Integrating Complete Streets into the Transportation System

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Caltrans
1. Define “Complete Street”
2. Caltrans’ Complete Streets Policy
3. Why does Caltrans need a Complete Streets Policy?
4. Complete Streets Examples on the State Highway
5. Complete Streets Planning
6. Breakout Activity: Redesign a Roadway
1. What is a Complete Street?
A Complete Street is …

A transportation facility that:
• Serves the transportation needs users of all ages and abilities.
• Is context sensitive and the approach provides system design considering land development patterns.
• Provides public space for community and economy.

Users are:
- Bicyclists
- Pedestrians
- Mobility impaired
- Transit riders
- Freight handlers
- Motorists

Lancaster, CA - a six-lane street reduced to three with a tree-lined central public space. EPA
Complete Streets is …

A transformative approach to transportation facility design

• Shift from focusing on automobile movement to moving people of all modes, including pedestrians, bicyclists, and transit.

• An element of community-building through public space re-allocation.
The Complete Streets Approach

Move people, not cars

Car-Oriented Street

Total capacity: 12,300 people/h

Multimodal Street

Total capacity: 30,100 people/h

NACTO Global Street Design Guide
2. Caltrans’ Complete Streets Policy

Caltrans District 8
Ontario, CA
Euclid Avenue (SR-83)
District 8’s Historic Euclid Avenue Walking Tour

Caltrans
Illeen Prentiss
“Caltrans provides for the needs of travelers of all ages and abilities in all … activities and products on the State highway system.”

“Caltrans views all improvements as opportunities … for all travelers ….”

-Deputy Directive 64-R2

https://onramp.dot.ca.gov/sw_policy/dd/dd_64_r2.pdf
Implementing the CS Policy

Employees (From Draft DD64-R3)

• **Use appropriate application of standards and guidance,** to promote innovative designs that enhance mobility for all users in all transportation products and activities.

• **Promote awareness** of bicycle, pedestrian, and transit needs to develop an integrated, multimodal transportation system.

• **Maximize bicycle, pedestrian, and transit safety and mobility** through each project’s life cycle.

Draft revisions not final
3. Why does Caltrans need a Complete Streets Policy?
Caltrans Strategic Management Plan

**Mission:**
Provide a **safe, sustainable, integrated and efficient** transportation system to enhance California’s **economy and livability.**

**Goals:**

- **Safety and Health**
  - 10% reduction in fatalities for drivers, transit users, pedestrians and cyclists.

- **Sustainability, Livability and Economy**
  - Triple bicycle trips, double pedestrian trips, double transit trips.

- **System Performance**
  - Increase Complete Streets features on State highways.
Active Transportation Trip Goals

2020 Target: Triple Bike Trips

Baseline Source: California Household Travel Survey (2012)

2020 Target: Double Walking Trips
Safety and Health Goal

- Bicyclist and Pedestrian fatalities are increasing nationwide.
- People utilizing active transportation are considered vulnerable road users.

2016 could be the first year in more than two decades with 6,000* pedestrian deaths.

*2016 estimate based on preliminary data

Source: GHSA
Relative social cost for a 10-mile trip:
- Automobile: $ 1.20
- Bicycle: $ 0.05
- Pedestrian: $ 0.02

https://www.strongtowns.org/journal/2016/11/3/pay-your-fair-share
4. Complete Streets Examples on the State Highway

Caltrans District 5
San Luis Obispo, CA
South Street (formerly SR-227)
Road Diet Project

Before

After
Example #1: Gateway Transportation Enhancement Project
Caltrans District 1
Arcata, California
Samoa Boulevard-State Route 255
Example #1: Gateway Transportation Enhancement Project
Caltrans District 1
Arcata, California
Samoa Boulevard-State Route 255

Complete Streets Elements
Added:
1. Enhanced Crosswalk Visibility
2. Raised Curb Median
3. Median Refuge Area
4. Class II Bike Lanes
Example #2: Kings Beach Commercial Core Project
Caltrans District 3
Kings Beach, California
Lake Boulevard-State Route 28

Before

Google Maps Archived Photo- August 2007

Lake Tahoe Real Estate
Example #2: Kings Beach Commercial Core Project
Caltrans District 3
Kings Beach, California
Lake Boulevard-State Route 28

Complete Streets Elements Added:
1. Roundabouts
2. Median Refuge Area
3. Enhanced Crosswalk Visibility
4. Class II Bike Lanes (not pictured)
Example #3: Green Bike Lane at Freeway On- and Off- Ramps
Caltrans District 4
San Mateo County, California
Alpine Road at Interstate 280

Before

During Construction

Silicon Valley Bicycle Coalition

Google Maps Image
Example #3: Green Bike Lane at Freeway On- and Off-Ramps
Caltrans District 4
San Mateo County, California
Alpine Road at Interstate 280

Complete Streets Elements Added:
1. Class II Buffered Bike Lanes
2. Green Paint in Conflict Areas
Complete Streets Elements

Complete Streets include a variety of features to achieve objectives.

**Common Elements include:**

- **Roadway Reconfigurations**
- **Bikeways**: Bike Lanes, Bike Routes, Separated Bikeways, Green paint in conflict areas.
- **Pedestrian features**: ADA-compliance, sidewalks, enhanced visibility crosswalks, curb bulb-outs, crossing islands, flashing beacons.
- **Transit features**: transit stops, bus pullouts, bus bulbs, shoulder-managed lanes.
- **Roundabouts**
- **Medians**: Mid-block crossings
5. Complete Streets Planning
Performance Measurement

Traditional:
- Automobile Throughput
- Automobile Level of Service
- Crash Rates

Complete Streets:
- Multi-modal Throughput
- Bicycle/Pedestrian Level of Traffic Stress
- Traffic Speed Suitability
- Economic Vitality
- Environmental and Public Health
- Place-making

Measuring the Street (NYCDOT)
Complete Streets Planning

Smart Mobility Place Types:

- A concept from Caltrans’ Smart Mobility Framework

- Complete Streets are planned based on land-use context.
Complete Streets Planning

Consider Context

Bicycle-Accessible Rural Freeway

Urban Conventional Highway (in a residential area)

Caltrans District 1
US-101
Eureka, CA

Caltrans District
Sloat Boulevard (SR-35)
San Francisco, CA
Complete Streets Planning

Consider Context

Bicycle-Accessible Rural Freeway

- Colored bicycle-accessible shoulders
- Bicycle warning signage

Urban Conventional Highway (in a residential area)

- High Intensity Activated Crosswalk (HAWK)
- Median Crossing Island
- Enhanced Crosswalk Visibility
- Class II Buffered Bike Lane Lane Reduction (Road Diet)
- Curb Bulbou
Complete Streets Planning

Needs Identification

Partnerships with local agencies:

• Relationship-building with local agency staff

• Assessing/Anticipating needs

• Customer Service

• Community-oriented

From Left: James Camarillo, ATP, D8; Cuong Trinh, ATP, D4; Dustin Foster, ATP, DOTP HQ

“Planning doesn’t happen in the ‘cube’”
Local Plans:

- Local planning documents hold the key to assessing *identified* needs by local agencies.

- Plans can include:
  - General Plan Circulation Element
  - Specific Plans
  - Bicycle and Pedestrian Plans
  - Complete Streets Plans
  - Safe Routes to School Plans
  - Short-range Transit Plans
  - Long-range Transit Plans

- *Local Plan oversight opportunities*
Bicycle and Pedestrian Collision Data

• The frequency and severity of bicycle and pedestrian collisions within project limits could provide justification for complete streets elements in projects.

• Use engineering judgement when analyzing these collision data inputs.

• Data can be analyzed using Caltrans’ TASAS
Complete Streets Planning

Needs Identification

Field Review:

- Walk/ Bike Audit: an evaluation of the walking/biking environment to identify opportunities for increasing safety, access, comfort and convenience for active transportation.

- Resources:
  - Pedbikeinfo.org
  - SCAG Go Human Campaign

The basic process of conducting a walk or bike audit takes a number of steps:
Multi-modal Trip Count Data:

• The collection of bicycle and pedestrian trip data within project limits could provide justification for complete streets elements in projects.

• Transit trip data on daily boardings can be provided by local transit agencies.

• Data can be analyzed using:
  - Census Mode Share (Journey to Work) Data
  - Manual Multi-modal Trip Count (pictured above right)
  - Portable Counters (pictured below right)
Complete Streets Planning

Needs Identification

Oakland, CA
Telegraph Avenue (before)

Google Streetview

Oakland, CA
Telegraph Avenue (after)

City of Oakland

Bike East Bay

Bike East Bay

City of Oakland

Complete Streets

Google Streetview
Complete Streets Planning

Needs Identification

• A Complete Streets education tool and guidance document.

• A ‘living document’ regularly maintained to reflect Caltrans’ direction and updates to Design, Operations, and SHOPP guidance.

• Includes:
  • Complete Streets Planning Concepts
  • Complete Streets Elements Definitions
    • Guidance
    • District and Local Examples
    • Quantification

Access at:
www.dot.ca.gov/transplanning/ocp/complete-streets.html
Complete Streets Planning

Tools and Guidance

NACTO Urban Street Design Guide

• A visionary document providing “the toolbox and tactics to make streets safer, more livable, and more economically vibrant”.

• Provides information on:
  • Street Design Typologies
  • Street Design Elements
  • Interim Design Strategies
  • Intersection Design

Can be found at:
https://nacto.org/publication/urban-street-design-guide/
Complete Streets Planning

Tools and Guidance

NACTO Urban Street Design Guide Street Design Typologies

Downtown 1-Way Street
FHWA Small Town and Rural Multimodal Networks

• A guidance document that provides bicycle and pedestrian design and guidance in a rural planning setting.

• Provides information on Street Design Elements based on:
  • Speed and Volume
  • Facility Type
  • Place Type

Complete Streets Planning
District-Level Complete Street Plans

Connected and Comfortable Networks (M1)

Develop local and regional networks of high-quality bicycle and pedestrian facilities for all ages and abilities

- M1.1: **Develop District-level plans** to identify bicycle and pedestrian needs and priority projects on or parallel to the state highway system…
- M1.2: Explore opportunities to develop a network of separated ‘bicycle highways’ to serve regional and interregional travel.
- M1.5: Consider bicycle and pedestrian comfort when designing new or improved facilities…
Complete Streets Planning

*District-Level Complete Street Plans*

- Headquarter to assist with development of Complete Streets Plans for each District.
- Each District has submitted a scope of work that will be incorporated into the statewide contract.
- Each District will be able to customize a plan that fits their specific needs.
- **Goal:** to identify and develop Complete Streets project lists on the State Highway System.
Complete Streets Contacts

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Technical Assistance

District Design Liaisons
www.dot.ca.gov/design/liaison.html

District Bike & Ped Coordinators
http://www.dot.ca.gov/hq/LocalPrograms/bike/contacts.html

District Traffic Safety Bike & Ped Engineers
http://www.dot.ca.gov/trafficops/ped/engineer.html

Complete Streets Website
www.dot.ca.gov/transplanning/ocp/complete-streets.html
Complete Streets Planning

Redesign a Roadway