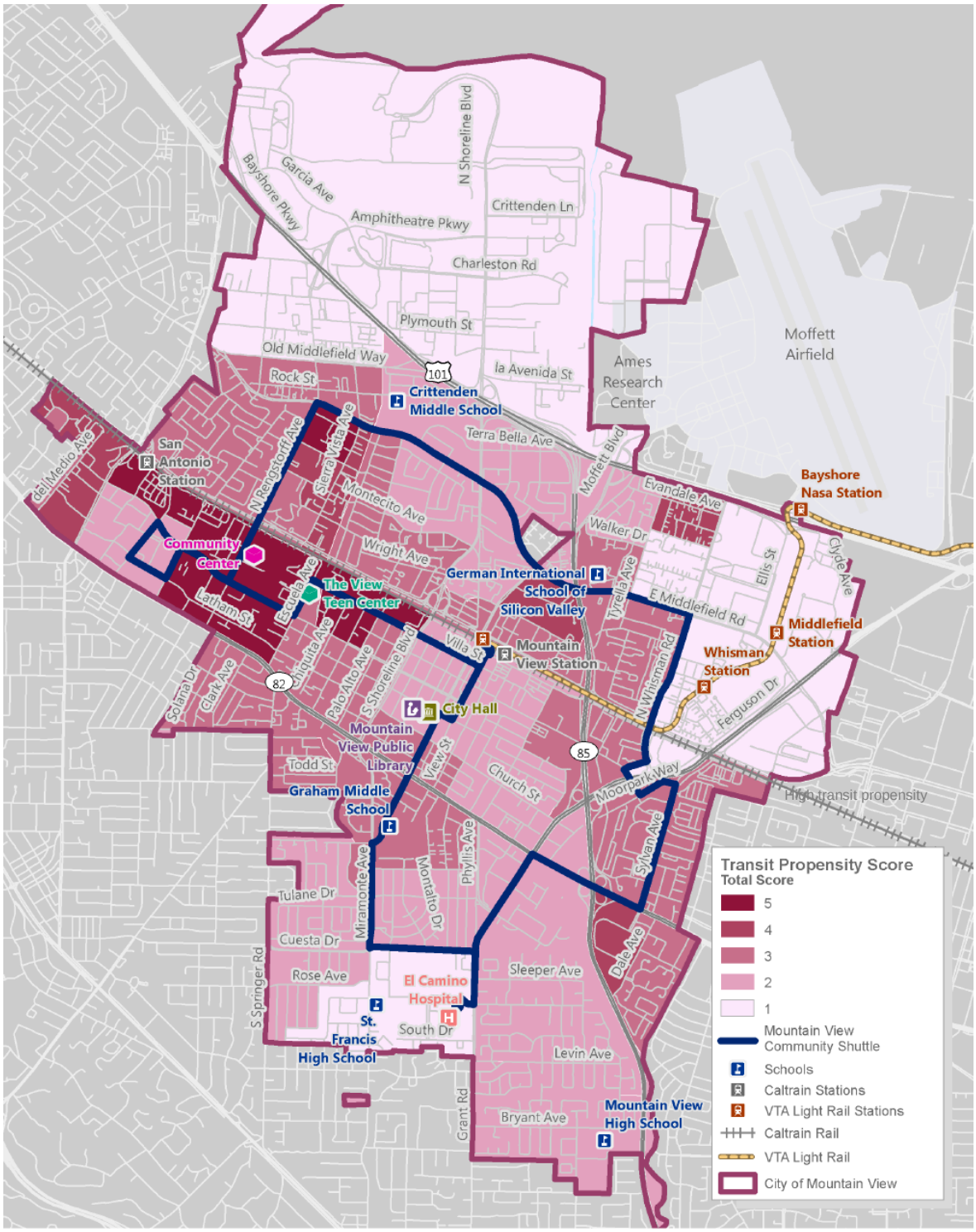

Figure 11: Citywide Transit Propensity for Residents

System and Network Analysis

As illustrated in Figure 1, initial tasks under AccessMV include inventorying existing infrastructure, identifying planned infrastructure from 31 plans, incorporating shuttle study findings, completing supplementary analysis, and mapping conditions by mode. These initial tasks are then used to undertake system and network analysis as shown in Figure 12. System and network analysis includes identification of network overlaps, inconsistencies, and gaps between the different plans and studies.

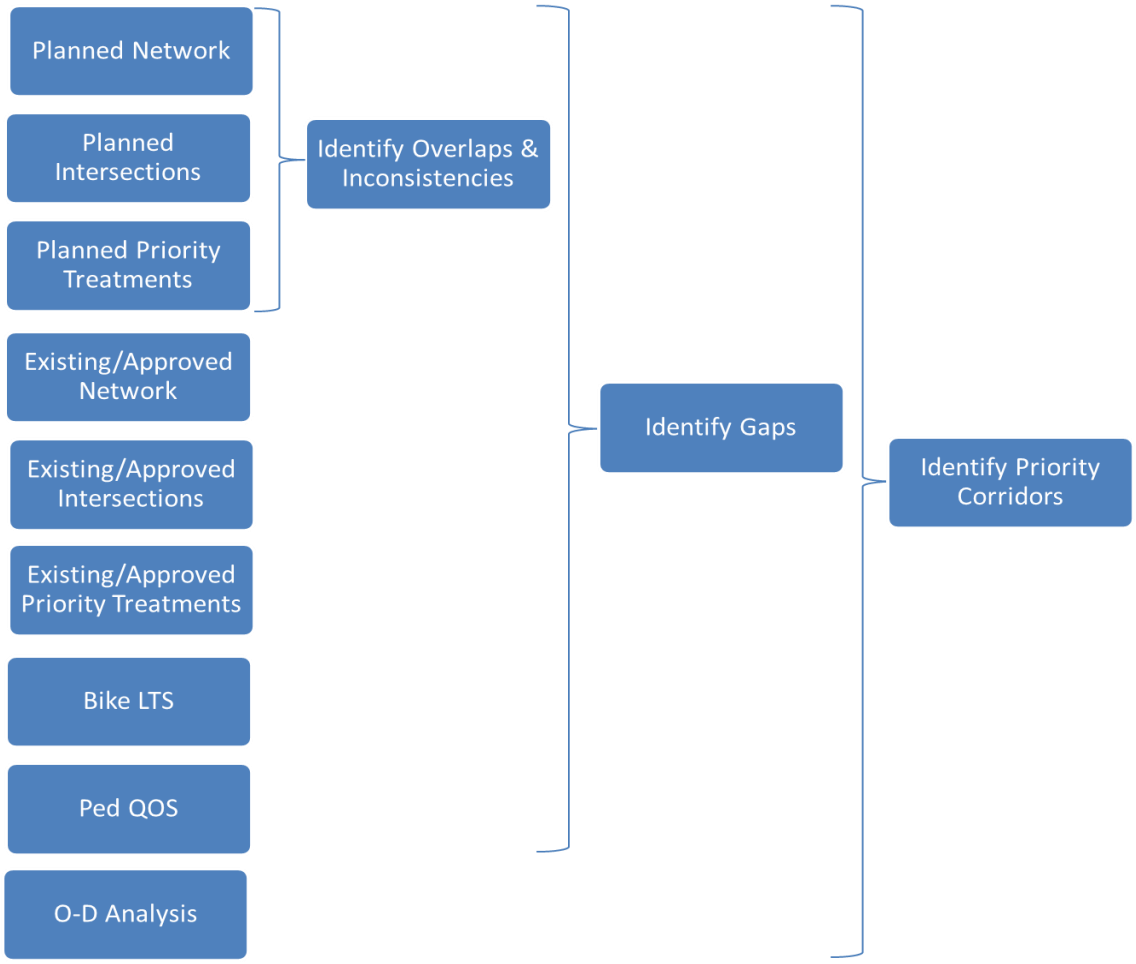

Figure 12: System and Network Analysis

Network Overlaps between Plans

Network overlaps include corridors where planned improvements are identified in multiple different plans or studies. The analysis of network overlaps identified Shoreline Boulevard, California Street, and Charleston Road as corridors where various plans had overlapping pedestrian, bicycle, and transit strategies. This reflects the multi-modal

nature of the corridors as well as efforts to align different studies and plans. Other key corridors were also identified in multiple plans or studies as displayed in Figure 13.

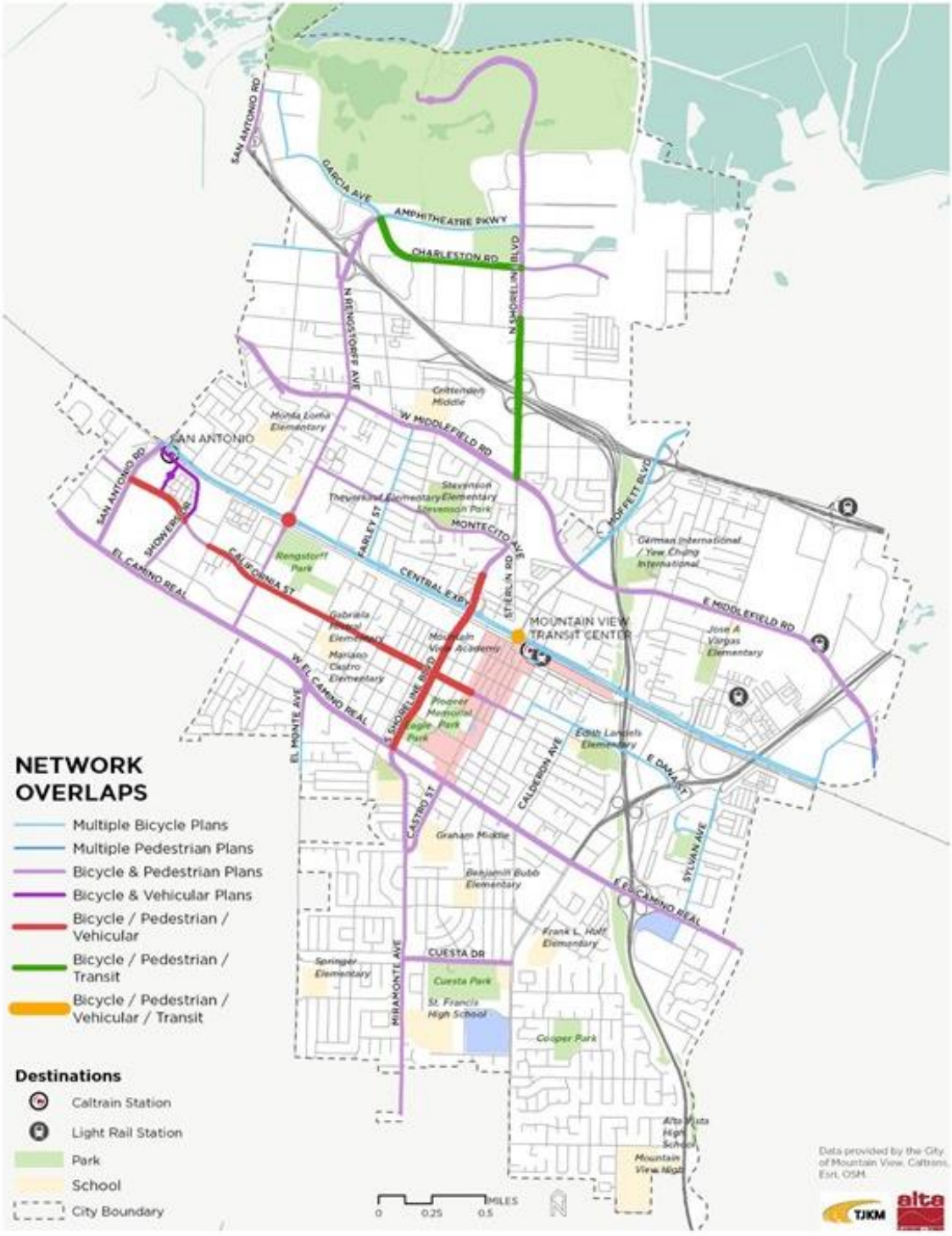

Figure 13: Network Overlaps based on Multiple Plans or Studies

Network Inconsistencies between Plans

Network inconsistencies include corridors where plans identify a different vision or strategy for the corridor. Although there are inconsistencies in plans for the corridors displayed in Figure 14, no fundamental inconsistencies were identified. This is indicative of deliberate efforts to align different planning efforts with one another.

More nuanced and textual inconsistencies for corridors shown in Figure 14 represent differences in recommended treatment types for the same facility. In general, these differences relate to bicycle transportation facilities and result from the rapid evolution of bicycle treatments in recent years. Given the recent recognition of Class IV protected bikeways as an acceptable treatment in California, there are a number of inconsistencies with respect to these facilities, which the City's Bicycle Transportation Plan (BTP) recommends for priority consideration along facilities with a posted speed limit of 30 miles per hour or higher.

Many of these inconsistencies are resolvable by considering the most recent plans, which tend to better reflect current understanding of appropriate bicycle treatments for different types of roadways. In other cases, where the inconsistency is based on the BTP policy of prioritizing Class IV facilities where feasible, resolution of the inconsistency may require feasibility assessment. Resolution of these inconsistencies could also be considered in future updates of plans such as the Bicycle Transportation Plan.

Figure 14: Network Inconsistencies Based on Multiple Plans or Studies

Network Gaps between Plans

AccessMV does not aim to identify new capital projects. Instead the goal of this work is to prioritize the numerous projects that have already been identified in prior plans or studies and have been vetted through both internal review and community engagement.

Nevertheless, the project team has undertaken an analysis of network, which could potentially be considered in future updates of the respective plans, such as the Pedestrian Master Plan and Bicycle Transportation Plan. In the context of this analysis, network gaps are defined as follows:

- Pedestrian network gaps: Public roadways that are missing a sidewalk on at least one side of the street, or adjacent multi-use trail, even after planned projects have been implemented.

- Bicycle network gaps: Bikeways or streets identified in the General Plan as having high or medium bike use priority where it is anticipated that there will be a high level of traffic stress (LTS 3 or 4) even after planned projects have been implemented.

- Transit gaps: Transit corridors for trips within the City of Mountain View (intracity trips) where there is a high transit propensity but a lack of available services even after accounting for future improvements.

- Vehicular gaps: Corridors where roadways would be needed to access destinations but are not available even after accounting for future projects.

As indicated in Figure 15, key gaps identified in Mountain View relate to pedestrian and bicycle facilities.

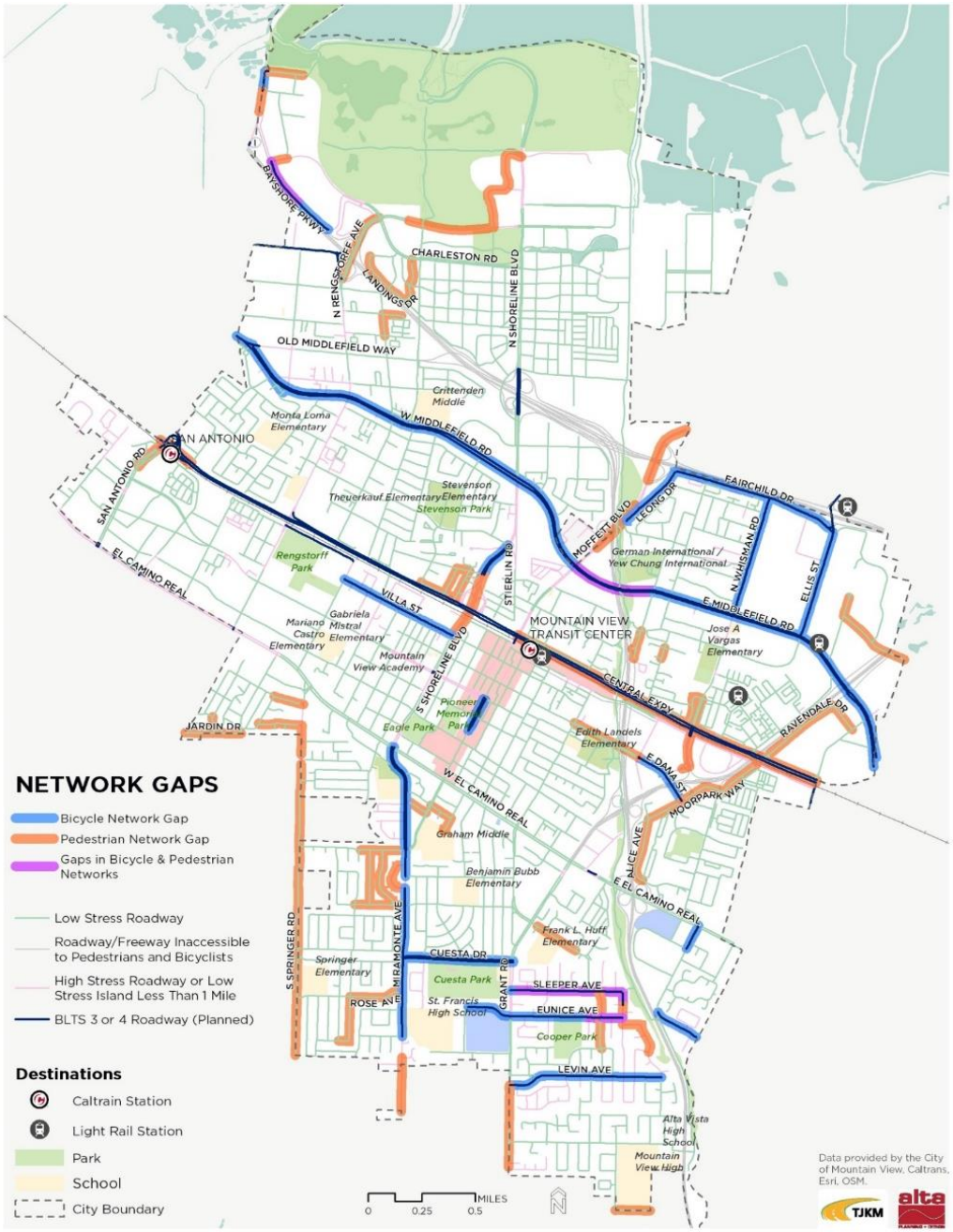

Figure 15: Network Gaps Based on Multiple Plans or Studies