CITY OF MOUNTAIN VIEW

MEMORANDUM

Public Works Department

DATE: December 2, 2020

TO: Bicycle/Pedestrian Advisory Committee

FROM: Aruna Bodduna, Transportation Planner
Jim Lightbody, Project Manager

SUBJECT: **North Bayshore Circulation Feasibility Study**

RECOMMENDATION

Receive, review, and provide feedback on the North Bayshore Circulation Study analysis for active transportation modes and facilities.

BACKGROUND

The North Bayshore Precise Plan[1] (NBPP) (2014 and amended 2017) provides the vision for the North Bayshore Area regarding land use, sustainability, habitat preservation, economic development, and mobility. Notable development principles of the NBPP include new bicycle and pedestrian improvements, walkable, human-scaled blocks, and sustainability.

To limit automobile trips, the NBPP sets a target commute mode share of 45 percent for single-occupancy vehicles (SOV). To reach that goal, the Plan set a target of 10 percent bicycle and pedestrian commute trips. The NBPP establishes street typologies, including recommended facilities for walking and biking. The Plan also presents a proposed bicycle network and improved pedestrian accommodation and establishes priority transportation improvements.

The North Bayshore Circulation and Feasibility Study (Circulation Study), initiated in 2019, is focusing on potential transportation strategies to serve the full development of the NBPP. These strategies may include potential additional gateway infrastructure as

[1] The North Bayshore Precise Plan area is located in the northern end of the City, bordering the Shoreline at Mountain View Regional Park to the north, U.S. 101 to the south, Palo Alto to the west, and Stevens Creek to the east.

well as policies to further reduce vehicle trips and meet Transportation Demand Management (TDM) goals.

On December 11, 2018, the City Council approved a contract with TJKM Transportation Consultants (TJKM) to conduct the Circulation Study. Alta Planning + Design (Alta), a member of the TJKM consulting team, has been conducting a Pedestrian and Bicycle Use Study that explores existing and future active transportation use and that will develop potential improvements to achieve the NBPP mode targets. A further discussion of the study results and key issues is provided below.

The Circulation Study has also studied the feasibility of modifications at the Rengstorff Avenue/U.S. 101 interchange and a potential transit, pedestrian, and bicycle bridge over Stevens Creek at two locations: (1) Charleston Alternative; and (2) La Avenida Alternative. This analysis was presented to the City Council at a May 12, 2020 Study Session. Council supported pedestrian and bicycle connectivity over Stevens Creek but did not support the transit bridge option. Council also supported a concept for modifying the Rengstorff Avenue/U.S. 101 ramps that would add capacity and improve safety and operations, particularly for pedestrians and bicycles.

Also under development by Google LLC is a potential public bicycle/pedestrian bridge across Stevens Creek, just south of La Avenida, that could connect trail users to development at NASA.

ANALYSIS

As a part of the Pedestrian and Bicycle Use Study, Alta conducted an assessment of the existing and proposed bicycle and pedestrian infrastructure to meet the future needs of residents and commuters in the North Bayshore Area. This analysis will help identify potential changes, additions, or upgrades to the infrastructure improvements included in the NBPP.

The key tasks of the Pedestrian and Bicycle Use analysis are described below:

- **Background Research:** Alta conducted background research and reviewed studies relevant to the NBPP area. These included trip-monitoring reports, site-specific traffic analyses (SSTA) for various development projects in the area, transportation demand management (TDM) plans, and corridor studies. This background research helped identify local trends in bicycle and pedestrian usage and to produce bicycle and pedestrian demand projections.

- **Employer Outreach:** Alta developed a survey to gather bicycle and pedestrian commute data, such as employee commute patterns as well as bicycle and pedestrian supportive policies. This survey was sent out to major employers in the North Bayshore Area, including Google, Intuit, and Microsoft. The survey feedback received from these employers provided mode-share information that was used in estimating the existing and future proportional flows attributable to bicycles and pedestrians.

- **Mapping Pedestrian and Bicycle Network and Existing Usage:** The pedestrian and bicycle network for the North Bayshore Area was developed based on the existing infrastructure, near-term funded improvements, and longer-term planned projects. Alta, who is also working on the Comprehensive Modal Plan (Access MV) project, leveraged their work conducted for that project to inform this study. The information from the Access MV project was further refined to develop more detailed pedestrian and bicycle network maps for the NBPP area.

The existing pedestrian and bicycle count data gathered from the background research, local and regional travel demand models, and employer commute survey feedback was used to develop the existing pedestrian and bicycle network flow within the NBPP. The analysis presented in this report is for the a.m. peak hour, which represents the highest activity time of day based on the available counts. The existing pedestrian and bicycle flows are presented in Figures 1 and 2, respectively. Under existing conditions, high pedestrian activity occurs along Charleston Road, and high bicycle activity occurs along Stevens Creek and Permanente Creek Trails, which provide access to the NBPP area.

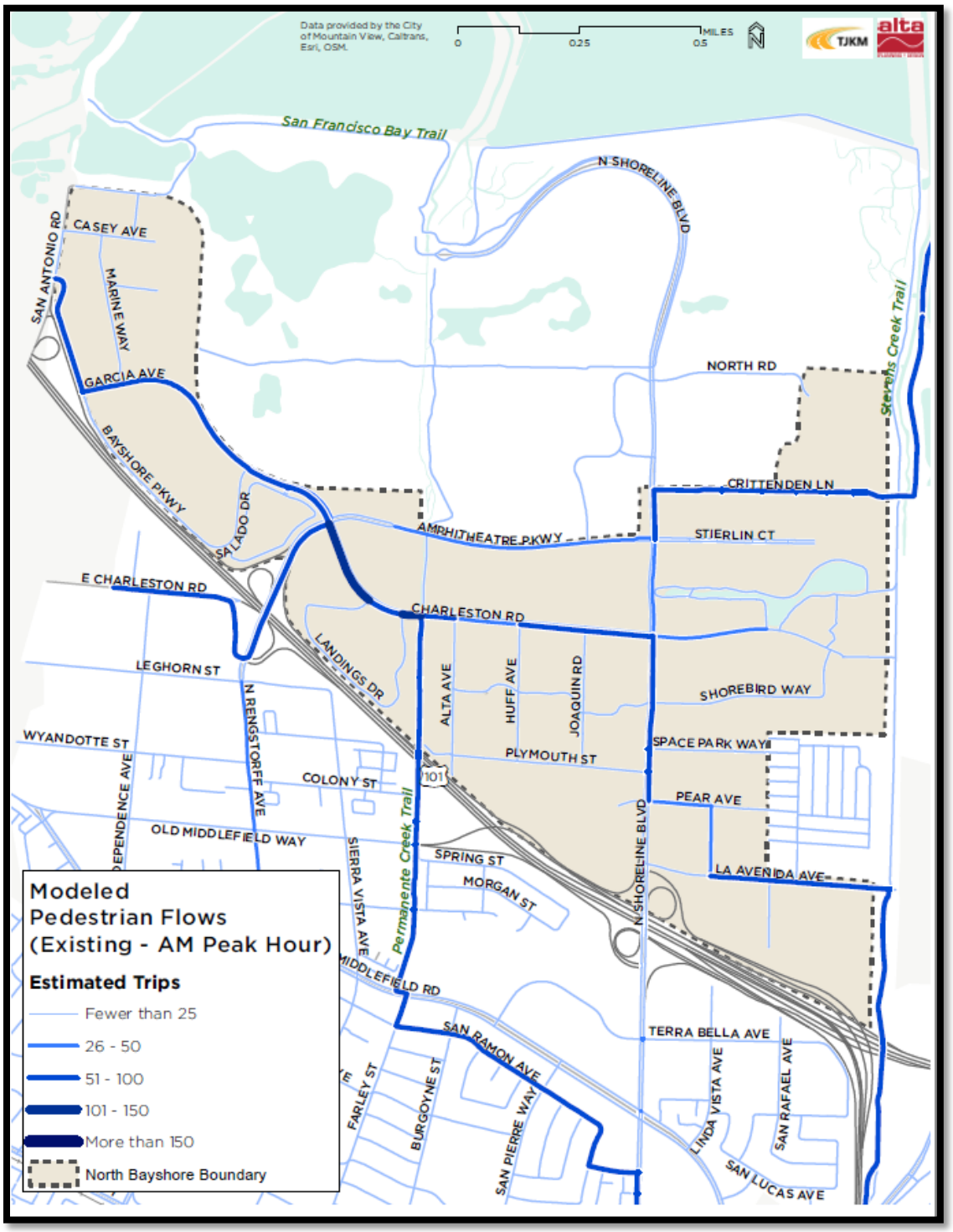

Figure 1: Existing Pedestrian Flow

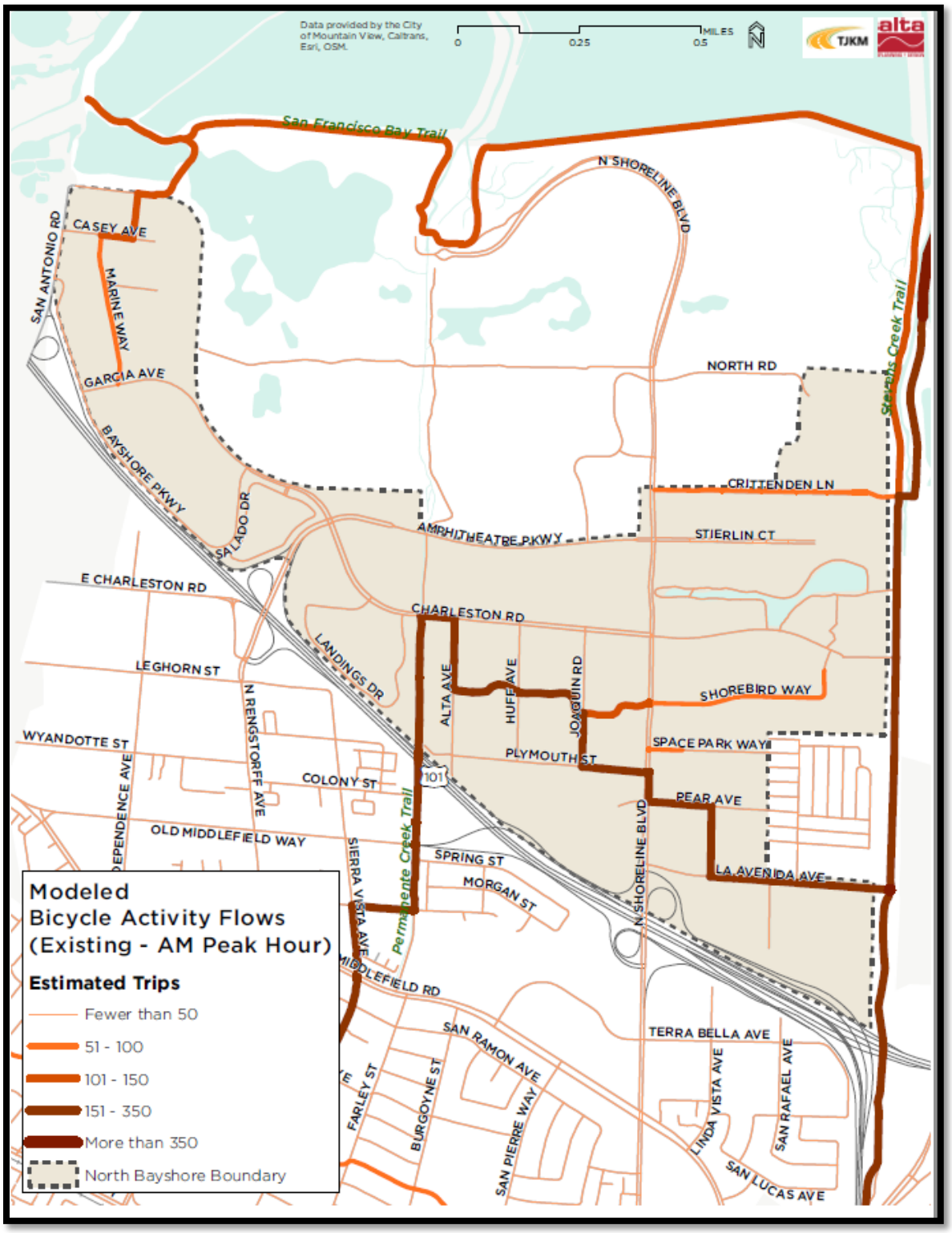

Figure 2: Existing Bicycle Flow

- **Future Year (2040) Flow Estimates:** Future year pedestrian and bicycle demand estimates were developed based on the local and regional travel demand models that include future land use information (i.e., future residential development and employment growth) for the area. The projections also assumed an increase in cycling and walking activity in North Bayshore to reflect 10 percent of commuter trips and 25 percent of all internal trips to be made by walking or bicycling. The future year estimates were then imposed on the future network and are presented in Figures 3 and 4, respectively.

  As shown in Figure 3, high pedestrian activity is anticipated to occur in the Joaquin Road neighborhood[2], which has a mix of higher-intensity residential, office, and mixed-use buildings and is designated as a complete neighborhood in the NBPP.

  From Figure 4, high bicycle activities continue to occur on Stevens Creek and Permanente Creek Trails and streets that provide direct access to these trails similar to the existing conditions. Additionally, streets that have proposed bicycle facility improvements, such as the cycle tracks on Stierlin Court and Charleston Road, show increased activity.

- **Capacity Analysis:** An analysis of future facility capacity was conducted using future estimated flows and facility width information drawn from relevant plans. Level of service (LOS) values were calculated for each sidewalk and multi-use trail segment, and volume-to-capacity (v/c) ratio was calculated for each bicycle facility segment, as shown in Figures 5 and 6, respectively.

  The pedestrian capacity analysis found that planned sidewalks should have sufficient capacity. The Green Loop has a high level of bicycle and pedestrian service. Potential capacity problems exist on the Stevens Creek Trail and portions of the Permanente Creek Trail, where projected increases in bicycle and pedestrian flows will likely lead to increased user conflicts and a diminished pedestrian user experience.

[2] Joaquin Road neighborhood is bounded by Shoreline Boulevard, Charleston Road, Huff Avenue, and U.S. 101.

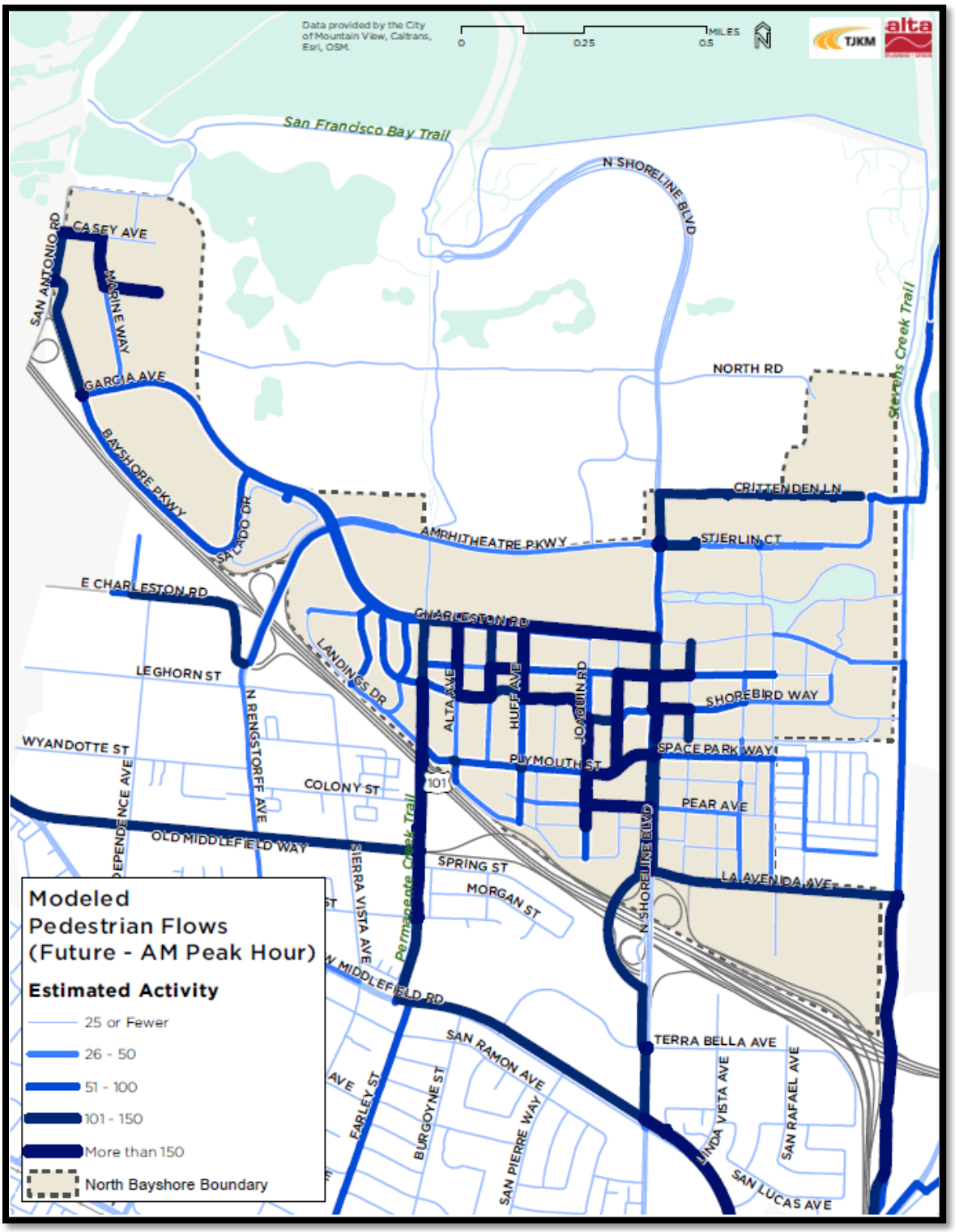

Figure 3: Future (2040) Pedestrian Flow

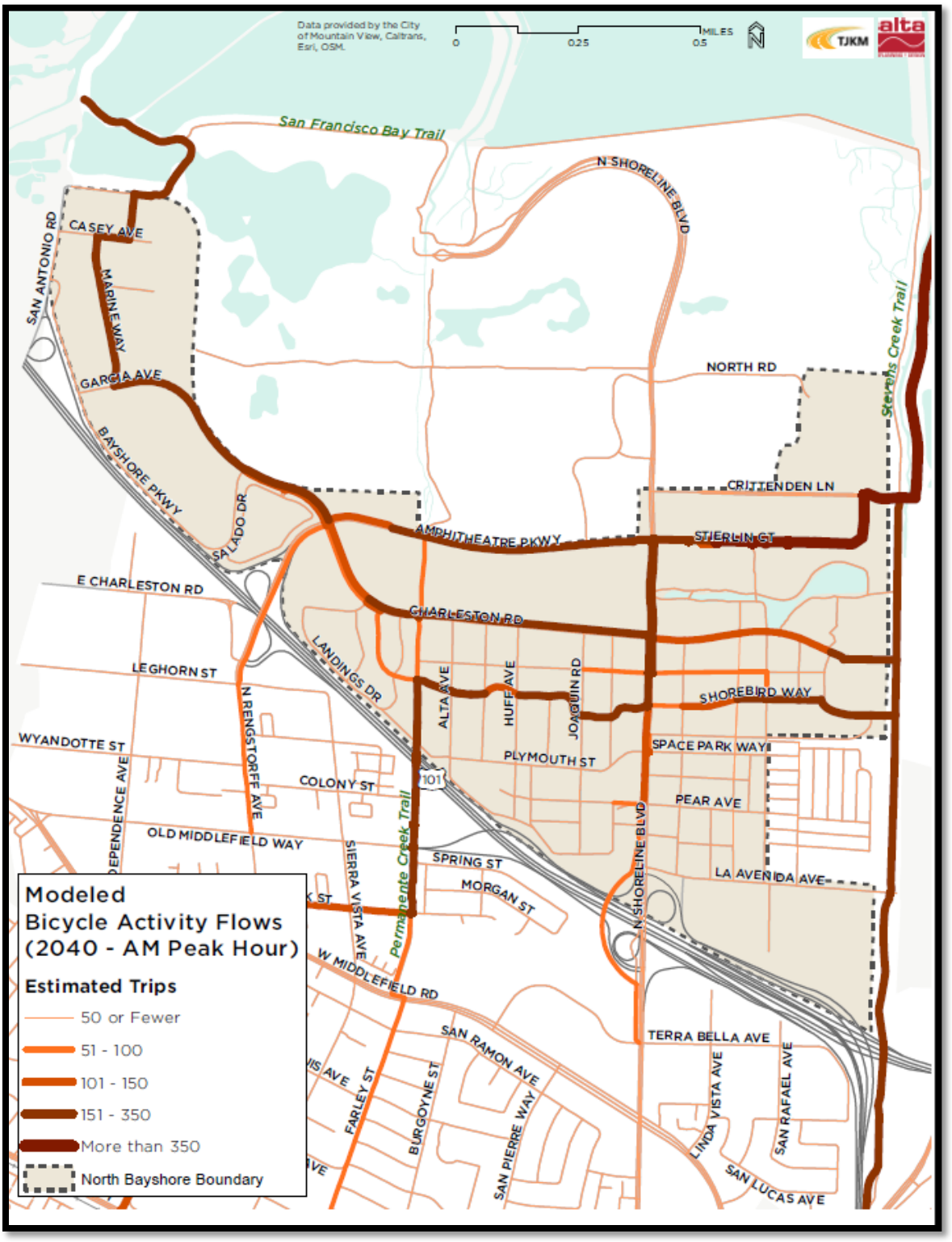

Figure 4: Future (2040) Bicycle Flow

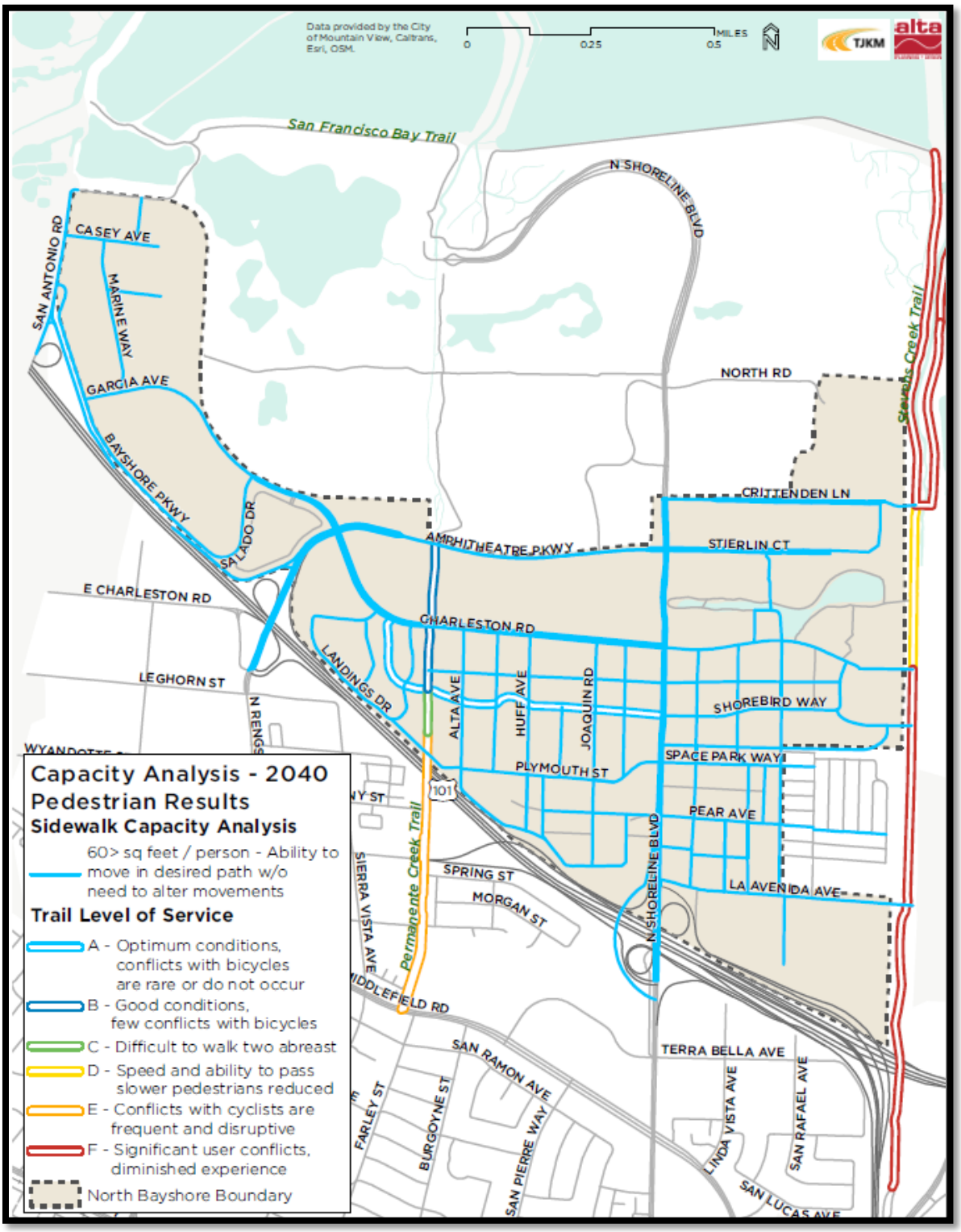

Figure 5: Pedestrian Infrastructure Capacity Analysis

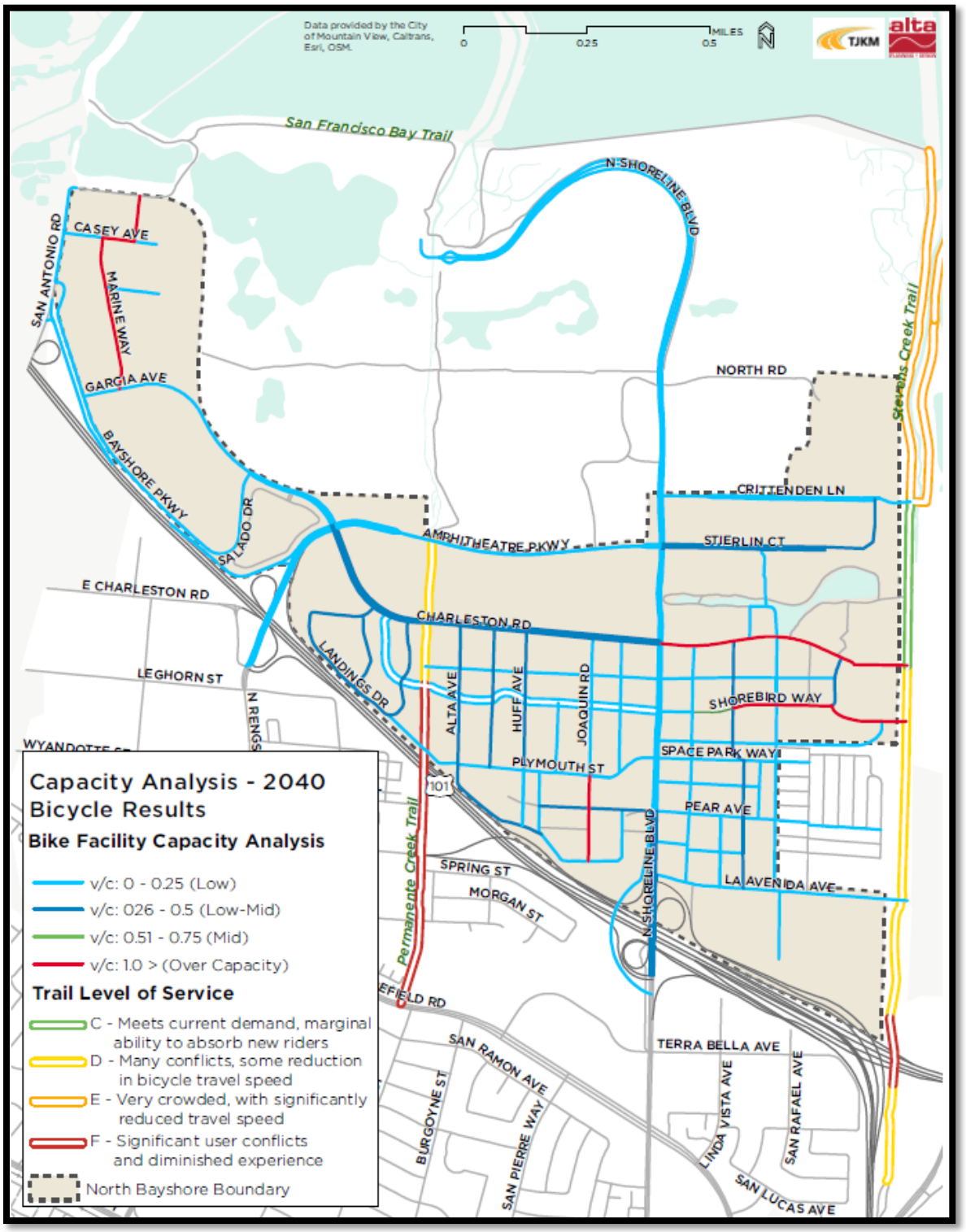

Figure 6: Bicycle Infrastructure Capacity Analysis

- **Network Recommendations:** The final component of the Alta study is to recommend what, if any, improvements or modifications to the NBPP strategies for bicycle and pedestrian infrastructure would be needed in order to meet the mode-share goals. These recommendations are under development and may address the following elements:

  - Sidewalk widths—possible adjustments to minimum widths
  - Intersection improvements—locations for protected intersections
  - Protected street crossings on major streets and boulevards
  - Additional cycle tracks or Class IV protected bicycle lanes
  - Need for cycle tracks on both sides of major streets and boulevards
  - Trail improvements—additional connections and new bridges
  - Strategies to shift some trips from the trails to the Shoreline corridor

DISCUSSION

Bicycle/Pedestrian Advisory Committee (B/PAC) input is sought on the following questions:

- Does B/PAC have comments on the analysis?

- Does B/PAC have preferences or proposals in regard to infrastructure recommendations?

NEXT STEPS

Staff will incorporate feedback from B/PAC into study recommendations that will be included in the final North Bayshore Circulation Study. The Circulation Study recommendations will be prepared in the first half of 2021.

AB-JL/6/PWK
903-12-02-20M

cc: PWD