DATE: May 15, 2018

TO: Honorable Mayor and City Council

FROM: Rey S. Rodriguez, Senior Project Manager
Lisa Au, Principal Civil Engineer
Michael A. Fuller, Public Works Director

VIA: Daniel H. Rich, City Manager

TITLE: **Latham/Church Street Bike Boulevard Feasibility Study, Project 16-38**

STUDY SESSION MEMO

CITY OF MOUNTAIN VIEW

PURPOSE

Provide direction on the draft bike boulevard concept plan developed for the Latham/Church Street Bike Boulevard Feasibility Study, Project 16-38.

BACKGROUND

The Latham Street/Church Street corridor was identified by Council as one of the top 10 priority projects in the Bicycle Transportation Plan Update (Plan) adopted in 2015. The goal of the Latham/Church Street Bike Boulevard Feasibility Study (Study) is to develop a concept for a bike boulevard on Latham Street between Showers Drive and Shoreline Boulevard and along Church Street between Shoreline Boulevard and Highway 237 (see Figure 1—Project Area Corridor Map). In April 2016, the City retained Nelson\Nygaard Consulting Associates to assist with the Study.

Latham Street was selected as a bike boulevard candidate to provide an alternative for bicyclists who may otherwise traverse on El Camino Real, which may be more intimidating for nonseasoned bicyclists. Latham Street/Church Street is also a relatively straight, continuous east-west route with signalized intersections crossing arterial streets.

The Latham/Church Corridor connects the San Antonio Shopping Center area to downtown, and via Calderon Avenue, connects to Stevens Creek Trail at Mercy Street and at Evelyn Avenue. There is additional opportunity to connect to the intersection of Grant Road/El Camino Real/State Route 237. Castro School, Mistral School, Eagle Park and Pool, Pioneer Park, the Library, City Hall, and the Center for the Performing Arts are located along or easily accessible from the corridor.

Existing Roadway Characteristics

The Latham Street/Church Street corridor is a 25-mile-per-hour, low-volume, two-lane residential collector running parallel to El Camino Real. Vehicle travel lane widths vary, with curb-to-curb width ranging between 32' and 40'. Portions of it are fairly narrow and congested with parked vehicles. Church Street between Shoreline Boulevard and Calderon Avenue is designated as a Class III Bike Route.

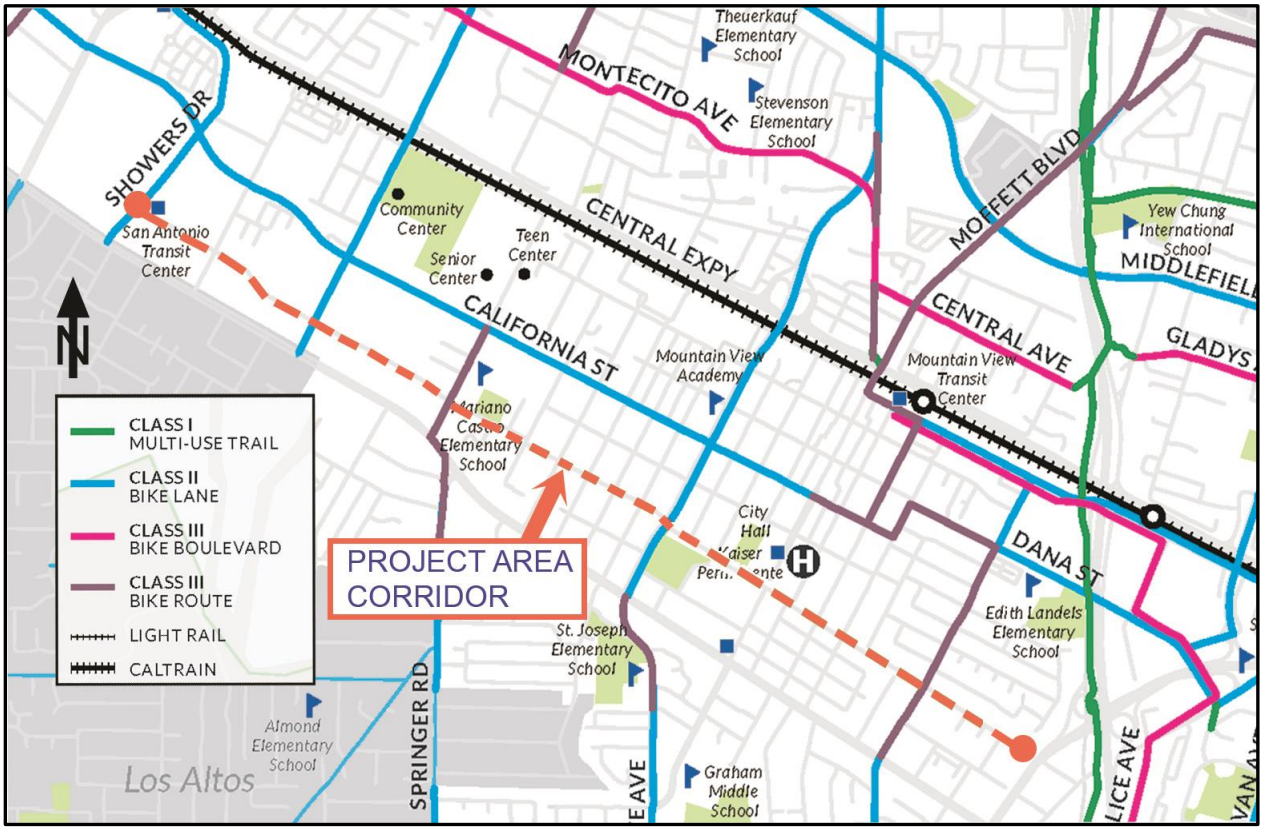

Figure 1—Project Area Corridor Map

DISCUSSION

This Study Session memo first provides a description of the types of elements included in the proposed bike boulevard, then how those elements are distributed along the corridor.

Bike Boulevard Elements

Creating and labeling a street as a bike boulevard requires managing vehicle speeds and volumes to create a route that gives bicycle travel priority.

The five elements for a successful bike boulevard include:

1. Speed management: low speed (less than 25 miles per hour);

2. Volume management: low motor vehicle volumes (less than 1,500 vehicles per day);

3. Major street crossings: safe and convenient;

4. Minor street crossings: minimize bicyclist delay (limit starts and stops and improving sight visibility for all users);

5. Signs and pavement markings: easy to find and follow for bicyclists and clearly labeled to inform drivers of the shared road function.

The physical improvements that can be employed to address the required elements and create a bike boulevard include:

- Traffic diverters
- Speed humps
- Splitter islands
- Raised crosswalks
- Narrow median islands
- Stop sign removal
- Wayfinding signage and pavement markings
- Traffic signal modifications
- Intersection crossing treatments

The following describes the concepts analyzed for the project.

Traffic Diverters

Based on accepted best practices, the ideal daily volume of vehicles on a bike boulevard is 1,500 or less. As shown in Figure 2, the traffic volume on portions of Latham Street is more than 2,000 vehicles per day. As a result, two diverters are recommended, at Ortega Avenue and Shoreline Boulevard, to reduce the traffic volume in this area in order to make the bike boulevard effective.

Figure 2—Traffic Volume through Corridor

The Ortega Avenue diverter (Figure 3) would reduce eastbound cut-through traffic heading to downtown. Vehicles traveling eastbound on Latham Street at Ortega Avenue would be directed to turn right towards a signalized intersection at El Camino Real. Bicyclists would be able to continue eastbound. All other traffic movements would be unchanged.

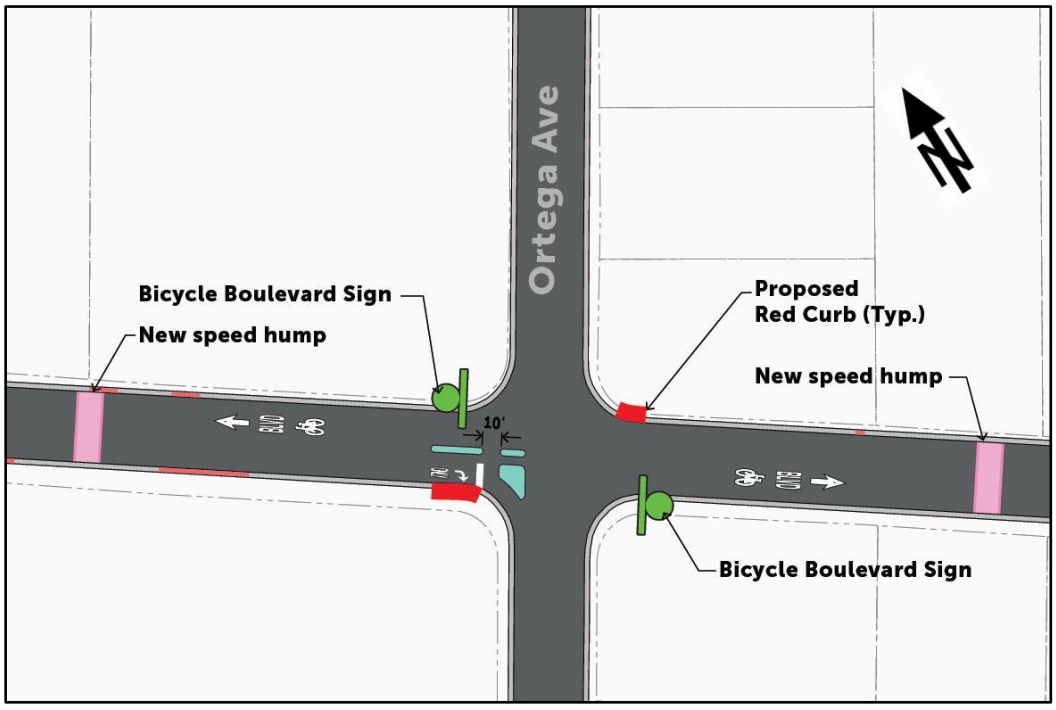

Figure 3—Ortega Avenue Traffic Diverter

The proposed Shoreline Boulevard diverter (Figure 4) would prevent vehicles from entering westbound Latham Street, though bicycles would be allowed to pass.

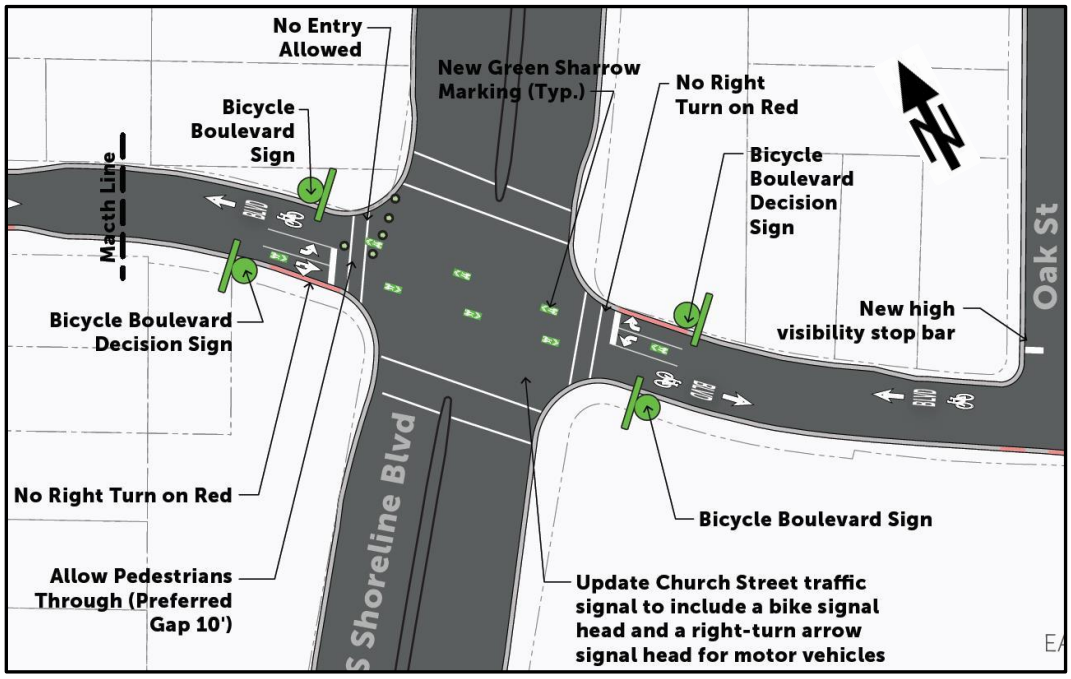

Figure 4—Latham and Shoreline Boulevard Recommended Improvements

Figures 5 and 6 show sample routes from an example origin (on Showers Drive) to an example destination (on Latham Street) that would be affected by the diverter.

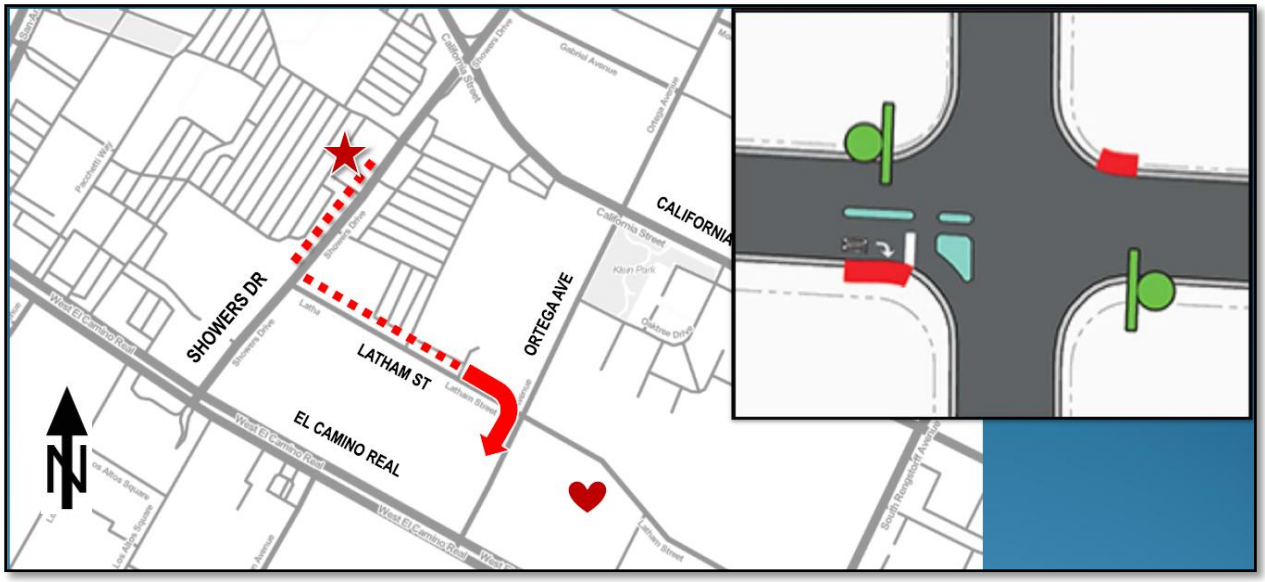

Figure 5—Diverted Route

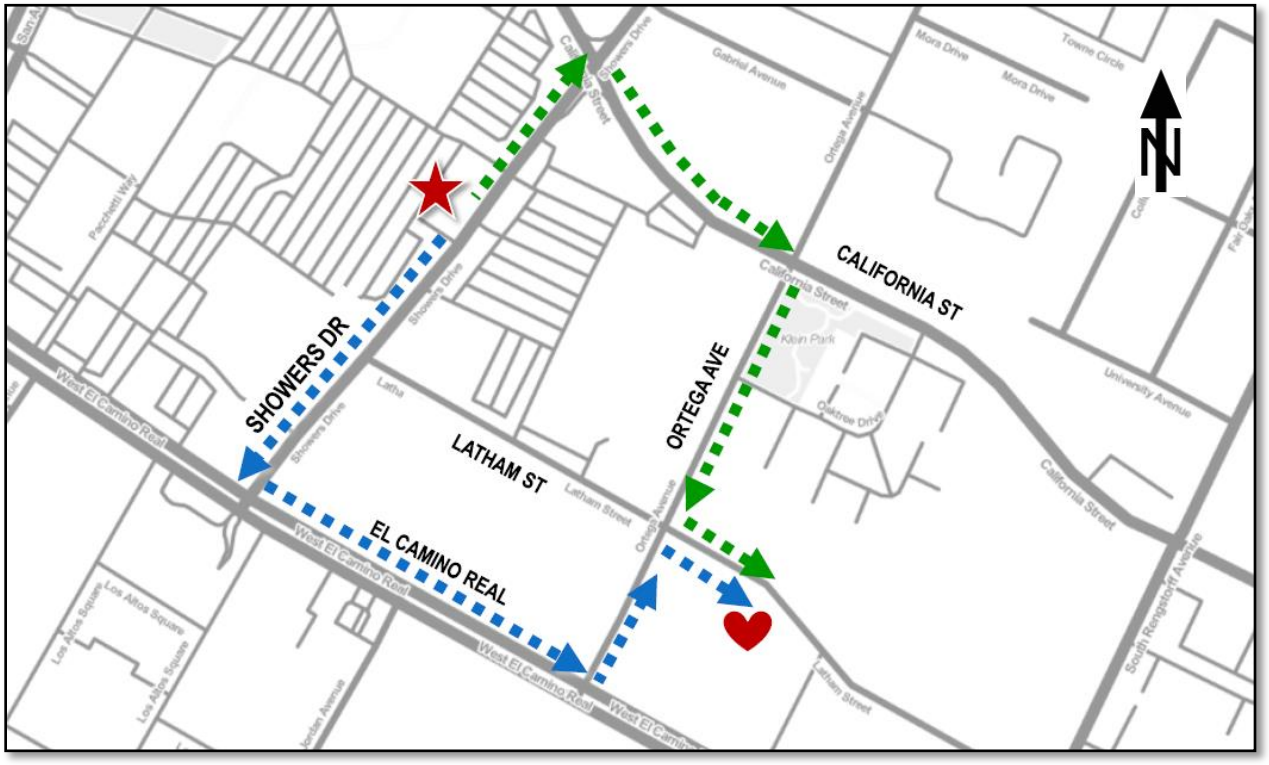

Figure 6—New Route

The tradeoffs associated with diverters are apparent, with reduced volume Latham Street benefitting bicyclists, but some inconvenience created for drivers and those on the streets to which traffic is diverted.

Speed Humps

Speed humps are another tool recommended along the corridor to slow vehicles and make Latham Street a less attractive route for cut-through traffic. Speed humps are generally used in the City as a traffic calming measure and are chosen by residents as part of the Neighborhood Traffic Management Program (NTMP). In this case, the speed humps are recommended as part of a larger strategy to reduce the speed and volume of vehicles on the Latham Street/Church Street corridor in favor of bicycles.

Figure 7—Example of a speed hump

Median Splitter Islands: Median splitter islands are another tool used in the NTMP process that reduce travel lane width near intersections, narrowing the path of travel for vehicles and causing traffic to slow. Turning vehicles are also channelized into a proper turning geometry and tend to slow.

Figure 8—Example of Splitter Island

Raised Intersections

In raised intersections (Figure 9), the street is elevated to the top-of-curb level. The effect of the raised intersection is similar to speed humps, where the elevated driving surface tends to slow vehicles. A change in pavement color can increase awareness at

the intersection, and bicyclists on the raised surface are more visible to drivers. Staff recommends elevating the intersections of Pettis Avenue and Mountain View Avenue as part of a package of elements to reduce speeds along this stretch of the corridor.

Raising the intersections would also allow removal of the storm drain "cross culverts" at the corners of the intersection. Bicyclists occasionally ride inadvertently into these cross culverts, so eliminating them is a benefit to bicycle travel.

Figure 9—Example of Raised Intersection

Stop Sign Removals

To increase convenience for bicyclists by requiring fewer stops, stop signs are proposed for removal at four locations on Latham Street where there are currently four-way stop intersections (crossed streets would still have stop signs). The locations are Mariposa Avenue, Pettis Avenue, Palo Alto Avenue, and Mountain View Avenue. Making the route more convenient for cyclists, while reducing vehicle volume and speed, will encourage use of the route as a bike boulevard. Removing stop signs is only recommended in conjunction with other elements to reduce speeds and increase the visibility of bicyclists to cross-street drivers. Raised intersections are proposed at Pettis Avenue and Mountain View Avenue, and splitter islands are proposed at Mariposa Avenue and Palo Alto Avenue. Staff does not recommend an earlier proposal to remove stop signs at the Franklin Street intersection.

Sight Triangles

Vehicles parking on-street near intersections and driveways create a visual barrier to drivers, bicyclists, and pedestrians. The recommended improvements include additional red curb near intersections and driveways to improve sight lines for all travelers. Staff estimates a total loss of fewer than 10 parking spaces on the corridor.

Existing Signalized Intersection Improvements

Modifications to traffic signals at Shoreline Boulevard and Rengstorff Avenue are also proposed to provide dedicated left-turn signals with protected movements for pedestrians.

Community Input

On March 27, 2017, a community meeting was held to present the concepts of the Latham Street/Church Street Bike Boulevard and to obtain input from residents. Approximately 50 residents attended the meeting and provided feedback.

Subsequently, staff reviewed the concepts to obtain input of the Latham Street/Church Street Bike Boulevard with the Bicycle/Pedestrian Advisory Committee on October 25, 2017, and the Council Transportation Committee (CTC) on February 15, 2018.

Recommended Conceptual Design

The recommended conceptual design is described below, segment by segment, along with input received where appropriate.

The section from Showers Drive to Ortega Avenue is adjacent to Target, the Department of Motor Vehicles, several small businesses on the south side of the street, as well as several multiple-family residential complexes. A diverter is recommended at Ortega Avenue to reduce traffic volumes, and speed humps are recommended to reduce speeds.

Staff received concerns from one property owner regarding large trucks having difficulty traversing speed humps. If this project is approved for implementation, staff would evaluate and design appropriate locations of the speed humps to work with all types of vehicles.

Concerns about the connectivity of the bike boulevard to the west side of Showers Drive and the existing shopping center were raised by residents. Currently, there is a crosswalk with in-pavement warning lights (IRWL) on the south side of the intersection of Latham Street and Showers Drive. As there is significant development anticipated in the San Antonio Precise Plan area, staff recommends reviewing and implementing any major connectivity and enhanced bicycle/pedestrian amenities along Showers Drive with the upcoming development project(s).

Other concerns included large vehicle parking along the streets and the inability to see and comfortably ingress/egress from driveways. Parking restrictions and additional red curbs would be considered during detailed design to improve visibility.

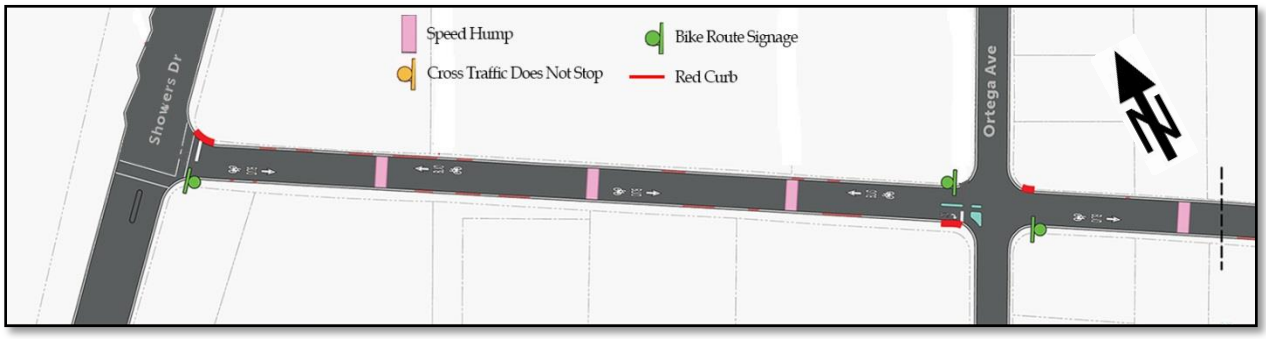

Figure 10—Showers Drive to Ortega Avenue Proposed Improvements

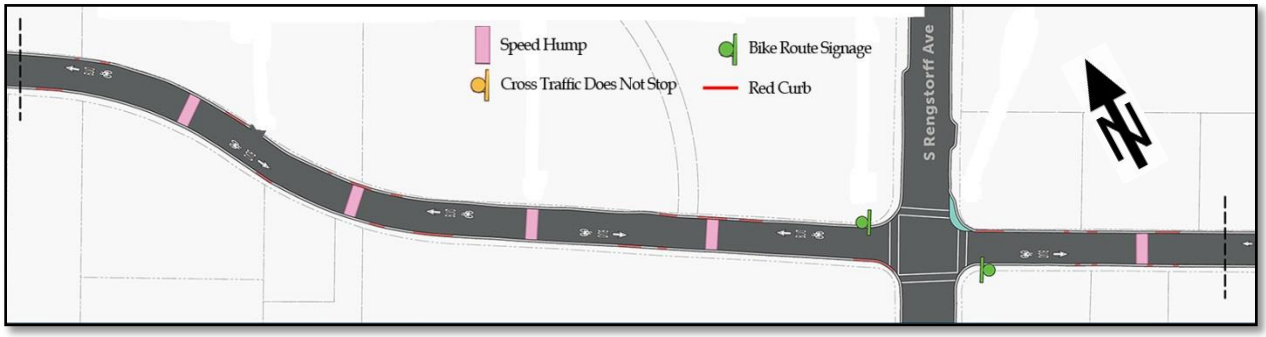

Figure 11—Ortega Avenue to Rengstorff Avenue Proposed Improvements

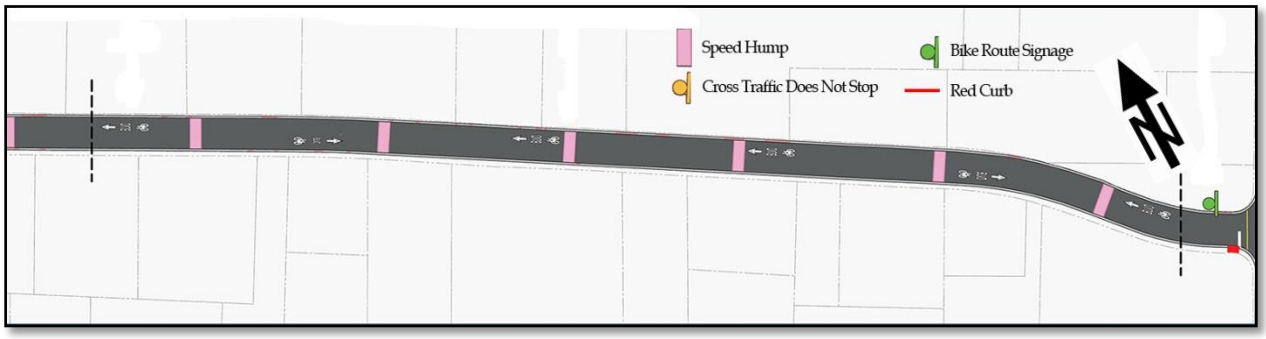

Figure 12—Rengstorff Avenue to Escuela Avenue Proposed Improvements

Escuela Avenue to Shoreline Boulevard

This section of the corridor is adjacent to residential properties and public facilities, including Castro Elementary School, Mistral Elementary School, and Castro Park.

Heavy bicycle and pedestrian traffic is, therefore, expected. Recommendations for this section include two splitter islands and two raised intersections to slow vehicles, and installation of red curb at select corners to improve sight lines approaching the intersection benefiting cross traffic and pedestrians at the intersections. A diverter is recommended at the intersection of Latham Street and Shoreline Boulevard.

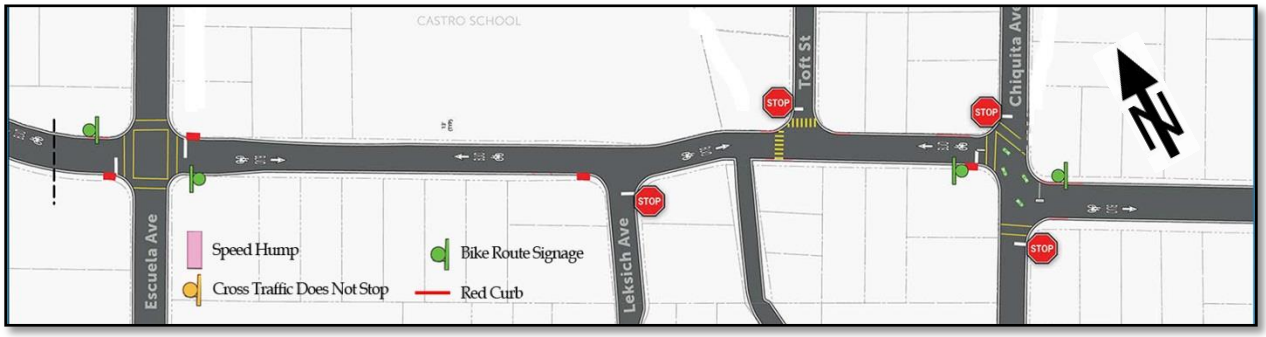

Figure 13—Escuela Avenue to Chiquita Avenue Proposed Improvements

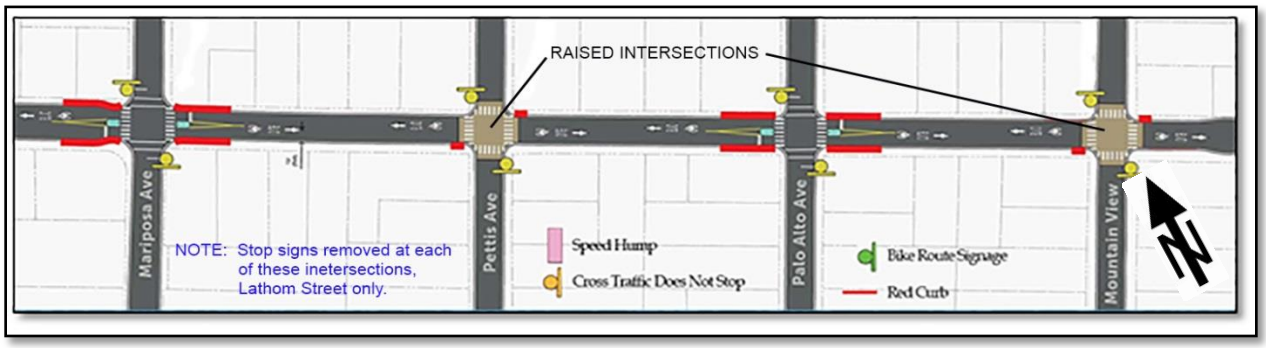

Figure 14—Mariposa Avenue to Mountain View Avenue Proposed Improvements

Shoreline Boulevard to Highway 237

This segment consists of mostly single-family homes, Eagle Park, Pioneer Park, the Mountain View Library, City Hall, Center for the Performing Arts, and Castro Street. The section east of Castro Street already has one traffic circle and six speed humps installed. Proposed additional bike boulevard improvements could include red curb at select corners to improve sight lines, pavement markings, and wayfinding signage. See Figure 19 for a diagram of Calderon Avenue, which is one example of an intersection with these treatments.

Figure 15—Shoreline Boulevard to Franklin Street Proposed Improvements

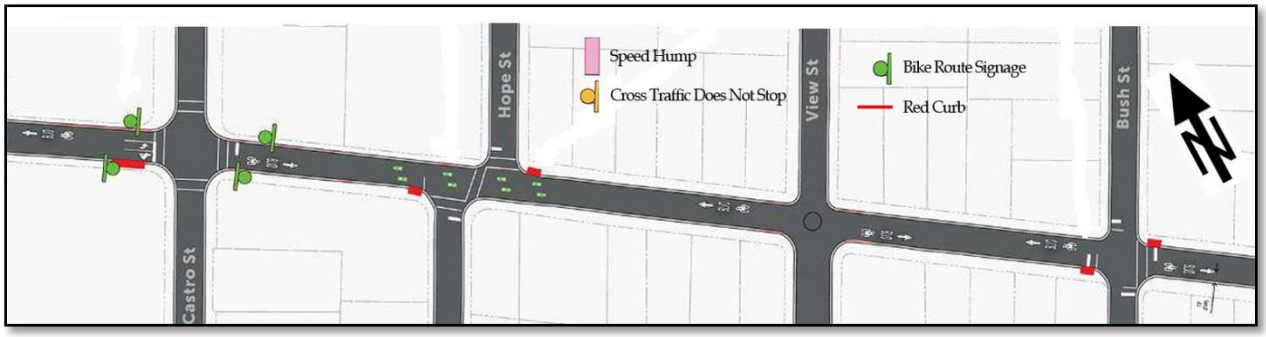

Figure 16—Castro Street to Bush Street Proposed Improvements

Figure 17—Anza Street to Calderon Avenue Proposed Improvements

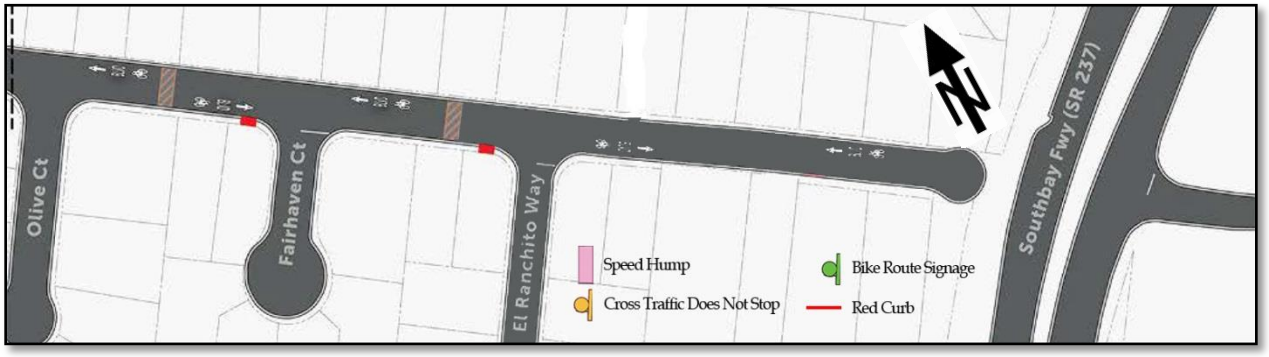

Figure 18—Olive Court to Highway 237 Proposed Improvements

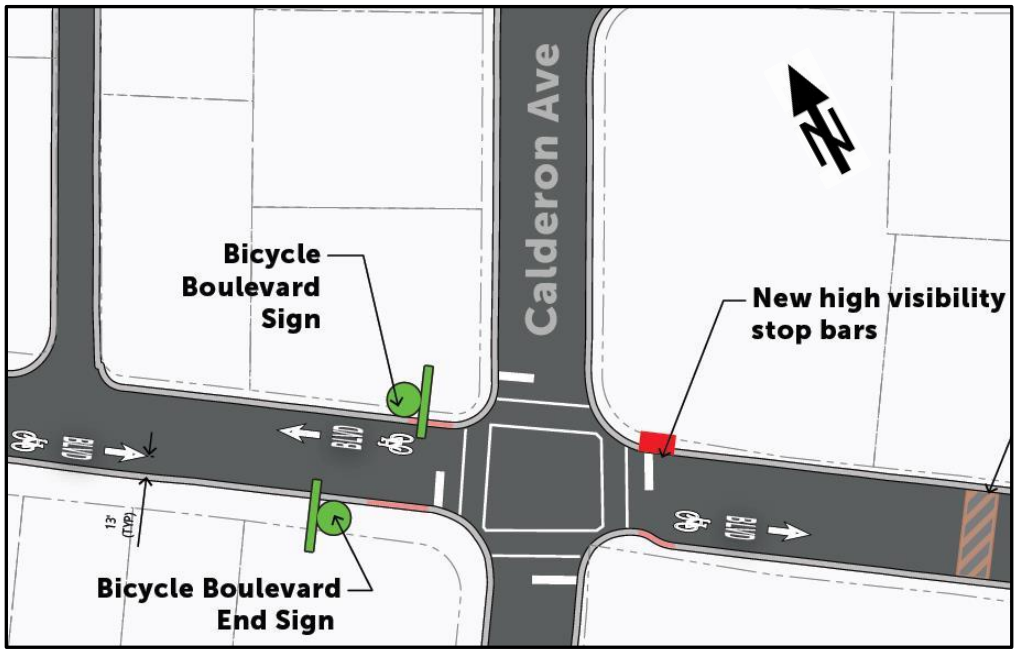

Figure 19—Church Street and Calderon Avenue Recommended Improvements

Council Transportation Committee Meeting

On February 15, 2018, the project was reviewed with the Council Transportation Committee (CTC). The CTC and public comments were negative regarding the use of diverters to control traffic volumes and the removal of stop signs. Some concern was expressed regarding using Latham Street as a bike boulevard because areas for vehicle passing zones are limited or nonexistent due to narrow sections of the street. CTC members also suggested that neighbors be able to vote on traffic calming elements such as speed humps, as is done with the NTMP process.

There were other supportive comments for bike boulevard signage and traffic calming features, such as raised intersections and splitter islands, but parking removal should be minimized. The CTC suggested speed hump design with a groove to allow bicycles to travel and minimize the effect of the hump on bicyclists.

Summary

To implement a true bike boulevard on Latham Street, reducing vehicle traffic volume and speed are essential. There are tradeoffs associated with the improvements needed to accomplish traffic and speed reduction that include inconveniencing drivers to benefit bicyclists. The elements included in the recommended concept act together to provide an improved bicycle environment on Latham Street. Through the public input process and meeting with the CTC, staff received comments expressing concern about some of the fundamental elements of the recommended project, such as traffic diverters, stop sign removal, and speed humps installed without an affirmative vote from residents on the street. If the improvements where concern was expressed were removed from consideration, the project would no longer be creating a true bicycle boulevard on the Latham Street/Church Street corridor. However, some bike enhancements could still be achieved.

In light of the input received, staff seeks Council direction on balancing the competing interests of drivers and bicyclists on Latham Street with the bicycle boulevard project.

An alternative for Council's consideration is focusing on parallel routes instead of Latham and Church Streets, such as the interim Peninsula Bikeway, which occupies primarily California Street in Mountain View. The Peninsula Bikeway is a cooperative effort between the cities of Redwood City, Palo Alto, Mountain View, and Sunnyvale to create an east-west bicycle route. The initial phase includes signage, which will be installed in spring 2018. The four cities will be embarking on a process to explore and develop additional improvements, including possibly cycle tracks that would create a comprehensive and effective east-west bike corridor.

Alternatives:

1. Proceed to design the recommended bicycle boulevard improvements on the Latham Street/Church Street corridor.

2. Focus instead on a more modest set of improvements that would not create a bicycle boulevard on the Latham Street/Church Street corridor, but may provide traffic calming and visibility improvements.

3. Rather than the Latham Street/Church Street corridor, focus on the short and long term Peninsula Bikeway improvements.

4. Provide other direction.

PUBLIC NOTICING

In addition to the standard agenda posting, notices were posted along the project corridor, shared on social media sites such as *Nextdoor.com* and the City's website, and published in the *Mountain View Voice*. The notice was also e-mailed to past community meeting attendees and other interested parties who provided contact information for the project.

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