



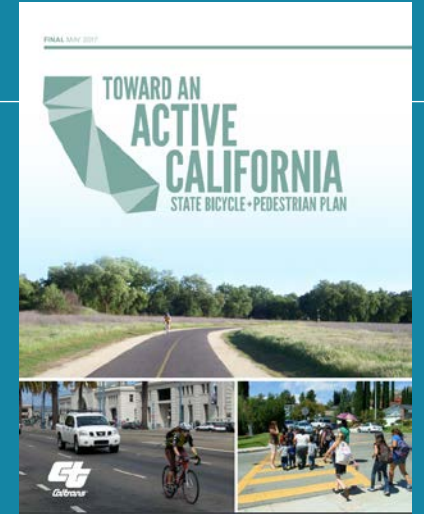
**CALTRANS**  
**BAY AREA**

# *Bike Plan Update*



# Why Update the Bike Plan?

- Current D4 Bike Plan is 6 years old
- Opportunity for Engagement
- Performance Tracking
- Build on success and identify more paths forward



# Draft Vision and Goals

By 2040, people in California of all ages, abilities, and incomes can safely, conveniently, and comfortably bike for their transportation needs.

## SAFETY

Reduce the number, rate, and severity of bicycle involved collisions



## MOBILITY

Increase biking by providing comfortable, convenient and connected bikeways



## EQUITY

Eliminate barriers to biking, so that everyone has access to high quality biking infrastructure no matter their race, socioeconomic status, identity or where they live





# Methodology to Tier List of Location Based Needs



# Prioritization Methodology

**Safety** 

**Mobility** 

**Equity** 

- Weighted Crash Density

- Density of Short Trips
- on a Regional Bikeway Network
- Proximity to Transit
- Permeability
- Public Feedback

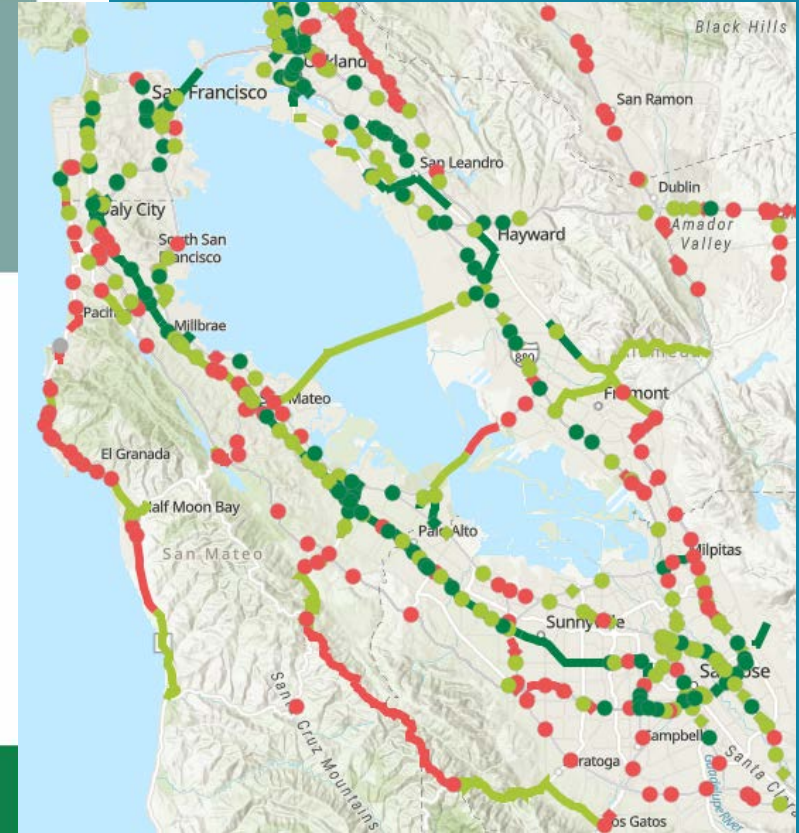
- Cal Envrio Screen
- MTC's Equity Priority Communities

 **Location Based Need Score**

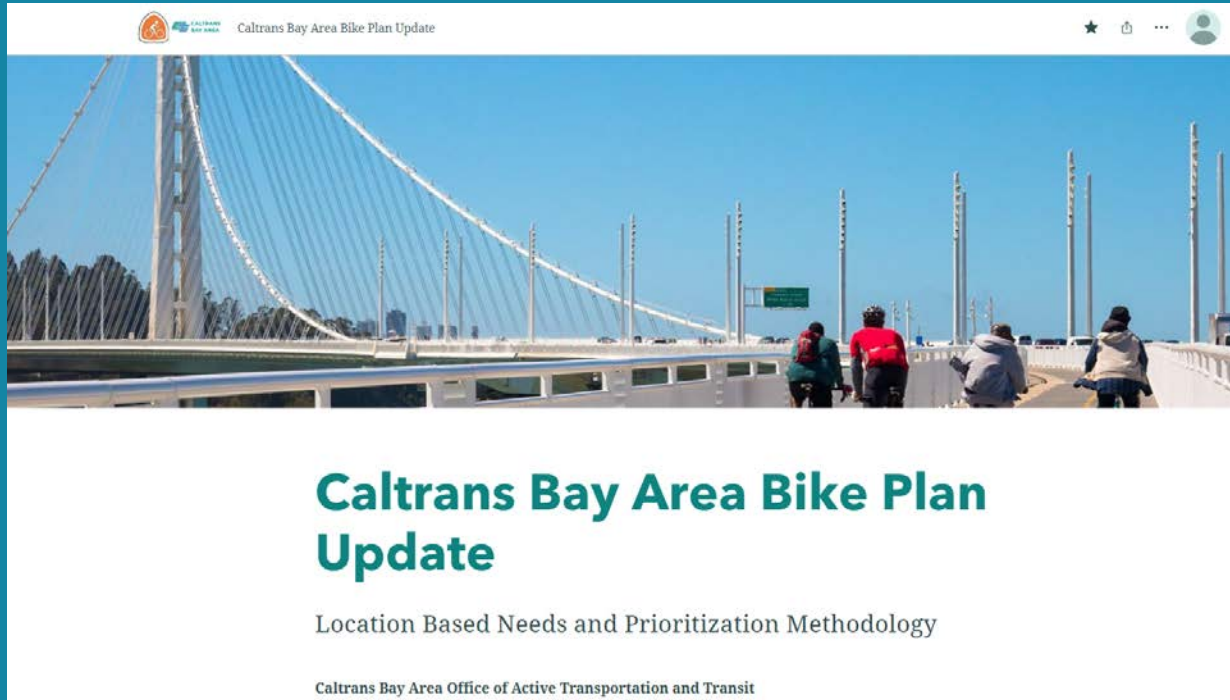
**Low**

**Mid**

**High**



# Story Map Online



Comment on our Location Based Needs Online Map!

<https://storymaps.arcgis.com/stories/3d67ec0ec2bf44528ee42d44b7faf0be>



# Bicycle Best Practices

- Obtain consensus and feedback from the public, stakeholders and partner agencies on preferred designs
- Fill in gaps on design guidance
- Resource to staff when making comments on projects
- Showcase examples of all ages and abilities facilities built on Caltrans right of way
- Final list of location based needs will reference the best practices

<https://storymaps.arcgis.com/stories/a9aa574f59ed4af9abd73704dacf0e6a>



Caltrans Bay Area District 4  
Bike Plan Update 2024

## Draft Bicycle Best Practices



**Caltrans**



# Best Practice Guidelines - Interchanges



Wolfe Rd/ I-280 in Santa Clara County

## Interchange – Partial Clover Leaf

Crossing freeway interchanges can be uncomfortable and stressful, forcing cyclists to cross multiple streams of high-volume and high-speed traffic. A combination of bicycle infrastructure features can increase visibility and minimize conflict between motorists and active transportation users to provide a lower stress crossing.

### Typical Application

- Multilane freeway interchanges

### Example Caltrans Facilities

- Wolfe Road/I-280 interchange in Santa Clara County (facility under construction)

### Design Features

- A** To achieve an all ages and abilities facility, eliminate free right turns where possible. At signalized ramp crossings, eliminate right turn on red to reduce conflicts between vehicles and cyclists.
  - B** Meet ramps at local roads at 90-degrees where possible. Grade separation of the bike lane can improve visibility. Design the curb radii of the ramp intersection such that motorists cross the path of bicycles and pedestrians at a slow speed, preferably 15 mph. Truck aprons can be used to manage the design vehicle and still accommodate passage of trucks.
  - C** Class IV/Class I facility is typically preferred for interchanges, because it minimizes uncontrolled conflicts and provides maximum separation. Include landscaping, street trees and pedestrian scale lighting where possible.
- There are benefits to including both a Class IV/I and a Class II bikeway in interchange design. This design allows users who are comfortable traveling in traffic to position themselves to the left of the right turn lane, which some confident cyclists are more accustomed to.

X-7



US 101/ Blossom Hill Rd interchange in Santa Clara County

## Interchange – Grade Separated Crossings

Crossing bicycle facilities through an interchange has a greater potential for conflict because of higher travel speeds and lane configurations. One solution to this is to eliminate the conflicts between motorists and bicyclists by grade separating the bicycle facility at on/off ramp crossings. This facility type should be used thoughtfully as it can increase out-of-directional travel and reduce network connectivity compared to a Class IV facility.

### Typical Application

- Multilane freeway interchanges

### Example Caltrans Facilities

- US 101/ Blossom Hill Rd interchange in Santa Clara County
- US 101/ De La Cruz Blvd/ Trimble Rd interchange in Santa Clara County

### Design Features

- A** Overcrossings and undercrossing eliminate pedestrian and bicycle motor vehicle conflicts.
- Design bicycle crossings to minimize out of directional travel.
- Include pedestrian-scale lighting where possible and emphasize other crime-prevention strategies through design.
- Provide wayfinding to assure users that they can reach their destination through use of off-street facilities.
- Avoid use of landings if possible and instead maintain a flatter grade less than 5%. Landings on Class I facilities can cause undulations for cyclists.
- Consider providing redundant on-street facilities for confident cyclists who may be more accustomed to traveling adjacent to traffic.
- On long downgrades consider widening the pathway for extra clearance between bikes and pedestrian where cyclists may be traveling faster
- Encourage light, air and roadway visibility to undercrossings.



X-8







I-880 and Auto Mall Pkwy in Alameda County

## Partially Separated Floating Bike Lanes – Interim Design

Partially separated floating bike lanes are Class II bike lanes that are positioned between two lanes of traffic with separation between the outside lane of traffic and the bike lane. While this wouldn't offer the same benefits of a full Class IV facilities it offers some benefits in constrained situations. The row of separation may act as a traffic calming feature that may increase the comfort of bicyclists. Using the features can be particularly effective at interchanges that often have high speeds and high volumes that can be uncomfortable facilities for bicyclists. This is an interim design to a fully separated bikeway and wouldn't be considered an all ages and abilities facility if adjacent to high-speed traffic.

### Typical Application

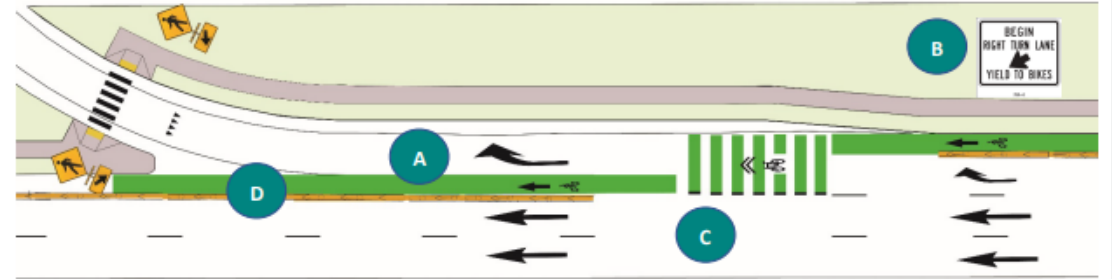
- Any floating bike lane between a through and dedicated turn lane

### Example Caltrans Facilities

- US-101 and Cochrane Rd in Santa Clara County
- I-880 and Auto Mall Pkwy in Alameda County

### Design Features

- A** Partially separated bike lanes can use bollards or channelizers for the separation.
  - Channelizers may provide more robust separation than delineators. Quick Kurb (see [quickkurb.com](http://quickkurb.com)) is on Caltrans' list of authorized delineation materials. See also <https://dot.ca.gov/-/media/dot-media/programs/engineering/documents/mets/signing-and-delineation-materials-a11y.pdf>



## Interchange – Interim design

### Option 2: On-Ramp – Direct Path

The on-ramp direct path design option moves the conflict point of bicyclists and motor vehicles before the on-ramp, where confident cyclists would begin negotiating the merge. This treatment is similar to the striping of on-street bicycle lanes at standard intersections where dedicated right turn movements are present to avoid a right-hook collision. A benefit of this treatment is that it is a more direct route and a more expected facility, especially for strong and confident cyclists.

This facility wouldn't be considered an all ages and abilities facility and would only be an interim design.

### Typical Application

- Existing freeway interchange upgrades or repaving projects

### Example Caltrans Facilities

- Auto Mall Pkwy/ I-880 interchange in Alameda County

### Design Features

- A** Limit length of the "floating" bike lane to 150' or provide for greater separation such as a buffer or raised outer separation when the bike facility is between two lanes of traffic. Consider including a partially separated floating bike lane.
- B** Regulatory signs can help clarify who has the right of way.
- C** Mark vehicle entrance onto ramp with green-colored conflict markings. Green-colored pavement is used to enhance the conspicuity of locations where bicyclists are expected to operate and areas where bicycles and other roadway traffic might have potentially conflicting weaving crossing movements. Even if ramp includes multiple lanes, reduce ramp entry to a single vehicle lane to limit conflicts.
- D** Upgrade Class II bike lanes to Class IV separated bikeways where possible.





## San Mateo County Top Tier Project Highlights

ID	Route	City	Improvement Type	Location	Description
SM-84-X01	84	Redwood City	Intersection Improvement at controlled intersection	Middlefield Rd	Improve arterial crossing. Explore installing a protected intersection.
SM-82-X19	82	Redwood City	Intersection improvement at controlled intersection	Roosevelt Ave	Improve crossing at Roosevelt Avenue
SM-84-C03	84	Redwood City	Corridor Improvement-Class IV	US 101 - Hudson St/Central Ave	Class IV facility from US 101 to Hudson St/Central Ave in Redwood City. Include ramp improvements at Hwy 82.
SM-109-NC01	109	Menlo Park, East Palo Alto	Corridor Improvement-Class IV	University Ave - Donohoe St	Explore options of upgrading existing Class II to a Class IV
SM-82-NC01	82	Colma	Corridor Improvement-Class IV	F St - Arlington Dr	Colma El Camino Pedestrian and Bicycle Improvement Plan recommends Class IV on El Camino through Colma
SM-82-C09	82	Redwood City	Corridor Improvement-Class IV	Cordilleras Creek to Berkshire Ave	Class IV on El Camino Real throughout Redwood City (~ Cordilleras Creek to Berkshire Ave). Priority project identified in Redwood City Walk Bike Thrive Plan (2022) and concept plans in Bike and Ped Safety Improvement Study El Camino Real
SM-82-C11	82	Menlo Park	Corridor Improvement-Class IV	Sand Hill Rd - Encinal Ave	Explore option of installing Class IV on El Camino to connect with planned adjacent jurisdiction's bikeways on El Camino.
SM-280-NX01	280	Daly City	Interchange improvements - Class IV	John Daly Blvd	Install Class I or Class IV bikeway on interchange as identified in Walk Bike Daly City and to connect to existing path on west side to the BART station. See Walk Bike Daly City pg 58 for interchange conceptual plan.
SM-101-X05	101	South San Francisco	Interchange improvements - Class IV	Grand Ave	Install bicycle interchange improvements, such as square up ramps, install Class IV bikeways, add signage and striping to mark bicycle conflict points and remove free right turns.
SM-101-X06	101	South San Francisco	Interchange improvements - Class IV	Oyster Point Blvd	Install bicycle interchange improvements, such as square up ramps, install Class IV bikeways, add signage and striping to mark bicycle conflict points and remove free right turns.

This table identifies a partial list of top-tier projects in the County. A full list of projects is included in Appendix B.



Multiple priority bikeways are underway in San Mateo County, including upcoming improvements on El Camino Real and SR-1. Interchange and intersection improvements across highways that act as barriers to cycling remain a top priority.

# Key Questions for TAC

- What are priority bikeway projects in San Mateo County on and across the state highway system?
- What can Caltrans do to be a better partner with our local jurisdictions and public?
- What would you like to see Caltrans do to improve bike mobility in San Mateo County?







Questions/  
Comments?