



Planning & Transportation Commission

Staff Report (ID # 9556)

Report Type:	Study Session	Meeting Date: 11/14/2018
Summary Title:	El Camino Real Safety+Connectivity Planning	
Title:	Provide Feedback on Conceptual Design Options to Improve Multimodal Connectivity and Safety along El Camino Real Between Stanford Avenue and Lambert Avenue	
From:	Jonathan Lait	

Recommendation

Staff recommends that the Planning and Transportation Commission (PTC) take the following action(s):

1. Discuss preliminary results of the *Grand Boulevard Initiative: Creating Safe and Healthy Corridor Communities* planning project and provide input to staff on Conceptual Design Option 1 and Option 2.

Report Summary

El Camino Real has long been the focus of local and regional planning activity. From the City of Palo Alto's 2007 *Draft El Camino Real Master Plan* and the 2002 *South El Camino Real Design Guidelines*, to the broader vision of the *Grand Boulevard Initiative*, many challenges and opportunities related to land use, design, and transportation have been raised.

Unlike past city-led efforts, the *Grand Boulevard Initiative: Creating Safe and Healthy Corridor Communities* planning project is highly focused, both spatially and topically. Spatially, the project limits are a short segment of El Camino Real: Stanford Avenue to Lambert Avenue. Topically, safety is the prime criteria: 51 bicyclist and pedestrian involved crashes have occurred along this 0.8-mile section between 2005 and 2015.

Background

One of the eight goals in the *Comprehensive Plan 2030 Transportation Element* centers on providing a safe environment for all modes on Palo Alto streets and is further described as the first priority of citywide transportation planning.

In early 2015, results of a collaborative collision analysis along El Camino Real, conducted through interagency partnerships forged through the Grand Boulevard Initiative, revealed high bicycle and pedestrian collision rates on El Camino Real between Stanford Avenue and Lambert Avenue.

A unique multi-agency grant application proposal was selected as the preferred method to undertake a planning process to comprehensively engage communities, incorporate feedback, and develop potential streetscape concept plans. SamTrans, as one of the coordinating agencies of the Grand Boulevard Initiative, volunteered to be the primary grant applicant.

In fall 2015, SamTrans, in collaboration with the City's Office of Transportation and Redwood City's Community Development Department, submitted a grant application to Caltrans's *Sustainable Transportation Planning Grant Program* called *Grand Boulevard Initiative: Creating Safe and Healthy Corridor Communities*. The primary goal of the project is to develop streetscape design options in response to high bicycle and pedestrian collision rates along two segments of El Camino Real in the respective partner cities.

SamTrans's *Communities* project proposal was awarded \$349,074 by Caltrans in summer 2016. In January 2017, the City of Palo Alto entered into a funding agreement with SamTrans, authorizing use of \$22,613 in matching local funds for the project.

Throughout 2018, public meetings and surveys presented facts and solicited community feedback on transportation-related concerns in the study area. The Planning & Transportation Commission study session is one element in the final phase of the project's outreach before concluding in January 2019 with conceptual plans and a summary of public feedback. Commission feedback is sought on two attached conceptual designs.

Discussion

Community feedback and analysis of technical data indicate multimodal safety, mobility, and connectivity are key areas for potential improvement along the study corridor. These categories, among others, guided development of the two conceptual design options for the study corridor. Analysis of these factors is provided in the following paragraphs followed by a summary of the design options and several questions for commission discussion around areas of concern.

SAFETY

Between 2006 and 2015, 51 people walking or biking along El Camino Real between Stanford and Lambert Avenue were involved in a collision. This is an average of five people each year over a 10-year span. The collision data originate from the Statewide Integrated Traffic Records System (SWITRS) and were analyzed by Fehr & Peers, the lead transportation planning and engineering consulting firm working on this study. The following tables are a summary of

bicycle and pedestrian crash profile graphics and maps, which are available as an attachment to this report.

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See Table on Following Page*

Pedestrian Collision Profiles 2006-2015

Total Crashes: 20

Four Frequent Crash Types	Summary of Pedestrian-Involved Collisions	Potential Causes & Countermeasures
Side-Street Stop Controlled Intersection	7 crashes occurred at side-street stop-controlled intersections 4 crashes: Driver failure to yield 3 crashes: Pedestrian crossing El Camino Real	- Causes: High speeds; impaired sight lines; limited gaps in traffic; distance between crosswalks - Countermeasures: curb extensions; remove some parking to clear sight lines; slow vehicle turns
Vulnerable Populations (Seniors)	7 crashes involved injuries to seniors walking - Sunrise Senior Living facility is adjacent to the corridor	- Senior-friendly design: longer walk signal times - Focus pedestrian improvements adjacent to senior centers
Red Light Violations	6 crashes where either a vehicle or pedestrian entered intersection against the signal	Shorter signal cycles at key intersections
Permitted Right Turns	6 crashes occurred when vehicle was turning right onto or off of El Camino Real. 5 of 6 occurred at signalized intersections and while pedestrian was in crosswalk	Same as Side-Street Stop crash countermeasures

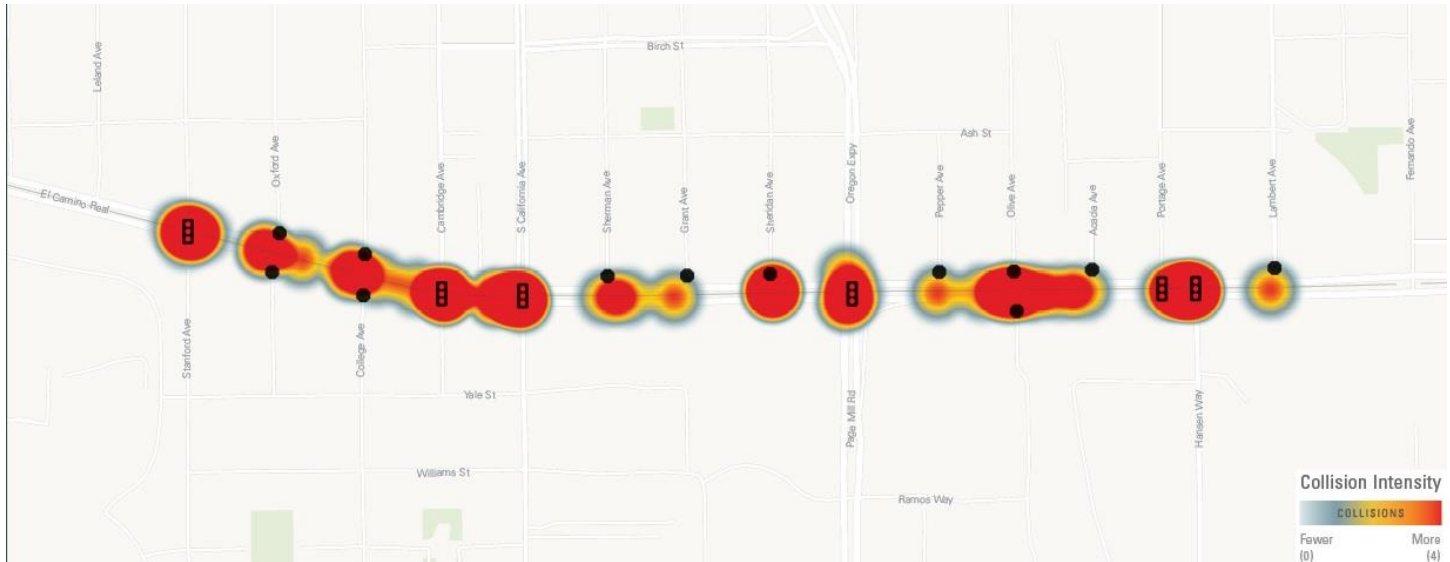
Bicyclist Collision Profiles 2006-2015

Total Crashes: 31

Four Frequent Crash Types	Summary of Bicycle-Involved Collisions	Potential Causes & Countermeasures
High Speed Traffic and Shared Travel Lane	9 crashes: midblock sideswipe and rear-end collisions - Occurred when vehicle was changing lanes	- Causes: Bicyclists share high-speed auto travel lanes - Countermeasures: traffic calming; driver education; wayfinding directing cyclists to alternate routes; and/or dedicated bicycle facilities
Wrong-Way Bicycling	9 crashes: Occurs when cyclist is travelling in the street opposite the direction of motor vehicle traffic	- Existing facilities do not meet a cyclist's desire lines - Expand cycling facilities and ensure reasonably short signal cycle lengths
Side Streets and Driveways	5 Crashes: Vehicle or bicyclist entering or exiting El Camino Real and failed to yield to a vehicle or bicyclist travelling on the street.	- Causes: inhibited sight lines; limited gaps in traffic; right of way confusion - Countermeasures: clear sight lines; clarify right-of-way at intersections
Red Light Violation	4 crashes: vehicle or bicycle entered the intersection during a red light.	Shorter signal cycles at key intersections

The nine reported sideswipe and rear-end bicycle-involved collisions are a surprising outlier and offer insight towards potential countermeasures. These collision types are uncommon on urban roads where there are either few cyclists or motor traffic speeds and volumes are low enough

that travel lanes may be shared between bicyclists and motor vehicles with less crash risk. On El Camino Real, neither of these conditions appears to be present. Motor traffic routinely exceed the 35MPH posted speed limit and high vehicle volumes likely complicate passing maneuvers around cyclists within the travel lane. Furthermore, despite the automobile-dominant environment, cyclists are still traveling on El Camino Real.



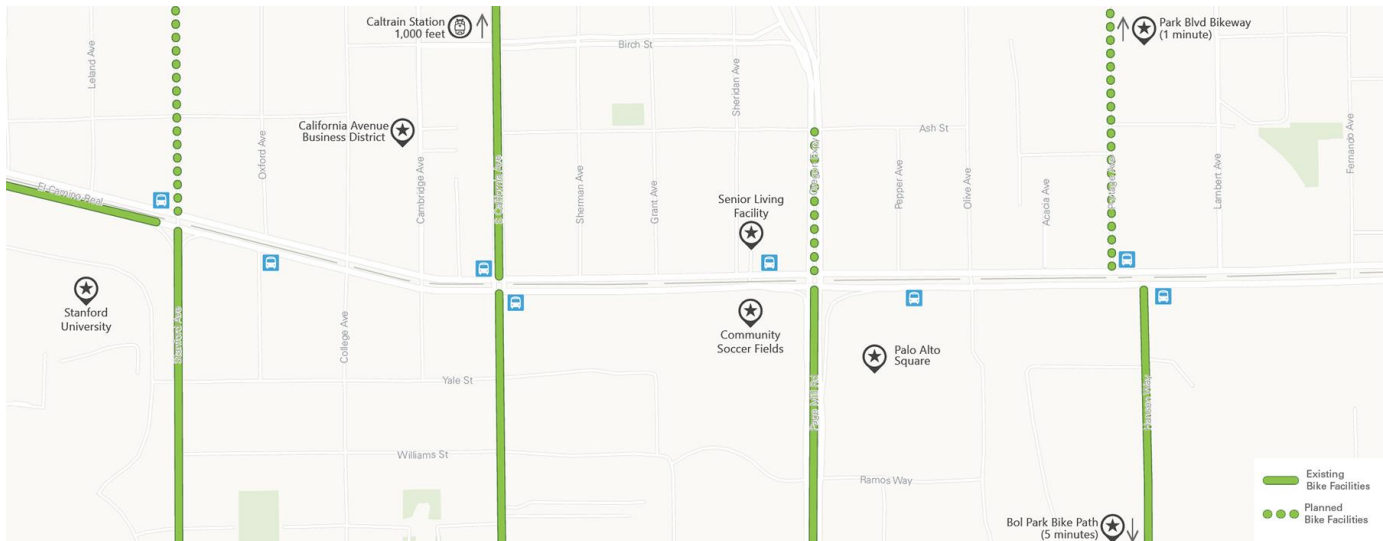
Bicycle and Pedestrian Collision “heat map” showing location and frequency of collisions along the study corridor.

CONNECTIVITY

Bicycle and pedestrian connectivity issues generally relate to the quality of east-west *crossings* of El Camino Real and needs *along* El Camino Real.

Most continuous east-west streets which cross El Camino Real are classified either an existing or planned bikeway connection or suggested safe route to school. However, with the exception of Stanford Avenue and El Camino Real, few intersections have received substantial upgrades. Some intersections, such as College Avenue have a marked crosswalk, but no type of control, such as a signal, which is not recommended in the latest federal design guidelines. Furthermore, the distance between crossings can be long, reinforcing the perception that El Camino Real is a barrier to community connectivity.

Along El Camino Real, there are no on-street bicycle facilities, and as the collision findings note, sharing the road can be hazardous. Despite the discomfort with cycling on an automobile-oriented road, the land use characteristics of the corridor likely contribute to travel demand by bicycle, particularly within the study area. Businesses, offices, community facilities, and increasingly mixed-use residential land uses directly front El Camino Real, necessitating that those approaching via bicycle complete their trip on at least a few blocks of El Camino Real. Other major destinations such as Palo Alto Square and the Stanford/Palo Alto Community Playing Fields, may only be reached conveniently from most residential neighborhoods via El Camino Real.



Existing and proposed bicycle network in the vicinity of the study area. With the exception of the Stanford Perimeter Trail, which ends at Stanford Avenue and El Camino Real, all bikeways are east-west oriented. Star icons denote major destinations.

MOBILITY AND ACCESS

In the *Comprehensive Plan*, El Camino Real is classified as an arterial, a roadway typology commonly associated with mobility and higher travel speeds. Additionally, the corridor hosts the city's most frequent and heavily patronized bus services: VTA line 22 and 522. Community feedback touched on the importance the road plays in moving large volumes of motor traffic relatively quickly and that it would remain a major force along the corridor, moderated with streetscaping and safety countermeasures. However, based on results from dot exercises and online surveys, opinions diverged regarding the need for on-street auto parking along El Camino Real.

Project staff organized a stakeholder meeting with CalMOCA, a California Avenue Merchant organization, and the feedback received was to retain parking supply and focus bicycle and pedestrian improvements on east-west connectivity.

Parking occupancy surveys conducted as part of the project partially reflect this result: parking occupancy is relatively low along most block faces within the study area. In the graphic below, dark red indicates occupancy greater than 85%, or when parking would be difficult to find.

In addition to potential changes to curbside uses, the project is considering new transit “queue jump” lanes approaching the El Camino Real and Page Mill Road intersection. The operations of the lanes were evaluated using traffic simulation software which can better account for random arrivals of vehicles and corridor congestion than traditional methods. Initial results show significant travel time savings for both transit riders and drivers of private vehicles, but street trees and right-of-way acquisition would be required along the Palo Alto Square and

Stanford/Community Playing Fields frontages. The following results from the preliminary analysis show significant reductions in delay. Further analysis and approvals from Caltrans and Santa Clara County Roads and Airports would be required if detailed conceptual design and steps toward implementation were desired.

Table: Transit Delay (seconds) at Page Mill Rd/El Camino Real

	PM		AM	
	Southbound	Northbound	Southbound	Northbound
Background Cond.	100	110	70	100
Option 1 + Option 2	-35 (35.0%)	-15 (15.0%)	-	-40 (40.0%)



On-street parking occupancy along El Camino Real within the limits of the study area.

CONCEPTUAL DESIGNS

After compiling community feedback from two outreach events and two surveys, the project team developed conceptual design plans for two options along the study corridor (El Camino Real; Stanford Ave to Lambert Ave). The following are a summary of the key differences between the two options. Full-size concept plans are presented as attachments.

	Option 1	Option 2
Bicycle	Protected bicycle lanes along the study corridor, including at key intersections	- No bike facility on El Camino Real - Potential enhancement or implementation of parallel bikeways
Transit Reliability	- Queue jump lanes at Page Mill/El Camino Real; some property acquisition required - Bus bulb-out boarding areas with passenger amenities - Substantial reduction in delay for transit at the intersection - Moderate reduction in delay for automobiles	
Parking	- All on-street parking removed along El Camino in the study area - Additional parking management analysis required	Some on-street parking removed to achieve safety benefits
Pedestrian	- Install curb extensions to shorten crossings, improve visibility, slow turning vehicles - Potential shorter traffic signal cycles - New controlled mid-block pedestrian crossings at College Avenue; Grant Avenue and Olive Avenue, reducing distance between crossings. - Opportunity for streetscaping & placemaking with new pedestrian light fixtures, street trees, and furnishings.	

As shown in the table, there are several major changes proposed in either or both option 1 and 2, for which staff is seeking Commission feedback:

- 1) In the study area, one option would remove all on-street parking and install protected bicycle lanes. What are commissioner preferences for curbside uses along the study corridor?
- 2) Both options include a bus transit “queue jump” lane on the El Camino Real approaches to the Page Mill Road/El Camino Real intersection, requiring right-of-way acquisition and removal of street trees along the Palo Alto Square and Stanford Playing Field frontages. What benefits and drawbacks do commissioners see with this aspect of the project? Are there additional features or considerations that should be included?

Analysis

The City’s 2012 *Bicycle and Pedestrian Transportation Plan* and 2017 *Comprehensive Plan 2030* are two primary policy documents which informed development of the concept plans. The two conceptual design options presented for consideration are consistent with many goals, plans and programs identified in the Transportation Element of the *Comprehensive Plan 2030*. There are a few differences and factors to consider, however:

- Option 1 (Protected Bike Lanes) would result in safer bicycle access to destinations along El Camino Real and respond to the known bicycle collision pattern along the corridor. Option 2 does not provide an equivalent degree of bicyclist connectivity or safety.
- Bus Queue Jump Lanes: Transit priority treatments are identified as a mitigation measure in the *Comprehensive Plan 2030* EIR and were conceptually developed with feedback from VTA.

The project options are consistent with the following goals, policies, and programs in the *Comprehensive Plan 2030 Transportation Element*:

Goal T-1: Create a sustainable transportation system, complimented by a mix of land uses, that emphasizes walking, bicycling, use of public transportation and other methods to reduce GHG emissions and the use of single occupancy motor vehicles.

Policy T-1.1: Take a comprehensive approach to reducing single-occupant vehicle trips by involving those who live, work and shop in Palo Alto in developing strategies that make it easier and more convenient not to drive.

Policy T-1.3: Reduce GHG and pollutant emissions associated with transportation by reducing VMT and per-mile emissions through increasing transit options, supporting biking and walking, and through the use of zero-emission vehicle technologies to meet City and State goals for GHG reductions by 2030.

Policy T-1.6: Encourage innovation and expanded transit access to regional destinations, multi-modal transit stations, employment centers and commercial centers, including those within Palo Alto through the use of efficient public and/or private transit options such as rideshare services, on-demand local shuttles and other first/last mile connections.

Policy T-1.9: Continue to encourage the provision of amenities such as seating, lighting and signage, including real-time arrival information, at bus and shuttle stops and train stations to increase rider comfort, safety and convenience.

Program T1.12.3: Work with VTA to study the feasibility of, and if warranted provide, traffic signal prioritization for buses at Palo Alto intersections, focusing first on regional transit routes. Also, advocate for bus service improvements on El Camino Real such as queue jump lanes and curbside platforms.

Policy T-1.19: Provide facilities that encourage and support bicycling and walking.

Goal T-2: Decrease delay, congestion, and VMT with a priority on our worst intersections and our peak commute times, including school traffic.

Policy T-2.3: Use motor vehicle LOS at signalized intersections to evaluate the potential impact of proposed projects, including contributions to cumulative congestion. Use signal warrants and other metrics to evaluate impacts at unsignalized intersections.

Policy-T-3.5: When constructing or modifying roadways, plan for use of the roadway by all users.

Goal T-3: Maintain an efficient roadway network for all users.

Program T3.5.1: Continue to use best practices in roadway design that are consistent with complete streets principles and the Urban Forest Master Plan, focusing on bicycle and pedestrian safety and multi-modal uses. Consider opportunities to incorporate best practices from the National Association of City Transportation Officials guidelines for urban streets and bikeways, tailored to the Palo Alto context.

Policy-T-3.7: Encourage pedestrian-friendly design features such as sidewalks, street trees, on-street parking, gathering spaces, gardens, outdoor furniture, art and interesting architectural details.

Goal T-5: Encourage attractive, convenient, efficient and innovative parking solutions for all users.

Goal T-6: Provide a safe environment for motorists, pedestrians, and bicyclists on Palo Alto streets.

Policy T-6.1: Continue to make safety the first priority of citywide transportation planning. Prioritize pedestrian, bicycle, and automobile safety over motor vehicle level of service at intersections and motor vehicle parking.

Public Notification, Outreach & Comments

Outreach activities are structured into three stages. The following have occurred or are planned:

Stage 1: Winter 2018

- Pop-up event at the California Avenue Farmer's Market
- Online Survey

Stage 2: Summer 2018

- Pop-up event at the California Avenue Farmer's Market
- Online Survey

Stage 3: Fall 2018

- Pop-up event at the California Avenue Farmer's Market
- PABAC Meeting

- Planning Commission Meeting
- Evening Open House Community Meeting.
- Online Survey

City Council: Winter 2019

- City Council Meeting [Tentative]

The survey link was emailed to a list of those interested in project updates as well as to local school communities, posted to the project website, and distributed at outreach events. The online surveys completed to date have generated 1,700 comments about where improvements should be focused and were instrumental in shaping the two concept plans. The final survey is open for community feedback now and is on the project website [here](#).

Project Schedule & Future

Commission feedback received at this meeting will be shared at the winter 2019 City Council meeting and ultimately incorporated into a final report prepared at the conclusion of the *Communities* study. The final report and concept plans represent the final deliverables for the *Communities* study and will potentially allow the city to develop and implement changes along all or a portion of the corridor, if ultimately authorized by City Council.

The City does have \$4.6 million in separate grant funding available to prepare design plans and construct multimodal streetscape improvements along El Camino Real between Stanford Avenue and Grant Avenue. However, employing this funding will require additional outreach and design, work for which staff have not identified resources to support.

Environmental Review

The study session is a preliminary review process in which commissioners may provide comment, but no formal action will be taken. Therefore, no review under the California Environmental Quality Action (CEQA) is required at this time. The proposed action will be assessed in accordance with CEQA prior to any request for a formal recommendation.

Report Author & Contact Information

Jarrett Mullen, Senior Transportation Planner
(650) 329-2218
jarrett.mullen@cityofpaloalto.org

PTC¹ Liaison & Contact Information

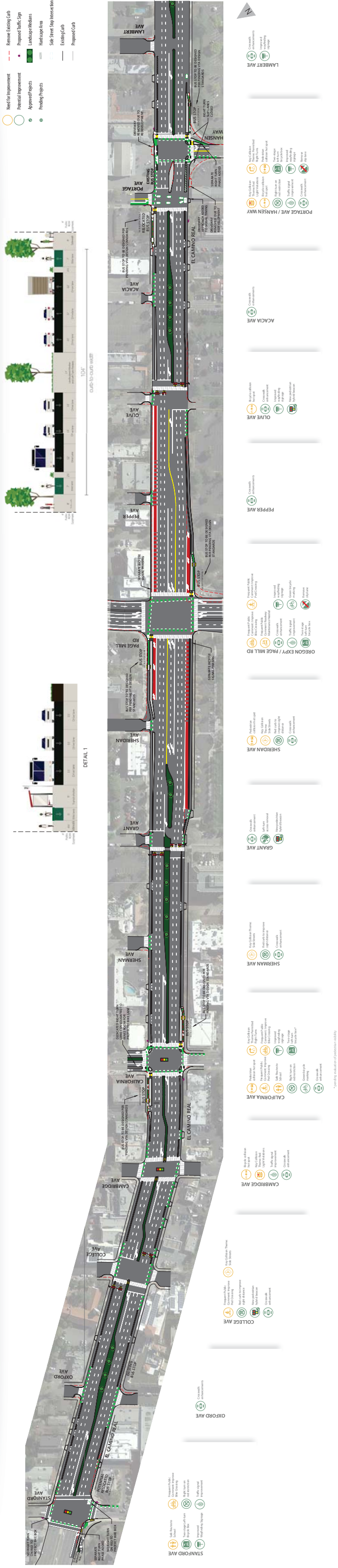
Jonathan Lait, AICP, Interim Director
(650) 329-2679
jonathan.lait@cityofpaloalto.org

Attachments:

- Attachment A: Option 1 Concept Plan (PDF)
- Attachment B: Option 2 Concept Plan (PDF)
- Attachment C: California Ave 3d Rendering Option 1+2 [FINAL]reduced (PDF)

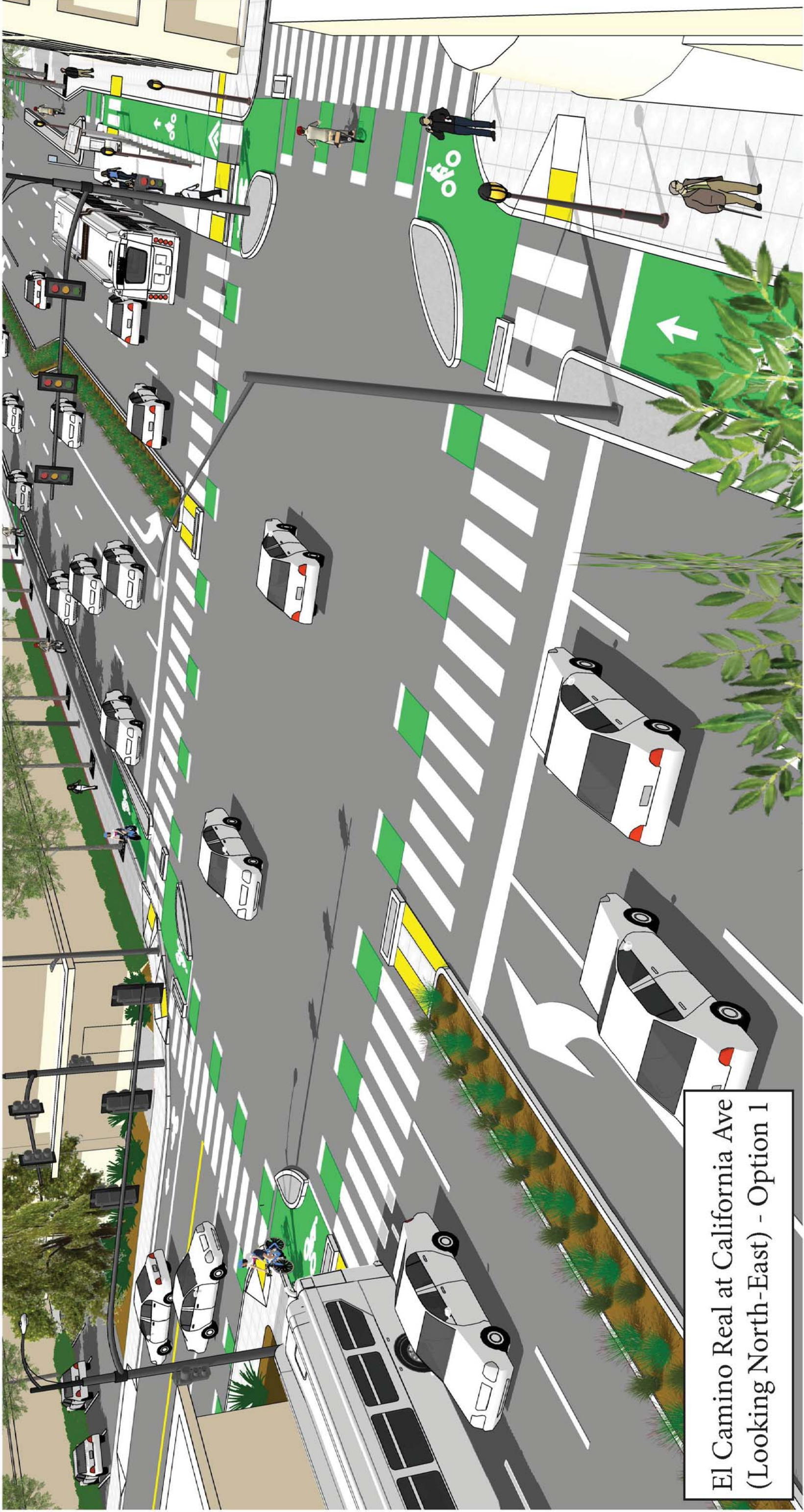
¹ Emails may be sent directly to the PTC using the following address: planning.commission@cityofpaloalto.org

- Attachment D: Hansen Way 3d Rendering Option 1+2 (PDF)

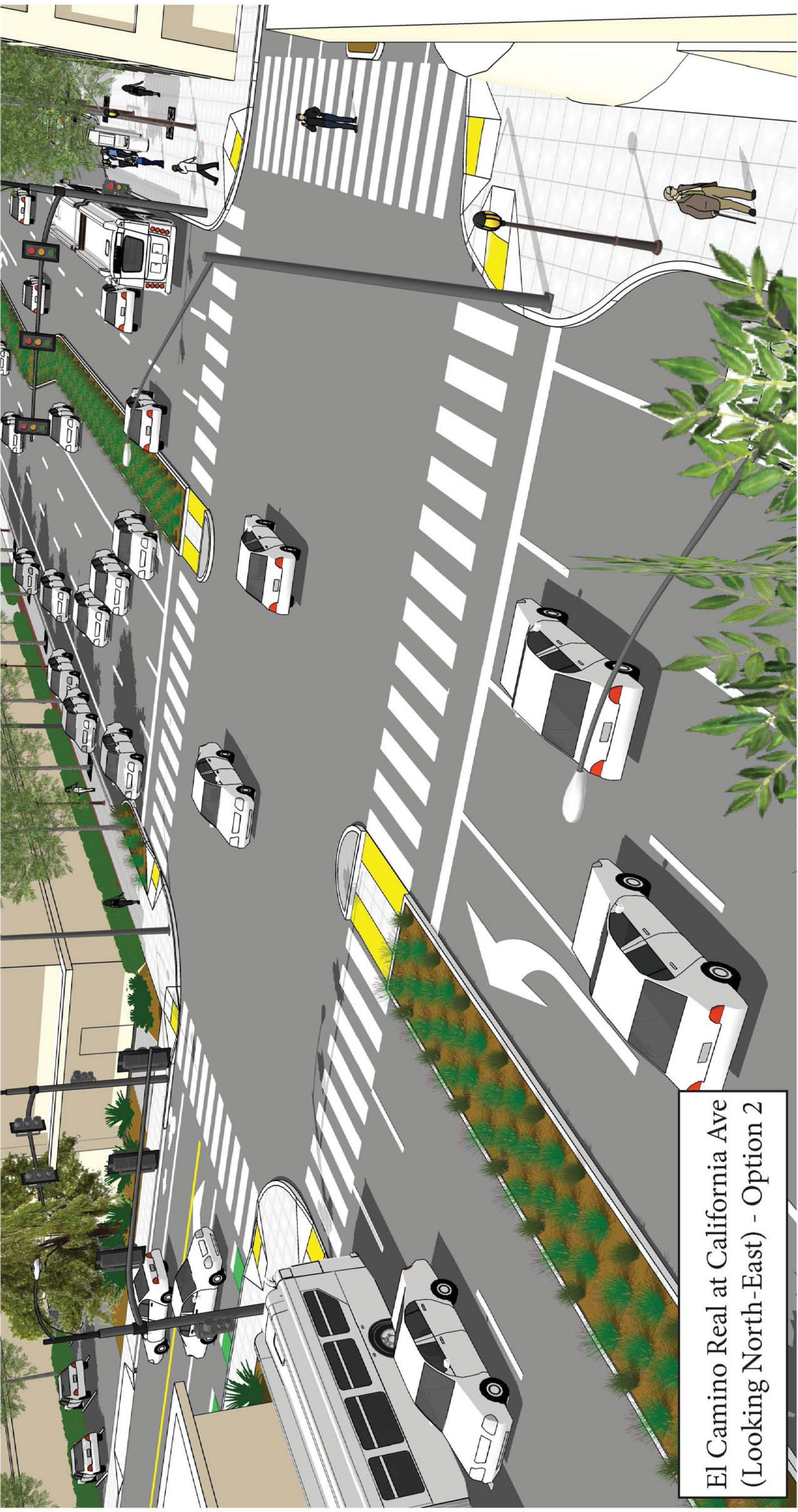


* pending evaluation of pedestrian visibility

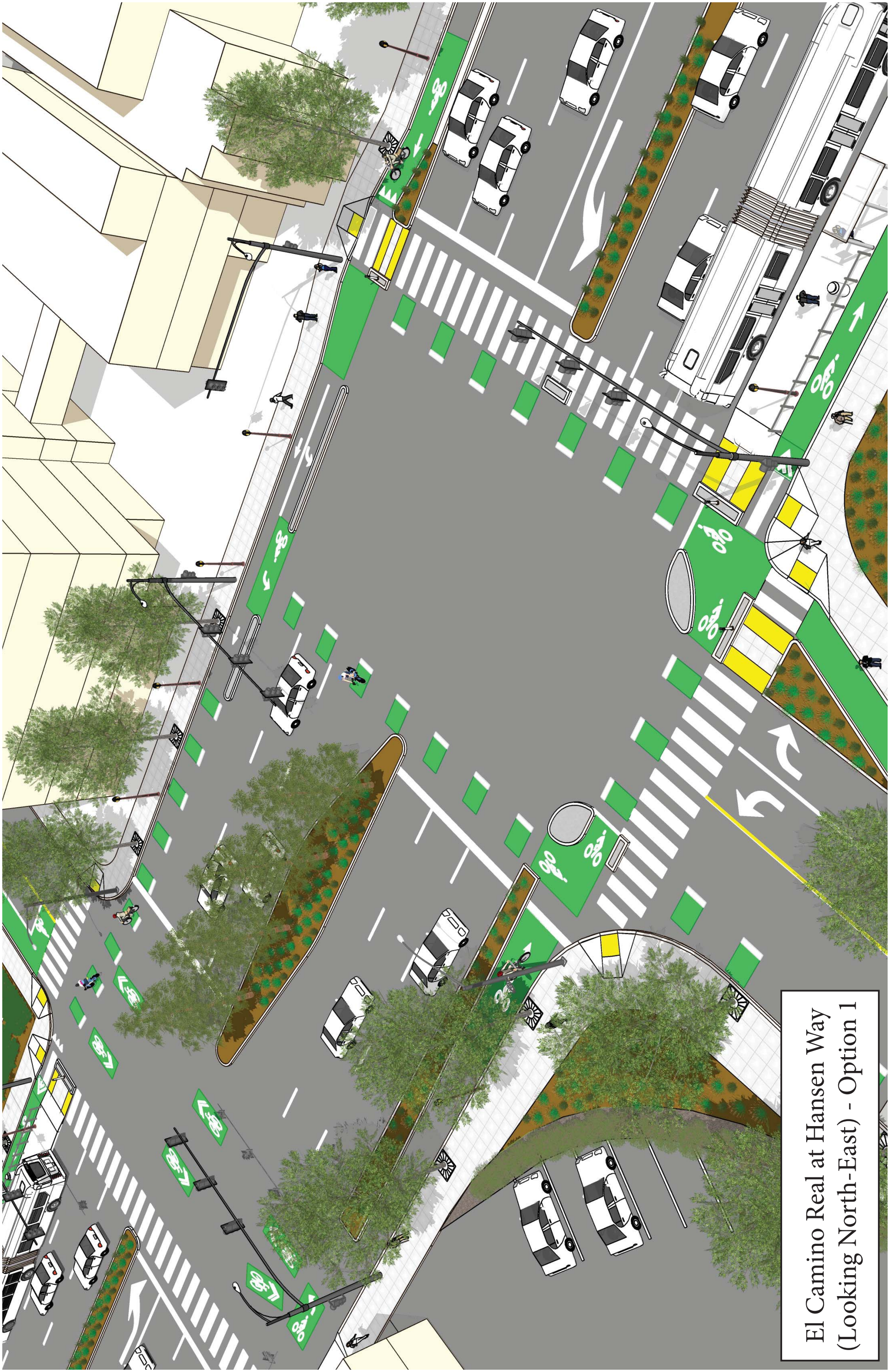
**Grand
Boulevard
Initiative**
people friendly places



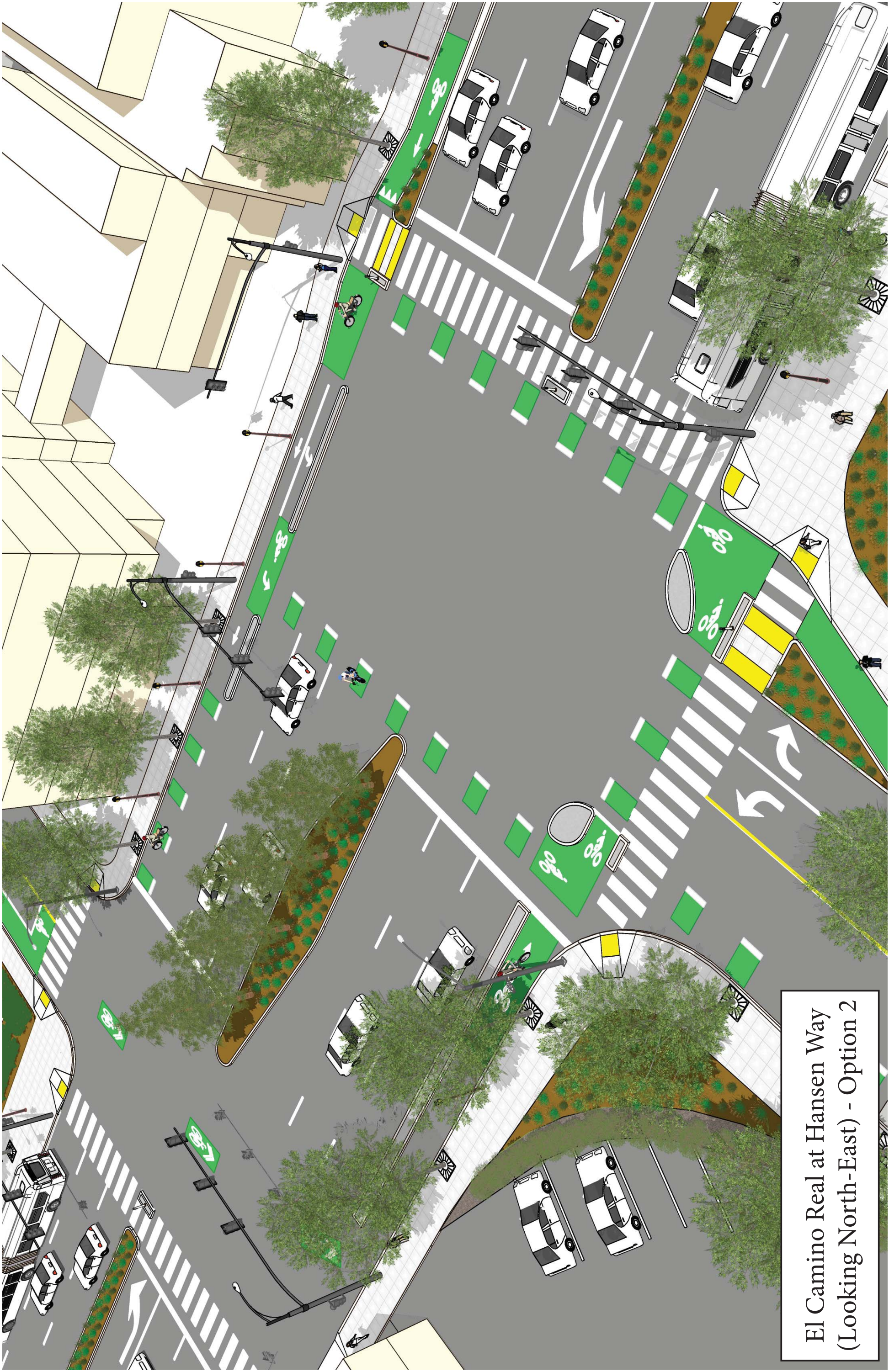
El Camino Real at California Ave
(Looking North-East) - Option 1



El Camino Real at California Ave
(Looking North-East) - Option 2



El Camino Real at Hansen Way
(Looking North-East) - Option 1



El Camino Real at Hansen Way
(Looking North-East) - Option 2