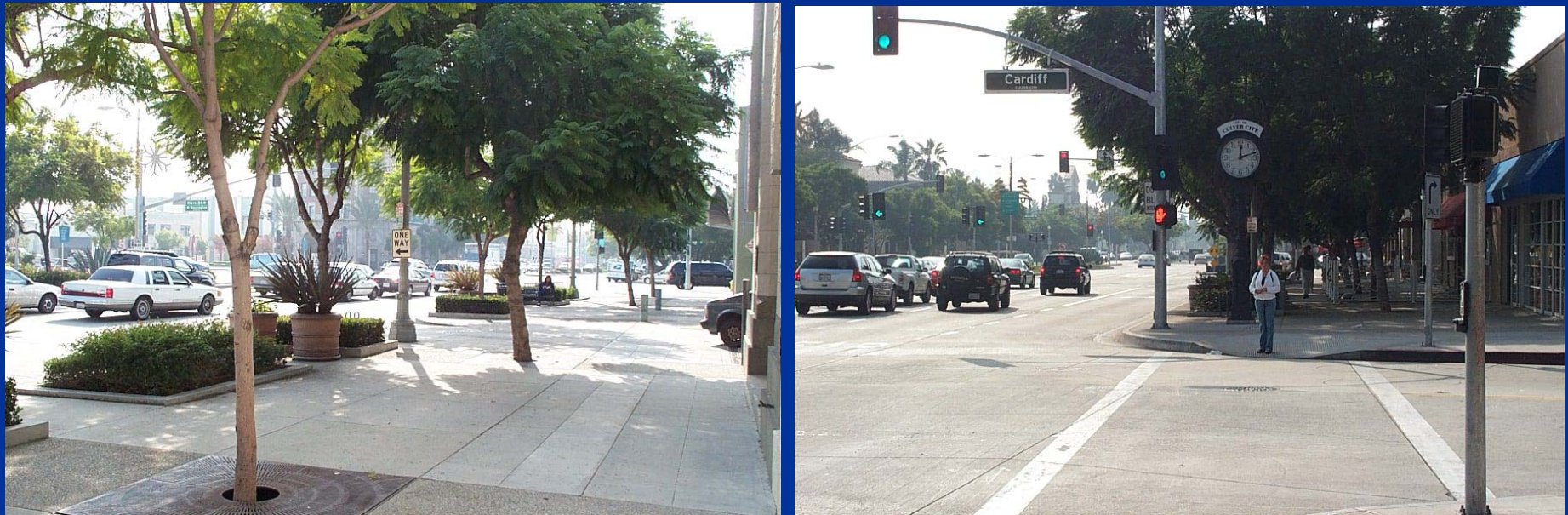


Context Sensitive Solutions

A Process to Achieve Better Results



Brian Bochner
Texas Transportation Institute

Context Sensitive Solutions

Collaborating with stakeholders to develop projects that meet their needs

- Stakeholders' views
 - Support needs & objectives
 - Compatible

Example:

I-30/I-35W Interchange Reconstruction

Downtown Ft. Worth, Texas

Project

- Existing elevated freeway over Lancaster Avenue



- Project
 - Reconstruction
 - Capacity and Safety improvements

Initial Plan

- Initial plan – early 1980s
 - Widened elevated structure
- Community reaction
 - Opposition
 - Lawsuit
 - Leadership interest to find better solution



Initial Plan

- Objectives/concerns
 - Replace aging structure
 - Increase interchange capacity
 - Increase safety
 - Merges
 - Weaves
 - Design speed
 - Sight distances
 - Stakeholders wanted
 - Freeway
 - Improve aesthetics
 - Remove or reduce barrier
 - Permit T&P Buildings revitalization

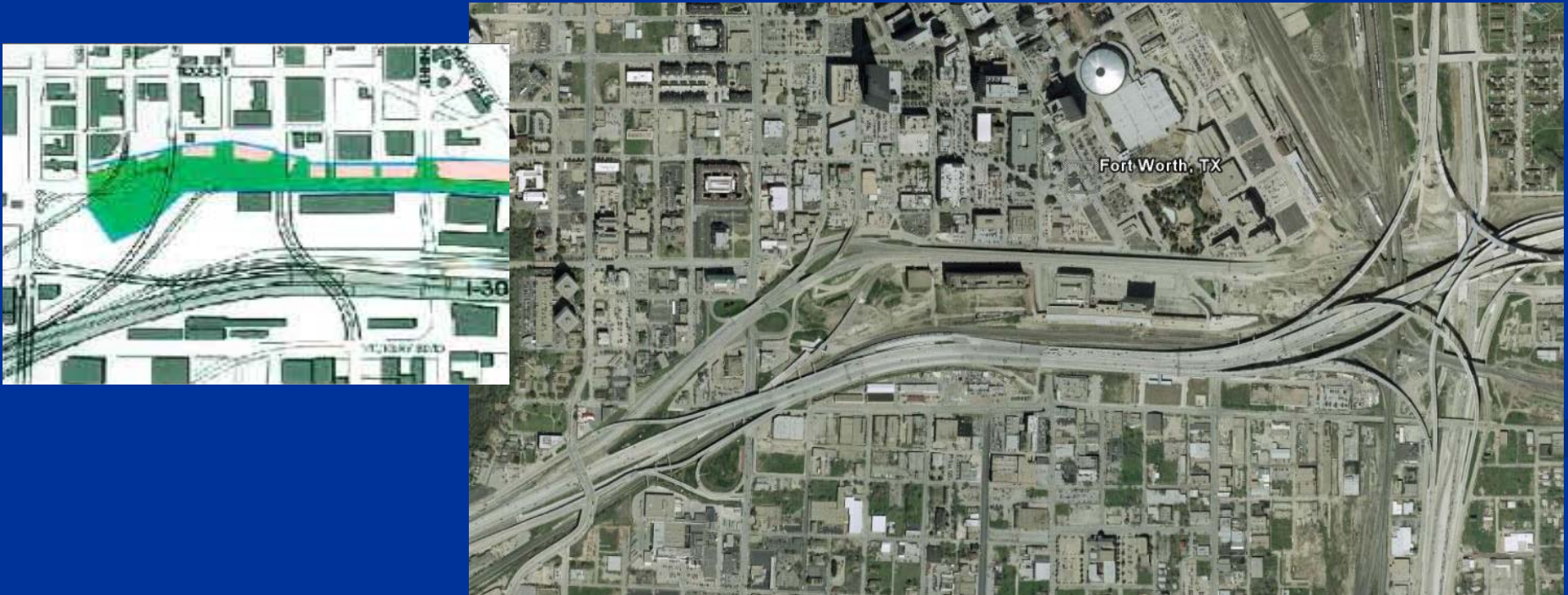


Approach

- **Multi-disciplinary team**
- **Initial stakeholder meetings**
- **Objectives**
- **Alternatives workshops**
 - **Existing alignment**
 - **Elevated**
 - **At-grade**
 - **Depressed**
 - **New alignments**

Plan

- New alignment
- “Recapture” Lancaster Avenue
- “Reunite” T&P area with downtown
- West leg at grade
- Redevelopment on surplus right-of-way
- Community support
- (Better freeway design)



Why New Plan Acceptable

- Stakeholders became part of solution
- Better stakeholder understanding
- More comprehensive objectives/evaluation
- Stakeholder support facilitated difficult decisions
- State DOT got better, more sustainable design

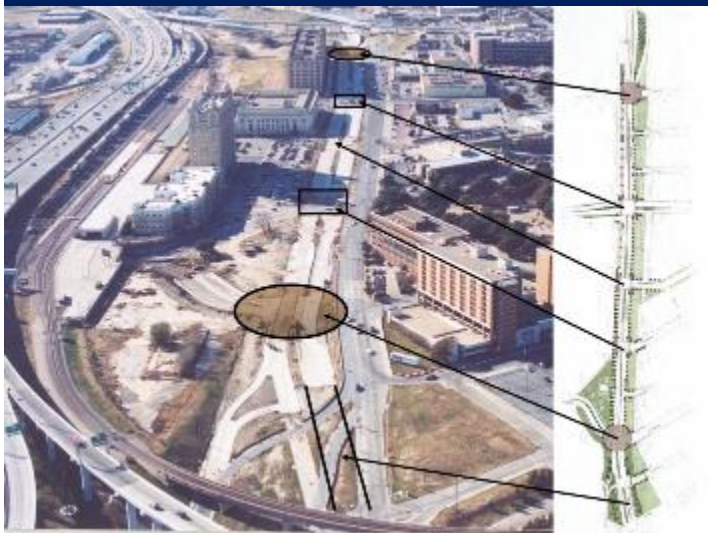
Relocated I-30 West Leg



Relocated I-30 West Leg



Lancaster Avenue



Lancaster Avenue



How Do You Get To This?

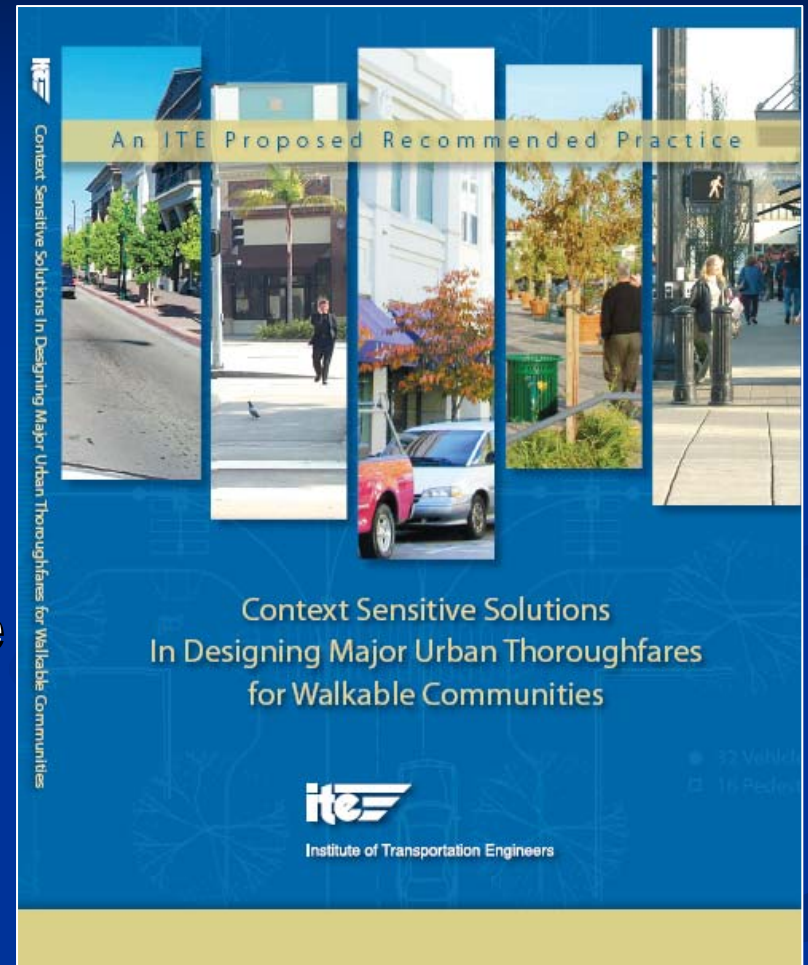


Collaborate – Design Flexibility – Logic & Demonstration

Context Sensitive Solutions in Designing Major Urban Thoroughfares for Walkable Communities

ITE proposed recommended practice

Download from www.ite.org



Project Sponsors

- **Federal Highway Administration**



- **Environmental Protection Agency**



Prepared by:

- **Institute of Transportation Engineers**
- **Congress for the New Urbanism**

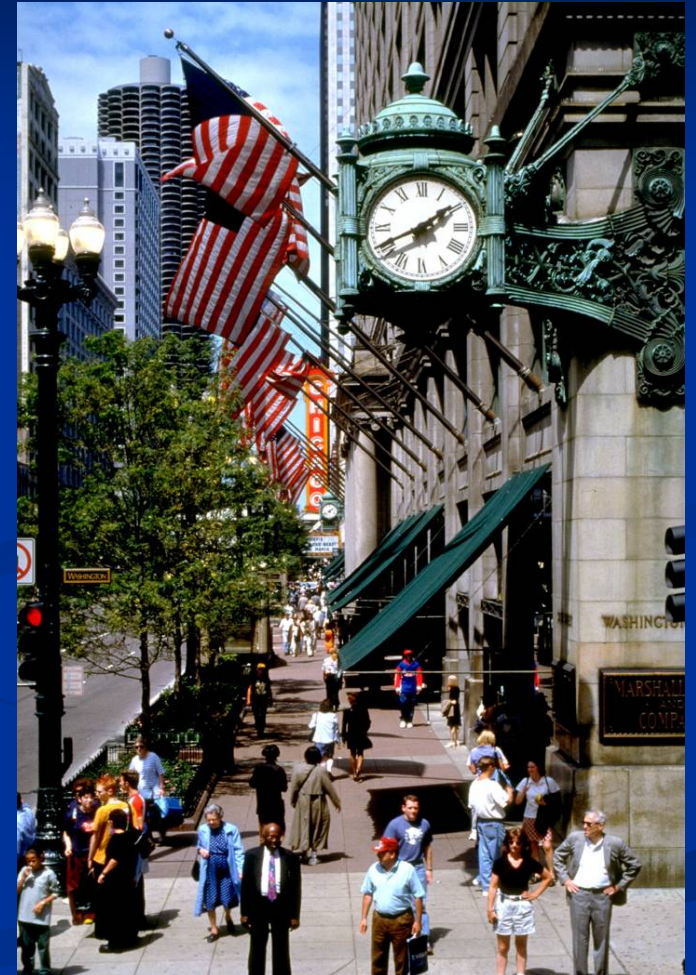
Communities Asked For:

- Flexibility
- Compatibility with adjacent land uses
- Balanced land use/transportation functions
- Safe and attractive streets
- Multimodal facilities
- Quality public street space



Focus

- Major urban thoroughfares in walkable areas
 - “Major”:
 - arterials and collectors
 - “Urban”:
 - Walkable suburbs, town and city centers, neighborhoods
 - mix of interactive land uses
 - Viable, attractive choices
 - Walking
 - Biking
 - Transit



Tenets of CSS

- **Bring place and thoroughfare design together**
- **Balance**
 - Safety
 - Mobility
 - Community objectives
 - Environment
- **Multimodal**
- **Involve public, stakeholders**
- **Interdisciplinary teams**
- **Flexibility in design**
- **Incorporate aesthetics**

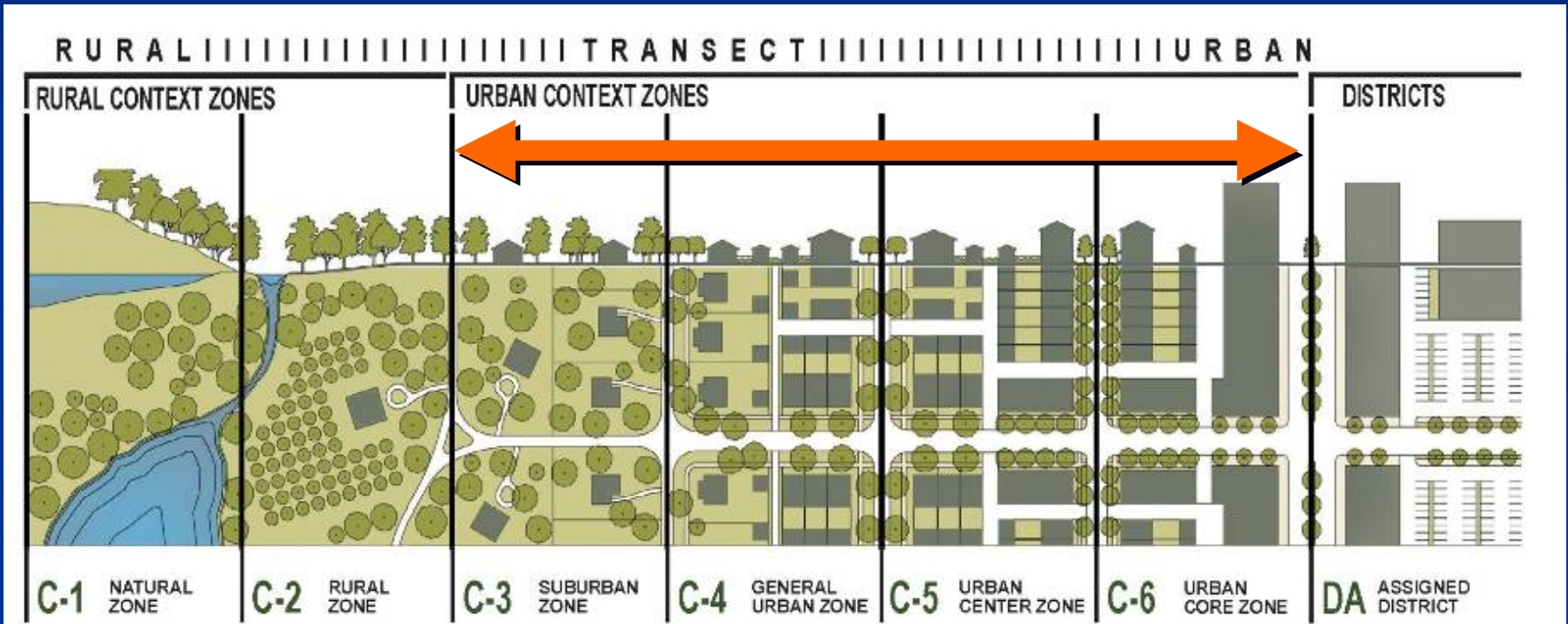


CSS Design Framework

- **Context zones:**
 - Suburbs to urban cores
- **Street classification:**
 - Functional class
 - **Thoroughfare type**
- **Compatibility & mutual support**



Context Zones – An Organizing System for Thoroughfare Design



Thoroughfare Components

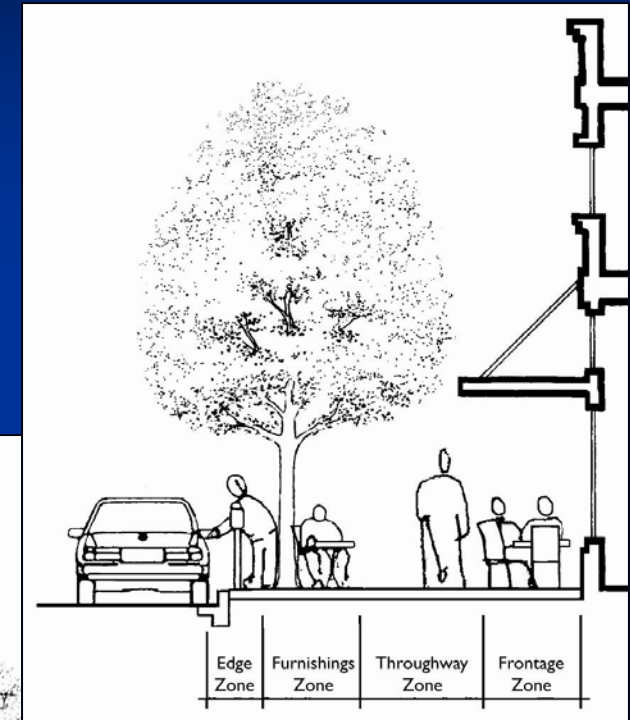
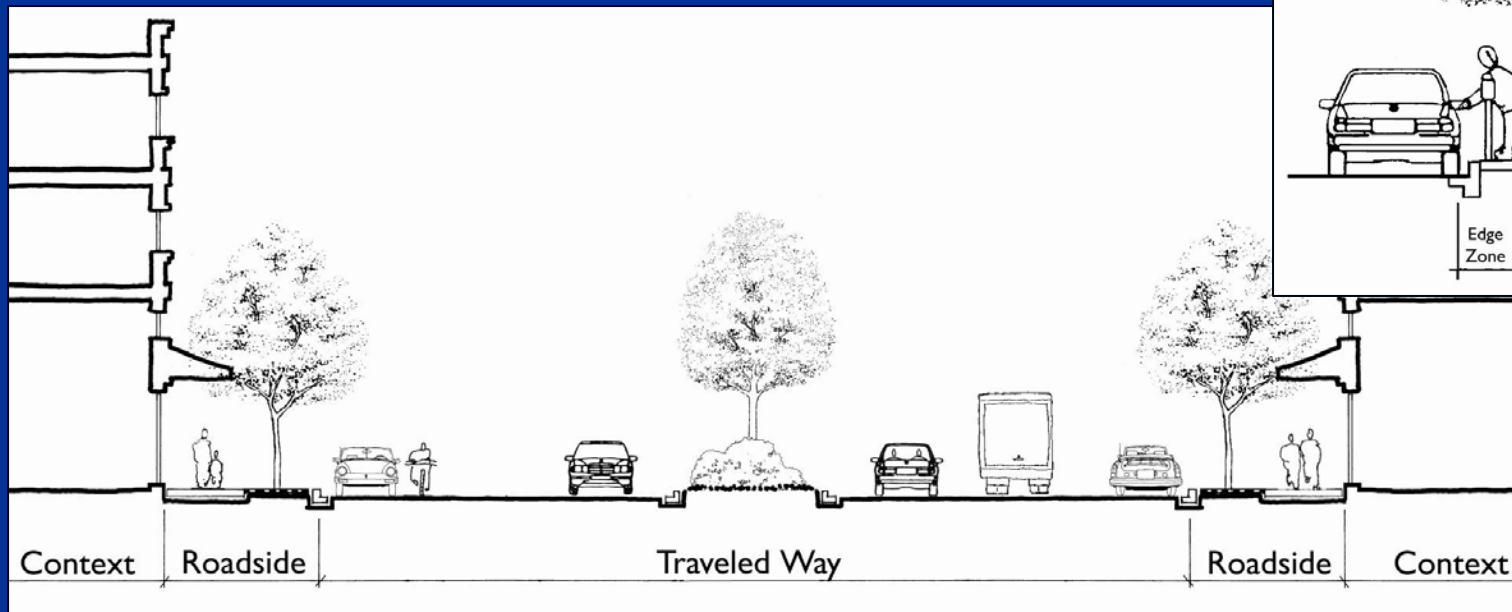
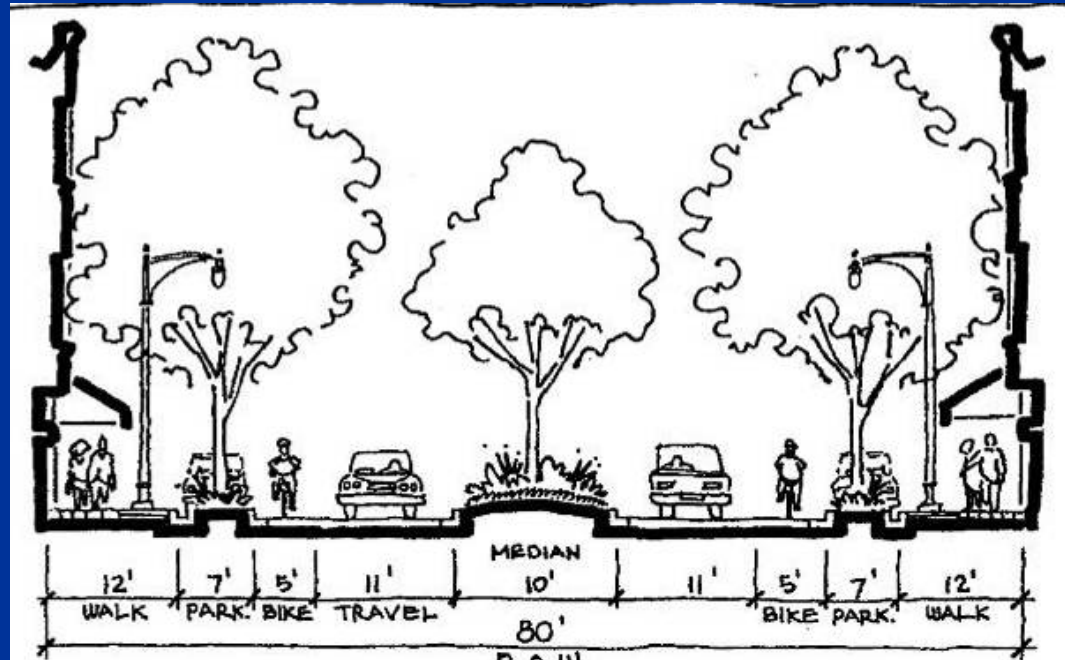


Table 6.2 General Parameters for Arterial Thoroughfares

Context	Suburban (C-3)				General Urban (C-4)				Urban Center/Core (C-5/6)			
	Residential		Commercial		Residential		Commercial		Residential		Commercial	
	Boulevard	Avenue	Boulevard	Avenue	Boulevard	Avenue	Boulevard	Avenue	Boulevard	Avenue	Boulevard	Avenue
Building Orientation (entrance orientation)	front, side	front, side	front, side	front, side	front	front	front	front	front	front	front	front
Maximum Setback [1]	20 ft.	20 ft.	5 ft.	5 ft.	15 ft.	15 ft.	0 ft.	0 ft.	10 ft.	10 ft.	0 ft.	0 ft.
Off-Street Parking Access/Location	rear, side	rear, side	rear, side	rear, side	rear, side	rear, side	rear, side	rear, side	rear	rear	rear	rear
Roadside												
Recommended Roadside Width [2]	14.5 ft.	12.5 ft.	16 ft.	15 ft.	16.5 ft.	12.5 ft.	19 ft.	16 ft.	21.5 ft.	19.5 ft.	21.5 ft.	19.5 ft.
Pedestrian Buffers (planting strip exclusive of travel way width) [2]	8 ft. planting strip	6-8 ft. planting strip	7 ft. tree well	6 ft. tree well	8 ft. planting strip	6-8 ft. planting strip	7 ft. tree well	6 ft. tree well	7 ft. tree well	6 ft. tree well	7 ft. tree well	6 ft. tree well
Street Lighting	For all arterial thoroughfares in all context zones, intersection safety lighting, basic street lighting and pedestrian-scaled lighting is recommended. See Chapter 8 (Roadside Design Guidelines) and Chapter 10 (Intersection Design Guidelines).											
Traveled Way												
Target Speed (mph)	35	25-30	35	35	35	25-30	35	25-30 [3]	35	25-30	30	25-30 [3]
Design Speed	Design speed should be a maximum of 5 mph over the operating speed. Design speed is used as a control for certain geometric design elements including sight distance and horizontal and vertical curvature.											
Number of Through Lanes [4]	4-6	2-4	4-6	2-4	4-6	2-4	4-6	2-4	4-6	2-4	4-6	2-4
Lane Width [5]	10-11 ft.	10-11 ft.	10-12 ft.	10-11 ft.	10-11 ft.	10-11 ft.	10-12 ft.	10-11 ft.	10-11 ft.	10-11 ft.	10-11 ft.	10-11 ft.
Parallel On-Street Parking Width [6]	7 ft.	7 ft.	8 ft.	8 ft.	7 ft.	7 ft.	8 ft.	8 ft.	7 ft.	7 ft.	8 ft.	8 ft.
Min. Combined Parking/Bike Lane Width	13 ft.	13 ft.	13 ft.	13 ft.	13 ft.	13 ft.	13 ft.	13 ft.	13 ft.	13 ft.	13 ft.	13 ft.
Horizontal Radius (per AASHTO) [7]	762 ft.	510 ft.	762 ft.	762 ft.	762 ft.	510 ft.	762 ft.	510 ft.	762 ft.	510 ft.	510 ft.	510 ft.
Vertical Alignment	Use AASHTO minimums as a target, but consider combinations of horizontal and vertical per AASHTO Green Book.											
Medians (which will accommodate single left-turn lanes at intersections) [8]	14-16 ft.	Optional 14 ft.	14-16 ft.	Optional 14 ft.	14-16 ft.	Optional 14 ft.	14-16 ft.	Optional 14 ft.	14-16 ft.	Optional 14 ft.	14-16 ft.	Optional 14 ft.
Bike Lanes (min./preferred width)	5 ft./6 ft.	5 ft./6 ft.	5 ft./6 ft.	5 ft./6 ft.	5 ft./6 ft.	5 ft./6 ft.	5 ft./6 ft.	5 ft./6 ft.	5 ft./6 ft.	5 ft./6 ft.	5 ft./6 ft.	5 ft./6 ft.
Access Management [9]	Moderate	Low	High	Moderate	Moderate	Low	High	Low	Moderate	Low	High	Low
Typical Traffic Volume Range (vpd)	20,000-35,000	15,000-25,000	20,000-50,000	10,000-35,000	10,000-30,000	10,000-20,000	15,000-40,000	5,000-30,000	15,000-30,000	10,000-20,000	15,000-40,000	5,000-30,000
Intersections												
Roundabout	Consider urban single-lane roundabouts at intersections on arterial avenues with less than 20,000 entering vehicles per day, and urban double-lane roundabouts at intersections on Boulevards and Avenues with less than 40,000 entering vehicles per day.											
Curb Return Radii	Refer to Chapter 10 (Intersection Design Guidelines) for details											

Considerations in Cross-Section Design

- Local objectives
- Stakeholder priorities
- Context zone and thoroughfare type
- Adjacent activities
- Functional class
- Modal requirements
- Other conditions
 - Right-of-way
 - Traffic volumes
 - Vehicle mix



Common Challenges

- Right of way limitations
- Conflicting objectives
- Flexibility
 - Departing from standards
 - How much is enough
 - Liability concerns
- Obtaining commitment to stakeholder collaboration





Each project a major departure from “normal”

For more information:

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