



# Proposed Bikeway Implementation in Palo Alto on State Route 82 (El Camino Real)



COUNCIL MEETING

4/1/24

Received Before Meeting

11



## City Council Meeting

April 1, 2024, at 8:30 PM in the city Hall

### AGENDA

-Introduction

-Presentation

- Caltrans paving project on State Route (SR) 82 (ECR)
- Planning & Mobility
- Safety Discussion for the proposed bikeway
- Design Considerations & challenges
- Engagement & Outreach

-Q&A



**High Visibility Crosswalk**



**Pedestrian Hybrid Beacon**



**Class IV Bike Way**



**APS**

## Scope:

- Pavement Rehabilitation
- Curb ramps, sidewalks, and driveways to comply with Americans with Disabilities Act (ADA) standard.
- High visibility crosswalk markings
- Electrical work
- New bikeways in Mountain View and Los Altos
- New bikeway proposal in Palo Alto



# Caltrans SR 82 Paving Project

## Funding:

- Total project cost : \$44.6 M
- Construction capital cost: 30.1 M
- SHOPP: \$40.9 M (SB 1:\$4.47 M)
- Local: \$3.7 M (City of Mountain View)
- Bikeway in Palo Alto: \$3.2 M (IIJA Safety)

## Schedule:

Construction began in November 2023 and completion is in fall 2025(T)



**Class II Bike Lane**



# Strategic Priorities and Policy

## Director's Policy 37 Complete Streets

*It is "Caltrans' organizational priority to encourage and maximize walking, biking, transit, and passenger rail."*

# Safety, Equity, Climate Action + Prosperity



El Camino Real in South San Francisco

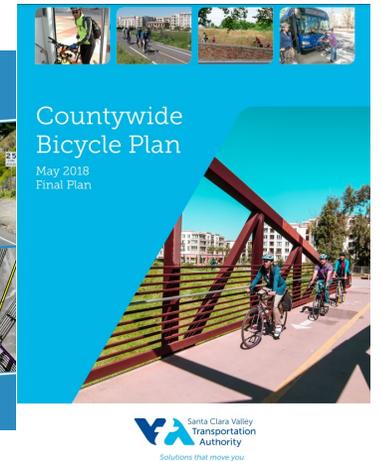
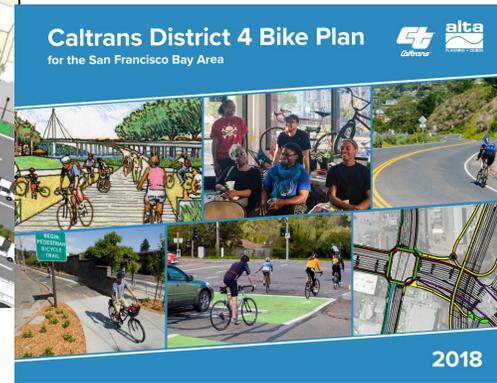
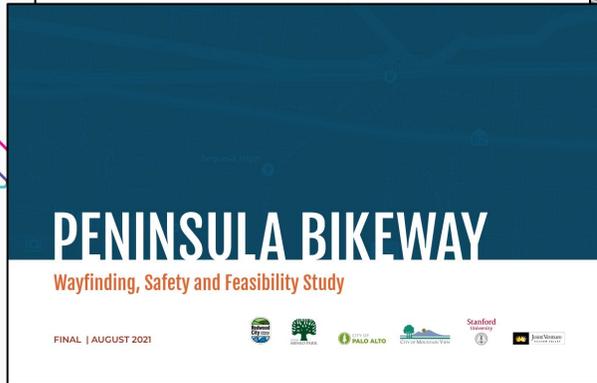
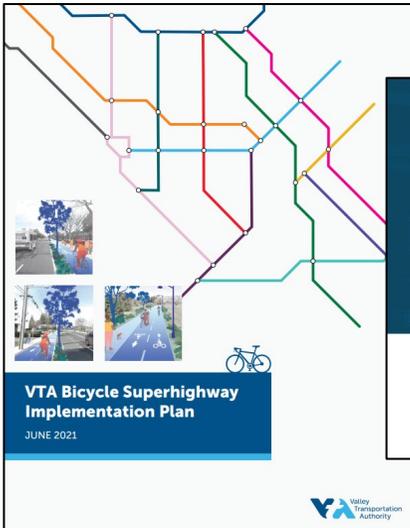


Caltrans®

# Planning

The need for bikeway improvements on El Camino Real has been documented in numerous county, regional and city planning efforts:

- VTA Bicycle Superhighway Implementation Plan (2021)
- Peninsula Bikeway Wayfinding, Safety and Feasibility Study (2021)
- Grand Boulevard Initiative Palo Alto Safety Study (2019)
- Caltrans District 4 Bike Plan (2018)
- VTA Countywide Bicycle Plan (2018)





# Improving Mobility for Bicyclists on El Camino Real

- Most direct connection to many downtowns and business districts between San Jose and San Francisco
- Connects to existing local bikeways within Palo Alto and complements parallel routes
- Aligns with FHWA and Caltrans contextual guidance





# El Camino Real Bikeways In Development

Caltrans SHOPP projects proposing bikeways on El Camino Real (tentative construction years):

- Mountain View and Los Altos (2024)
- Redwood City and Atherton (2026)
- Daly City, Colma, South San Francisco (2026)
- Santa Clara (2026)
- South San Francisco (2028)
- Palo Alto (potential in 2024)

## El Camino Real Bikeways

Proposed Bikeways projected to be installed as part of Caltrans SHOPP projects, with construction start anticipated between 2024- 2028 on SR-82





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**SAFETY DISCUSSION  
ON THE IMPLEMENTATION OF BIKEWAY  
IN PALO ALTO ON SR 82 (ECR)**

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# Bicyclist Safety Improvement Monitoring Program

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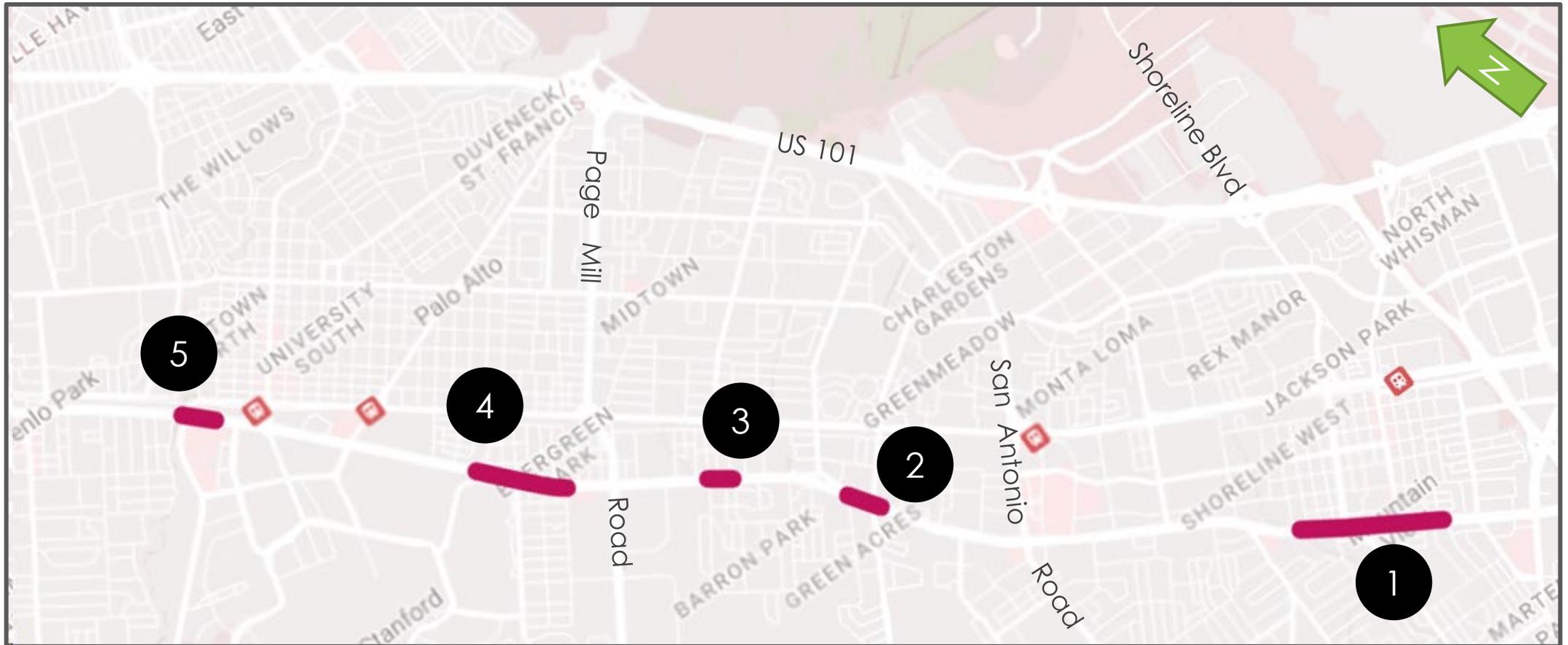
**Purpose:** identify and investigate areas with high concentration of bicyclist-involved crashes

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**Date range** covered by the Monitoring Program:  
Jan 1, 2016 – Dec 31, 2020  
(5-year period)

# Bicyclist Safety Improvement Monitoring Program

1. Bonita Ave to Mariposa Ave (Mountain View)
2. West Charleston Rd to Maybell Ave (**Palo Alto**)
3. Wilton Ave to Matadero Ave (**Palo Alto**)
4. California to Park Blvd (**Palo Alto**)
5. Entrance to El Camino Park to Quarry Rd (**Palo Alto**)



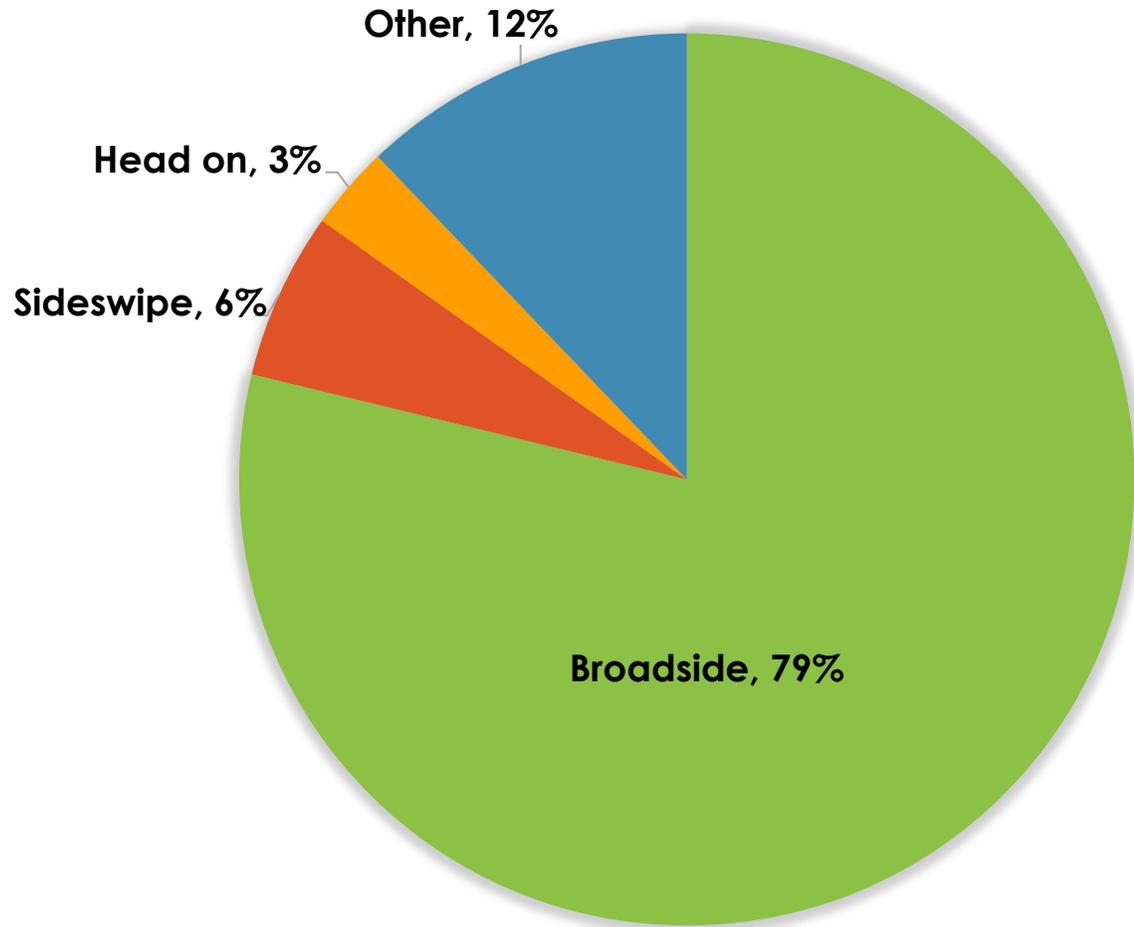


# Bike Related Crash History Review

Highway Segments Along El Camino Real	Number of Bicyclist-related Crashes (1/1/2016 – 12/31/2020)	
	Fatality	Injury
1. Bonita Ave to Mariposa Ave (MV)	0	12
2. West Charleston Rd to Maybell Ave	0	4
3. Wilton Ave to Matadero Ave	0	4
4. California Ave to Park Blvd	1	8
5. Entrance to El Camino Park to Quarry Rd	0	4
Total	1	32
	33	



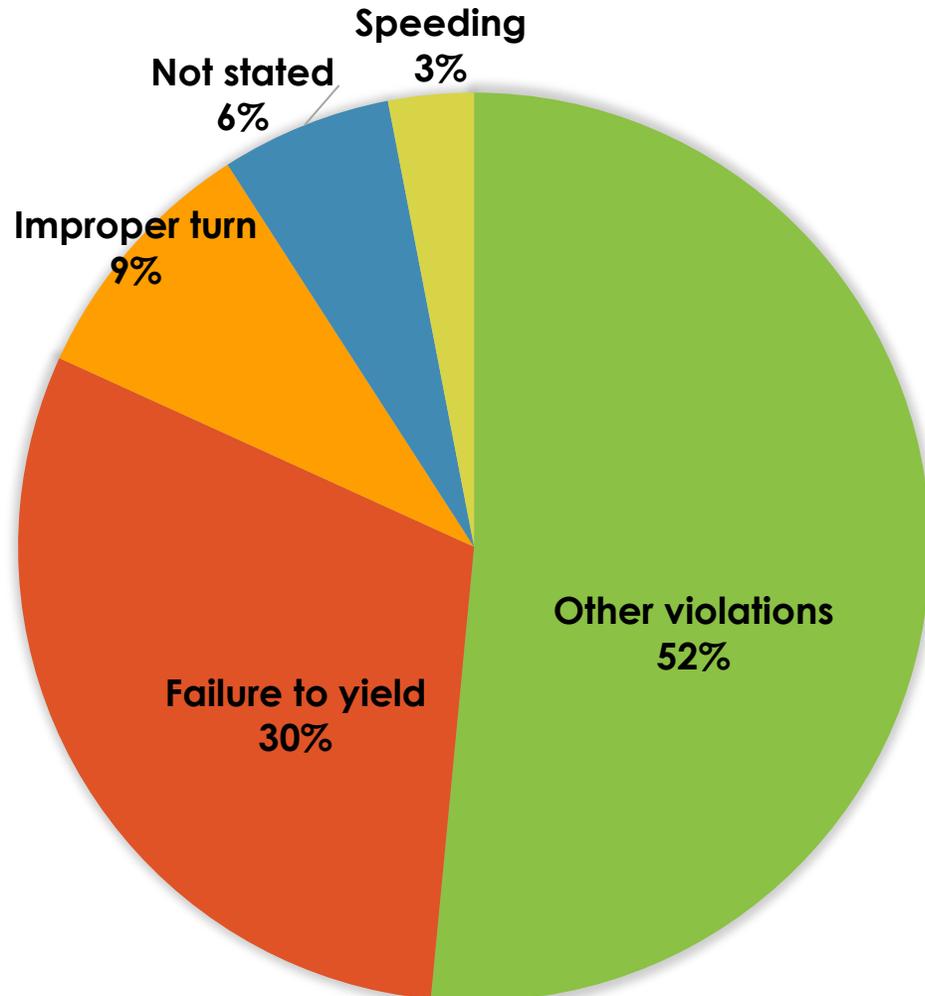
# Bike Related Crash History Review (Crash Type)



Collision Type	Number of Crashes	
Broadside	26	(78.8%)
Other	4	(12.1%)
Sideswipe	2	(6.1%)
Head on	1	(3%)



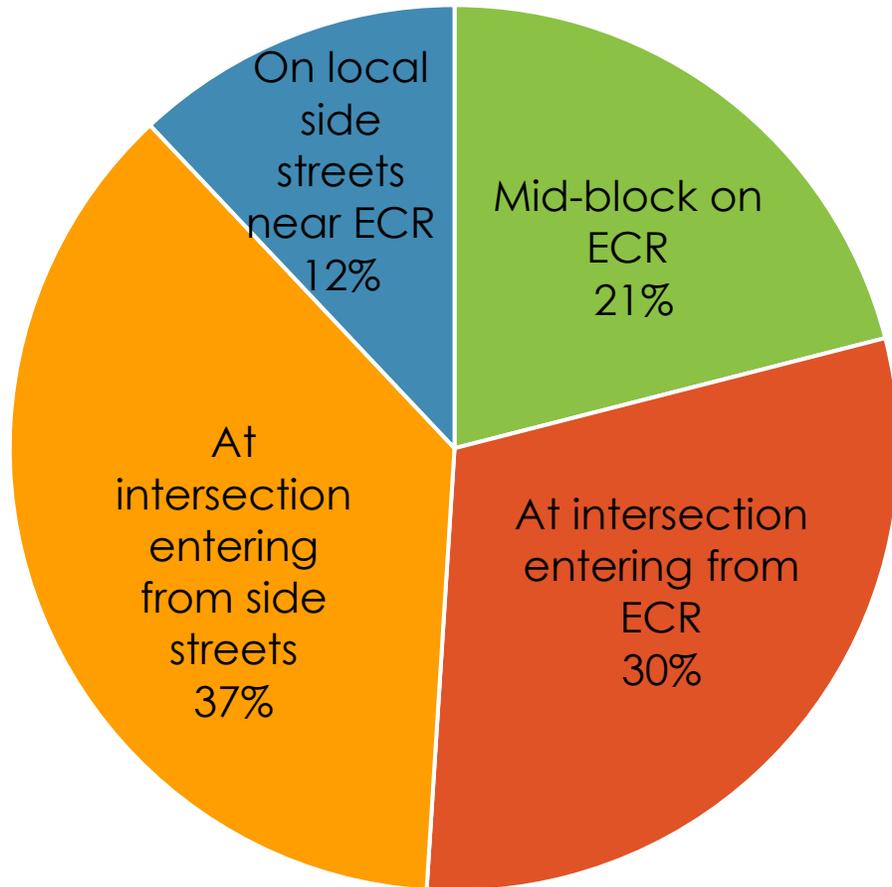
# Bike Related Crash History Review (Primary Collision Factor)



Primary Collision Factor	Number of Crashes
Other violations	17 (51.5%)
Failure to yield	10 (30.3%)
Improper turn	3 (9.1%)
Not stated	2 (6.1%)
Speeding	1 (3%)



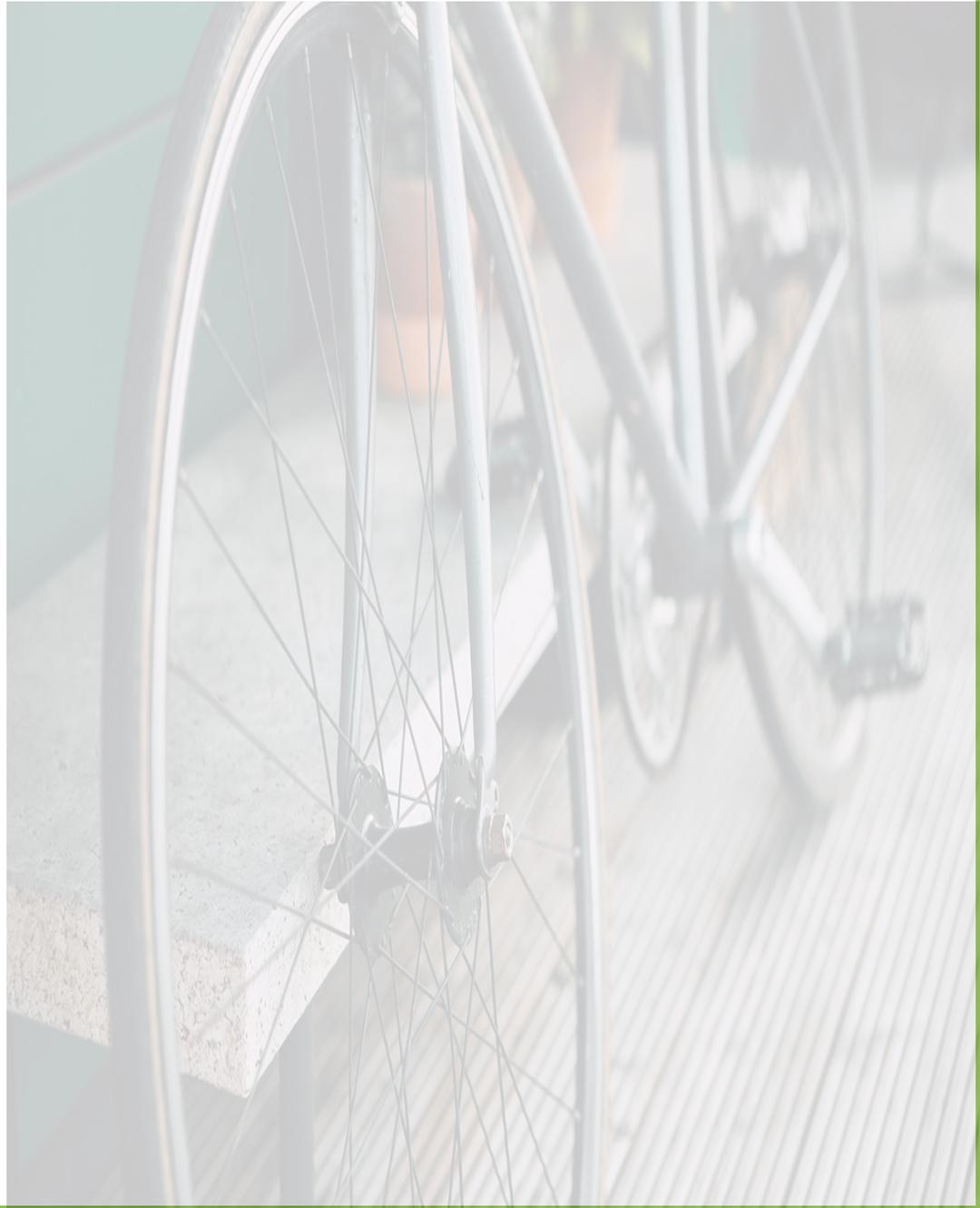
# Bike Related Crash History Review (Location of Collisions)



Location	Number of Crashes
Mid-block on El Camino Real	7 (21%)
At intersection with bicyclists entering from El Camino Real	10 (30%)
At intersection with bicyclists entering from side streets	12 (37%)
On local side streets near the vicinity of El Camino Real	4 (12%)

# Bike-Related Crash Pattern / Mitigation

1. Drivers' Failure to Yield
2. Bikes Going Against Flow of Traffic
3. Red Light Violation



# Bike-Related Crash Pattern / Mitigation

## 1. Drivers' Failure to Yield

### Potential Underlying Issues

- Distraction
- Visibility issue
- Unclear right-of-way assignment

### Potential Mitigations

- Upgrade / improve signs, markings
- Ensure clear line of sight
- Driver education
- Provide bike boxes at select intersections

# Bike-Related Crash Pattern / Mitigation

## 2. Bikes Going Against Flow of Traffic

Potential Underlying Issues	Potential Mitigations
<ul style="list-style-type: none"><li>• Lack of designated area for bicycling</li><li>• High-stress bike riding environment</li></ul>	<ul style="list-style-type: none"><li>• Provide standard bike facility designating portion of roadway for bikes</li><li>• Installing appropriate signs and markings to indicate direction of bike travel</li></ul>

# Bike-Related Crash Pattern / Mitigation

## 3. Red Light Violation

Potential Underlying Issues	Potential Mitigations
<ul style="list-style-type: none"><li>• Speeding</li></ul>	<ul style="list-style-type: none"><li>• Traffic enforcement</li><li>• Education</li></ul>
<ul style="list-style-type: none"><li>• Not able to see signal equipment</li></ul>	<ul style="list-style-type: none"><li>• Ensure signal visibility</li></ul>
<ul style="list-style-type: none"><li>• Signal timing</li></ul>	<ul style="list-style-type: none"><li>• Verify appropriate signal timing</li></ul>



# Proposed Bikeway Implementation on SR 82

## Bikeway Design Considerations and Challenges

- Right of Way
- On-Street Parking
- Intersections, driveways, and transit Stops (VTA)





# Proposed Bikeway & Right of Way along SR 82



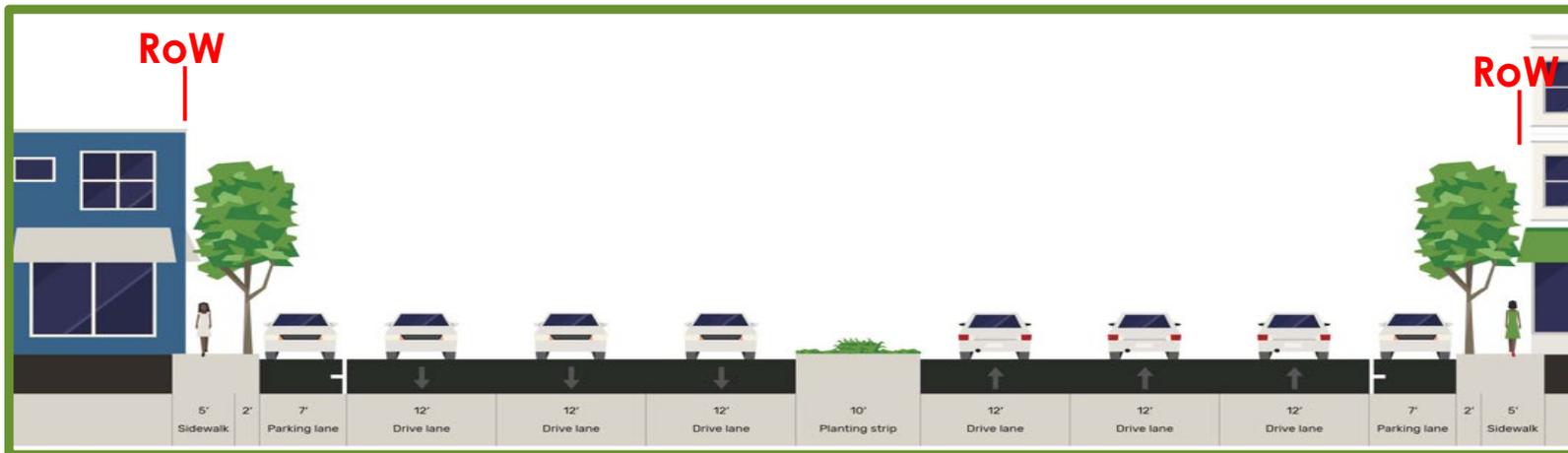
RoW = 130 ft



RoW = 121 ft



RoW = 100 ft



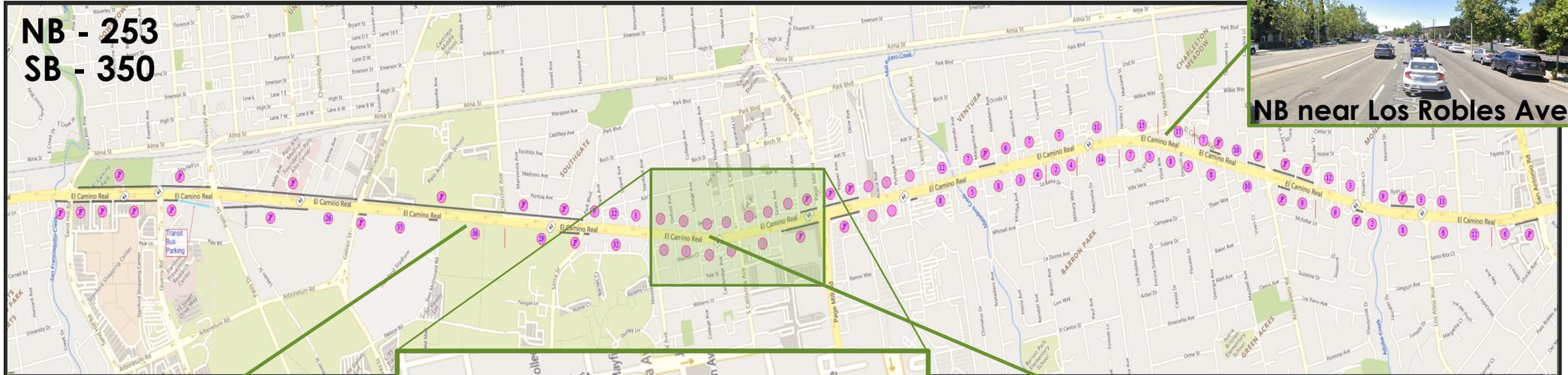
Right of Way Various:

- Back of sidewalk (TYPICAL)
- Face of curb
- Or Lip of Gutter



# Proposed Bikeway & On-Street Parking along SR 82

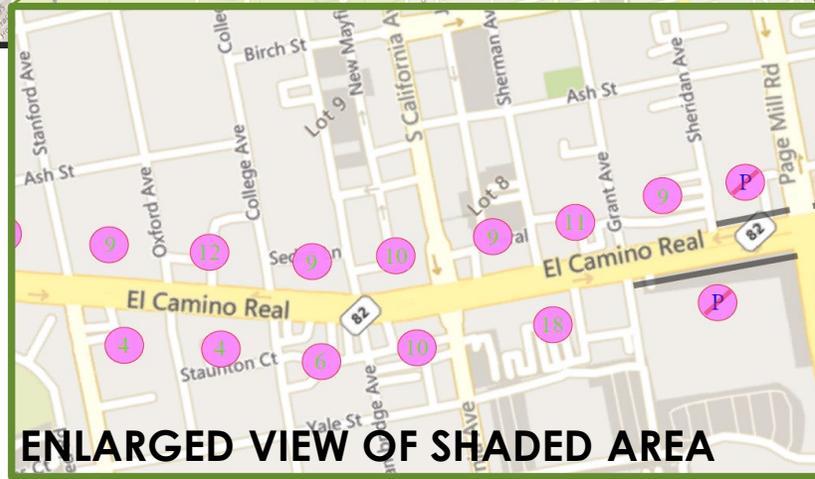
NB - 253  
SB - 350



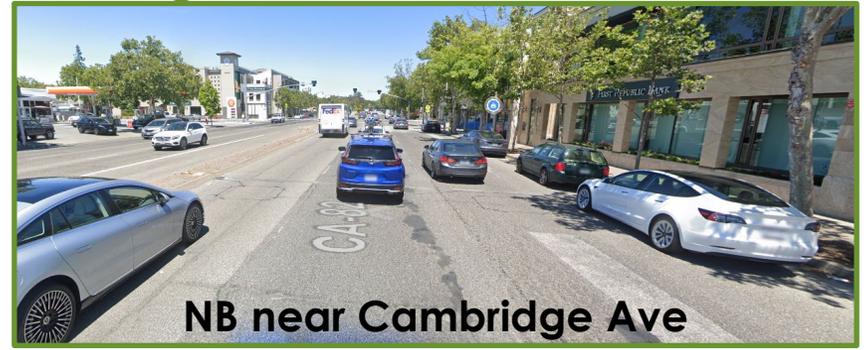
NB near Los Robles Ave



SB near Churchill Dr



ENLARGED VIEW OF SHADED AREA



NB near Cambridge Ave



# Proposed Bikeway & Conflict zones along SR 82

- Intersections & Driveways
- Transit Stops: Need space for buses to pull in and out





# Proposed Bikeway Typical Cross-Section (Before and After)



Before



After

Class IV (shown)





# Proposed Bikeway implementation in Palo Alto

## Engagement & Outreach



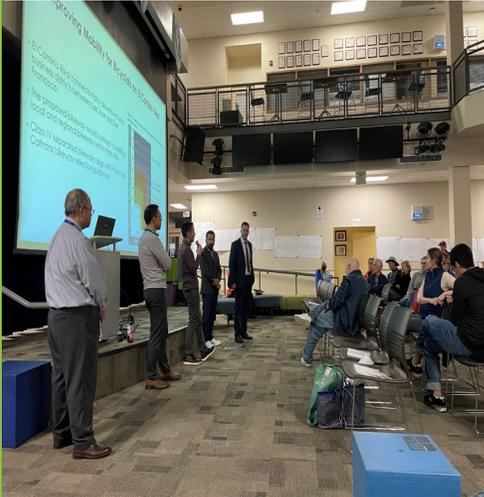
- Early 2019: Caltrans notified the SR 82 paving project and a complete street element(bike lanes) implementation opportunity to the city
- Feb 2021: Sent a letter inviting the city's participation in a Cooperative agreement for Caltrans to design and construct curb ramps upgrade part of SR 82 paving project; City did not participate
- Aug 2021: Received 65% plan review comments
- March 2022: Meeting with the city to coordinate the city's Arastradero plan and discussed the 95% plan review comments
- April 7, 2023: Shared the first draft bike plan with the city
- April 19, 2023: Meeting with the city to discuss the need and purpose for the bikeway in Palo Alto
- May 4, 2023: Meeting with SVBC to share the draft bikeway plan
- Aug 11, 2023: Meeting with the city to discuss a parking removal and outreach for the bikeway
- Nov 15, 2023: Meeting with the city to discuss the bikeway letter from Caltrans





# Proposed Bikeway implementation in Palo Alto

## Engagement and Outreach(continued)



Nov 6, 2023: SR 82 Paving project Pre-construction meeting with local agencies

Nov 14, 2023: SR 82 Community meeting with local agencies

Feb 5, 2024: Started monthly stakeholder meeting for construction and encampment

Feb 21, 2024: Meeting with the city to share the draft slides for the bikeway community engagement

Feb 26, 2024: Meeting with the city to discuss the community engagement preparation

Feb 29, 2024: Caltrans hosted community meeting for the bikeway in Palo Alto

Mar 7, 2024: Joint Pedestrian and Bicycle Advisory Committee (PABAC)/City/School Transportation Safety Committee (CSTSC) Special Meeting

Mar 13, 2024: Joint Planning and Transportation Commission/Human Relations Commission Meeting

Mar 21, 2024: Meeting with the city and County for encampment removal

Monthly: Construction Monthly Stakeholders meeting

Apr 1, 2024: City Council Meeting





# Proposed Bikeway

## Additional considerations based on feedback



- Design Flexibility - DIB 94
- Intersection treatment: bike box, signs,.....
- Continuous bikeway
- No turn on red signs
- Incorporate best practices
- Speed management/enforcement
- Continue collaboration with the stakeholders throughout the design process
- Continue collaboration with the city and stakeholders on future Roadway Diet feasibility study.





# Proposed Bikeway Implementation



## -Safety enhancement: Safety monitoring report

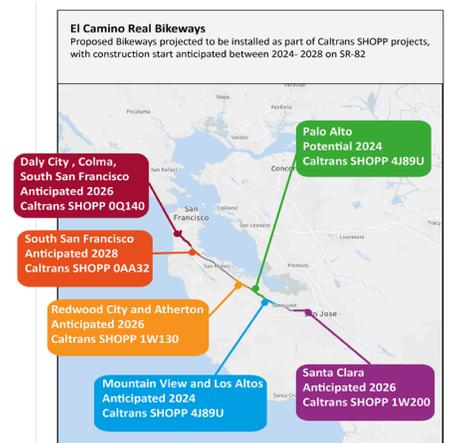
- Reduces the incidence of bicyclist riding against the flow of traffic
- Lessens potential for conflict between bikes and vehicles
- Improves traffic safety on El Camino Real
- FHWA information on safety benefits of bike lanes:  
<https://highways.dot.gov/safety/proven-safety-countermeasures/bicycle-lanes>

## -Funding and schedule opportunity

- Implement bikeway on El Camino Real with the on-going Caltrans pavement rehabilitation project

## - Alignment with city and regional plans

- **Network & connectivity** between various communities along El Camino Real



**THANK YOU!**

QUESTIONS/COMMENTS?

