

California Department of Transportation (Caltrans) District 7 (Los Angeles & Ventura Counties)

Complete Streets



American Council of Engineering Companies (ACEC) - April 2020

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Overview

- ▶ Policies/Mandates
- ▶ Importance of Complete Streets
- ▶ Caltrans Bicycle/Ped Plans
- ▶ Complete Street Concepts
- ▶ Wrap Comments



D7: Multi-modal transportation options on US-101 corridor in Ventura Co.

Photo Credit: D7 Graphic Services



Guiding Policies

- ▶ **AB 32 (2006) and SB 32 (2016)**
 - ▶ *Reduce GHG 40% below 1990 levels by 2030*
- ▶ **Caltrans Deputy Directive 64 - (2008) Rev. 2 (2014)**
 - ▶ *Integrate Complete Streets principles in all activities*
- ▶ **Caltrans Smart Mobility Framework (2010)**
 - ▶ *Addressing challenges to mobility and sustainability*
- ▶ **HDM (2012) w/ Complete Streets concepts**
- ▶ **California Transportation Plan 2040 (2013)**
- ▶ **Main Street California (2013)**
 - ▶ *Design treatments toolbox for SHS/community main streets*
- ▶ **NACTO Urban Bikeway/Street Design Guides endorsement**
- ▶ **Complete Streets Implementation Action Plan 2.0 (2014-2017)**
- ▶ **Caltrans Design Information Bulletin 89 (2015)**
- ▶ **Caltrans Strategic Management Plan (2015)**
- ▶ **California Strategic Highway Safety Plan (2015)**
- ▶ **California Sustainability Policy DP-33 (2015)**
- ▶ ***Toward an Active California State Bicycle/ Pedestrian Plan (2017)***



D7- US 101
Seaward Ave.



More Caltrans Policies and State Mandates Requiring Caltrans to Address Complete Streets

- ▶ **Senate Bill 1 (2017)** - Road Maintenance and Accountability Program requires CS elements for projects funded by program.
- ▶ **Executive Order B-30-15 on Climate Change** - Requires all state investments to take GHG reductions and climate change into consideration. Caltrans issued a memo in January 2016 to include Complete Streets and GHG emissions in Caltrans projects.
- ▶ **Executive Order N-19-19 (signed by Governor Newsom 2019)** - Requires redoubling of state's "efforts to reduce GHG emissions and mitigate impacts of climate change while building a sustainable, inclusive economy." This includes strategies for lowering VMT and supporting active modes of transportation such as biking and walking.



Caltrans Policy

Complete Streets Definition

A “Complete Street” is:

“A transportation facility that is planned, designed, operated, and maintained to provide safe mobility for all users, including bicyclists, pedestrians, transit riders, and motorists - appropriate to the function and context of the facility.” (DD 64-R2, 2014)



Caltrans Policy

Role in Complete Streets



“...provide for the needs of travelers of all ages and abilities in all planning, programming, design, construction, operations, and maintenance activities and products on the State highway system. Caltrans views all transportation improvements as opportunities to improve safety, access, and mobility for all travelers in California and recognizes bicycle, pedestrian, and transit modes as integral elements of the transportation system.”...

There is no one model of a “complete street” - context, community, and road user needs are key



Benefits

- ▶ SAFETY and risk management
- ▶ Increase physical activity and improve public health
- ▶ Provide options and access for non-drivers
- ▶ Decrease vehicle trips, air pollutants and greenhouse gas emissions
- ▶ Improve livability, revitalize communities, and decrease transportation costs
- ▶ Help partners meet local complete streets requirements (AB 1358, 2008)
- ▶ Manage capacity, deal with growth, and expand options for travel on the State Highway System
- ▶ **Support Department Mission: Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability**



D7: US-101/ SR-126 at Main St. onramp
Photo credit: D7 Graphic Services



Typical Counterarguments



- ▶ **Walking, bicycling, and public transit are inefficient and not important**
 - ▶ **DIVERSE NEEDS** - An efficient transportation system must be diverse to serve diverse demands
 - ▶ **OPTIONS** - Travelers may choose the best option for each trip: Active modes for local travel, public transit when traveling on major corridors, or automobile travel
 - ▶ **NON-DRIVERS** - In a typical community 20-40% of travelers cannot, should not, or prefer not to drive
 - ▶ **UNDERCOUNTED** - Most statistics undercount walking and bicycling trips because they undercount short trips, non-commute trips, travel by children, recreational travel, and links of trips that include a motorized mode



Typical Counterarguments...



- ▶ **Local obstacles make it infeasible (heat, cold, hills)**
 - ▶ PREFERENCES - These factors are less important than community commitment to multi-modalism
 - ▶ FACTORS NOT RELEVANT - Many cities with these factors have more active modes than cities that don't
- ▶ **Non-auto modes do not have as many benefits as auto**
 - ▶ RESOURCE EFFICIENT - Walking, bicycling, and public transit tend to be more resource-efficient, affordable, and healthy than automobile travel, which provides various economic, social, and environmental benefits



Complete Streets Elements Toolbox

- ▶ Educational tool for SHOPP Tool Complete Streets Activity Details.*

Provides:

- ▶ Definitions
- ▶ Guidance
- ▶ Case examples
- ▶ Quantification



D7: Class IV bike lane on Rosemead Blvd., Temple City
Photo Credit: D7 Graphic Services

- ▶ Found at: *Caltrans Complete Streets Program*

<http://www.dot.ca.gov/transplanning/ocp/docs/Complete-Streets-Elements-Toolbox.pdf>

* State Highway Operation & Protection Program





Statewide Vision

First ever statewide active transportation plan defines a vision and identifies strategies along with actions to create opportunities for bicycling and walking across the state...

“By 2040, people in California of all ages, abilities and incomes can safely, conveniently and comfortably walk and bicycle for their transportation needs”



D7: High intensity Activated Crosswalk (HAWK) beacon at SR-1/
Pacific Coast Highway and Driftwood Dr., Pacific Palisades
Photo Credit: Google



Objectives

▶ Safety

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

▶ Mobility

Increase walking and bicycling in California

▶ Preservation

Maintain a high-quality active transportation system

▶ Social Equity

Invest resources in communities that are most dependent on active transportation and transit



D7: US-101 at Los Angeles St. onramp
Photo credit: Google

Caltrans District 7

Active Transportation Plan

- ▶ Action item in [State Bicycle and Pedestrian Plan](#)
Develop *district-level plans* to identify bicycle and pedestrian needs and priority projects on or parallel to and across the SHS with a focus on:
 - ▶ Removing barriers
 - ▶ Closing gaps, and
 - ▶ Building complete, comfortable networks
 - ▶ Address equity
- ▶ Once complete, these plans can be incorporated into project scoping for maintenance, reconstruction, safety and other projects



D7 Active Transportation Plan

Improve walking, biking and riding public transportation

- ▶ Build an inventory of existing conditions - **DONE**
- ▶ Gather regional and local plan information - **IN PROCESS**
- ▶ Coordinate with stakeholders to identify gaps & challenges on/across State Highway System - **LAUNCHING**
- ▶ Develop Best Practices
- ▶ In coordination with stakeholders in identifying needs & priorities
- ▶ Develop a phased, prioritized implementation plan. The plan will identify needs for near-, mid-, and long-range multimodal projects



California Active
Transportation Program

D7- US 101
Seaward Ave.



Considerations - Micromobility (New Trend)

- ▶ An affordable solution to urban transportation covering a distance of 5 miles or less
- ▶ 60% of trips in the US are 5 miles or less
- ▶ Includes transportation methods such as e-bikes, e-scooters, and docked bikes
- ▶ E-scooters have had a 3.6% adoption rate in US Metros in under one year of implementation

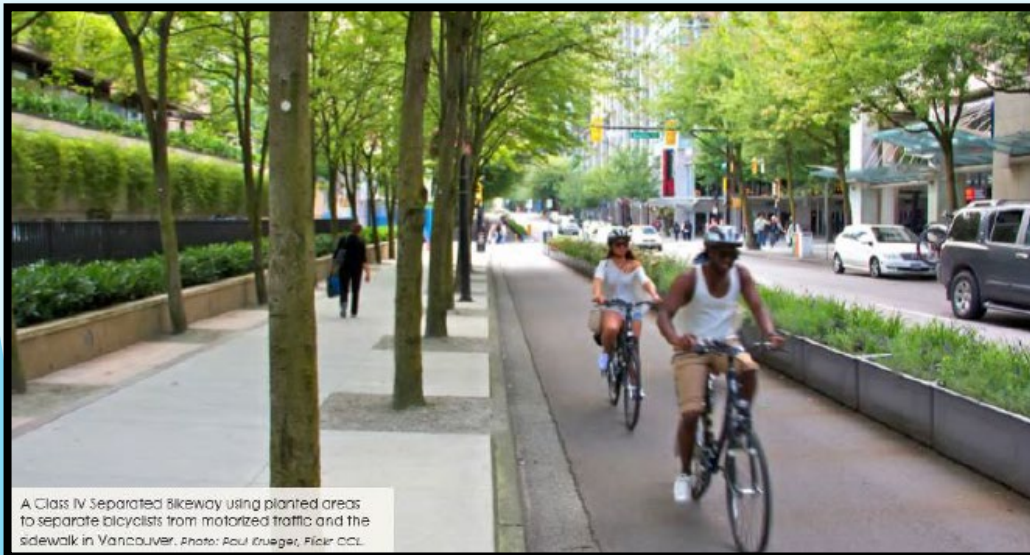


Considerations - Landscape

“Creating conditions that are comfortable and inviting can tip the scales to make walking and bicycling an activity that people happily and regularly pursue:

- ▶ Pedestrians prefer to be buffered from traffic via landscaped areas and wider pedestrian facilities; and prefer to walk along or across fewer lanes of traffic
- ▶ Street trees and landscaping make walking and bicycling more appealing - by providing shade, wind protection, and aesthetic enjoyment”

From Caltrans Project Delivery Quarterly, Summer 2018



A Class IV Separated Bikeway using planted areas to separate bicyclists from motorized traffic and the sidewalk in Vancouver. Photo: Paul Krueger, Flickr CCL



FHWA Guidance on Bikeway Selection

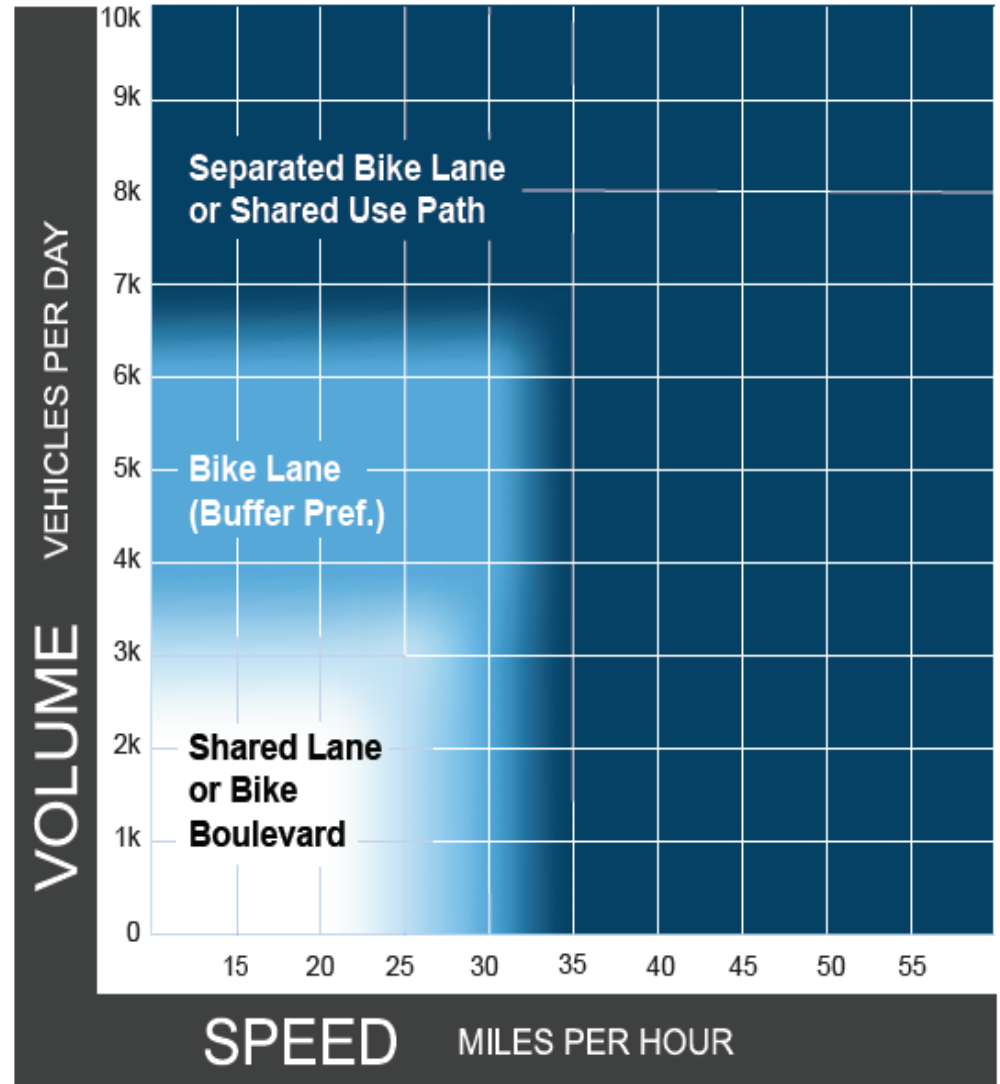
BIKEWAY SELECTION GUIDE



U.S. Department of Transportation
Federal Highway Administration

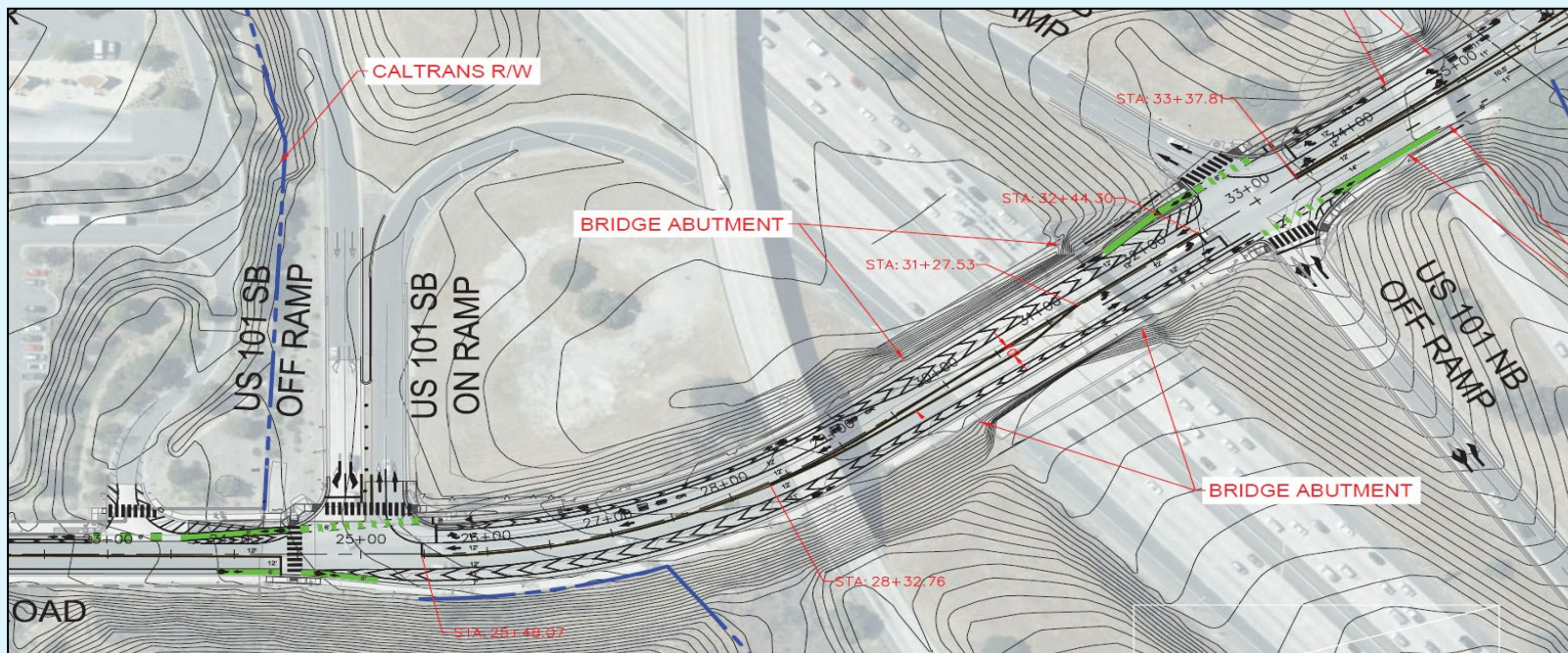
FEBRUARY 2019

Figure 9: Preferred Bikeway Type for Urban, Urban Core, Suburban and Rural Town Contexts

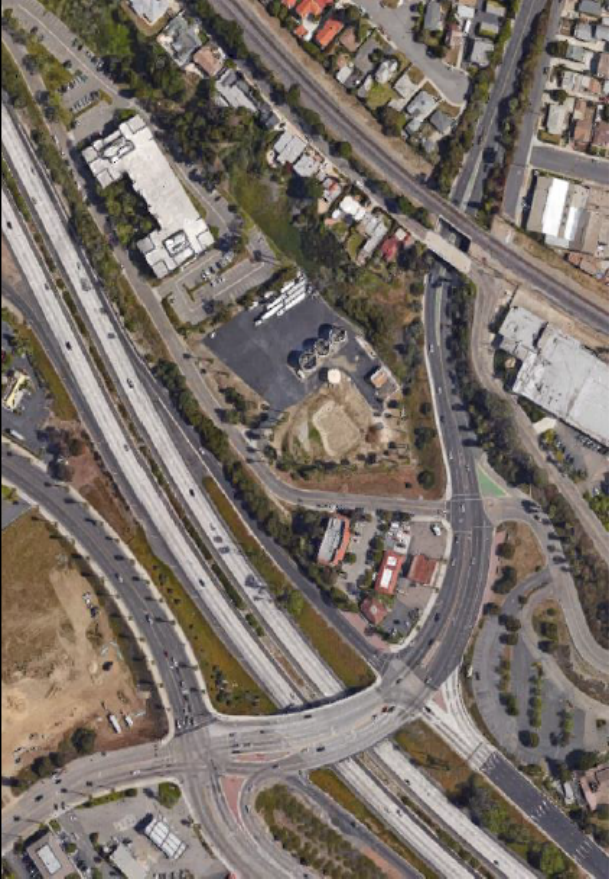
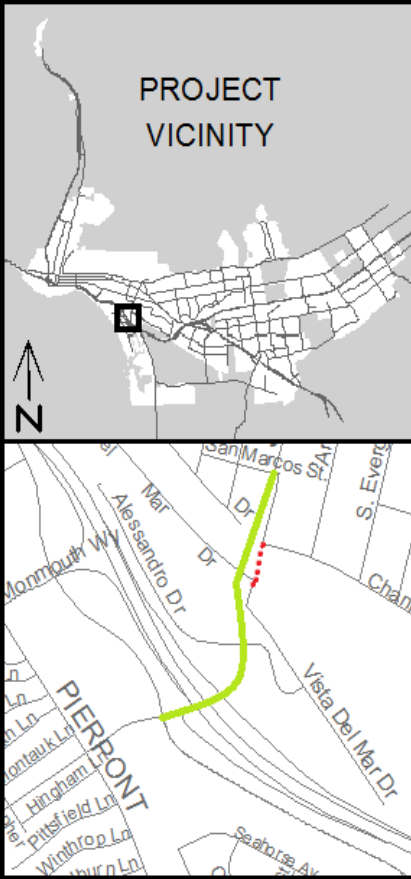


Presenter: Dale Benson, District 7 Senior Transportation Engineer & District Bike/Ped Coordinator

- Permit project reviewed by District Design staff.
- It proposed to improve pedestrian and bicycle safety on Rancho Road in Thousand Oaks, Ventura at the US-101 ramp intersection
- The project introduces one dedicated bicycle lane through the intersection with green bicycle pavement marker and with separate bicycle signal.



Seaward Green Lanes Project



The project location is in the midtown district of Ventura.

This is the primary access route for the midtown district and a significant beach access corridor for much of the city.

So, how did this project begin?

Project Location



Seaward Green Lanes Project

Existing Conditions - Southbound



Transportation began investigating existing conditions to determine the best option

Our findings included, Large Roadway Geometry, ranging between 52' to 110' Street Width

Lane configuration is 4 to 9 Lanes of Traffic, at minimum lane widths.

There are 3 Signalized Intersections, 2 Freeway On-ramps, & 1 Off-ramp



Seaward Green Lanes Project

Existing Conditions - Northbound



20,000 ADT (2014 Speed Survey)
Collector classification

35 MHP Speed Limit, 40 MPH 85th
Existing bike lanes are 5', next to
curb and gutter



4'-5' Sidewalk only on the west
side

In addition to the challenges of
the existing conditions, let's look
at some others.



Seaward Green Lanes Project

Challenges



Transportation identified several challenges with the existing Street Geometry including Street, sidewalk, and bike lane widths, constraints such as the Overhead rail/car bridge crossing

Numerous Conflict zones along the corridor
The Gutter width with Rough transition to edge of Pavement

We will discuss these more later.
First let's look at the design process.



Seaward Green Lanes Project

Design Process



In previous green treatment projects the City has established a pattern of matching green treatments to existing/proposed striping.

This satisfies the use of green as decorative versus traffic control

We had not previously done intersection treatments

We ended up using a combination of NACTO Designs based on previous experience, this decision was for Maintenance and clarity of use.

We Chose to use the Elephant Feet design with matching green for additional visibility through the intersections.



Seaward Green Lanes Project Specifications



The Specs originally called for two types of green treatments.

Transpo's Methyl Methacrylate or "MMA" or equivalent for conflict zones, as identified by dashed striping.

Sealmaster "Safe Ride" paint or equivalent for all other areas.

This was done for cost savings based in part on maintenance and wear.

The contractor renegotiated the price and did the entire job in the superior MMA product

The project included

485 LF of New Detail 39A (mostly matching on interior side)

900 LF of the Elephant Track White (1.5'x1.5')

Over 15000 SF Green Markings

Treating approximately 2000 feet each direction

As well as some signage changes

The Caltrans reviews identified several of these improvements, but also created some challenges of their own.



Seaward Green Lanes Project

Caltrans Partnership

There were several field visits with various Caltrans staff and City staff

We had strong Support of Caltrans Bicycle and Pedestrian Coordinator

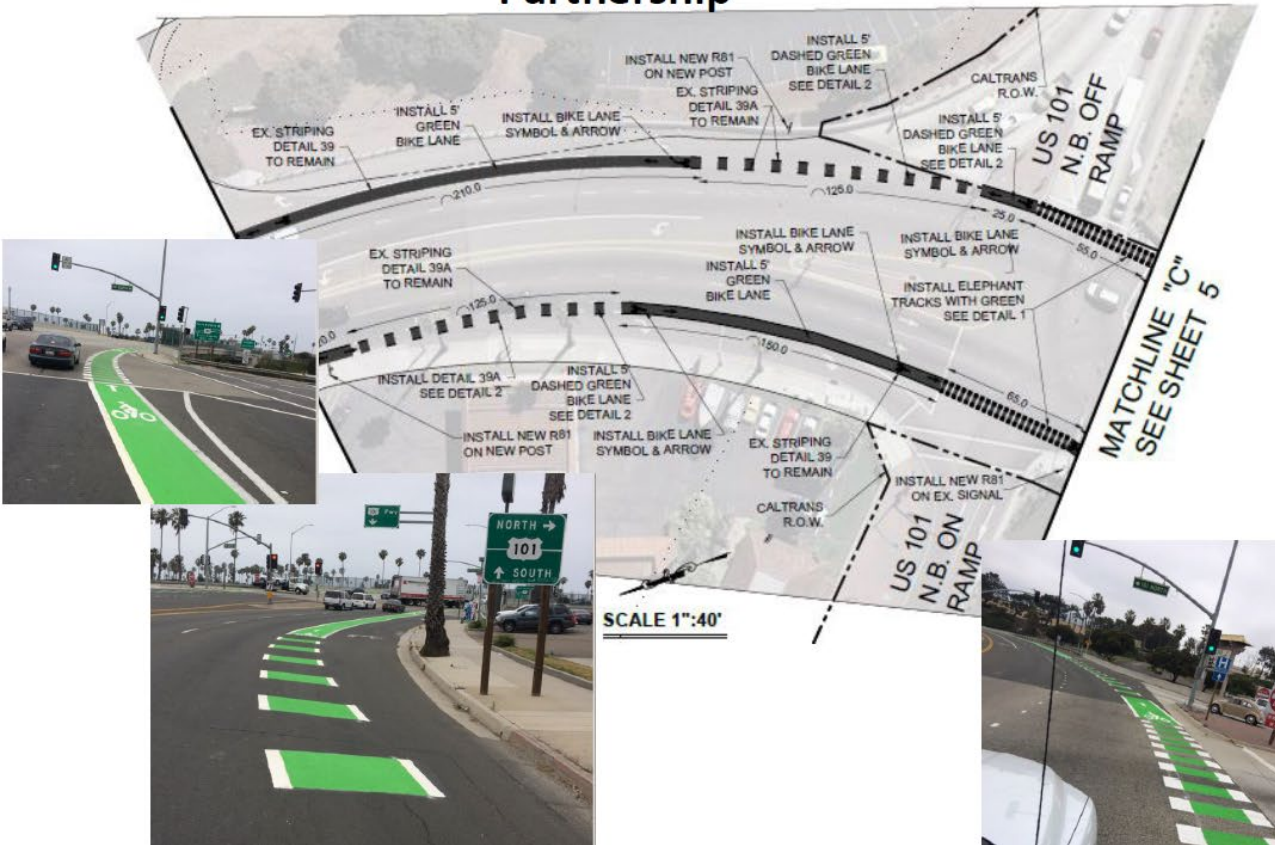
Everything was going quite smoothly with getting the Caltrans encroachment permit

Until one of the largest challenges was met.

The encroachment permit required an update to the Citywide Freeway Maintenance Agreement

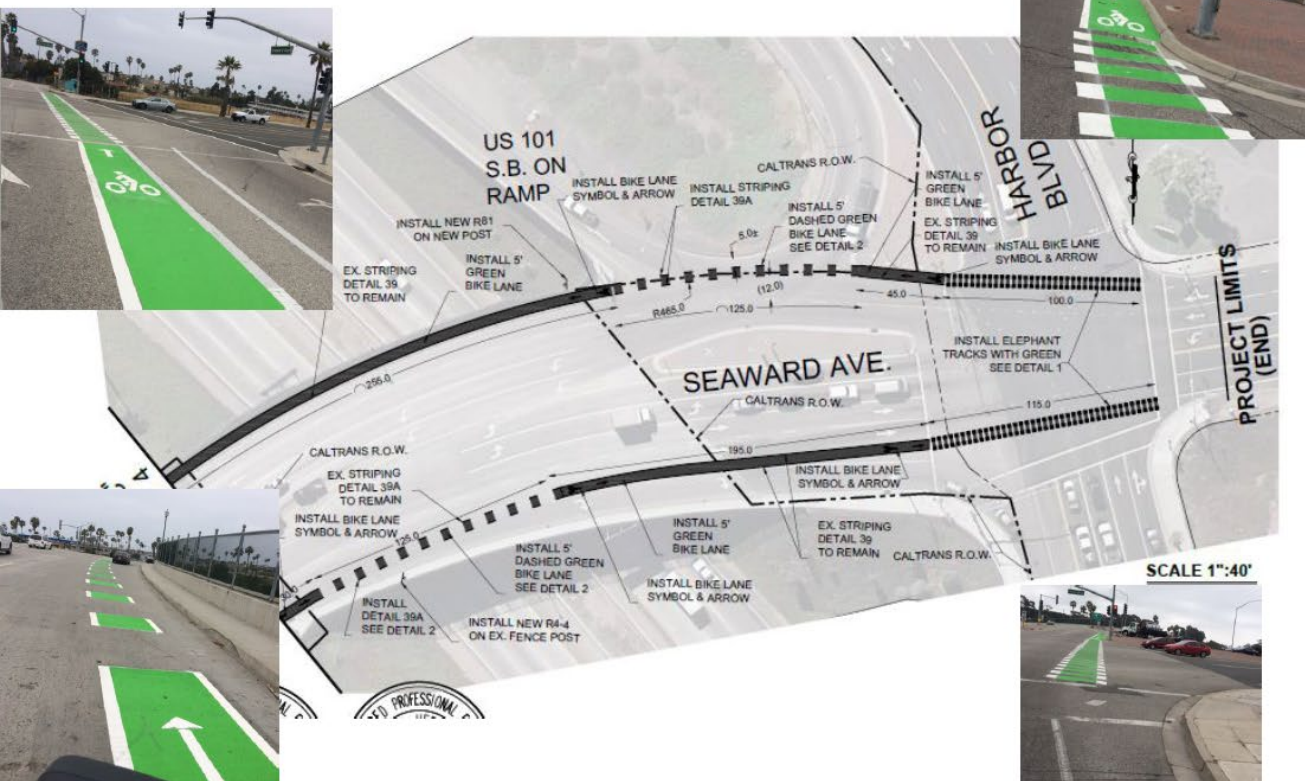
This process took nearly a year and nearly sank the project

Both sides were eventually satisfied and the permit was issued. Now let's look at the outcome.



Seaward Green Lanes Project

Outcome



As you have seen through these slides, the Outcome is a dramatic visual difference.

The use of Methyl Methacrylate used throughout had an unexpected two fold benefit. Significantly increasing the visibility of the bike lane, and the even greater benefit was its crack-sealing property. In conjunction with the grinding, this increased the usable and effective width of the bike lane.

The project has made paths of travel for cyclist and driver clear, as well as highlighting Conflict zones

There has been strong support for this design from City Council, Staff, and both public drivers and cyclist.

So, what's the usage and feedback like?



Seaward Green Lanes Project

Usage and Feedback

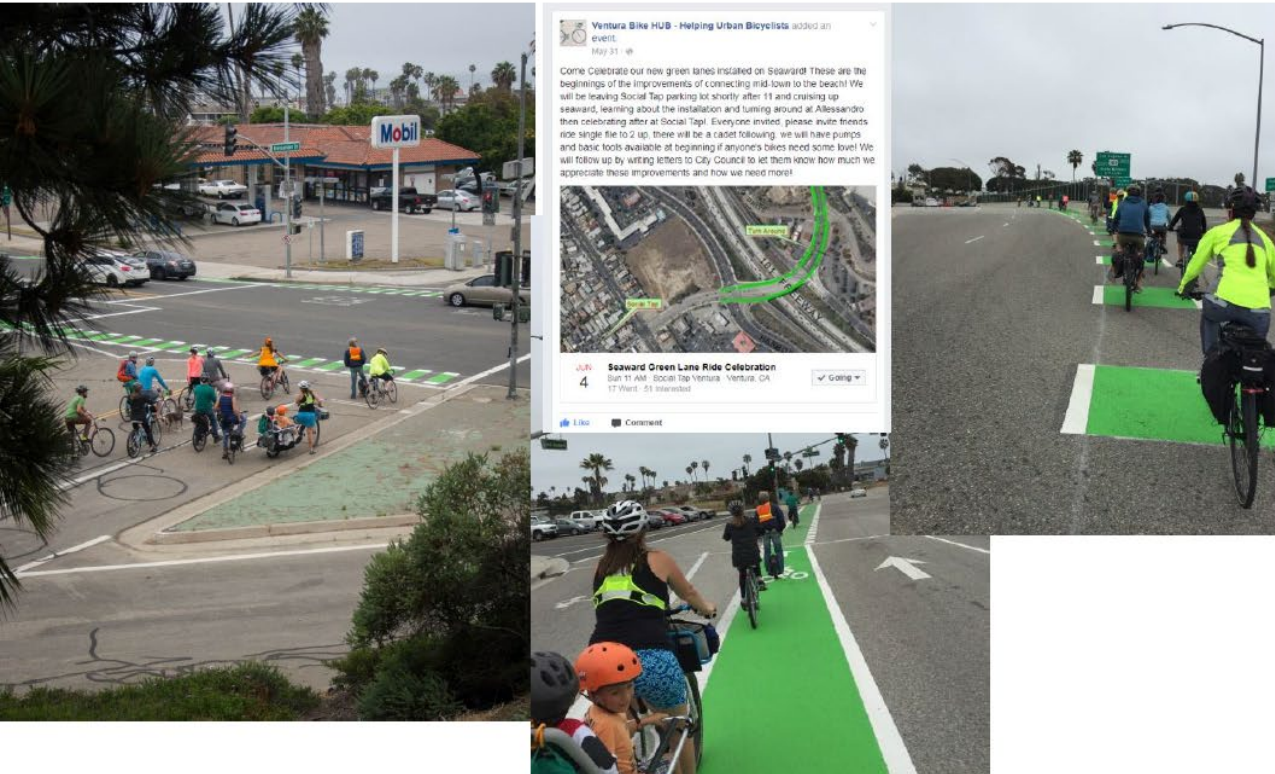
The project was so well received BikeVentura, our local bicycle advocacy organization, hosted a Celebration Ride.

More than two dozen riders came out on the Sunday following the installation to ride the project as a show of appreciation.

Several riders talked about the difference in the feel of the ride, notably safer.

We have seen an increase in riders using the eastside uphill lane. Likely we will extend the green to Pierpont Bl.

Finally, let's have a quick review.



Seaward Green Lanes Project



I have told you about the challenging initiation of the project, its confining existing conditions, the unique design process, our new specs, our partnership with Caltrans and finally the outcome and usage.

In conclusion, seizing challenging project opportunities like this can lead to incredible results. This project makes it more clear where everyone is going and when to expect to cross paths with each other.

Our challenges, lead to roads, that are less challenging for our citizens.

Thank you again and I'd be happy to take any questions.



Caltrans Resources for Project Delivery

- ▶ Statewide Asset Management Tool can identify locations of Pedestrian facilities districtwide with relevant information. This is useful in scoping projects.

(Intranet - http://sv07ppmweb/pirs/TenYrShopp/tenyrshopp_map.cfm)

- ▶ District 7's Design Division has an ADA Project Delivery Office, which assists in delivering projects with ADA components.

(Intranet - <https://district7.onramp.dot.ca.gov/office-ada-project-delivery>)



Statewide Asset Management Tool- SHOPP

sv07ppmweb/pirs/TenYrShopp/tenyrshopp_map_rev2.cfm

Most Visited Getting Started

Ten-Year Plan:
 All Ten-Year Plan
 2015
 2017

Projected SHOPP Cycle:
 All SHOPP Cycle
 2014 And Prior
 2016
 2018
 2020

PID Cycle:
 All PID Cycle
 2014 And Prior
 2016
 2018
 2020

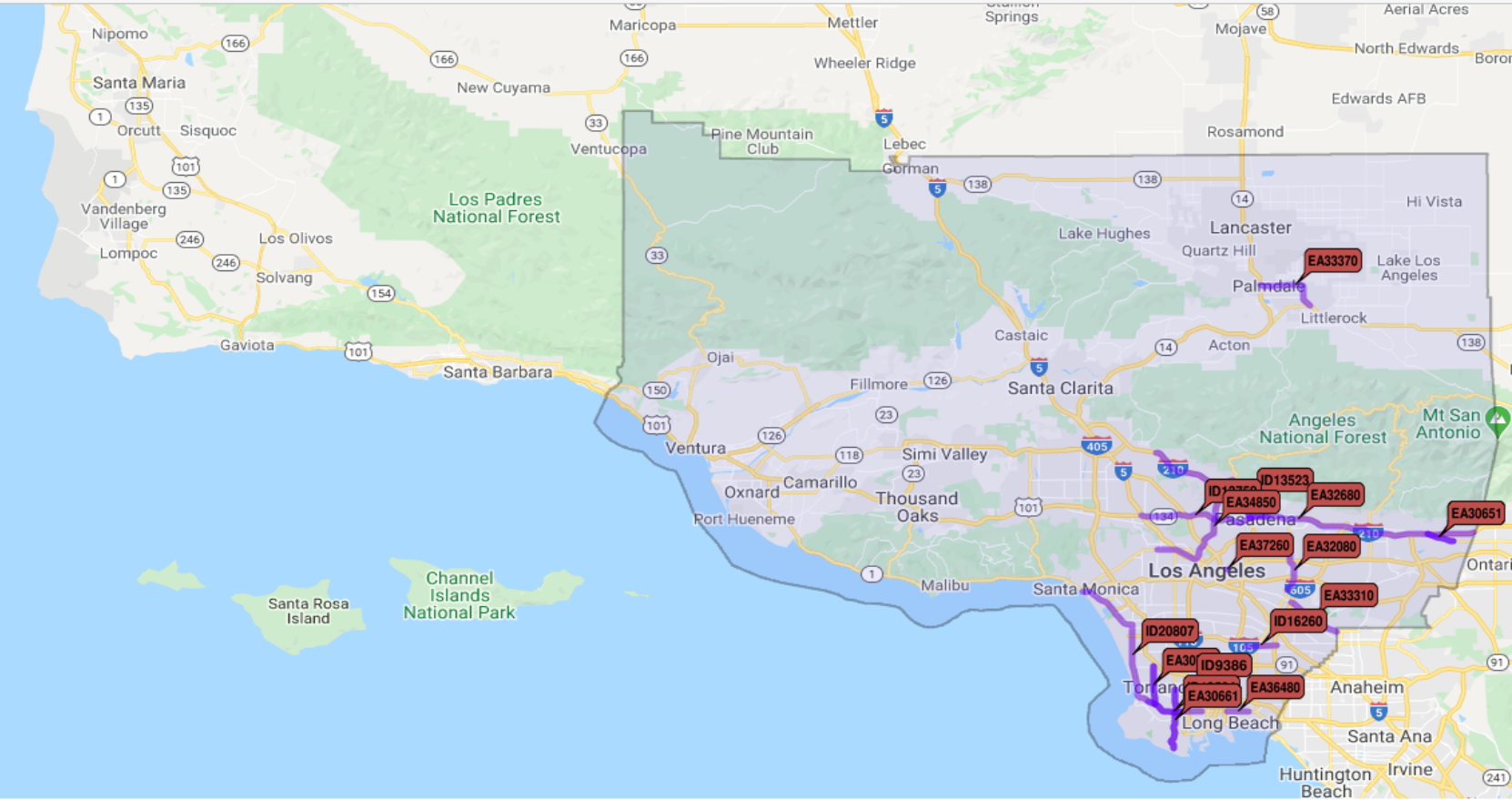
County:
 KER - Kern
 KIN - Kings
 LAK - Lake
 LAS - Lassen
 LA - Los Angeles

Route:
 All Route
 000
 001
 002
 003

SHSMP Perf Obj:
 All SHSMP PO
 ADA Pedestrian Infrastruct
 Advance Mitigation
 Bridge Goods Movement L
 Bridge Health

ID: EA:

[Get Map](#)
 (Hold down 'Ctrl' Key to select multiple)



District:07 , Activity Category: , County:LA

LEGEND:

- Advance Mitigation
- Bridge
- Drainage
- Facilities
- Major Damage
- Not Assigned
- Pavement
- Relinquishment
- Roadside
- Safety
- Sustainability/Climate Change
- Multiple Locations

EFIS	EA	CRP	Location	PPNO	Activity Category	TYP	Projected SHOPP Cycle	PID Cycle	Prog FY	Section	CONST (\$K)	RW (\$K)	Support (\$K)	Perf Output	Activity Location
0143	34850	LA-002-10.63/26.2	Primary	5392	Mobility - ADA	2017	2020	2020	2022/23	PRG	3432	2320	5923		In Los Angeles County, on Sate Route 2 between Sycamore A
		LA-110-6.76/7.2	Primary		Mobility - ADA	2021	2028	2028	2022/23	PID	2000	0	800		POC 220th st and 214th st
		LA-210-19.23/27.0	Primary		Mobility - ADA	2021	2026	2026		PID	5142	0	1645		POC @ Meadow
		LA-001-10/16.81	Primary		Mobility - ADA	2021	2028	2028	2021/22	PID	1140	0	300		Rte 1 POC at Harlee Lane
0317	30701	LA-107-0/4.8	Primary	4749	Mobility - ADA	2017	2018	2016	2018/19	PRG	3146	2250	6945		In Torrance, on Route 107, from Route 1 to Redondo Beach
0178	30660	LA-213-0/7.984	Primary	4743	Mobility - ADA	2017	2016	2016	2018/19	PRG	3100	50	8037		On Western from 34th stly to Sepulveda
		LA-124-0/13.241	Primary		Mobility - ADA	2021	2028	2028	2025/26	PID	1200	0	500		At various locations along Route 134 - ADA Curb cam

District ADA Support

Office of ADA Project Delivery



Anthony Ng
Office Chief, Office of ADA Project Delivery
Location: 07-039
Phone: [213-897-7315](tel:213-897-7315)



The ADA Project Delivery Office provides assistance and training to engineers in the delivery of projects with ADA elements from the beginning of the PID phase all the way through the end of Construction. Some of the services that the ADA Project Delivery Office provides are:

Training

Provide training to the project team with Best Practices and Lessons Learned on the common issues that arise during the PA/ED, PS&E and Construction phases due to improperly scoped and designed ADA projects.

Technical Assistance

Provide assistance from PID through the end of Construction to aide in the development of ADA scope, design and construction. The ADA Project Delivery Office will provide technical assistance for engineers when they have questions on how to apply ADA standards and will help figure out ways to make an ADA design work in difficult scenarios.

<https://district7.onramp.dot.ca.gov/office-ada-project-delivery>

Design

- » [DIB 82-06](#)
- » [DIB #82-06 - Pedestrian Accessibility Guidelines for Highway Projects - 11-16-2017 \(PDF\)](#)
- » [Additional Guidelines on Curb Ramp Scoping and Design \(David Cordova\)](#)
- » [Design Tips Chart](#)
- » [HDM Index 105.5](#)
- » [Chapter 100: Basic Design Policies \(PDF\)](#)
- » [Plans Preparation Manual](#)
- » [Curb Ramp Design Standards, Case A\(PDF\)](#)
- » [Curb Ramp Design Standards, Case C\(PDF\)](#)
- » [Curb Ramp Design Standards, Case CM\(PDF\)](#)
- » [Two Case A Curb Ramps - 1 of 2\(PDF\)](#)
- » [Two Case A Curb Ramps - 2 of 2\(PDF\)](#)
- » [Schematics for Curb Ramp and Driveway Design Criteria\(PDF\)](#)
- » [General Guidelines for Curb Ramp Design\(PDF\)](#)
- » [New Curb Ramp within Existing Curb, Gutter, and Sidewalk\(PDF\)](#)
- » [New Curb Ramp where Curb, Gutter, and Sidewalk Does Not Currently Exist\(PDF\)](#)

Traffic

- » [MUTCD](#)
- » [Pedestrian Push Buttons](#)
 - » [Section 4E.08](#)
 - » [Chapter 4E - Pedestrian Control Features \(PDF\)](#)
- » [TOFD](#)
- » [Implementation of Temporary Pedestrian Access Route \(TPAR\) \(PDF\)](#)
- » [Chapter 4F Pedestrian Hybrid Beacon Guidance Statement Change \(PDF\)](#)
- » [Replacement and Retrofit of Existing Pedestrian Signal "Meter On" Signs \(PDF\)](#)

Standard Plans

- » [Curbs and Driveways, Plan No. A87A \(.dgn\) \(click to view\)](#)
- » [Hot Mix Asphalt Dikes, Plan No. A87B \(.dgn\) \(click to view\)](#)
- » [Curb Ramp Details, Plan No. A88A \(.dgn\) \(click to view\)](#)
- » [Curb Ramp and Island Passageway Details, Plan No. A88B \(.dgn\) \(click to view\)](#)
- » [Accessible Parking Off-Street, Plan No. A90A \(.dgn\) \(click to view\)](#)
- » [Accessible Parking On-Street, Plan No. A90B \(.dgn\) \(click to view\)](#)
- » [Temporary Pedestrian Access Routes - Typical Sidewalk Close and Pedestrian Detour, Plan No. T30 \(.dgn\) \(click to view\)](#)
- » [Temporary Pedestrian Access Routes - Typical Sidewalk Diversion Within Roadbed, Plan No. T31 \(.dgn\) \(click to view\)](#)
- » [Temporary Pedestrian Access Routes - Typical Sidewalk/Crosswalk Closure and Pedestrian Detour, Plan No. T32 \(.dgn\) \(click to view\)](#)
- » [Temporary Pedestrian Access Routes - Ramp, Plan No. T33 \(.dgn\) \(click to view\)](#)
- » [Temporary Pedestrian Access Routes - Curb Ramp Options, Plan No. T34 \(.dgn\) \(click to view\)](#)

Other Caltrans Resources



Division of Local Assistance

- ▶ **Active Transportation Program (ATP):**

<http://www.dot.ca.gov/hq/LocalPrograms/atp/index.html>

- ▶ **Bike Program:**

<http://www.dot.ca.gov/hq/LocalPrograms/bike/homepage.htm>

Division of Design/Landscape Architecture

- ▶ **Context Sensitive Solutions:**

http://www.dot.ca.gov/hq/LandArch/cs_solutions/index.htm

HQ Landscape Architecture Program partnered with other Project Delivery functions, Maintenance and Operations, and Planning and Modal Programs to update Main Street, California - A Guide for Improving Community and Transportation Vitality:

http://www.dot.ca.gov/hq/LandArch/mainstreet/main_street_3rd_edition.pdf



Division of Traffic Operations/Office of Safety Program, Pedestrian Safety Branch



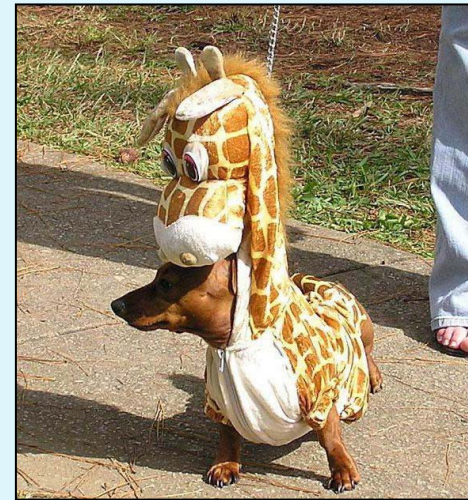
- ▶ **Caltrans Pedestrian Safety Resources:**
<http://www.dot.ca.gov/hq/traffops/survey/pedestrian/>
- ▶ **Complete Streets Intersections Guidelines (2010):**
<http://www.dot.ca.gov/hq/traffops/survey/pedestrian/Complete-Intersections-A-Guide-to-Reconstructing-Intersections-and-Interchanges-for-Bicyclists-and-Pedestrians.pdf>
- ▶ **Pedestrian and Bicycle Facilities in California: A Technical Reference and Technology Transfer Synthesis for Caltrans Planners and Engineers (2005):**
http://www.dot.ca.gov/hq/traffops/survey/pedestrian/TR_MAY0405.pdf
- ▶ **California Blueprint for Bicycling and Walking Report (2002):** <http://www.dot.ca.gov/hq/traffops/survey/pedestrian/California-Blueprint-for-Bicycling-and-Walking-Report.pdf>
- ▶ **Intersection Control Evaluation (ICE):**
<http://dot.ca.gov/hq/traffops/liaisons/ice.html>



THANK YOU



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Thinking BIG

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D7 Director John Bulinski pedaling
Ride MoVal
Photo Credit: Karen Ott Photography