Practical Implementation Strategies

Local Planning & Design for Active Transportation

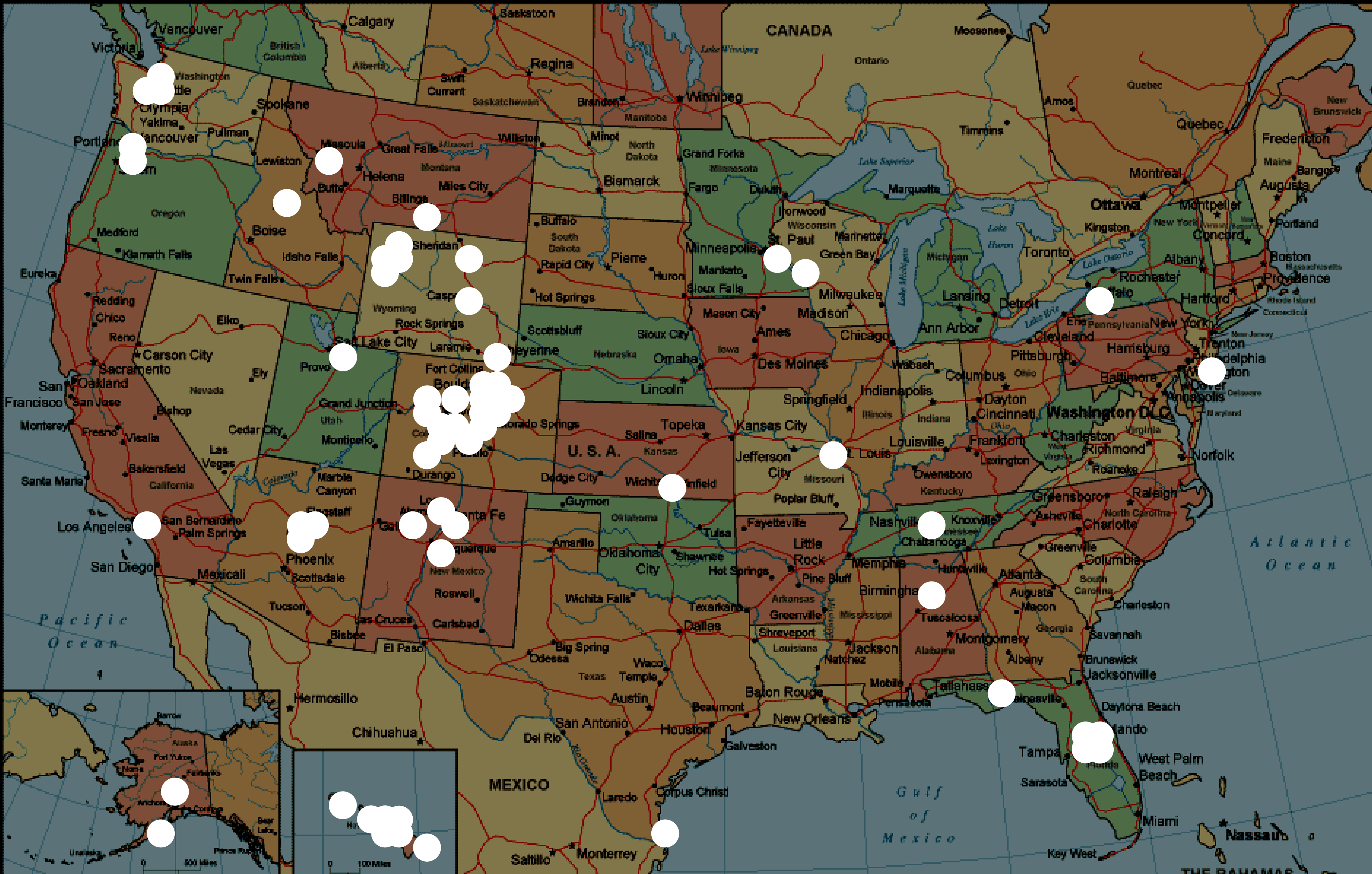
Outline

- Introduction
- Local Planning
  - ✓ Pedestrian Environments
  - ✓ Bicycling & Non-Motorized Systems
- Implementation Examples

Introduction

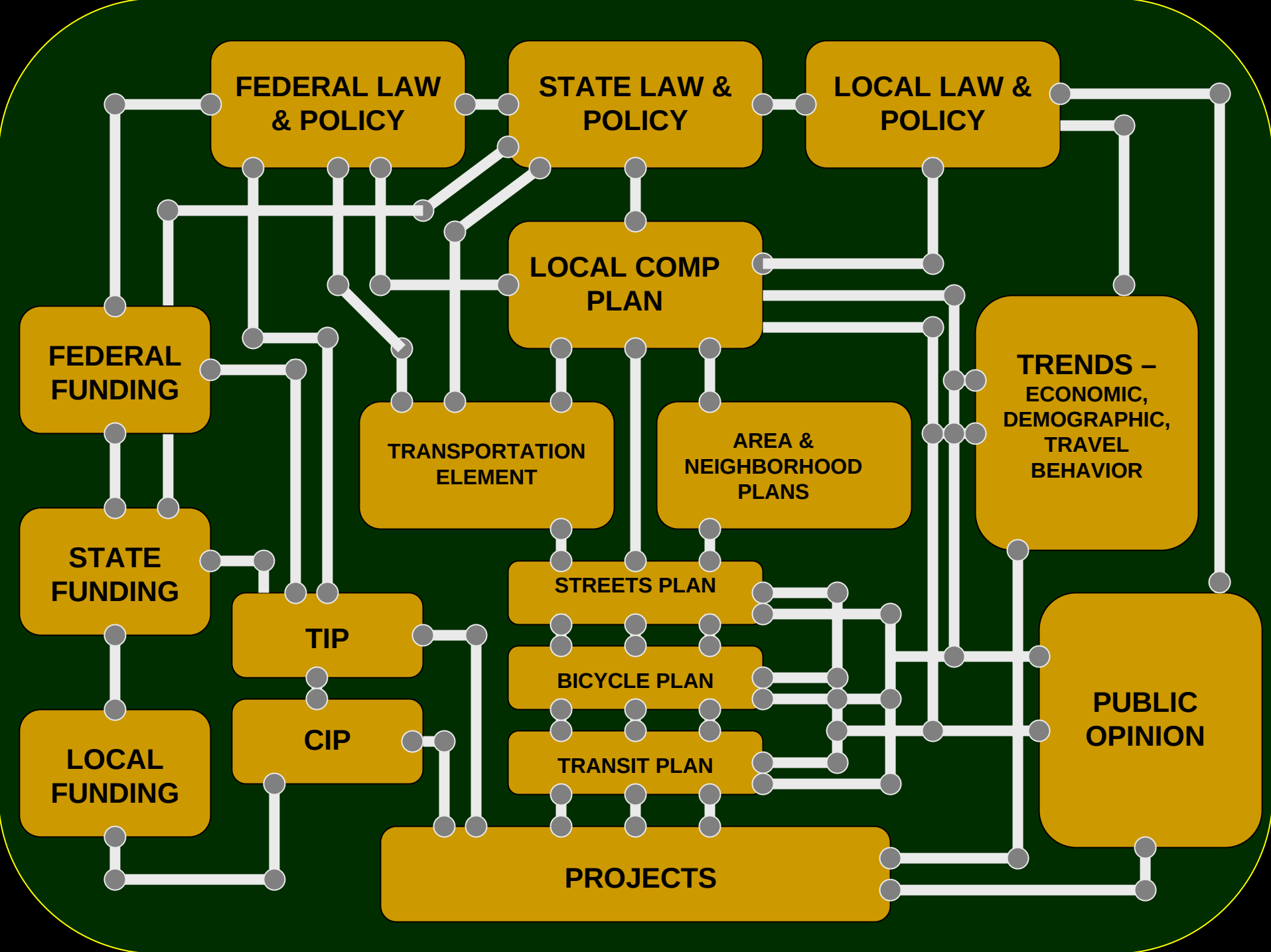
Practical Implementation Strategies

Our Work


CANADA
Vancouver
Victoria
Calgary
Saskatoon
Regina
Winnipeg
Moosonee
Ontario
Quebec
Ottawa
Montreal
Toronto
Fredericton
Spokane
Portland
Missoula
Helena
Butte
Billings
Great Falls
Boise
Idaho Falls
Twin Falls
Medford
Klamath Falls
Eureka
Redding
Chico
Reno
Carson City
Sacramento
Oakland
San Francisco
San Jose
Monterey
Fresno
Visalia
Bakersfield
Santa Maria
Los Angeles
San Bernardino
Palm Springs
San Diego
Mexicali
Elko
Ely
Las Vegas
Salt Lake City
Provo
Grand Junction
Cedar City
Monticello
Flagstaff
Phoenix
Scottsdale
Tucson
Bisbee
Sheridan
Rock Springs
Laramie
Fort Collins
Colorado Springs
Pueblo
Durango
Santa Fe
New Mexico
Roswell
Las Cruces
Carlsbad
El Paso
Bismarck
Fargo
Grand Forks
Minot
Williston
Pierre
Rapid City
Hot Springs
Huron
Sioux Falls
Scottsbluff
Sioux City
Omaha
Lincoln
Topeka
Salina
Wichita
Dodge City
U. S. A.
Guymon
Amarillo
Oklahoma City
Tulsa
Wichita Falls
Dallas
Texarkana
Big Spring
Odessa
Waco
Temple
Austin
San Antonio
Houston
Galveston
Beaumont
Del Rio
Laredo
Corpus Christi
MEXICO
Hermosillo
Chihuahua
Saltillo
Monterrey
Minneapolis
St. Paul
Mankato
Duluth
Mason City
Ames
Des Moines
Madison
Milwaukee
Green Bay
Chicago
Springfield
Kansas City
Jefferson City
St. Louis
Poplar Bluff
Fayetteville
Little Rock
Memphis
Nashville
Knoxville
Chattanooga
Huntsville
Birmingham
Tuscaloosa
Montgomery
Atlanta
Jackson
Shreveport
Baton Rouge
New Orleans
Mobile
Pensacola
Tallahassee
Gainesville
Jacksonville
Daytona Beach
Orlando
Tampa
Sarasota
West Palm Beach
Miami
Key West
Nassau
THE BAHAMAS
Indianapolis
Louisville
Frankfort
Lexington
Owensboro
Cincinnati
Dayton
Columbus
Cleveland
Detroit
Lansing
Ann Arbor
Pittsburgh
Harrisburg
Baltimore
Washington D.C.
Richmond
Roanoke
Norfolk
Charleston
Greensboro
Raleigh
Charlotte
Asheville
Greenville
Columbia
Augusta
Macon
Savannah
Brunswick
Albany
Buffalo
Rochester
Albany
Boston
Providence
Hartford
New York
Trenton
Philadelphia
Dover
Annapolis
Montpelier
Concord
Portland
Augusta
Bangor
Atlantic Ocean
Pacific Ocean
Gulf of Mexico


Boulder

Institutional Setting


FEDERAL LAW & POLICY
STATE LAW & POLICY
LOCAL LAW & POLICY
LOCAL COMP PLAN
FEDERAL FUNDING
STATE FUNDING
LOCAL FUNDING
TRANSPORTATION ELEMENT
AREA & NEIGHBORHOOD PLANS
TRENDS – ECONOMIC, DEMOGRAPHIC, TRAVEL BEHAVIOR
STREETS PLAN
BICYCLE PLAN
TRANSIT PLAN
TIP
CIP
PUBLIC OPINION
PROJECTS

3 Popular Planning Myths

…and how to dispel them

We don't have time to do it right.

(But we will have time to do it over.)

Planning Myths

We need to finish this plan once and for all.

Planning Myths

Planning is iterative…

…it is never finished or complete.

Charlier Associates, Inc.

Never start planning or design until you know for sure you have the money to build the project.

Money comes to plans…

…much faster than plans come to money.

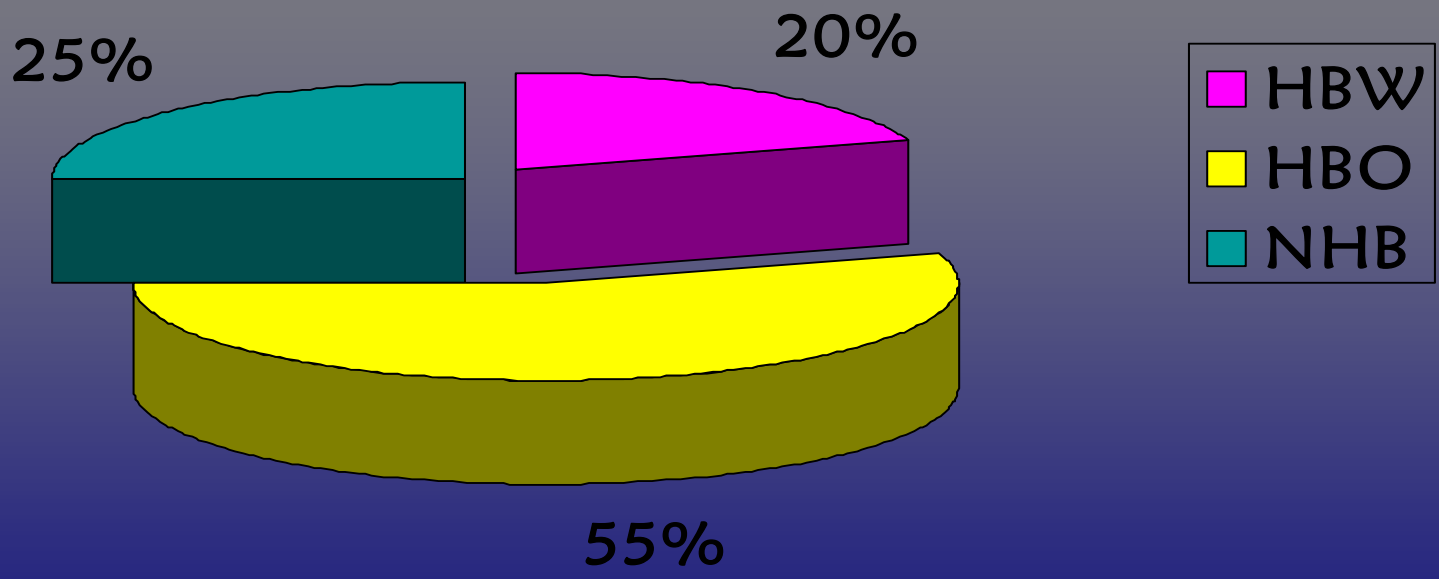
Local Planning

Practical Implementation Strategies

Terms and Concepts

- Trip purpose
- Travel mode

Typical Urban Trip Purpose Distribution

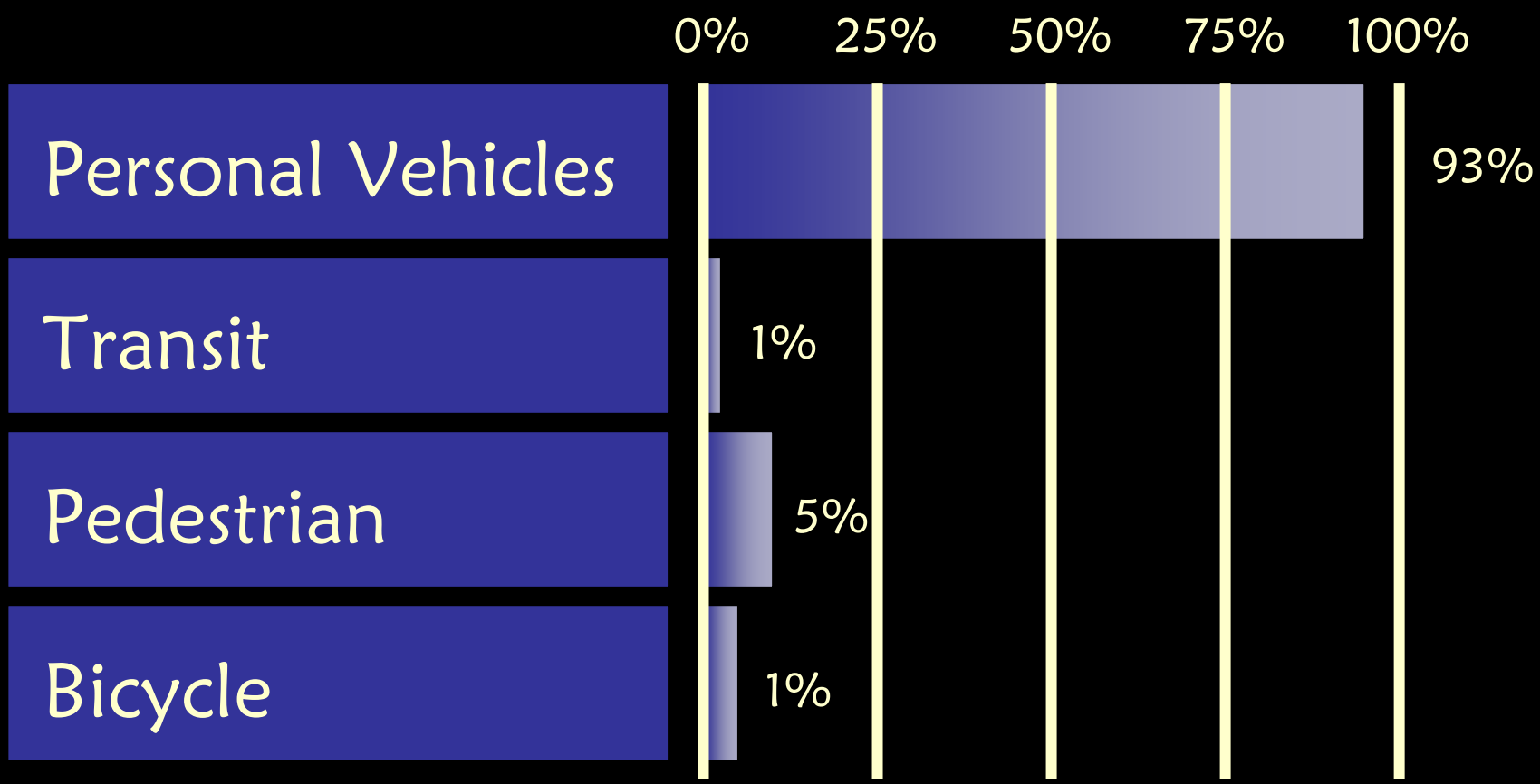


HBW = Home-Based Work (Commuting)

HBO = Home-Based Other (Shopping, Recreation, “Mommy 500”)

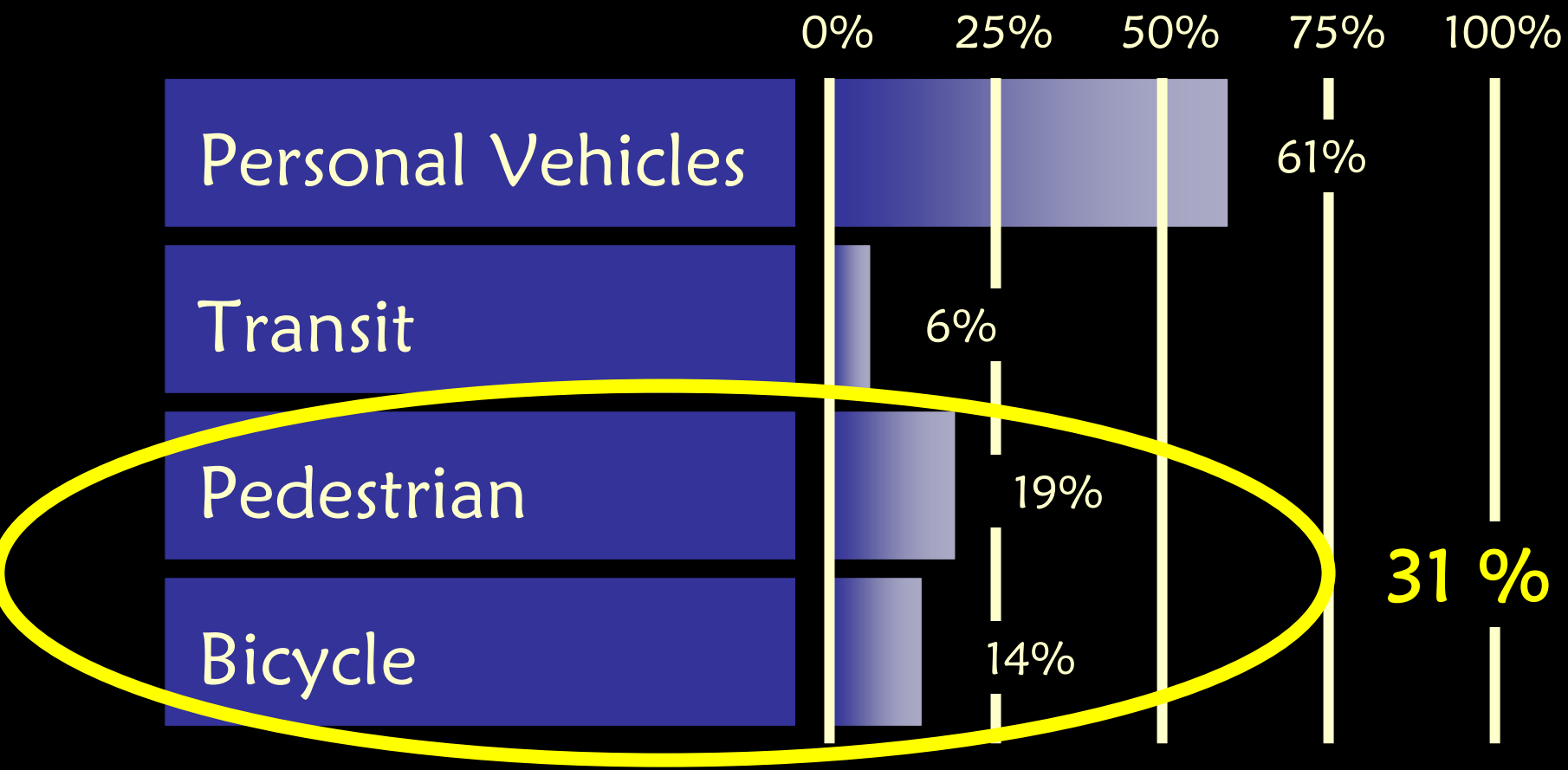
NHB = Mid-Day Trips, Deliveries, Work Trips, Other

Mode Share* – Typical Small City



* % of trips

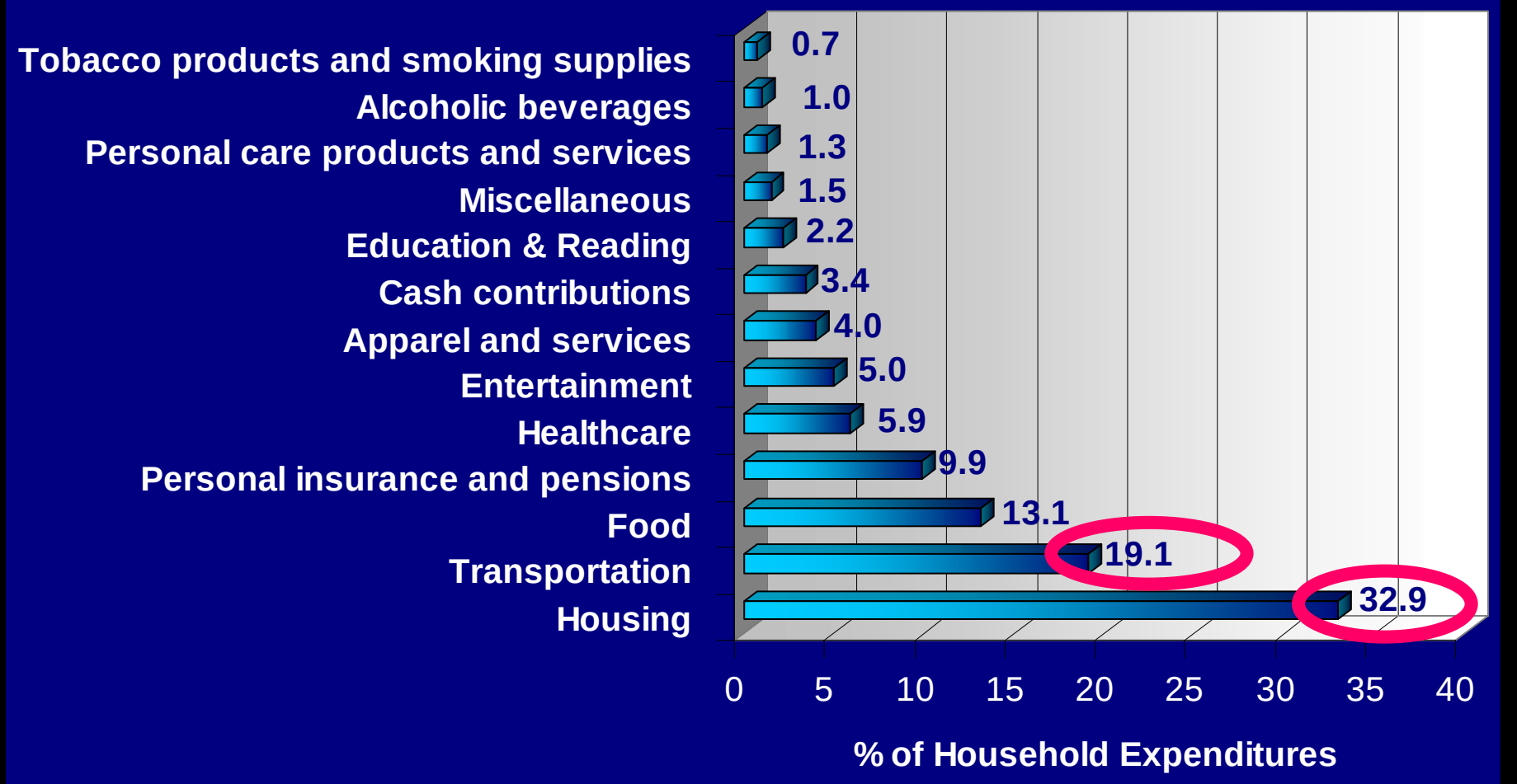
Mode Share* – Boulder



* % of trips


Foothills Parkway
Diagonal Highway

Household Expenditures



Three Car Family

	Mom	Dad	Daughter
Monday	SOV	SOV	SOV
Tuesday	SOV	SOV	SOV
Wednesday	SOV	SOV	SOV
Thursday	SOV	SOV	SOV
Friday	SOV	SOV	SOV
Saturday	--	SOV	--
Sunday	varies	varies	varies

Two Car Family

	Mom	Dad	Daughter
Monday	SOV	Transit	SOV
Tuesday	SOV	SOV	Bike
Wednesday	SOV	Transit	SOV
Thursday	SOV	SOV	Bike
Friday	Bike	Transit	SOV
Saturday	--	SOV	--
Sunday	varies	varies	varies


Next …

Local Planning

- Pedestrian Environments
- Bicycle & Non-Motorized Networks

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Local Planning

- Pedestrian Environments
- Bicycle & Non-Motorized Networks

Pedestrian Environments

Practical Implementation Strategies

Pedestrian Environments

- What are pedestrians?
- Types of pedestrians
- Types of pedestrian environments
- Setting clear priorities
- Distinguishing urban from suburban design
- Understanding the crossings challenge
- Safe routes to school

Types of Walking

Types of Walking

- Rambling
- Utilitarian Walking
- Strolling, Lingering
- Promenading
- Special Events

Rambling


Rambling
Redmond


Rambling
Prospect

Upcountry Maui

Rambling


Prospect
Rambling

Prospect

Rambling

Utilitarian Walking

Utilitarian Walking


Kailua
57 KAILUA SEA LIFE PARK
Utilitarian Walking


Upcountry Maui
Utilitarian Walking

Utilitarian Walking

Redmond

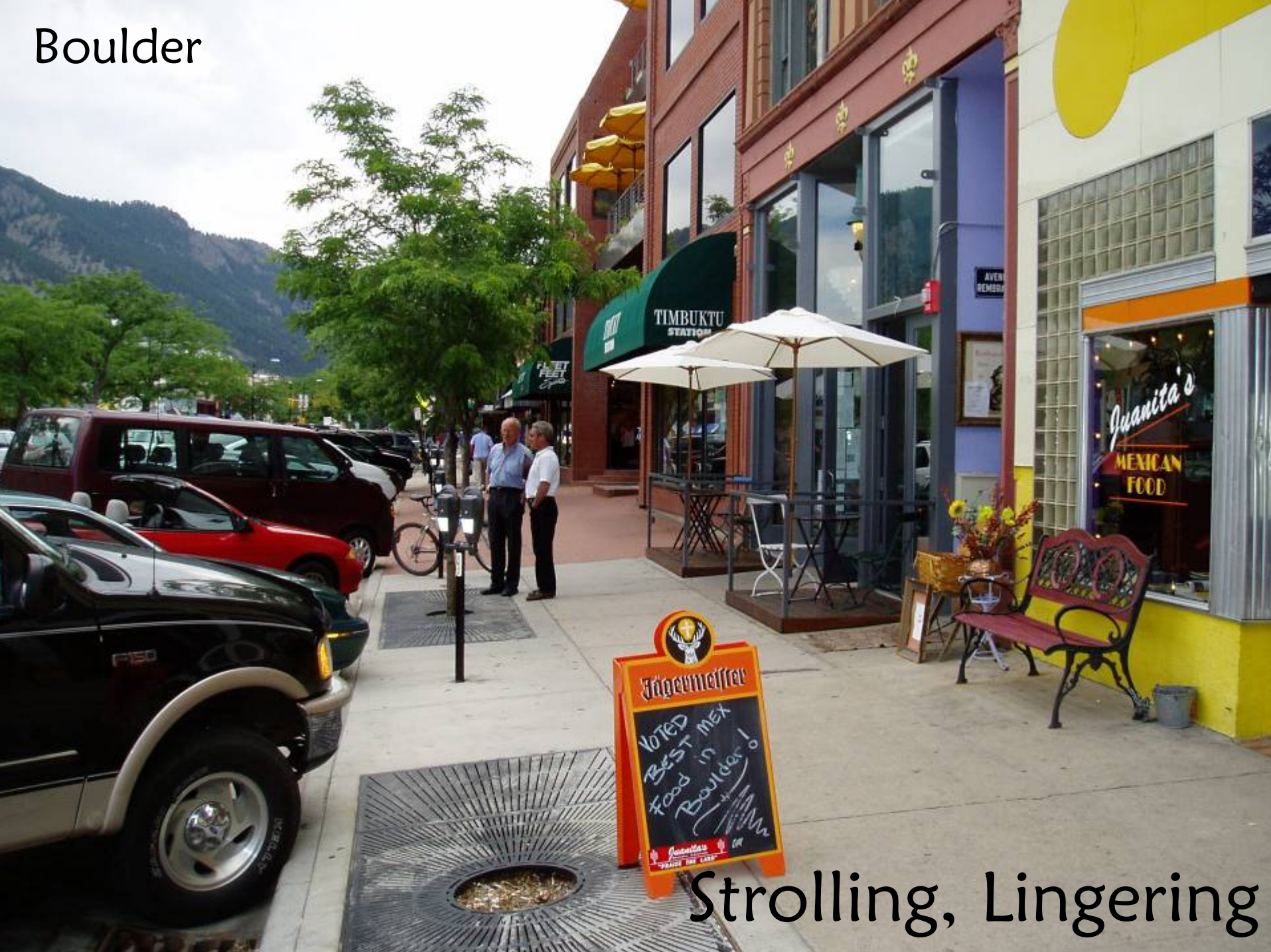
Strolling & Lingering


Boulder
Strolling, Lingering


Winter Park, FL
keybowl
MODA
Park Avenue
Ladies' Fine
Fashion
Apparel
Strolling, Lingering


Pukalani
R GALLON
ATER VENDING
REVERSE OSMOSIS
ES AVAILABLE IN HARDWARE STORE
E 878-VEND
PURIFIED WATER
35¢
Per Gallon
Reverse Osmosis
MONEY REMOVED NIGHTLY
Strolling, Lingering

Boulder



Strolling, Lingering

Promenade


Promenade
BOOKSTORE
Boulder

Special Events


Boulder
Special Events


Boulder
Special Events

The Pedestrian Environment

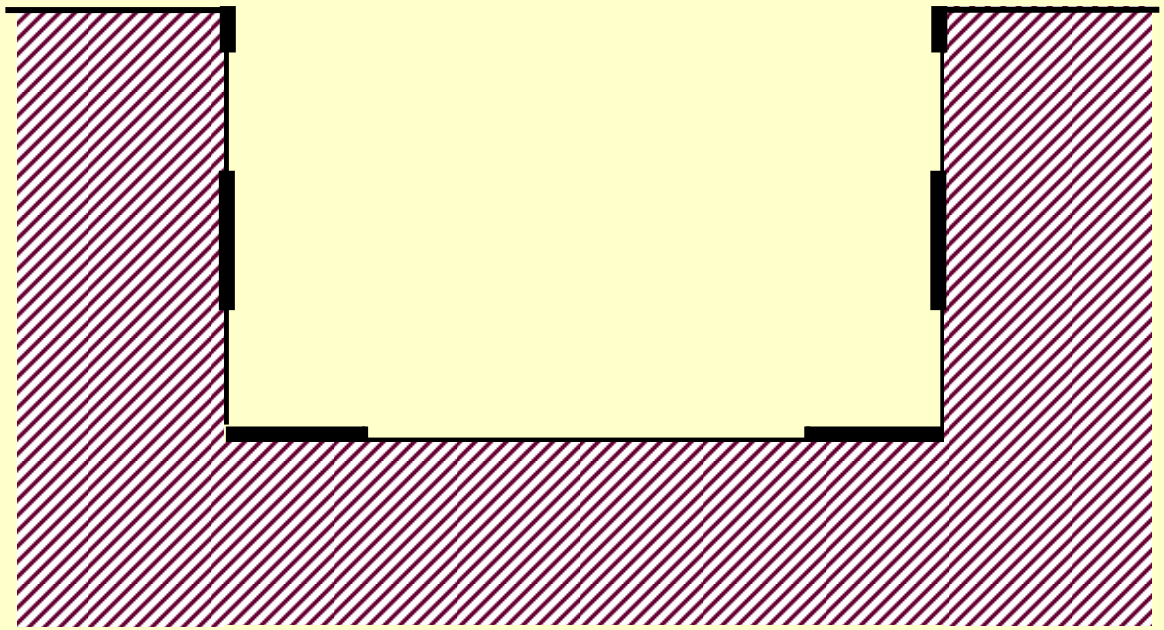
The Street Room


Shoes
Club 21
Club 21
AWEAR
MILK
NO PARKING
ASSOCIATES


$35
ME IN FOR A
E CONSULTATION!

Elements of the Street

1. Street Wall
2. Pedestrian Realm
3. Overhead Area
4. Vehicle Realm
5. Subsurface Area



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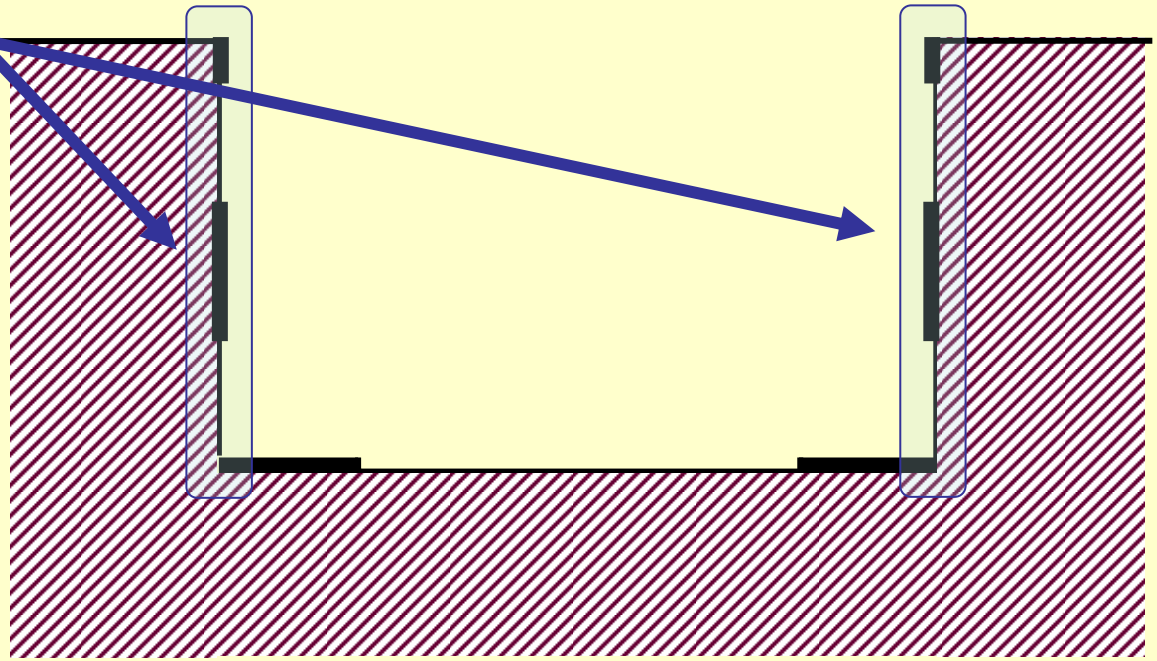

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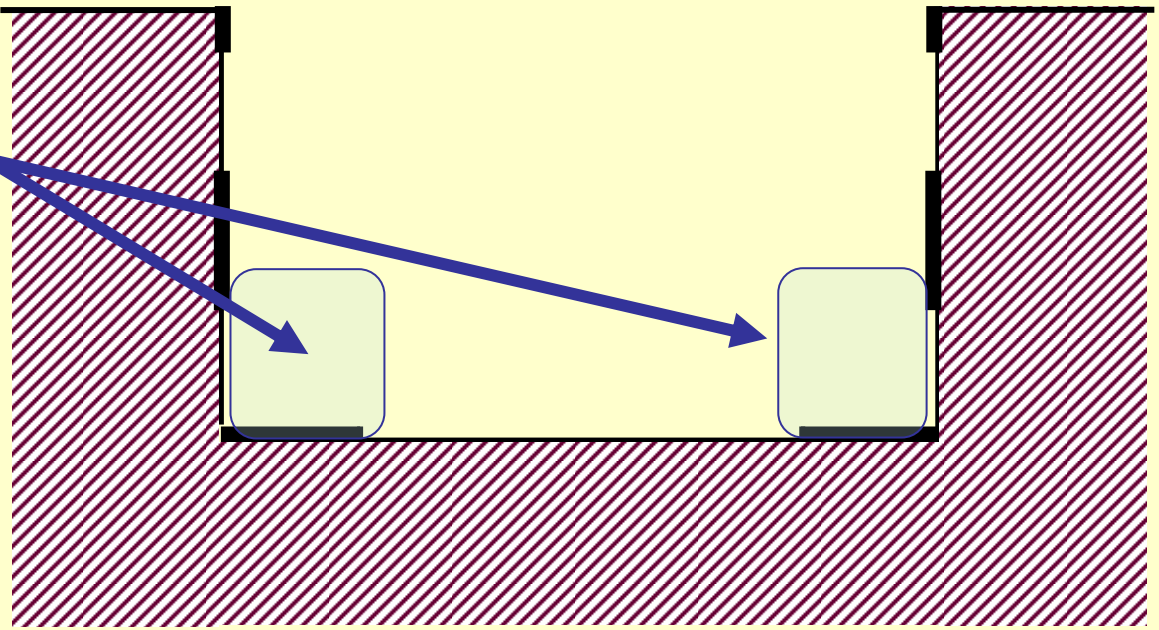

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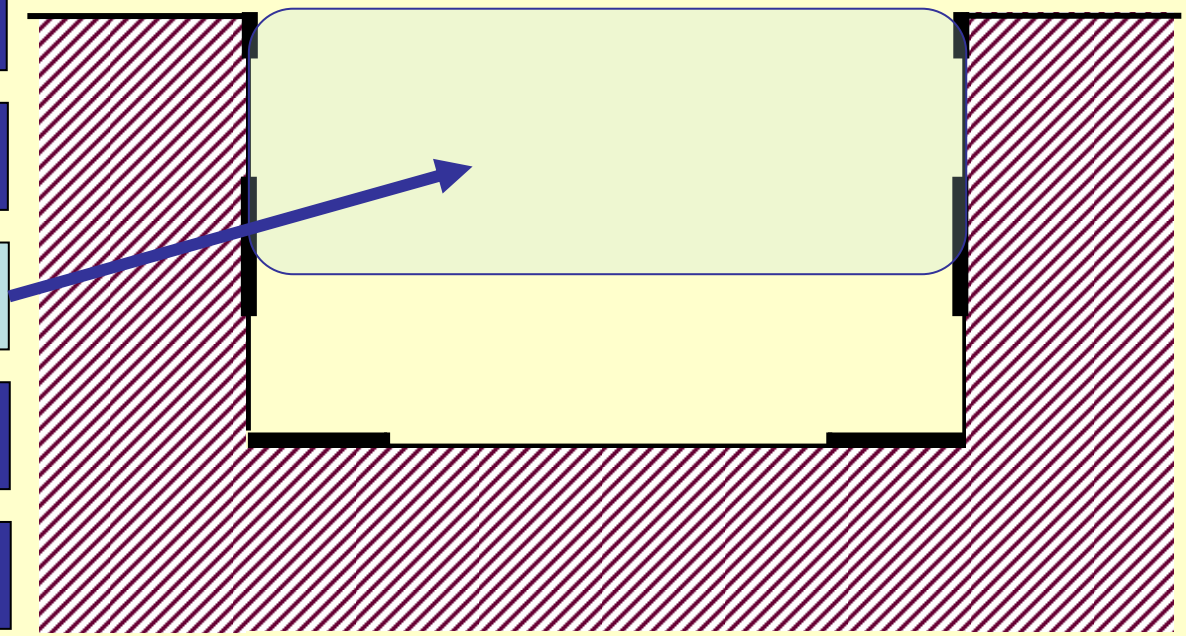

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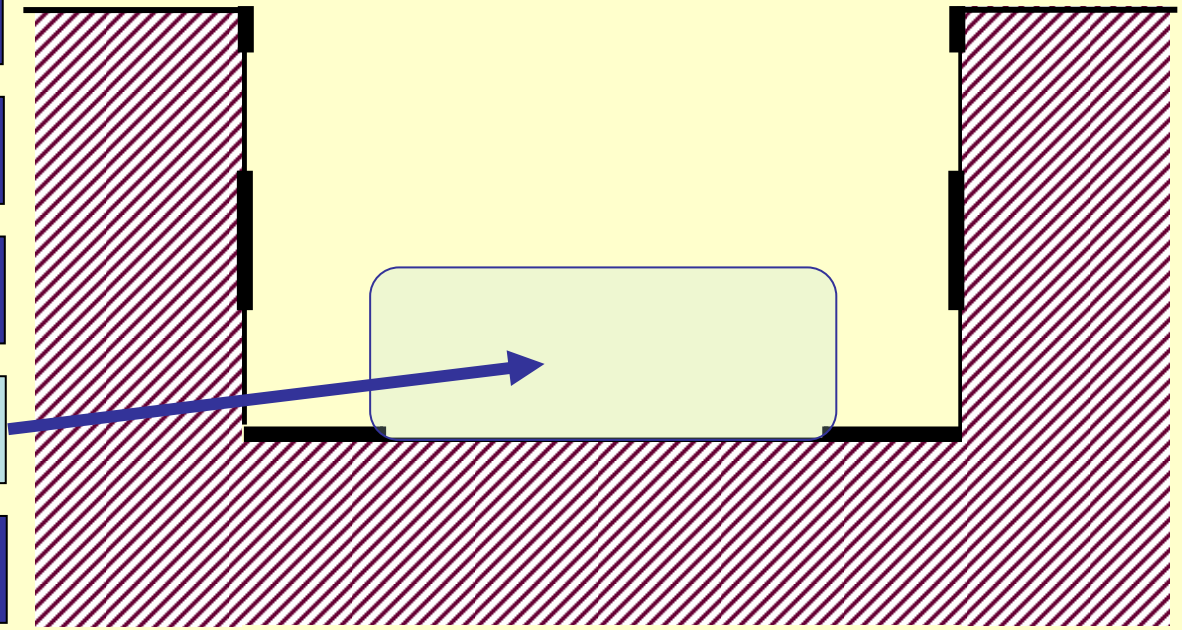

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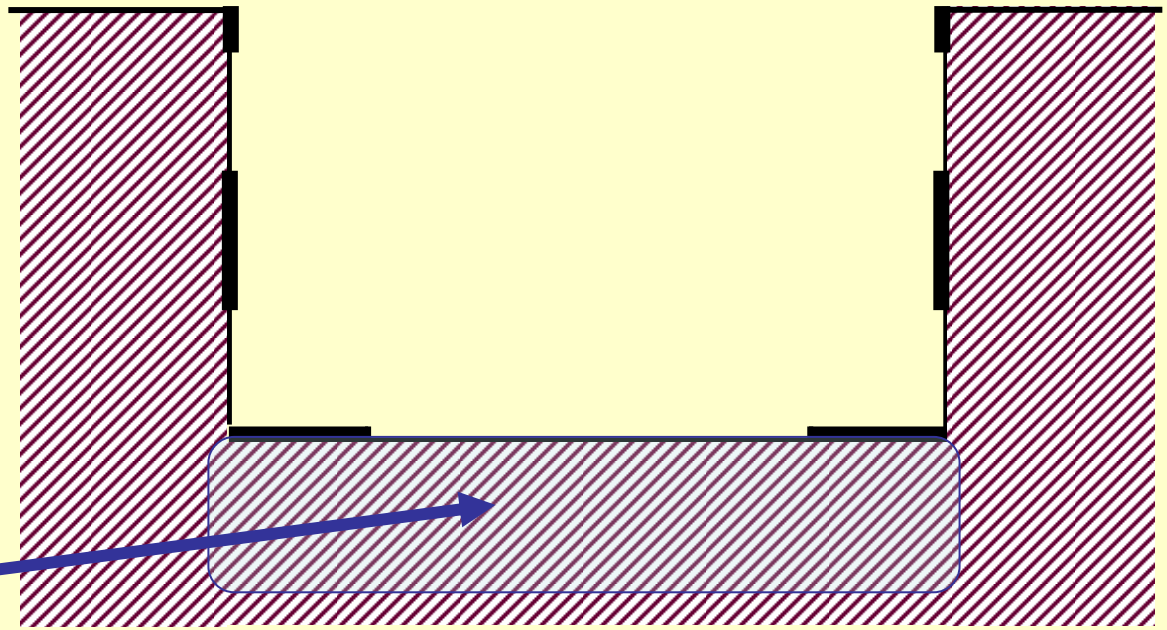
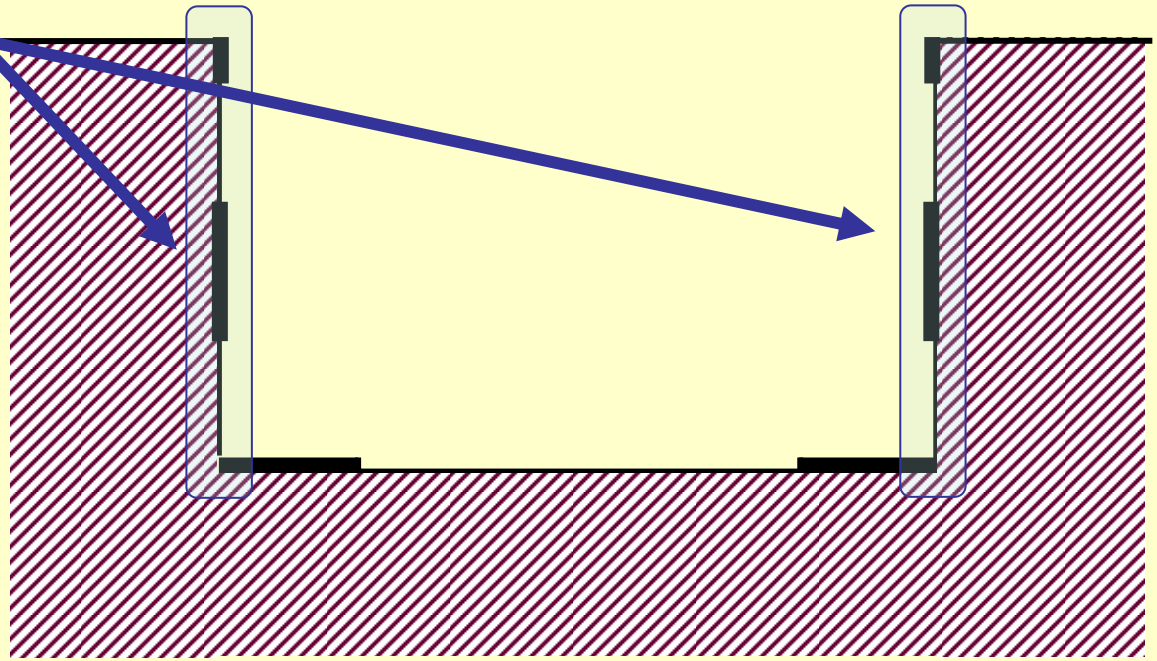


Characteristics of Street Elements

1. Street Wall



Characteristics:

Height	Building Articulation	Entry Frequency
Urban Scale	Transparency/Glazing	Canopies & Arcades


STARBUCKS COFFEE

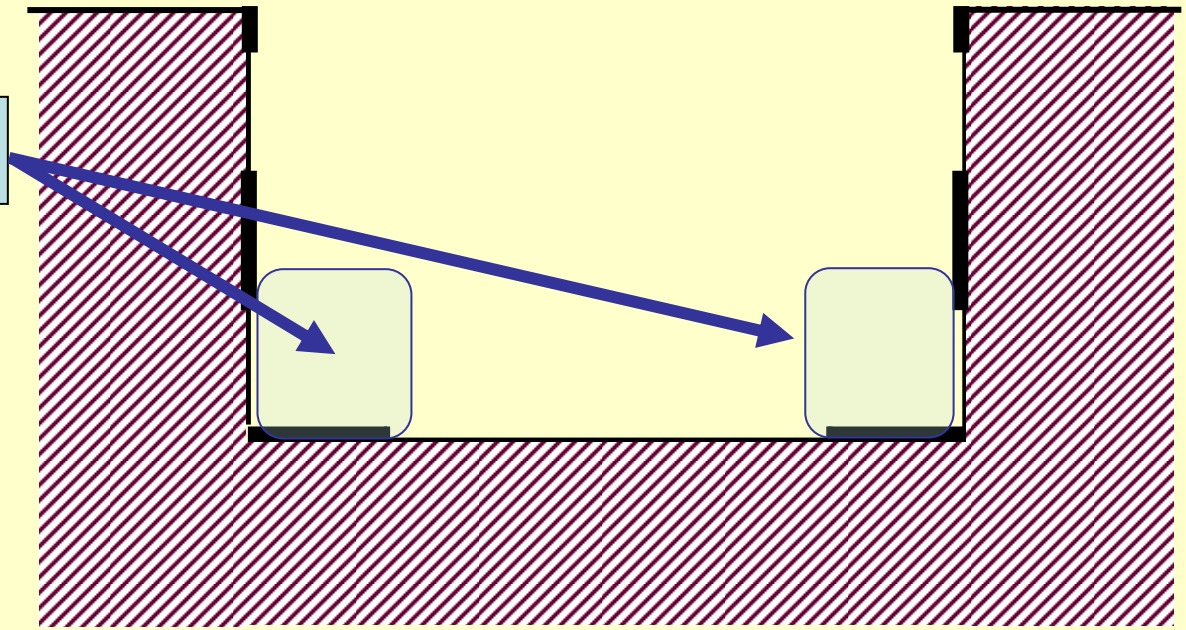

Patchington

Santa Fe

Victor

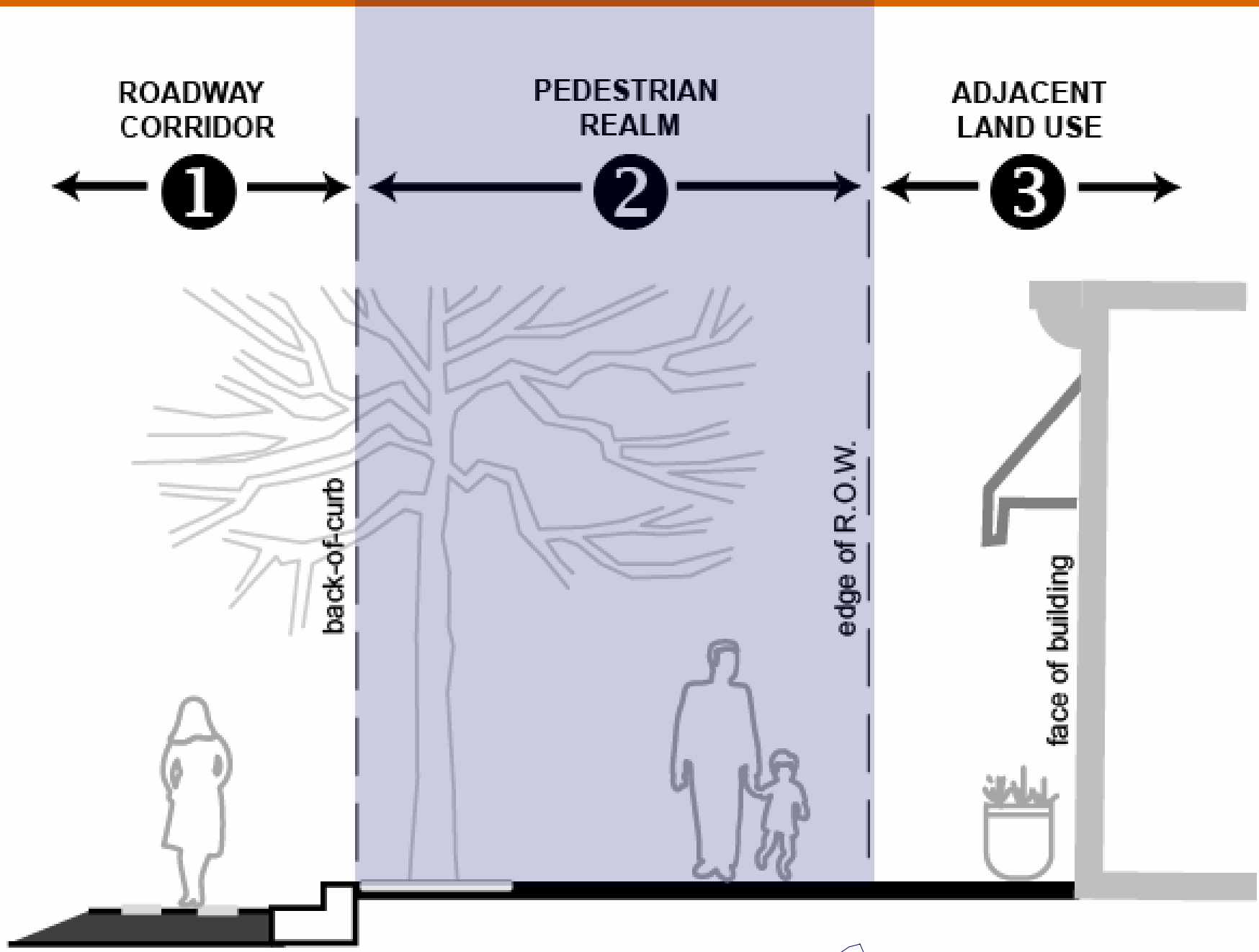
Characteristics of Street Elements

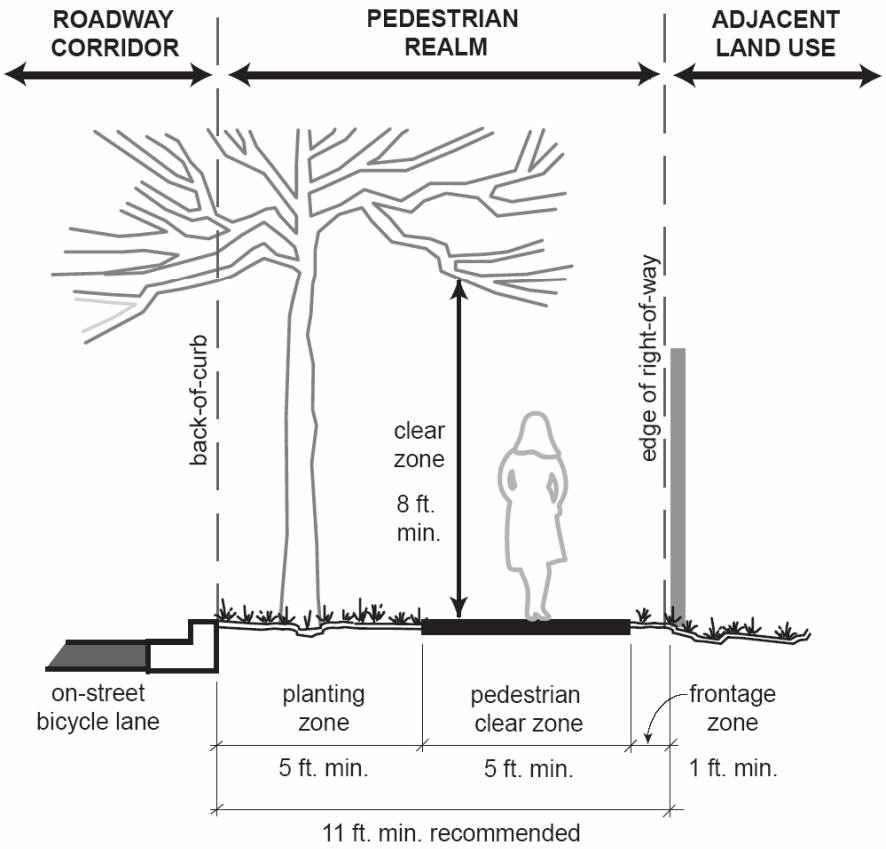
2. Pedestrian Realm

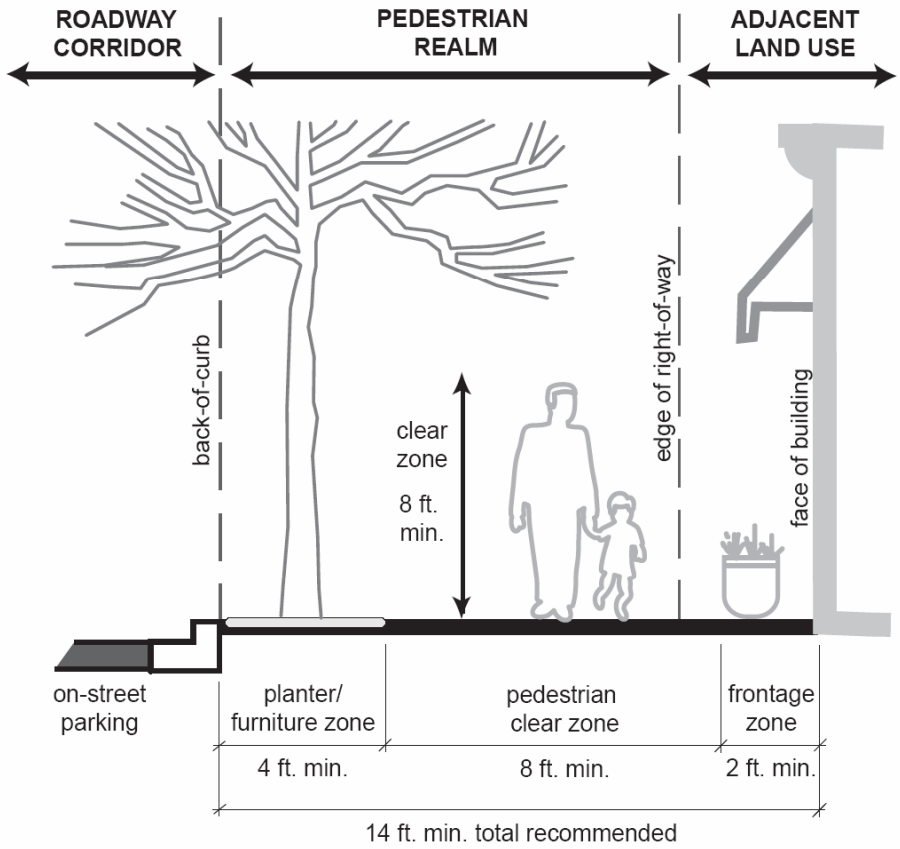


Characteristics:

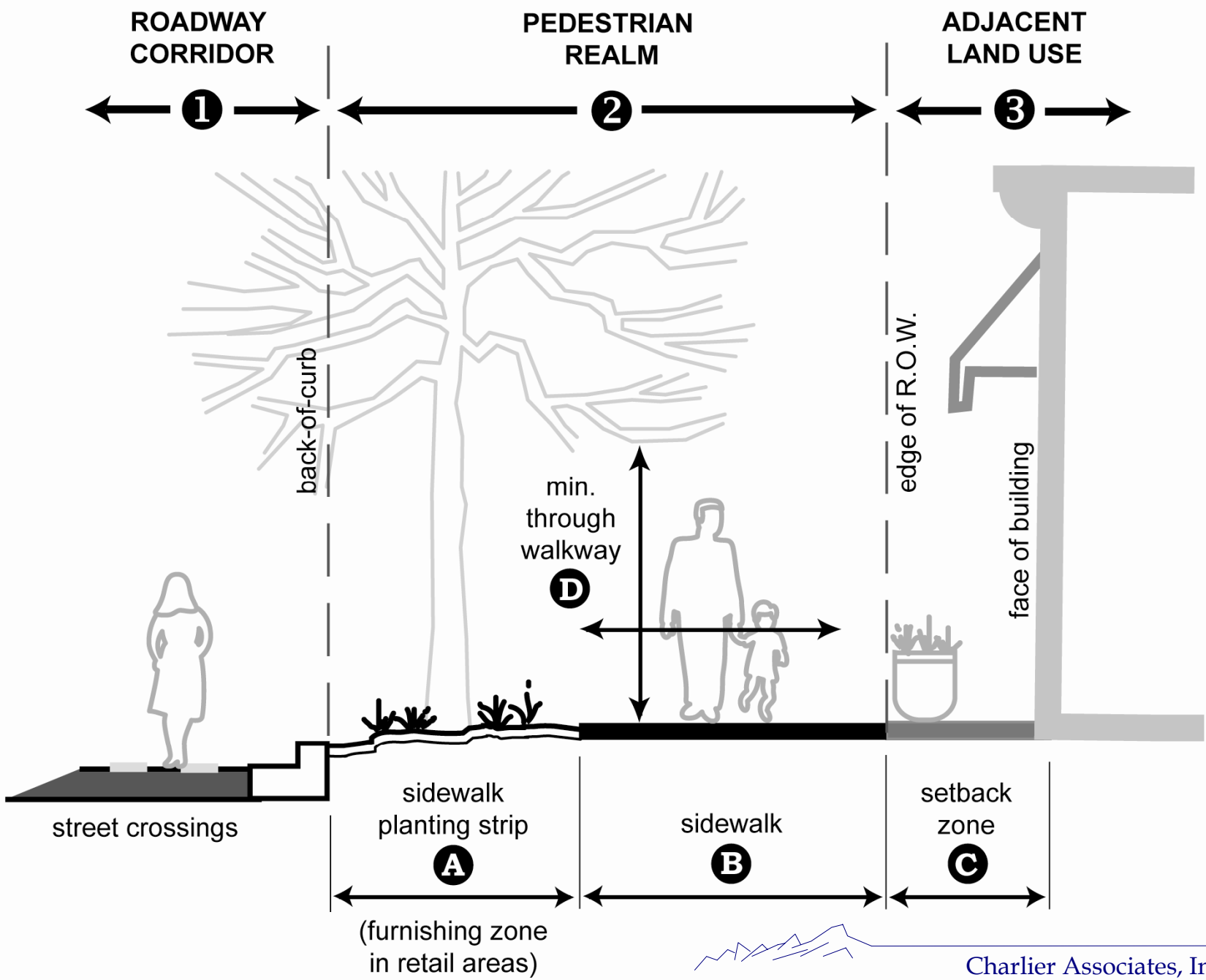
Cross Section	Amenities	Street Trees
Canopies & Arcades	Crosswalks	

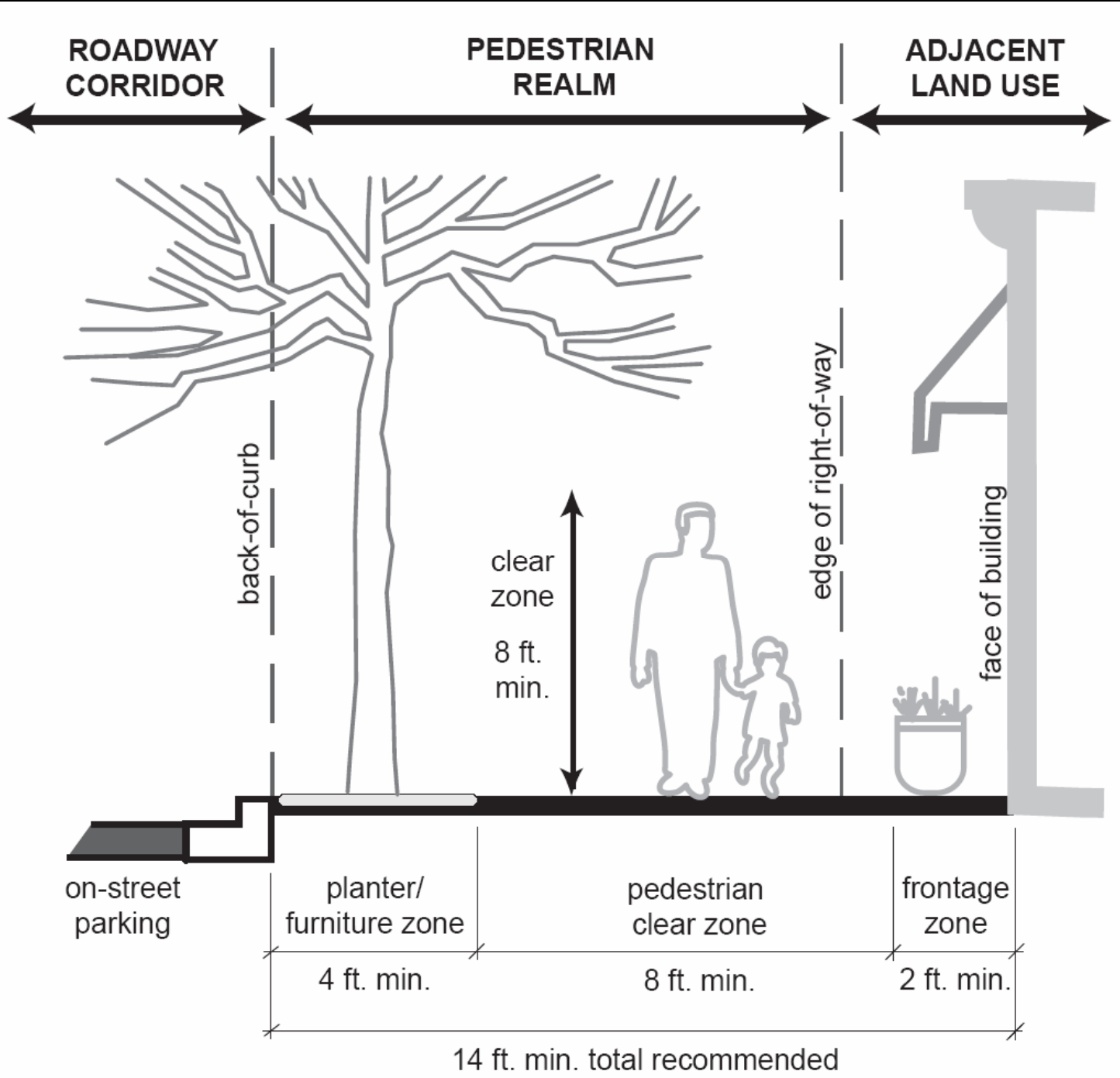

ROADWAY CORRIDOR
1
PEDESTRIAN REALM
2
ADJACENT LAND USE
3
back-of-curb
edge of R.O.W.
face of building


ROADWAY CORRIDOR
PEDESTRIAN REALM
ADJACENT LAND USE
back-of-curb
clear zone
8 ft. min.
edge of right-of-way
on-street bicycle lane
planting zone
pedestrian clear zone
frontage zone
5 ft. min.
5 ft. min.
1 ft. min.
11 ft. min. recommended


ROADWAY CORRIDOR
PEDESTRIAN REALM
ADJACENT LAND USE
back-of-curb
clear zone
8 ft. min.
edge of right-of-way
face of building
on-street parking
planter/ furniture zone
pedestrian clear zone
frontage zone
4 ft. min.
8 ft. min.
2 ft. min.
14 ft. min. total recommended

Longmont


ROADWAY CORRIDOR
1
PEDESTRIAN REALM
2
ADJACENT LAND USE
3
back-of-curb
edge of R.O.W.
face of building
min. through walkway
D
street crossings
sidewalk planting strip
A
(furnishing zone in retail areas)
sidewalk
B
setback zone
C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PEDESTRIAN REALM
ADJACENT LAND USE
back-of-curb
clear zone
8 ft. min.
edge of right-of-way
face of building
on-street parking
planter/ furniture zone
pedestrian clear zone
frontage zone
4 ft. min.
8 ft. min.
2 ft. min.
14 ft. min. total recommended

Longmont


Boulder


Boulder
FLOWER
ganic cuisine
sunnsi

Kailua

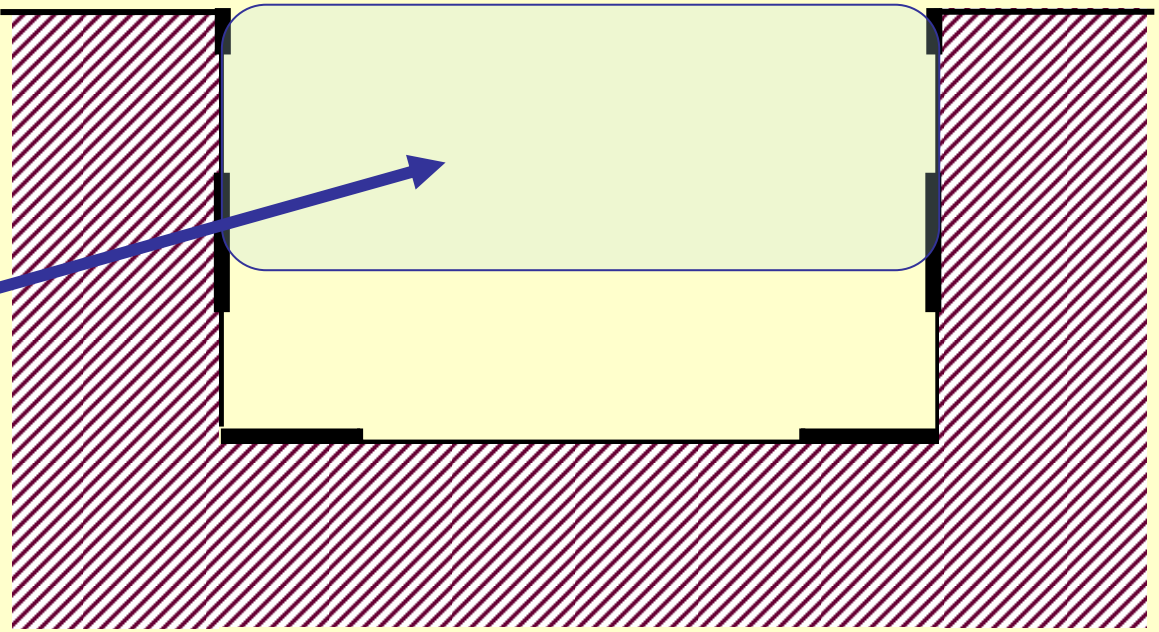
Kailua


Driggs
ROCK SHOP
JADE · OPAL
JEWELRY REPAIR


Bellows Falls

Characteristics of Street Elements

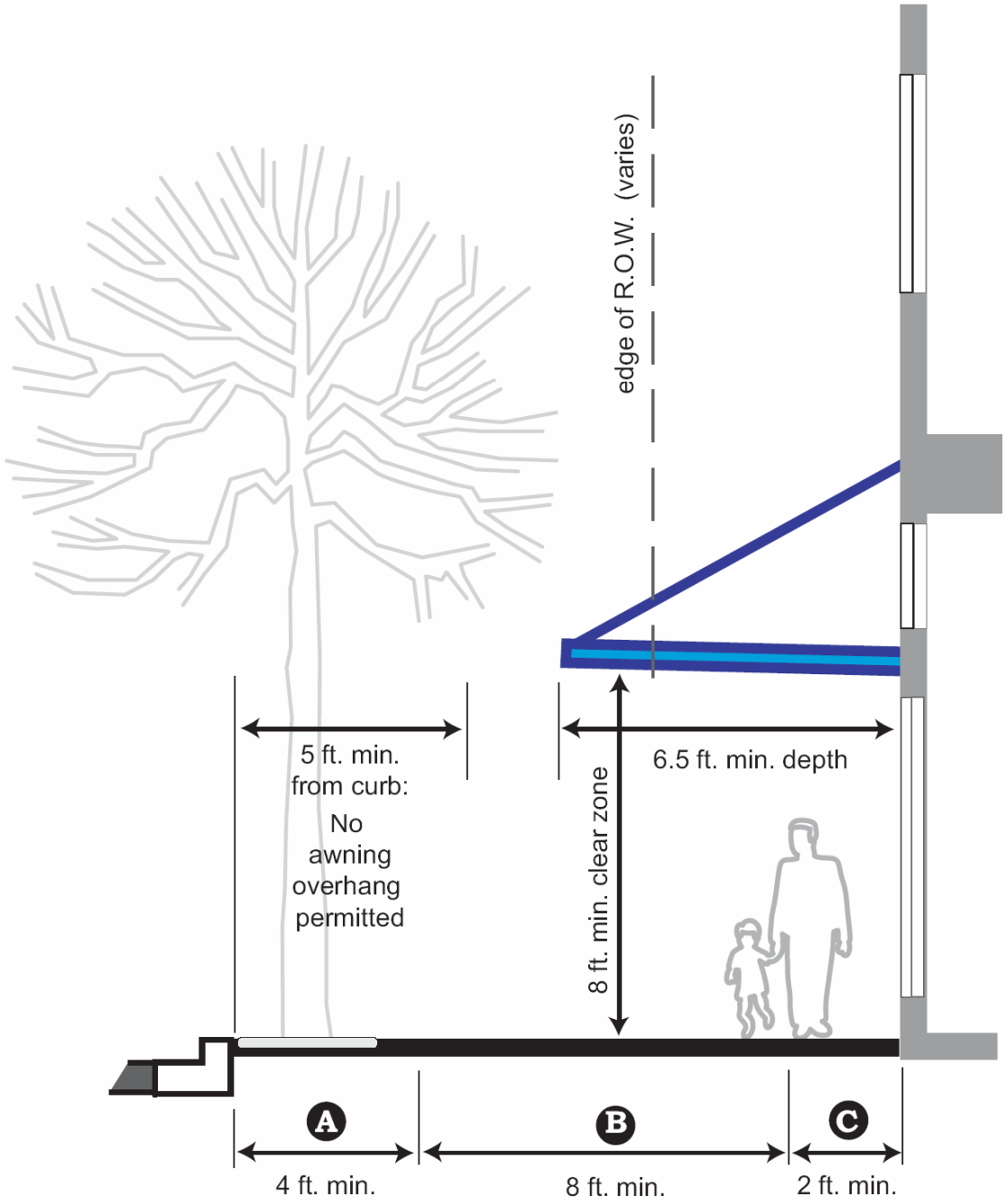
3. Overhead Area



Characteristics:

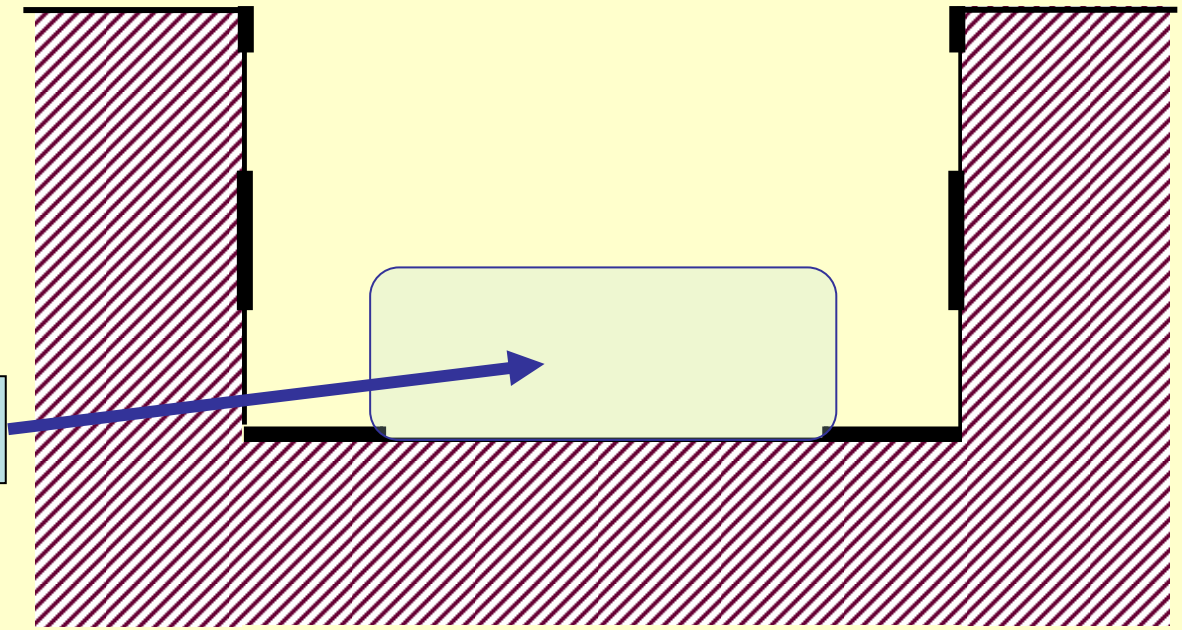
- Utilities
- Street Trees
- Lighting
- Canopies & Arcades

Boulder


edge of R.O.W. (varies)
5 ft. min.
from curb:
No
awning
overhang
permitted
6.5 ft. min. depth
8 ft. min. clear zone
A
B
C
4 ft. min.
8 ft. min.
2 ft. min.


Boulder

Characteristics of Street Elements



4. Vehicle Realm

Characteristics:

Number of Lanes	On-Street Parking	Traffic Volume
Lane Width	Traffic Speed	Traffic Control Systems

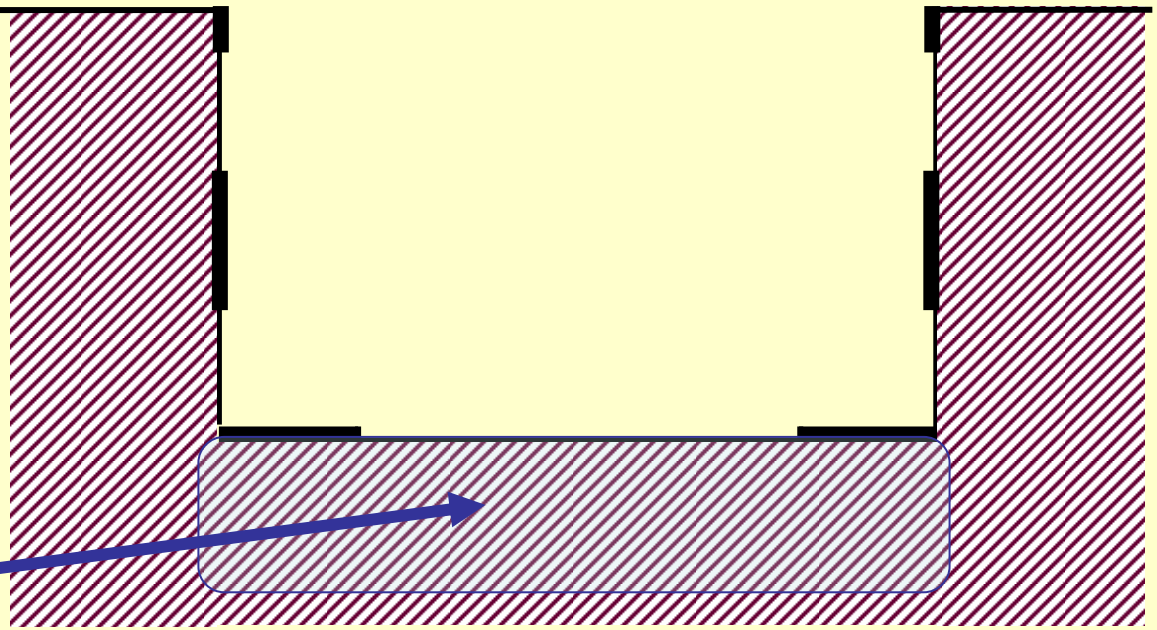
Traffic Buffering


POLICE


Bainbridge Island

Boulder

Characteristics of Street Elements



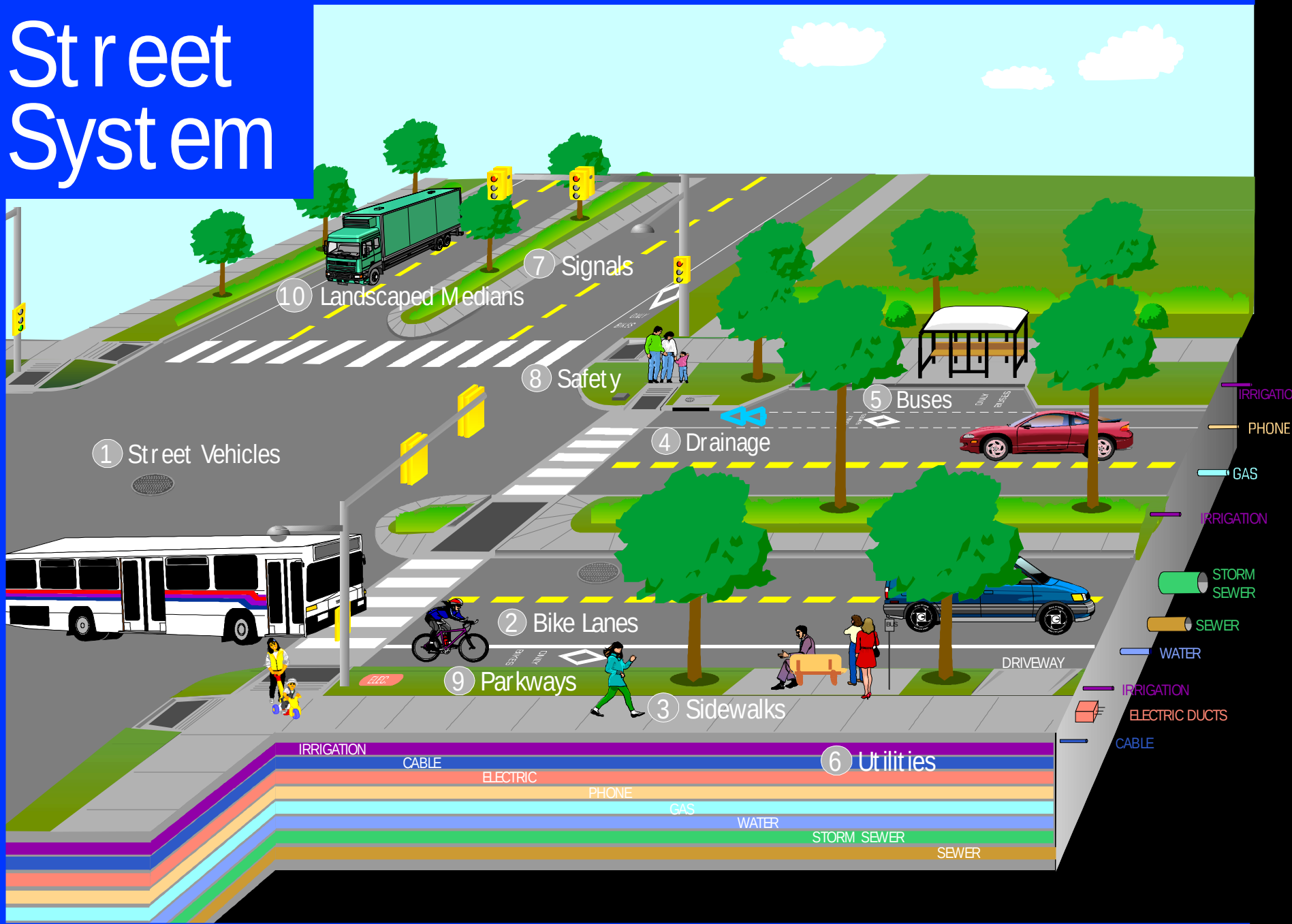
5. Subsurface Area

Characteristics:

Storm Water Drainage

Utilities

Street System



Urban Scale

Urban Design Concepts

Well Designed Density

Well Designed Density

Neighborhood Commercial Center

Transit-Oriented Areas

Industrial Sites

Pedestrian Environments

“Pedestrian Friendly”

Pedestrian Environment Continuum

Pedestrian Place/District

- Mixed use with retail
- Gathering place – identifiable as a PLACE
- Significant pedestrian presence
- Motor vehicles present, do not dominate
- Supportive transportation required (parking, transit, bike)


Pedestrian Place
Boulder


Miami Beach, FL
Pedestrian Place

Pedestrian Supportive

- Mixed use including residential
- May include gathering PLACES
- Pedestrians present at busy times
- Motor vehicles present, do not dominate


Redmond
Pedestrian Supportive


Mt. Vernon, IA
Pedestrian Supportive


Longmont
2:00 AM TO 5:00 AM
2 HR PARKING
8:00 AM TO 6:00 PM WEEKDAYS
Pedestrian Supportive


Boulder
1094
Pedestrian Supportive

Pedestrian Tolerant

- All land uses except freeway & certain special uses (airport runway, garbage dump, etc.)
- Utilitarian walking & rambling only
- Motor vehicles present, may tend to dominate


Redmond
Pedestrian Tolerant


Longmont
Pedestrian Tolerant

Pedestrian Tolerant

Maui


Maui
Pedestrian Tolerant

Pedestrian Intolerant

- Any land use
- Little or no walking
- Motor vehicles dominate
- Unsafe, unpleasant


Longmont
MARTIN ST
ICE
Pedestrian Intolerant


Longmont
Pedestrian Intolerant

Maui

Pedestrian Intolerant

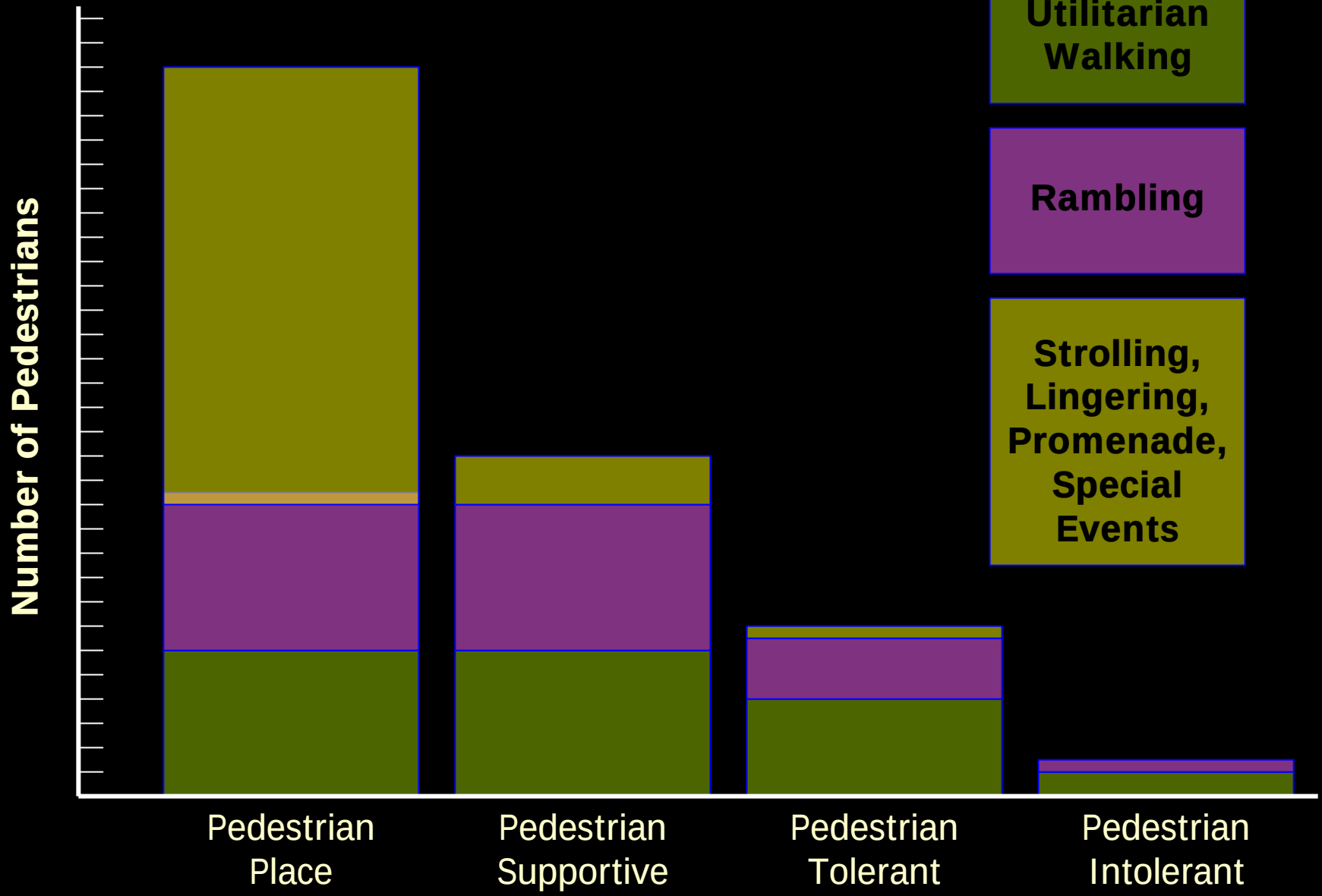

Anywhere, USA
STOP
Pedestrian Intolerant


Maui
Pedestrian Intolerant


Flagstaff, AZ
KING
DRIVE TH
ONLY
Pedestrian Tolerant

Pedestrian Intolerant

Walk Environments and Types of Walking



Practical Pedestrian Strategies

- Focus public investment in high priority pedestrian districts and school routes
- Adopt "complete streets" design standards
  - Private development
  - Public works projects (context sensitive)
- Apply concurrency/adequate public facility requirements to development projects
- Designate "safe routes to school"
- Get serious about maintenance

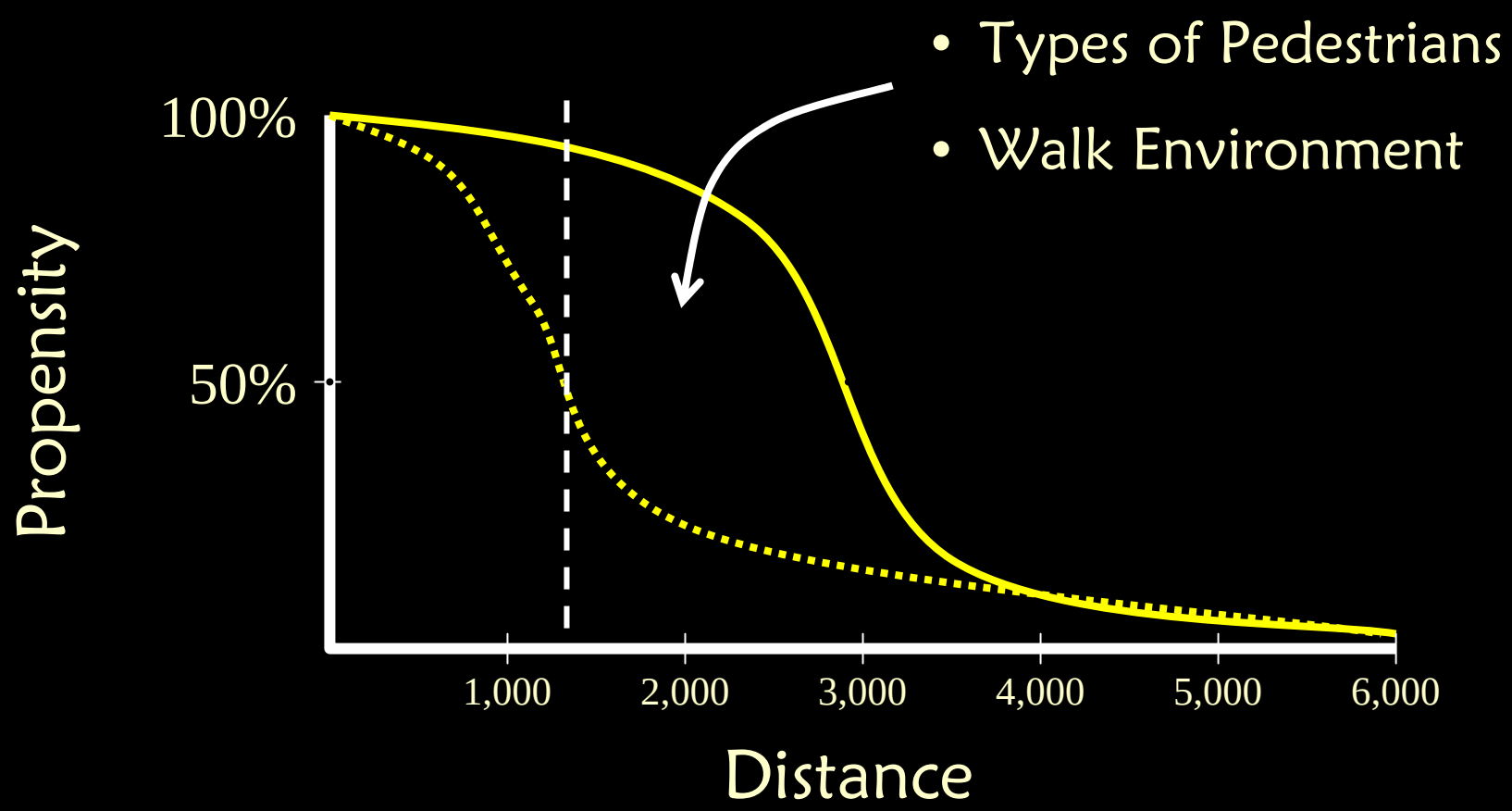
Setting Priorities

Practical Implementation Strategies

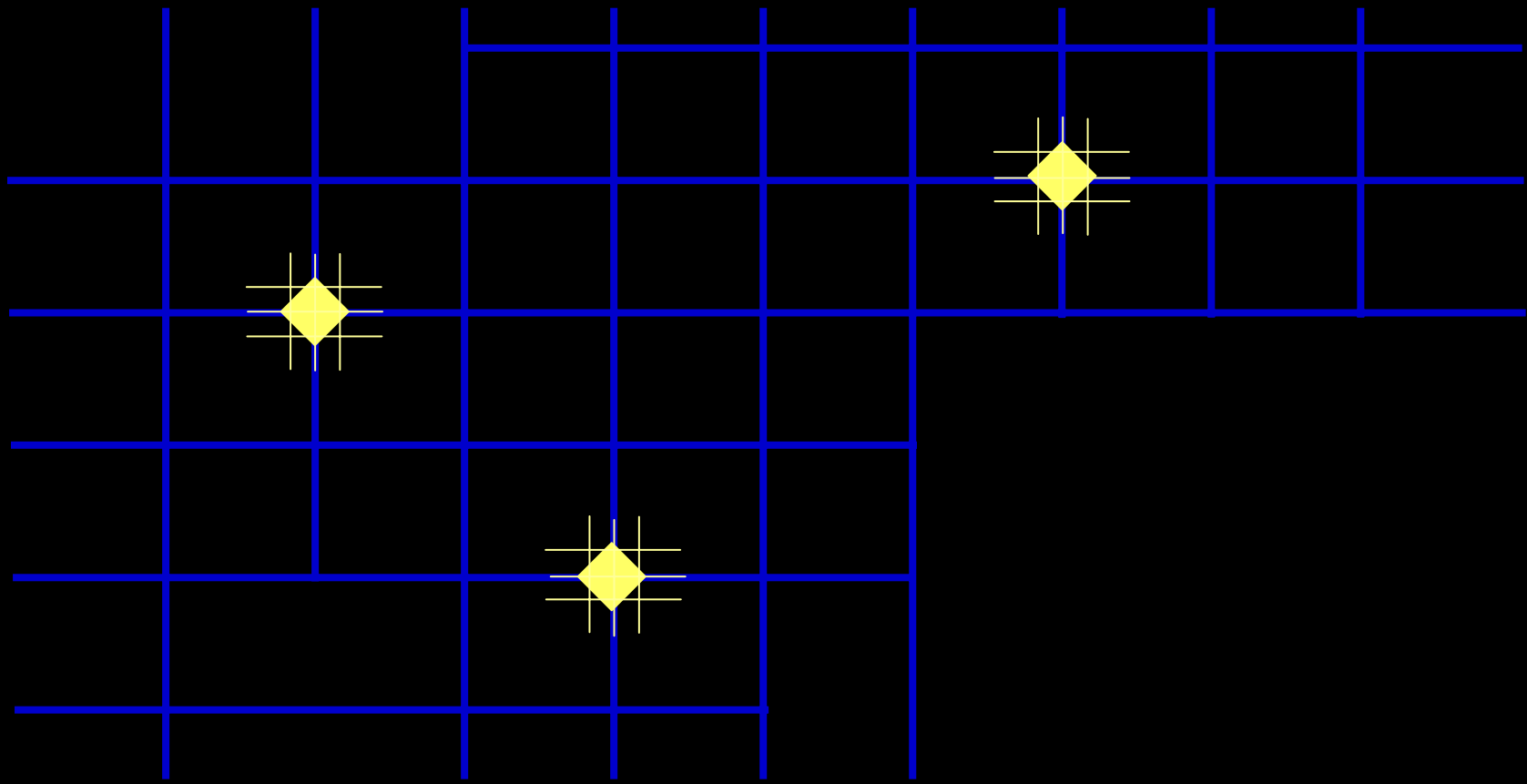

SPEED
LIMIT
35


Boulder

Pedestrian Walk Distance



Real-World Pedestrian Structure
(Nodes and Corridors)



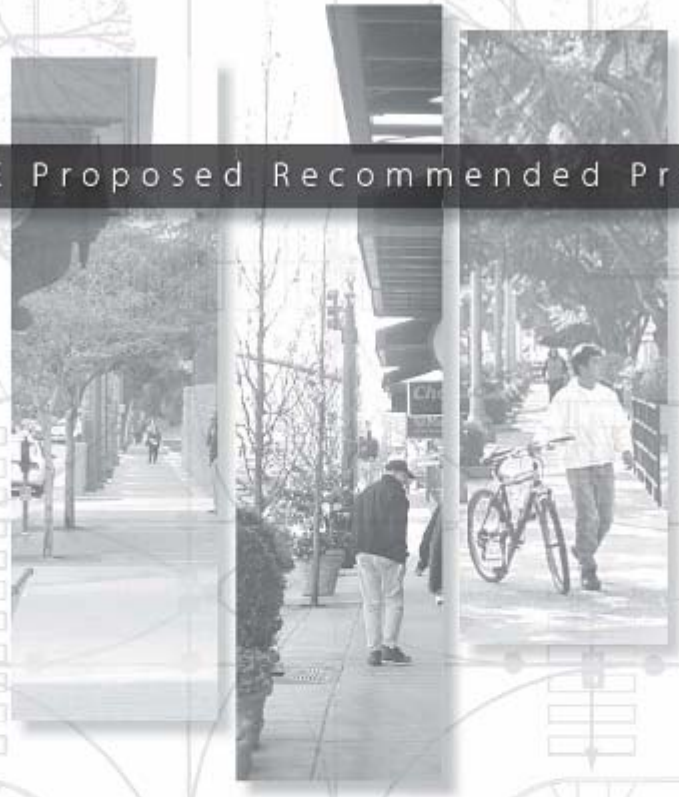
Winter Park

Complete Streets – Design Standards

Practical Implementation Strategies

Charlier Associates, Inc.

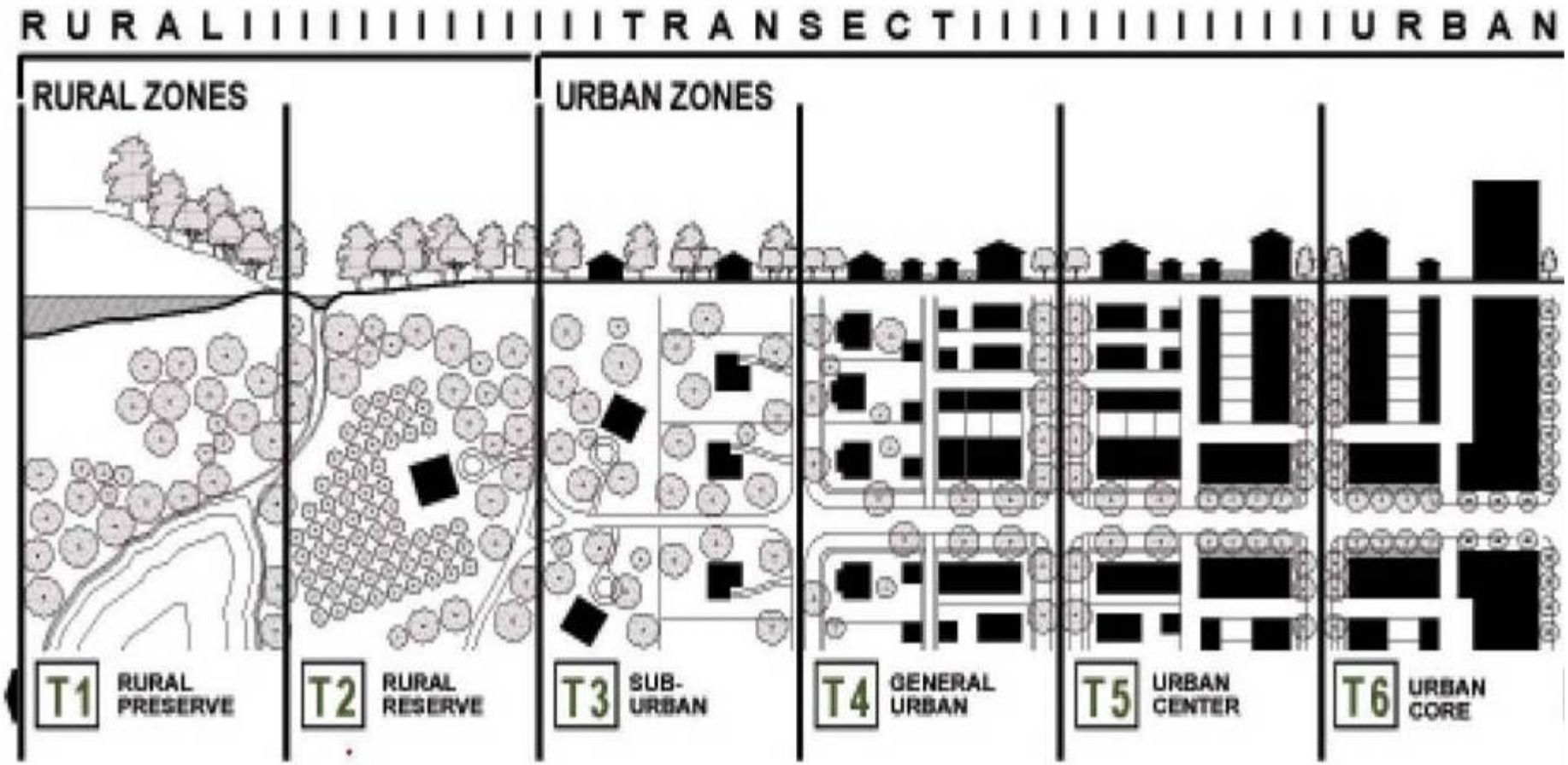
An ITE Proposed Recommended Practice



Context Sensitive Solutions in Designing Major Urban Thoroughfares for Walkable Communities

Institute of Transportation Engineers

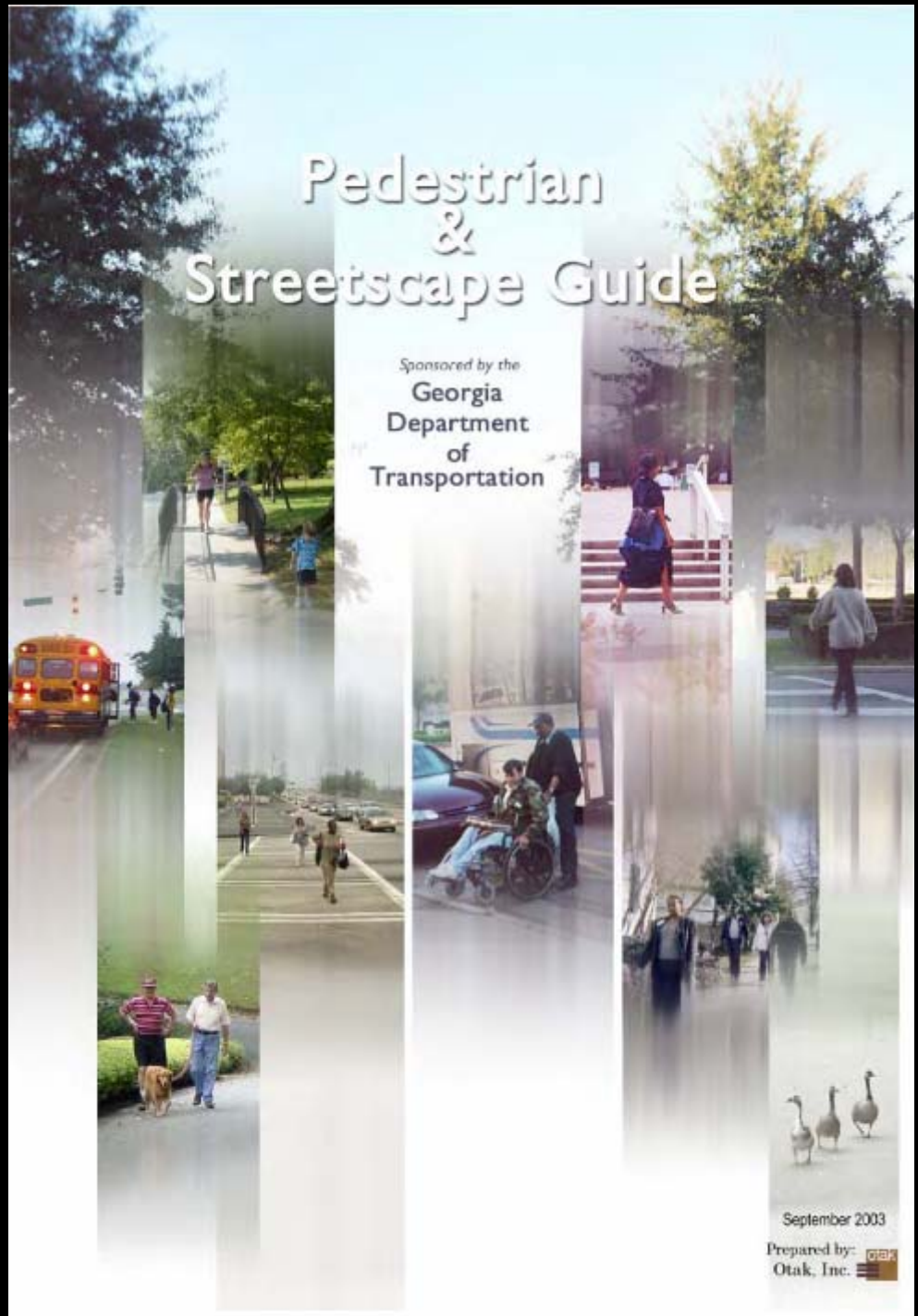
Design Reflecting Context



Pedestrian & Streetscape Guide

Sponsored by the

Georgia Department of Transportation



September 2003

Prepared by:
Otak, Inc.

Top 3 Pedestrian Design Issues

1. Continuous sidewalks – both sides of street
2. Street crossings
    - Shorten crossings
    - Slow traffic
3. Angled curb ramps

1. Continuous Sidewalks

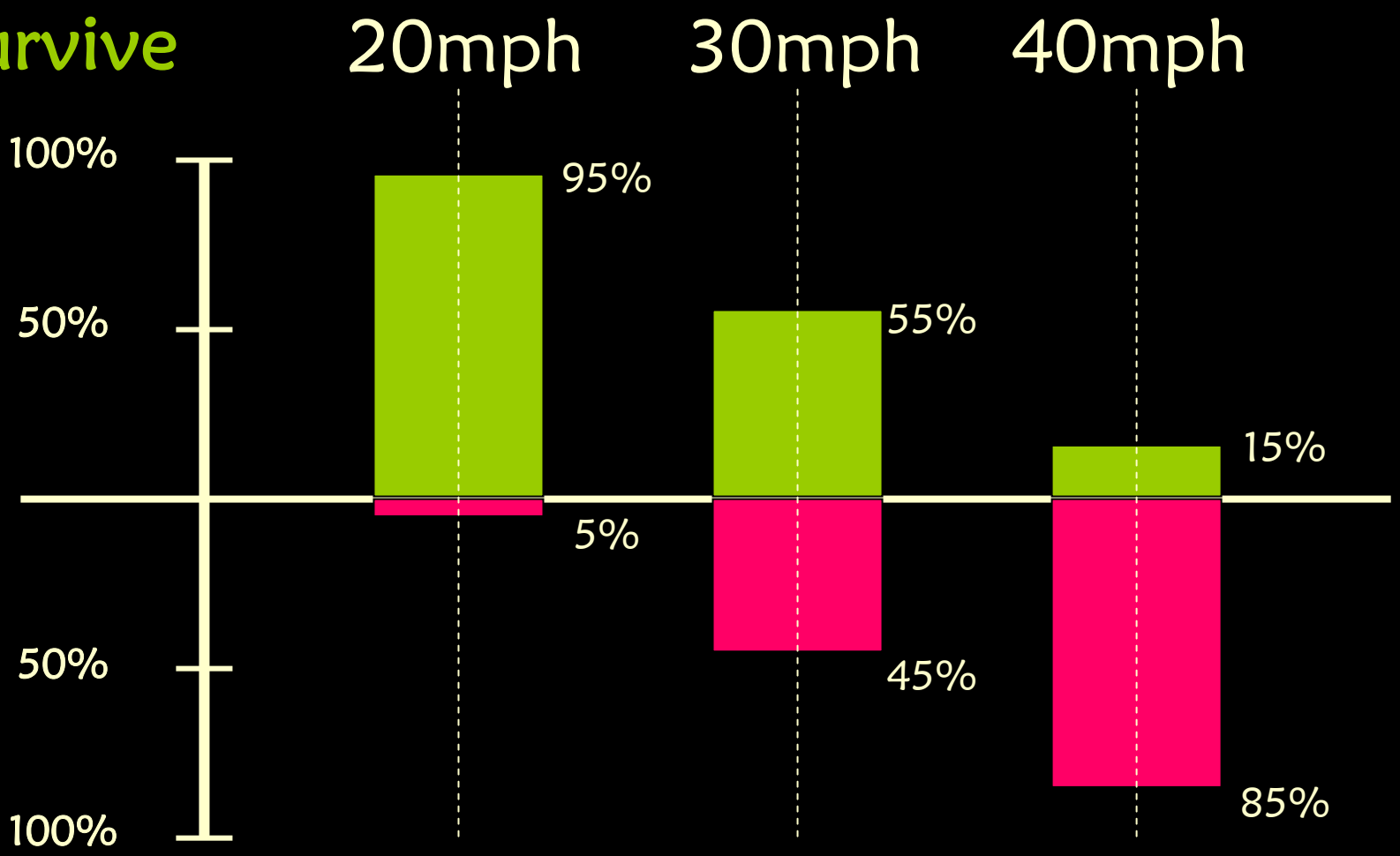
Sidewalks should be on both sides of the street and continuous

2. Street Crossings


Aurora


Aurora

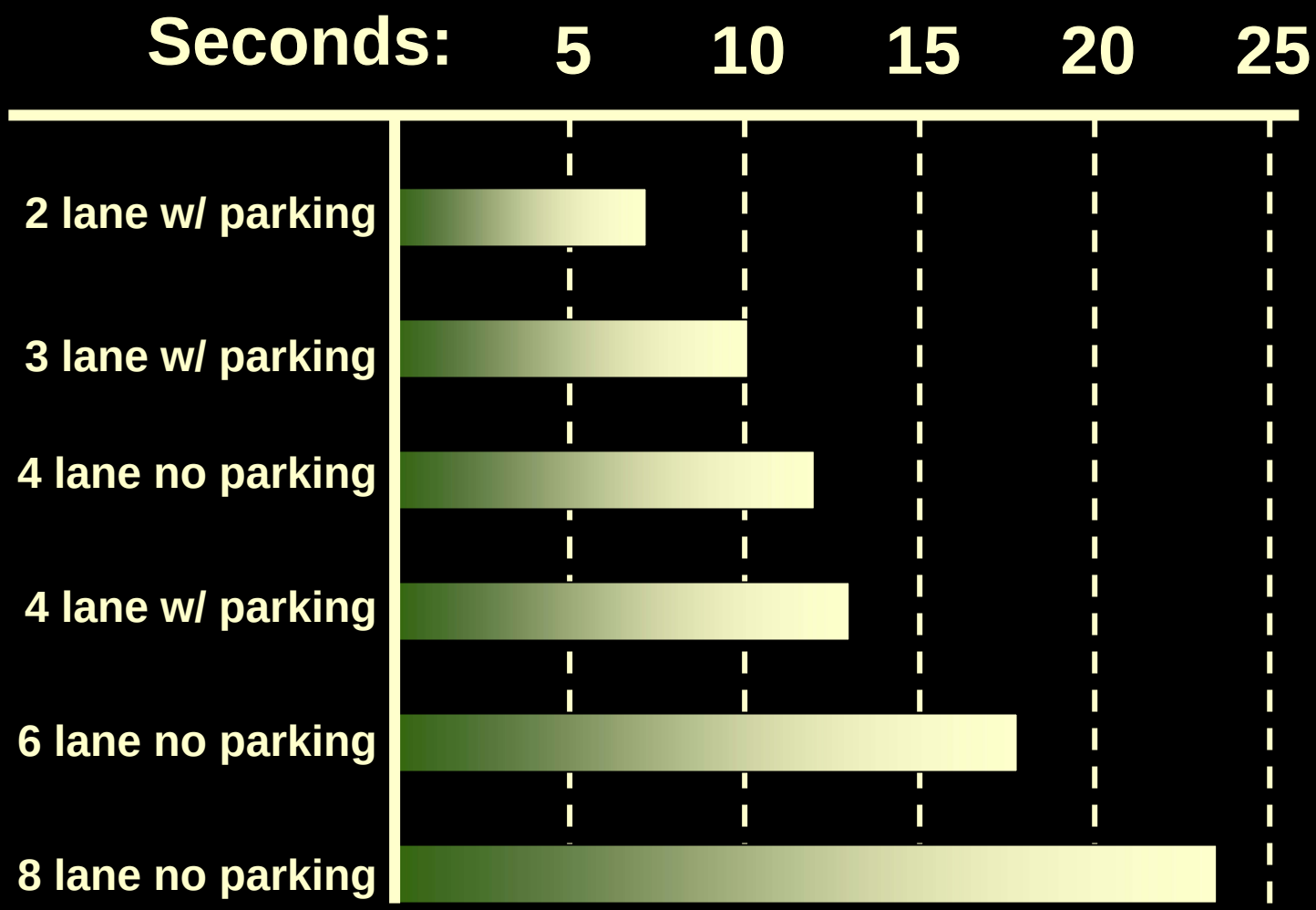
Pedestrian Survival Rates – Vehicle Speeds



Driggs

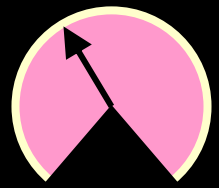
Pedestrian Crossing Time

Curb Extensions: YES | **Lane Width: 12 ft** | **Walk Speed: 250 fpm**




ALOHA

Vehicle Approach Time



25 mph

Feet: 200 400 600 800 1000 1200 1400

2 lane w/ parking

3 lane w/ parking

4 lane no parking

4 lane w/ parking

6 lane no parking

8 lane no parking

Vehicle Approach Time

45 mph

Feet: 200 400 600 800 1000 1200 1400

2 lane w/ parking

3 lane w/ parking

4 lane no parking

4 lane w/ parking

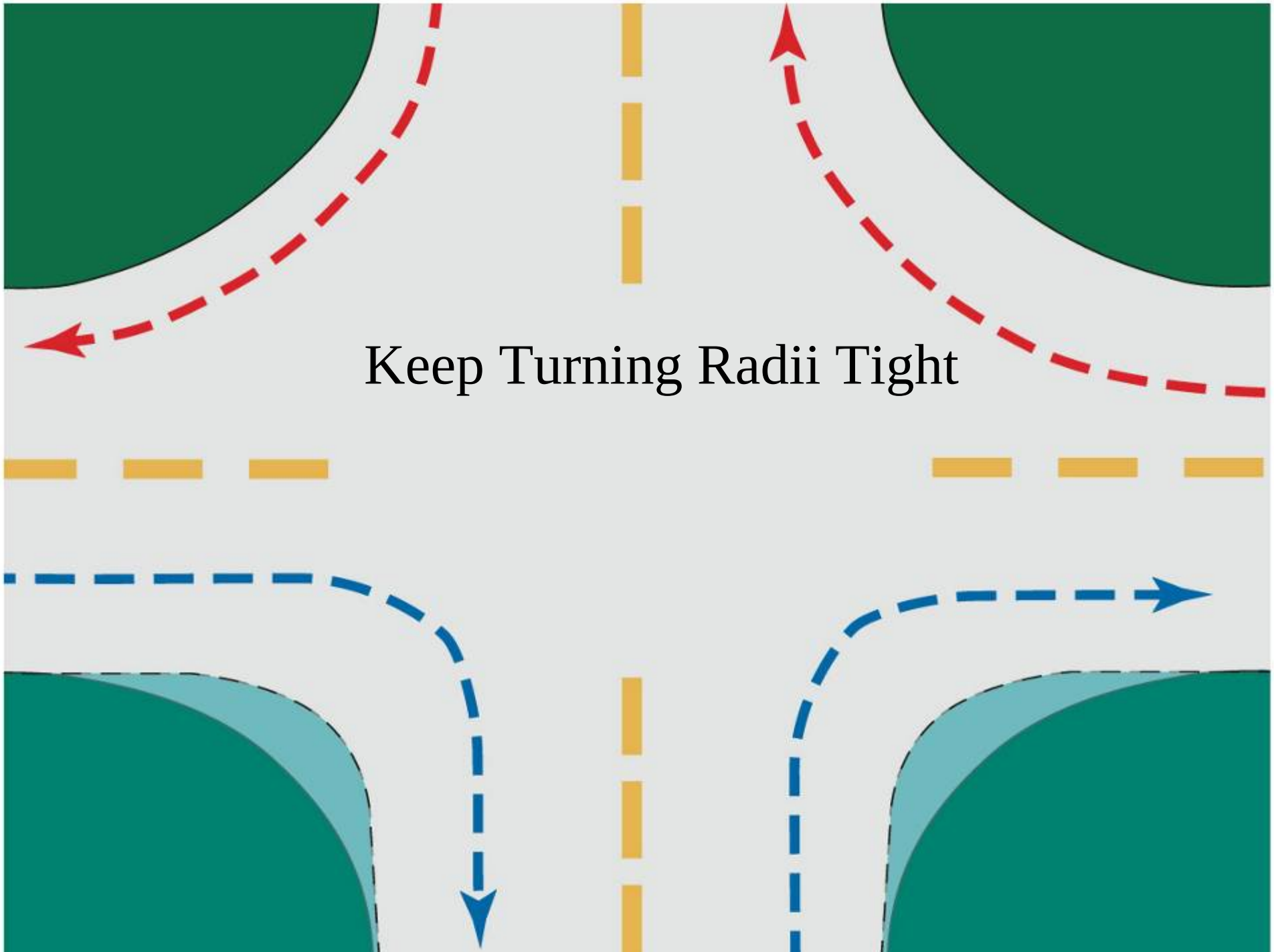
6 lane no parking

8 lane no parking

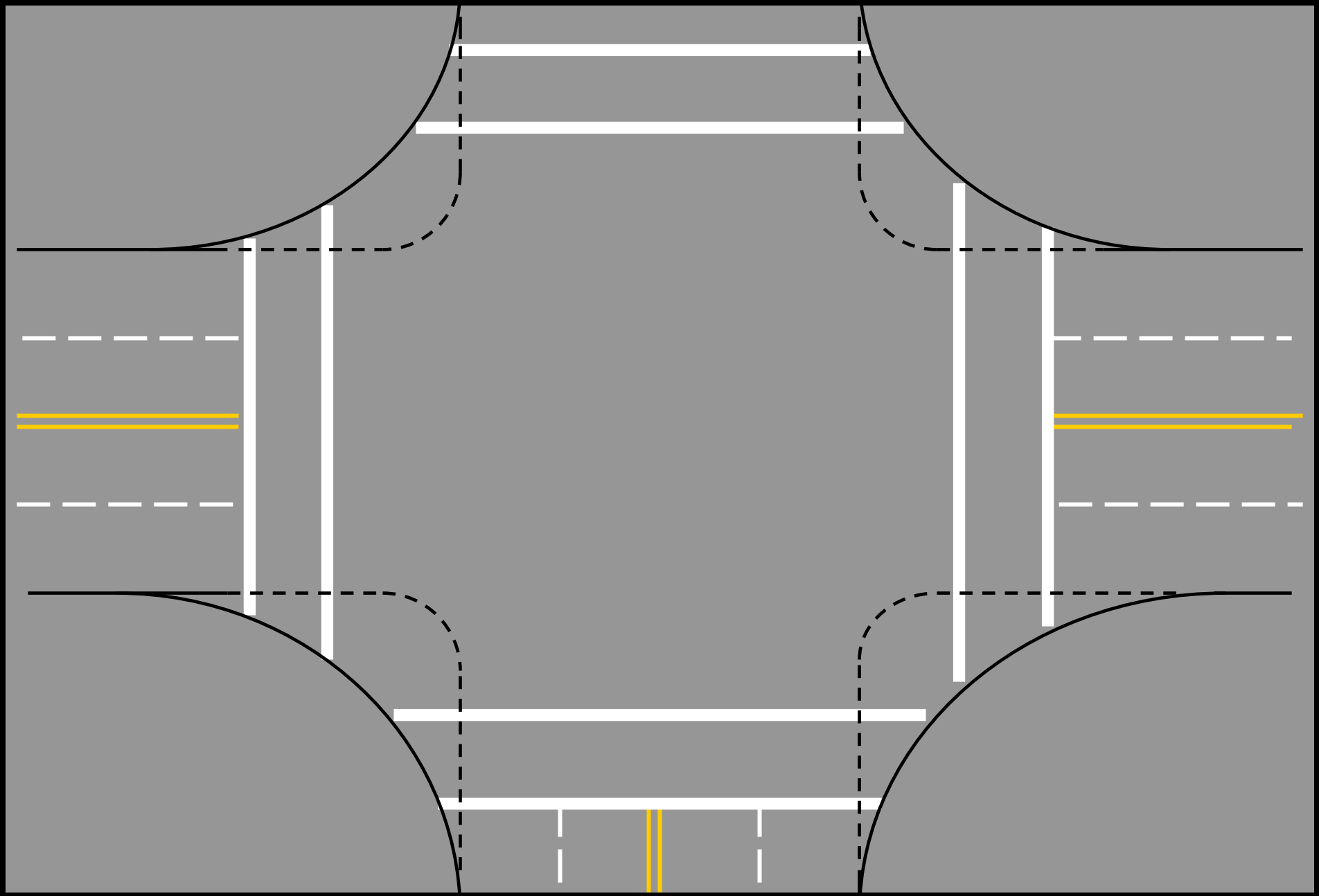

LAFAYETTE
MOTEL
TACO
BELL


STATE LAW
YIELD
TO PEDESTRIANS
IN CROSSWALK
STATE LAW
YIELD
TO PEDESTRIANS
IN CROSSWALK


STOP
STOP
STOP

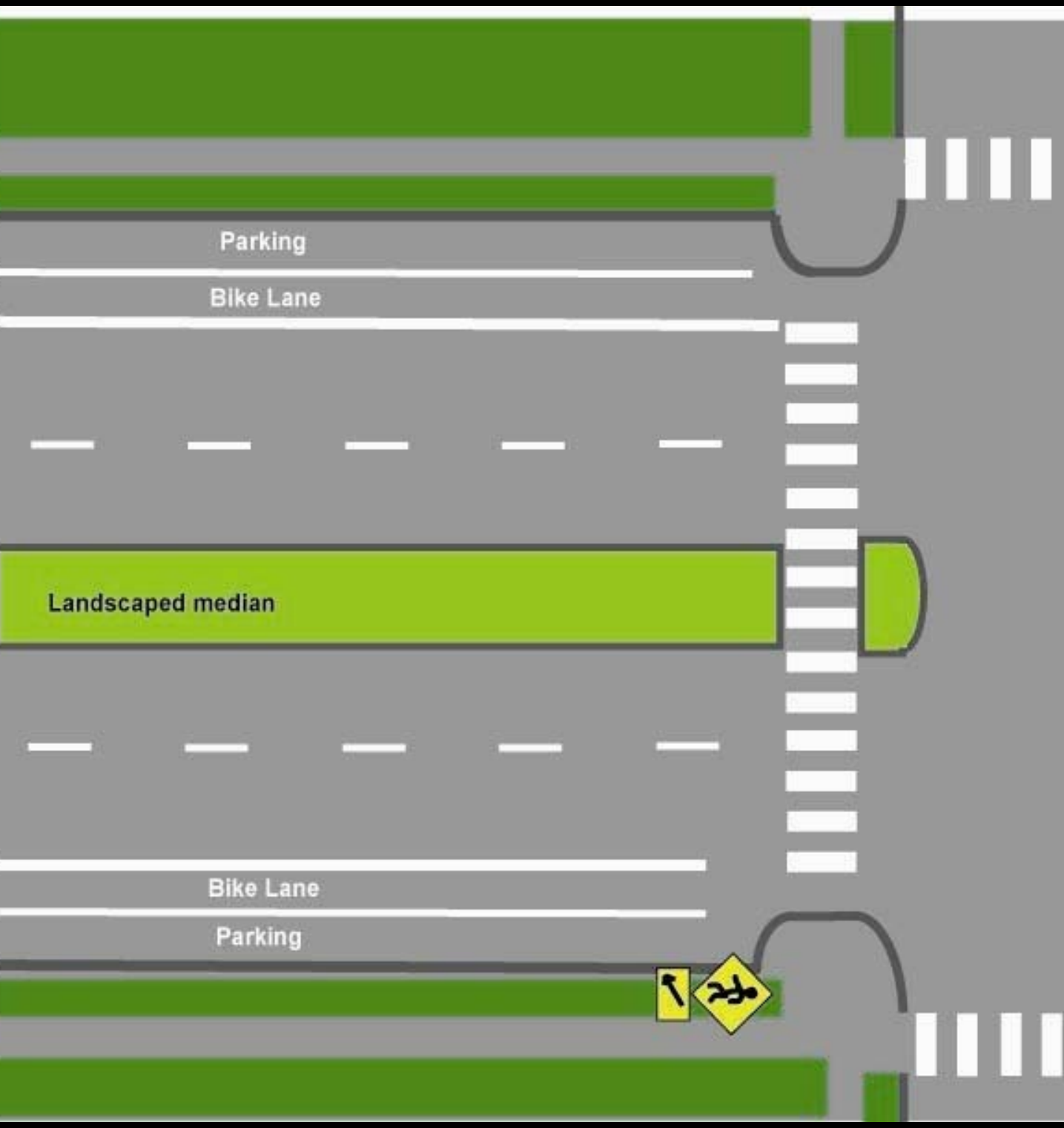

Keep Turning Radii Tight

Crosswalks are pushed back



Effect of large radius on crosswalk:

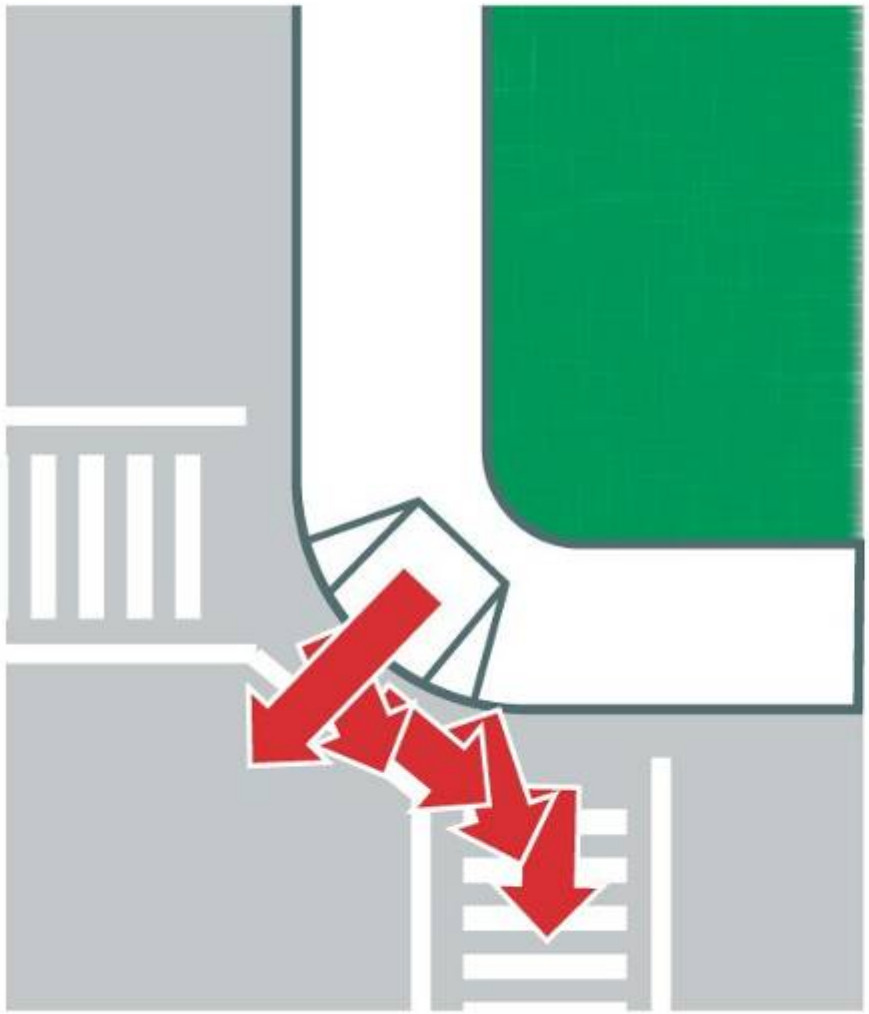
Bend OR


Parking
Bike Lane
Landscaped median
Bike Lane
Parking

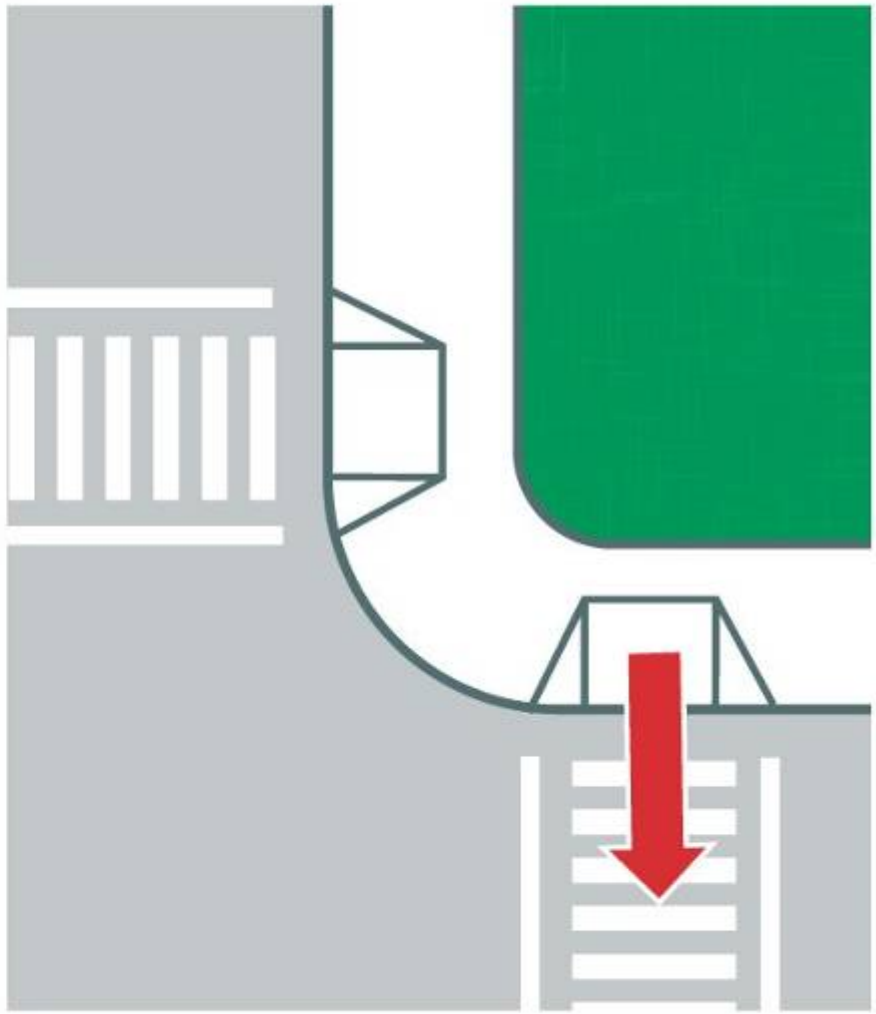
3. Modern Curb Ramps

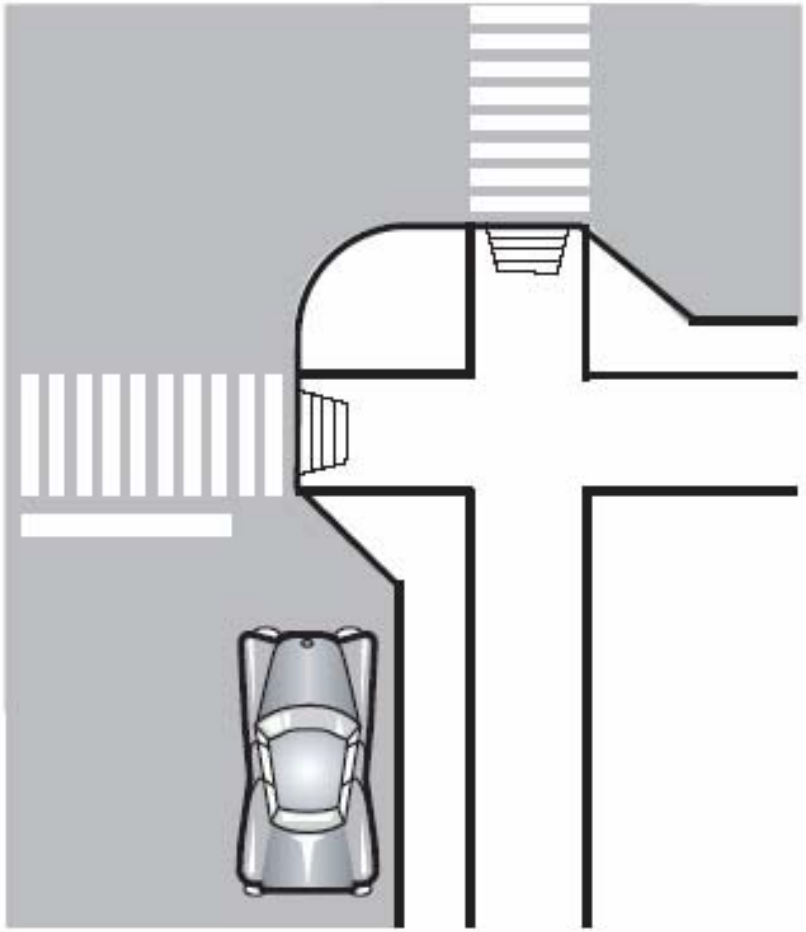

Fair Oaks AVE
SPEED LIMIT 25

Diagnoal Curb Ramp

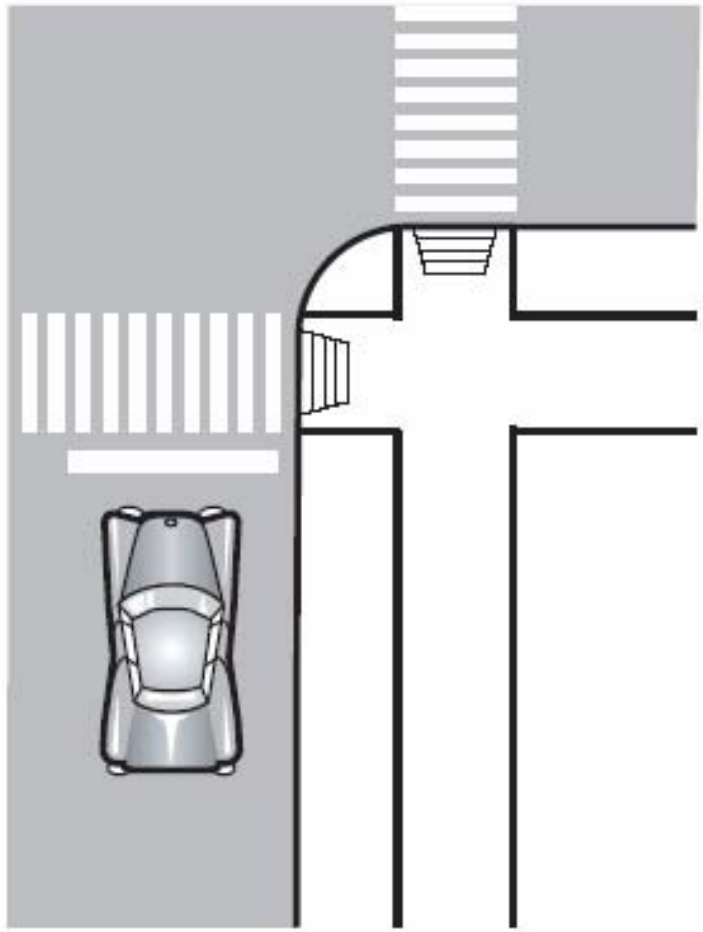


Perpendicular Curb Ramp





Pair of perpendicular curb ramps with curb extensions and on-street parking



Pair of perpendicular curb ramps aligning with crosswalks


LUCCA LUCCA
1601 PEARL


Next ...

Bicycle & Non-Motorized Systems

Practical Implementation Strategies


B R O A D W A Y

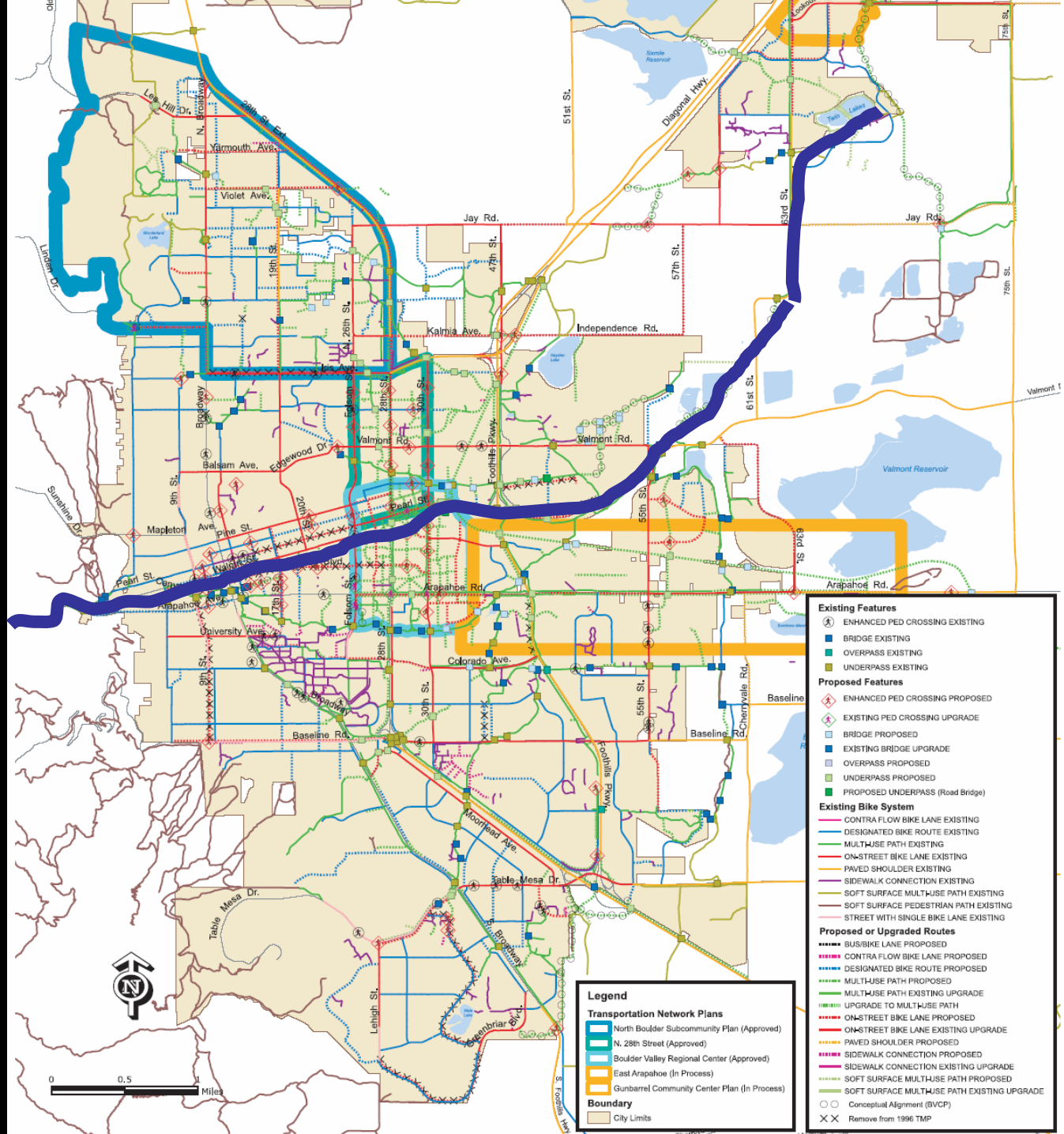
Practical Non-Motorized Strategies

- Build a spine route – an iconic corridor
- Formally approve parallel redundancy
- Designate primary & secondary bike corridors and prioritize public spending
- Map missing links
- Create route IDs for primary corridors
- Take advantage of modern design
- Consider road diets
- Get serious about maintenance
- Use the Web to map/promote bicycling

Build a Spine Route (Iconic Corridor)

Practical Implementation Strategies

Boulder Bicycle Network



on, 2030

Green Infrastructure

Trails Around Lakes

Natural Area Protection

Recreation

Water Management

Nested Loop Trail System

Putting it Together!

Formally Approve Parallel Redundancy

Practical Implementation Strategies

“Type A” Cyclist:

- comfortable in traffic
- prefers direct but safe routes
- rides with or without bicycle facilities present

“Type B/C” Cyclist:

- less skilled adults and children
- intimidated by traffic
- prefer designated facilities (bike lanes and multi-use paths)


OPEN


NO
MOTOR
VEHICLES

Designate Primary & Secondary Corridors & Prioritize Funding

Practical Implementation Strategies

Boulder Transportation Master Plan

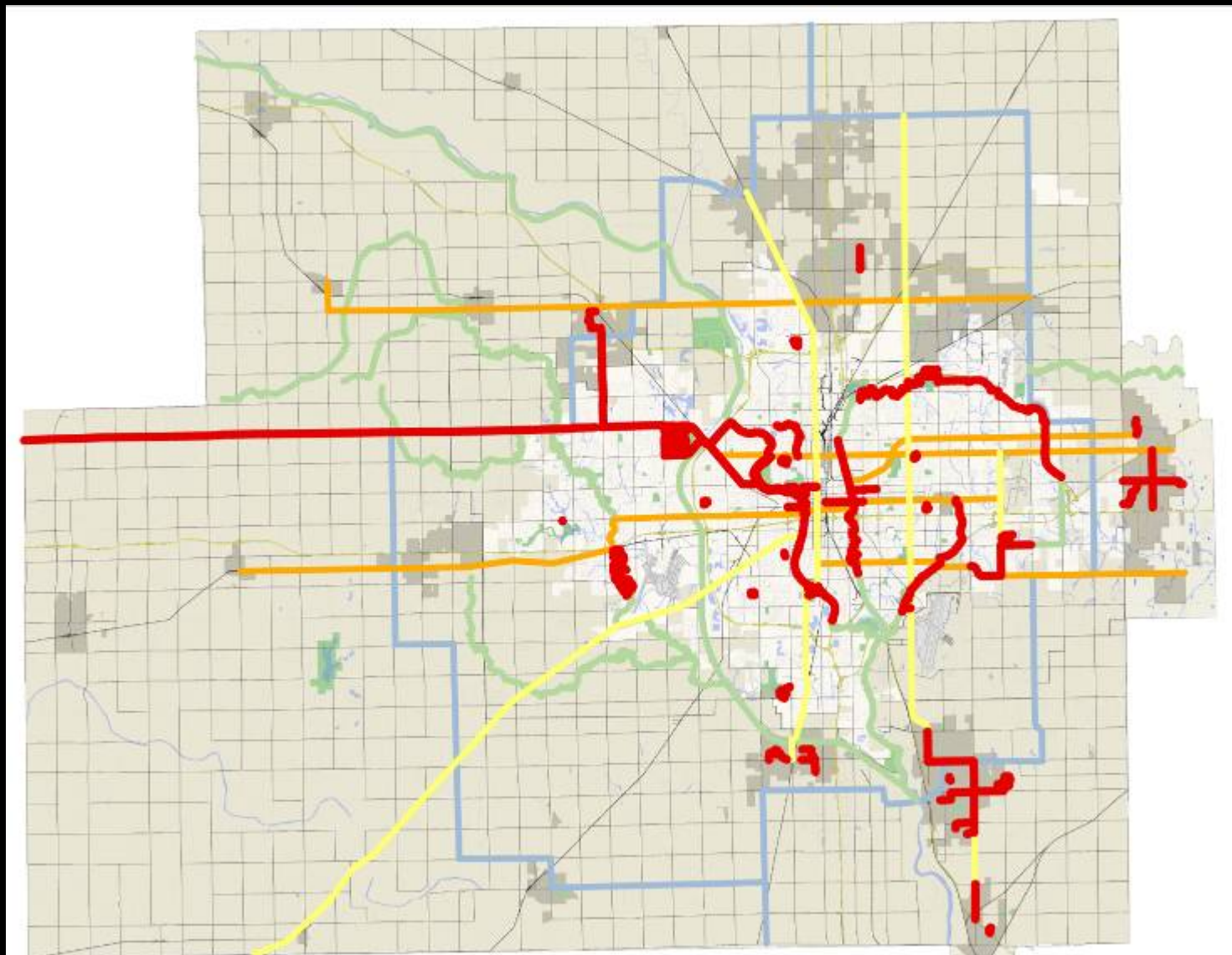
Importance of Network Connectivity:

- distance and safety impediments are the major obstacles to overcome
- facility type may change based upon context
- transitions need to be seamless

Primary Corridor System

Wichita

- 164 miles off-road paths
- 67 miles on-street bicycle lanes
- 18 miles paved shoulders



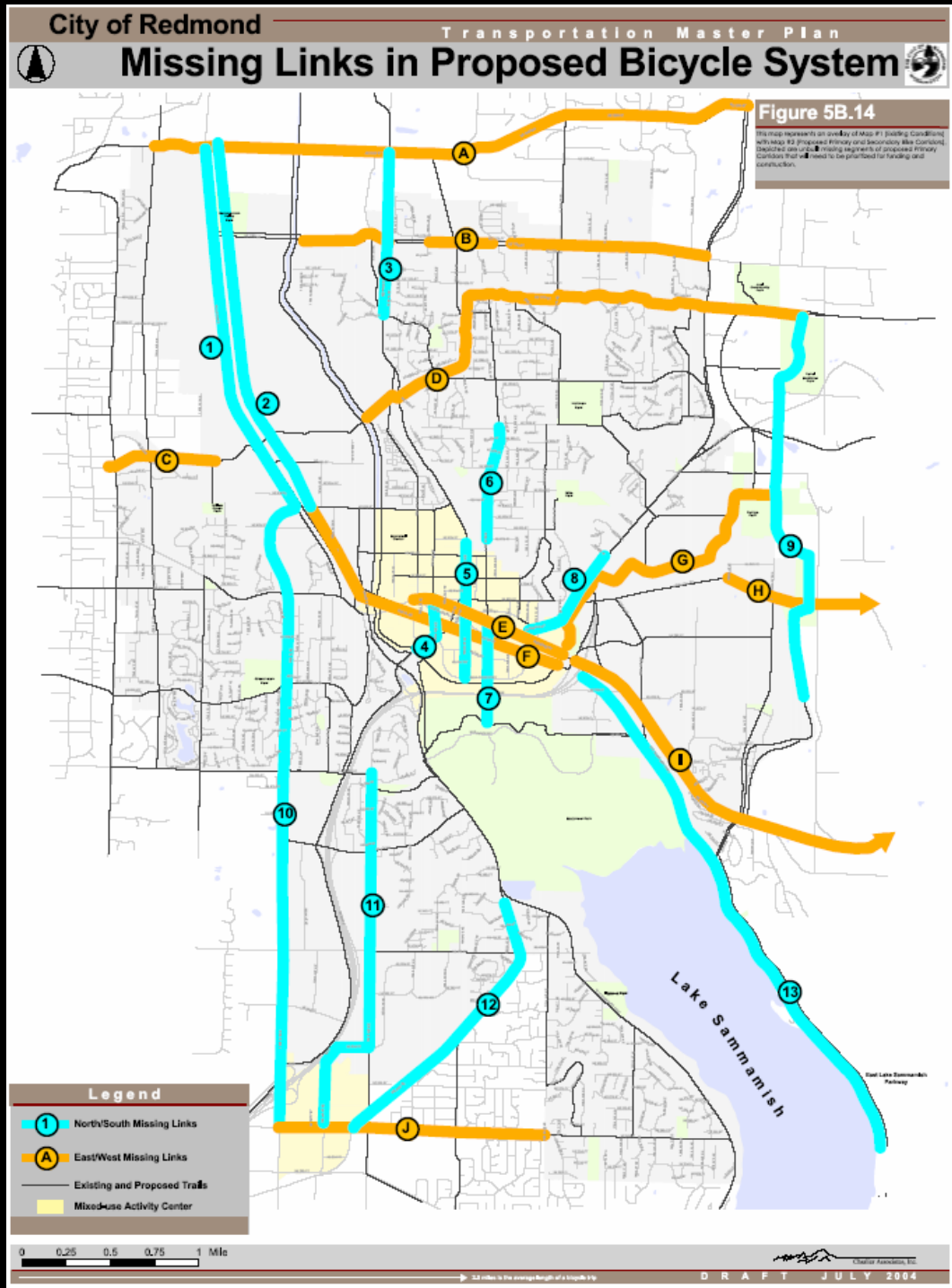
Map Missing Links

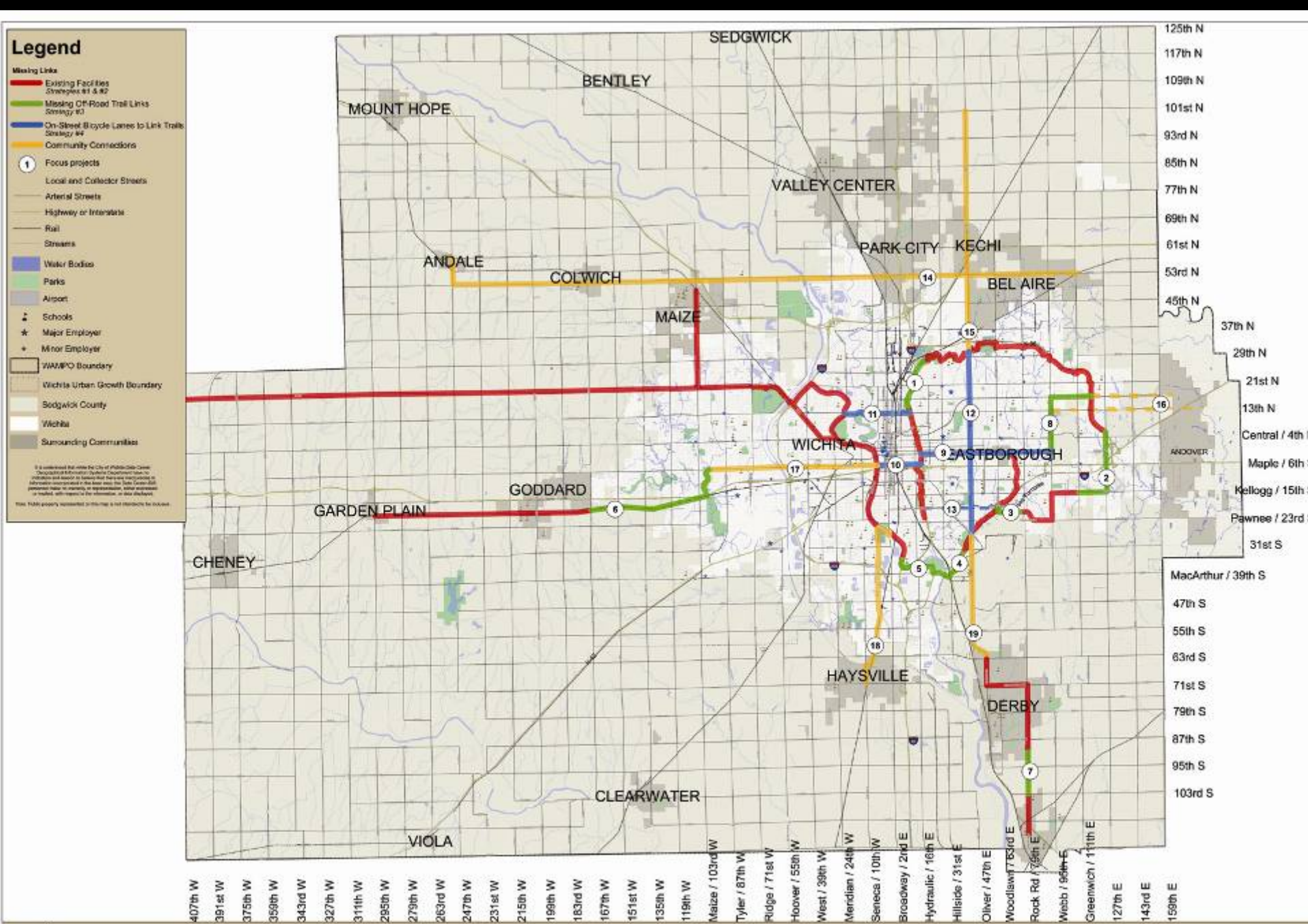
Practical Implementation Strategies

pathway users focus group

pathway users corridor workshop

Redmond Transportation Master Plan




Legend
Missing Links
Existing Facilities
Strategies #1 & #2
Missing Off-Road Trail Links
Strategy #3
On-Street Bicycle Lanes to Link Trails
Strategy #4
Community Connections
Focus projects
Local and Collector Streets
Arterial Streets
Highway or Interstate
Rail
Streams
Water Bodies
Parks
Airport
Schools
Major Employer
Minor Employer
WAMPO Boundary
Wichita Urban Growth Boundary
Sedgwick County
Wichita
Surrounding Communities
SEDGWICK
BENTLEY
MOUNT HOPE
VALLEY CENTER
PARK CITY
KECHI
ANDALE
COLWICH
BEL AIRE
MAIZE
WICHITA
EASTBOROUGH
ANDOVER
GODDARD
GARDEN PLAIN
CHENEY
HAYSVILLE
DERBY
CLEARWATER
VIOLA
125th N
117th N
109th N
101st N
93rd N
85th N
77th N
69th N
61st N
53rd N
45th N
37th N
29th N
21st N
13th N
Central / 4th
Maple / 6th
Kellogg / 15th
Pawnee / 23rd
31st S
MacArthur / 39th S
47th S
55th S
63rd S
71st S
79th S
87th S
95th S
103rd S
407th W
391st W
375th W
359th W
343rd W
327th W
311th W
295th W
279th W
263rd W
247th W
231st W
215th W
199th W
183rd W
167th W
151st W
135th W
119th W
Maize / 103rd W
Tyler / 87th W
Ridge / 71st W
Hoover / 55th W
West / 39th W
Meridian / 24th W
Seneca / 10th W
Broadway / 2nd E
Hydraulic / 16th E
Hillside / 31st E
Oliver / 47th E
Woodlawn / 63rd E
Rock Rd / 79th E
Webb / 95th E
Greenwich / 111th E
127th E
143rd E
159th E
N
W
E
S
0
2
4
8
Miles
Missing Links Map
Prepared by
February 2, 2007
WAMPO

Create IDs for Primary Corridors

Practical Implementation Strategies


BROADWAY
BOOGIE
BEAR CREEK
TRAIL

Apply Modern Design

Practical Implementation Strategies

Paved Shoulders, Pathways or Bike Lanes?

- AASHTO & MUTCD guidelines
- Drop or dash bike lane striping in advance of intersections
- Position bike lanes to left of right-turning vehicular lanes


Boulder, CO

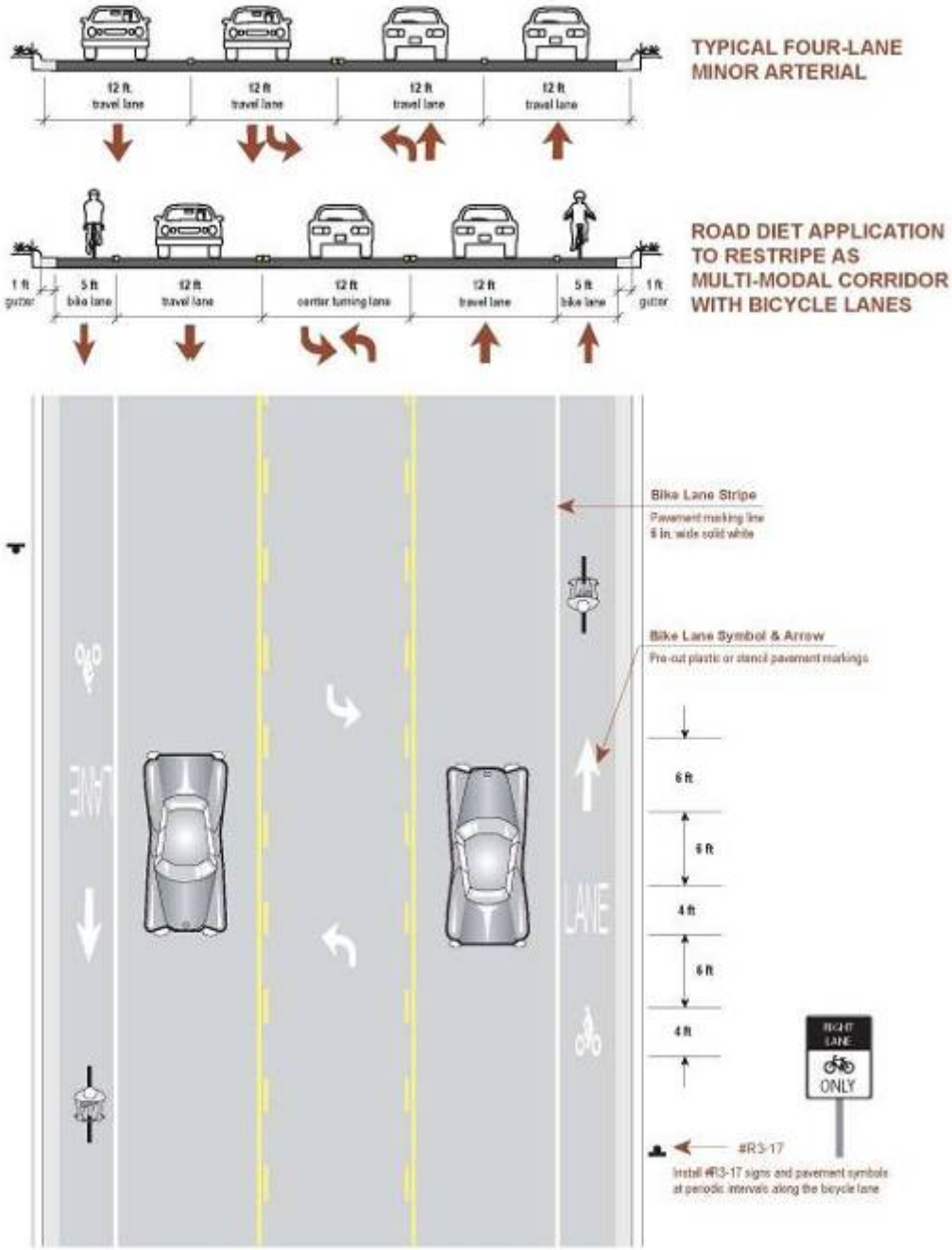

SPEED LIMIT
35

Consider Road Diets

Practical Implementation Strategies

“Road Diet”

Crash Studies: Vehicle-Vehicle



U.S.DOT FHWA

Highway Safety Information System -- Before and After Testing

Crash frequency	Road diets: 6% lower
Crash severity	No difference
Crash type	➢ Road diets had a higher percentage of angle crashes ➢ Road diets had a lower percentage of rear-end crashes

Source: HSIS, FHWA

University Place, WA

Bridgeport Way: 5-lane to 4-lane

before

after

Results

The City has analyzed speed, accident, and economic development data collected before and after the construction of the Bridgeport Way improvements between 35th and 40th Streets. The project's traffic calming features reduced speeds and crashes while increasing business activity. Average speed decreased by 13 percent and traffic accidents were reduced by 60 percent (see table below).

Safety Measures	Before	After	Change
Posted Speed Limit	6 km/h (35 mi/h)	56 km/h (35 mi/h)	Same
Average Actual Speed	1 km/h (37.6 mi/h)	52 km/h (32.6 mi/h)	–13 %
Average Annual Crashes	19	8 (first year)	–60 %

Table 1. Data from before and after the Bridgeport Way redesign.

Source: PEDSAFE

"Road Diets" Capacity Comparisons

Lane Reductions of Select Street Conversions-- Volume Changes

Roadway Section	Change	ADT (Before)	(After)	Notes
1. Lake Washington Blvd., Kirkland, Washington South of 83	4 lanes to 2 + TWLTL + bike lanes	23,000	25,913	
2. Lake Washington Blvd, Kirkland, Washington Near downtown	4 lanes to 2+ TWLTL + bike lanes	11,000	12,610	
3. Electric Avenue, Lewistown, Pennsylvania	4 lanes to 2 + TWLTL + bike lanes	13,000	14,500	
4. Burcham Road, East Lansing, Michigan	4 lanes to 2 + TWLTL + bike lanes	11-14,000	11-14,000	
5. Grand River Boulevard, East Lansing, Michigan	4 lanes to 2 + TWLTL + bike lanes	23,000	23,000	
6. St. George Street, Toronto, Ontario, Canada	4 lanes to 2 + bike lanes + wide sidewalks	15,000	15,000	
7. 120th Avenue, NE Bellevue, Washington	4 lanes to 2 + TWLTL	16,900	16,900	
8. Montana (commecial street) Bellevue, Washington	4 lanes to 2 lanes + TWLTL 4 lanes to 2 + median + bike lanes	18,500	18,500	
9. Main Street Santa Monica, California	4 lanes to 2 lanes + TWLTL 4 lanes to 2 + median + bike lanes	20,000	18,000	

Source: Walkable Communities Inc.

Iowa DOT

4-lane to 3-lane Conversions

Roads with less than 20,000 vehicles per day:

- 20%-30% reduction in crashes (due to reduced conflict points and improved sight distance)
- More user friendly to elderly drivers
- LOS remained the same (intersection delay increased from 6.2 sec/veh to 6.7 sec/veh)
- Improved emergency response time
- Improved pedestrian safety

Source: Transportation Research Board

Get Serious About Maintenance

Practical Implementation Strategies

Maintenance

- Spot improvement program
  - Standard reporting and responsibility assignment
- On-street facility maintenance
  - Sweep right hand edges
  - Maintain drainage grates
- Off-street facility maintenance
  - Remove loose material from pathway surface
  - Fix rough surfaces and post warning signs
- Prioritize snow removal


ALASKA
SNOW SAFARIS
Snowmobile tours
Dogsledding, Heli-skiing, Flightseeing
783-SNOW (7669)


SPEED
LIMIT
30

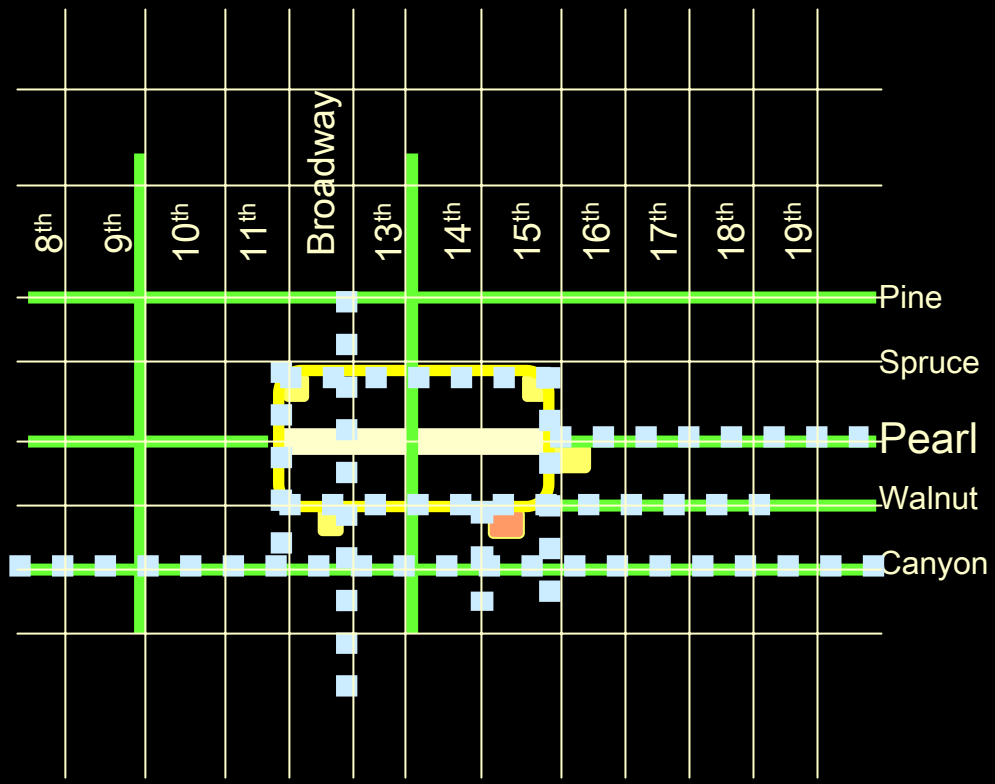
Next …

A pedestrian district – or is it?

Practical Implementation Examples

Boulder

Pearl Street "Pedestrian Mall"



Pedestrian Mall

Parking Structures

Parking Structure with Transit

Downtown Loop

Transit Routes

Bike Facilities

Boulder


PUBLIC PARKING
FREE PARKING SAT. & SUN.
P
BOLT
up & down
the Diagonal
6

Boulder


Boulder

Boulder

Boulder

Boulder

Boulder's "pedestrian mall" works because …

… it is an integral part of an intermodal system

Pushing the envelope: safe routes to school

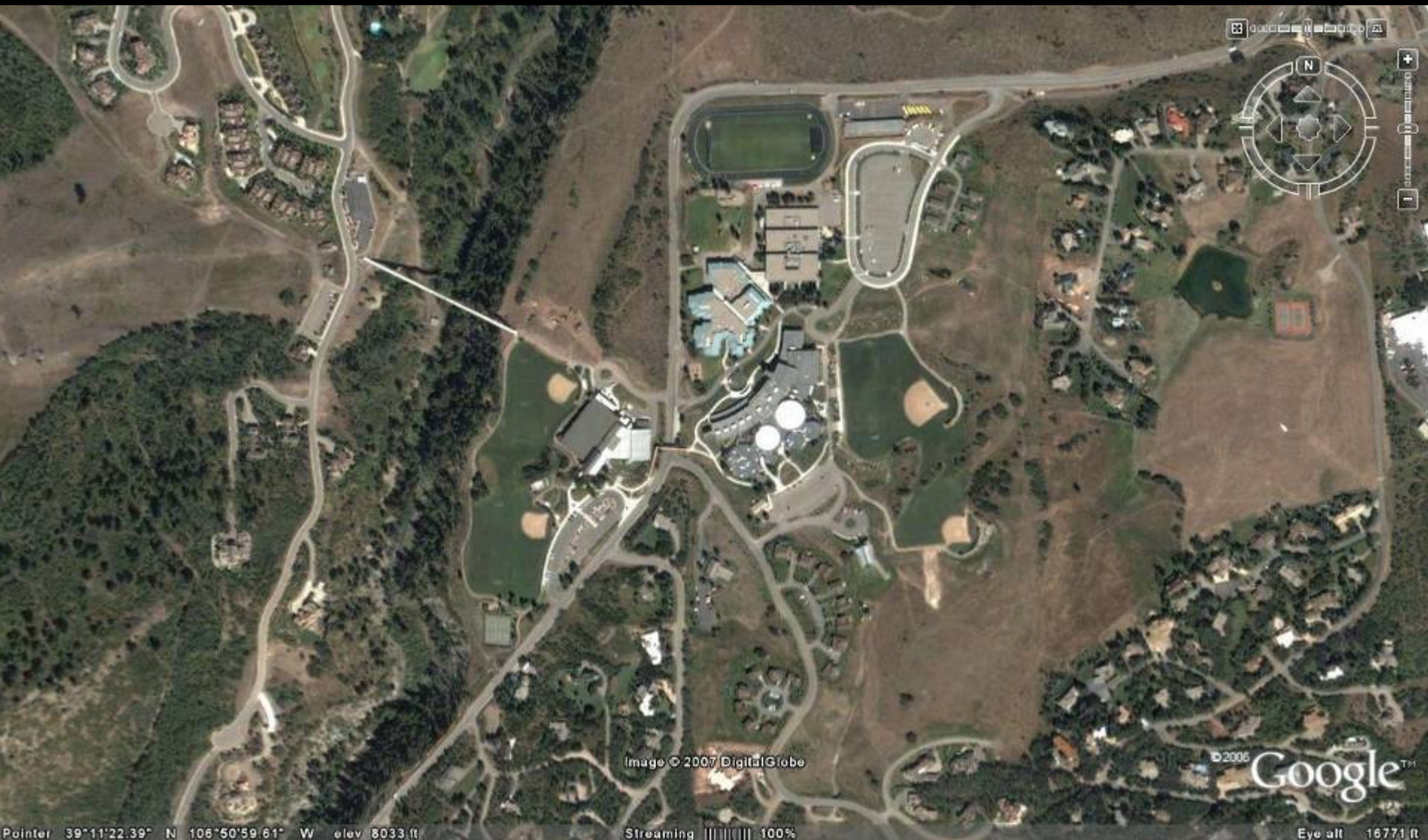
Practical Implementation Examples

Hawaii Island


N
Image © 2007 DigitalGlobe
©2006 Google
Pointer 39°11'42.25" N 106°50'27.91" W elev 7924 ft
Streaming 67%
Eye alt 14370 ft


Downtown Aspen
Airport Business Center
Aspen Golf & Tennis
School Campus
Aspen Recreation Center
NO
MOTORIZED
VEHICLES

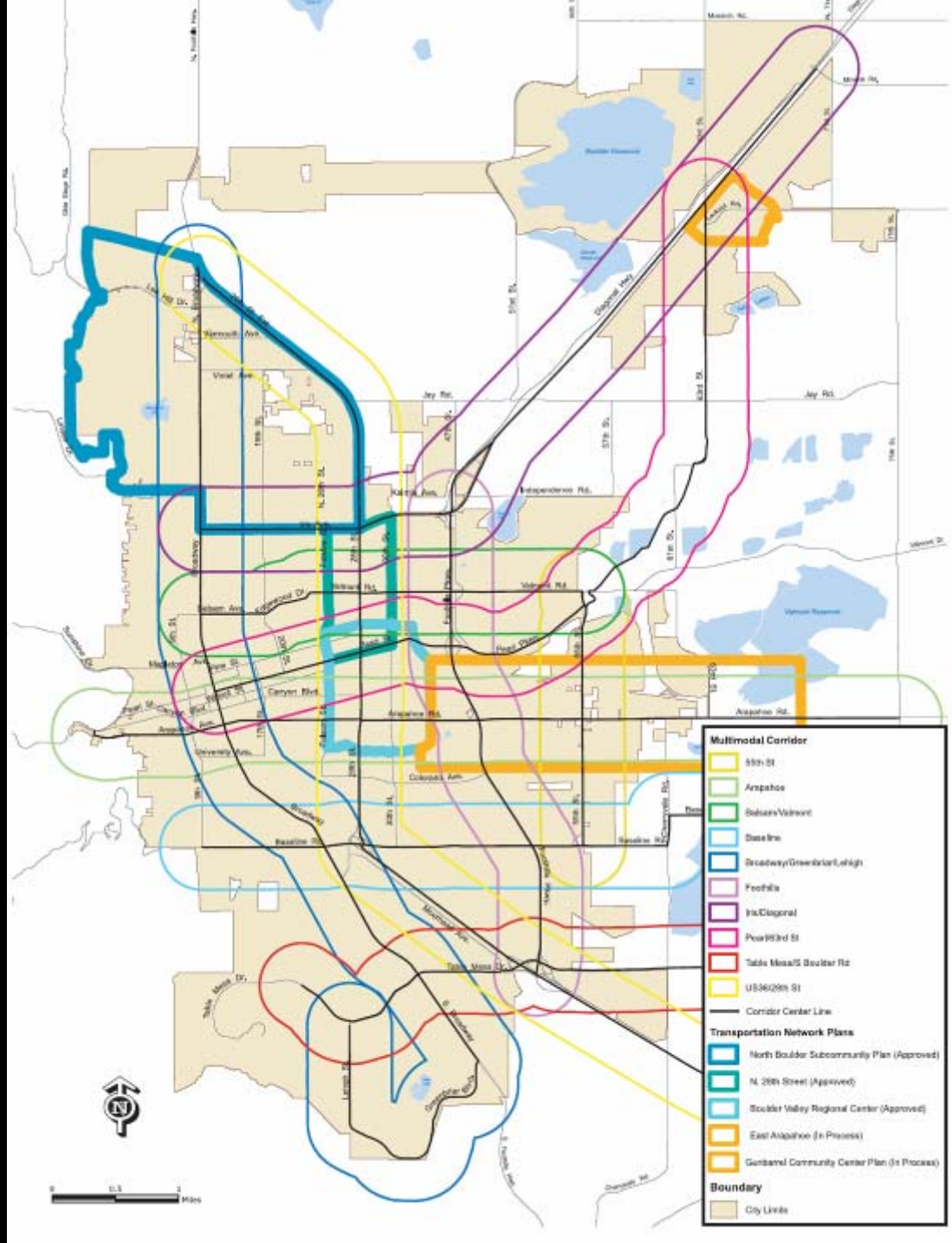

N
Image © 2007 DigitalGlobe
©2006 Google™
Pointer 39°11'21.73" N 106°51'06.04" W elev 8034 ft
Streaming 100%
Eye alt 13404 ft

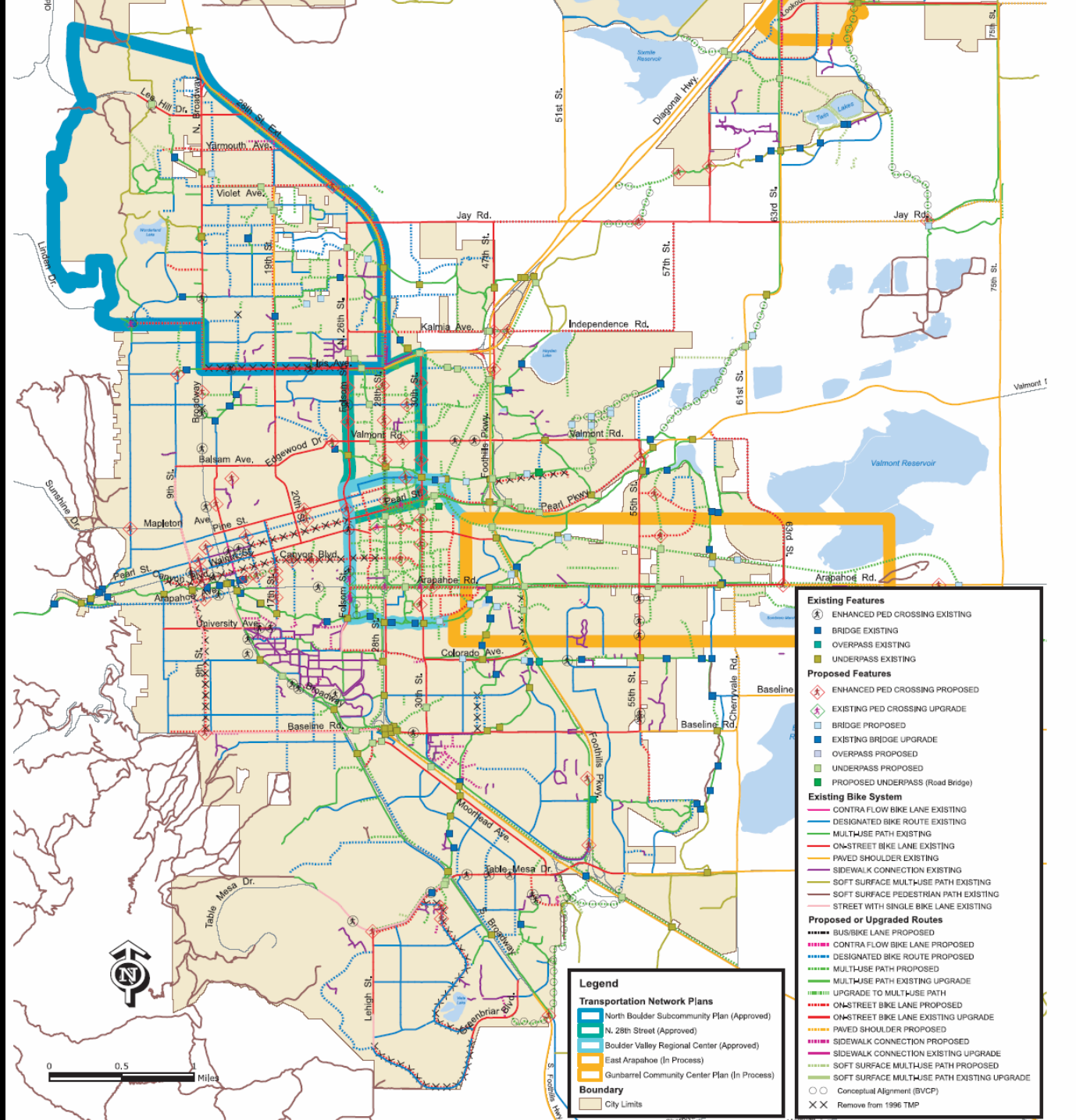

N
Image © 2007 DigitalGlobe
©2006 Google™
Pointer 39°11'22.39" N 106°50'59.61" W elev 8033 ft
Streaming 100%
Eye alt 16771 ft

Small steps with big results

Practical Implementation Examples

Boulder's Multimodal Corridors




Existing Features
ENHANCED PED CROSSING EXISTING
BRIDGE EXISTING
OVERPASS EXISTING
UNDERPASS EXISTING
Proposed Features
ENHANCED PED CROSSING PROPOSED
EXISTING PED CROSSING UPGRADE
BRIDGE PROPOSED
EXISTING BRIDGE UPGRADE
OVERPASS PROPOSED
UNDERPASS PROPOSED
PROPOSED UNDERPASS (Road Bridge)
Existing Bike System
CONTRA FLOW BIKE LANE EXISTING
DESIGNATED BIKE ROUTE EXISTING
MULTI-USE PATH EXISTING
ON-STREET BIKE LANE EXISTING
PAVED SHOULDER EXISTING
SIDEWALK CONNECTION EXISTING
SOFT SURFACE MULTI-USE PATH EXISTING
SOFT SURFACE PEDESTRIAN PATH EXISTING
STREET WITH SINGLE BIKE LANE EXISTING
Proposed or Upgraded Routes
BUS/BIKE LANE PROPOSED
CONTRA FLOW BIKE LANE PROPOSED
DESIGNATED BIKE ROUTE PROPOSED
MULTI-USE PATH PROPOSED
MULTI-USE PATH EXISTING UPGRADE
UPGRADE TO MULTI-USE PATH
ON-STREET BIKE LANE PROPOSED
ON-STREET BIKE LANE EXISTING UPGRADE
PAVED SHOULDER PROPOSED
SIDEWALK CONNECTION PROPOSED
SIDEWALK CONNECTION EXISTING UPGRADE
SOFT SURFACE MULTI-USE PATH PROPOSED
SOFT SURFACE MULTI-USE PATH EXISTING UPGRADE
Conceptual Alignment (BVCP)
Remove from 1996 TMP
Legend
Transportation Network Plans
North Boulder Subcommunity Plan (Approved)
N. 28th Street (Approved)
Boulder Valley Regional Center (Approved)
East Arapahoe (In Process)
Gunbarrel Community Center Plan (In Process)
Boundary
City Limits
0
0.5
1
Miles
Jay Rd.
Valmont Rd.
Independence Rd.
Kalmia Ave.
Arapahoe Rd.
Baseline Rd.
Pearl St.
Pearl Pkwy
Foothills Pkwy
Broadway
Table Mesa Dr.
Moorhead Ave.
Greenbriar Blvd.
Lehigh St.
Yarmouth Ave.
Violet Ave.
Balsam Ave.
Edgewood Dr.
Mapleton Ave.
Pine St.
Canyon Blvd.
University Ave.
Colorado Ave.
Cherryvale Rd.
Diagonal Hwy.
Valmont Reservoir
Sunshine Reservoir
Twin Lakes
Wonderland Lake
Heyder Lake
Linden Dr.
Lee Hill Dr.
N. Broadway
28th St. Ext.
19th St.
26th St.
47th St.
51st St.
57th St.
61st St.
63rd St.
75th St.
9th St.
20th St.
17th St.
Folsom St.
30th St.
55th St.


the end

www.charlier.org