

Aurora Urban Street Standards For Transit Oriented Developments and Urban Centers

I. Purpose

These standards will be applied to create a safe, comfortable, pleasant and pedestrian-friendly multi-modal travel environment that helps the creation of vibrant civic places and economic vitality in transit oriented developments (TODs) and urban centers. The Aurora Comprehensive Plan identifies various TOD sites and urban centers throughout the City. Further, the Comprehensive Plan includes a recommendation to “develop urban street standards for use in emerging areas of the city such as urban centers and transit oriented development sites (Aurora Comprehensive Plan 2003, Chapter IV. H - Transportation).”

II. Intent and Applicability

These standards supplement the street standards set forth in Section 126-36. They apply to any public and private streets in TODs and urban centers (see the attached Aurora TOD and urban centers map).

III. Administration and Interpretation

The directors of Planning and Public Works will jointly perform or assign the following responsibilities and authorities:

- A. Administer the urban street standards;
- B. Interpret the provisions of the urban street standards;
- C. Modify the street standards where special conditions indicate that such modification will best meet the purpose of the street standards and provide an adequate and safe street for all users, or provide transition to streets outside TODs and urban centers.

IV. Implementation and Management

It is desirable to achieve the highest levels of safety, security and comfort within the TODs and urban centers. Parking management and security are also vital to the success of these centers. A comprehensive street maintenance and parking plan should be developed for each TOD and urban center during the master planning or site planning processes.

Within the Edge Zone the City shall be responsible for the general maintenance of the street infrastructure. Street maintenance involves periodic street cleaning, snow removal (based on the City's street snow removal schedule), pavement maintenance/replacement (overlays), curb,

gutter and sidewalk replacement (except tree grates) and pedestrian street lighting maintenance.

Within TODs or Urban Centers Transition and Core Zones streets shall be either:

- A. Privately owned and maintained streets, or;
- B. Metropolitan districts or business districts shall be used to provide operation and maintenance, parking and security services. Operation and maintenance includes, but is not limited to, cleaning of streets, gutters and sidewalks, snow removal on streets and sidewalks, decorative pavement maintenance/replacement (including tree grates), pedestrian street lighting, sidewalk sweeping and litter/trash pickup, inspection and maintenance of parking signage, striping for parking, parking meters and all other facilities necessary to the regulation of parking.

The City's responsibility towards street maintenance, commonly known as capital maintenance, shall include pavement maintenance services and reconstruction of streets, curbs, gutters and sidewalks in accordance with City Standards and shall be provided by the City at its expense. Pavement maintenance shall include but is not limited to crack sealing and reconstruction.

All TODs and Urban Centers' streets shall be designed and constructed in accordance with the latest version of the Public Works Department "Roadway Design and Construction Specifications".

V. Standards

A. Context Zones

Each TOD or urban center should be divided into the following three zones to reflect the different level of pedestrian activities:

1. Core Zone – within approximately 1/8 mile of transit stations for TODs and the central plaza or main-street areas for urban centers;
2. Transition Zone – between approximately 1/8 mile and 1/4 mile of transit stations for TODs and the central plaza or main-street areas for urban centers;
3. Edge Zone - between approximately 1/4 mile and 1/2 mile of transit stations for

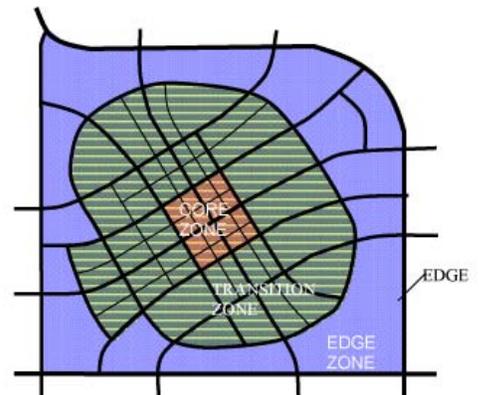


Fig. 1 Context Zones

TODs and the central plaza or main-street areas for urban centers.

Appropriate street design parameters, such as cross-sections, pedestrian amenities, levels of access control and design speed shall be selected for each zone accordingly. Design speed is the selected speed used in determining the various geometric design features of a street, such as curvature, sight distance, grades and lane width. Access control is a way of regulating street access rights to and from properties abutting a street. The highest design speeds and levels of access control should occur in the edge zone and the lowest design speeds and level of access control should occur in the core zone. Similarly, the highest level of pedestrian amenities, such as wider sidewalks, shorter block length and shorter crossing distances should occur in the core zone with reduced pedestrian amenities in the edge zone.

B. Street Network

Street network characteristics impact developments. To encourage compact and mixed-use developments, provide more route choices and direct access for pedestrians and bicyclists, an inter-connected street network is required. Specifically, a grid or modified grid system with east-west and north-south continuities throughout a TOD or urban center site should be designed when feasible. In addition, the following maximum intersection spacing or block size shall be used in network designs:

1. Core Zone – 300 feet between intersections
2. Transition Zone – 400 feet between intersections
3. Edge Zone – 600 feet between intersections

Vehicular access to edge streets such as boulevards or multi-way boulevards surrounding TODs and urban centers should be at the mile, half mile points or at 600 feet either side of the mile or half mile points. Full vehicular access to edge streets shall avoid $\frac{1}{4}$ mile points, but, may be right-in/right-out only. Pedestrian or bicycle access to the sidewalks of the edge streets should not be restricted by this provision. The maximum block size requirements may be adjusted for areas adjacent to transit rail stations to meet the transit rail station platform design requirements.

C. Street Cross-section Elements

The following describes the three key cross-section elements: context, roadside zone and traveled way. These elements should be carefully

analyzed and designed to promote a more pedestrian friendly environment and meet city emergency response standards:

1. Context

The key shaping elements of the context for street cross-sections include the characteristics and physical form of the predominant adjacent land uses and ground floor building uses, landscaping, site access, public and semi-public open spaces, vehicular volumes, building forms, pedestrian, bicycle and transit activities and the predominance of certain travel modes.

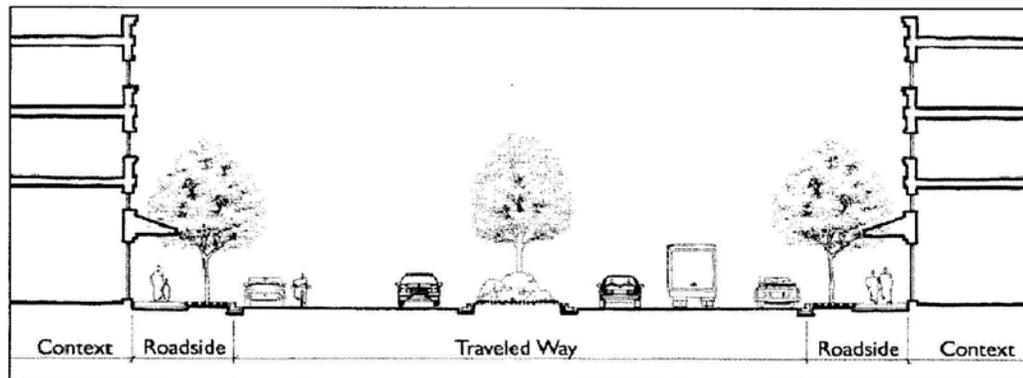


Fig. 2 Street Cross-section Elements

2. Roadside Zone

The roadside zone includes the area between curbs and the front property line of adjoining parcels. It should contain four sub-zones, including curb zone (edge zone), furnishings zone, throughway zone and frontage zone. These zones provide flexibilities along the length of a street for the necessary landscaping, street furnishings, pedestrian through movements and roadside activities.

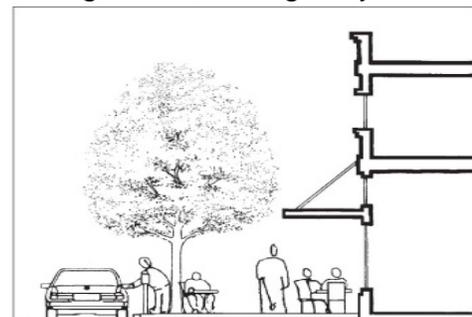


Fig. 3 Roadside Zone

A minimum of 16 foot attached pedestrian hardscape should be provided in multi-way boulevard, couplet, local urban and all main street cross-sections for the roadside area. Hardscape mainly consists of masonry-work and other decorative paving materials. When the characteristics and physical layout of adjacent land uses and ground floor activities do not justify attached pedestrian hardscape, eight-foot detached

sidewalks with eight-foot tree-lawns may also be used for main-street cross-sections. Detached sidewalks are the pedestrian travel area separated by a tree-lawn from the traveled way area.

The following discusses the specific functions and minimum dimensions for each sub-zone within the roadside zone:

a) Edge Zone

The edge zone provides an interface between parked vehicles and street furniture. This zone should generally be kept clear of any objects. Parking meters may be placed here with consideration to vehicle door swings. The edge zone should have a minimum width of 1.5 feet and may be widened to a minimum of four feet at transit stops with shelters.



Frontage|Throughway|Furnishing|Curb
Fig. 4 Example of Roadside Zone

b) Furnishings Zone

The furnishings zone is the key buffer component between the active pedestrian walking area and the vehicle traveled way area. Street trees, planting strips, street furniture, bollards, signal poles, signals, electrical, telephone and traffic signal cabinets, signs, fire hydrants and bicycle racks should be consolidated in this zone to keep them from becoming obstacles to pedestrians. The furnishings zone should have a minimum width of seven feet. The location and dimension of furnishings and trees should follow Section G.2. (b) Street Trees and Stop Signs and Section G.2. (c) Intersection Sight Triangles.



Curb|Furnishing|Throughway|Frontage
Fig. 5 Example of Roadside Zone

c) Throughway Zone

The throughway zone is intended for pedestrian travel only and shall be entirely clear of obstacles and provide a smooth walking surface. The throughway zone should be at a minimum of six feet wide, which is the minimum comfortable passing width for two wheel chairs on a sidewalk.

d) Frontage Zone

The frontage zone is the area adjacent to the property line that may be defined by a building facade, landscaping area, fence, or screened parking area. A minimum width of 1.5-feet should be provided for the frontage zone. The width of the frontage zone may be increased to accommodate a variety of activities associated with adjacent uses, such as outdoor seating or merchant displays.

3. Traveled Way

Traveled way is the street pavement area between curbs. It includes the following key components:

a) Vehicle Travel Lanes

Vehicle travel lanes range from 10 feet to 12 feet in width.

b) Bicycle Lanes

A minimum bicycle lane width of five feet (not including the gutter pan) shall be provided, including striping and stencils for bicycle lanes.

c) Medians

Medians shall be used as an additional location for landscaping. Medians may also serve as pedestrian refuge islands within the traveled way when needed.

d) On-Street Parking

Angled parking allows motor vehicles to park with an angle to the driving lanes. Angled parking allows for increased “front door” retail parking and serves to slow vehicular speeds.



Fig. 6 Angled Parking

Parallel parking is the on-street parking spaces parallel to the driving lanes.

D. Other Design Elements

The following elements shall also be considered in street cross-section designs:

1. Emergency Access

To accommodate the set-up requirements of large emergency response vehicles, a minimum width of **25** feet of paved surface shall be provided every **150** feet along all streets. This paved surface area may be provided by means of driveways or “No On-Street Parking” areas or other unobstructed design features.

2. Design Speed and Posted Speed

The greater the level of pedestrian activity, the lower the design and posted speed should be for vehicular traffic due to pedestrian safety concerns. The overall characteristic of street cross-sections should create an environment that is appropriate to the design speed of the street. Relevant design elements in the vehicular travel realm include lane widths, pavement markings, materials and color, curb design, bike lanes and on-street parking. Relevant design elements and treatments within the pedestrian realm include building setbacks, street trees, sidewalks and furnishings. Generally, posted speeds should be 5 to 10 miles per hour lower than design speeds.

3. Building Heights and Location

Buildings should be utilized to define the street edge and reinforce the character of TODs and urban centers. A ratio of 1:4 or higher

between the building height and the distance between buildings across the street should be generally maintained.

E. Cross-Section Descriptions

The following describes each street cross-section for TODs and urban centers:

BOULEVARD (4 or 6 lanes)

Location

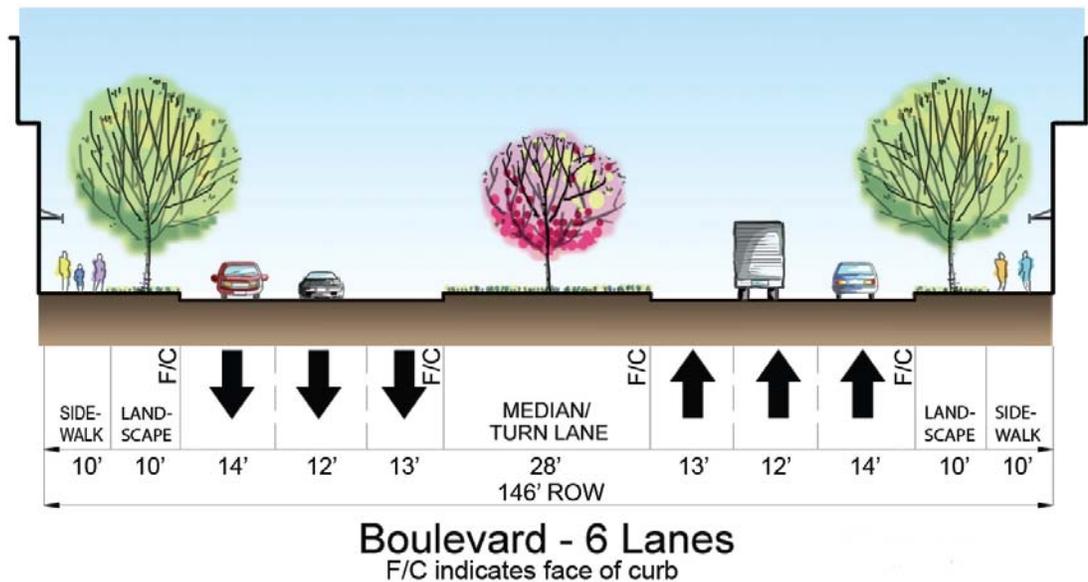
- Edge

Primary Functions and Purposes

- Serves as edge streets and provides mobility to and around TODs and urban centers
- Creates an initial image and sense of place for TODs and urban centers through enhanced landscaping and street trees

Defining Elements

- Travel Lanes – four or six
- Pedestrian Travel – detached sidewalk
- Landscapes – wider medians and tree lawns
- Median – yes
- Bicycle Lanes – no
- On-street Parking – no
- Design Speed – 50 MPH
- Posted Speed – 40 MPH
- Access Control – maximum



NEW CROSS-SECTION ABOVE

MULTI-WAY BOULEVARD (4 or 6 through lanes)

Location

- Edge

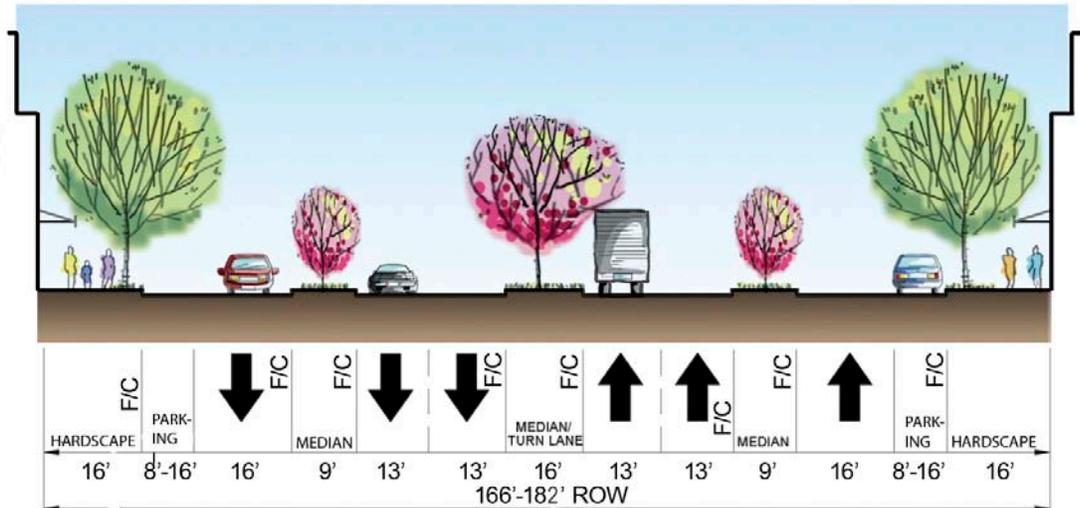
Primary Functions and Purposes

- Serves as edge streets and provides mobility to and around TODs and urban centers
- Balances mobility and access – local access lanes and parallel or angled parking aisles on the periphery of the section provide local access while the center four or six lanes provide mobility for through traffic

Defining Elements

- Travel Lanes – four or six for through traffic and one lane each direction for local access
- Pedestrian Travel – attached hardscape
- Landscapes – three medians and two hardscape areas
- Median – yes
- Bicycle Lanes – shared with local access lanes
- On-street Parking – only on local access lanes (parallel or angled)
- Design Speed – 50 MPH for through lanes and 30 MPH for local access lanes

- Posted Speed - 40 MPH for through lanes and 25 MPH for local access lanes
- Access Control – low to moderate for local access lanes and maximum for through lanes



Multiway Boulevard - 4 Lanes
 F/C indicates face of curb
NEW CROSS-SECTION ABOVE

MAIN STREET – MEDIAN – 4 LANES

Location

- Transition or edge zone

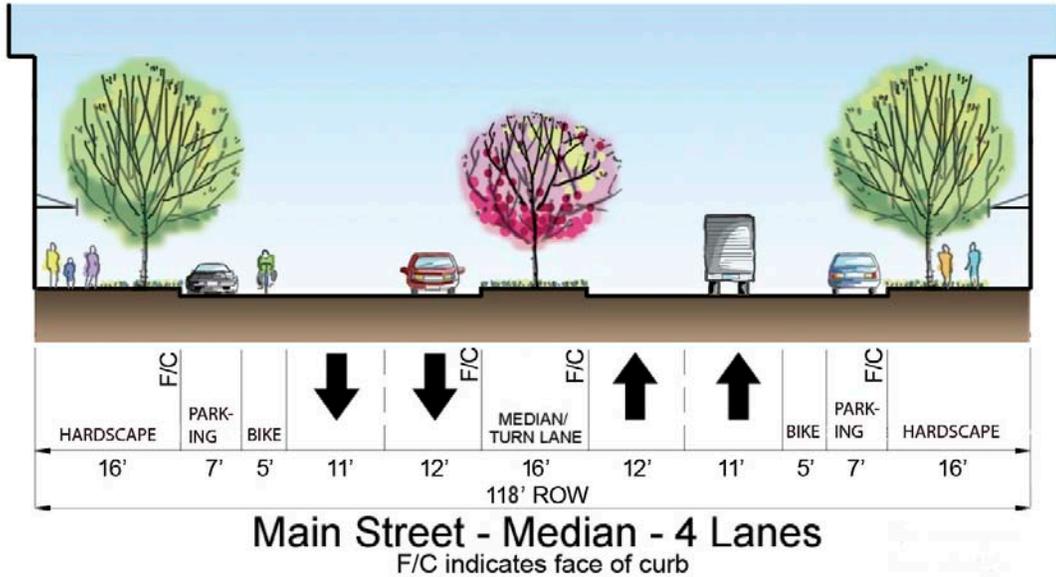
Primary Functions and Purposes

- Provides both mobility and access within TODs and urban centers
- Provides access within transition and edge zones
- Connects core zone to edge streets

Defining Elements

- Travel Lanes – four
- Pedestrian Travel – attached hardscape
- Landscapes – median and hardscape areas
- Median - yes
- Bicycle Lanes – yes
- On-street Parking – yes

- Design Speed – 35 to 40 MPH
- Posted Speed – 25 to 30 MPH
- Access Control – high



NEW CROSS-SECTION ABOVE

MAIN STREET – TWO LANES WITH MEDIAN/ CENTER TURN LANE

Location

- Transition or edge zone

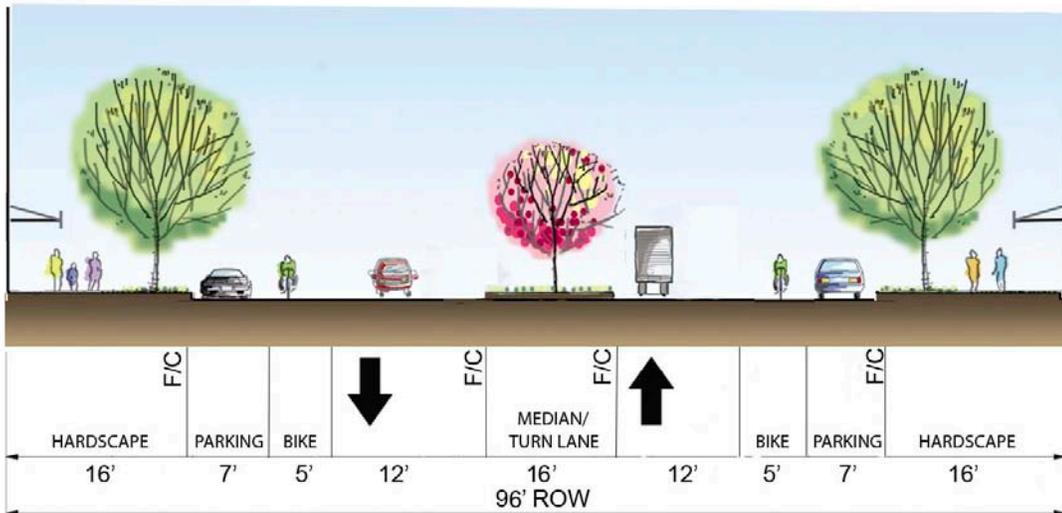
Primary Functions and Purposes

- Provides both mobility and access within TODs and urban centers
- Provides access within transition and edge zones
- Connects core zone to edge streets
- Provides flexibility for a center turn lane when needed

Defining Elements

- Travel Lanes – two
- Pedestrian Travel – attached hardscape
- Landscapes – median and hardscape areas
- Median – yes
- Bicycle Lanes – yes

- On-street Parking – yes
- Design Speed – 30 to 35 MPH
- Posted Speed – 25 to 30 MPH
- Access Control – low to moderate



Main-Street Two Lanes With Median/Center Turn Lane

F/C indicates face of curb.

NEW CROSS-SECTION ABOVE

MAIN STREET – TWO LANES WITH PARALLEL PARKING

Location

- Transition or core zone

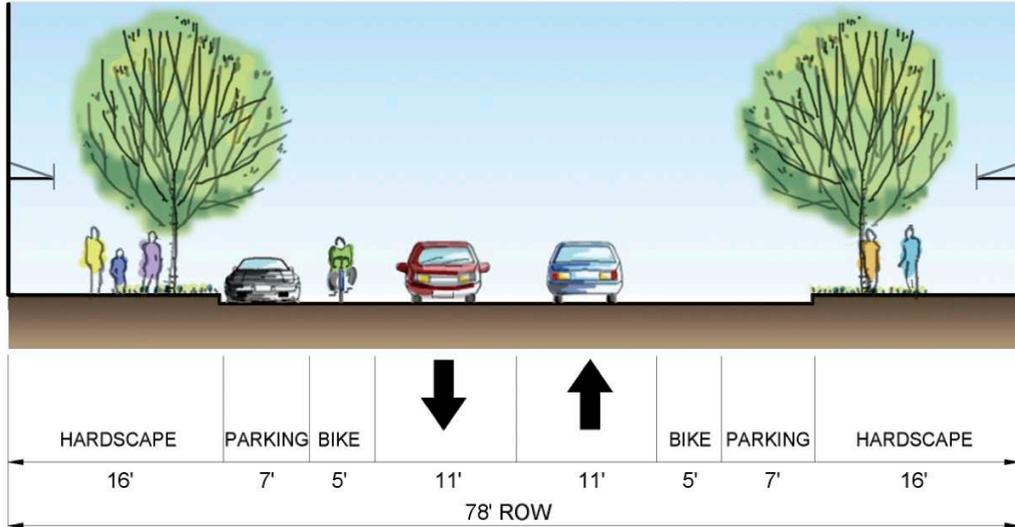
Primary Functions and Purposes

- Provides both mobility and access within TODs and urban centers
- Provides access within transition and core zones
- Connects core zone to edge streets

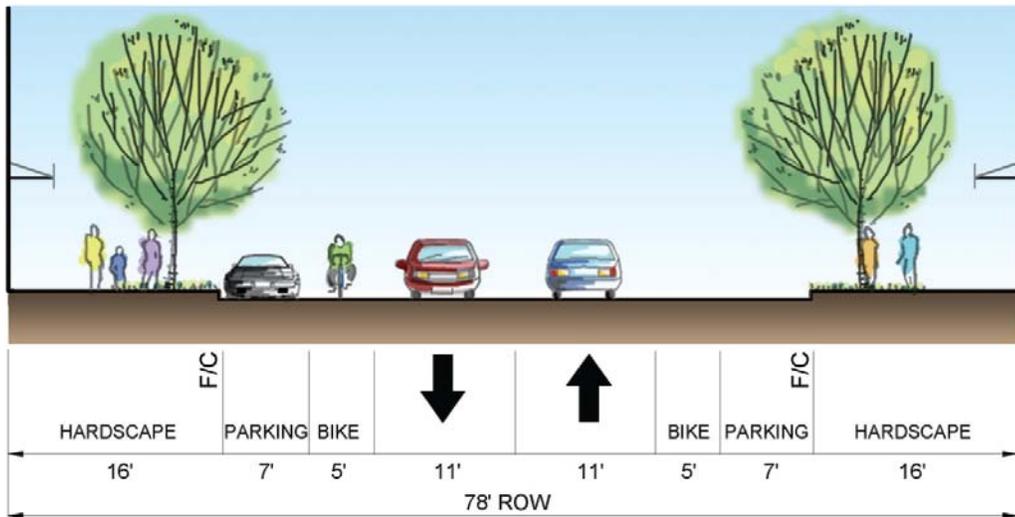
Defining Elements

- Travel Lanes – two
- Pedestrian Travel – attached hardscape
- Landscapes – within attached hardscape area
- Median – no
- Bicycle Lanes – yes
- On-street Parking – yes
- Design Speed – 30 MPH

- Posted Speed – 25 MPH
- Access Control – low to moderate



Main Street - Parallel - 2 Lanes
NEW CROSS-SECTION ABOVE



Main-Street Two Lanes with Parallel Parking
 F/C indicates face of curb.

NEW CROSS-SECTION ABOVE

MAIN STREET – ANGLED PARKING

Location

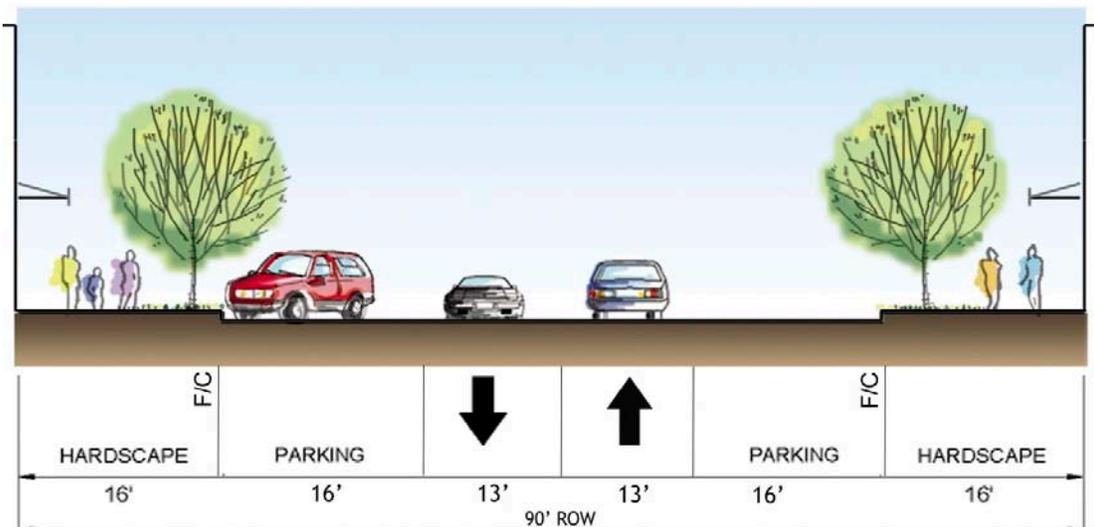
- Transition or core zone

Primary Functions and Purposes

- Provides both mobility and access within TODs and urban centers
- Provides access within transition and core zones
- Connects core zone to edge streets
- Provides increased “front door” retail parking spaces
- Slows vehicular traffic speeds

Defining Elements

- Travel Lanes – two
- Pedestrian Travel – attached hardscape
- Landscapes – within attached hardscape area
- Median – no
- Bicycle Lanes – no
- On-street Parking – yes (angled)
- Design Speed – 30 MPH
- Posted Speed – 25 MPH
- Access Control – low to moderate



Main-Street - Angled - 2 Lanes

F/C indicates face of curb.

NEW CROSS-SECTION ABOVE

COUPLET

Location

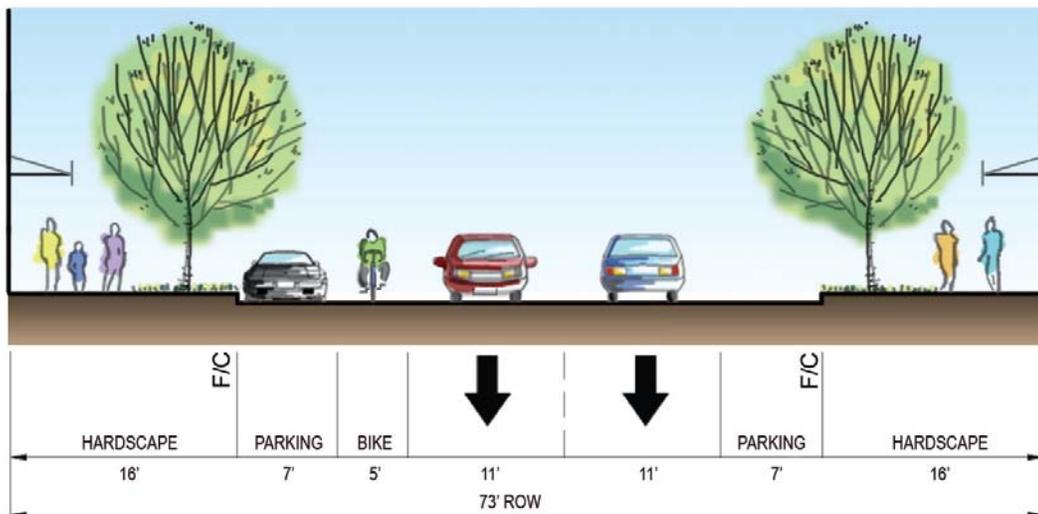
- Transition or edge zone

Primary Functions and Purposes

- Provides both mobility and access within TODs and urban centers
- Connects core zone to edge streets
- Provides one-way travel as an option

Defining Elements

- Travel Lanes – two
- Pedestrian Travel – attached hardscape
- Landscapes – within attached hardscape area
- Median – no
- Bicycle Lanes – yes
- On-street Parking – parallel on one or both sides
- Design Speed – 30 to 35 MPH
- Posted Speed – 25 to 30 MPH
- Access Control – low to moderate



Couplet - 2 Lanes

F/C indicates face of curb

NEW CROSS-SECTION ABOVE

LOCAL URBAN

Location

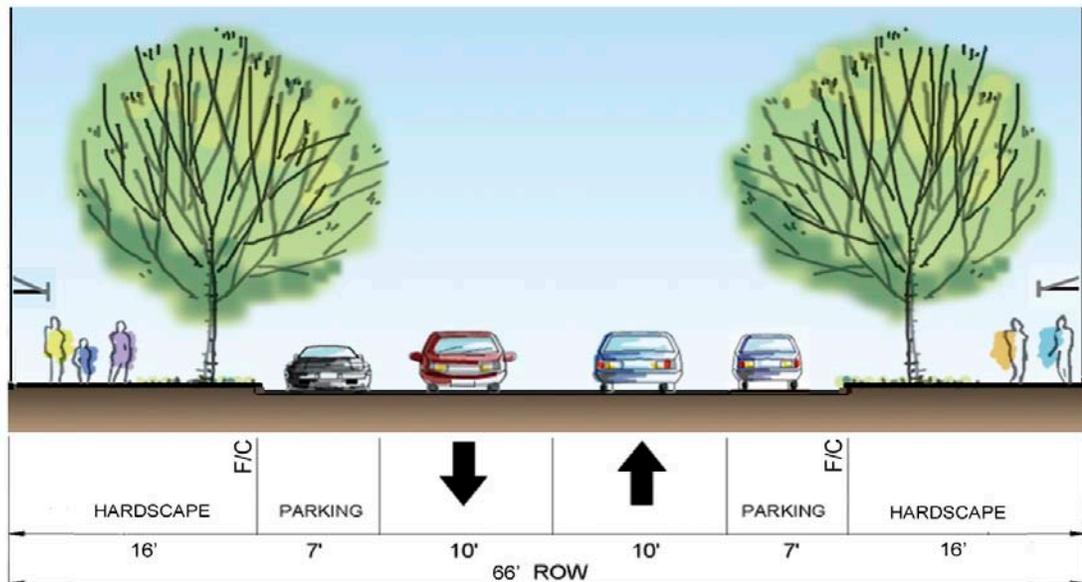
- Core or transition zone

Primary Functions and Purposes

- Provides local access within core or transition zone

Defining Elements

- Travel Lanes – narrowed two lanes
- Pedestrian Travel – attached hardscape
- Landscapes – within attached hardscape area
- Median – no
- Bicycle Lanes – shared
- On-street Parking – yes
- Design Speed – 30 MPH
- Posted Speed – 25 MPH
- Access Control – low



Local Urban - 2 Lanes

F/C indicates face of curb.

NEW CROSS-SECTION ABOVE

RESIDENTIAL PARKWAY

Location

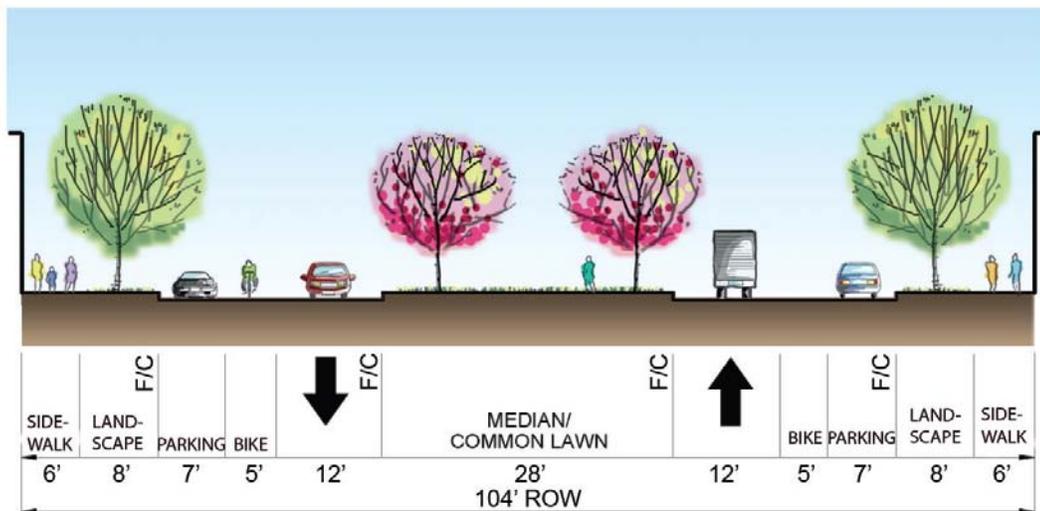
- Transition or core zone

Primary Functions and Purposes

- Provides mobility and local access within transition and core zone
- Provides a common lawn/open space area for adjacent residences

Defining Elements

- Travel Lanes – two lanes
- Pedestrian Travel – detached sidewalks
- Landscapes – median and tree lawns
- Median – wide median for common lawn or open spaces
- Bicycle Lanes – yes
- On-street Parking – parallel
- Design Speed – 30 MPH
- Posted Speed – 25 MPH
- Access Control – low to moderate



Residential Parkway - 2 Lanes

F/C indicates face of curb.

NEW CROSS-SECTION ABOVE

NEIGHBORHOOD STREET

Location

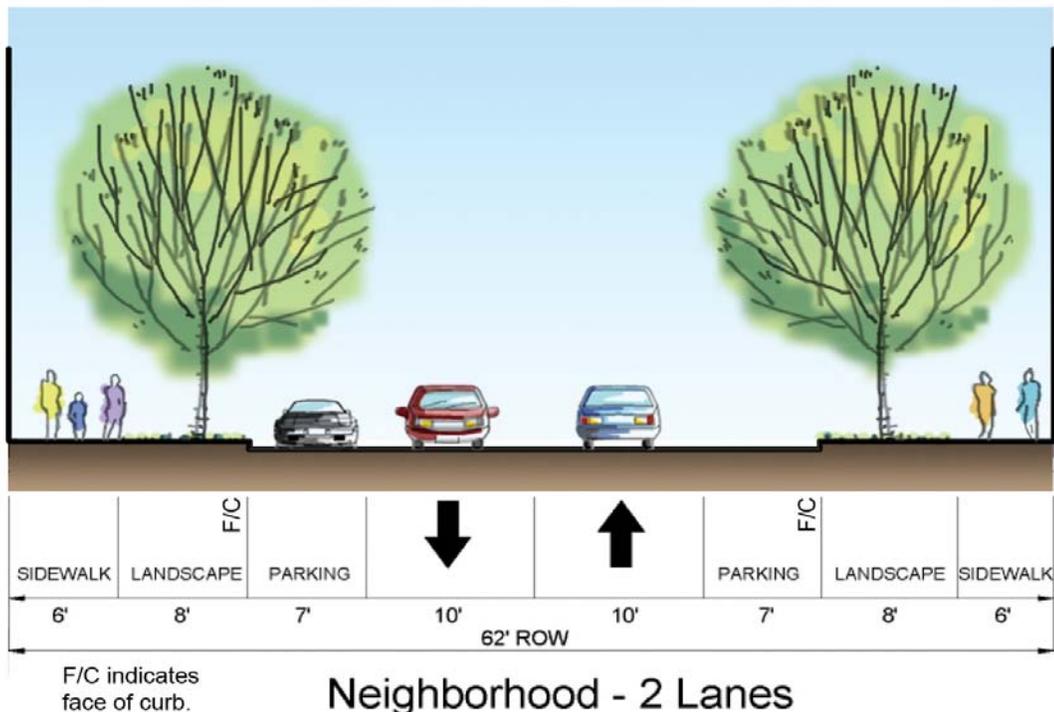
- Transition zone

Primary Functions and Purposes

- Provides local access within transition zone

Defining Elements

- Travel Lanes – narrowed two lanes
- Pedestrian Travel – detached sidewalks
- Landscapes – tree lawns
- Median – no
- Bicycle Lanes – shared
- On-street Parking – yes
- Design Speed – 30 MPH
- Posted Speed – 25 MPH
- Access Control – low



Neighborhood - 2 Lanes

NEW CROSS-SECTION ABOVE

F. Land Use Categories

The compatibility between street cross-sections and the characteristics and physical forms of adjacent land uses is an important factor affecting urban forms and street functions in TODs and urban centers. The following land use categories should be considered when selecting street cross-sections. In addition, Table 1 – Cross Section/Land Use Matrix depicts the appropriate relationship between cross sections and land uses:



Residential Use: The predominant surrounding land use is multi-family residential units, such as apartments and condominiums. These residences typically have a few combined access points for pedestrian and vehicular access along the street.



Civic Use: The predominant surrounding land uses are institutions, plazas and parks complemented with retail and office uses. They typically front onto the street with service businesses located in the same building. The buildings are typically built up to the sidewalk and pedestrian areas along the street.



Mixed Use: The surrounding land uses contain a mix of retail, office and residential. These uses can be located in the same building or in different buildings along the street. Retail uses can be located at the street level with residential and other uses on the upper floors.



Commercial: The surrounding land uses are typically office and retail. The buildings are usually set back from streets. On-site parking and access driveways are usually provided to groups of businesses.

Table 1 - Cross Section/ Land Use Matrix							
Cross Section	ROW Width	Curb to Curb Width	Land Use and Frontage Type				Location
			Residential	Civic	Mixed Use	Commercial	
Boulevard	146'	106'		X	X	X	Edge
Multi-way Boulevard	166' – 182'	134' – 150'	X	X	X	X	Edge
Main Street 4 Lanes with Median	118'	86'	X	X	X	X	Transition or edge zone
Main Street - 2 Lane with Median/Center Turn Lane	96'	64'	X	X	X	X	Transition or edge zone
Main Street - 2 Lanes with Parallel Parking	78'	46'	X	X	X	X	Core/Transition zone
Main Street – 2 Lanes with Angled Parking	90'	58'	X	X	X	X	Core/Transition zone
Couplet	73'	41'	X	X	X	X	Transition or edge zone
Local Urban	66'	34'	X	X	X		Core/Transition zone
Residential Parkway	104'	76'	X				Transition zone
Neighborhood	62'	34'	X				Transition zone

G. Intersections

Intersection designs in TODs and urban centers should consider the needs of all travel modes. While vehicular traffic flow should be carefully considered, creating safe crossings and accommodating pedestrians and bicycles as much as possible in the available right-of-way take precedence. Reasonable reduction of vehicular traffic capacities and level of service at intersections are justified when high volumes of pedestrians and bicyclists are present.

1. Design Principles

The following principles should be applied in intersection designs.

- a) **Pedestrian Safety** - Pedestrian safety and convenience measures should be considered as key parameters in preparing traffic impact studies. For the safety of pedestrians and bicyclists, in TODs and urban centers, especially in the core and transition zones, various pedestrian safety enhancement measures, such as curb extensions, non-exclusive turning lanes or no right-turns on red signals, are pre-determined in Table 2 - Intersection and Mid-Block Approach Design Matrix and should not be changed by a traffic impact study. Instead, these measures should be considered as key parameters in the traffic

impact study when developing assumptions for trip generation, trip distribution, modal split and trip assignment.

- b) System-wide Level of Service** - A system-wide analysis should be conducted to maintain acceptable vehicular circulation and the accessibility of large vehicles. As certain key streets and intersections within core and transition zones may experience reduced vehicular capacity due to certain pre-determined pedestrian safety measures, an acceptable system-wide level of service should be maintained through careful network design and analysis. Street designs within TODs and urban centers should be reviewed closely on a case by case basis, in conjunction with the entire street network, surrounding uses and the overall city transportation network. In addition, freight routes shall be identified in the street network for freight access.
- c) Emergency Vehicle Access** - It is required that adequate emergency vehicle access be provided to all areas of TODs and urban centers. All street intersections shall be designed to allow fire trucks to complete a turn without running over curbs. Fire trucks may occasionally encroach into the opposing or adjacent lanes when making a turn. A minimum of 28 feet of drivable road surface (face of curb to face of curb) on one cross street and a minimum of 26 feet of drivable road surface (face of curb to face of curb) on the other cross street shall be provided for all intersections. The dimension of a large school bus, S-BUS 40 as defined by AASHTO (the American Association of State Highway and Transportation Officials), shall be used for conducting additional intersection turning movement analyses of fire trucks when required by Aurora Life Safety.
- d) Bus Access** - It is required that bus routes and appropriate bus stop locations in the street network be identified in coordination with the Regional Transportation District (RTD) and city staff. Bus routes should be generally planned at a spacing of every half mile. All street intersections on the bus routes should be designed to allow adequate bus access.

2. Design Elements

The following five elements should be considered in intersection designs:



Fig. 7 Diagonal Curb Ramp

a) Curb Ramps

Diagonal curb ramps should not be used at intersections within TODs and urban centers. Instead, directional curb ramps should be utilized for all intersections within TODs and urban centers.



Fig. 8 Directional Ramp

b) Street Trees and Stop Signs

Street trees should be planted and maintained to provide the required sight stopping distance for drivers of approaching vehicles to observe stop signs. Specifically, a sight line between a stop sign and an approaching vehicle shall be established using the appropriate street cross-section and intersection designs, and AASHTO-recommended stopping sight distance (AASHTO 2004, Page 112, Exhibit 3-1. Stopping Sight Distance). In addition, a ten foot diameter of tree canopy shall be assumed. A tree shall be located at a minimum of three feet from the curb, not block the sight line and have foliage maintained above eight-feet above the surrounding grade.

c) Intersection Sight Triangles

Sight triangles shall be in conformance with Section 146-1100 (I) of the City Code.

d) Curb Extensions And Drainage Requirements

Curb extensions are the sidewalk areas extended beyond the regular curb lines into the traveled way. When on-street parking is provided, curb extensions should be provided at all intersections. They are encouraged at mid-block crossings in limited locations, but, must be approved prior to being used. Curb extensions shall not be constructed beyond bicycle and vehicle travel lanes.

When curb extensions are constructed, special drainage designs are required such as separate drainage inlets on both sides of streets, draining water away from the curb extensions and additional drainage inlets.



Fig. 9 Curb Extension

e) Pedestrian Crossing Treatments

A hierarchy of crossing treatments should be applied to intersection and mid-block crossings based on the location within the urban center or TOD and the presence of pedestrians and bicyclists. When designing pedestrian crossings, appropriate signage and striping measures shall be applied per the MUTCD (Manual on Uniform Traffic Control Devices). The hierarchy and appropriate locations include the following applications:

- Standard Markings - All crossings should be identified with ladder striping if no special pavements or color is used and parallel lines with stop bar when special pavements and/or color are used within the cross walk:
- Colored Paving - A dark gray or other appropriate colors may be applied to the paving in crosswalks within core or transition zone;
- Special Pavers - A distinctly patterned paver may be applied to distinguish intersection crosswalks and mid-block crossings in the core or transition zone. License agreements will be required when special pavers are used within public streets.



Fig. 10 Crossing Treatment

f) High Visibility Crosswalk Markings

High visibility crosswalk marking is an added feature beyond the use of the standard or enhanced pavement markings, colored pavement, or special pavers. High visibility crosswalk markings may be in the form of signage, special pavement markings, or flashers. High visibility crosswalk markings should be provided at all mid-block crossings and at intersection crossings where no traffic control is provided.

g) Mid-Block Crossing

Mid-block crossings with curb extensions should be considered at locations where a substantial number of pedestrians or bicyclists attempt to cross streets regardless of the presence of protection or identification of the crossing. These circumstances

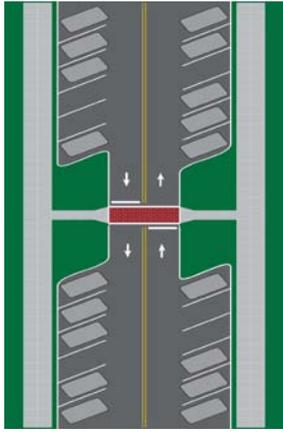


Fig. 11 Mid-block Crossing

typically occur in locations with pedestrian attractions on both sides of a roadway, in areas with a combination of street-facing retail shops and on-street parking, and the presence of long blocks (i.e., blocks of 600-feet or greater). Mid-block crossing will only be applied to limited locations and will be analyzed on a case by case basis. Multilane un-signalized controlled mid-block crossing will not be allowed.

h) Pedestrian Refuge Islands and Medians

Refuge islands should generally be considered for crossings wherever there is a median. Refuge islands in medians should be at least 6 feet wide

i) Roundabout

Intersections with a roundabout design for traffic control may be appropriate in certain locations within urban centers and TOD. Only a one-lane roundabout design shall be considered. No mid-block roundabout designs are appropriate. The specific location and design of roundabouts shall be evaluated and approved by the city engineer and traffic engineer.

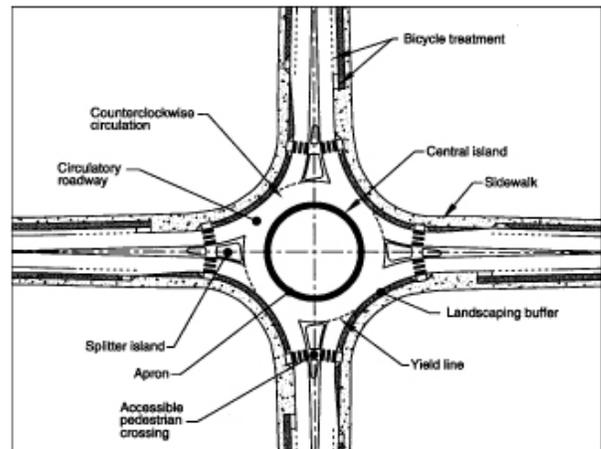


Fig. 12 Roundabout

j) Intersection Approach Designs

The following table depicts various key intersection approach design elements for all cross-section

**Table 2 - Intersection and Mid-Block Approach Design Matrix
(Continued)**

	Main Street – Two Lanes with Angled Parking	Main Street – Two Lanes with Angled Parking (Mid-block)	Couplet – Two Lanes	Residential Parkway – Two Lanes	Residential Parkway – Two Lanes (Mid- block)	Neighborhood/ Local Urban – Two Lanes
Curb Extensions	Yes	Yes	Yes	Yes	Yes	Partial
Corner Radii	20 Feet	NA	20 Feet	20 Feet	NA	20 Feet
Exclusive Left Turn Lanes Allowed	No	NA	Yes (when intersects with boulevards or existing major arterials)	No	NA	No
Exclusive Right Turn Lanes Allowed	No	NA	No	No	NA	No
Standard Markings	Yes	Yes	Yes	Yes	Yes	Yes
Colored Paving	No	No	No	No	No	No
Pavers	Yes	Yes	Yes	No	Yes	Yes
High Visibility Markings	No	Yes	No	No	Yes	No
Pedestrian Refuge Islands	NA	NA	NA	Yes	Yes	NA