STAFF REPORT
To the Honorable Mayor and City Council
From the City Manager

DATE: February 25, 2019

SUBJECT
El Camino Real Bike & Ped Safety Improvement Study (between Maple and Charter Street)

RECOMMENDATION
Receive presentation on the Bike & Ped Safety Improvement Study final report and provide direction on design concepts and next steps.

STRATEGIC INITIATIVE
Transportation

BACKGROUND
On December 4, 2017, the City Council adopted the El Camino Real Corridor Plan (“Corridor Plan”), a policy document that provides a comprehensive land use, transportation, and streetscape approach. The Corridor Plan was the result of a 2½ year process entailing a citizen advisory group, stakeholder interviews, community-wide workshops, pop-up booths at community events, direct in-person outreach to Corridor businesses, and numerous meetings with Caltrans, the Planning Commission, and other relevant groups, committees, boards, and agencies. The Corridor Plan is a guiding document with recommended implementation actions to be further analyzed and processed after plan adoption, which are organized by timeframe.

One of the Corridor Plan’s short-term implementation actions is streetscape redesign, including the preparation of conceptual design drawings for a segment of the Corridor between Maple and Charter streets. This effort is known as the El Camino Real Bike & Ped Safety Improvement Study (“Safety Improvement Study”). This study is funded through a Caltrans Sustainable Transportation Planning grant. Redwood City was selected as one of two case studies for this grant based on high bicycle and pedestrian

collision rates within this segment of El Camino Real. Work on the Safety Improvement Study began in December of 2017 and will end by March of 2019.

The yearlong Safety Improvement Study resulted in conceptual design drawings that build off of the Corridor Plan, exploring options for crosswalk locations and design as well as protected bike lane configurations. The study examined how these design elements would work with existing constraints and the removal of slip lanes near the Woodside interchange. These conceptual design drawings were informed by feedback from agencies, committees, neighborhood associations, and the community (see Public Notification and Outreach section for details). While the Bike & Ped Safety Improvement Study is complete, the construction of these design concepts remains a long-term implementation action (see Next Steps section).

ANALYSIS

The collision rate for the Redwood City case study segment is about 2.32 collisions per million vehicle miles compared to the statewide average of 1.48 collisions for the same type of roadway, demonstrating the need for streetscape enhancements that improve safety for all roadway users. This segment has the opportunity to improve critical links between existing bike routes, connect existing residential neighborhoods to the downtown, connect new downtown residences to Red Morton Park & Community Center, and improve safety where El Camino Real transitions in the number of lanes and between state highways (SR84 – Woodside).

FIGURE 1 – STUDY SEGMENT

While the Corridor Plan encompasses mobility, economic vitality, housing, and placemaking, the Safety Improvement Study focuses on safety improvements within the roadway. It further developed the mobility elements from the Corridor Plan to show how these concepts could be applied in the study segment based on existing constraints. As such, the Safety Improvement Study provides conceptual designs for the following key elements:

1. Protected Bike Lanes
2. Crosswalks
3. Street Crossings
4. Bus Stops

1. Protected Bike Lanes

The Corridor Plan identified protected bike lanes on El Camino Real as a long-term vision to replace on-street parking. While further analysis is needed before bike lanes can be installed, additional design and input was needed to determine the bike lane widths, barrier types, intersection treatments, and driveway treatments. The Safety Improvement Study focused on obtaining this information within the study segment.

The City solicited community input on design options and tradeoffs for the bike lanes. Community consensus formed around a design option for the bikeway, barrier, and mid-sized landscaping medians. Comments include the preference for design elements that include physical barriers (rather than soft tip posts) that provide visibility between bicyclists and vehicles, and the desire for landscape, greenery for shade, sun protection, and aesthetics.

The conceptual design drawings incorporated these design elements where there is sufficient space within the roadway (84 ft.). In the section between Woodside and Charter streets, the design requires narrower bike lanes, barriers, and medians since there are six lanes (plus a turn lane) rather than four lanes.

In addition, the consultant prepared intersection treatment options based on traffic control, available right-of-way, and the volume of right turns during peak periods (see Figure 2 for an example of an intersection treatment). The public and Complete Streets Advisory Committee (CSAC) provided input on these options, which have been incorporated into the conceptual design drawings.

FIGURE 2 – EXAMPLE OF PROTECTED CORNER/INTERSECTION

2. Crosswalks

The Corridor Plan recommended high visibility crosswalks with safety features and refuge medians (flat, paved areas within medians for people to wait if they cannot cross the intersection within the crossing cycle). It further recommended crosswalks to be within 600 feet of each other, prioritizing locations based on existing uses and pedestrian volumes. The Safety Improvement Study focused on where there missing crosswalks at signalized intersections, improvements to existing crosswalks, and where new mid-block crosswalks might be needed.
The City solicited community input on where people currently walk along and across El Camino Real, key designations, and where people would like to cross. Based on this input, most people cross El Camino Real at Roosevelt and Maple streets. In addition, a large number of people cross at Oak, Charter, and would like to cross at Main/Redwood Ave. Key destinations identified were Target, Mi Rancho Supermarket, BevMo, and Bed, Bath & Beyond. Using this input and the Corridor Plan guidance, the conceptual design drawings include improved crosswalks at all signalized intersections, with high visibility striping, median refuges, and adjustments to crossing timings (leading pedestrian intervals) where appropriate. In addition, the conceptual design drawings show three new mid-block crossings at Lincoln/Beech, Lathrop, and Laurel intersections. While the Laurel Street mid-block crossing is not a priority at this time due to low pedestrian volumes and existing auto-oriented uses, the Safety Improvement Study, the Safety Improvement Study recommended a crossing between Main/Redwood and Charter Streets, which are separated by 1,131 feet (.21 miles). It is important to note that mid-block crossings would include such safety elements as lighting, striping, overhead warnings for drivers and would only be activated when a pedestrian needs to cross.

FIGURE 3 – EXAMPLE OF MID-BLOCK CROSSING: EL CAMINO REAL AT NORTHUMBERLAND (EXISTING)

3. Street Crossings

The Corridor Plan identified street alignments as an issue impeding mobility in parts of the corridor. Of the 39 intersections on El Camino Real, only 7 intersections connect streets across El Camino Real, all of which fall outside the study segment. The other 32 streets end at El Camino Real forcing people to travel on El Camino Real in order to get across it. This creates additional traffic on an already congested corridor as well as safety challenges for people traveling east to west. As shown in Figure 4 below, a majority of the misaligned intersections fall within the study segment.
The Safety Improvement Study builds on the Corridor Plan by showing how the identified intersections could be designed and function. Key changes are to Roosevelt and Main/Redwood Ave, which would allow connections across El Camino Real (see Figure 5, blue arrows). As the Corridor Plan seeks to improve all modes of travel, the goal is to better space existing traffic signals and avoid adding any new signals, which creates additional traffic delay. As such, the Safety Improvement Study would recommend maintaining the existing traffic signal at Roosevelt, removing the existing traffic signal at Chestnut, and adding a new traffic signal at Main/Redwood Ave. This would result in the same number of signals but with improved spacing. The conceptual designs also lengthen the turning lanes for Roosevelt to allow for longer queueing and change Chestnut to a right turn only. Those who currently use Chestnut to cross El Camino Real would instead use the new Roosevelt or Main/Redwood Ave. crossings.

FIGURE 4 – STREET CROSSINGS (EXISTING)

FIGURE 5 – STREET CROSSINGS (PROPOSED)
In addition, by consolidating Main Street into one intersection (where it is currently split into two), it would lengthen sidewalks along El Camino Real, areas for open space, landscaping, or more active uses (see Figure 6, green area). The City solicited community input on the how the resultant open space area could be used. The majority of comments received indicated a preference for this area to be used as a passive open space such as landscaping and stormwater drainage, at least in the near term. This potential realignment would also require the closure of Spruce Street, a short dead-end street adjacent to Broadway Cleaners.

This intersection would also provide significant improvements for pedestrian safety at all four corners. The existing slip lanes with wide turning angles that promote faster vehicular turning movements could be squared off corners with shorter crosswalks providing better visibility for pedestrians, and slower vehicular turning movements. As noted previously in this report, this intersection was identified during community input as a place where people would like to cross El Camino Real. The City also received concerns from residents who live in the neighborhoods around Redwood Avenue about potential traffic impacts that could result from the proposed intersection.

As noted in the next steps section, the City will continue to analyze potential opportunities and impacts of this intersection through traffic studies and an extensive outreach effort, and revise the proposal based on this input.

4. Bus Stops
The Corridor Plan provides strategies to improve transit service for bus ridership, including improved bus stops and more efficient operations. In addition, the Corridor Plan emphasizes the importance of providing protected bike lanes that are physically separated from other uses, including buses. The Safety Improvement Study built upon this by analyzing what types of improvements the community prioritized at the bus stops and how boarding of the buses could occur without mixing within the bike lanes.

The City solicited community input on bus stop amenities that would contribute to a comfortable and enjoyable passenger waiting experience. The first preference was for bus stop shelters that provide weather protection. This was followed by a preference for benches so that people have a place to sit while they wait. Real time arrival information and lighting were also identified as important and should be considered where funding is available.

In addition to amenities, the City looked into boarding operations that would be compatible with protected bike lanes. Based on input from the Complete Street Advisory Committee and community, the preferred option is a separate bus boarding area (also called floating islands), as it would provide a dedicated platform for bus riders to safely and efficiently board buses (see Figure 7). Passengers would board busses from the sidewalk adjacent to the travel lane, which means that bus would not pull out of traffic and load at the curb. The Safety Improvement Study also recommends relocating one bus stop from the north side of Oak Ave. to the south side. This is consistent with the other bus stops and would improve access to the bus stop. The separate bus boarding stops would be installed concurrently with the protected bike lanes. This and remains a long term action as provided in the Corridor Plan.

**NEXT STEPS**

The Safety Improvement Study is an important step in the implementation of the Corridor Plan as it applies the envisioned streetscape improvements to the most challenging segment of El Camino Real. By understanding how these improvements fit within existing constraints using accurate data and CAD drawings, the City will be better poised for obtaining grant funding. The design concepts also help inform how the City could apply the streetscape improvement to the remainder of the Corridor.

While the conceptual design drawings are detailed and accurate, further engineering and detailed design work would be needed for construction. The City also needs to complete a number of steps before constructing these improvements. Summarized below are a list of next steps by design element (see Safety Improvement Study final report for more details). Many of these improvements have a long-term time frame as further analysis, cooperation from property owners, and community input are required. Since El Camino Real is a state highway, all work within the roadway requires Caltrans approval, which is itself a lengthy process.
### TABLE 1 – NEXT STEPS BY DESIGN ELEMENT

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<thead>
<tr>
<th>Protected Bike Lanes</th>
<th>Crosswalks</th>
<th>Street Crossings</th>
<th>Bus Stops</th>
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</thead>
<tbody>
<tr>
<td>• develop a parking management plan to address loss of on-street parking</td>
<td>• work with Caltrans to obtain approval and permits</td>
<td>• work with adjacent neighborhoods, businesses, and property owners to discuss and address concerns</td>
<td>• work with SamTrans on final designs, locations, and operations</td>
</tr>
<tr>
<td>• develop strategy for on-going cleaning and maintenance of bike lanes</td>
<td>• pursue grants and capital improvement program to fund final design and construction</td>
<td>• conduct a neighborhood traffic study to determine potential impacts of roadway alignments</td>
<td>• conduct a traffic study to determine potential impacts of in-lane loading operations</td>
</tr>
<tr>
<td>• continue to work with the Fire Department to facilitate emergency access</td>
<td>• develop traffic calming measures to be implemented with the new crossings</td>
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<td>• work with Caltrans to obtain approval and permits</td>
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<tr>
<td>• continue to work with businesses to facilitate loading, deliveries, and trash pick-up</td>
<td>• present final designs based on above process to CSAC and Council for authorization to prepare detailed design drawings</td>
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### FISCAL IMPACT

Acceptance of the final report will not have any impact on the City’s budget. The additional studies, outreach, and detailed design drawings outlined in Table 1 above will be funded separately through CIP funds and grants, consistent with the [RWCmoves prioritization analysis](#).

### ENVIRONMENTAL REVIEW

The Bike & Ped Safety Improvement Study has been reviewed with respect to applicability of the California Environmental Quality Act ("CEQA") and the State CEQA Guidelines (California Code of Regulations, Title 14, Sections 15000 et seq.). The Safety Improvement Study falls within the requirements of Section 15262 “Feasibility and Planning Studies” as it is a planning study which provides conceptual design recommendations to implement a segment of the Corridor Plan’s vision.
PUBLIC NOTIFICATION AND OUTREACH

Public Notification was achieved by posting the agenda, with the agenda items being listed, at least 72 hours prior to the meeting. In addition, the City engaged the community throughout the study as follows:

Community Outreach
- Pop-up events
  - Pop-up events on existing conditions and design preferences (Fair Oaks Community Center, Target, and BevMo) in March and April, 2018
  - Demonstration protected bike lane on El Camino Real (between Chestnut and Cedar) to show how it might look and feel on October 20th

- Online surveys
  - Existing conditions and design preferences survey with over 100 comments received (3-week period in April/May, 2018)
  - online interactive webmap with over X comments received (4-week period in October/November, 2018)

- Roundtable discussion
  - Held an informal meeting with representatives from the 7 adjacent neighborhood associations to solicit feedback, concerns, and recommendations for the study segment

Meetings
- Complete Streets Advisory Committee (on draft conceptual designs)
- Technical Advisory Committee (4 meetings at various stages)
- Caltrans (on draft conceptual designs, process, and next steps)

Data and Materials
- Existing conditions memo and graphics for the study segment
- Photo simulations of conceptual design

ALTERNATIVES

1. Recommend changes to the conceptual designs
2. Request additional studies and analysis prior to seeking Council authorization for detailed design drawings and construction

ATTACHMENTS

Attachment A: Bike & Ped Safety Improvement Study - Final Report

REPORT PREPARED BY:
Lindy Chan, Senior Planner
lchan@redwoodcity.org
780-7237

APPROVED BY:

Steven Turner, Acting Community Development Director
Melissa Stevenson Diaz, City Manager