Context Sensitive Solutions
A Process to Achieve Better Results

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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
How Do You Get To This?

Collaborate – Design Flexibility – Logic & Demonstration

CSS – A Process to Achieve Better Results
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

Source: Minnesota Department of Transportation
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

<table>
<thead>
<tr>
<th>Context</th>
<th>Suburban (C-3)</th>
<th>General Urban (C-4)</th>
<th>Urban Center/Core (C-5/6)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Residential</td>
<td>Commercial</td>
<td>Residential</td>
</tr>
<tr>
<td></td>
<td>Boulevard</td>
<td>Avenue</td>
<td>Boulevard</td>
</tr>
<tr>
<td>Building Orientation (entrance orientation)</td>
<td>front, side</td>
<td>front, side</td>
<td>front, side</td>
</tr>
<tr>
<td>Maximum Setback [1]</td>
<td>20 ft.</td>
<td>20 ft.</td>
<td>15 ft.</td>
</tr>
<tr>
<td>Off-Street Parking Access/Location</td>
<td>rear, side</td>
<td>rear, side</td>
<td>rear, side</td>
</tr>
<tr>
<td>Roadside</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recommended Roadside Width [2]</td>
<td>14.5 ft.</td>
<td>12.5 ft.</td>
<td>16 ft.</td>
</tr>
<tr>
<td>Pedestrian Buffers (planting strip exclusive of travel way width) [2]</td>
<td>8 ft. planting strip</td>
<td>6-8 ft. planting strip</td>
<td>7 ft. tree well</td>
</tr>
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<td>Pedestrian Buffers (planting strip exclusive of travel way width) [2]</td>
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<td>6-8 ft. planting strip</td>
<td>7 ft. tree well</td>
</tr>
<tr>
<td>Street Lighting</td>
<td>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).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Traveled Way</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Design Speed</td>
<td>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.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Through Lanes [4]</td>
<td>4-6</td>
<td>2-4</td>
<td>4-6</td>
</tr>
<tr>
<td>Parallel On-Street Parking Width [6]</td>
<td>7 ft.</td>
<td>7 ft.</td>
<td>8 ft.</td>
</tr>
<tr>
<td>Horizontal Radius (per AASHTO) [7]</td>
<td>762 ft.</td>
<td>510 ft.</td>
<td>762 ft.</td>
</tr>
<tr>
<td>Vertical Alignment</td>
<td>Use AASHTO minimums as a target, but consider combinations of horizontal and vertical per AASHTO Green Book.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bike Lanes (min./preferred width)</td>
<td>5 ft./6 ft.</td>
<td>5 ft./6 ft.</td>
<td>5 ft./6 ft.</td>
</tr>
<tr>
<td>Access Management [9]</td>
<td>Moderate</td>
<td>Low</td>
<td>Moderate</td>
</tr>
<tr>
<td>Typical Traffic Volume Range (vpd)</td>
<td>20,000-35,000</td>
<td>15,000-25,000</td>
<td>20,000-50,000</td>
</tr>
</tbody>
</table>

### 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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