ALAMEDA COUNTY TRANSPORTATION COMMISSION

# Complete Streets Considerations in Arterial Operations


A presentation to MTC Arterial Operations Commiitee

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## Presentation Overview

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- What are Complete Streets?
- Why Complete Streets?
- Existing Complete Streets requirements
- Example arterial operations complete streets opportunities

## What are Complete Streets? 3

- Streets that are safe, convenient, and inviting for all modes and all users
- Context sensitive – appropriate to function and context
- Touches on all phases (planning, design, funding/ prioritization, construction, operation, maintenance/ enforcement)

## Why Complete Streets? 4

- Safety
- Business case (economic benefits)
- Demographic trends
- Public health
- Efficient use of resources (fiscal benefits)
- Environmental goals and policy mandates

# Safety

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- Motor vehicle crashes were the **leading cause of death for children age 4 and every age 11 through 14** (based on 2009 figures, which is the latest mortality data available from the National Center for Health Statistics).
- Total cost of crashes exceeds cost of congestion by a **factor of three** ($299.5 Bn vs. $97.7 Bn)


http://www-nrd.nhtsa.dot.gov/Pubs/812011.pdf
American Automobile Association (2008) "Crashes vs. Congestion: What's the Cost to Society?

# Business Case

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Numerous examples of Complete Streets projects that have had positive business performance outcomes and leveraged significant private investment. People want to shop, recreate, and congregate in pleasant public spaces.

- Example – Lodi, California invested $4.5 million in downtown streetscape improvements that helped to:
  - Attract 60 new businesses
  - Decrease vacancy rates from 18% to 6%
  - Increase sales tax revenue by 30%

Photo: http://www.earthshelterdevelopers.com/schoolst.htm

# Demographic tends responding to market demand

- 66% of Americans want more transportation options so they have the freedom to choose how to get where they need to go.
- 76% of Gen-Yers that plan to move, place a high value on walkability
- 57% would like to spend less time in the car

Sources:
1. 2010 Future of Transportation National Survey
2. America in 2013: A ULI Survey of Views on Housing, Transportation and Community
Image: Easton, NJ, by Dan Burden

# Public Health Benefits

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- 1 in 5 children and 1 in 3 teens is overweight or at risk of becoming overweight.
- Research suggests that more walkable neighborhoods encourage individuals to walk more, reducing risk for obesity and other chronic diseases.
- Streets often represent a majority of public space

# Fiscal benefits and efficient use of resources

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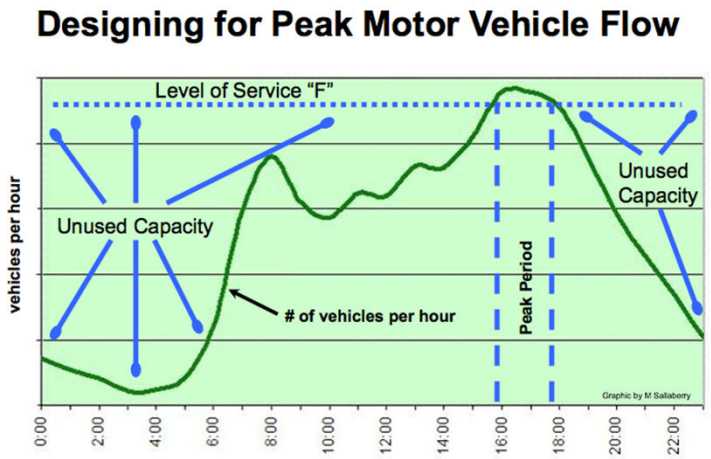


Mike Sallaberry, SFMTA

# Environmental goals

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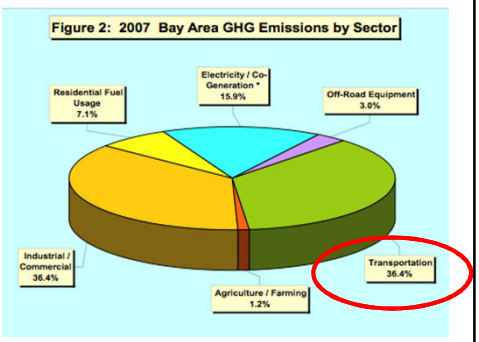
- Improving viability of alternative modes key to meeting aggressive GHG reduction mandates of SB 375 and other air pollution goals
- Opportunities to meet other environmental goals (e.g. water treatment) through improved coordination over street design



# State, Regional, & Local Requirements

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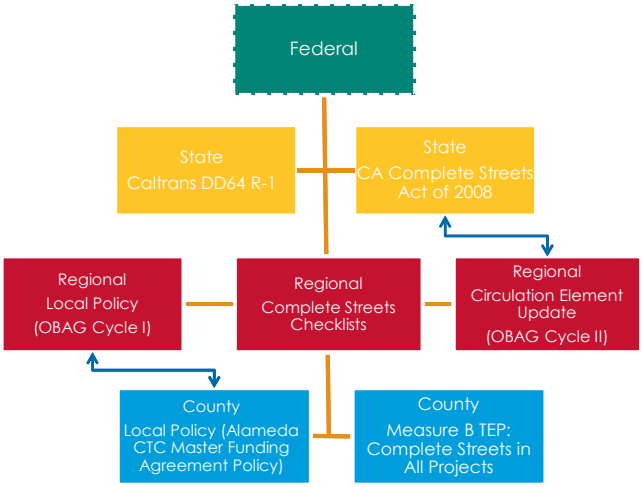


# Regional - MTC Complete Streets

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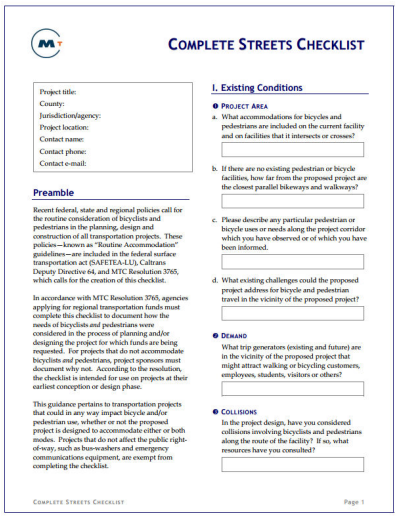
- Routine Accommodation Policy developed in 2006
- Required project checklist for all MTC-funded projects
- Assist project sponsor to consider all users in planning & design from the earliest conception of a project
- Checklists reviewed by CMA BPACs
- Now online: http://completestreets.mtc.ca.gov/



COMPLETE STREETS CHECKLIST

Project title:
County:
Jurisdiction/agency:
Project location:
Contact name:
Contact phone:
Contact e-mail:

**Preamble**

Recent federal, state and regional policies call for the routine consideration of bicyclists and pedestrians in the planning, design and construction of all transportation projects. These policies—known as "Routine Accommodation" guidelines—are included in the federal surface transportation act (SAFETEA-LU), Caltrans Deputy Directive 64, and MTC Resolution 3765, which calls for the creation of this checklist.

In accordance with MTC Resolution 3765, agencies applying for regional transportation funds must complete this checklist to document how the needs of bicyclists and pedestrians were considered in the process of planning and/or designing the project for which funds are being requested. For projects that do not accommodate bicyclists and pedestrians, project sponsors must document why not. According to the resolution, the checklist is intended for use on projects at their earliest conception or design phase.

This guidance pertains to transportation projects that could in any way impact bicycle and/or pedestrian use, whether or not the proposed project is designed to accommodate either or both modes. Projects that do not affect the public right-of-way, such as bus-washers and emergency communications equipment, are exempt from completing the checklist.

**I. Existing Conditions**

● PROJECT AREA

a. What accommodations for bicycles and pedestrians are included on the current facility and on facilities that it intersects or crosses?

b. If there are no existing pedestrian or bicycle facilities, how far from the proposed project are the closest parallel bikeways and walkways?

c. Please describe any particular pedestrian or bicycle uses or needs along the project corridor which you have observed or of which you have been informed.

d. What existing challenges could the proposed project address for bicycle and pedestrian travel in the vicinity of the proposed project?

● DEMAND

What trip generators (existing and future) are in the vicinity of the proposed project that might attract walking or bicycling customers, employees, students, visitors or others?

● COLLISIONS

In the project design, have you considered collisions involving bicyclists and pedestrians along the route of the facility? If so, what resources have you consulted?

COMPLETE STREETS CHECKLIST Page 1

# Local – Complete Streets Policies

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**Typical Policy Elements**

- Vision statement
- All users and all modes
- All projects/phases
- Leadership approval/ exceptions process
- Network connectivity
- All departments
- Best practices/latest and best design guidelines
- Context sensitivity
- Evaluation/performance measures
- Next steps

# Complete streets considerations across all phases

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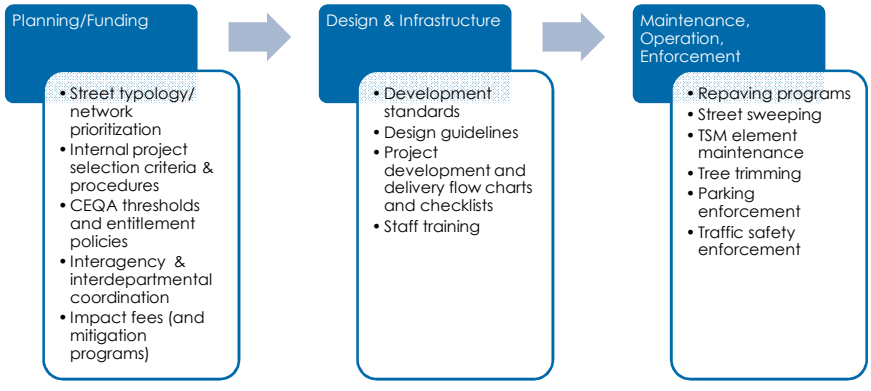

# Street Typology:
## Planning for Complete Networks

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- Not every street can accommodate every user equally well
- Provides guidance of which modes to prioritize on which streets
- Holistic view of network at planning stage – reduces prioritization questions at project/design stage

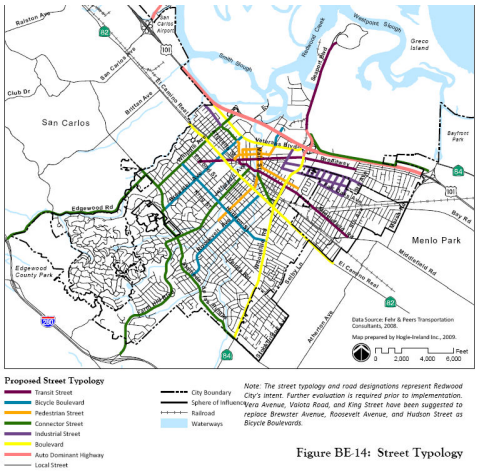


Figure BE-14: Street Typology

Redwood City General Plan

# Street Typology clearly identifies which modes are prioritized on roads

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| TABLE 2E CONTEXT ZONE MODE PRIORITIZATION | Boulevard | | | | Avenue & One Way Avenue | | | | Street, One Way Street | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| Urban Commercial/Mixed Use | Transit | Auto | Walk | Bike | Walk | Bike | Transit | Auto | Walk | Bike | Auto | Transit |
| Urban Residential | Auto | Transit | Walk | Bike | Walk | Bike | Auto | Transit | Walk | Bike | Auto | Transit |
| Urban Single Use | Auto | Transit | Bike | Walk | Bike | Walk | Auto | Transit | Bike | Walk | Auto | Transit |
| Suburban Commercial | Auto | Transit | Walk | Bike | Transit | Auto | Walk | Bike | Walk | Auto | Bike | Transit |
| Suburban Residential | Auto | Walk | Transit | Bike | Walk | Bike | Auto | Transit | Walk | Bike | Auto | Transit |
| Suburban Mixed-Use | Transit | Walk | Auto | Bike | Walk | Bike | Transit | Auto | Walk | Bike | Auto | Transit |
| Suburban Single Use | Auto | Transit | Bike | Walk | Bike | Auto | Walk | Transit | Bike | Auto | Walk | Transit |
| Rural Residential/Agricultural | Auto | Transit | Bike | Walk | Auto | Bike | Walk | Transit | Walk | Auto | Bike | Transit |
| Rural Village | Auto | Walk | Transit | Bike | Walk | Auto | Bike | Transit | Walk | Bike | Auto | Transit |

Complete Streets Complete Networks: A Manual for the Design of Active Transportation

# Example opportunities: Bicycle and Pedestrian Detection

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- Critical to red light compliance
- Variety of technologies
  - *Inductive loops, camera, microwave, infrared, etc.*
- Requires signal timing adjustments
  - *Min Green, Yellow + Red Clearance, Green Extension*
- Should calibrate all actuated detection zones to detect bicycles unless bikes specifically prohibited
- Some technologies can detect pedestrians in crosswalk to provide extensions
  - *Detection of whether pedestrian wants to cross trickier*
  - *WALK every cycle best practice for high pedestrian activity areas/times of day*
  - *Push buttons may be needed for ADA*
- Important to provide markings and to incorporate into maintenance programs


R10-15

# Example opportunities: Leading intervals

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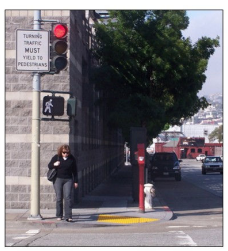
- Can be used to enhance pedestrian and bicyclist safety
  - *Right-hook crashes*
- Pedestrians and/or bicyclists given 3 to 7 second head start
  - *Bikes – requires bike signal*
  - *Requires no RTOR*
- Consider at locations with heavy right turn vehicle volumes
- For bicyclists, can assist in making vehicular left turns at downstream intersections

# Example opportunities: Prevent permitted left turn crashes

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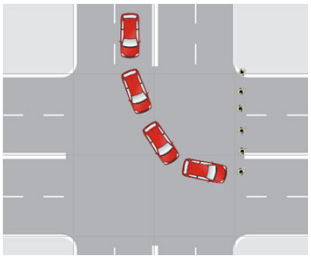
- On conventional highways with heavy traffic volumes, drivers making permitted left-turns must devote considerable attention to finding gaps in traffic
- Drivers may not see pedestrians crossing on opposite side of street
  - *Oregon State University/ Portland State University study – drivers making permitted turns 4-9% less likely to scan for pedestrians than protected turns*
- Safety benefits from reduced motor vehicle crashes as well
- In areas where permitted left turns appropriate, flashing green arrow treatment may help delineate permitted/protected

# Example opportunities: Signal progression speeds

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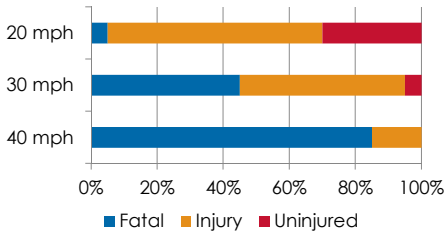
- Timing coordinated signals for a corridor speed of 15-20 mph has significant safety benefits for all modes
- Speeds in this range generally reduce delay for bikes and transit
- Applicability may depend on signal spacing
- Signage may help prevent unnecessary acceleration and deceleration from drivers


**Pedestrian Injuries at Impact Speed**



# Example opportunities: time-of-day signal plans

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- Peak hour for different users may vary considerably depending on land use context
- When not using adapted signal timing, consider how midday, evening, and weekend activity may require different timing regime


# Other considerations

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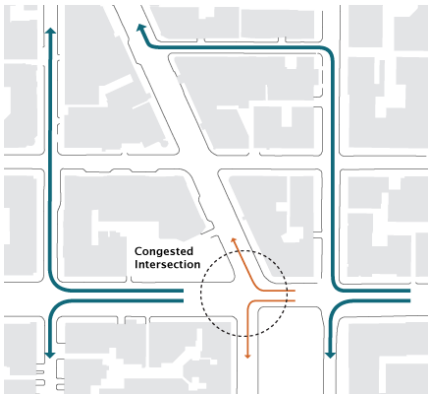
- Appropriateness of signal timing regime in urban or high pedestrian activity context
  - *Sufficient crossing opportunities for pedestrians?*
  - *Sufficient gaps in traffic for turning vehicles?*
- Network level solutions



# Questions or Comments?

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**Topics for discussion:**

- How is your jurisdiction (or jurisdictions you work with) implementing Complete Streets
  - *In general?*
  - *In signal timing projects?*
- What are perceived barriers to implementing Complete Streets?
- How can MTC and CMAs support Complete Streets implementation?