Context Sensitive Solutions for the Design of Major Urban Thoroughfares

James M. Daisa, P.E.
Senior Project Manager

Kimley-Horn
and Associates, Inc.

"Thinking Beyond the Pavement"
Federal Highway Administration 1998

The Project:

- Satisfies purpose and need

- Is safe for user and community

- Is in harmony with the community

"Thinking Beyond the Pavement"
Federal Highway Administration 1998

The Project:

- preserves environmental, scenic, aesthetic, historic, and natural resource values of the area

Proposed Principles of Urban CSD

- Walkability comes first
- Thoroughfare design must complement urban buildings, public spaces and landscape
- Safety through lower speed
- Design changes with context
- Network connectivity and capacity

Purpose

- Advance the successful use of Context Sensitive Solutions in urban thoroughfare planning and design

- Offer a new resource that focuses on the built environment from suburbs to downtown core areas, creating walkable, mixed use urban areas

- Demonstrate how established guidance can best be applied for designs

Project Goals

- Synthesize existing design guidance

- Principles of context sensitivity, smart growth, and new urbanism

- Design criteria within AASHTO ranges

Targeting the Practitioner

New Urbanist
Transportation
Professionals

Urban
Planners

Urban
Designers

Landscape
Architects

Conventional
Transportation
Engineers

State DOTs

Local Public
Works
Agencies

Those
unfamiliar with
CSD

Example Criteria – Lane Width

- Range of basic widths:
  - Arterial Boulevards and Avenues – 10 to11′
  - Collector Avenues and Streets – 9 to11′
- Flexibility: lane width varies from 9′ to 15′ depending on:
  - Design/target speed
  - Design/control vehicle
  - Adjacent land use activity
  - Pedestrian demands
  - Available right of way

Design Controls

- **Speed**
  - Recommends design speed = desirable operating speed
  - Design selected based on context
- **Design Vehicle**
  - Largest common vehicle
  - Accommodate common vehicles <u>without</u> encroachment and occasional vehicles <u>with</u> encroachment
- **Location**
  - Suburban to highly urban
 - Predominantly residential or commercial

Design Controls

- Capacity and Level of Service
  - Based on community vision, goals and objectives
  - Thoroughfare capacity may be a lower priority - higher levels of congestion acceptable.
  - Emphasizes network capacity as opposed to the capacity of the individual thoroughfare

- Pedestrian and Bicycle Requirements
  - Emphasizes allocating right-of-way appropriately to all modes depending on their priority and as defined by the context
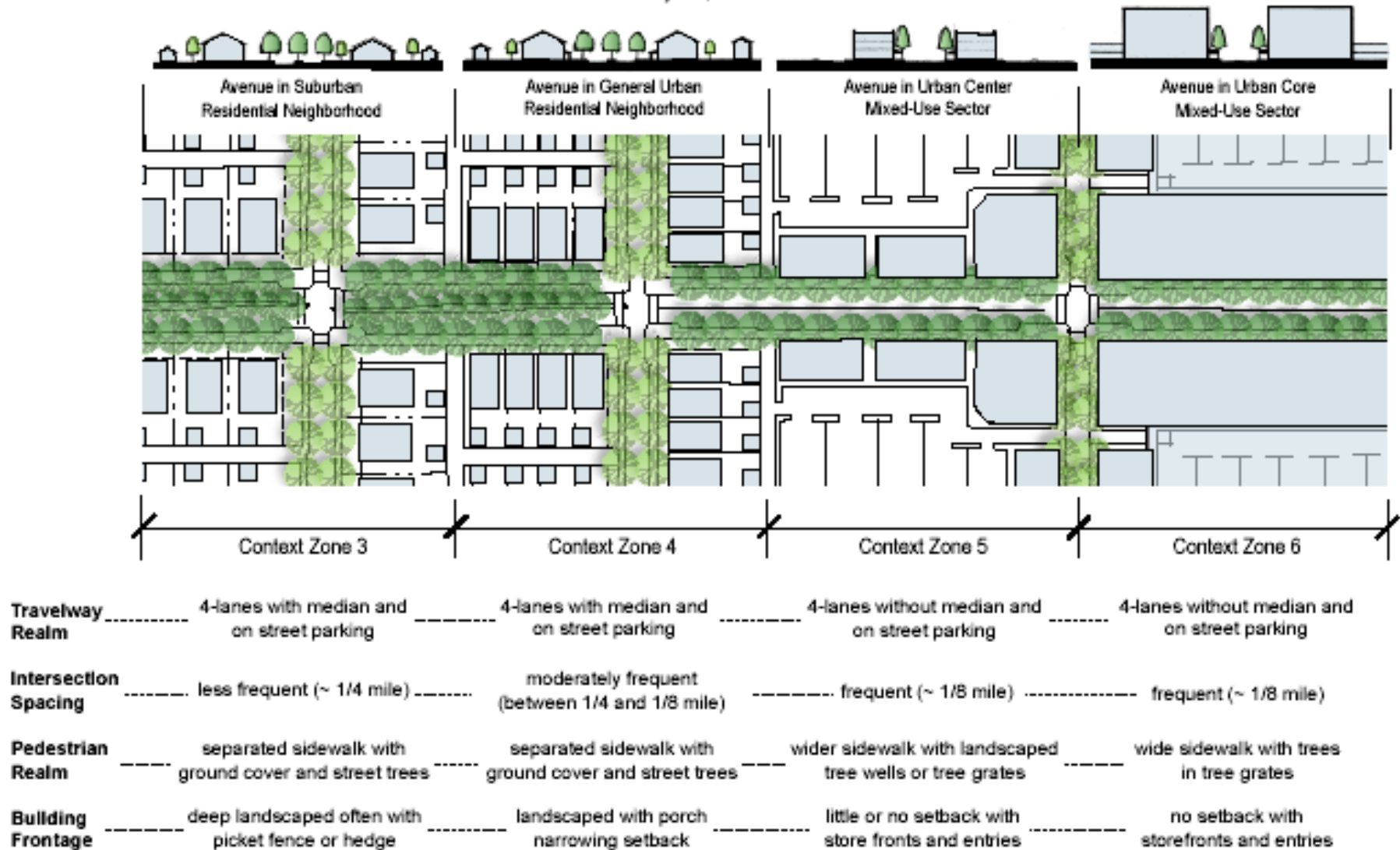
Responding to a Need

- Flexibility to meet local objectives

- Improved compatibility with adjacent land uses

- Balanced land use/transportation functions

- Support for adjacent activity

- Truly multimodal facilities

- Streets that are quality public space

Flexibility in Highway Design
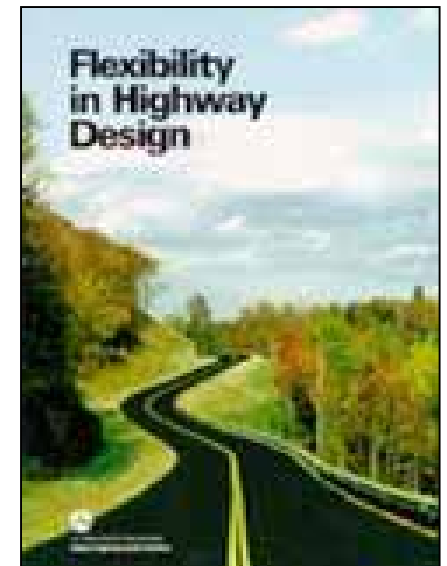
ITE/CNU Guidance for Context Sensitive Design of Major Urban Thoroughfares
THOROUGHFARE – CONTEXT RELATIONSHIP DIAGRAM
DRAFT
July 20, 2004

Avenue in Suburban Residential Neighborhood

Avenue in General Urban Residential Neighborhood

Avenue in Urban Center Mixed-Use Sector

Avenue in Urban Core Mixed-Use Sector

	Context Zone 3	Context Zone 4	Context Zone 5	Context Zone 6
Travelway Realm	4-lanes with median and on street parking	4-lanes with median and on street parking	4-lanes without median and on street parking	4-lanes without median and on street parking
Intersection Spacing	less frequent (~ 1/4 mile)	moderately frequent (between 1/4 and 1/8 mile)	frequent (~ 1/8 mile)	frequent (~ 1/8 mile)
Pedestrian Realm	separated sidewalk with ground cover and street trees	separated sidewalk with ground cover and street trees	wider sidewalk with landscaped tree wells or tree grates	wide sidewalk with trees in tree grates
Building Frontage	deep landscaped often with picket fence or hedge	landscaped with porch narrowing setback	little or no setback with store fronts and entries	no setback with storefronts and entries

Design of the Avenue changes as it passes through different Context Zones & uses

Contents

Contents

Design Criteria

- Background and purpose
- General principles
- General considerations
- Recommended practice
- Justification
- Sources of additional information