



DATE: September 6, 2016

CATEGORY: New Business

DEPT.: Public Works

TITLE: **Shoreline Boulevard Bus Lane and Utility Improvements, Project 16-58 – Approve Conceptual Design and Amend Professional Services Agreement**

RECOMMENDATION

1. Approve the conceptual design of the Shoreline Boulevard Bus Lane and Utility Improvements, Project 16-58.
2. Authorize the City Manager to amend the professional services agreement with Mark Thomas & Company of San Jose for the Shoreline Boulevard Bus Lane and Utility Improvements, Project 16-58, increasing compensation by \$1,402,881, for a total contract not-to-exceed amount of \$1,750,069.

BACKGROUND

In November 2014, the City Council approved the “Shoreline Boulevard Transportation Corridor Study” (Corridor Study) that provided a phased program for transportation improvements to accommodate anticipated increases in employment and development in the North Bayshore Area. Implementation of these and other transportation strategies will be crucial to achieve the North Bayshore commute mode-share goals endorsed by the Council in 2013. Two of the near-term improvements identified in the Corridor Study are a dedicated center-running reversible bus lane and protected bicycle lanes on Shoreline Boulevard from Middlefield Road to Plymouth Street/Space Park Way. The purpose of the dedicated bus lane is to reduce transit travel time and improve transit efficiency and reliability. The purpose of the protected bike lanes is to enhance safety and increase ridership for bicyclists of all riding skills.

On March 15, 2016, the City Council approved a design agreement with Mark Thomas & Company (Mark Thomas) for preliminary design work up to and including conceptual design (approximately 35 percent complete design). Phasing the design enabled staff and Mark Thomas to study a number of variables, such as lane and buffer widths, turn pockets, right-of-way impacts, tree impacts, platform locations, and pedestrian/bicycle facilities that would affect both the final design and construction

cost. The conceptual design is now complete, and staff seeks Council approval before embarking on final design. Staff also seeks authorization to amend Mark Thomas' contract to complete the design.

ANALYSIS

The following are descriptions of the key design elements in the conceptual plan.

Reversible Bus Lane

A new 12' wide dedicated bus lane with 2' raised buffer separating it from adjacent lanes will be installed on the center of Shoreline Boulevard between Middlefield Road and Pear Avenue, with a total length of approximately 2/3 of a mile (see Figure 1). The new bus lane will replace the existing two-way left-turn lane or landscaped median and will not eliminate existing vehicle lanes. The bus lane will operate northbound in the morning peak hours and southbound in the afternoon peak hours on weekdays (final operating hours have not yet been determined). New traffic signals at five intersections (Middlefield Road, Terra Bella Avenue, southbound Highway 101 off-ramp, La Avenida, and Pear Avenue) along the bus lane corridor will also be installed. Bus stops are planned at Terra Bella Avenue and Pear Avenue. An example of an existing reversible bus lane in Sacramento is shown in Figure 2.

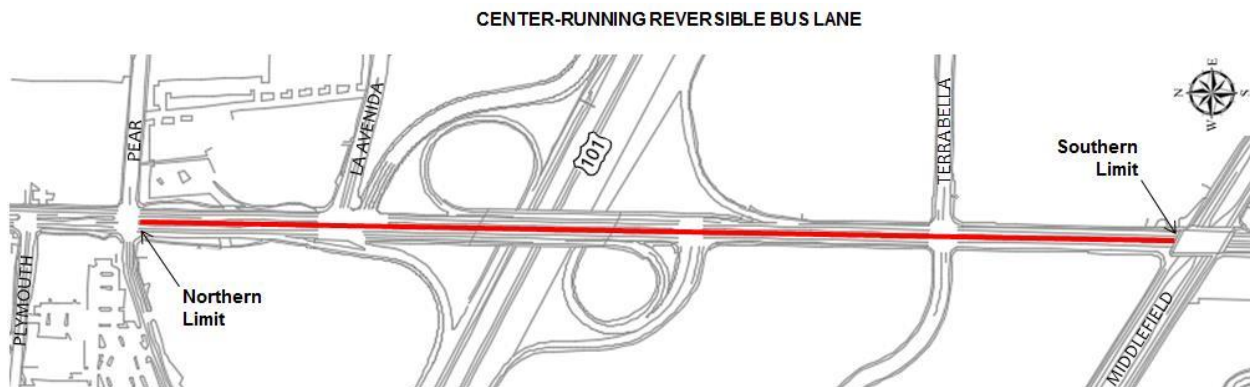


Figure 1 – Limits of Bus Lane



Figure 2 – Example of Dedicated Bus Lane

Bike Lane Improvements

The conceptual plan includes protected bike lanes with 2' raised buffer between Middlefield Road and Terra Bella Avenue. Bike lanes between Terra Bella Avenue and Pear Avenue will be enhanced with other safety measure such as high-visibility green bike lane treatment at certain locations. A bicycle/pedestrian bridge over Highway 101 on the west side of Shoreline Boulevard is also planned, though not as part of this project.

Pedestrian Improvements

The conceptual plan will provide sidewalks in the project area that vary from 5' to 8' wide. Improvements at Shoreline Boulevard at the Middlefield Road intersection and modifications to crosswalks on Highway 101 interchange will enhance safety for pedestrians.

Conceptual Plan by Location

The following describes the conceptual design in more detail.

Middlefield Road to Terra Bella Avenue

The work in this segment (see Figure 3) includes the following:

- Center bus lane with two bus stops in the median and two curbside bus stops to serve the mixed-use lanes at Terra Bella Avenue. Middlefield Road is the southern terminus for the center bus lane. Northbound buses would enter the bus lane and

southbound buses would exit the bus lane at this location. New signals at this location will include preemptive transit signal phase to facilitate egress from the bus lane. A cross-section of the intersection at Middlefield Road looking north is shown in Figure 4.

- Protected intersection at Middlefield Road.
- Protected bike lanes with 2' raised buffer.
- Additional left-turn lanes on both directions from Middlefield Road to Shoreline Boulevard.
- Increased left-turn pockets from Shoreline Boulevard to Middlefield Road and Terra Bella Avenue.
- Water and sewer main replacement.

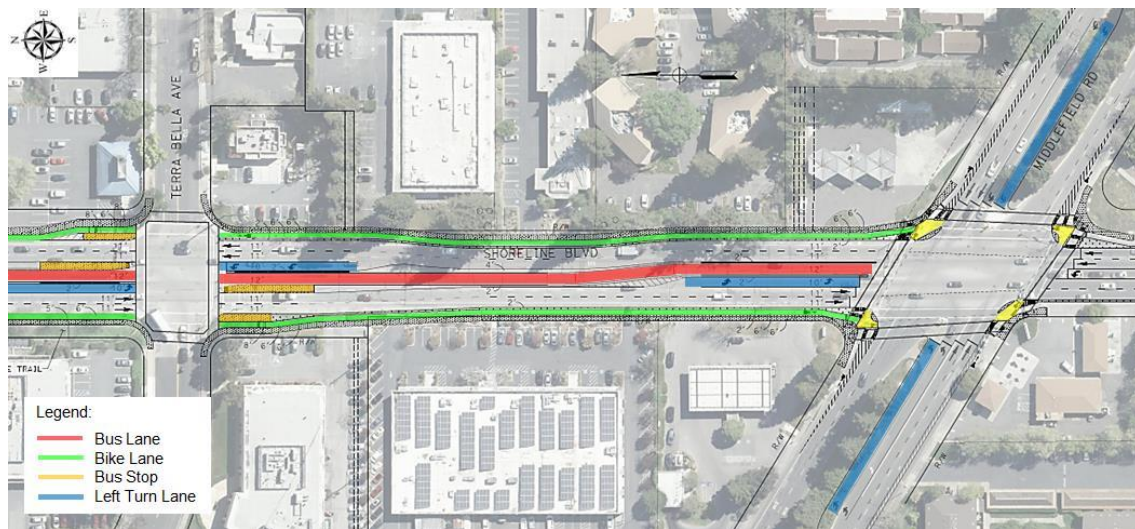


Figure 3 – Improvements from Middlefield Road to Terra Bella Avenue

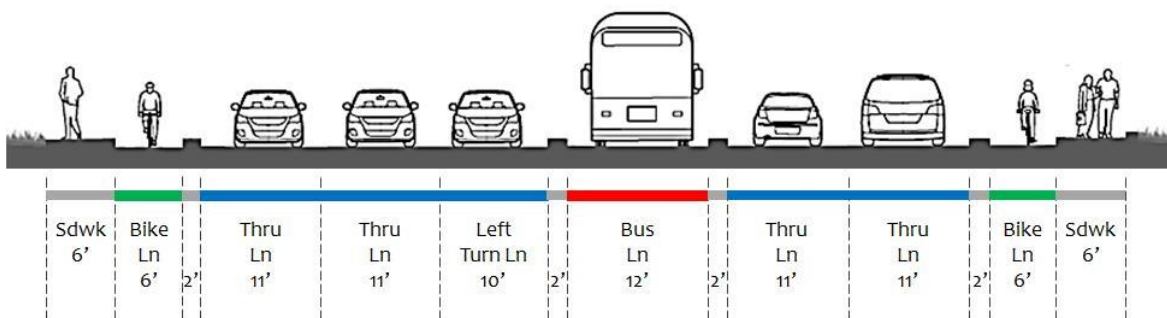


Figure 4 – Cross Section of Shoreline Boulevard at Middlefield Road (Looking North)

Protected Intersection at Middlefield Road

Shoreline Boulevard at Middlefield Road will be improved to become a protected intersection, the first of its kind in the City. A protected intersection is achieved by extending the physical buffer on the protected bike lane into the intersection to create a protected refuge area (see Figure 5). The refuge area provides physical protection for the bicyclist/pedestrian waiting at the corner; it places the bicyclist/pedestrian ahead of the vehicles, making them much more visible to drivers; it provides a dedicated crosswalk for bicyclists and a buffer between the vehicle travel lane and the bicyclist crosswalk; and the distance to cross the intersection is also reduced. These benefits will improve safety at this intersection for both bicyclists and pedestrians.

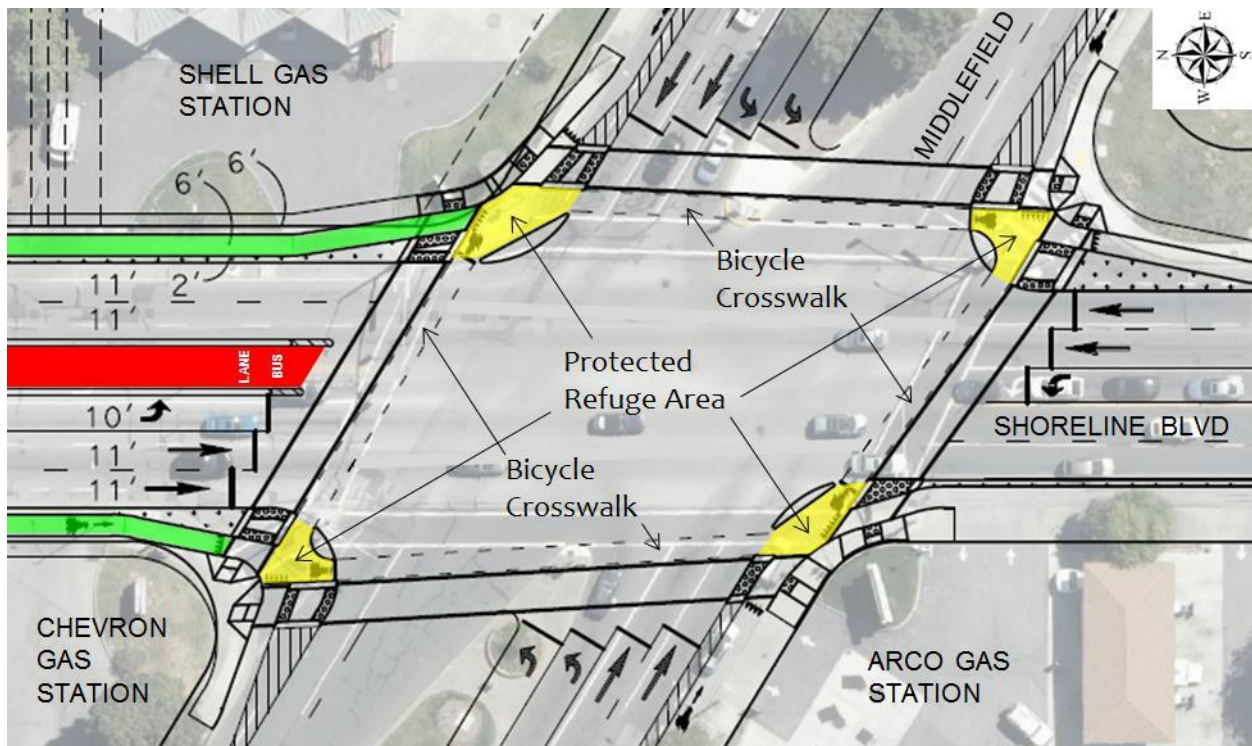


Figure 5 – Protected Intersection at Shoreline Boulevard/Middlefield Road

Left-Turn Pocket Improvements

Several left-turn pockets will be improved as follows:

- An additional left-turn lane will be added on both directions on Middlefield Road at Shoreline Boulevard. This additional left turning capacity is a mitigation measure for the North Bayshore Precise Plan.

- The left-turn pocket length from southbound Shoreline Boulevard to eastbound Middlefield Road will be increased from 140' to approximately 220'.
- The left-turn pocket length from southbound Shoreline Boulevard to eastbound Terra Bella Avenue will be increased to 350'. This is a mitigation measure required as part of the 1005 Shoreline Boulevard development.
- The left-turn pocket length from northbound Shoreline Boulevard to westbound Terra Bella Avenue will be increased from 75' to approximately 150'.

Other Design Considerations

The conceptual design along this segment took several factors into consideration as described below:

- As proposed, the conceptual design requires reconstruction of the curb, gutter, and sidewalk along the project length. Staff evaluated whether it is possible to install the bus lane and maintain bike lanes (protected or not) within the existing curb-to-curb width. Because of the need to add left-turn lanes adjacent to the new bus lane at the intersections, the existing unprotected bike lane would be eliminated in these areas, leaving only a short midblock segment with a bike lane. There would also be stretches where a raised buffer could not be installed. The recommended conceptual design therefore includes replacement of the curb, gutter, and sidewalk.
- While an effort was made to preserve as many trees as possible, staff currently estimates that 11 Heritage trees (see Figure 6) will need to be removed within this section to construct the recommended plan. As design proceeds, staff will continue to minimize tree impacts and replace trees consistent with the City's Heritage Tree Ordinance.

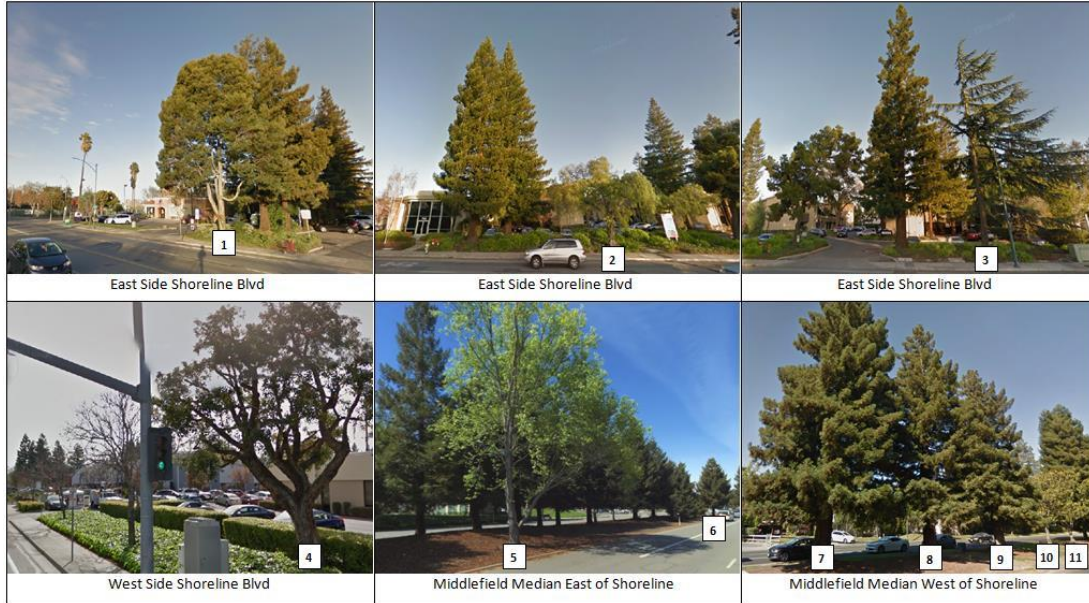


Figure 6 – Heritage Trees to be Removed

Terra Bella Avenue to 101 Overpass

Figure 7 shows the cross section view of Shoreline Boulevard at Terra Bella Avenue looking south. It depicts the bike lane, bus lane, bus stop, and sidewalk improvements with proposed widths.

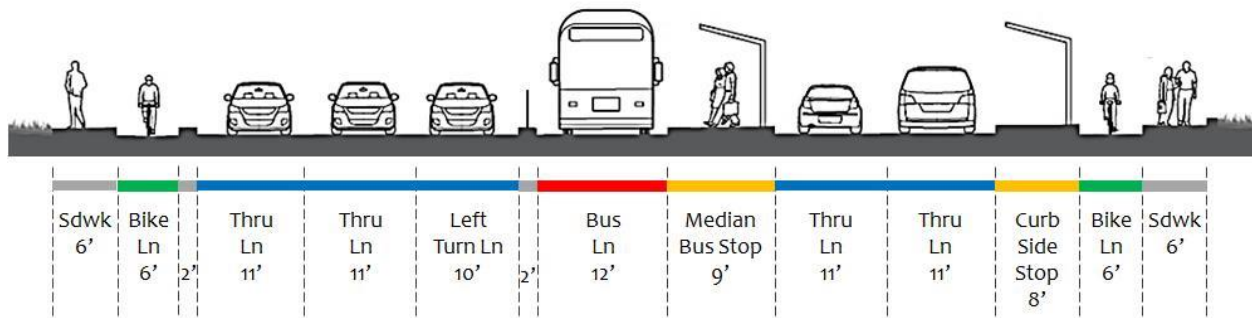


Figure 7 – Cross Section of Shoreline Boulevard at Terra Bella Avenue (Looking South)

The work in this segment (see Figure 8) includes the center bus lane and enhancement to bike lanes with high-visibility green pavement markings at locations within the 101 overpass where the path of bikes and vehicles cross. Bike lanes on the 101 overpass will also be enhanced to 7' wide (see Figure 9). There are approximately 40 non-Heritage trees in the median planter that must be removed (see Figure 10).

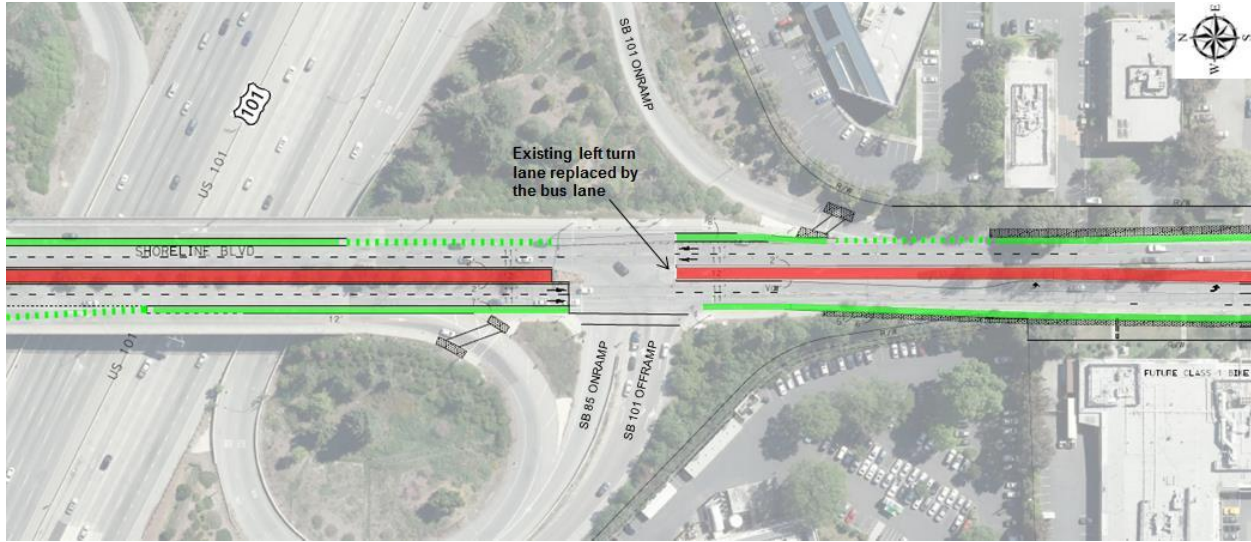


Figure 8 – Improvements from Terra Bella Avenue to 101 Overpass

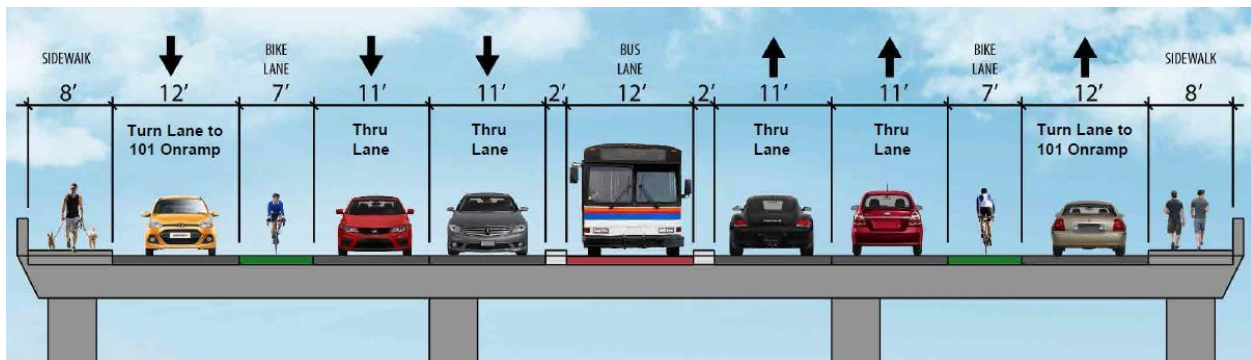


Figure 9 – Cross Section of Shoreline Boulevard on 101 Overpass



Figure 10 – Trees to be Removed on Shoreline Boulevard Median

The northbound Shoreline Boulevard left-turn lane to the southbound Highway 85 on-ramp would be closed, as there is not sufficient width on the overpass to accommodate the left-turn lane and the bus lane. Traffic data indicates the usage of this left-turn lane is relatively low at approximately 100 vehicles during the peak period of 7:00 a.m. to 10:00 a.m. The alternate route for vehicles to access southbound Highway 85 will be from eastbound Middlefield Road to northbound Moffett Boulevard as shown in Figure 11.

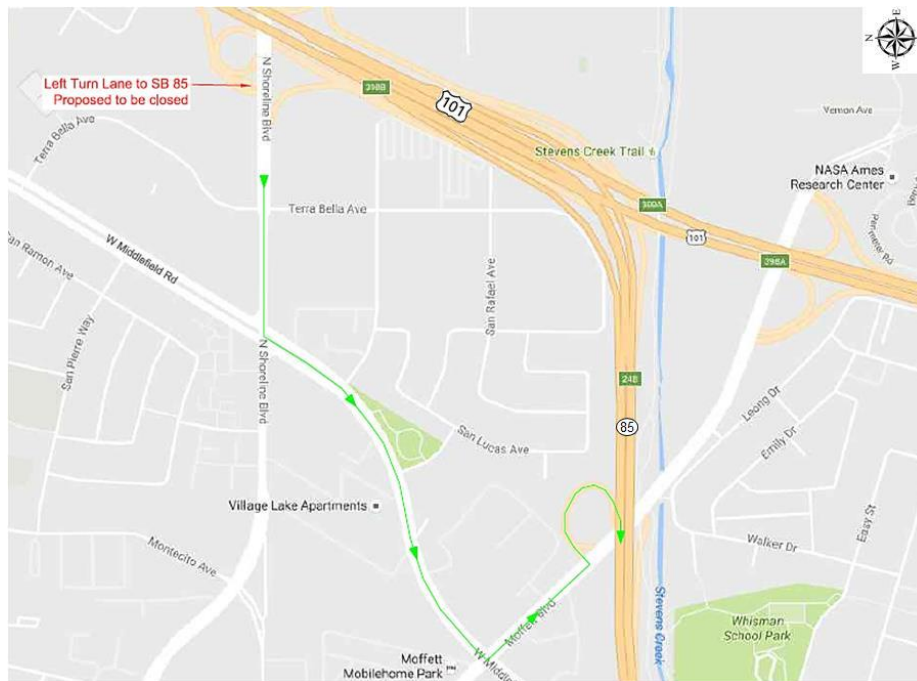


Figure 11 – Alternate Route to Southbound 85 from Shoreline Boulevard

Bus Stops

Four new bus stops will be installed at the Shoreline Boulevard/Terra Bella Avenue intersection. Two bus stops in the median will serve the dedicated bus lane and two curbside bus stops will serve buses in the mixed-use lanes (see Figure 12). The new bus stops will have a shelter and basic amenities such as benches and schedule information.

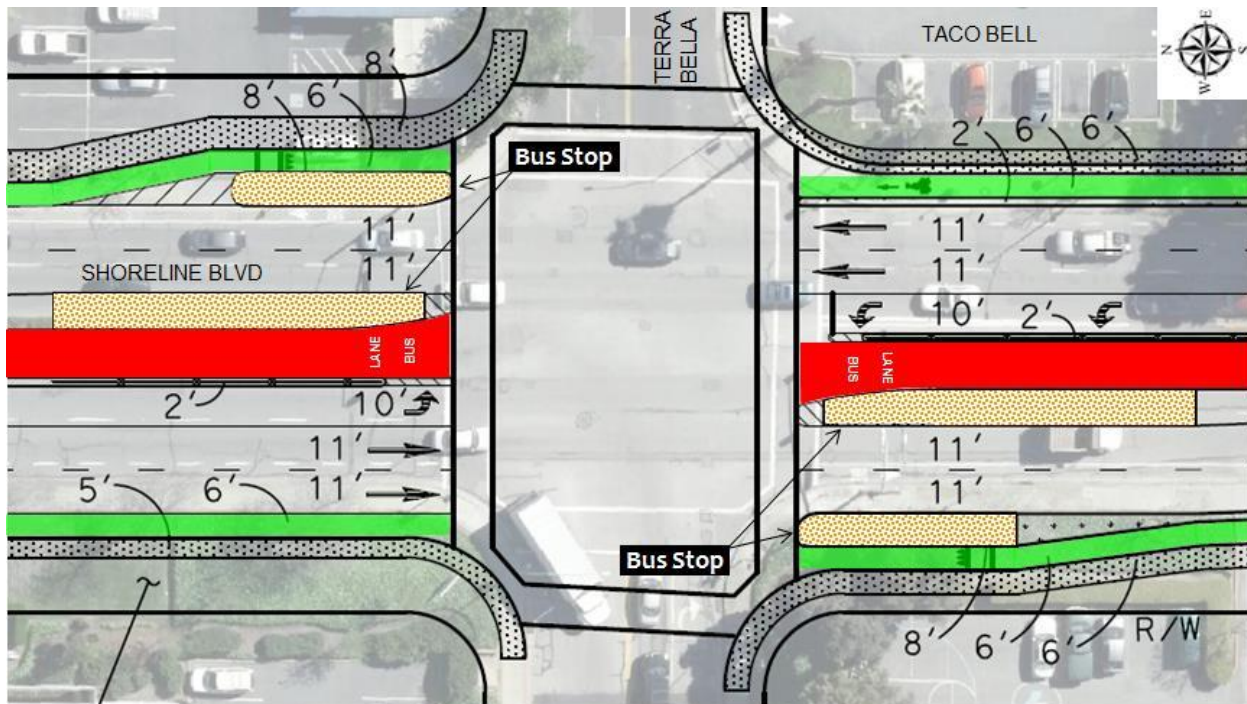


Figure 12 – Four New Bus Stops at Shoreline Boulevard/Terra Bella Avenue Intersection

101 Overpass to Pear Avenue

Pear Avenue is the northern terminus of the current project (see Figure 13). Southbound buses would enter the bus lane and northbound buses would exit the bus lane at this location. A new traffic signal would include a preemptive transit signal phase that allows buses to exit the lane ahead of other traffic. Bike lanes will be enhanced to 6' wide (see Figure 14) between La Avenida and Pear Avenue. There are approximately 30 non-Heritage trees in the median that must be removed in this segment.

This portion of the conceptual design should be considered an interim improvement as other modifications will occur between Highway 101 and Space Park Way when the theater property redevelops.

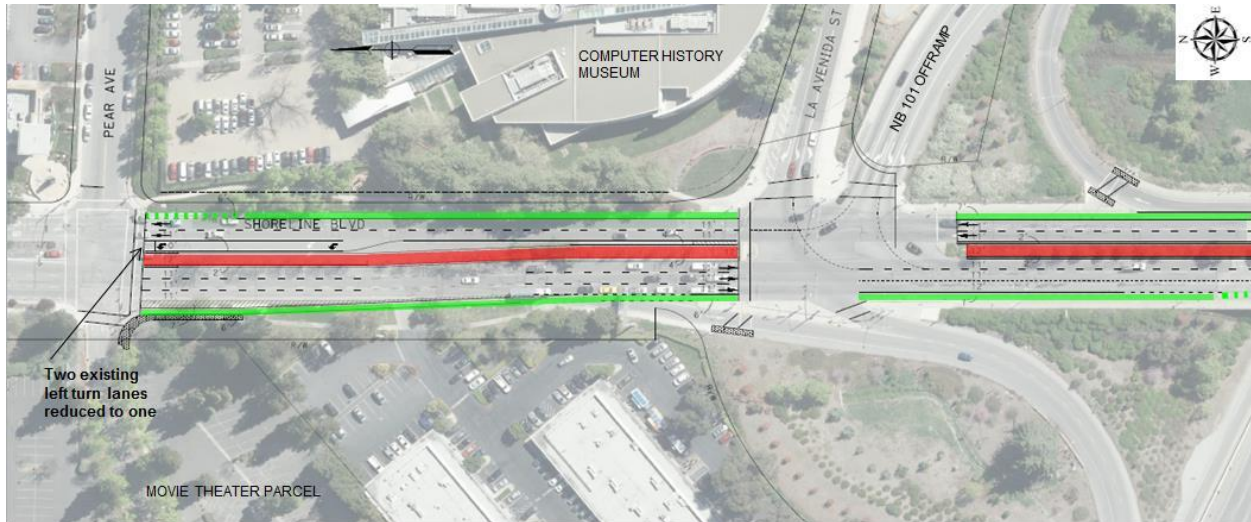


Figure 13 – Improvements from 101 Interchange to Pear Avenue

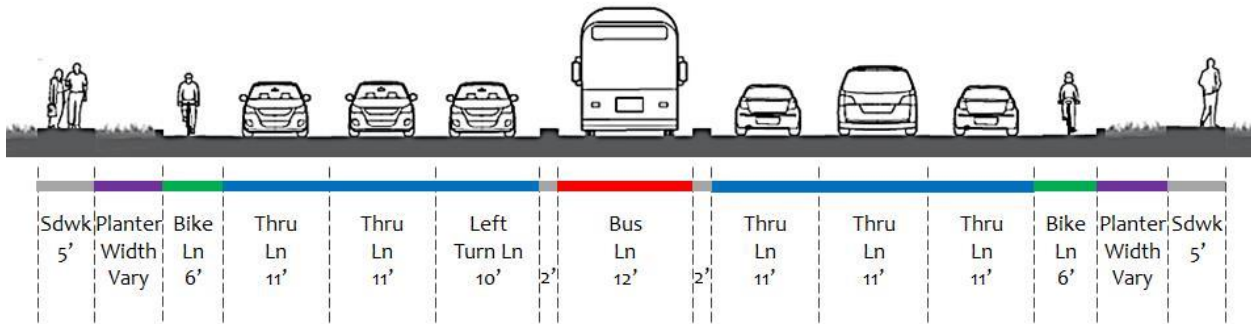


Figure 14 – Cross Section of Shoreline Boulevard at Pear Avenue (Looking South)

Utility Improvements

The project will replace and upsize approximately 3,200’ of water and sewer mains from Middlefield Road to the southbound Highway 101 on-ramp due to the age of the existing infrastructure and in anticipation of increased demand from North Bayshore development. The utility work is included in the project to avoid disruption to the bus lane once completed.

Community Outreach

During development of the conceptual plan, staff conducted two outreach meetings:

- Community Meeting—A community meeting attended by approximately 20 people was held on July 26, 2016. Notices were sent to residents and businesses

within 1,000' of the project site and individuals on the City's bicycle and pedestrian e-mailing list.

- **Transit Operator Meeting**—A meeting was held on August 16, 2016 with transit operators who have current bus/shuttle operations on Shoreline Boulevard, including the Santa Clara Valley Transportation Authority (VTA), Mountain View Transportation Management Association (TMA), ALTRANS (operates Mountain View Community Shuttle), and private employer shuttle services.

The purpose of the meetings was to introduce the conceptual design, solicit input, and answer questions regarding the project. Overall, the community and transit shuttle operators expressed support for the project. A number of detailed questions and concerns were raised that will be addressed during the next phase of design and additional public outreach.

Right-of-Way Acquisition

Additional right-of-way will be necessary, particularly between Middlefield Road and Terra Bella Avenue. While the concept plan considered the right-of-way impacts and kept the buffer and sidewalk widths to acceptable minimums, the project will require the acquisition of approximately 4' to 6' of additional right-of-way along the property frontages at the nine properties as shown in Figure 15.

The acquisition of the additional right-of-way will begin with an independent appraisal to determine the fair market value and offering no less than the fair market value as required by State law. Staff has contacted those owners whose property will be impacted by the proposed project and will be discussing the right-of-way acquisition process with them.

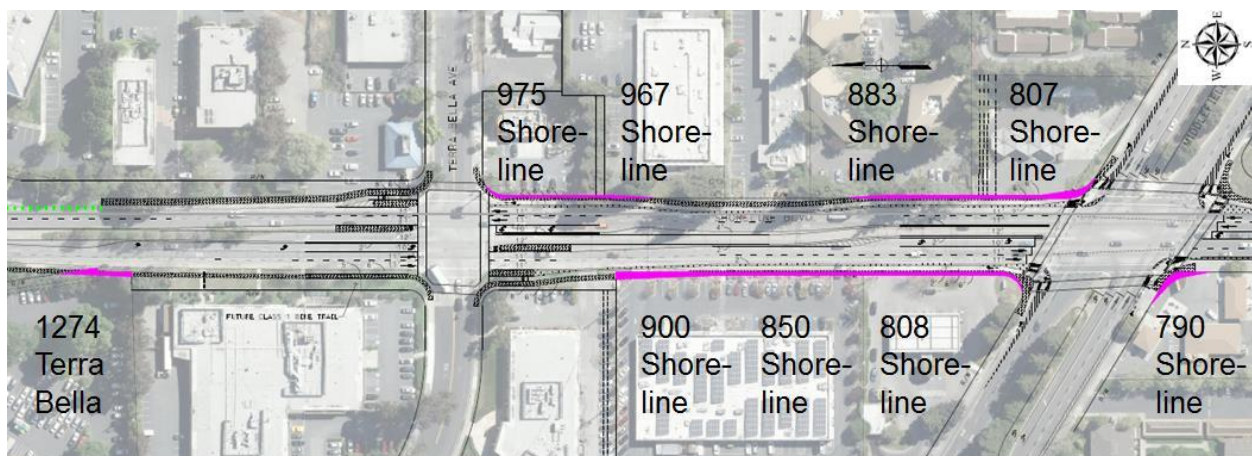


Figure 15 – Properties with Right-of-Way Impact

Amendment to Professional Services Agreement

At the March 15, 2016 Council meeting, it was noted that staff would return to City Council with a request to amend the professional services agreement to continue with and complete the detailed design work and prepare plans and specifications for bidding. The scope of work to complete the design is shown in Attachment 1 for a total not-to-exceed amount of \$1,750,069, which includes \$170,000 in total contingency. The existing contract with Mark Thomas is in the amount of \$347,188, and an additional compensation of \$1,402,881 is necessary. The additional work will include designing the traffic signalization system, the bus lane, the bike lane, traffic handling/construction phasing, and utility plans and specifications. Staff believes this amount to be fair and reasonable for the services required.

FISCAL IMPACT

The Shoreline Boulevard Bus Lane and Utility Improvements Design, Project 16-58, is funded with \$2,363,000 from the Shoreline Community Fund, \$444,000 from the Water (capacity fees) Fund, and \$148,000 from the Wastewater (capacity fees) Fund, for total funding of \$2,955,000. The project budget is adequate to fund the recommended amendment to the agreement. Estimated construction costs between \$8 million and \$9 million will be funded separately via proposed CIP Project 18-41. The North Bayshore Development Impact Fee will cover a portion of the project costs associated with traffic and utility improvements.

NEXT STEPS

If the conceptual plan is approved by City Council, staff will proceed with the following steps to continue with the development of the detailed design:

- Work with Caltrans on the project approval within State right-of-way (across Highway 101).
- Return to City Council at a future meeting with a budget estimate for the right-of-way acquisition and request authority and an appropriation to pursue acquisition.
- Additional outreach efforts with property owners with right-of-way impacts and review of bus operation design with transit operators.
- City Council approval of final plans and specifications.

CONCLUSION

Staff is seeking City Council's approval of the proposed conceptual design plan for the reversible bus lane and utility improvement project on Shoreline Boulevard from Middlefield Road to Pear Avenue. With Council's approval of the amendment to the professional services agreement, Mark Thomas could begin detailed design in September 2016 with final design scheduled to be completed in summer 2017. Provided the right-of-way acquisition proceeds as planned, construction is tentatively scheduled to start in fall 2017.

ALTERNATIVES

1. Direct staff to make revisions to the recommended conceptual design.
2. Do not approve the amendment to the professional services agreement.
3. Provide other direction.

PUBLIC NOTICING

In addition to the City's standard agenda posting requirements, notices were distributed to residents and businesses within 1,000' of the project site (including the mobile home park), the more than 200 individuals on the City's bicycle and pedestrian e-mailing list, nearby City neighborhood associations, the Bicycle/Pedestrian Advisory Committee, and attendees of the past public outreach meetings.

Prepared by:

Andy Chang
Senior Civil Engineer

Reviewed by:

Lisa Au
Principal Civil Engineer

Approved by:

Michael A. Fuller
Public Works Director

Daniel H. Rich
City Manager

AC-LA/TS/7/CAM
913-09-06-16CR-E

Attachment: 1. Mark Thomas & Company – Design Services Proposal and Fee Schedule

cc: APWD – Solomon, PCE – Au, CTE, USM, SCE – Muench, SCE – Chang, AAI – Grimm, F/c