

# Kennebunk Comprehensive Plan and Zoning Ordinance Committee

## COMPLETE STREETS

July 25, 2016



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National Complete  
Streets Coalition

# What are Complete Streets?

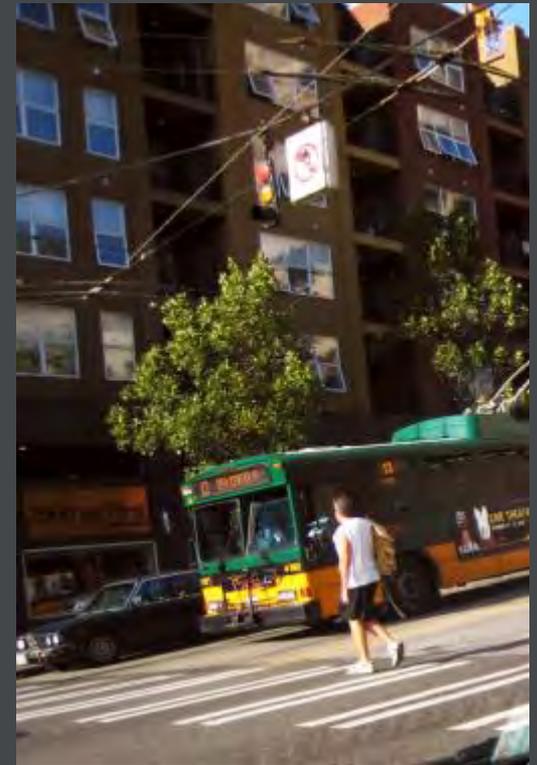


Complete Streets are streets for everyone, no matter who they are or how they travel.



# What are Complete Streets?

Safe    Comfortable    Convenient



# What are Complete Streets?

Safe    Comfortable    Convenient



# The tremendous potential

Every trip starts and ends with walking.



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# The tremendous potential

Of all trips:

**39%**

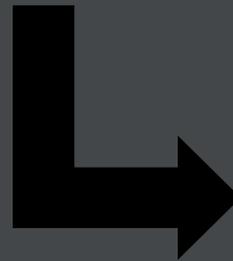
are less than  
3 miles

**17%**

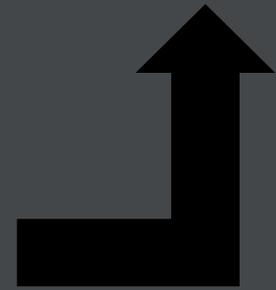
are less than  
1 mile

**47%**

are driven



of these trips...



National Household Travel Survey (2009)

# Who wants Complete Streets?

- 55% of Americans would rather drive less & walk more.
- Transit use is growing faster than population or highway travel.
- **Nearly one-third of Americans don't drive:**
  - 21% of Americans over 65.
  - Children under 16.
  - Many low income Americans do not have access to automobiles.



# Benefits: Older Adults

By 2025, nearly 1 in 5 Americans will be 65 or older.

About 1/2 of all non-drivers over the age of 65 would like to get out more often.



# Benefits: Children



Dedicated, safe spaces for bicycling and walking help kids be active and gain independence.

Being physically active helps kids learn and improves their mental health



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# People with disabilities

Nearly 1 in 5 Americans have a disability

Sidewalks make a community accessible for all

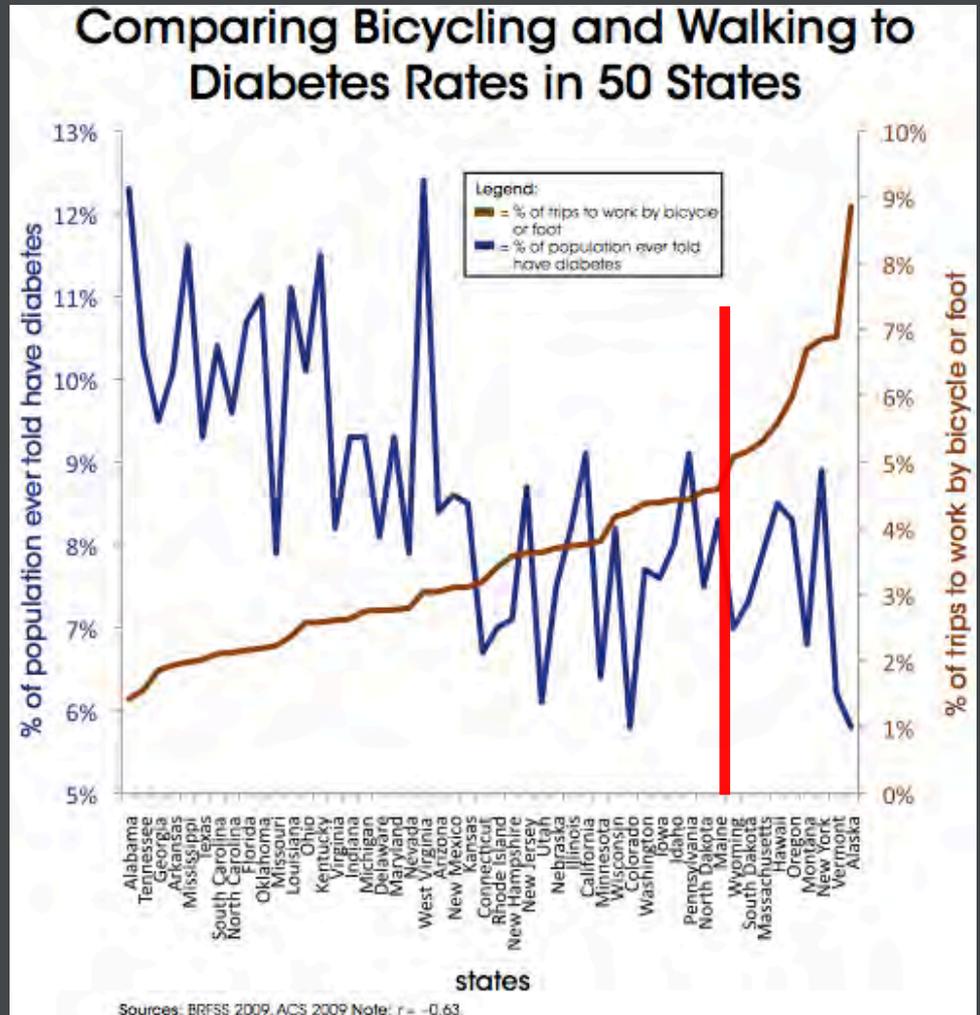
- ADA requires sidewalks be accessible, but doesn't require their construction

Reduce the need for expensive paratransit



# Benefits: Health

States with the lowest levels of biking and walking have, on average, the highest rates of obesity, diabetes, and high blood pressure.



# Benefits: Safety

Pedestrian crashes

↓ **88%** with sidewalks

↓ **69%** with hybrid beacon

↓ **39%** with medians

↓ **29%** with road conversions

# Incomplete streets are unsafe

More than 40% of pedestrian deaths in 2007 and 2008 occurred where no crosswalk was available.

National Highway Traffic Safety Administration's Fatality Reporting System



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# Streets are inadequate

- Inaccessible for wheelchair users



# Streets are inadequate

- No sidewalks
- Too dangerous to cross on foot



# Streets are inadequate

- Unsafe for people on bicycles



# Streets are inadequate

- Uninviting for bus riders



# We know how to build right



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Yet too many roads still turn out like this:



or this:



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or this:



# Examples of Complete Streets

## Rural roads with shared use trails



# Paved shoulders on bridges





# Low-traffic, low-speed skinny residential streets

# Skinny residential streets with sidewalks



# Main streets



# Shared commercial streets



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# Traffic circles



# Neighborhood greenways



# Angled head-out parking



# Protected bike lanes



# Modern roundabouts



# Busy multi-modal thoroughfares



# Complete Streets in US

**In total, over 850 Complete Streets policies have been passed in the United States, including those adopted by 31 states, the Commonwealth of Puerto Rico, and the District of Columbia.**



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# Complete Streets in Maine

## Complete Streets Policy Adoption

updated: 5/19/15

For more information, visit [www.smartgrowthamerica.org/completestreets](http://www.smartgrowthamerica.org/completestreets)

Agency	State Policy	Type	Level	Year	Population
Somerville, MA	MA Chapter 12, Article VII	leg	city	2014	75,754
State of Massachusetts*	MA Bicycle-Pedestrian Access Law (Chapter	leg	state	1996	6,547,629
Stoughton, MA	MA Complete Streets Policy	pol	city	2014	26,962
Baltimore County, MD	MD Resolution 126-13	pol	county	2013	805,029
Baltimore, MD	MD Council Bill 09-0433	res	city	2010	620,961
Maryland Department of Transportation State Highway Administration*	MD SHA Complete Streets Policy	int	state	2012	5,773,552
Montgomery County, MD	MD Montgomery County Code Chapter 49, SI	leg	county	2007	971,777
Prince George's County, MD	MD Complete and Green Streets Policy (Coun	leg	county	2013	863,420
Prince George's County, MD*	MD Master Plan of Transportation	plan	county	2009	863,420
Rockville, MD	MD Complete Streets Policy	pol	city	2009	61,209
Salisbury, MD	MD Resolution No. 2431	res	city	2014	30,343
State of Maryland*	MD Maryland Trans. Code Ann. Title 2 subtitle	leg	state	2000	5,773,552
Auburn, ME	ME Complete Streets Policy	pol	city	2013	23,055
Lewiston, ME	ME Complete Streets Policy	pol	city	2013	36,592
Maine Department of Transportation	ME Complete Streets Policy	int	state	2014	1,328,361
Portland, ME*	ME Resolution	res	city	2011	66,194
Portland, ME*	ME Complete Streets Policy	pol	city	2012	66,366
Windham, ME	ME Complete Streets Policy	pol	city	2014	17,001

# MaineDOT Complete Streets Policy

- The intent of this policy is to help ensure that all users of Maine's transportation system—our customers—including bicyclists, pedestrians, people of all ages and abilities, transit users, and motor vehicle users, have safe and efficient access to the transportation system.



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# 2010 USDOT Policy Statement

"...DOT encourages transportation agencies to **go beyond the minimum requirements**, and proactively provide convenient, safe, and **context-sensitive facilities** that foster **increased use by bicyclists and pedestrians of all ages and abilities**, and utilize universal design characteristics when appropriate."

[http://www.fhwa.dot.gov/environment/bicycle\\_pedestrian/overview/policy\\_accom.cfm](http://www.fhwa.dot.gov/environment/bicycle_pedestrian/overview/policy_accom.cfm)



# 2013 FHWA memo



U.S. Department  
of Transportation  
Federal Highway  
Administration

## Memorandum

SENT BY ELECTRONIC MAIL

Subject: **GUIDANCE:** Bicycle and Pedestrian Facility Design Flexibility Date: August 20, 2013

Supports “**taking a flexible approach to bicycle and pedestrian facility design**”

Recommends using AASHTO, ITE, and NACTO guidance

[http://www.fhwa.dot.gov/environment/bicycle\\_pedestrian/guidance/design\\_guidance/design\\_flexibility.cfm](http://www.fhwa.dot.gov/environment/bicycle_pedestrian/guidance/design_guidance/design_flexibility.cfm)



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# There's room; it needs to be recaptured



# Park Avenue— Portland



# Park Avenue— Portland



# Beth Condon Path- Yarmouth



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# Beth Condon Path- Yarmouth



# Should street width be based on classification?

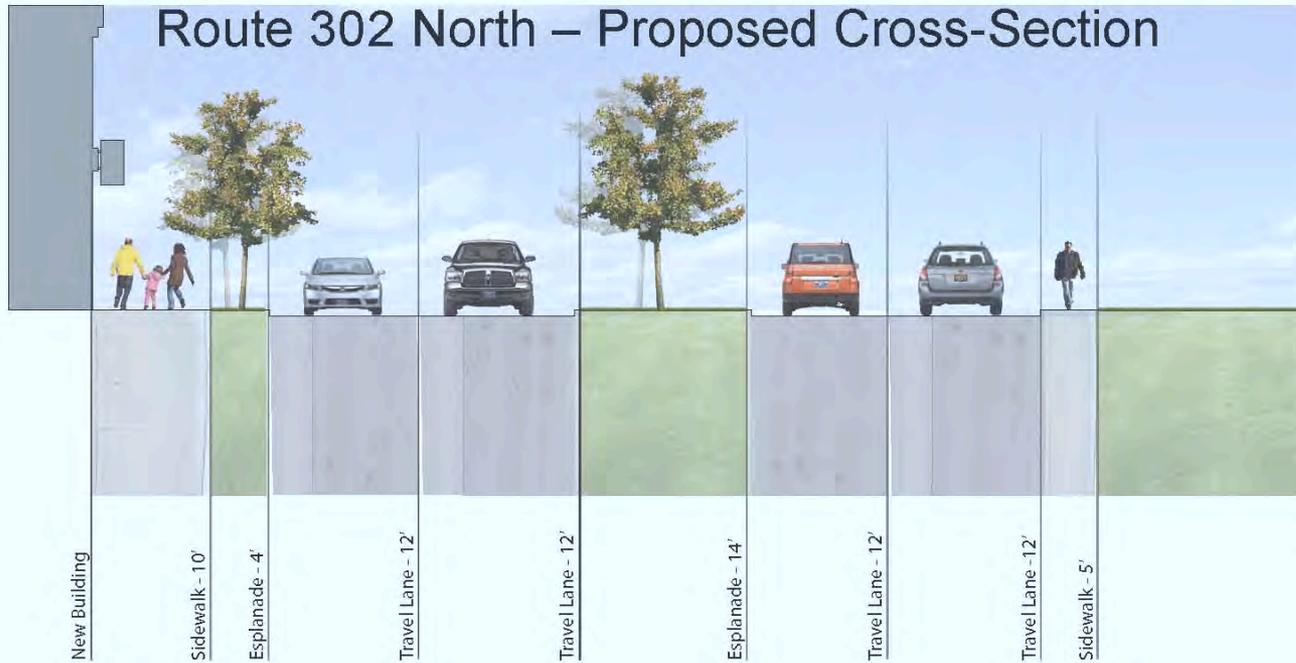
Functional classification doesn't adequately describe the street's role in a community

These 3 streets are "arterials" yet look, feel and perform very differently:



# Route 302 - North Windham

North Windham 21<sup>st</sup> Century Downtown Plan | Public Forum | 9.22.11



302 North Cross-Section - Proposed

21st Century Downtown Plan

Windham, ME

**TYLIN** INTERNATIONAL  
engineers | planners | scientists  
**MRLD**  
Landscape Architecture + Urbanism

# Bath Road Master Plan (Route 1) Wiscasset



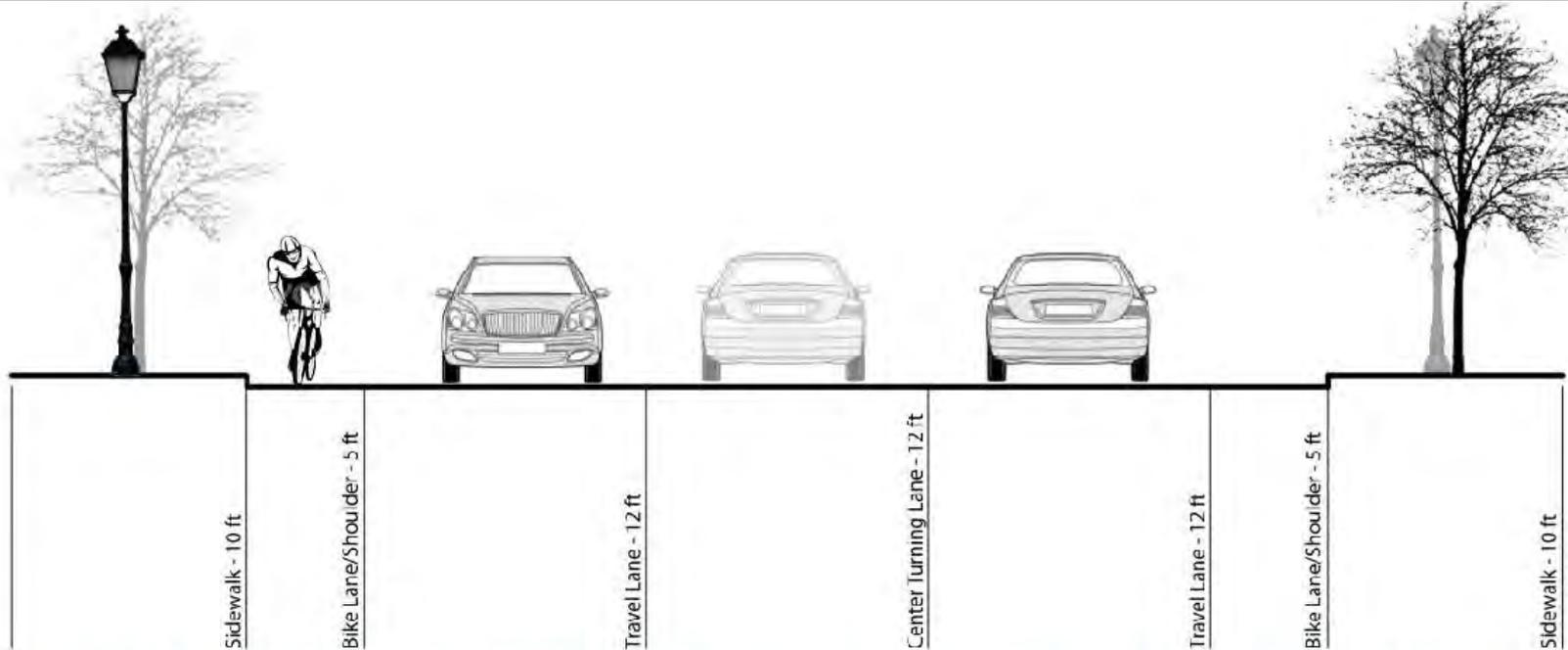
# Route 1-Wiscasset



*Existing Conditions*



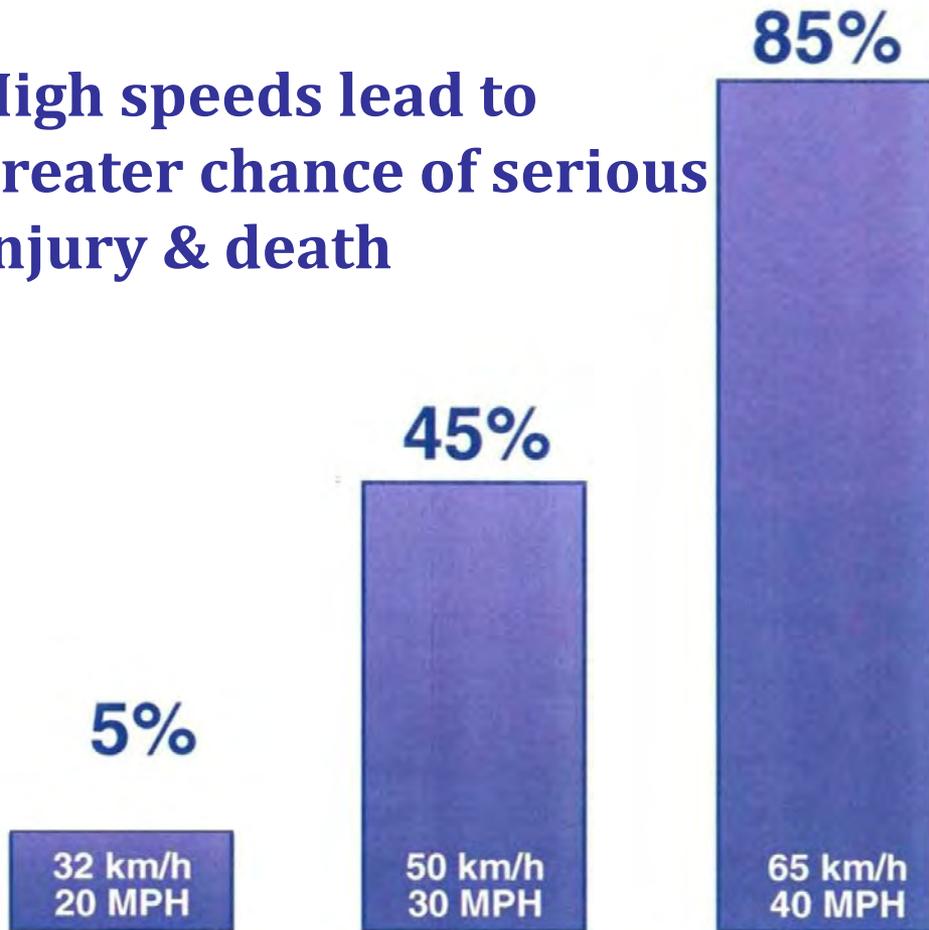
# Route 1-Wiscasset



**Figure 5-13 Cross-section through Bath Road** in the proposed Bath Road Village 3 District. *Improvements would be within the right-of-way creating a safe, attractive and unified design.*

# Speed Affects Crash Severity

High speeds lead to greater chance of serious injury & death



**Pedestrians' chances of death if hit by a motor vehicle**

SOURCE: *Killing Speed and Saving Lives*, UK Department of Transportation

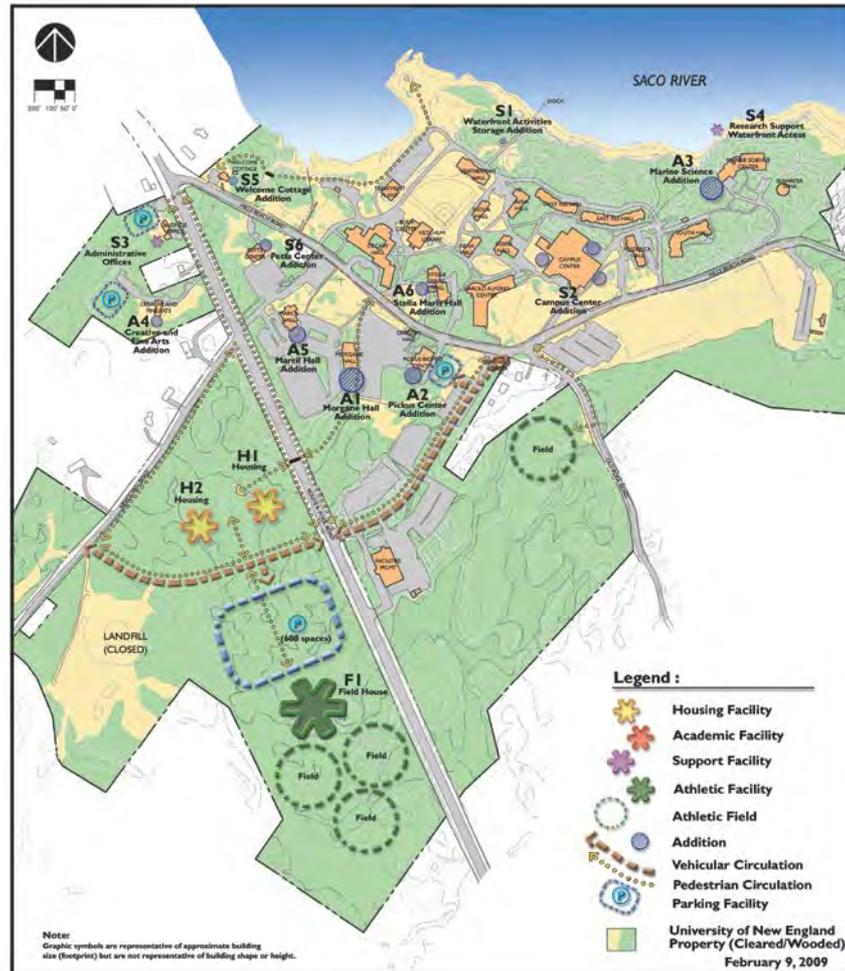
Doubling the speed from 20 mph to 40 mph reduces the survivability from 95% to just 15%



# Speed Affects Crash Severity



# Route 9 – Biddeford



University of New England - Biddeford Campus  
Campus Master Plan  
Five Year Development Strategy

SYTDesign Consultants  
Civil Engineering & Landscape Architecture



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# Route 9 – Biddeford



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# Narrower Travel Lanes

10' and 11' lanes are safer than 12' lanes on urban arterials with speeds under 45 MPH

AASHTO Green Book allows narrower lanes:

- 9' on local residential streets
- 10' on low speed arterials & collectors
- 11' for streets with trucks



# Lane Width Adjustment



# Lane Width Adjustment



# Effect of large radius on drivers



**They drive fast,  
ignoring pedestrians**

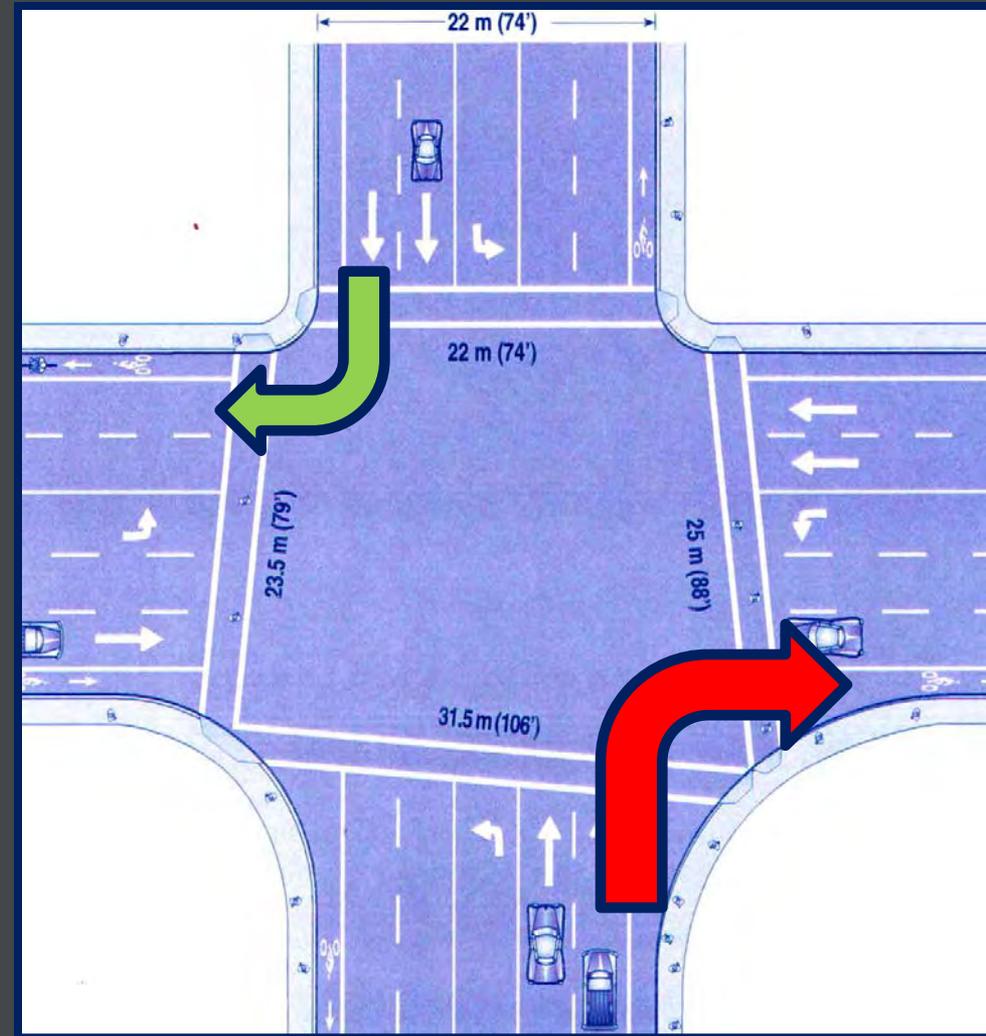
# Tighten Corner Curb Radii

- Large corner radii:

Allow high-speed turns by cars

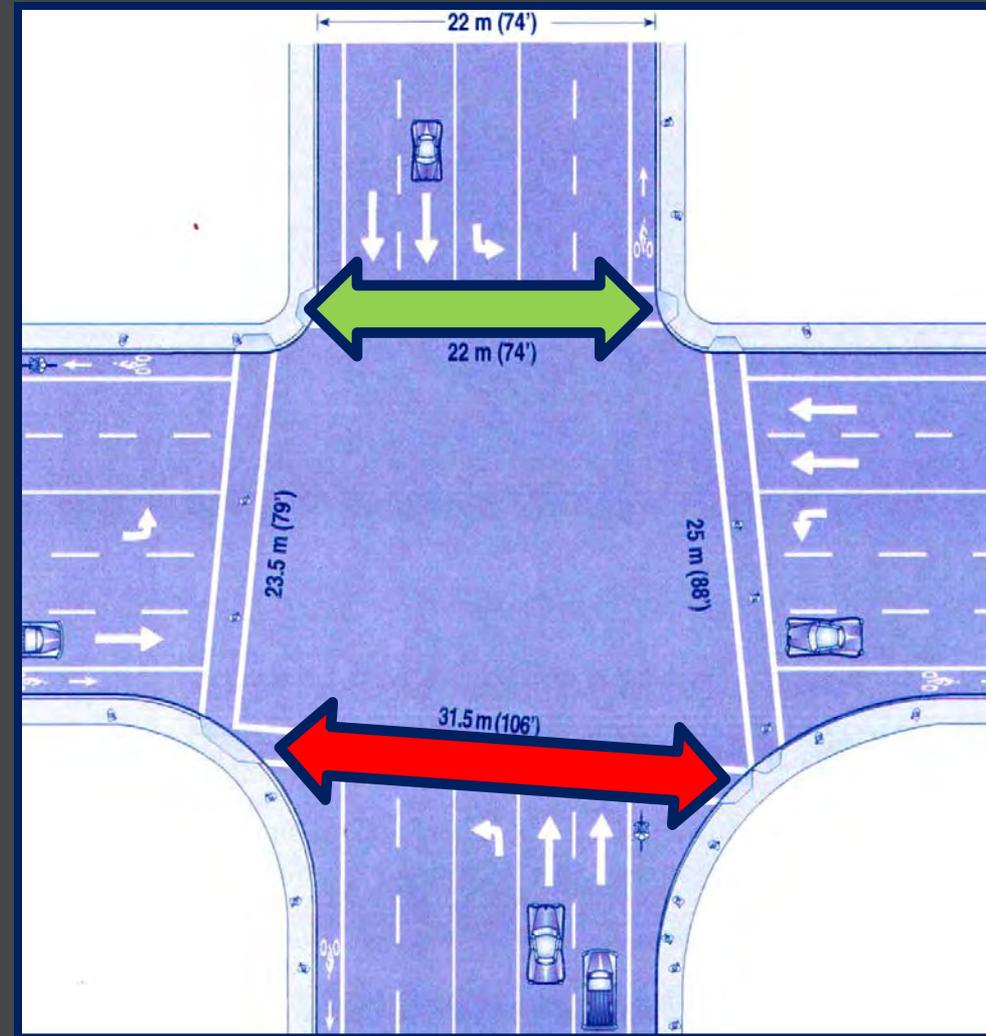
-Less likely to yield

-Injury severity



# Tighten Corner Curb Radii

- Large corner radii:
  - Increase crossing distance
  - Require longer signal time



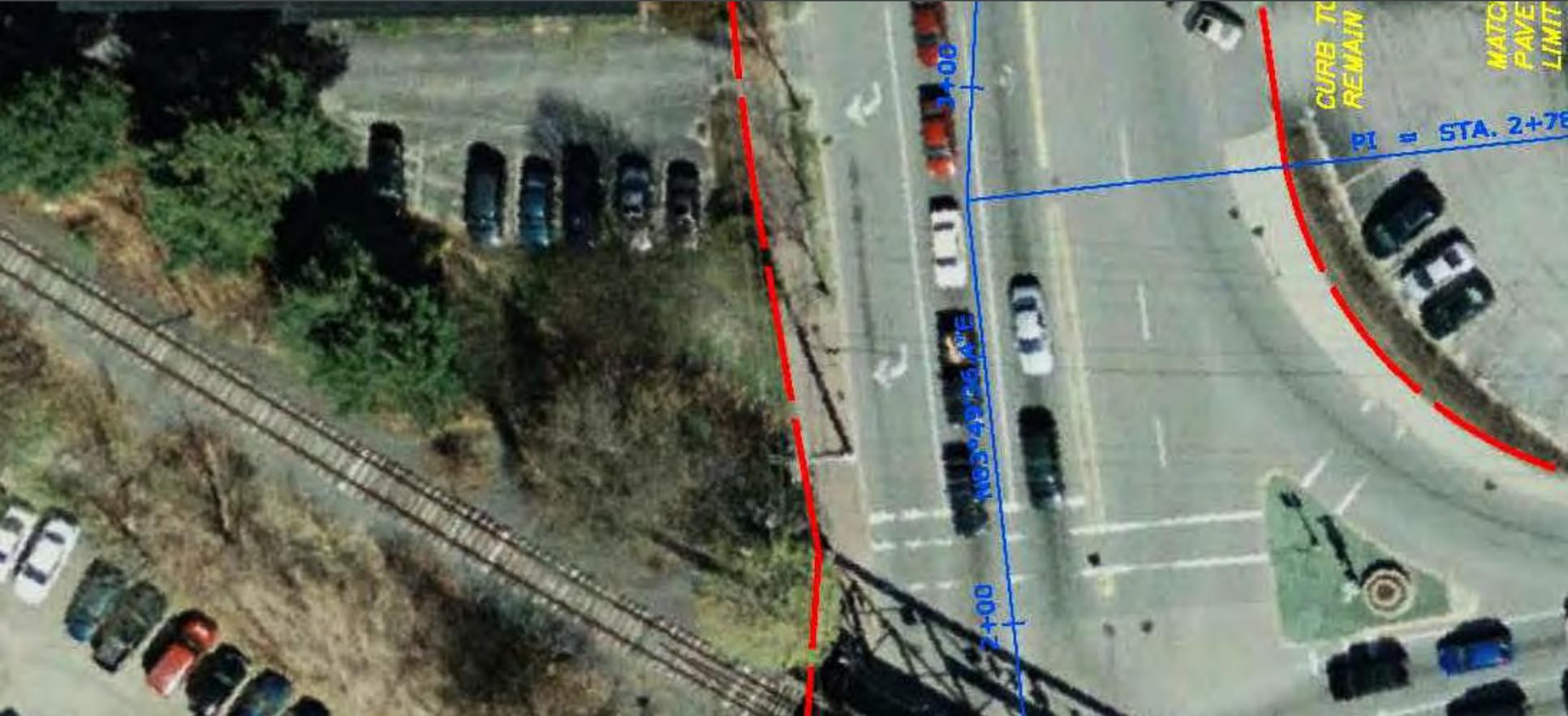
# Franklin St. – Radius Adjustment



# Franklin St. – Radius Adjustment



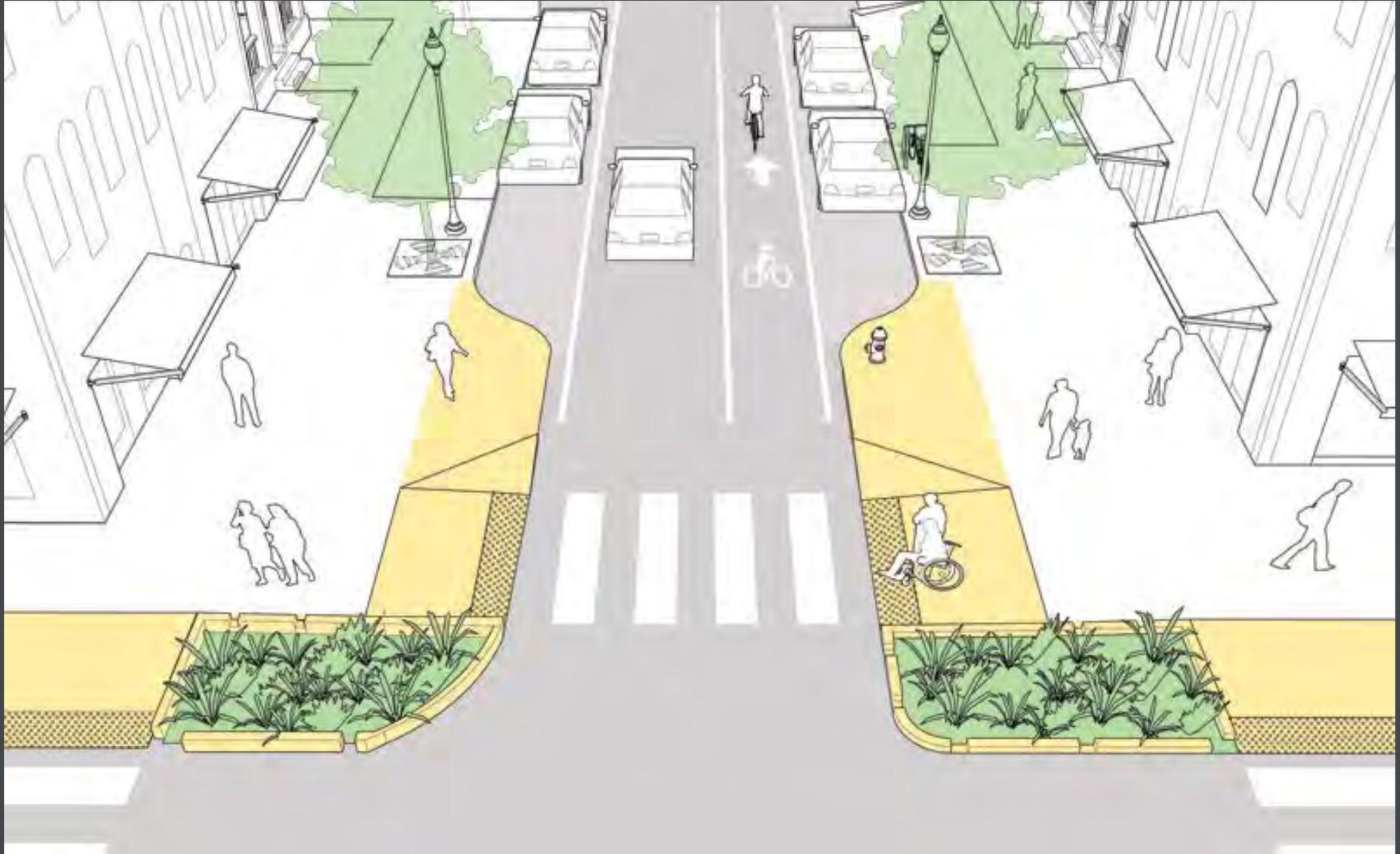
# Park and St. John – Radius Adjustment



# Park and St. John – Radius Adjustment



# Curb Extensions



# Curb Extensions

- Reduces Pedestrian Crossing Distance
- Increases pedestrian visibility
- Prevents vehicle encroachment on crosswalk
- Encourages slower speeds by tightening corner radii
- Provides improved opportunity for ADA Ramps

# Anderson St. Neighborhood By-Way



# Rectangular Rapid Flash LED Beacon

- ▶ Beacon is yellow, rectangular, and has a rapid “stutter” flash
- ▶ Beacon located between the warning sign and the arrow plaque
- ▶ Must be pedestrian activated (pushbutton or passive)
- ▶ Studies indicate **motorist yielding rates increased from 18.2% to 81.2% for 2 beacons and to 87.8% for 4 beacons**
- ▶ Interim approval from FHWA in July 2008



# Marginal Way – Portland

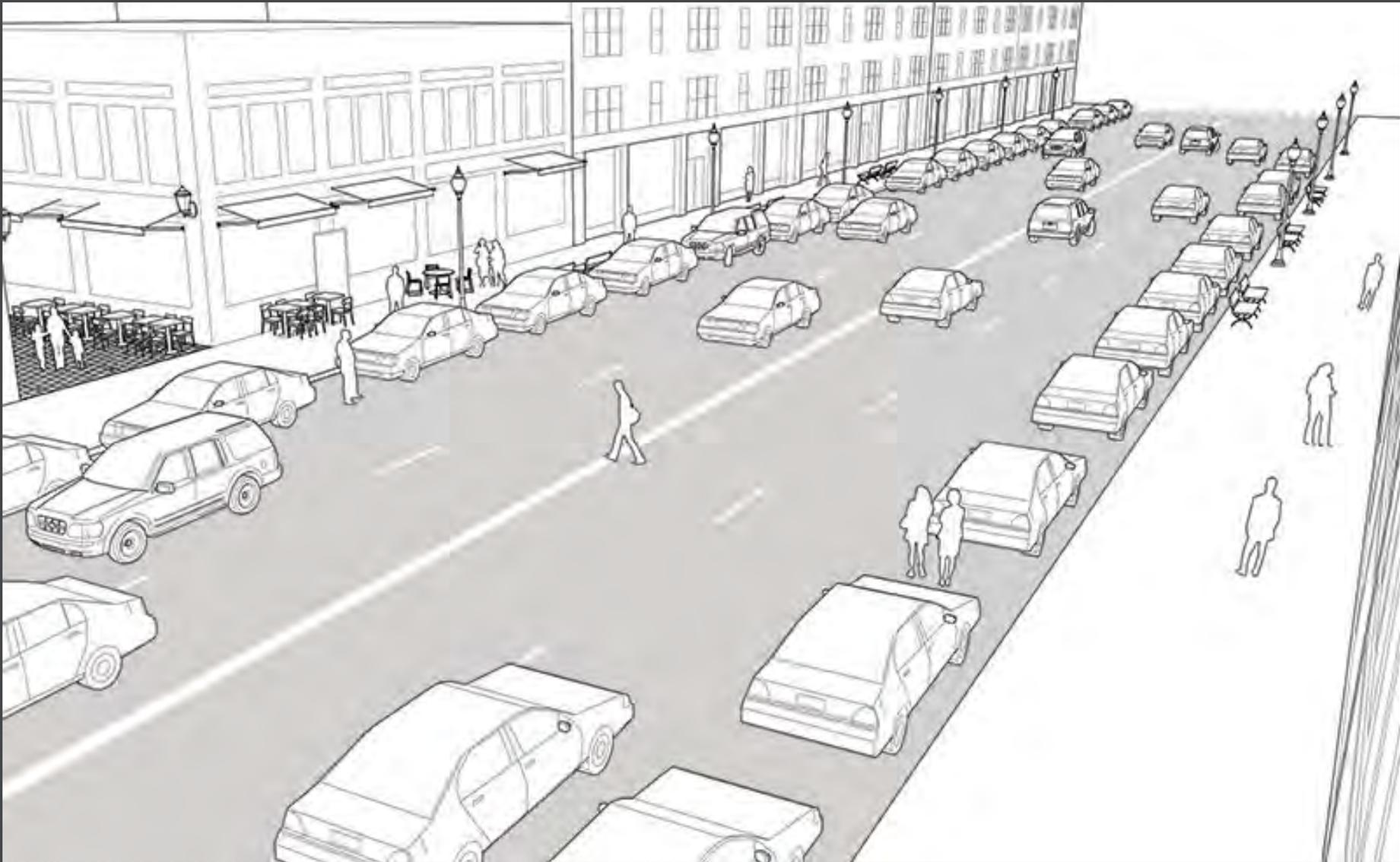


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# Mid-Block Crossing



# Mid-Block Crossing



# Relative Danger Index of Facilities

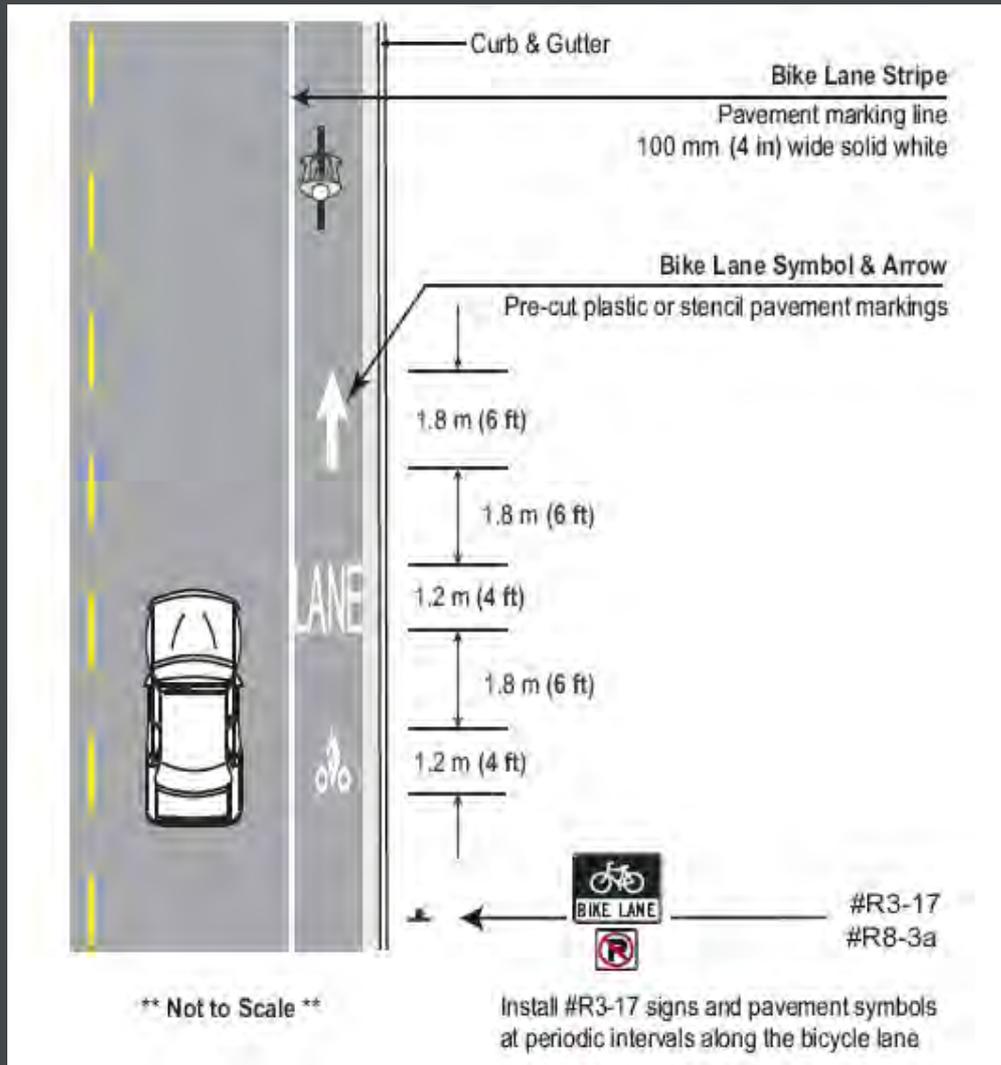
## Bicycle crashes:

- On major streets without bike lanes 1.28
- On minor streets without bike lanes 1.04\*
- On streets with bike lanes 0.5
- On shared use paths 0.67
- On sidewalks 5.32

(\* = shared roadway)

1.00 = median

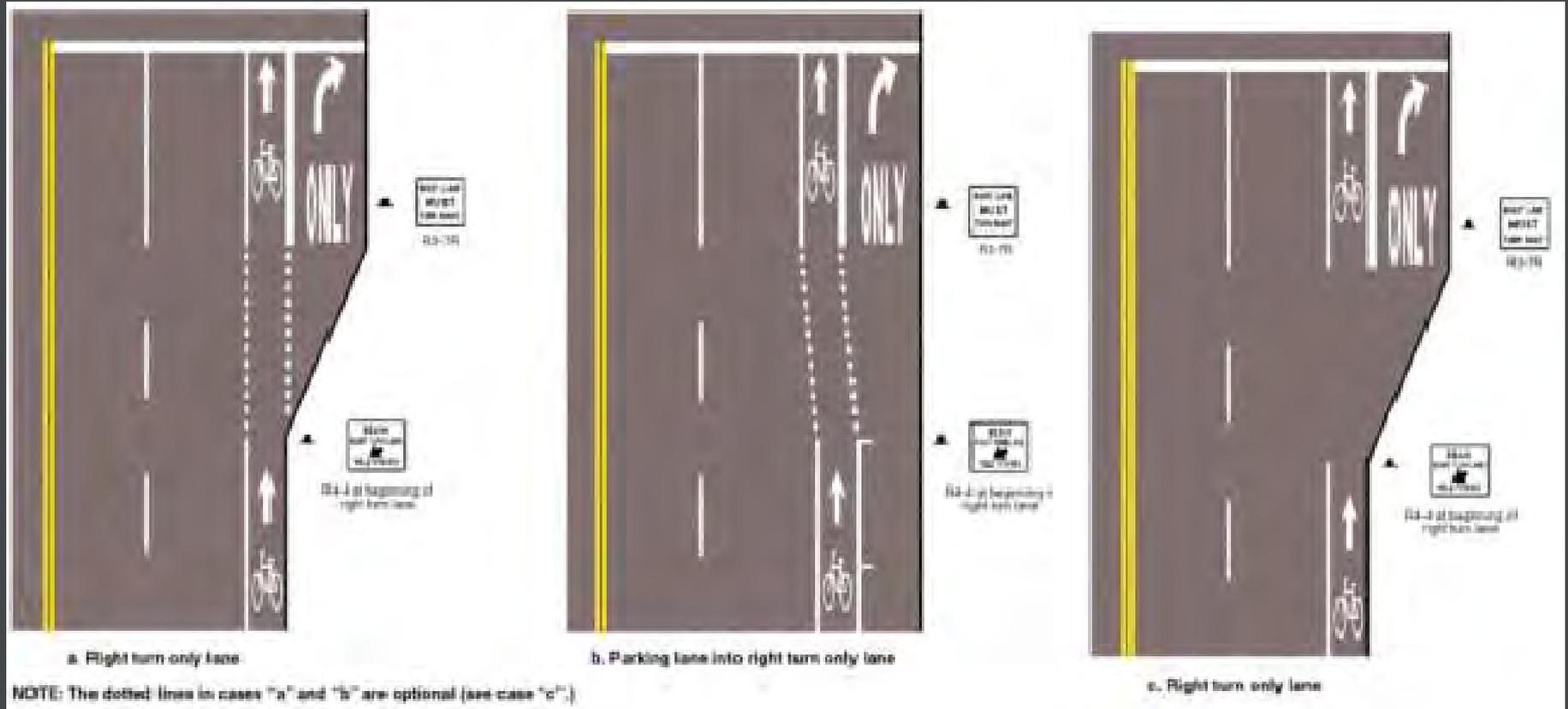
# Bike Lane Design Details



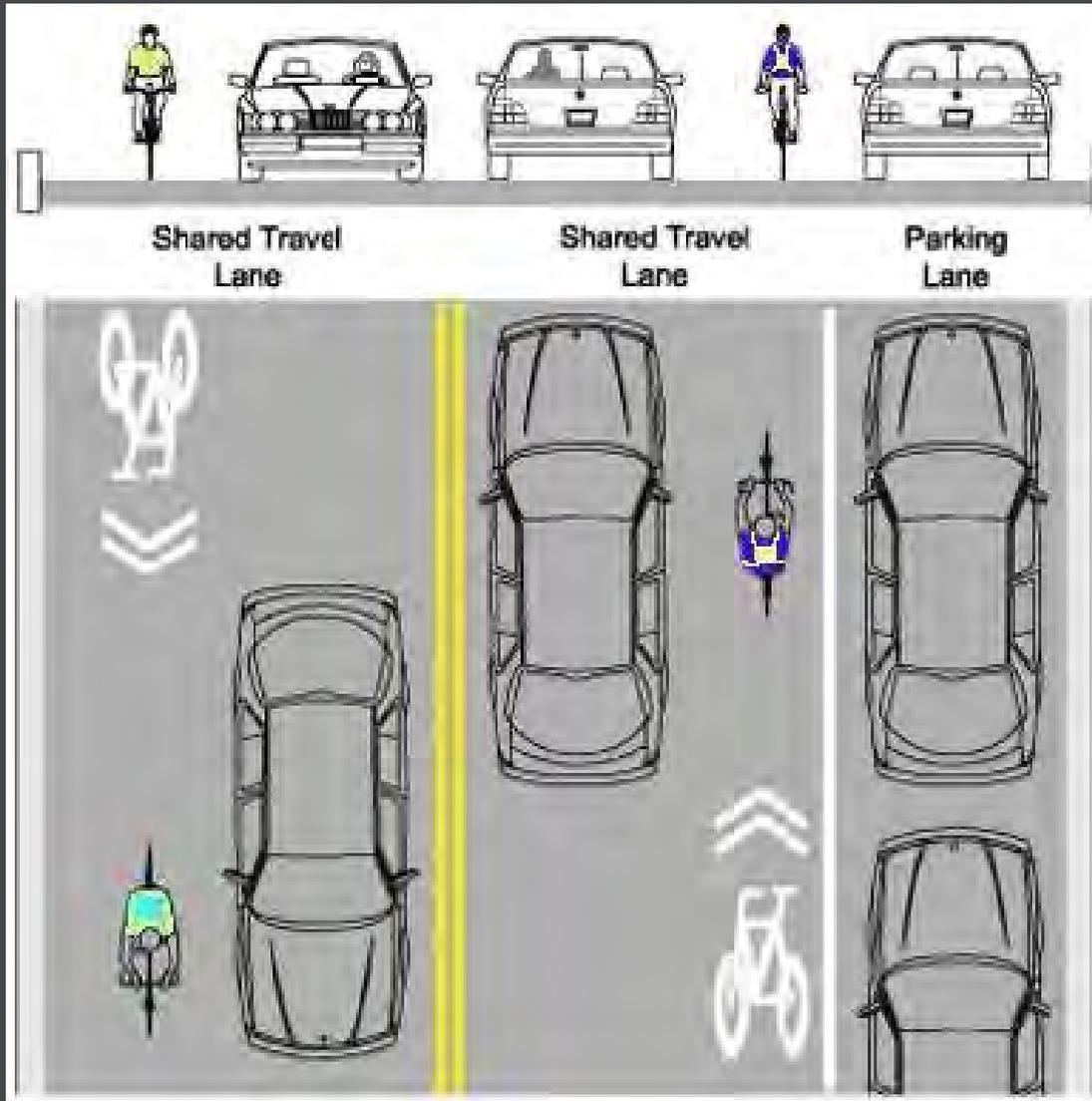
- Pavement Markings
  - Stripes
  - Lane Symbols & Arrows
- Signs
  - Regulatory
  - Guide
- Example: Road with Gutter Pan, No on-street parking



# Bike Lanes and Right Turn Only Lanes

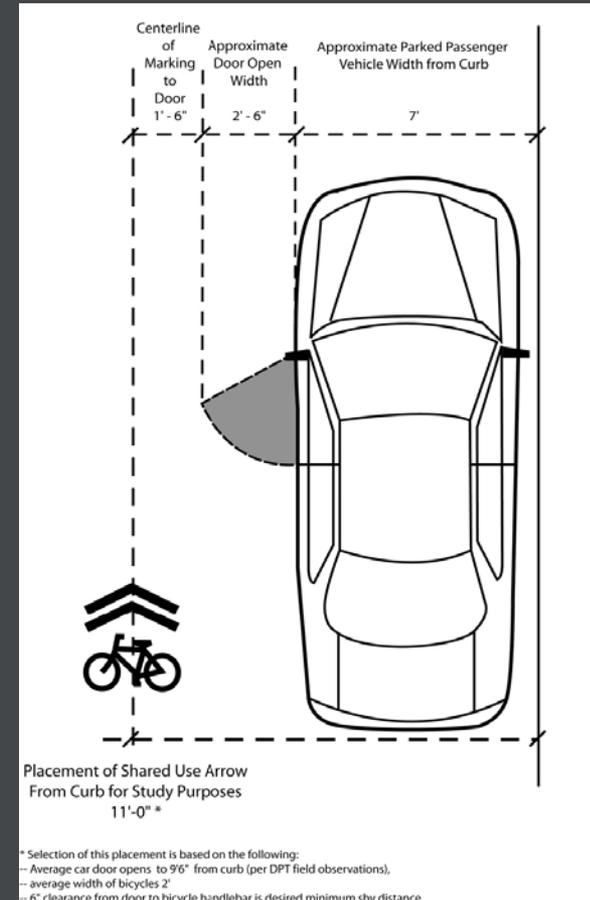


# Shared Lane Markings



# Shared Lane Markings

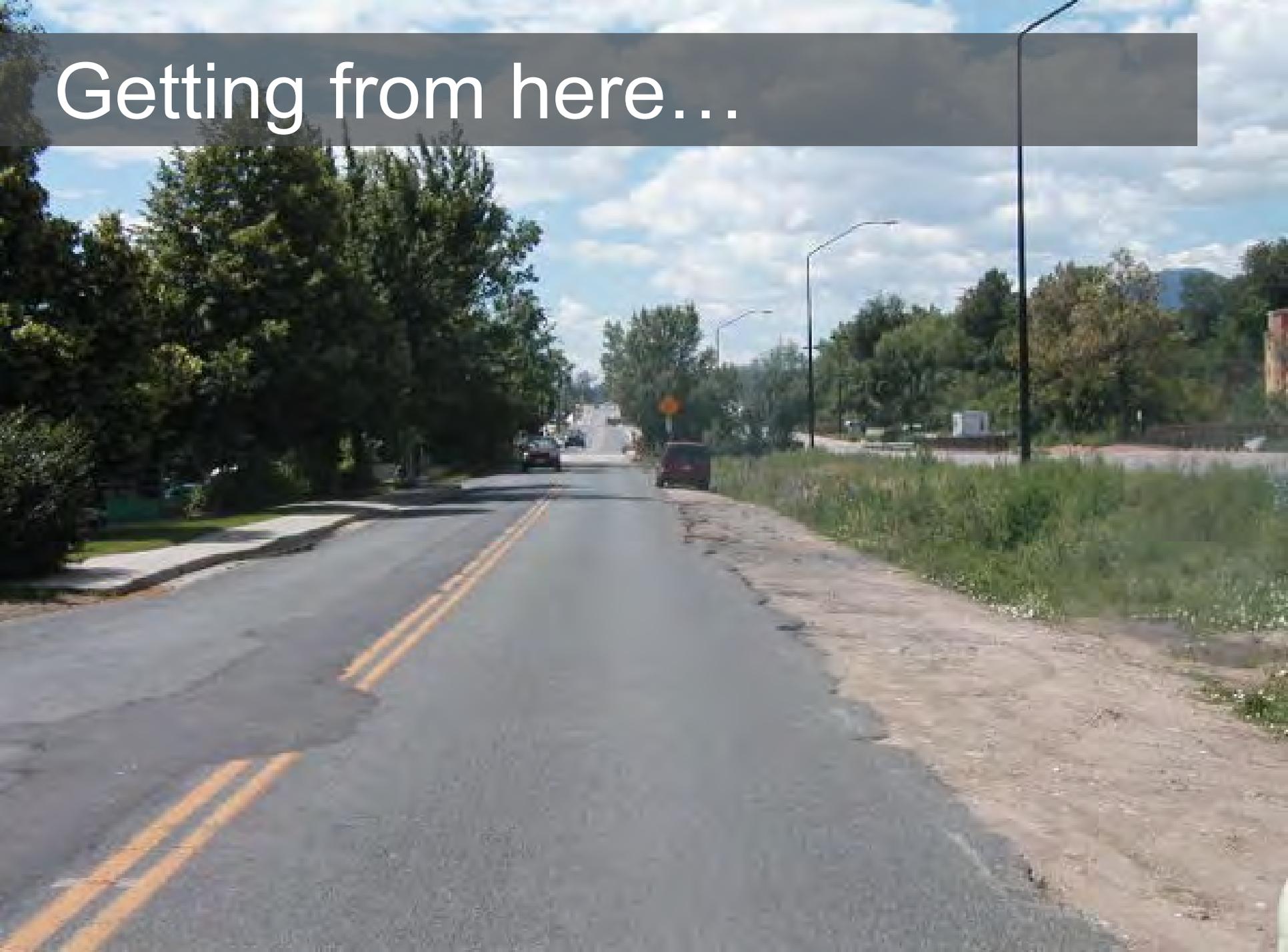
- “Sharrow”
  - Reinforces shared lane concept
  - Keeps bikes away from door zone



# Implementing Complete Streets



Getting from here...



...to there!



# Getting from here...



...to there!



# Getting from here...



# Getting from here...



Getting from here...



...to there!



Getting from here...



...to there!



# From policy to practice

Effective implementation means:

1. Organize implementation activities
2. Restructure processes, procedures, policies, plans, and programs
3. Rewrite or update design guidance
4. Offer educational opportunities to transportation staff, community leaders, and the general public
5. Create new performance measures

# 1. Organize implementation

Committee or person to “guide” activities,  
ensure accountability

External or internal; new or new  
responsibilities

# Implementation committees

Bring together different departments (buy-in)

Clear coordination and accountability

Need appropriate level of staff

- High-level: authority, demonstrate commitment, but delegates work
- Mid-level: more familiar with projects and stakeholders, but doesn't have authority

Share work in identifying gaps and fixing them

Multi-disciplinary review of exceptions

# Implementation committees (cont)

## Internal stakeholders:

- Engineering/PW
- Transportation planners, land use planners
- Transit agency
- ADA compliance
- Parks, recreation, trails
- Economic development
- Public health



# Implementation committees (cont)

**Internal:** Easier to manage expectations, achieve goals

**External:** Builds stronger community and political will

- State/MPO/other staff
- Bike-walk advocates
- Disability advocates
- Older adult organization
- Realtors & developers
- YMCA/health promotion
- Enviro: Sierra Club
- Smart Growth groups
- Churches/faith-based
- Neighborhood orgs

# 1. Organize Implementation

Committee or person to “guide” activities,  
ensure accountability

External or internal; new or new  
responsibilities

## Benchmarking audit

Checklists, design trees, procedures, plans,  
processes, code/ordinances, design  
guidance, performance measures



# 1. Organize Implementation

Committee or person to “guide” activities, ensure accountability

External or internal; new or new responsibilities

Benchmarking audit

Checklists, design trees, procedures, plans, processes, code/ordinances, design guidance, performance measures currently used

## Develop a plan



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# Implementation plans

## Best practices:

- List of documents, policies, procedures needing update
- Timeline for action
- Assign responsibilities to people/positions/departments

Clear path forward

Measure internal changes as well as built projects

Communication tool

# 2. Process & procedure change

Update documents to comply with CS manuals, RFPs, plans, regulations, codes, project scope

# 2. Process & procedure change

Update documents to comply with CS manuals, RFPs, plans, regulations, codes, project scope

Modify process, procedures, and documents

# Change project procedures

- Planning
  - Programming
  - Scoping
  - Design
  - Construction
  - Maintenance\*
  - Operations\*
- Capital projects
    - New, retrofit, reconstruction
  - Repair, resurfacing, restoration, rehabilitation
  - Bridges



# Modify procedural documents

- Checklists
  - Street manuals, signals, streetscaping, ADA, development reviews, etc.
- Decision trees
- Design vehicle
- Standard operating procedures
- Project development forms



## 2. Process & procedure change

Update documents to comply with CS manuals, RFPs, plans, regulations, codes, project scope

Modify process, procedures, and documents

Prioritize projects that achieve CS goals



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# Complete Streets prioritization

- Use same budget, but *better*
- Clear and transparent decisions
  - Stakeholder input on criteria
- Align with larger community goals, not just “mobility”
- Award points multimodal projects, projects that fill gaps in walking, biking networks
- Prioritize for submission to TIP
- Review projects already in list to ensure they match current needs

# 2. Process & procedure change

Update documents to comply with CS manuals, RFPs, plans, regulations, codes, project scope

Modify process, procedures, and documents

Prioritize projects that achieve CS goals

Clarify exceptions process, accountability

Implementation committee can help!



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# 2. Process & procedure change

Update documents to comply with CS

manuals, RFPs, plans, regulations, codes, project scope

Modify process, procedures, and documents

Prioritize projects that achieve CS goals

Clarify exceptions process, accountability

Adopt or update relevant/supporting plans and policies

# 2. Process & procedure change

Update documents to comply with CS

manuals, RFPs, plans, regulations, codes, project scope

Modify process, procedures, and documents

Prioritize projects that achieve CS goals

Clarify exceptions process, accountability

Adopt or update relevant/supporting plans and policies

Take advantage of maintenance and operations opportunities



# Opportunity: repaving

A photograph of a long, straight asphalt road with double yellow lines, flanked by trees and a clear sky. The road is viewed from a low angle, looking down its length. The sky is blue with some light clouds. The trees are green and line both sides of the road. The road surface is dark asphalt with clear yellow and white markings.

## Colorado Springs:

- Bike lanes added after resurfacing projects
- 2-3% of network per year

# Opportunity: utilities work

Sidewalk added after fiber optic cable laid or with drainage upgrade



# 3. Update design guidance

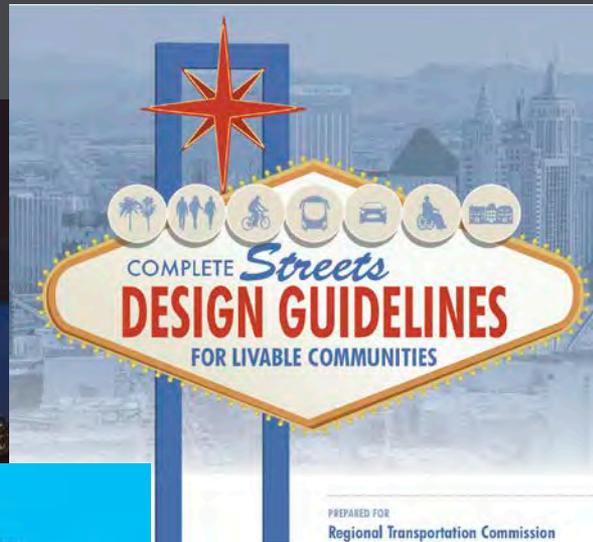
Create new document or revise existing

- Custom
- Time- and resources-intensive
- Buy-in from staff



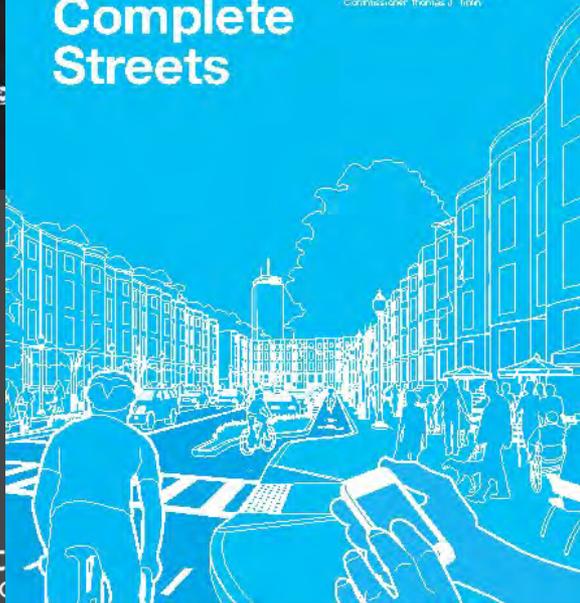
# Agency-specific examples

PHILADELPHIA  
COMPLETE STREETS DESIGN HANDBOOK



Boston  
Complete  
Streets

City of Boston  
Mayor Thomas W. Menino  
Boston Transportation Department  
Commissioner Thomas J. Telfer



Complete Streets Chicago  
Department of Transportation



Design Guidelines



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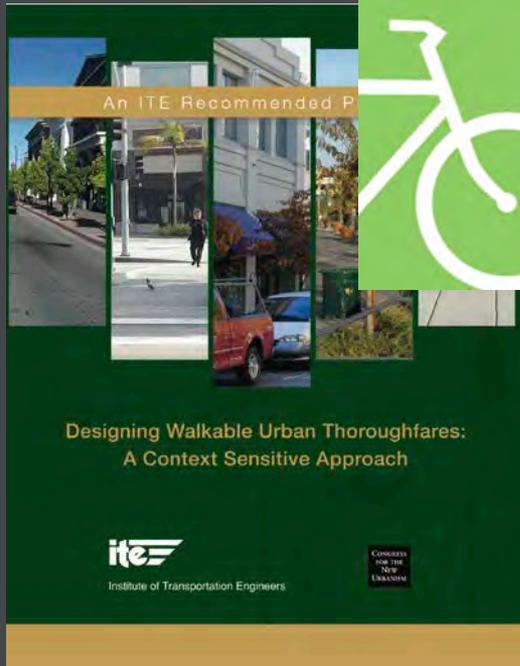
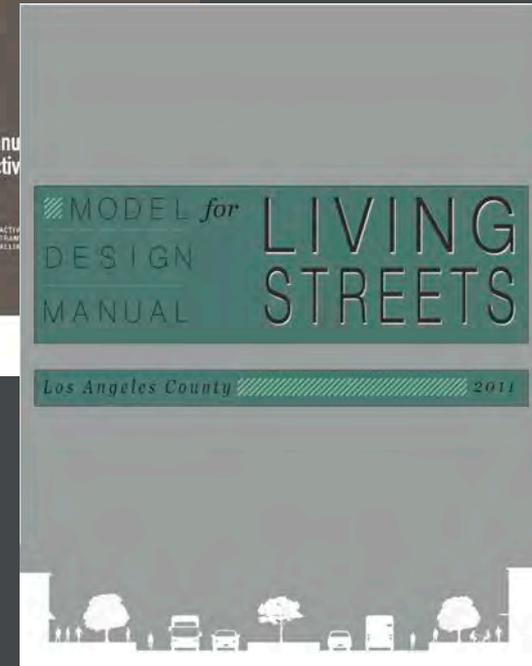
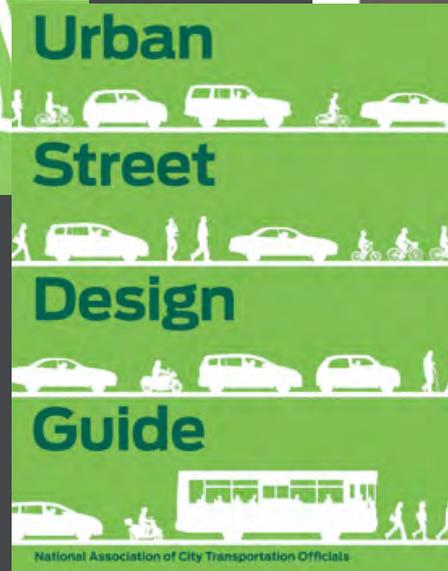
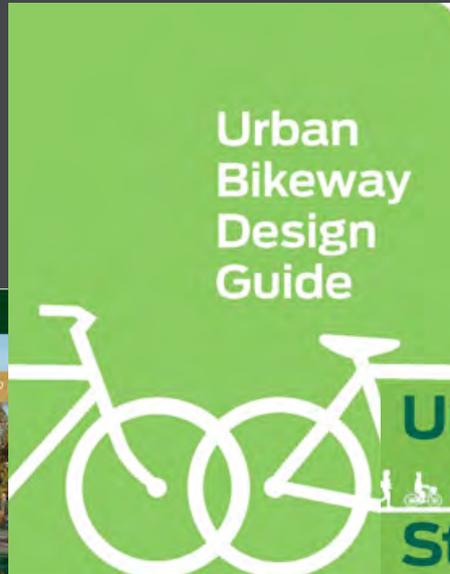
# 3. Update design guidance

Create new document or revise existing

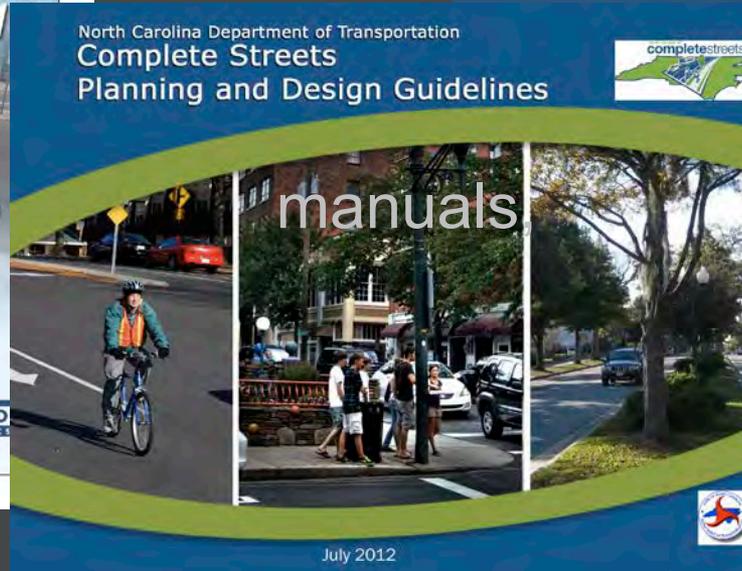
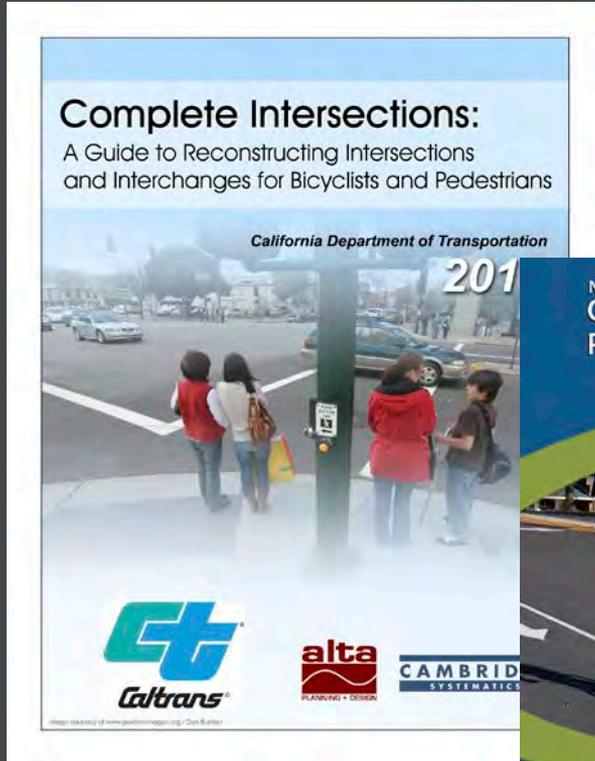
Reference latest and best national/state guides

- Less work
- Great examples ready for adoption
- Move on to other activities sooner

# Adoptable/adaptable models



# Refer to state standards



If appropriate for local needs...

# 3. Update design guidance

Create new document or revise existing

Reference latest and best national/state guides

Public and private development

Update related land use and development codes, parking policies, zoning, station design plans



# 3. Update design guidance

Create new document or revise existing

Reference latest and best national/state guides

Public and private development

Set new standard templates



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# 3. Update design guidance

Create new document or revise existing

Reference latest and best national/state guides

Public and private development

Set new standard templates

Pilot new designs



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# Pilot designs

Boulder's "Living Laboratory" to test ideas and collect data:

Back-in angled parking

Protected bike lanes

Bike box



# Interim strategies: moving the curb

Traffic calming

Narrow drainage  
channel



# Traffic calming, via bike corral

“Daylight” an intersection when placed at corner

Can benefit local businesses

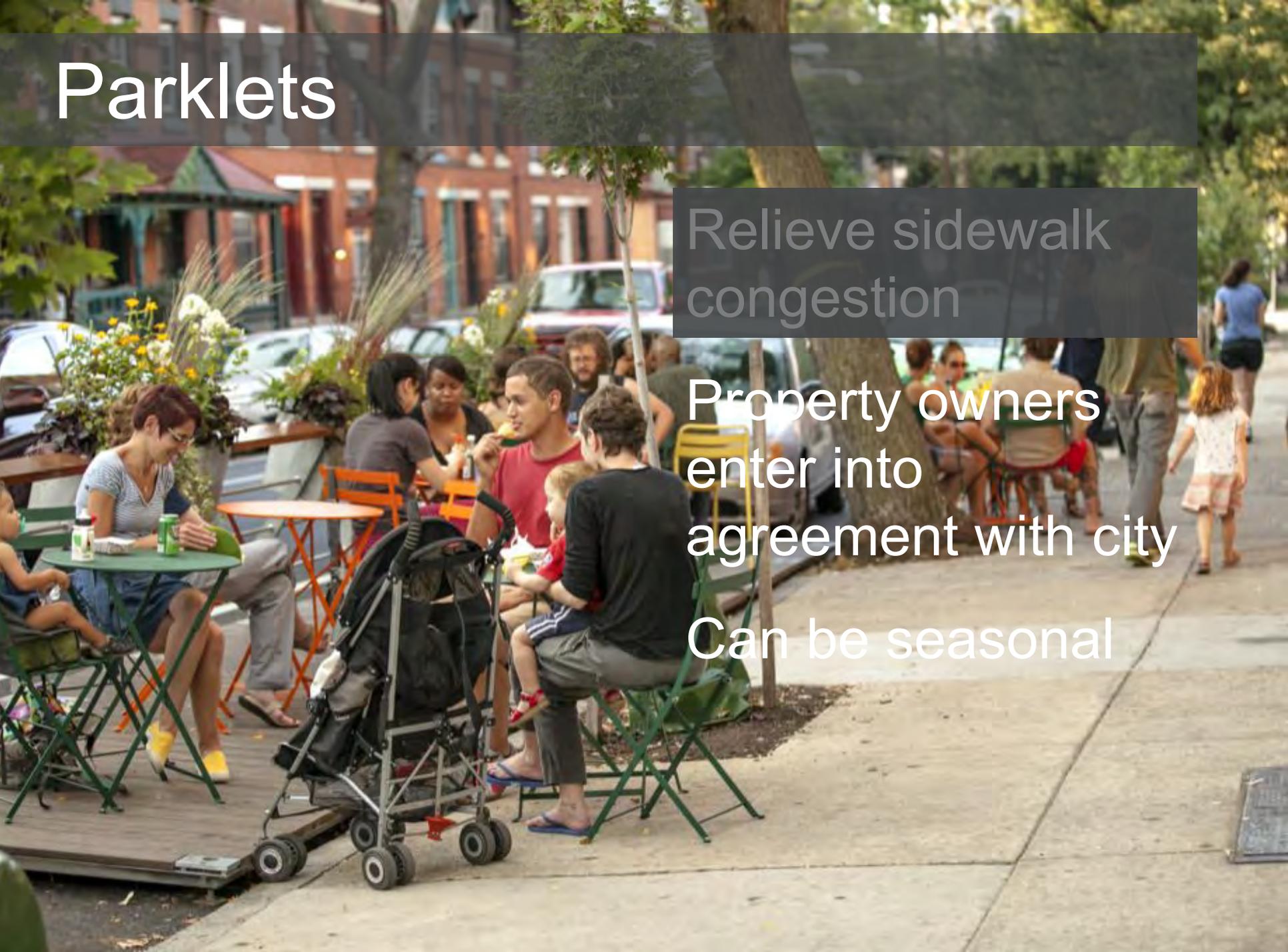


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Na  
St

# Parklets



Relieve sidewalk congestion

Property owners enter into agreement with city

Can be seasonal

# 3. Update design guidance

Create new document or revise existing

Reference latest and best national/state guides

Public and private development

Set new standard templates

Pilot new designs

Integrate new techniques into practice



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# 4. Offer training

## Identify different training needs

- Department heads, managers, program staff
- Planning/design staff
- Construction/field operations staff
- Cooperating agencies (health, transit, etc.)



# 5. Performance measures

## Adopt or revise transportation performance measures

- Establish base data collection
- Easily countable data better than none!
- Project/corridor specific AND community wide
- Compare over years

# Track projects

- Miles or # of facilities
  - Sidewalk blocks, ADA-accessible ramps, bike lanes, street trees...
- # of intersections improved
  - Signal timing, medians, count-down timers, APS, bulb outs...
- %age of sidewalk gaps eliminated
- %age of modal plans completed
- %age of children walking/biking to school
- # of exceptions granted
- ???



# Track on corridor or community

- Deaths and injuries by mode
- Crashes by mode and type
- Minimal walking delay at crossings
- Travel time for all modes
- Mode shift
- On-road transit performance
  - Buses running on time, average speed
- Stress or comfort indicators for bike, walk
- Corridor impact analysis
- Automobile Trips Generated (ATG)
- VMT or SOV trip reduction
- Level of Service that includes all modes



# 5. Performance measures

Adopt or revise transportation performance measures

Easily countable, compare over years

Track Complete Streets projects

Collaborate on achieving community-wide goals

Departments of Public Health, Environment; transit agencies; first responders

# Collaborate with other agencies

- Air quality improvements
- Health
  - Chronic disease, physical activity
- Housing + Transportation affordability
- Access to opportunity
- Emergency response time
- Transit operating costs and farebox recovery ratio
- Economic impact
  - Revenue, jobs, increased value
- Community quality of life survey

# 5. Performance measures

Adopt or revise transportation performance measures

Easily countable, compare over years

Track Complete Streets projects

Collaborate on achieving community-wide goals

Air quality, public health, economics

Communicate internal and external activities on regular basis

Public reports, annual

# Successful implementation

1. Have a champion
2. Ensure organization supports the plan
3. Focus on less – do it well
4. Align work and communicate across all stakeholders
5. Monitor progress often
6. Update plan/policy for strength, agility, and relevance

# Summary: implementation steps

1. Organize implementation activities
2. Restructure procedures, policies, and programs
3. Rewrite or update design guidance
4. Offer training opportunities to transportation staff, community leaders, and the general public
5. Create new performance measures

# Main Street – Kennebunk



# Main Street – Kennebunk

## Kennebunk Downtown Village Enhancement Project

## Enhancement Plan

View of Existing Conditions Along Main Street Looking South from Curtis Court



Prepared for the Town of Kennebunk, Maine

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Prepared by E. G. & G., Inc.

# Main Street – Kennebunk

## **Kennebunk Downtown Village Enhancement Project**

## **Enhancement Plan**

View of Enhancements Along Main Street Looking South from Curtis Court



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# Main Street – Kennebunk

Project: Kennebunk Downtown Enhancement Phase #1 Location: Downtown Plaza



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# Main Street – Kennebunk

Project: Downtown Kennebunk Enhancement Phase#1 Location: Main Street near  
banks looking north



# Main Street – Kennebunk

Kennebunk Downtown Enhancement Phase 1-2010

[VISITING NURSES ON LEFT looking up Main Street]



# Main Street – Kennebunk

Project: Downtown Kennebunk Enhancement Project #1 Location: Main Street and Nasons Court looking north



# Main Street – Kennebunk

Kennebunk Phase #2 - York/Rte 1 Street headed south



# Main Street – Kennebunk

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## Kennebunk Downtown Village Enhancement Project

Enhancement Plan

View of Enhancements Along Main Street Looking South from Curtis Court

Original Concept - Plans have been modified



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# Thank you!



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# QUESTIONS?

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