

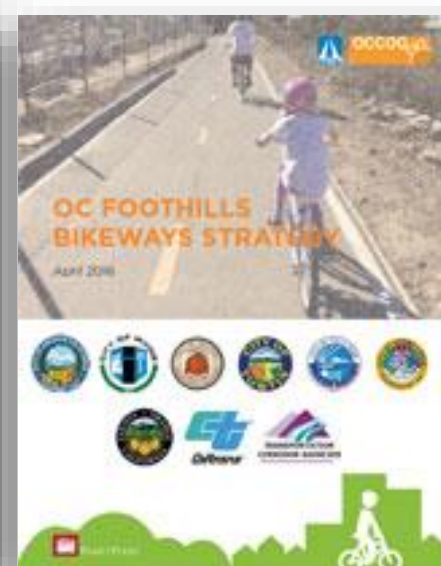
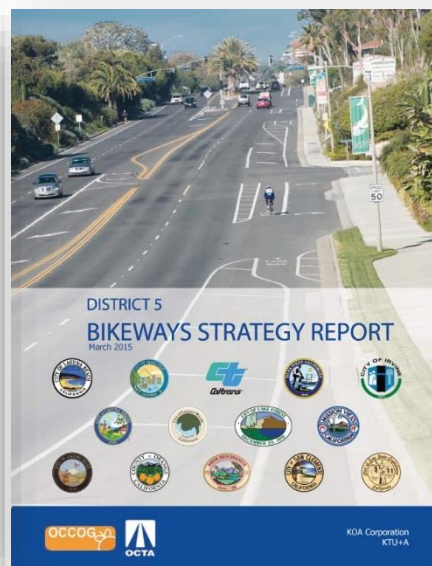
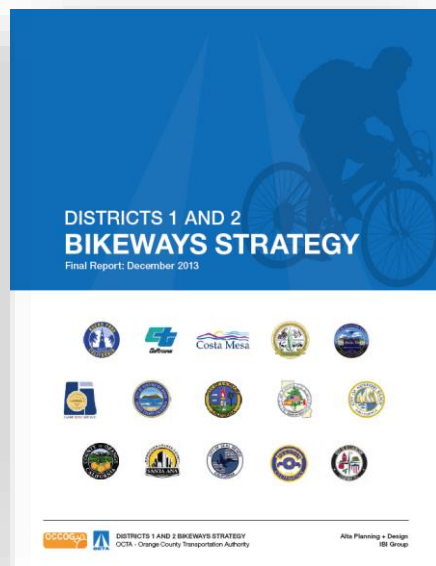
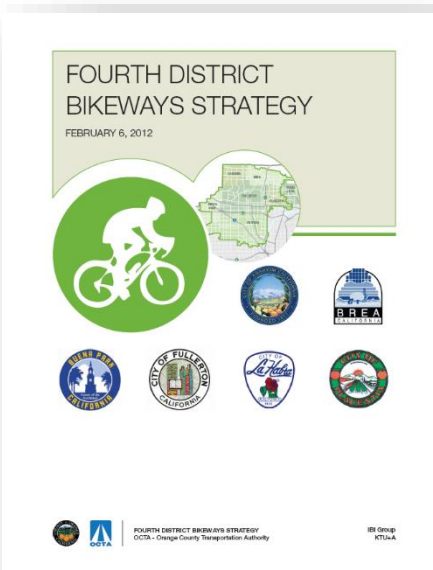


# Best Practices Toolkits

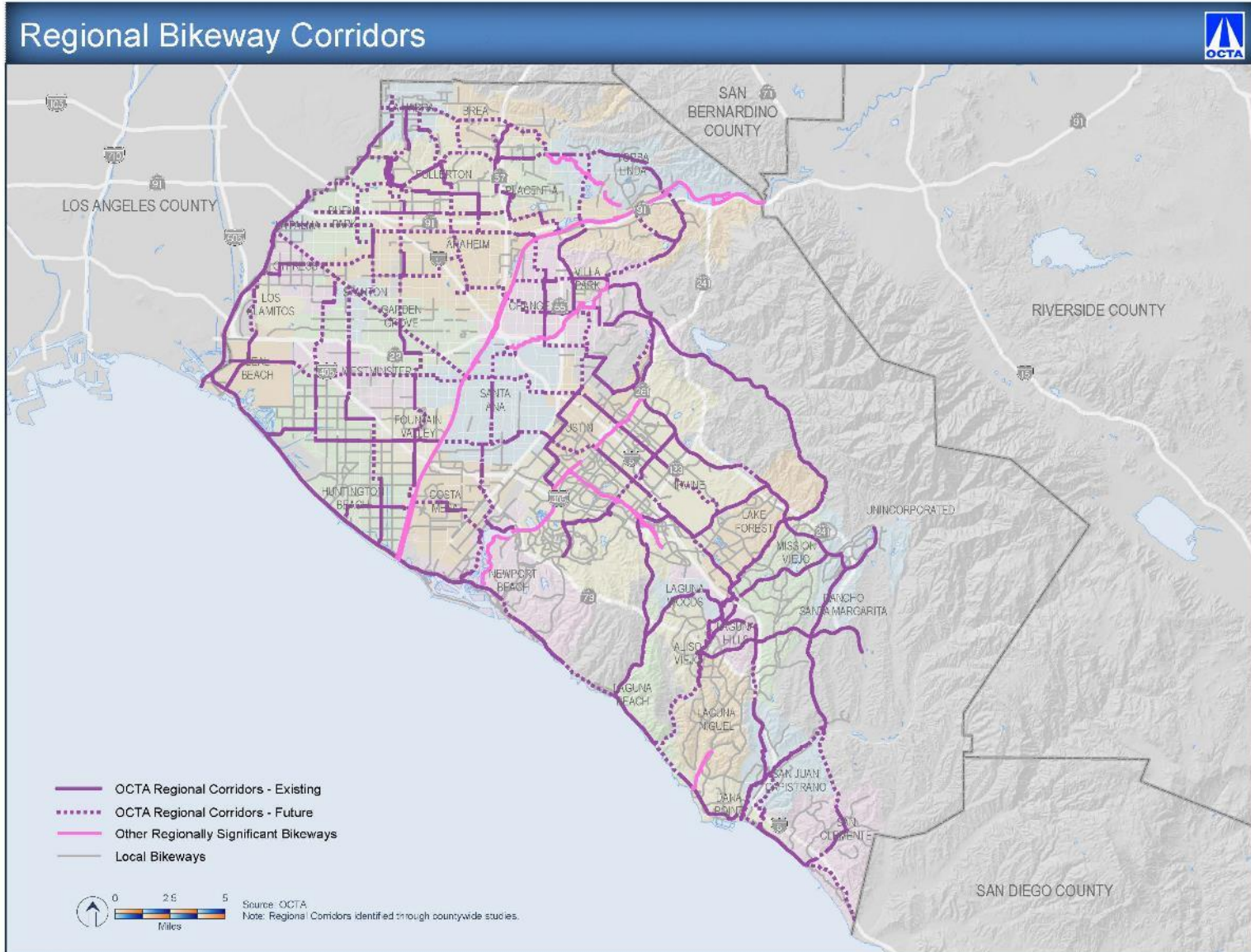
OCTA Bicycle & Pedestrian Subcommittee, 1/10/17



# Regional Bikeways Collaboratives

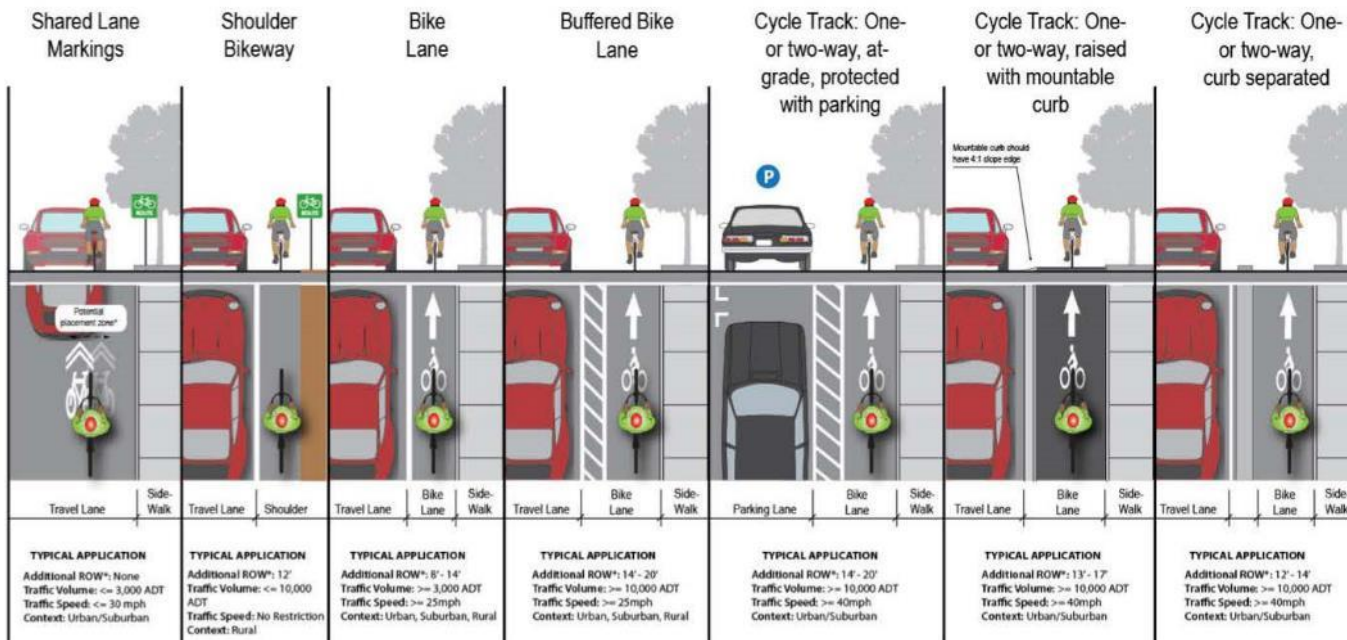


# Regional Bikeways Network



# Design Toolbox




- Understanding Advances in Bicycle Design Treatments
  - Bike Boxes, Green Paint, Cycle Tracks?



# Design Toolbox

## 1-Page Sheets on Bicycle Treatments

- Definition
- Applicability
- Rendering
- Consistency with Standards
  - HDM
  - MUTCD
  - FHWA, etc.

	 California Manual of Uniform Traffic Control Devices (2012)	 Guide for the Development of Bicycle Facilities (2012)	 Urban Bikeway Design Guide (2012)
Signed Shared Roadway	X	X	
Marked Shared Roadway	X	X	X
Bicycle Boulevard	–	X	X
Bicycle Lane	X	X	X
Buffered Bicycle Lane	–	X	X
Cycle Tracks	–	Called "one-way sidepath"	X
Bike Box			X
Bike Lanes at Right Turn Only Lanes	X	X	X
Colored Bike Lanes in Conflict Areas	FHWA Interim Approval Granted	X	X
Combined Bike Lane/Turn Lane	–		X
Intersection Crossing Markings	X	X	X
Wayfinding Sign Types & Placement	X	X	X
Wayfinding Sign Placement	X	X	X
Shared-Use Path	X	X	
Active Warning Beacons	X	X	X
Pedestrian Hybrid Beacons	X	X	X

# Design Toolbox

## Marked Shared Roadway

### Description

A marked shared roadway is a general purpose travel lane marked with shared lane markings (SLM, popularly known as "sharrows") used to encourage bicycle travel and proper positioning within the lane.

In constrained conditions, the SLMs are placed in the middle of the lane to discourage unsafe passing by motor vehicles. On a wide outside lane, the SLMs can be used to promote bicycle travel to the right of motor vehicles.

In all conditions, SLMs should be placed outside of the door zone of parked cars.

### Guidance

- In constrained conditions, preferred placement is in the center of the travel lane to minimize wear and promote single file travel.
- Minimum placement of SLM marking centerline is 11 feet from edge of curb where on-street parking is present, 4 feet from edge of curb with no parking. If parking lane is wider than 7.5 feet, the SLM should be moved further out accordingly.



### Discussion

**Bike Lanes** should be considered on roadways with outside travel lanes wider than 15 feet, or where other lane narrowing or removal strategies may provide adequate road space. SLMs shall not be used on shoulders, on designated **Bike Lanes** or to designate **Bicycle Detection** at signalized intersections. (MUTCD 9C.07)

### Additional References and Guidelines

AASHTO, *Guide for the Development of Bicycle Facilities*, 2012.  
 Caltrans CA-MUTCD, 2012  
 NACTO, *Urban Bikeway Design Guide*, 2012.

### Materials and Maintenance

Placing SLMs between vehicle tire tracks will increase the life of the markings and minimize the long-term cost of the treatment.

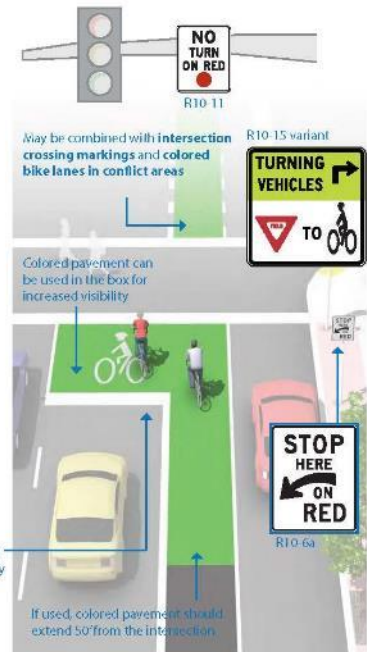
## Bike Box

### Description

A bike box is a designated area located at the head of a traffic lane at a signalized intersection that provides bicyclists with a safe and visible space to get in front of queuing motorized traffic during the red signal phase. Motor vehicles must queue behind the white stop line at the rear of the bike box.

### Guidance

- 14 foot minimum depth
- A "No Turn on Red" (MUTCD R10-11) sign shall be installed overhead to prevent vehicles from entering the Bike Box.
- A "Stop Here on Red" sign should be post-mounted at the stop line to reinforce observance of the stop line.
- A "Yield to Bikes" sign should be post-mounted in advance of and in conjunction with an ingress lane to reinforce that bicyclists have the right-of-way going through the intersection.
- An ingress lane should be used to provide access to the box.
- A supplemental "Wait Here" legend can be provided in advance of the stop bar to increase clarity to motorists.



### Discussion

Bike boxes should be placed only at signalized intersections, and right turns on red shall be prohibited for motor vehicles. Bike boxes should be used in locations that have a large volume of bicyclists and are best utilized in central areas where traffic is usually moving more slowly.

### Additional References and Guidelines

NACTO, *Urban Bikeway Design Guide*, 2012.  
 FHWA, *Interim Approval #A-141*, 2011.

### Materials and Maintenance

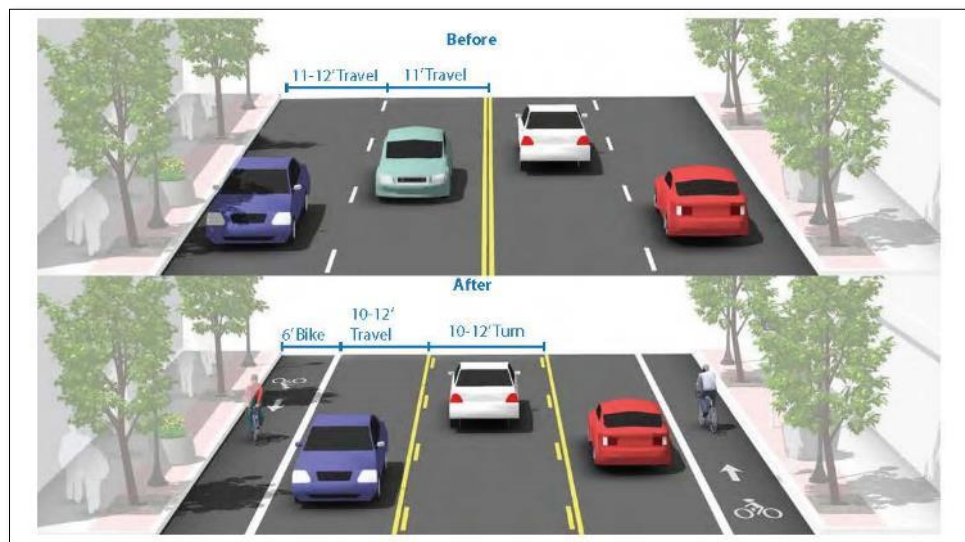
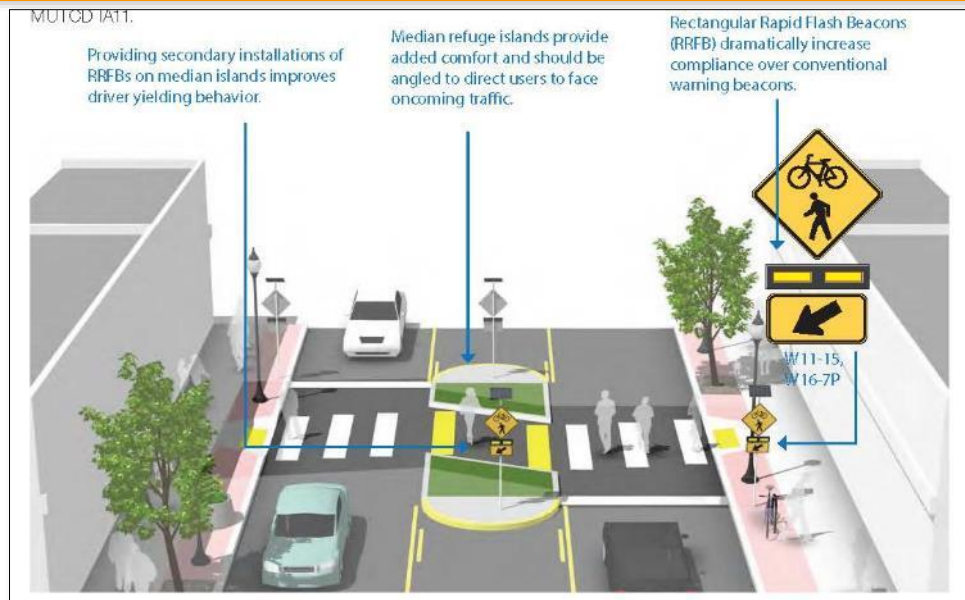
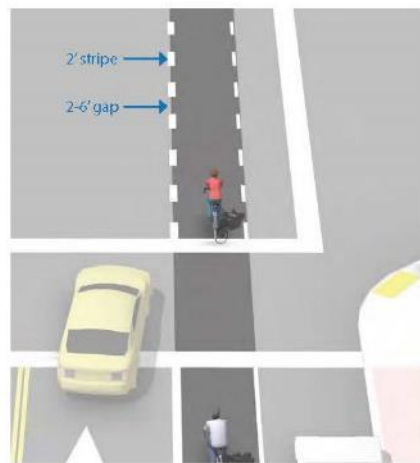
Because the effectiveness of markings depends entirely on their visibility, maintaining markings should be a high priority.

# Design Toolbox

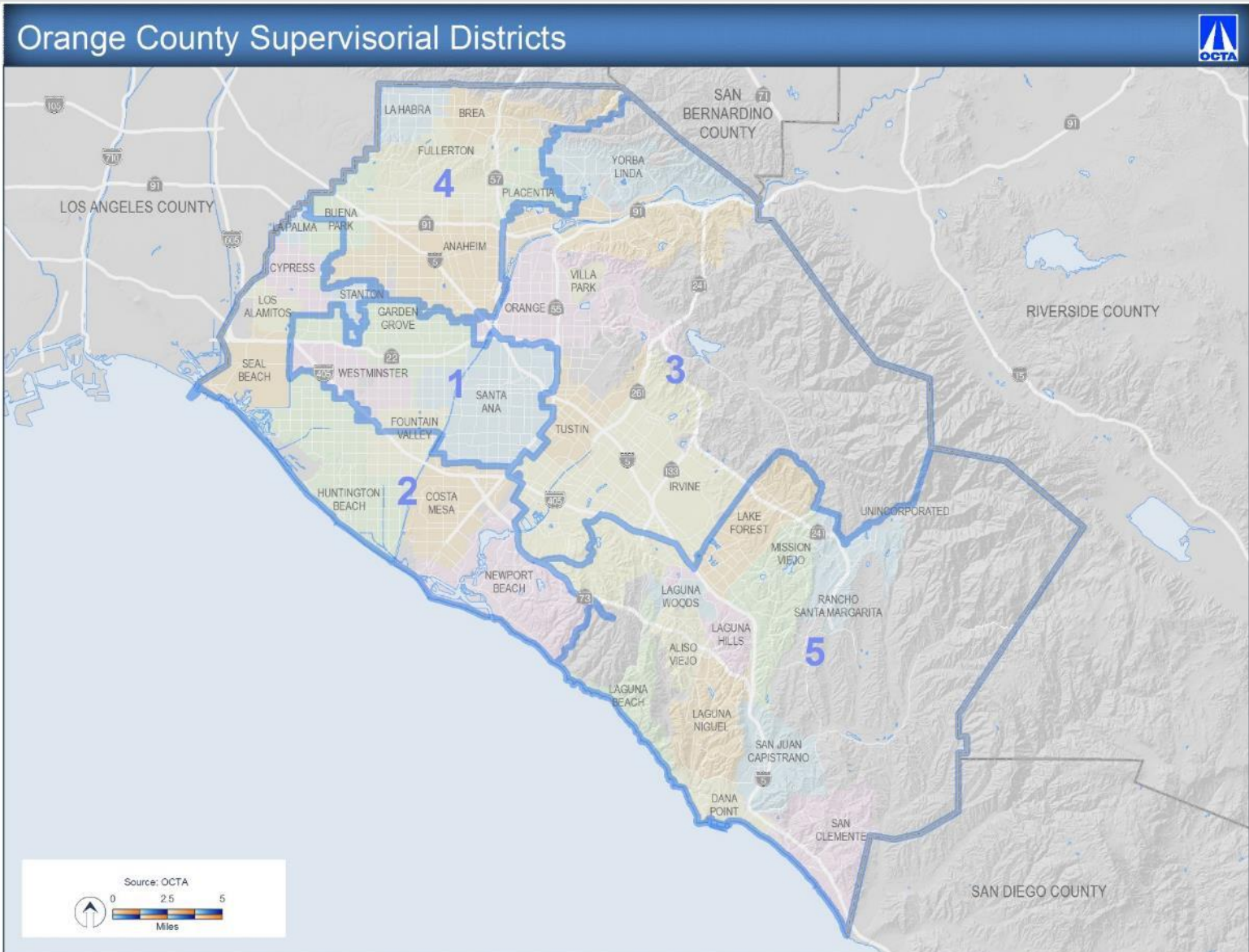
## Dotted Line Extensions Ped Beacon Road Rebalancing

### Guidance

- See MUTCD Section 3B.08: "dotted line extensions"
- Crossing striping shall be at least six inches wide when adjacent to motor vehicle travel lanes. Dotted lines should be two-foot lines spaced two to six feet apart.
- Chevrons, shared lane markings, or **colored bike lanes in conflict areas** may be used to increase visibility within conflict areas or across entire intersections. Elephant's Feet markings are common in Europe and Canada.

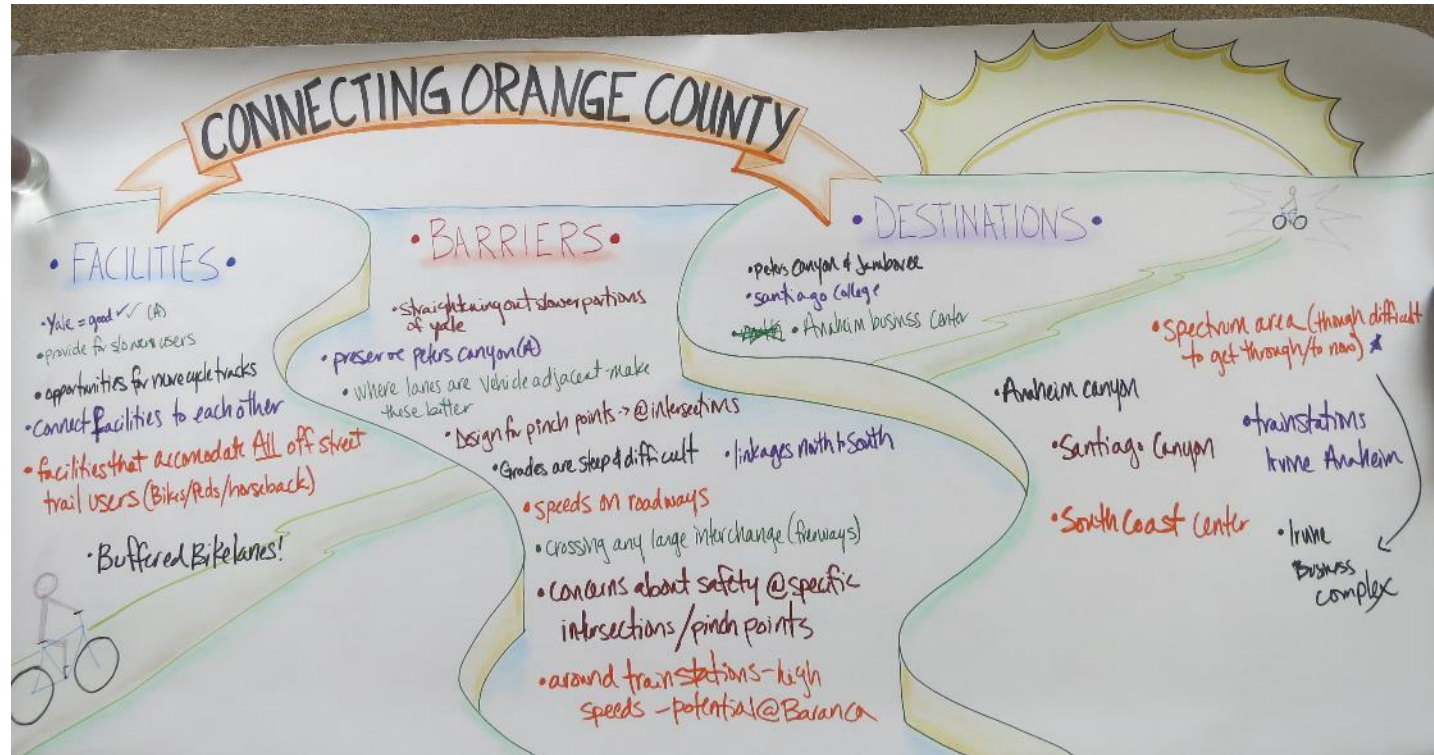


# Orange County = 35 Jurisdictions





# Thank You!



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