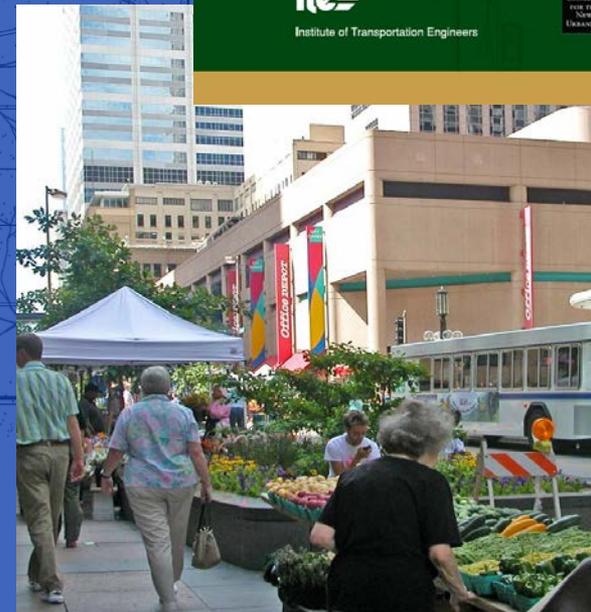
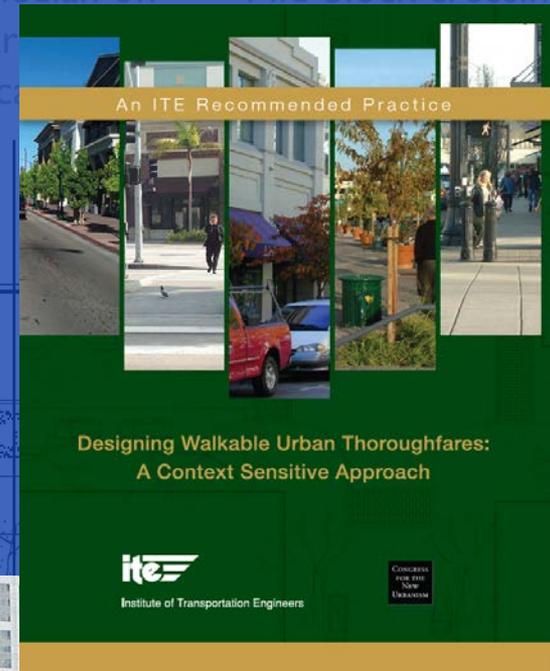


Designing Walkable Urban Thoroughfares: A Context Sensitive Approach

Communities Want:

- Flexibility
- Compatibility with adjacent land uses
- Balanced land use/transportation functions
- Safe and attractive streets
- Multimodal facilities
- Streets as quality public space
- Fewer design exceptions



Focus of the Recommended Practice

Walkable urban thoroughfares based on urban contexts

- “Major roads”:
 - Arterials and collectors
- “Urban”:
 - Walkable suburbs, town and city centers, neighborhoods
 - Mix of interactive land uses
 - Viable, attractive choices
 - Walking
 - Biking
 - Transit



Photo: Skidmore, Owings and Merrill LLP

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



Source: Minnesota Department of Transportation

CSS: Bringing Place and Thoroughfare Design Together



CSS: Bringing Place and Thoroughfare Design Together



CSS: Bringing Place and Thoroughfare Design Together

Raised median on
Boulevards with

Mid-block crossings
with curb extensions
and median refuge

Sidewalk width appropriate to
use

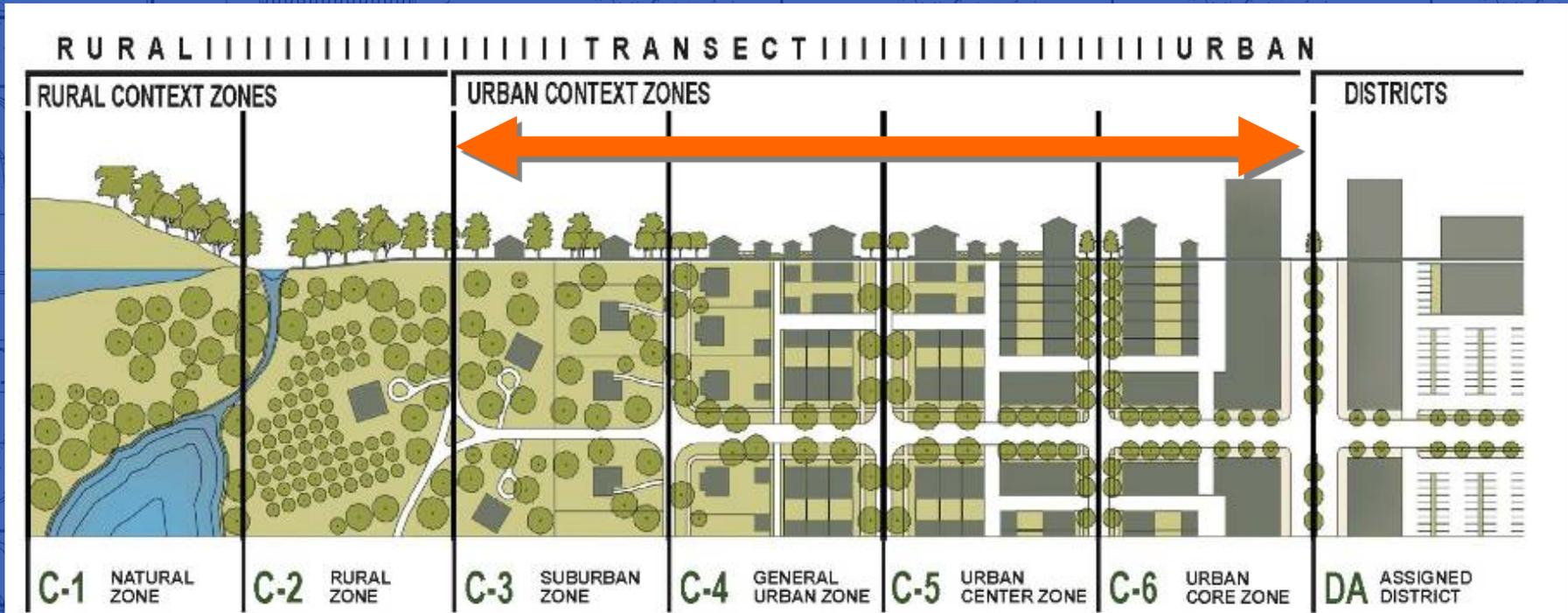


CSS Design Framework

- Context zones:
 - Suburbs to urban cores
- Street classification:
 - Functional class
 - Arterial
 - Collector
 - Thoroughfare type
 - Boulevard
 - Avenue
 - Street
- Compatibility and mutual support



Context Zones – An Organizing System for Thoroughfare Design



Source: Duany Plater-Zyberk and Company

Pedestrian amenities
such as benches,

Urban Design
Features

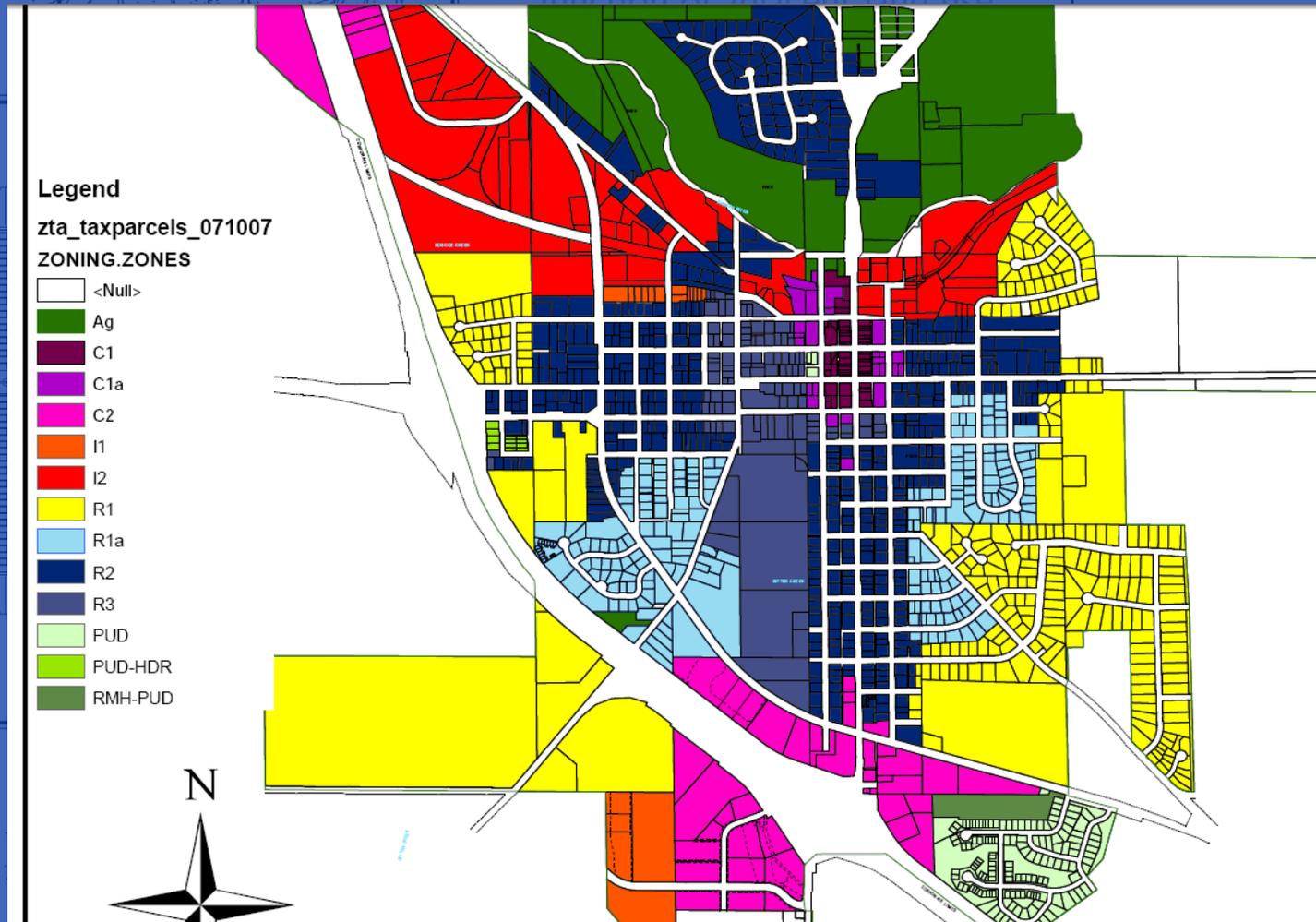
Short pedestrian
scaled blocks

Features That Create Context

- **Land use**
 - Defines urban activity
 - Major factor in design criteria
- **Site design**
 - Arrangement of buildings, circulation, parking and landscape
 - Vehicle or pedestrian-orientation
- **Building design**
 - Height, massing shape context
 - Create enclosure/pedestrian interest



Zumbrota Land Use/Zoning

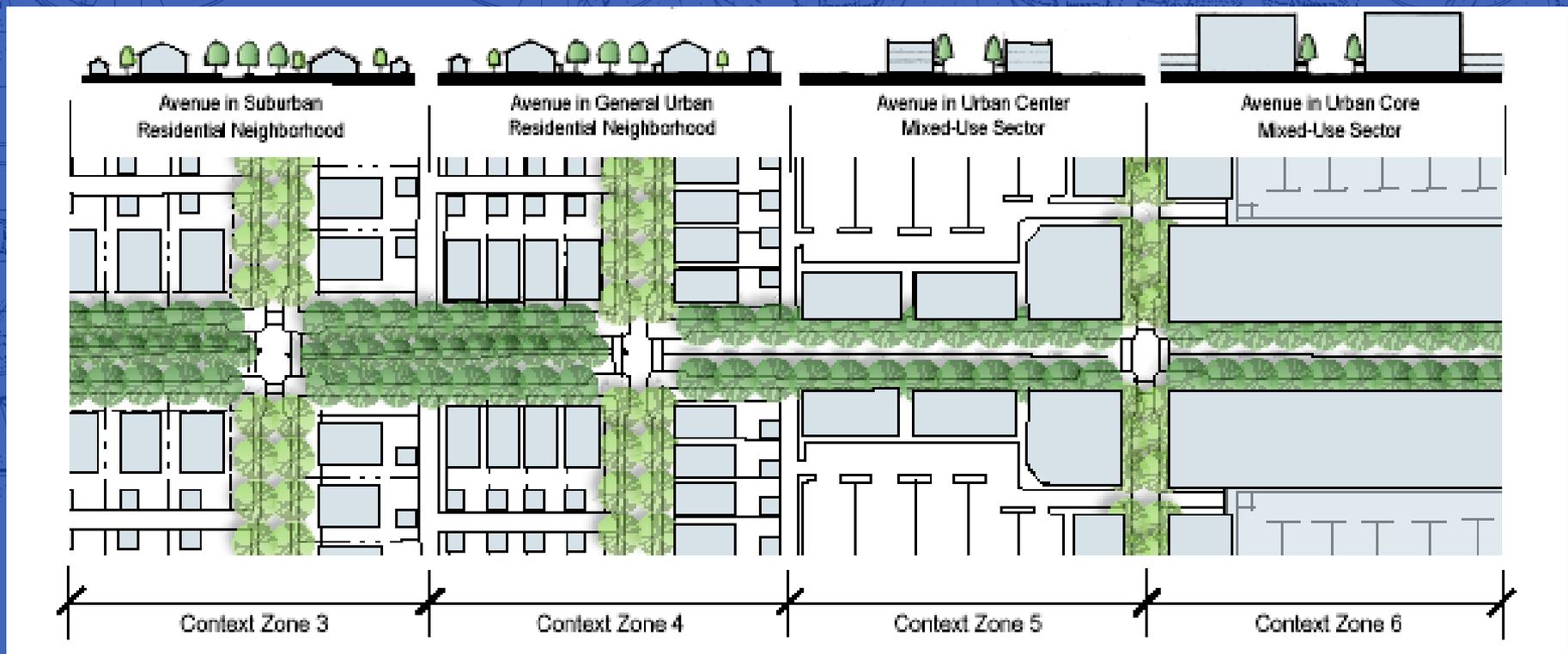


CSS vs. Conventional Thoroughfare Design Approach

Conventional	CSS Approach
<p>Context:</p> <ul style="list-style-type: none">-Urban-Rural	<p>Context:</p> <ul style="list-style-type: none">-Suburban-General urban-Urban center-Urban core
<p>Design criteria primarily based on:</p> <ul style="list-style-type: none">-Functional class-Design speed-Forecast travel demand-Level of service	<p>Design criteria primarily based on:</p> <ul style="list-style-type: none">-Community objectives-Functional class-Thoroughfare type-Adjacent land use

Thoroughfare Design Changes as Context Changes

The thoroughfare both responds to and contributes to shaping the context and defining the place



Context Zone Descriptions

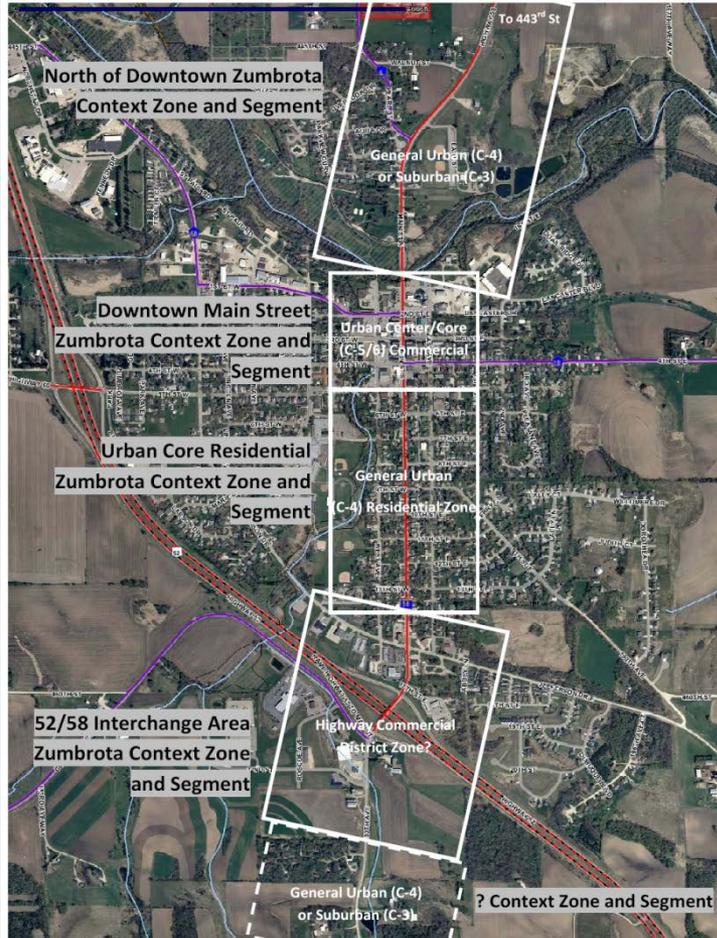
Raised median on
landscaping

Mid-block crossings
with curb extensions
and median refuge

C-3 Suburban	Primarily single family residential with walkable development pattern and pedestrian facilities, dominant landscape character. Includes scattered commercial uses that support the residential uses, and connected in walkable fashion.	Detached buildings with landscaped yards, normally adjacent to C-4 zone. Commercial uses may consist of neighborhood or community shopping centers, service or office uses with side or rear parking.	Varying front and side yard setbacks	Residential uses include lawns, porches, fences and naturalistic tree planting. Commercial uses front onto thoroughfare.	1 to 2 story with some 3 story	Parks, green-belts	Local, express bus
C-4 General Urban	Mix of housing types including attached units, with a range of commercial and civic activity at the neighborhood and community scale	Predominantly detached buildings, balance between landscape and buildings, presence of pedestrians	Shallow to medium front and side yard setback	Porches, fences	2 to 3 story with some variation and few taller workplace buildings	Parks, green-belts	Local, limited stop bus rapid transit, express bus; fixed guideway
C-5 Urban Center	Attached housing types such as townhouses and apartments mixed with retail, workplace and civic activities at the community or sub-regional scale.	Predominantly attached buildings, landscaping within the public right of way, substantial pedestrian activity	Small or no setbacks, buildings oriented to street with placement and character defining a street wall	Stoops, dooryards, storefronts and arcaded walkways	3 to 5 story with some variation	Parks, plazas and squares, boulevard median landscaping	Local bus; limited stop rapid transit or bus rapid transit; fixed-guideway transit
C-6 Urban Core	Highest-intensity areas in sub-region or region, with high-density residential and workplace uses, entertainment, civic and cultural uses	Attached buildings forming sense of enclosure and continuous street wall landscaping within the public right of way, highest pedestrian and transit activity	Small or no setbacks, buildings oriented to street, placed at front property line	Stoops, dooryards, forecourts, storefronts and arcaded walkways	4+ story with a few shorter buildings	Parks, plazas and squares, boulevard median landscaping	Local bus; limited stop rapid transit or bus rapid transit; fixed-guideway transit
Districts	To be designated and described locally, districts are areas that are single-use or multi-use with low-density development pattern and vehicle mobility priority thoroughfares. These may be large facilities such as airports, business parks and industrial areas.						As applicable

Zumbrota Context Zone Examples

MN 58 Zumbrota Context Zones and Segments, Zumbrota Sub-Area Study
DRAFT EXAMPLE 6/23/11



width appropriate to
of adjacent land use

Urban amenities
such as benches,

Urban Design
Features

Short pedestrian
scaled blocks

Thoroughfare Type Characteristics

Table 4.4 Urban Thoroughfare Characteristics

Urban Thoroughfare Type	Number of Through Lanes	Desired Operating Speed (mph)	Transit Service Emphasis	Median	Driveway Access	Curb Parking	Pedestrian Facilities [1]	Bicycle Facilities	Freight Mvmt. [2]
Freeway	4 to 6+	45–65	Express	Required	No	No	No	Optional separated pathway or shoulder	Regional truck route
Expressway/ Parkway	4 to 6	45–55	Express	Required	No	No	Optional separated pathway	Optional separated pathway or shoulder	Regional truck route
Boulevard	4 to 6	30–35	Express and Local	Required	Limited	Optional	Sidewalk	Bike lanes or parallel route	Regional truck route
Multiway Boulevard	4 to 6	25–35	Express and Local	Required on access lanes	Yes from access lane	Yes on access roadway	Sidewalk		Regional route/ local deliveries only on access roadway
Avenue	2 to 4	25–30	Local	Optional	Yes	Yes	Sidewalk	Bike lanes or shared	Local truck route
Street	2	25	Local or none	No	Yes	Yes	Sidewalk	Shared	Local deliveries only
Rural Road	2	25–35	Local or none	No	Yes	No	No	Shared or shoulder	Local deliveries only
Local Street	2	25	Local or none	No	Yes	Yes	Sidewalk	Shared	Local deliveries only
Alley/Rear Lane	1	5–10	None	No	Yes	No	Shared	Shared	Local deliveries only

Shaded cells represent thoroughfare types that are not addressed in this report.

Notes:

[1] Boulevard, Multiway Boulevard, Avenue, and Street thoroughfare types have sidewalks on both sides. Sidewalk width varies as a function of context zone, fronting land use and other factors.

[2] Freight movement is divided into three categories: 1) Regional truck route, 2) Local truck route and 3) Local deliveries only. Cells show highest order of truck movement allowed.

Avenue

- Arterial or collector (4 lanes max)
- Target speed (25 to 30 mph)
- Land access
- Curb parking
- Primary ped and bike route
- Local transit route
- Freight, local deliveries
- Optional: landscaped median

Raised median on
Boulevards with
landscaping

Mid-block crossings
with curb extensions
and median refuge

Sidewalk width appropriate to
function of adjacent lan



Pedestrian amenities
such as benches,

Urban Design
Features

Short pedestrian
scaled blocks

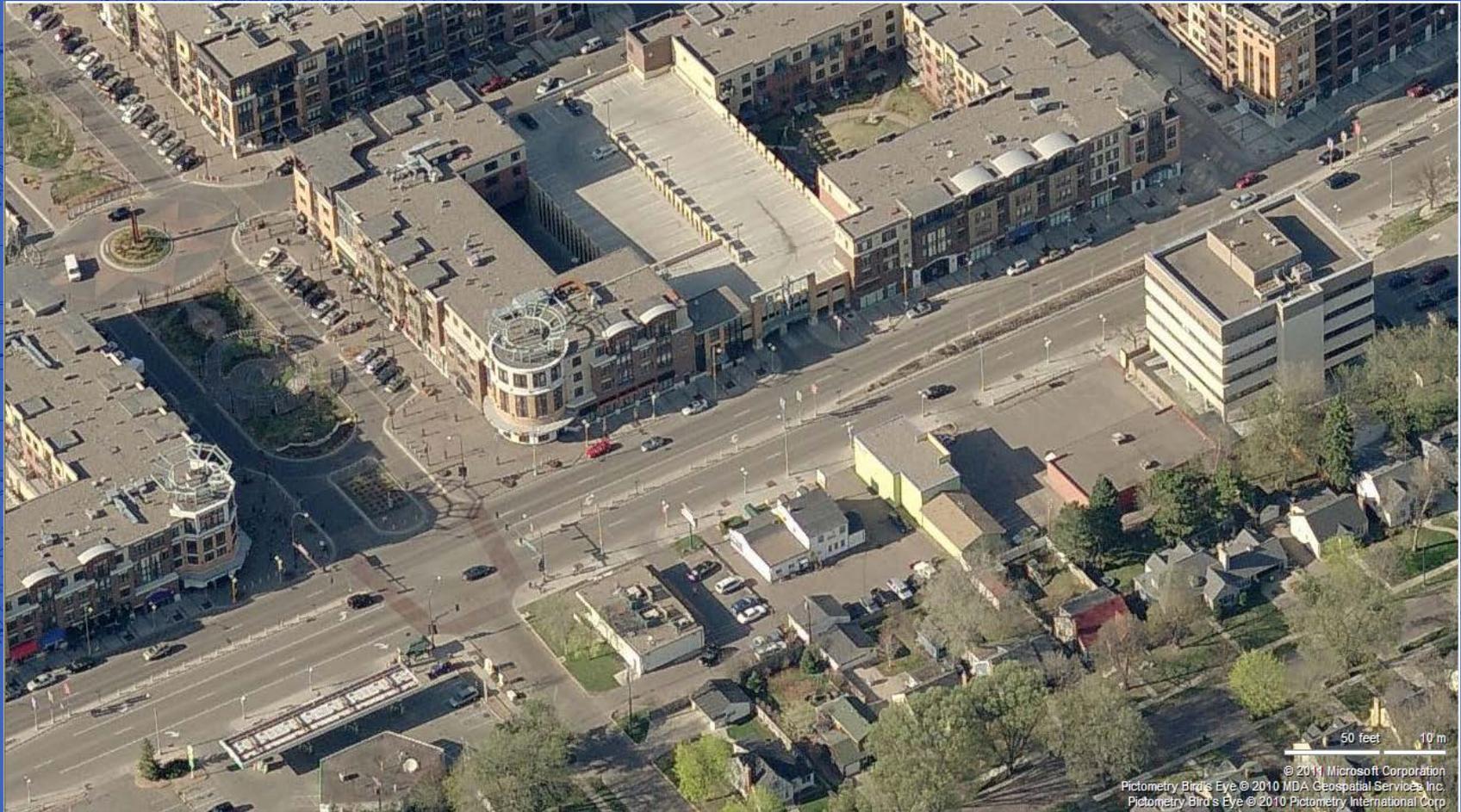
Avenue

Excelsior Blvd St Louis Park

Raised median on
Boulevards with
landscaping

Mid-block crossings
with curb extensions
and median refuge

Sidewalks with appropriate
function of adjacent land use



Thoroughfare Components

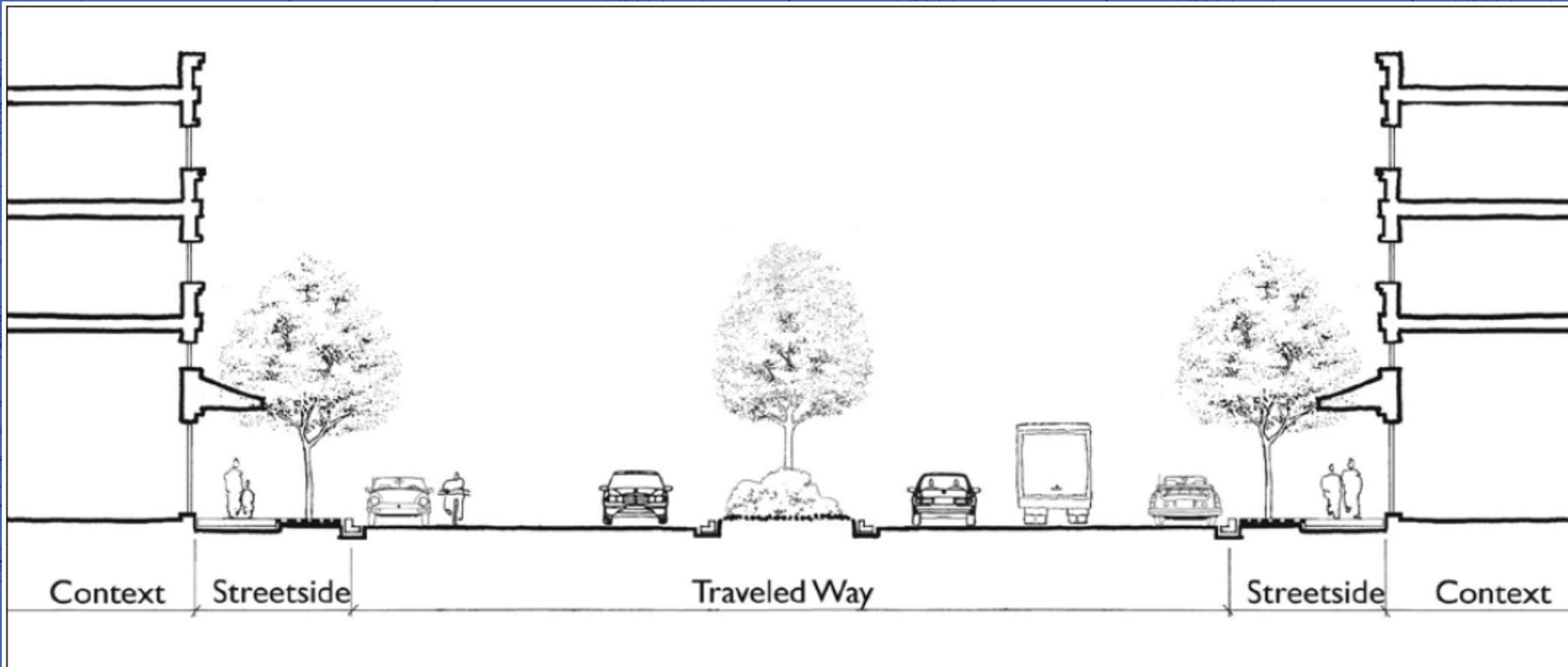
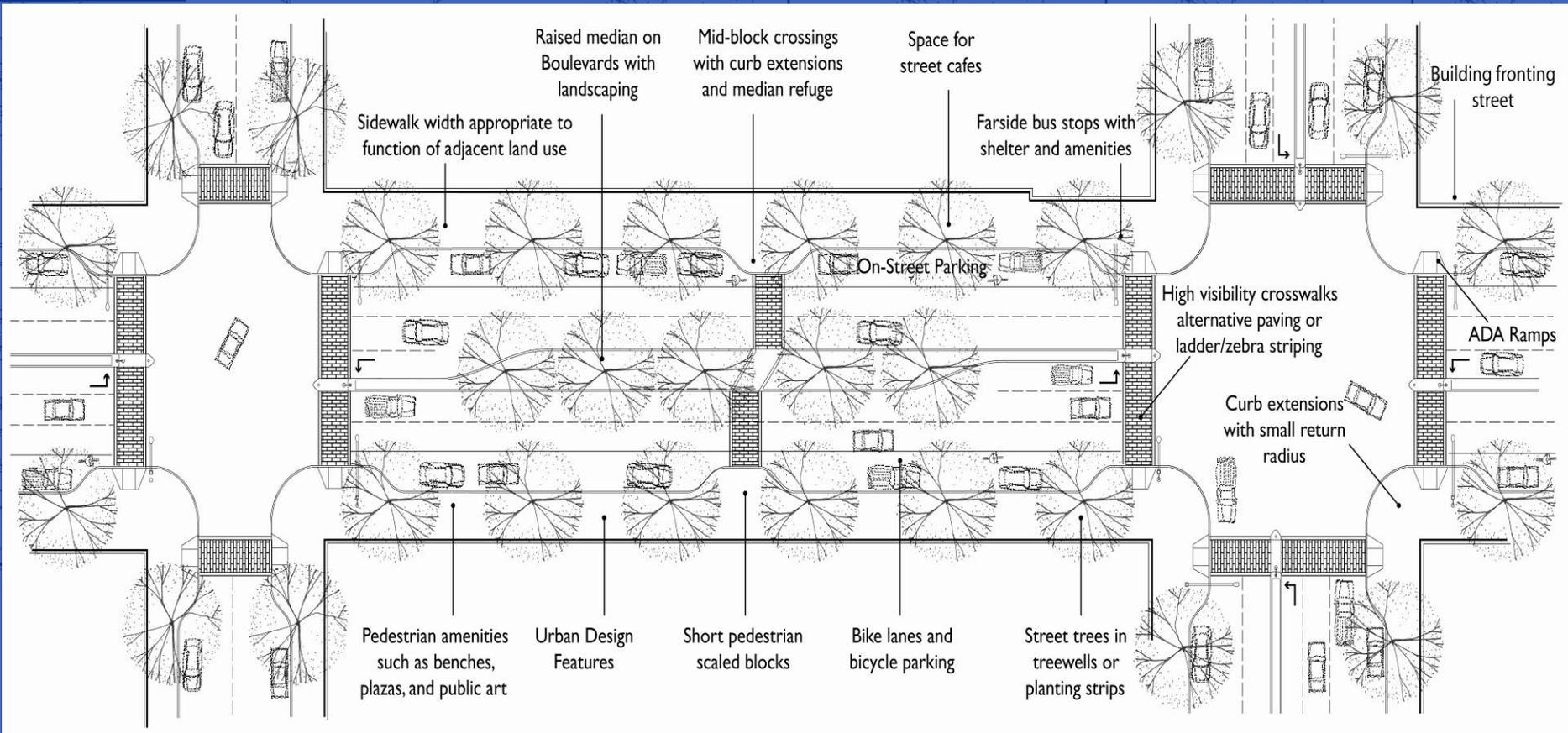


Figure 5.1 Components of an urban thoroughfare. Source: Community, Design + Architecture.

CSS Elements in Urban Contexts



Thoroughfare Type and Land Use Establish Design Criteria

Table 6.4 Design Parameters for Walkable Urban Thoroughfares (continued)

Thoroughfare Design Parameters for Walkable Mixed-Use Areas									
	General Urban (C-4)			Urban Center/Core (C-5/6)					
	Commercial			Residential			Commercial		
	Boulevard [1]	Avenue	Street	Boulevard [1]	Avenue	Street	Boulevard [1]	Avenue	Street
Context									
Building Orientation (entrance orientation)	front	front	front	front	front	front	front	front	front
Maximum Setback [2]	0 ft.	0 ft.	0 ft.	10 ft.	10 ft.	10 ft.	0 ft.	0 ft.	0 ft.
Off-Street Parking Access/Location	rear, side	rear, side	rear, side	rear	rear	rear, side	rear	rear	rear, side
Streetside									
Recommended Streetside Width [3]	19 ft.	16 ft.	16 ft.	21.5 ft.	19.5 ft.	16 ft.	21.5 ft.	19.5 ft.	16 ft.
Minimum sidewalk (throughway) width	8 ft.	6 ft.	6 ft.	10 ft.	9 ft.	6 ft.	10 ft.	9 ft.	6 ft.
Pedestrian Buffers (planting strip exclusive of travel way width) [3]	7 ft. tree well	6 ft. tree well	6 ft. tree well	7 ft. tree well	6 ft. tree well	6 ft. tree well	7 ft. tree well	6 ft. tree well	6 ft. tree well
Street Lighting	For all thoroughfares in all context zones, intersection safety lighting, basic street lighting, and pedestrian-scaled lighting is recommended. See Chapter 8 (Streetside Design Guidelines) and Chapter 10 (Intersection Design Guidelines).								
Traveled Way									
Target Speed (mph)	25–35	25–30 [4]	25	25–35	25–30	25	25–35	25–30 [4]	25
Number of Through Lanes [5]	4–6	2–4	2–4	4–6	2–4	2–4	4–6	2–4	2–4
Lane Width [6]	10–12 ft.	10–11 ft.	10–11 ft.	10–11 ft.	10–11 ft.	10–11 ft.	10–11 ft.	10–11 ft.	10–11 ft.
Parallel On-Street Parking Width [7]	8'	7–8 ft.	7–8 ft.	7 ft.	7 ft.	7 ft.	8 ft.	8 ft.	7–8 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.
Horizontal Radius (per AASHTO) [8]	200–510 ft.	200–330 ft.	200 ft.	200–510 ft.	200–330 ft.	200 ft.	200–510 ft.	200–330 ft.	200 ft.
Vertical Alignment	Use AASHTO minimums as a target, but consider combinations of horizontal and vertical per AASHTO Green Book.								
Medians [9]	4–18 ft.	Optional 4–18 ft.	None	4–18 ft.	Optional 4–16 ft.	None	4–18 ft.	Optional 4–18 ft.	None
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.
Access Management [10]	High	Low–Moderate	Low–Moderate	Moderate	Low–Moderate	Low–Moderate	High	Low–Moderate	Low–Moderate
Typical Traffic Volume Range (ADT) [11]	15,000–50,000	1,500–30,000	1,000–15,000	15,000–30,000	1,500–20,000	500–5,000	15,000–40,000	1,500–30,000	1,000–15,000

Downtown Zumbrota Main Street Avenue Thoroughfare Type & Land Use Example

MN 58 Downtown Zumbrota "Main Street" Context Zone and Corridor Segment
 Zumbrota Sub-Area Study
 DRAFT EXAMPLE 6/22/11 rev 6/24



MN 58 Downtown Zumbrota "Main Street" Context Zone and Corridor Segment DRAFT EXAMPLE
 Performance-based Land Use and Transportation Goals and Recommended Actions (6-24-11 draft, GP)

Planned Context Zone	Urban Center/Core (C-5/6) Commercial (based on ITE Designing Walkable Urban Thoroughfares, A Recommended Practice, 2010)		
MnDOT Access Mgmt Classification	Minor Arterial/Urban Core 5C		
Thoroughfare Type	Avenue - Main Street/State Highway (based on ITE)		
Performance Element	Existing	Goal/Projected	Recommended Actions
LAND USE			
Land Use	Commercial, High Density Residential	Maintain, in-fill	Maintain, in-fill consistent with City plans and zoning
Land Access and Access Mgmt (AM)	-----	Low-Mod AM, minimize drives, use cross Sts & alleys	No Change
Access fr Roadway	Direct, street	Direct, street	No Change
Access fr Sidewalk-Path	Direct, street, sidewalk	Direct, street, sidewalk	No Change
Access/Place Off-St Parking	Mostly rear, side	Rear, side	-----
Street Spacing/Primary+2 nd	?	300-660'/block length	No Change
Driveways/Spacing	?	Varies; based on alt access, use, expectancy	-----
Signal Spacing	None/NA	0.25 mile	No Change
TRANSPORTATION			
Networks - Completeness			
Motor Vehicle MV FC	Minor Arterial	Minor Arterial	No Change
Truck	10 ton/truck route?	10 ton/truck route?	No Change
Transit	-Regional Route -Downtown Stop	-Regional Route -Sheltered Dwtn Stop	Add Shelter or storefront waiting space
Pedestrian	City Trunk Sidewalk	City Trunk Sidewalk	No Change; see _____
Bicycle	Not determined/NA	Regional/Main Route	Classify; see Bicycle Lanes & Parking
Traffic-Crashes-O&M			
Ave Daily Traffic MV-ADT & % Trucks	9,000 (4th-5)-7,000 (2009) and % Trucks	12,000(4 th -5)-8,500 (2034) and % Trucks	Ag traffic??
Speeds - MV Posted & Operating	-30 mph Posted -unknown Operating	-25 to 30 mph Posted -25 mph Operating	Assessed speeds, QOS; add bike lanes, post speed at 30 mph
Safety & Crashes, ___ & Substantive	At/near District and State Averages	Reduce to _____	-----
O&M Factors/Agreements	--- ie snow storage, ----	?	-----
Streetside-Traveled Way			
Streetside Width	R/W width = _____	19.5 ft, 16 ft min.	-----
Driving Lanes/Width	?	2-4 lanes, 10-11 ft, 12 ft if ?	-----
Parking/Width MV	Parallel, Both Sides, ? ft	Parallel/ Both Sides, 8 ft	Change parking width to 8 ft
Medians	None	Optional	-----
Bike Lanes and Parking	None	5-6 ft, 2 racks/block/side	Add 5-6 ft bike lanes, and bike racks
Street Lighting	?	Basic Street & Pedestrian	-----
Intersections			
ADA compliant ramps/cuts	-----	-----	Change per inventory and table
Curb Extensions (On-St Pk)	None	Yes	Add as shown on map
Min Curb Radii (No Exten)	?	10-15 ft	-----
Roundabouts	None	Only as Gateway	No change
Lighting	?	Intersection safety lighting	-----
UTILITIES			
Storm Utilities	Some deficient CB's, pipes	Min CR of ___ for CBs, pipes	Make improvements per table
Water Utilities	?	?	-----
Overhead Utilities/Crossings	?	?	-----