

**APPENDIX A: EXISTING CONDITIONS GRAPHICS (2018)**

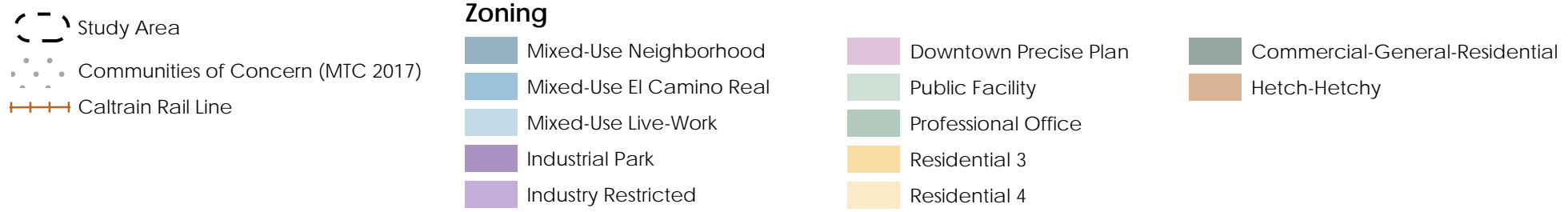
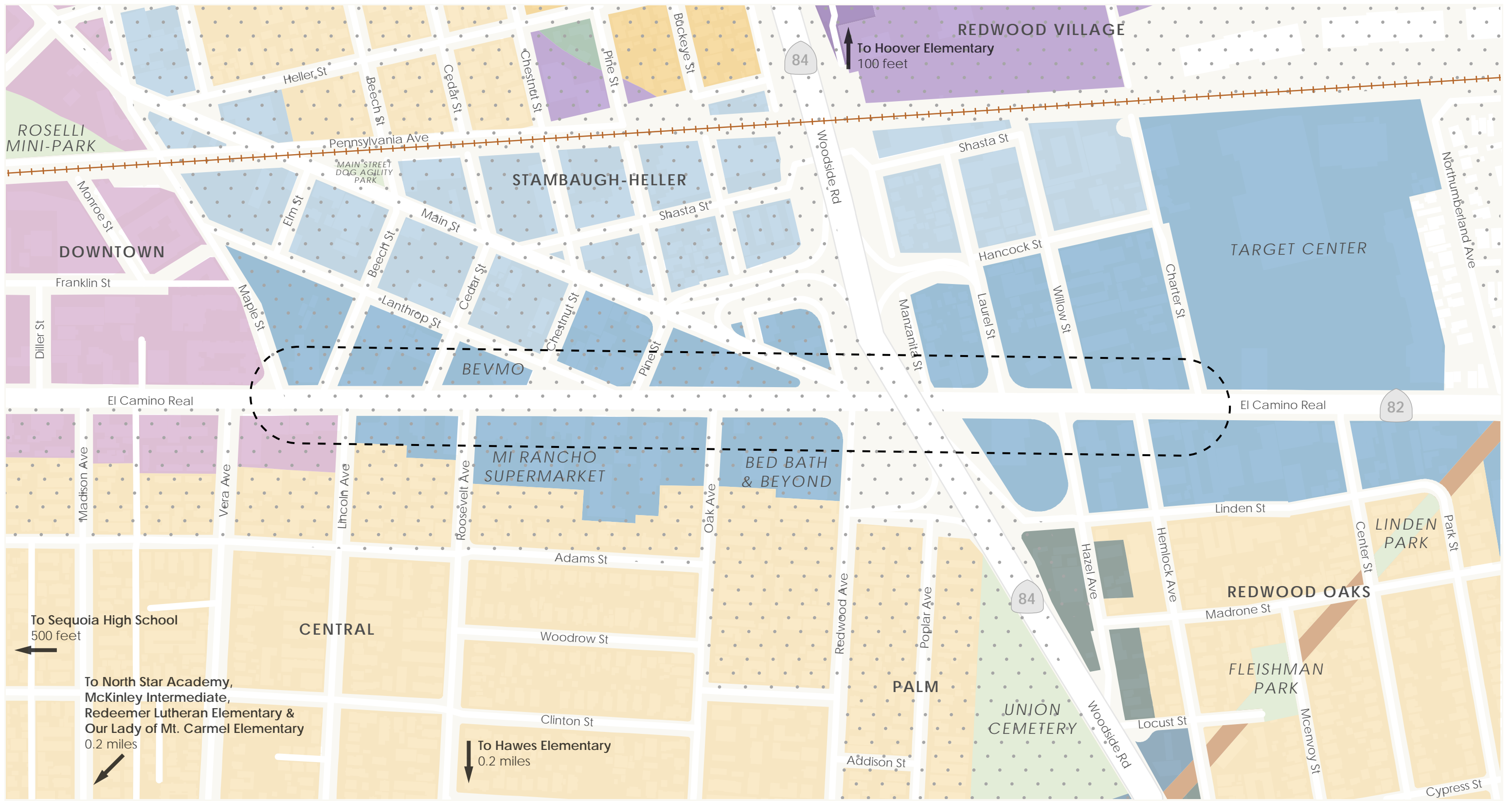


Figure 1  
Who's Using the Corridor

# Summary of Previous Corridor Study (Adopted December 2017)

The City of Redwood City recently completed the El Camino Real Corridor Plan, adopted in December 2017. The Plan identified a series of high-level recommendations that were approved and will be carried forward to this study, illustrated in dark green below. This study will build upon the concepts from the Plan, providing further detail and study as needed.



The purpose of the current Bike and Ped Safety Improvement Study is to lay out the approved improvements and see how they fit, evaluate alternative options for what they might look like, and to take a closer look at the appropriate location for crosswalk enhancements and new crosswalks.

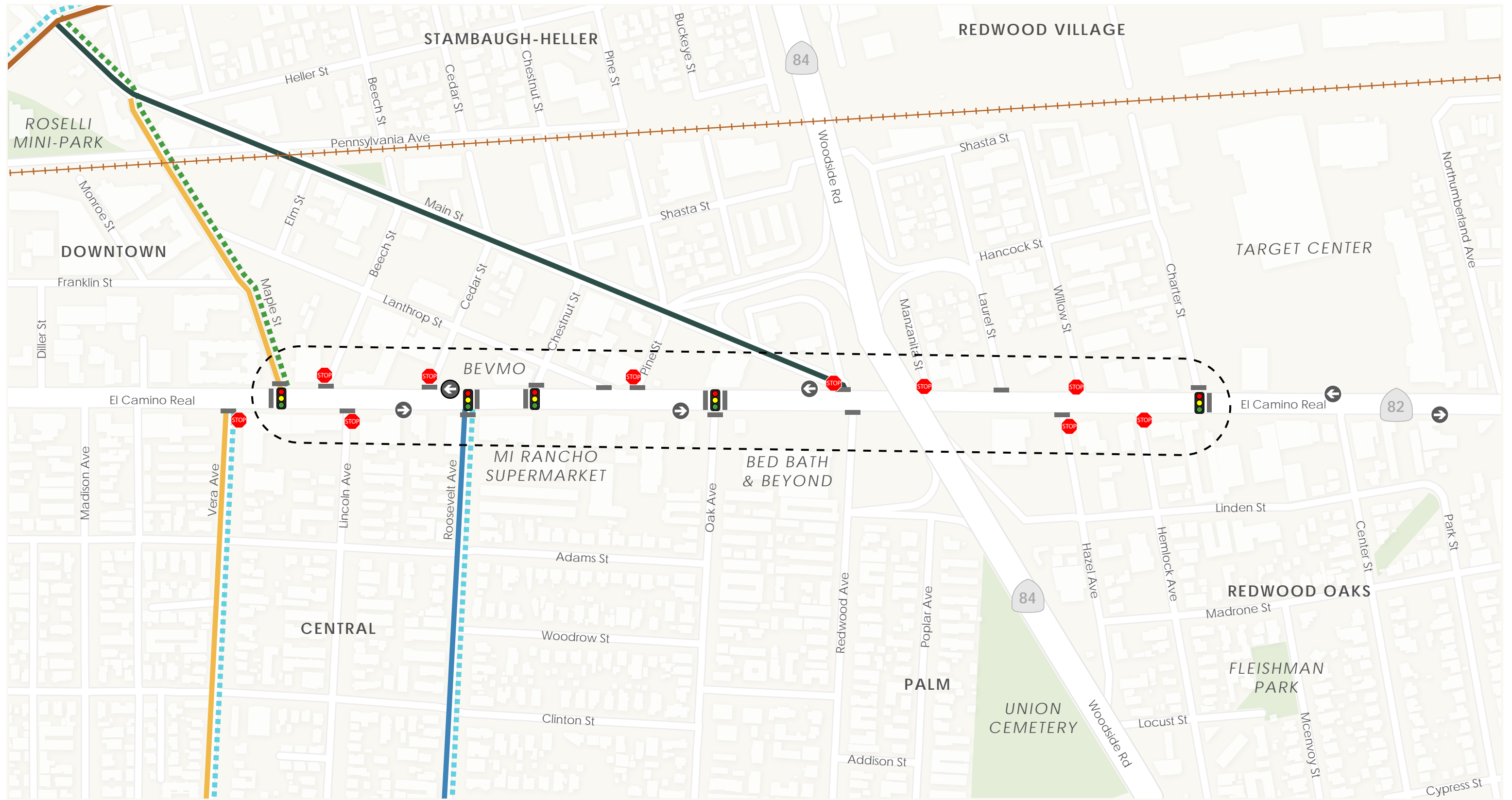


## CONCEPTS IDENTIFIED IN CORRIDOR STUDY (Further refined through this study)

Existing signal	Add median canopy trees and replace existing small trees	Remove slip lane or right turn lane	Median refuge	Bus shelter	New marked crosswalk across side street	New crosswalks based on land use and activity, generally spaced at 600ft	Consider right turn only	Consider removal of signal	Add new signal	Consider redevelopment land as pocket park or plaza

**CORRIDOR-WIDE IMPROVEMENTS:**

- Sidewalk improvements, including street trees, lighting, bike racks, and clearance zones
- Class IV protected bike lanes



- Study Area
- Crosswalk
- Signalized Intersection
- Stop Sign
- Pedestrian Street <sup>1</sup>
- Connector Street <sup>1</sup>
- Transit Street <sup>1</sup>
- Bicycle Boulevard <sup>1</sup>
- Class II Bike Lane
- Class III Bike Route
- Bus Stop and Direction of Travel
- Bus Stop with Shelter
- Caltrain Rail Line

<sup>1</sup>Source: Redwood City General Plan and El Camino Real Corridor Plan

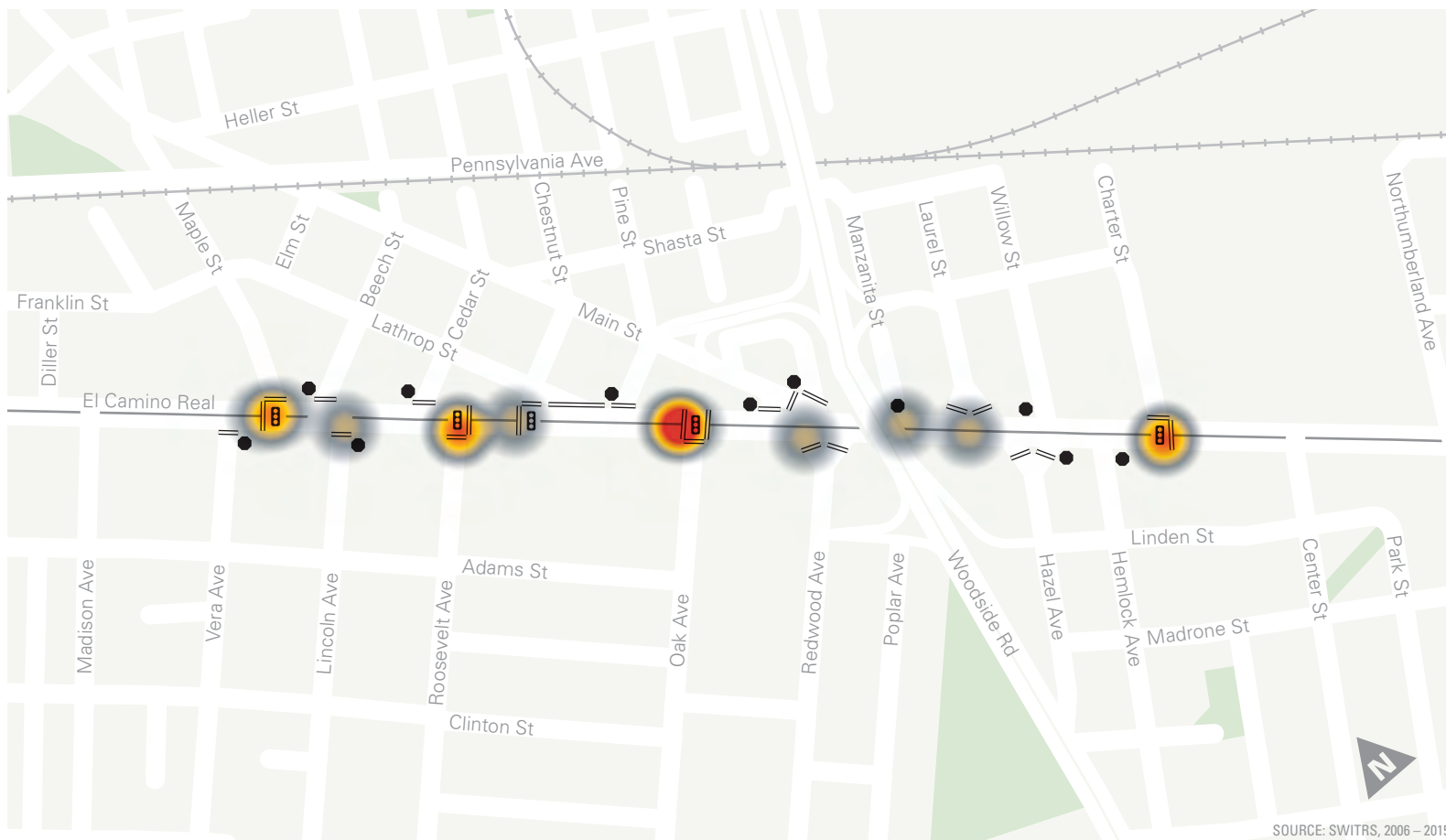
Figure 2  
Existing Transportation Network



# Pedestrian Collision Profiles



In the ten year period 2006-2015, 14 pedestrian-involved collisions occurred within the study corridor. Major collision trends include red light violations and permitted turns at signalized intersections, sight lines and gaps in traffic for vehicles entering El Camino Real, and complex intersection geometries.



**Collision Type**  
Pedestrian-involved collisions along the El Camino Real corridor

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**Collision Intensity**

COLLISIONS

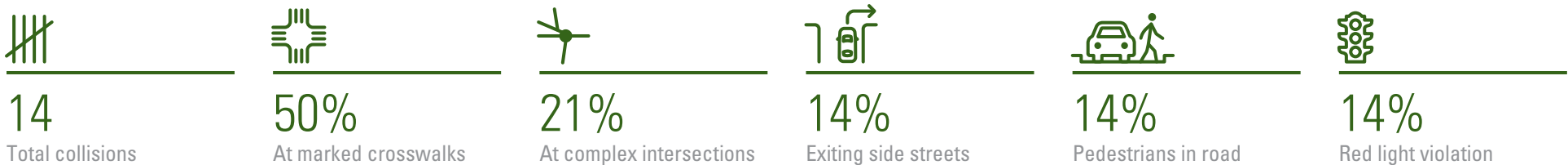
Fewer (0) More (2)

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**Points on the Map**

- Signalized intersection
- Stop Sign
- Crosswalk
- Raised median

## What Do We Know about These Collisions?



Note: Percentages do not add up to 100% due to overlapping collision types

## The Most Common Crash Types on El Camino Real Are:

### Marked Crosswalks at Signals

Collisions that occur in marked crosswalks are often the result of red light violations by a vehicle or pedestrian. Permitted turns (either left or right), which conflict with pedestrian walk signals, and inadequate pedestrian crossing times are possible causes of collisions at signalized intersections. Potential countermeasures include:

- giving pedestrians a “head start” for their walk signal (called a leading pedestrian interval)
- increasing pedestrian crossing time
- installing pedestrian median refuges
- restricting right turns on red
- implementing a protected left-turn phase for vehicles

### Complex Intersections

Offset intersections along the corridor result in long and sometimes unclear crossings with multiple conflict points between vehicles and pedestrians. Intersection geometries such as right turn slip lanes and skewed approaches allow vehicles to enter/exit El Camino Real at a high speed. Potential countermeasures include:

- consolidating access to side streets and driveways at signalized intersections, to reduce the number of conflict points to fewer, controlled locations
- redesigning intersection approaches to encourage slower vehicle turning speeds and improved pedestrian visibility

### Exiting Side Streets

These collisions occur when a vehicle enters El Camino Real from a side street and does not yield to a pedestrian. Obscured sight lines for vehicles turning off of side streets, limited gaps in traffic on El Camino Real, and high vehicle speeds all increase the likelihood of this collision type. Potential countermeasures include:

- daylighting (removing one parking space before and after an intersection) to improve sight lines
- installing signals at stop-controlled side streets with limited gaps in traffic to provide better access for both vehicles and pedestrians

### Pedestrians in Road

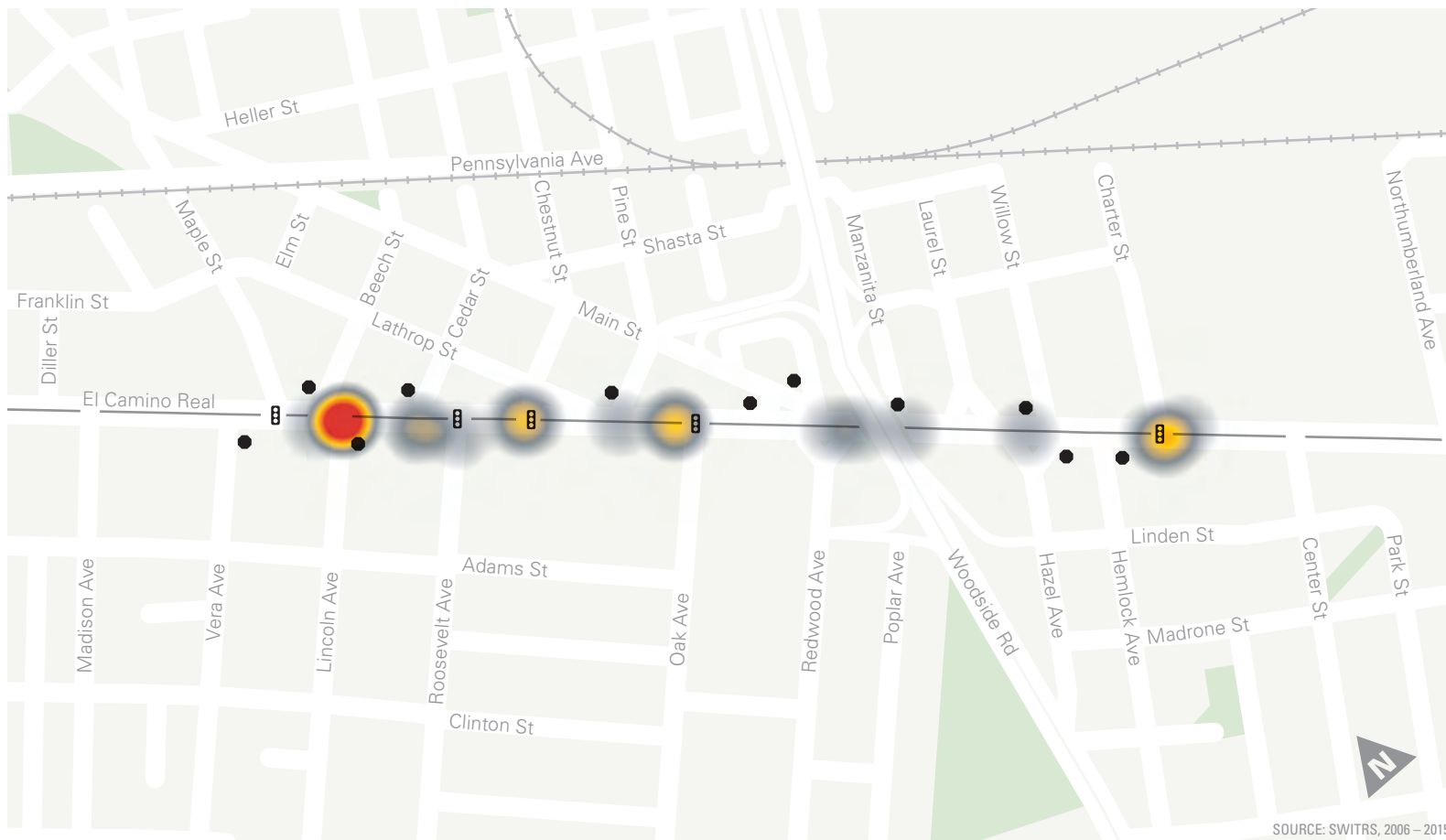
Pedestrians may walk in the roadway when there are sidewalk gaps or in the event that they need to access on-street parking. Potential countermeasures include:

- closing sidewalk gaps adjacent to El Camino Real (such as along both sides of Maple Street) to ensure pedestrian access remains continuous
- implementing traffic calming through visual cues and reduced lane widths
- increasing parking lane widths or removing on-street parking

# Bicycle Collision Profiles



In the ten year period 2006-2015, 25 bicyclist-involved collisions occurred on El Camino Real between Maple and Charter streets. These collisions are explained by a mix of factors, which indicates that many different elements on the corridor influence bicycle safety. Some of those elements include red light violations and permitted turns at signalized intersections, numerous conflict points at side streets and driveways, and complex intersection geometries.



## Collision Type

Bicycle-involved collisions along the El Camino Real corridor

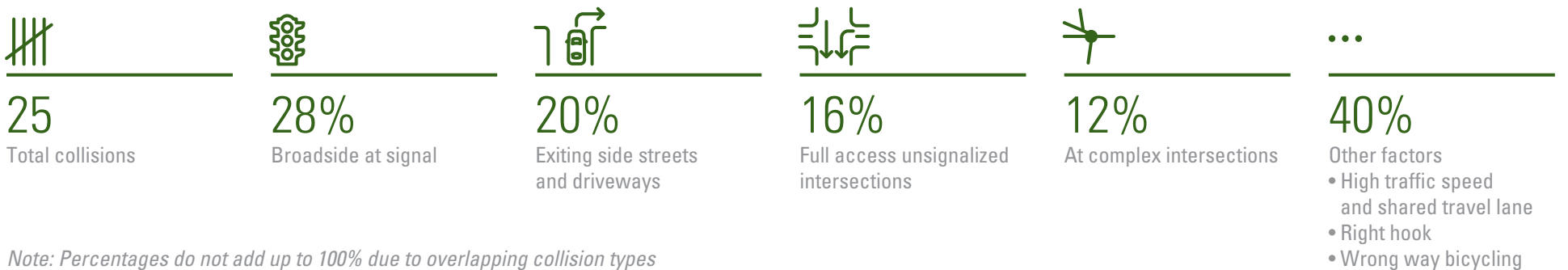
## Collision Intensity



## Points on the Map

- Signalized intersection
- Stop Sign
- Raised median

## What Do We Know about These Collisions?



Note: Percentages do not add up to 100% due to overlapping collision types

## The Most Common Crash Types on El Camino Real Are:

### Broadside at Signal

Broadside collisions occur when the front of an auto collides with the side of a bicyclist. These typically occur when either a vehicle or a bicyclist fails to observe the red light or yield on a signalized turn. Potential countermeasures include:

- updating signal timing to lengthen red time
- updating signal timing to separate bicyclist and vehicle turning movements
- adding intersection visibility treatments, such as green paint

### Exiting Side Streets and Driveways

These collisions occur when a vehicle enters El Camino Real from a side street or driveway, and fails to yield to a bicyclist. Unclear sight lines at side streets, limited gaps in traffic for vehicles exiting a side street or driveway, and high vehicle speeds all increase the likelihood for this collision type. Potential countermeasures include:

- daylighting (removing one parking space before and after an intersection) to improve sight lines
- adding green paint across side streets and driveways to improve visibility of bicyclists
- implementing traffic calming at intersections to reduce speeds

### Full Access Unsignalized Intersections

These collisions occur when a vehicle makes either a left turn into a side streets or cuts across El Camino Real to another side street in a location where there is no center median. Limited gaps in traffic at intersections and high vehicle speeds on El Camino Real increase the likelihood of this collision type. Potential countermeasures include:

- restricting side street access (e.g. installing medians) at these locations
- adding a new signal at these locations

### Other Factors

The mix of issues observed on the corridor reflect the complexity of navigating El Camino Real as a bicyclist. Other collision factors observed include:

- complex intersections where side streets are skewed or intersect at an offset
- “right hooks” when a driver is traveling in the same direction as a bicyclist and turns right across the rider’s path
- wrong way bicycling
- high traffic speeds while bicyclists and vehicles share the same lane
- parking-related issues