

Context Based Design and the Fate of the Arterial



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Thanks to CNU's Transportation Task Force Members

Context Based Design and the Fate of the Arterial



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Bringing New Urbanism into the Street Design Mainstream

Connecting to the Context Sensitive Design Movement





Beyond CSD

Context Sensitive Design

- Focused on cross section at single point or single link

CNU / ITE Project

- Focus on place -- context broadly defined
- Includes network design



Beyond CSD

Context Sensitive Design

- Applies conventional functional classification system and distinction between urban and rural environments

CNU / ITE Project

- Greater complexity in both thoroughfares and contexts



Beyond CSD

Context Sensitive Design

- Often does not address transportation functions

CNU / ITE Project

- Transportation functions integral to design process



CNU Transportation Task Force

Context Based Design

A framework for thoroughfare design

- **Define context**
- **Specify a complete palette of thoroughfare types**
- **Define correspondence between context and thoroughfare type**
- **Bring network into the process**



Defining Context

The Context Zones (CZ)

CZ 1 – Natural

CZ 2 – Rural

CZ 3 – Suburban

CZ 4 – General Urban

CZ 5 – Urban Center

CZ 6 – Urban Core



Defining Context

The Context Zones (CZ)

CZ 3 – Suburban

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Characterizing Context Zones (CZ)

- Frontage
- Thoroughfare Pattern
- Building Height
- Building Orientation
- Land Use Mix
- Open Space Types

Example: Context Zone 4



CZ-4 General Urban



Thoroughfare Names

Context Based Design

Context Based Design

***Nomenclature relates to the thoroughfare's
function as a place***

Conventional Design

***Nomenclature focuses on thoroughfare traffic
moving function***



The Thoroughfare Types

FREEWAY

EXPRESSWAY/PARKWAY

HIGHWAY

URBAN ARTERIAL

MULTIWAY BOULEVARD

AVENUE

CONNECTOR STREET

STREET

ROAD

YIELD STREET

MEWS/COURT/WOONERF

ALLEY

PATH/PASSAGE



The Thoroughfare Types

**URBAN ARTERIAL
MULTIWAY BOULEVARD
AVENUE
CONNECTOR STREET**



Defining Thoroughfare Type

Size

Target Speed

Intersection Spacing

Transit Design

Pedestrian Design

Bike Design

Parking

Access Control

Building Frontage

Defining Thoroughfare Type

The Major Urban Thoroughfares

Thoroughfare Type	Number Lanes	Target Speed	Intersection Spacing
Urban Arterial	4 to 6	40-45	¼ to ½ mile
Boulevard	6 total 2 local	35 20 local	¼ mile
Avenue	4 (6)	30	1/8 to ¼ mile
Connector Street	2	25	300 ft to 1/8 mile

Defining Thoroughfare Type

The Major Urban Thoroughfares

Thoroughfare Type	Transit Modes	Driveway Access	Curb Parking
Urban Arterial	Express Bus, LRT	Limited	No
Boulevard	BRT, LRT, Streetcar	Yes for Access Lanes	Yes for Access Lanes
Avenue	Rapid Bus, LRT	Limited	Yes
Connector Street	Local Bus, Street Cars	Yes	Yes

Defining Thoroughfare Type

The Major Urban Thoroughfares

Thoroughfare Type	Pedestrian Facilities	Bicycle Facilities	Building Entry Orientation
Urban Arterial	No	Limited	No
Boulevard	Sidewalk	Yes or Parallel Route	Yes
Avenue	Sidewalk	Yes or Parallel Route	Yes
Connector Street	Sidewalk	Yes or Parallel Route	Yes

Context Based Names and Functional Classification

Thoroughfare Type	Closest Correspondence with Conventional Classification System
FREEWAY	Principal Arterial
EXPRESSWAY/PARKWAY	Principal Arterial
URBAN ARTERIAL	Principal and Minor Arterials
MULTIWAY BOULEVARD	Principal and Minor Arterials
AVENUE	Principal and Minor Arterials or Collector
CONNECTOR STREET	Minor Arterial or Collector
STREET	Local
YIELD STREET	Local
MEWS/COURT/WOONERF	Local
ALLEY	Local
PATH/PASSAGE	Local



Principles of Context Based Thoroughfare Design

- ❑ **Confine high speed thoroughfares to edges of urban zones**
- ❑ **Limit speed in urban areas**
- ❑ **Limit thoroughfare size in urban areas**
- ❑ **Maintain a dense network**



Compatibility

Context and Thoroughfare Type

Consistency of thoroughfare types with context zone

“y” – permitted

“x” – not permitted

“p” – permitted provisionally with special treatment or edge condition

Context and Thoroughfare Type

“the matrix”

THOROUGHFARE TYPE	CONTEXT ZONE						
	CZ - 1	CZ - 2	CZ - 3	CZ - 4	CZ - 5	CZ - 6	D
FREEWAY	Y	Y	P	P	X	X	P
EXPRESSWAY/PARKWAY	Y	Y	P	P	P	P	P
HIGHWAY	Y	Y	P	X	X	X	P
URBAN ARTERIAL	X	X	Y	P	P	P	Y
MULTIWAY BOULEVARD	X	X	P	P	Y	Y	Y
AVENUE [1]	X	X	Y	Y	Y	Y	Y
CONNECTOR STREET	X	X	Y	Y	Y	Y	Y
ROAD	Y	Y	P	X	X	X	P
STREET	X	X	Y	Y	Y	Y	Y
YIELD STREET	X	Y	Y	Y	P	P	P
MEWS/COURT/WOONERF	X	X	P	Y	Y	Y	P
ALLEY	X	X	Y	Y	Y	Y	P
PATH/PASSAGE	Y	Y	Y	Y	Y	Y	Y



The Arterial in Context Based Design

Preferred Types in CZ-3, 4, 5

Multiway Boulevards

Avenues

Connector Streets

Restricted Use

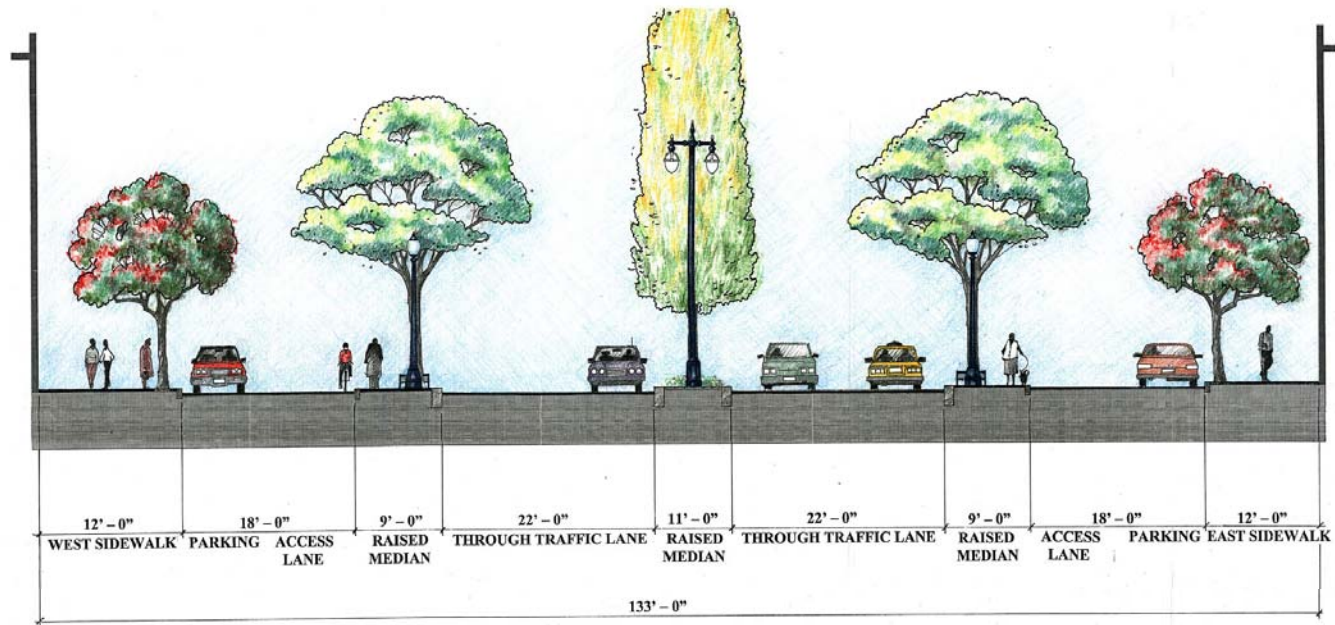
Urban Arterials

Expressways

Prohibited

Freeways

The Multiway Boulevard



SECTION
SCALE 1/4" = 1'-0"

OCTAVIA BOULEVARD



The Multiway Boulevard

Fully support urban character and activities

High Traffic Volume

6 lanes total, 2 on local access roadway

Target Speed 35 mph (20 mph local access)

Intersection spacing 1/4 mile (1/8 mile local access)

Curb Parking on local access

Multimodal accommodations

Building frontage

The Avenue





The Avenue

Fully support urban character and activities

Relatively High Traffic Volume

Preferably 2 or less lanes

Target Speed <30 mph

Intersection spacing 1/8 to 1/4 mile

Curb Parking

Multimodal accommodations

Building frontage

The Urban Arterial





The Urban Arterial

Primary function is vehicle movement

Used as an edge or boundary

High Traffic Volume

Target Speed 40 –45 mph

Intersection spacing $\frac{1}{4}$ to $\frac{1}{2}$ mile

No Parking

Limited multimodal accommodation

No building frontage

Is there a role for the Urban Arterial in NU?



The Avenue

How large? 4 lanes or 6 lanes?



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