

Creating Safer and More Complete Streets in Small Towns

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Local Government Commission

Loomis Streetscape Design Workshop

April 22, 2021

1

What is the Purpose of Towns and Cities?

Towns and Cities are an invention to maximize exchange (goods, culture, friendship, knowledge) and to minimize travel.



2

“I realized we had created a really great city... if you’re a car.”



– Mick Cornett, former Mayor of Oklahoma City

3



Creating an Inviting Sense of Place

Before

4



Creating an Inviting Sense of Place
After

5

Would you rather spend time here...



6

...or here?



7

People want transportation options — 2017 survey

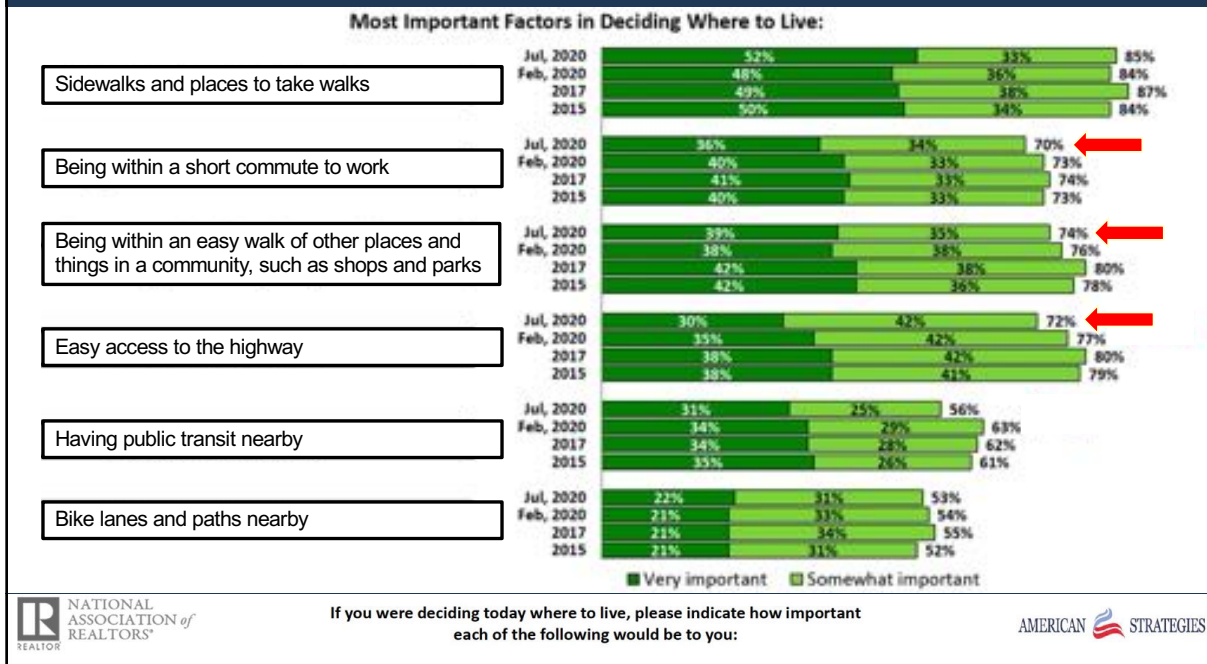
Important things when deciding where to live...	Important (very or somewhat)	Not Important
→ Sidewalks and places to take walks	87%	14%
→ Being within an easy walk of other places and things in the community	80%	20%
Easy access to the highway	80%	20%
Being within a short commute to work	74%	26%
Having public transit nearby	62%	38%
→ Bike lanes and paths nearby	55%	46%
→ Separated bike paths or trails	53%	47%

Q10-16. If you were deciding today where to live, please indicate how important are each of the following?

National Association of Realtors, Portland State University, Community and Transportation Preferences Survey, September 2017

8

People want transportation options — July 2020 survey



9

Poll #1

How far would you be willing to walk to get to a coffee shop or restaurant in Loomis?

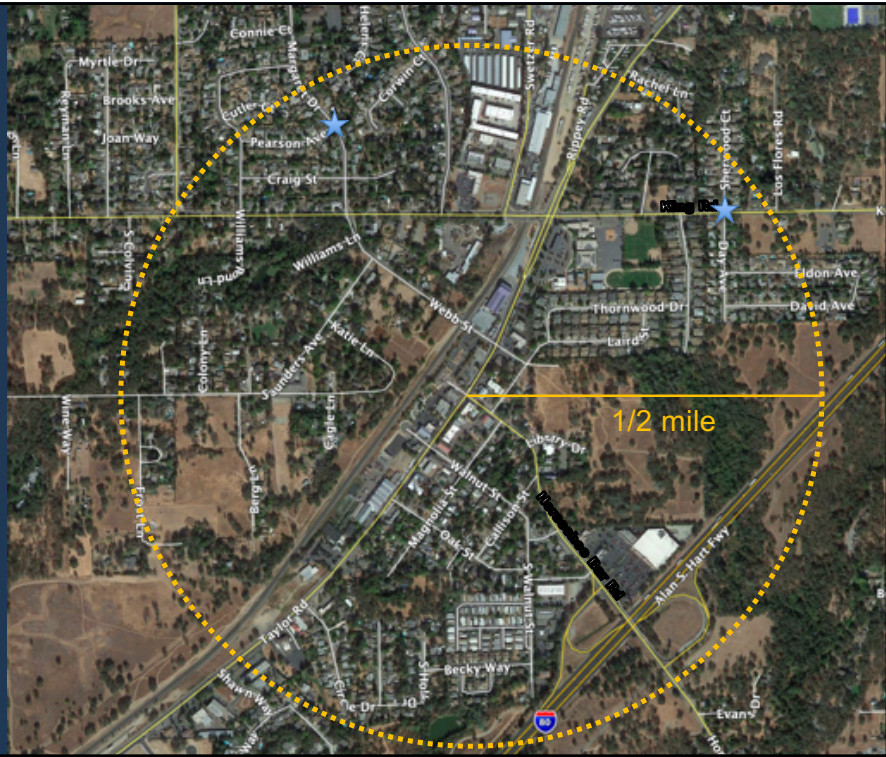
- ¼ mile (about 5-6 minutes)
- ½ mile (about 10-12 minutes)
- ¾ mile (about 15-18 minutes)
- 1 mile (about 20-24 minutes)
- 2 miles (about 40-48 minutes)

10

Walking in Loomis:

From Taylor Road and Horseshoe Bar Road

1/2 mile
10-12 minute walk

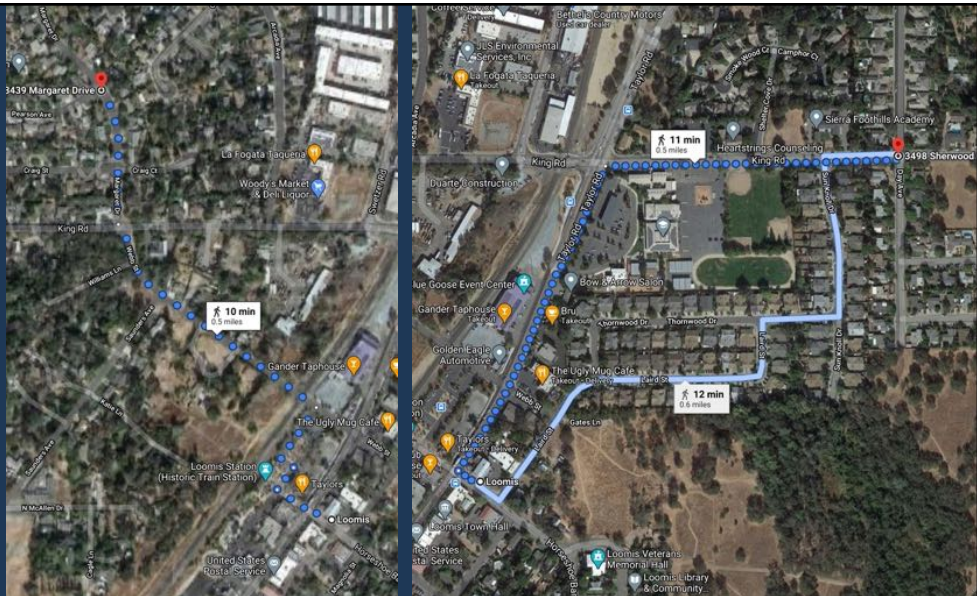


11

Walking in Loomis:

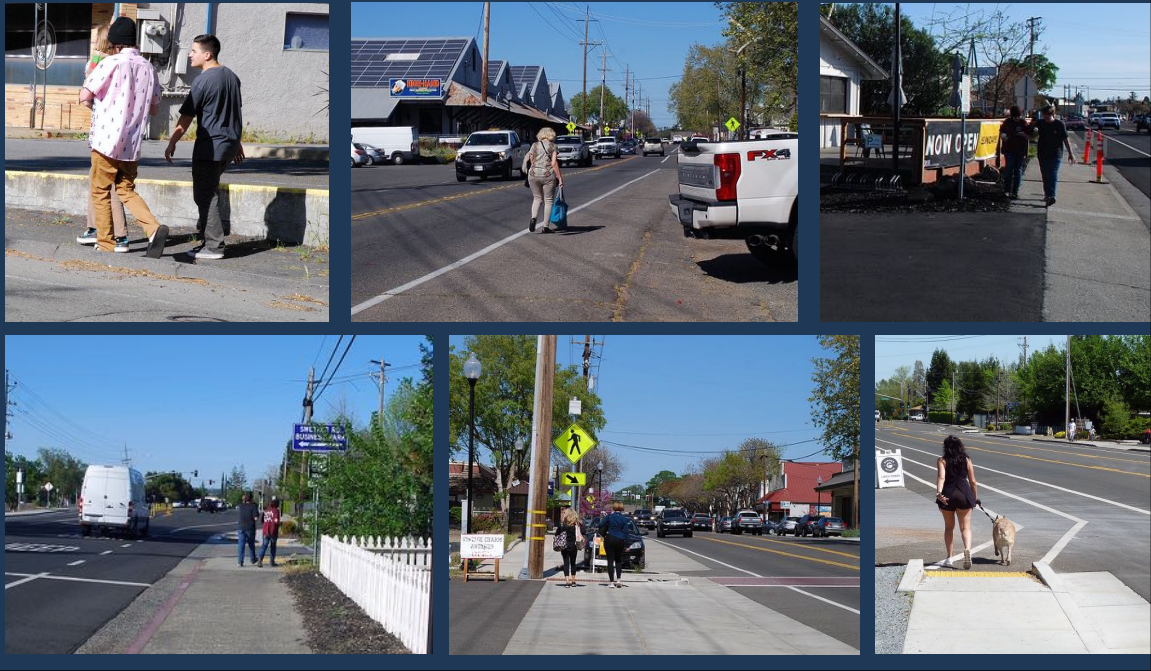
0.5 mile
10 minute walk

0.5 mile
11 minute walk



12

Pedestrians in Loomis



13

People will walk



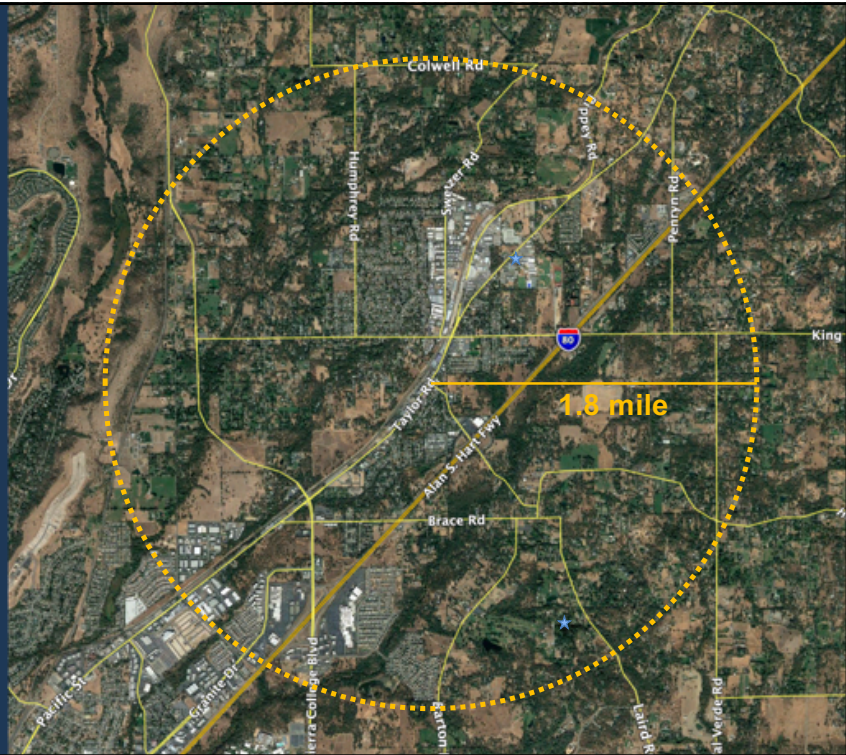
Centers for Disease Control and Prevention 2012, newpublichealth.org

14

Bicycling in Loomis:

From Taylor Road and Horseshoe Bar Road

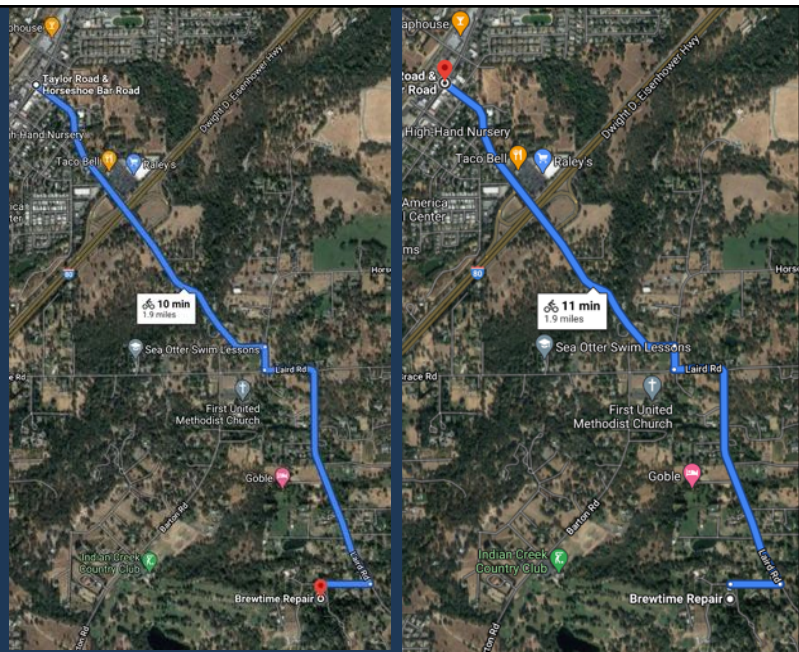
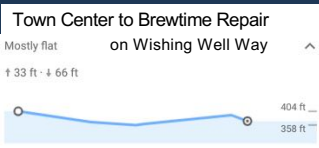
1.8 mile
10-12 minute ride
(at 10mph)



15

Bicycling in Loomis:

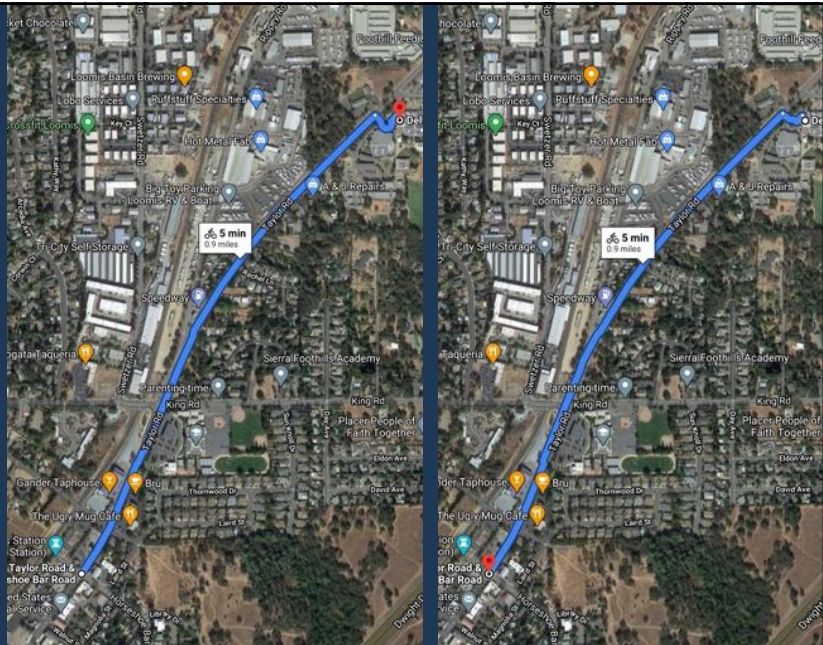
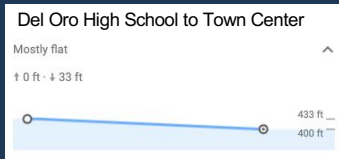
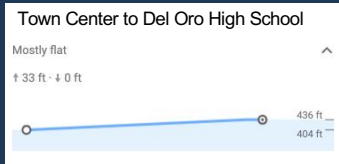
1.9 mile
10-11 minute ride



16

Bicycling in Loomis:

0.9 mile
5 minute ride



17

Cyclists and Skateboarders in Loomis



18

Poll #2

Which of the following best describes your attitude about riding a bike?

- I'm a strong and fearless cyclist
- I'm enthused and confident about riding a bike
- I'm interested but concerned about riding a bike
- There is no way, no how I'm getting on a bike

19

Complete Streets



Complete Streets are streets for everyone, no matter who they are or how they travel.

20

Complete Streets

- Streets designed for people, not just cars
- Friendly to cars, pedestrians and cyclists



21

Complete Streets

Safe

Comfortable

Convenient



22

Complete Streets

Safe



Comfortable



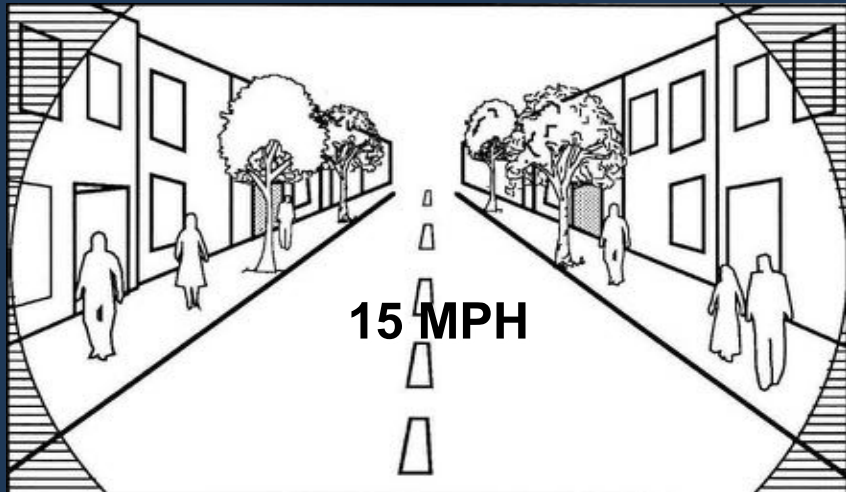
Convenient



23

Speed Matters

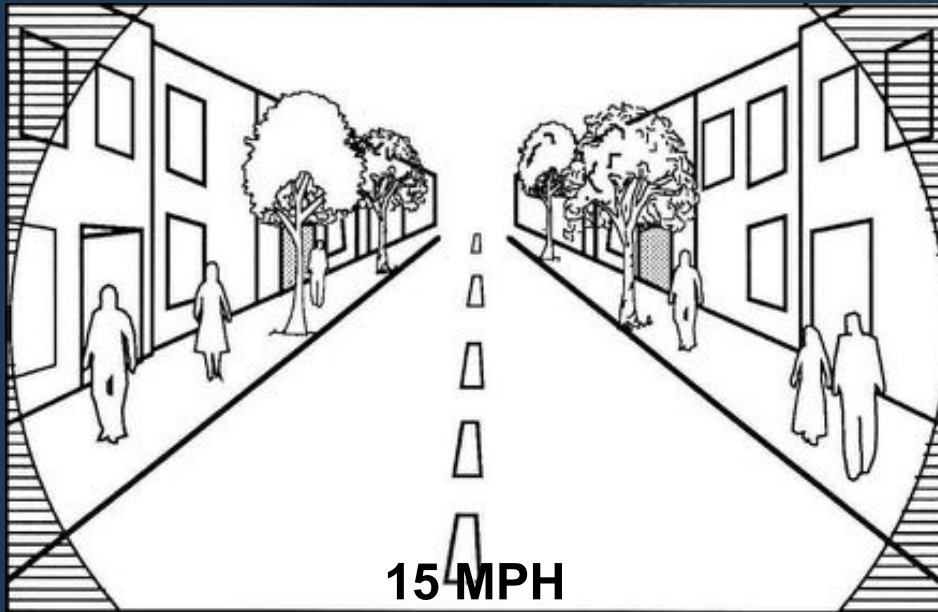
- Drivers' field of vision and ability to see pedestrians
- Drivers' ability to react and avoid a crash
- Crash Severity



Designing for Pedestrian Safety – Crossing Principles

24

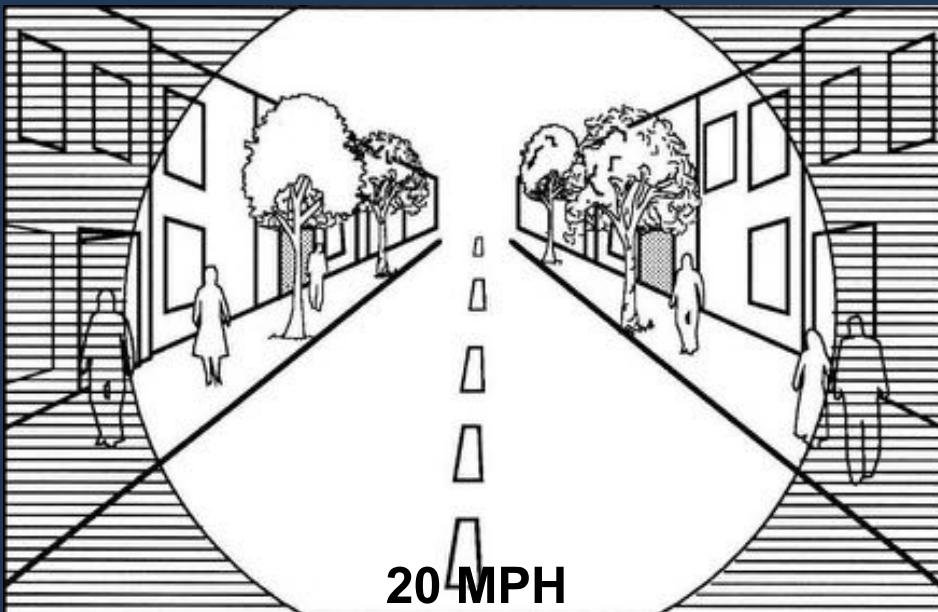
As speed increases, driver focus less on surroundings



Designing for Pedestrian Safety – Crossing Principles

25

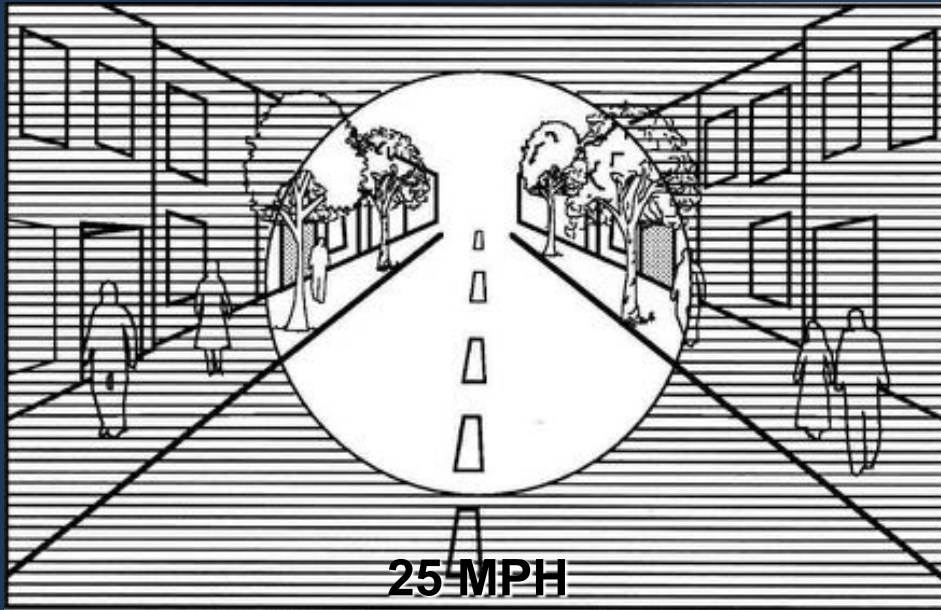
As speed increases, driver focus less on surroundings



Designing for Pedestrian Safety – Crossing Principles

26

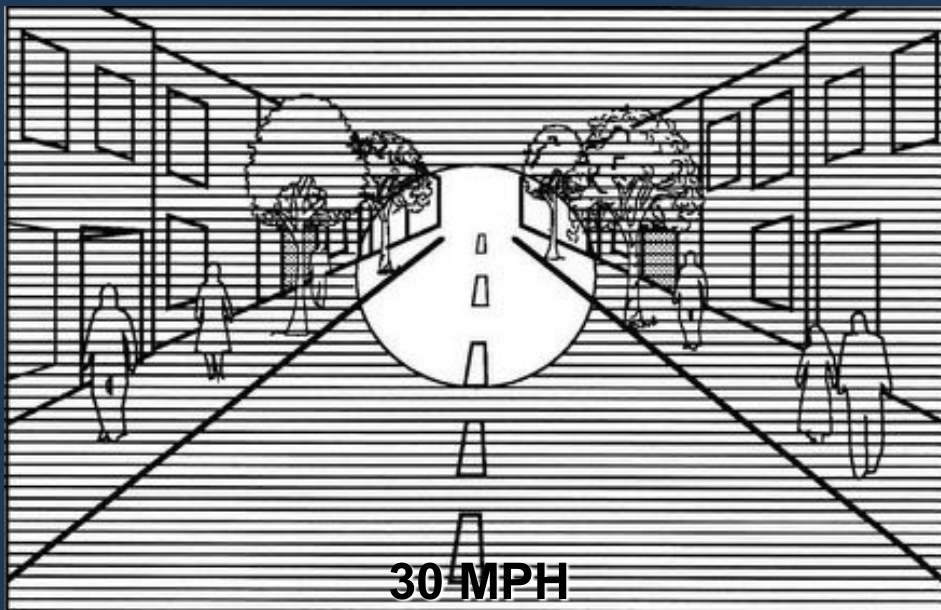
As speed increases, driver focus less on surroundings



Designing for Pedestrian Safety – Crossing Principles

27

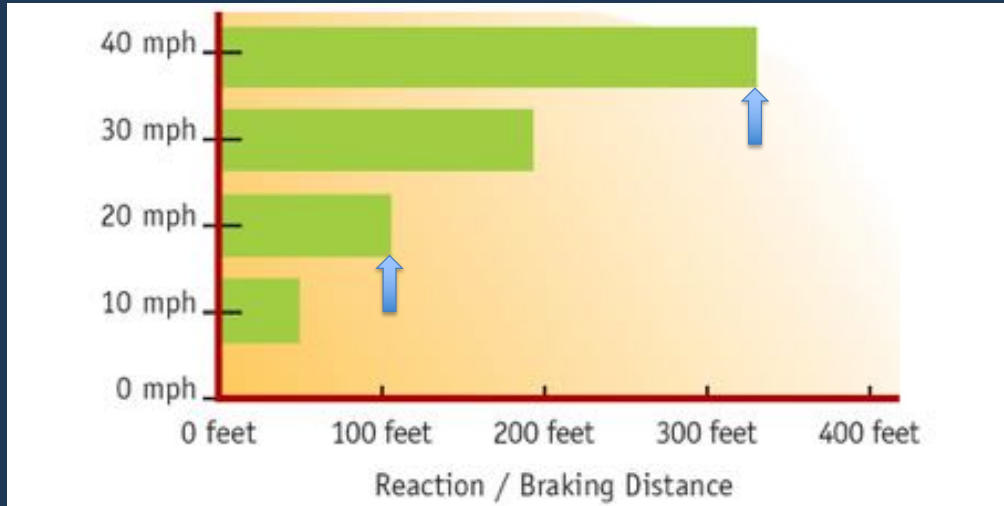
As speed increases, driver focus less on surroundings



Designing for Pedestrian Safety – Crossing Principles

28

Speed Affects Crash Avoidance



High speeds result in greater reaction and stopping distance

Designing for Pedestrian Safety – Crossing Principles

29

Speed Affects Crash Severity



W.A. Leaf and D.F. Preusser, "Literature Review on Vehicle Travel Speeds and Pedestrian Injuries Among Selected Racial/Ethnic Groups," US Department of Transportation, National Highway Traffic Safety Administration (1999).

Designing for Pedestrian Safety – Crossing Principles

30

Poll #3

As drivers approach this town, what makes them slow down?

- Speed limit sign
- Gateway sign
- Sidewalks
- Trees
- Houses
- People
- All of the above



31

Curbs and sidewalks slow traffic more than speed sign



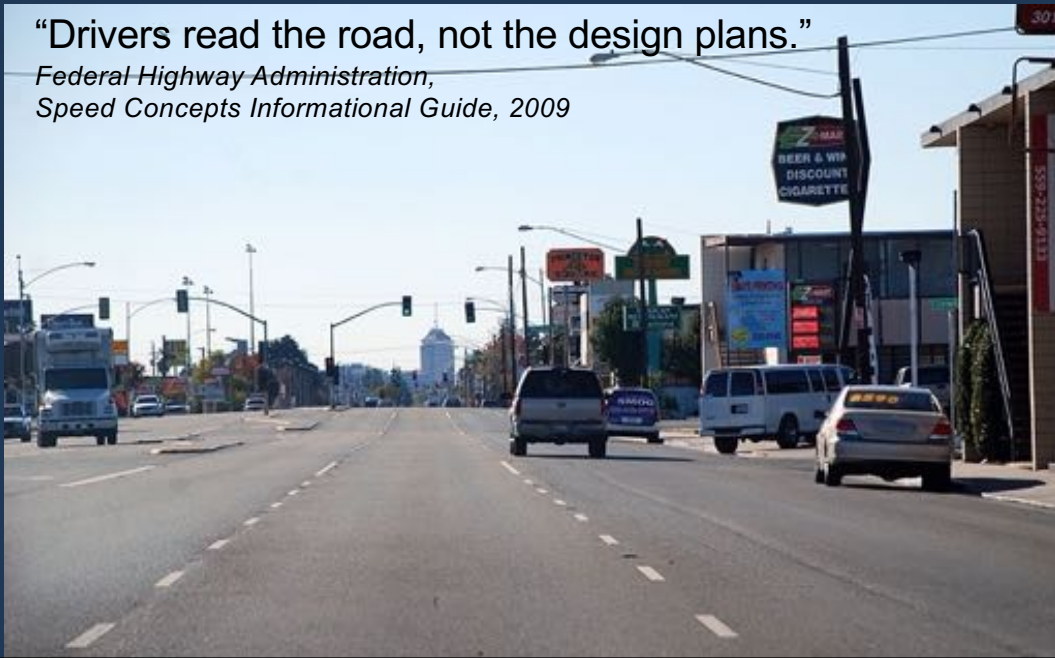
Right Design Invites Right Use

32

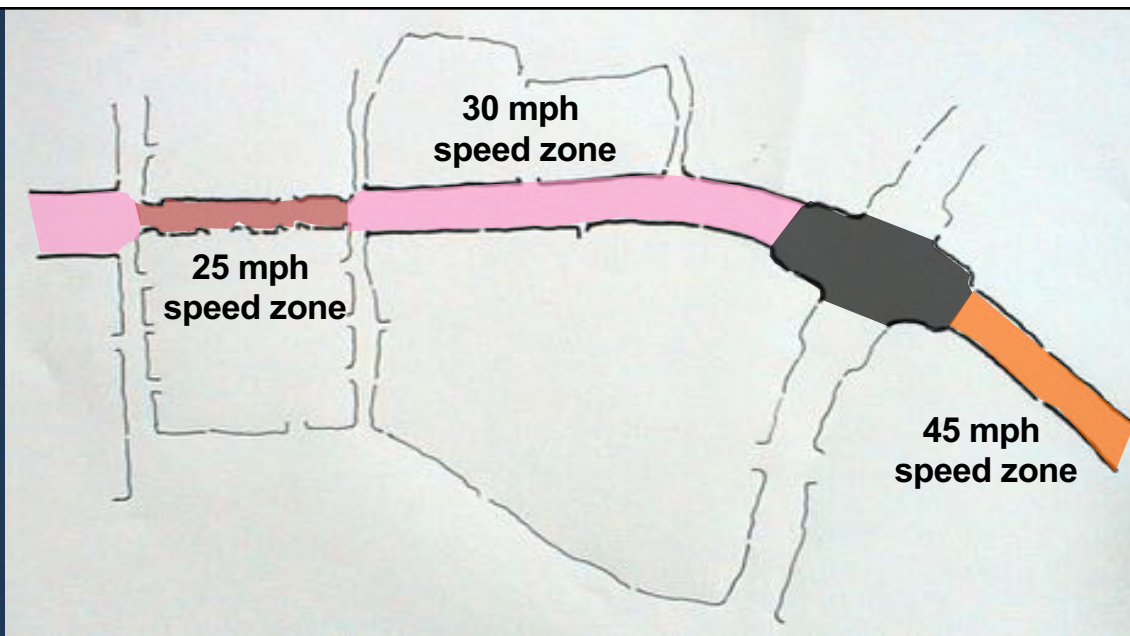
The Design of the Street Rules

“Drivers read the road, not the design plans.”

*Federal Highway Administration,
Speed Concepts Informational Guide, 2009*



33



Streets need to be designed to relate to the context

34



Don't Oversize Your Streets

Where would you prefer to walk?
On which street is it safer to drive?



Volume of cars on street above: 16,000/day
Volume of cars on this street: 16,000/day

35

Don't Oversize Traffic Lanes



10' and 11' lanes are just as safe as 12' lanes on urban arterials with speeds < 45 mph

"Relationship of Lane Width to Safety for Urban and Suburban Arterials": Study by Potts, Harwood, and Richard

36

Narrow Lanes



10' and 11' lanes are just as safe as 12' lanes on urban arterials with speeds < 45 mph

"Relationship of Lane Width to Safety for Urban and Suburban Arterials": Study by Potts, Harwood, and Richard

37

Narrow Lanes



10' and 11' lanes are just as safe as 12' lanes on urban arterials with speeds < 45 mph

"Relationship of Lane Width to Safety for Urban and Suburban Arterials": Study by Potts, Harwood, and Richard

38

Example of 10' Lanes on Arterial Roadway: Mather Field Road, near Hwy. 50 in Rancho Cordova



39

Define the Edge of the Roadway



Highway 33, Town of Oak View, Ventura County

Sargent Town Planning

40

Define the Edge of the Roadway



Highway 33, Town of Oak View, Ventura County

Sargent Town Planning

41

Define the Edge of the Roadway



Highway 33, Town of Oak View, Ventura County

Sargent Town Planning

42

Treatment in a rural context to define roadway edge



State Route 16, Capay, CA

43

Narrow Driveways, Create Buffers to Parking Lots



Sargent Town Planning

Highway 33, Town of Oak View, Ventura County

44

Narrow Driveways, Create Buffers to Parking Lots



Sargent Town Planning

Highway 33, Town of Oak View, Ventura County

45

Examples: Buffers to Parking Lots



46

Gateways



47

Gateways



48

Gateways



49



Gateways

50



Roundabouts can create great gateways, while reducing vehicle speeds and moving traffic safely and smoothly

51



Roundabout design characteristics

52

Before and After Example



Asheville NC

53

Before and After Example

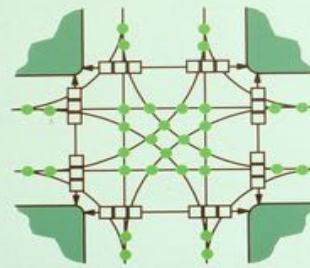


Asheville NC

54

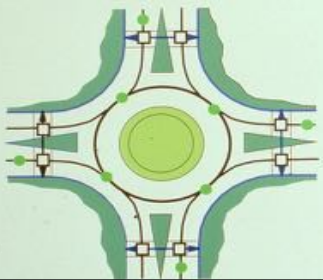
Roundabouts are safer

Conflicts at a 4-way intersection



- 32 vehicle to vehicle
- 24 vehicle to pedestrians

Conflicts at roundabouts



- 8 vehicle to vehicle
- 8 vehicle to pedestrians

“Results of this study indicate that converting conventional intersections from stop sign or traffic signal control can produce substantial reductions in motor vehicle crashes.”

March 2000 Study by the Insurance Institute for Highway Safety

55

Poll #4

Approximately how many roundabouts do you estimate have been built in the U.S.?

- 500
- 1,000
- 3,000
- 5,000
- 7,000
- 15,000

56

Poll #5

Which city in the U.S. has the most roundabouts?

- Modesto, CA
- Sioux City, IA
- Seattle, WA
- Carmel, IN
- Orlando, FL
- Worcester, MA

57

Traffic Calming Mini-Circles



Arcata, California

Mini circles at intersections resulted in a 77% reduction in crashes in Seattle, WA

Source: PedSafe, Pedestrian Safety Guide and Countermeasure Selection Guide, FHWA; Traffic Circle Program, City of Seattle, WA. www.seattle.gov/transportation/trafficircles.htm;

58



Arcata, California

59



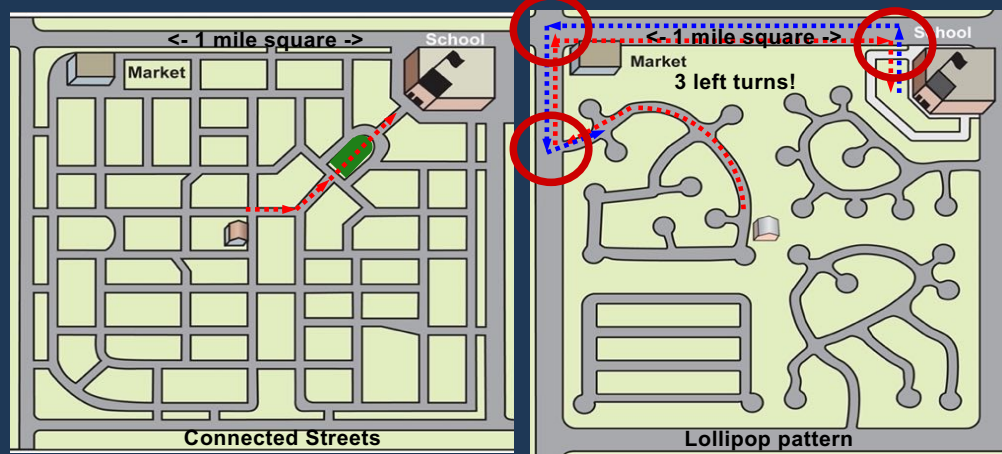
Sacramento, California

60

Tools to help pedestrians walk along and cross the street

61

Street Connectivity is Key



Connectivity creates a walkable street system by:

- Reducing walking distances
- Creating more route choices on quiet local streets
- Dispersing traffic — reducing reliance on arterials for all trips

62

Trails can Provide Great Connectors and Amenities



Placerville, CA



Davis, CA

63

Trails Alongside Roads/Highways



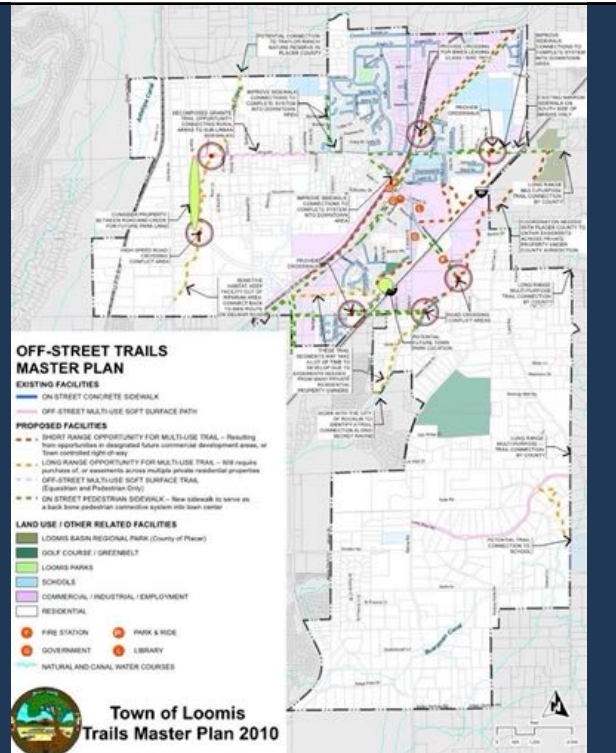
Davis, CA



Seward Highway, Alaska

64

Look for opportunities to create and expand trail connections

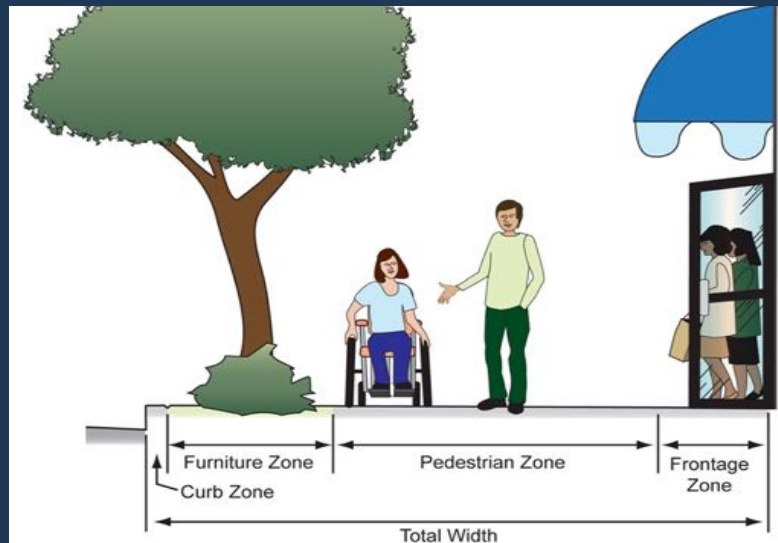


65

Sidewalk Corridors — The Zone System

The sidewalk corridor extends from the edge of roadway to the private property line and is divided into 4 zones:

- Curb Zone
- Furniture Zone
- Pedestrian Zone
- Frontage Zone



66

Poll #6

What should be the minimum width for sidewalks?

- 3 feet
- 4 feet
- 5 feet
- 6 feet
- 7 feet

67



For two people to walk comfortably side-by-side we need sidewalks that are at least 5-feet wide.

68



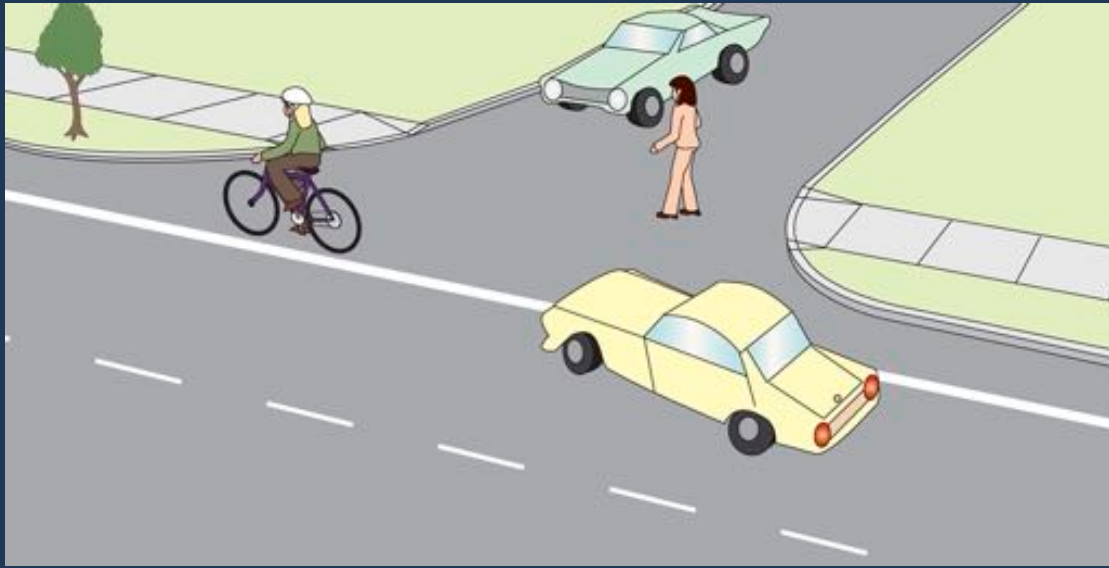
For two moms (or dads) with strollers, sidewalks need to be at least 5 feet wide

69



70

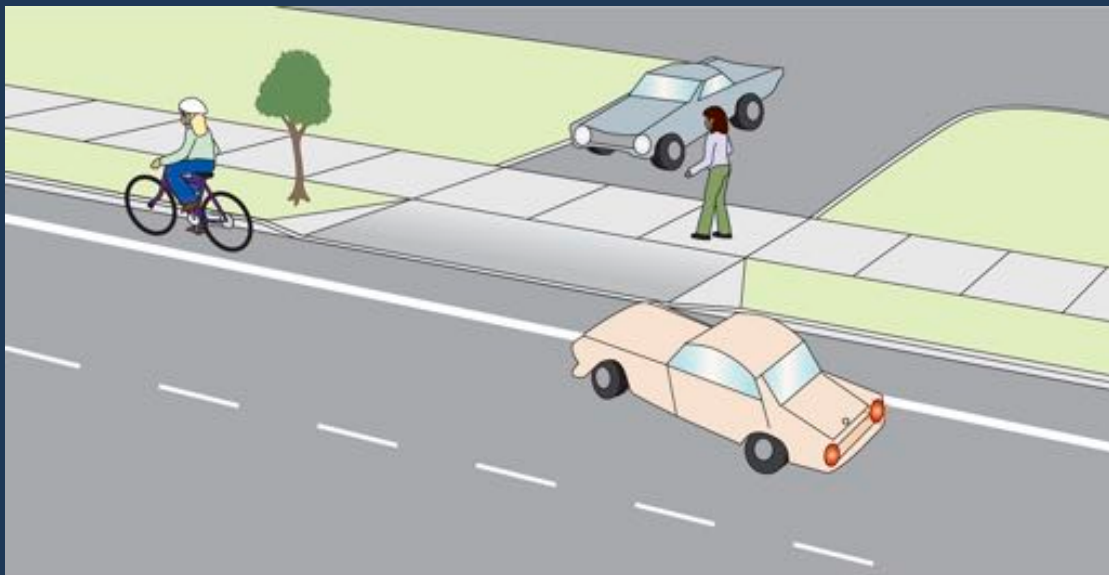
Don't build driveways like intersections



Designing for Pedestrian Safety – Walking Along the Road

71

Build driveways like driveways



Designing for Pedestrian Safety – Walking Along the Road

72



73



Sidewalks in rural neighborhoods can be built without curb and gutter

74

Accessible Neighborhoods Need Good Street Crossings



75

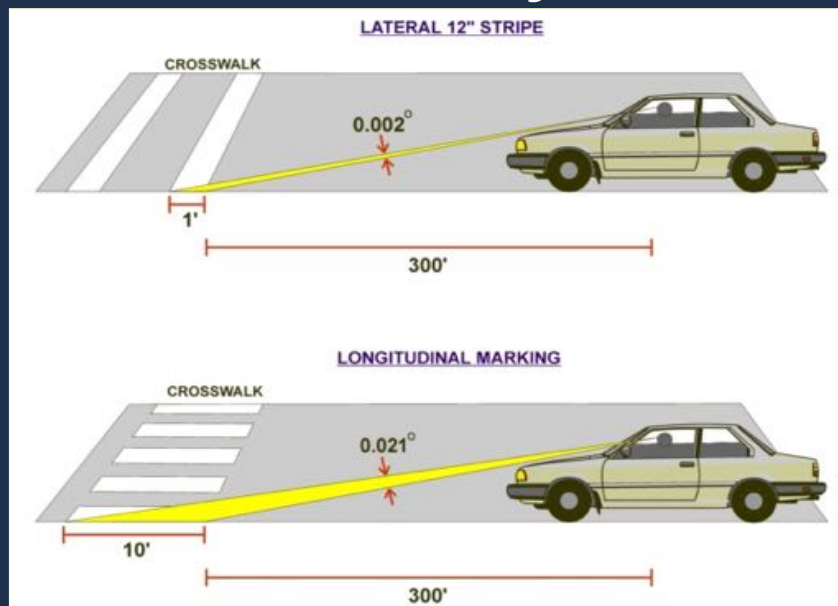
Increase Effectiveness Of Crosswalks With:

- Proper location
- High Visibility Markings
- Illumination
- Signing
- Advance Stop Bars
- Median Islands
- Curb Extensions
- Beacons
 - Rectangular Rapid Flashing Beacon
 - Pedestrian Hybrid Beacon
- Signals



76

Crosswalk Visibility



Longitudinal markings are more visible to driver at a distance

77

Poll #7

Is it legal to cross the street at an intersection (where there's no signal or stop sign) if the crosswalk is not marked?

- Yes
- No

78

Poll #8

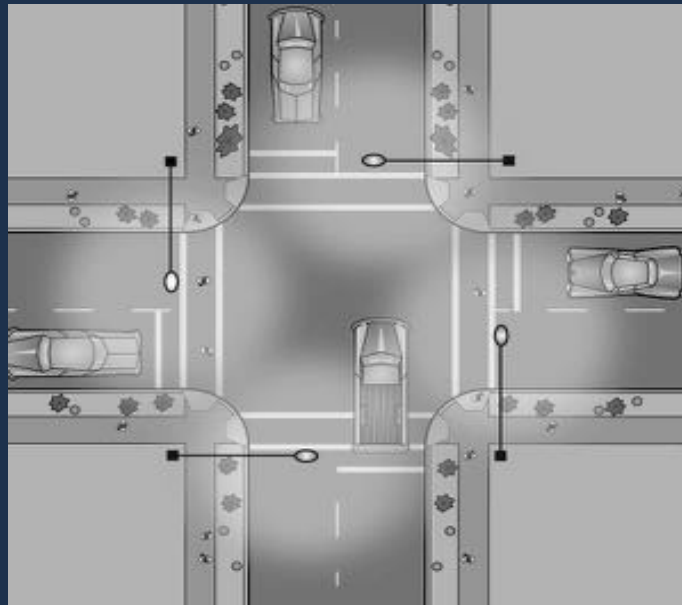
Is it legal to cross the street in the middle of the block?

- Yes
- No
- It depends

79

Illumination – Essential For Any Crossing

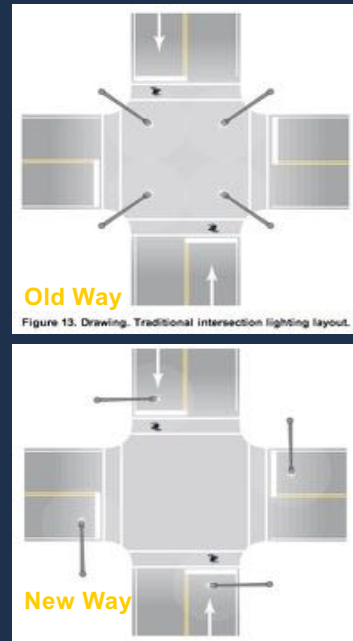
- Marked crosswalk?
- Light it
- Up to 50% of pedestrian crashes occur at night



Designing for Pedestrian Safety – Crossing Countermeasures

80

Lighting Location is Important



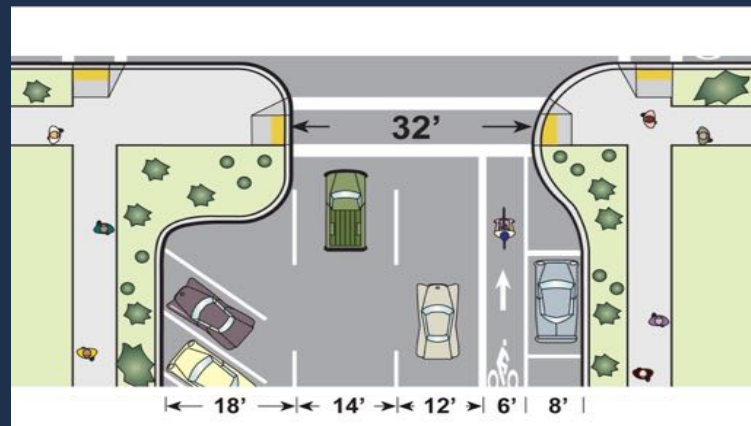
- Informational Report on Lighting Design for Midblock Crosswalks (www.tfhr.gov/safety/pubs/08053/08053.pdf)

Designing for Pedestrian Safety – Crossing Countermeasures

81

Curb extensions:

- Option on any street with on-street parking
- Don't just reduce crossing distance

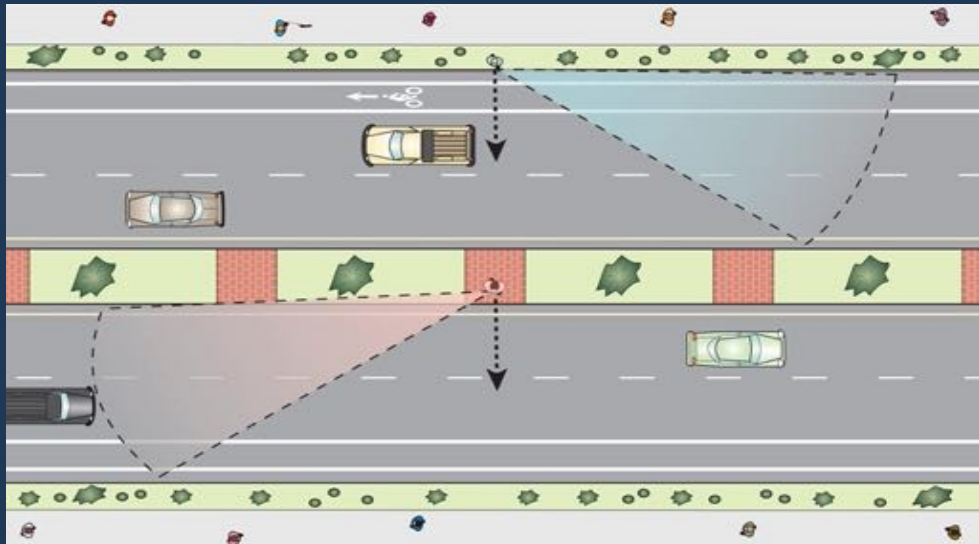


Other advantages

- Better visibility (both ways)
- Traffic calming
- Room for street furniture

82

Raised Median or Median Island



Breaks long complex crossing into two simpler crossings;
Reduces pedestrian crashes by 39%

Designing for Pedestrian Safety – Crossing Countermeasures

83

Crossing Islands



84

Rectangular Rapid Flashing Beacon

Supplement warning signs at unsignalized intersections or mid-block crosswalks.



85

**Tools to help make bicycling
safe and comfortable**

86

Bicycling

What the Research Tells Us



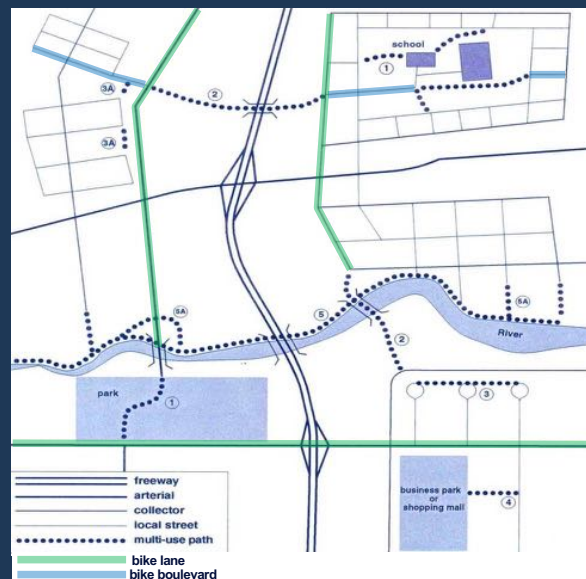
Typically only about 8% of cyclists are willing to ride in standard (Class II) bike lanes

Graphic Courtesy: Fehr & Peers

87

Bikeway Network

- Complete Streets require a complete network for cyclists
- Just like roads and sidewalks, bikeways need to be part of a connected network.
- OK to combine various bikeway types, including on and off-street facilities



88

Buffered Bicycle Lanes

Provide greater distance between bicyclists and motor vehicles

Can also be used next to parking

Contribute to bicyclist perception of safety



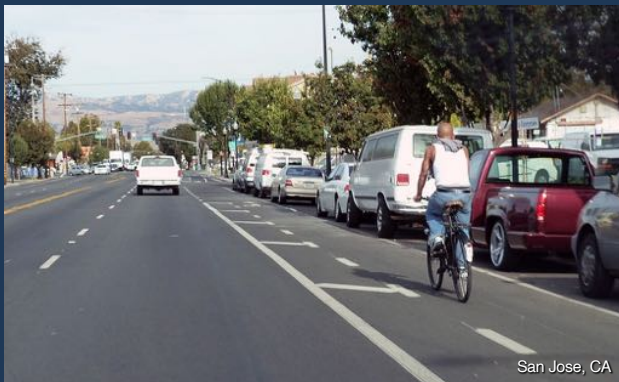
Madison Avenue, Folsom, CA



Fairfax, CA

89

Examples: Buffered Bicycle Lanes



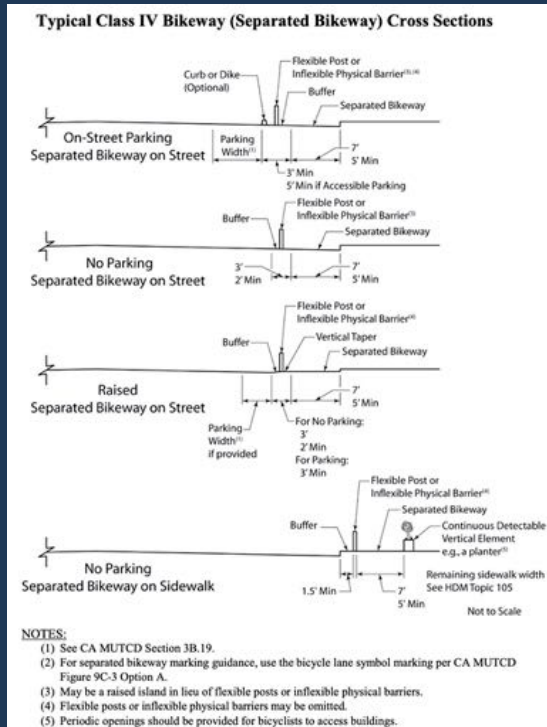
San Jose, CA



Davis, CA

90

Separated or Protected Bikeways (Class IV)



Caltrans Design Information Bulletin #89, December 30, 2015

91

Separated/Protected Bikeway without Parking



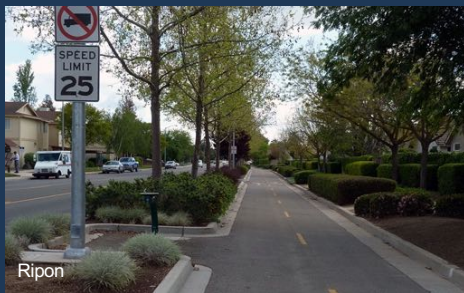
92

Separated/Protected Bikeway without Parking



93

Examples in California: Class IV Separated Bikeways



94

Poll #9

In which of the following facilities would you be most willing to ride a bicycle?

- Vehicle travel lane
- Standard bicycle lane next to vehicles
- Bicycle lane with a painted buffer to vehicles
- Bikeway that's separated from vehicles
- Multi-Use trail

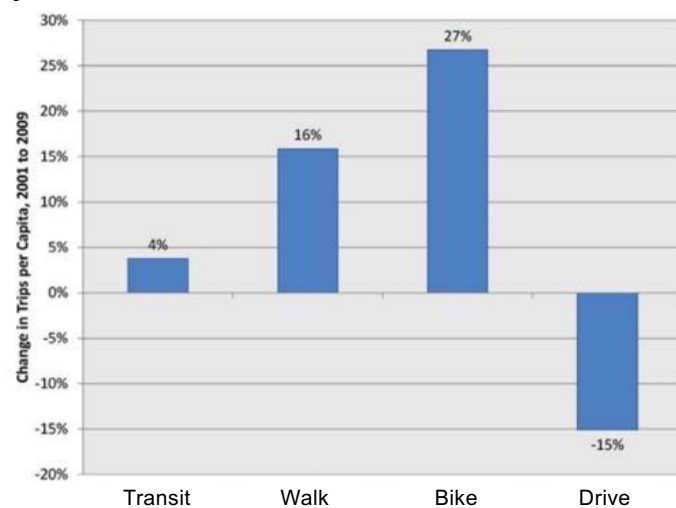
95

Millenials are walking/cycling more, driving less

- Moving to downtowns and older neighborhoods
- Driving less and looking for other transportation options.

www.copirg.org/sites/pirg/files/reports/Millennials%20in%20Motion%20CoPIRG.pdf

Change in Number of Trips per Capita among 16 to 34 year-olds, 2001-2009



96

Streets Need Trees



97

Quantified Benefits of Trees

Benefits

- Save Energy
- Improve Air Quality
- Reduce CO₂
- Reduce Stormwater Runoff
- Increase Property Values



From *Tree Guidelines for San Joaquin Valley Communities*, by E. Gregory McPherson, James R. Simpson, Paula J. Peper, Qingfu Xiao, Western Center for Urban Forest Research and Education, Published by the Local Government Commission

98

Quantified Benefits of Trees

Average Annual Net Benefit Per Tree

(over 40 years with costs factored in)

<u>Small</u>	<u>Medium</u>	<u>Large</u>
\$1-\$8	\$26-\$37	\$48-62



From *Tree Guidelines for San Joaquin Valley Communities*, by E. Gregory McPherson, James R. Simpson, Paula J. Peper, Qingfu Xiao, Western Center for Urban Forest Research and Education, Published by the Local Government Commission

99

Shade trees reduce street maintenance costs

- Unshaded street: 6 slurry seals over 30 yrs.
- Partially shaded: 5 slurry seals over 30 yrs.
- Highly shaded: 2.5 slurry seals over 30 yrs.
 - Savings = \$7.13/m² (\$0.66/ft²) over 30-year period compared to unshaded street



Source: "Effects of Street Tree Shade on Asphalt Concrete Pavement Performance," E. Gregory McPherson, Jules Muchnick, *Journal of Arboriculture*, November 2005

100

Places to Gather



101

Places to Gather



102

Places to Gather



Farmer's Market

103

Places to Gather: Parklets

Take underused street space to create people places, support local businesses



San Francisco, CA

104

Parklets



E Street, Davis, CA

105

Parklets



10th Street, Modesto, CA — Parklet installed by the City and volunteers circa 2013

106

Parklets



10th Street, Modesto, CA

107

Parklets



10th Street, Modesto, CA — Permanent parklet built by the City in 2016

108



Salinas —Temporary Demonstration Parklet

109



Salinas —Temporary Demonstration Parklet

110

Public Art



111

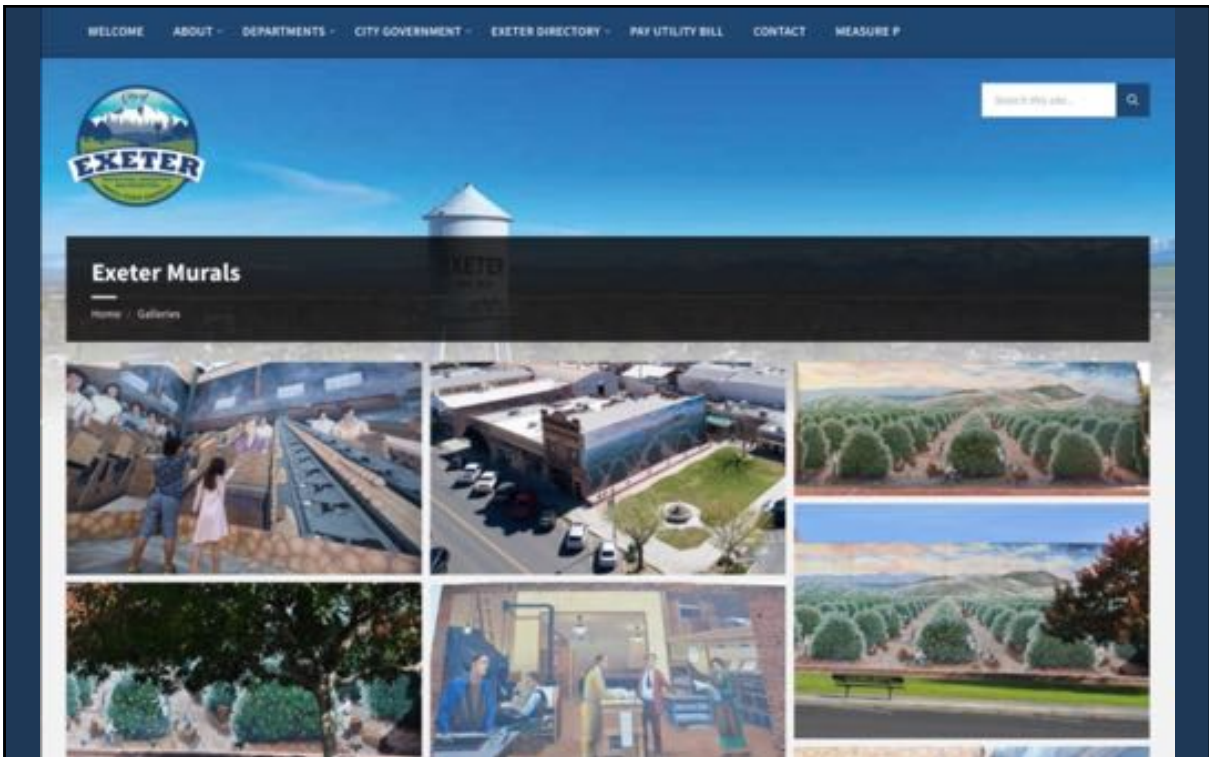


Exeter, CA

112



113



114



115



Laytonville, CA

116

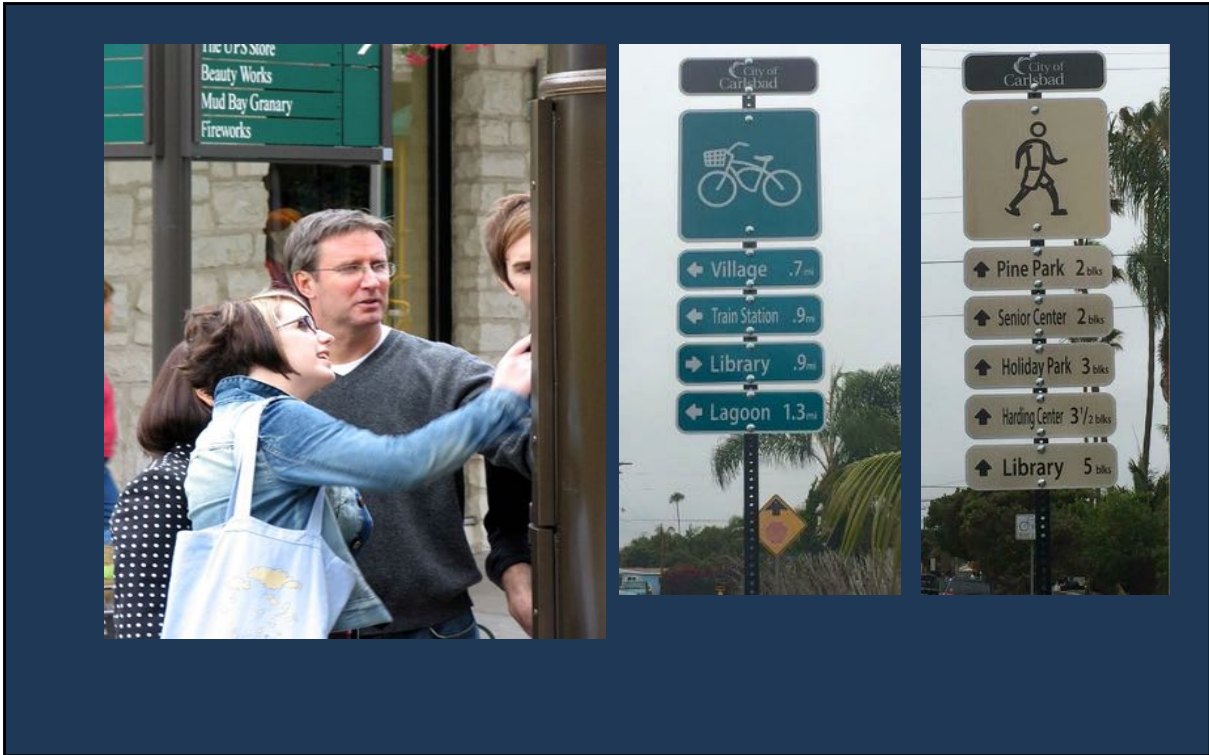


117

Wayfinding



118



119



Photo Simulations of Small Town Street Revitalization Projects

Developed by Steve Price,
Urban Advantage

www.urban-advantage.com

120

Cottonwood, CA (pop. 3,300)
Main Street



121

Cottonwood, CA
Main Street



122

Cottonwood, CA
Main Street



123

Cottonwood, CA
Main Street



124

Cottonwood, CA
Main Street



125

Winters, CA (pop. 6,600)
Railroad Street



126

Winters, CA
Railroad Street



127

Winters, CA
Railroad Street



128

Winters, CA
Railroad Street



129

Winters, CA
Railroad Street



130

Winters, CA
Railroad Street



131

Live Oak, CA (pop. 8,400)
Live Oak Boulevard



132

Live Oak, CA
Live Oak Boulevard



133

Live Oak, CA
Live Oak Boulevard



134

Live Oak, CA
Live Oak Boulevard



135

Questions/Comments

136