Abu Dhabi Urban Street Design Manual

رؤية 2030 Vision

مجلس أبوظبي للتخطيط العمراني
ABU DHABI URBAN PLANNING COUNCIL

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Chapter 5 – Street Design Elements

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5.1 Introduction

This chapter provides a set of standards for street design elements, including junctions and traffic calming. Standard cross sections and dimension tables are followed by flexible ranges for situations with restricted right-of-way. Details on designing for the various elements follow.

Throughout this chapter, reference is made to existing and upcoming municipal and DOT guidelines; however, this Manual takes precedence except as noted. Refer to the UPC, DOT, DMA and the local municipalities for the latest updates on planning and design requirements (typically available on agency websites).

This Manual does not cover street operations such as signal timing, except to state priorities and limit particular operations. Nor does this Manual address street pavement markings, wayfinding, or signage (with the exception of sign placement guidelines related to the pedestrian realm covered in Chapter 6). Operations, signal design, pavement marking, and regulatory signage are addressed in separate DOT documents.

5.2 Street Composition

Dimensions are provided for each of the following elements that compose the pedestrian realm and the traveled way (see Figure 5.1):

1 Pedestrians

The pedestrian realm is the area between the curb and the property or building line. Pedestrian areas are also included at junctions and crossings, as well as bus stops, waiting platforms, and taxi lay-bys. Refer to section 5.6 for pedestrian design considerations.

2 Transit Users

Transit facilities include metro entrances, bus and tram lanes, stops, stations, and associated waiting platforms. Close coordination with the DOT is necessary to determine the type of required transit facilities. Refer to section 5.7 for more information.

3 Bicyclists

Bicycle use can be accomplished through cycle tracks located within the pedestrian realm, bicycle lanes within the traveled way, shared use of frontage lanes, and yield lanes. Consult with the DOT to determine specific bicycle facility requirements. Refer to section 5.8 for more information.

4 Motor Vehicles

Motor vehicle space includes travel lanes, turning pockets, and parking. Refer to section 5.9 for more information. On-street parking is optional on all streets, but preferred on all except boulevards, where parking may only be provided in a frontage lane.

5 Median

Medians shall be provided in the center of boulevards and avenues. They serve various functions, including refuge space for pedestrians, definition of turning lanes and tramways, and space for trees and landscaping. Side medians shall separate frontage lanes from the traveled way. Refer to section 5.9.8 for additional guidance.

5.2.1 Pedestrian Realm Zones

There are four primary zones in the pedestrian realm: frontage, through, furnishings, and edge. Because interaction occurs between these zones, development of a cohesive design for the pedestrian realm is important. Design must consider the unique conditions associated with each zone as well as how the pedestrian realm interacts with other elements of the street, such as bicycle and transit facilities and junctions. Maintaining clear sight lines between pedestrians, bicyclists, and motorists in these areas of interaction is critical.

Refer to Figures 5.2 and 5.3 for an illustration of the pedestrian realm zones. In some cases, a cycle track may be located within the pedestrian realm (see section 5.8 for design of cycle tracks and other bicycle facilities.) Keep in mind that buildings in the Emirate of Abu Dhabi may have more than one frontage.

Frontage Zone

The frontage zone is adjacent to the building or property line. It provides space for door openings,

An example of a building with two fronts.

			Section	Example 1: Avenue with Transit Median	Example 2: Boulevard with Frontage Lane
1	Pedestrians		5.6		
2	Transit Users	Side Bus / Tram Center Bus / Tram	5.7		
3	Bicyclists	Cycle Track Frontage Lane Bicycle Lane Yield Lane	5.8		
4	Motor Vehicles	Travel Lanes On-Street Parking Frontage Lane	5.9		
5	Median	Center Median Side Median Transit Median	5.9.8		

Figure 5.1 Street Design Elements Prioritization

steps, architectural elements, utilities, window shopping, signs, displays, and similar features.

- Keep this space as narrow and clear as possible so that people may walk and stand in the shadow of buildings.
- Vertical changes between the pedestrian realm grade and ground floor levels should be addressed internally within buildings as a last resort in the frontage zone. Do not substitute steps with a low wall or a series of low walls.
- Construct the frontage zone at the same grade and level as the through zone.
- The surface material should be the same as the through zone, but accent paving or color may be used to delineate and distinguish the frontage zone from the through zone.

Through Zone
The through zone is an obstacle-free space for pedestrian movement. It must remain both horizontally and vertically clear and provide a direct connection along pedestrian desire lines.

- Provide a firm, smooth, slip-resistant surface.
- Increase the width of the through zone in places that will attract high volumes of pedestrians, such as near Metro station entrances, malls, and other major destinations.

Furnishings Zone
The furnishings zone is where street furniture, necessary utility equipment, trees, landscaping, transit stops, and other features such as kiosks, sidewalk cafés, and vendors may be located.

- Consolidate and organize furnishings to maximize public use and benefit.
- Break up the furnishings zone to provide pedestrians access to crossings, taxi lay-bys, bus stops, and other facilities.
- Provide screening and buffering of utility fixtures in this zone while maintaining clear access for utility providers for maintenance.
- Refer to Chapter 6 for additional guidance related to streetscape furnishings.

Edge Zone
The edge zone is adjacent to on-street parking or motor vehicle lanes. The edge zone provides space to open a car door. It is where pedestrians wait for taxis or buses. This zone is often where street lights, signals, traffic signs, parking meters, electric car recharge stations, and other street-related infrastructure are placed. These elements may also be placed in the furnishings zone, particularly on narrower streets, or on the side median where there is a frontage lane.

- Provide 4.5 m vertical clearance in the edge zone for tall vehicles.
- Combine furnishings zone and edge zone where necessary for transit stops and taxi lay-bys. If this is not possible, provide a minimum of 1.5 m horizontal clearance where pedestrians are likely to wait for taxis or buses.

Bicycle Facilities
A cycle track may be included in the pedestrian realm, between the furnishings and edge zones, to provide bicyclists with a dedicated right-of-way separate from the traveled way. Coordination is required with the DOT to determine the specific facilities required.

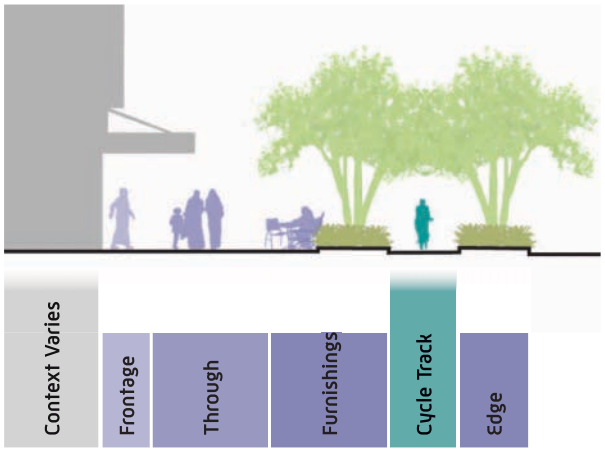


Figure 5.2 Pedestrian Realm Zones

"If we can develop and design streets so that they are wonderful, fulfilling places to be – community-building places, attractive for all people – then we will have successfully designed about one-third of the city directly and will have had an immense impact on the rest."
— Allan Jacobs

Figure 5.3 The Function of the Pedestrian Realm Zones

Frontage	Through	Furnishings	Cycle Track	Edge
Space between the building façade, wall or fence and the through zone of the pedestrian realm.	Obstacle-free space for clear pedestrian through travel. This is the primary walking area of the pedestrian realm.	Primary buffer space between the active pedestrian walking area of the through zone and adjacent thoroughfares.	Designated track for bicyclists; may not be required on some streets.	Interface between the on-street parking or travel lane.

Pedestrian Realm Zones

The frontage, through, furnishings, and edge zones shall be designed to fit the neighborhood context and adjacent land uses along the street. Refer to Chapter 6 for streetscape guidelines related to these zones of the pedestrian realm.

5.3 Standard Cross Sections

The following dimension tables and cross sections have been organized according to the Emirate's land use context categories: City, Town, Commercial, Residential, Industrial, and No Active Frontage. The tables and cross sections presented use a color code to identify the street design elements that compose the pedestrian realm and the traveled way. Where space within the cross section fulfills multiple functions or accommodates multiple modes, this is reflected by the use of colored bars in the tables and cross sections.

Most of the dimensions in the preferred dimension tables are fixed values. These prescribed dimensions reflect best practices applied under typical conditions with regard to the specific element and in the given land use context. However, dimension ranges are provided for the furnishings zone and edge zone as design flexibility of these areas provides designers with the opportunity to accommodate localized design elements.

5.3.1 City Context

Definition

Mixed use Central Business Districts (CBD) and high density neighborhoods with high levels of pedestrian activity, where buildings are typically seven stories and higher.

Design Considerations

Designing for the comfort and safety of pedestrians is the highest priority. Transit efficiency and reliability, as well as the comfort of transit passengers should be prioritized. A network of high quality bicycle facilities should be provided according to DOT guidance. Focus shade, landscape, café seating, public art, and other amenities in the pedestrian realm, particularly at major destinations such as prominent retail areas, mosques, schools, and tram stops. Provide frequent, signalized pedestrian crossings, particularly at Boulevards and Avenues in areas of high pedestrian activity. Use care in the design of transit stops and taxi lay-bys, ensuring comfortable waiting areas for passengers without interrupting cycle tracks or pedestrian Through zones.

Examples

The entire Abu Dhabi CBD and most of Al Reem Island.

Development Code Designations

Office High Density, High Density Mixed Use, High Density Residential (O-HD / MU-R / R80 / R60 / R50)

Standard City Dimensions

Street Family	Pedestrian Realm					Frontage Lane			Traveled Way				
	Frontage	Through	Furnishings	Cycle Track [2]	Edge [2]	Parking [1] Curb Extension	Travel Bicycle	Side Median	Parking Curb Extension	Bicycle Lane [2]	Curb Lane Bus [3]	Travel Lane(s)	Center Median [4]
Boulevard	0.8	3.5	1.5 - 3.0	2.0	0.5 - 1.5	n/a	n/a	n/a	n/a	n/a	3.5	3.3	6.0
with Frontage Lane	0.8	3.5	1.8 - 3.0	n/a	0.5	2.3	2.8	2.0	n/a	n/a	3.5	3.3	6.0
Avenue	0.8	3.0	1.5 - 2.0	2.0	0.5 - 1.5	n/a	n/a	n/a	2.5	2.0	3.5	3.3	6.0
with Frontage Lane	0.8	3.0	1.5 - 2.0	n/a	0.5	2.3	2.8	2.0	2.5	2.0	3.5	3.3	6.0
Street	0.5	2.8	1.2 - 1.8	n/a	0.5	n/a	n/a	n/a	2.3	2.0	3.0	n/a	n/a
Access Lane	n/a	1.8	n/a	n/a	0.5	n/a	n/a	n/a	n/a	n/a	3.0	n/a	n/a

1 Parking along pedestrian realm.

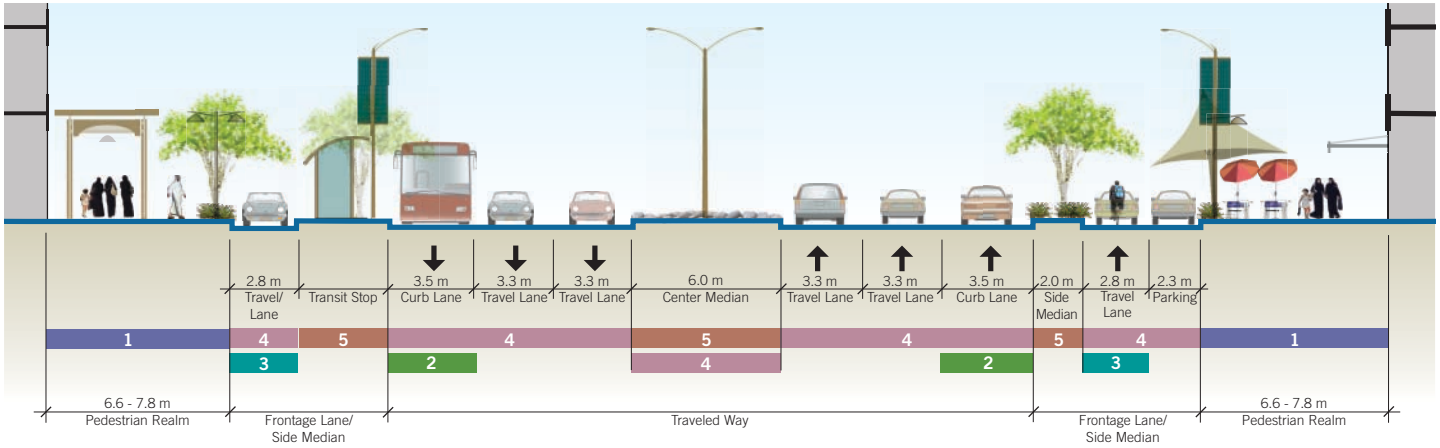
2 Designers to determine type of bicycle facility per Section 5.8 and consult with the DOT. If cycle track is used, the edge zone will be 1.5 m. If a bicycle lane is used, the edge zone will be 0.5 m. Streets and Access Lanes may have bicycle lanes or bicycles may share the curb lane. Where there is on-street parking, the edge zone will be 1.5 m.

3 Use 3.5 m if buses use curb lane as part of a regular transit route.

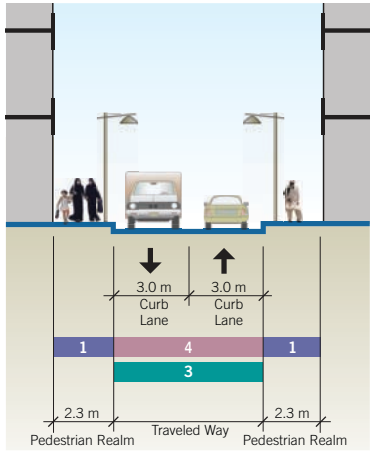
4 Median dimensions include 3.0 m left turn lane.

Optional

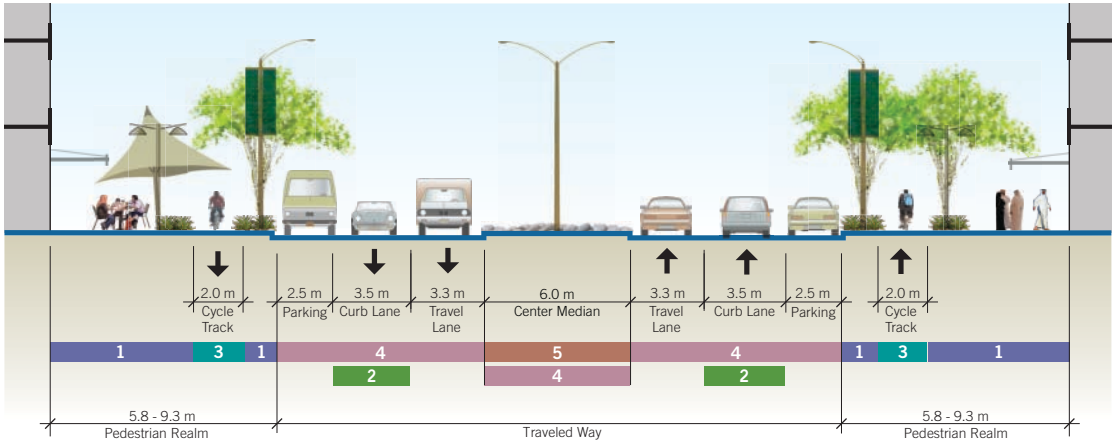
Standard City Boulevard (with Frontage Lane)



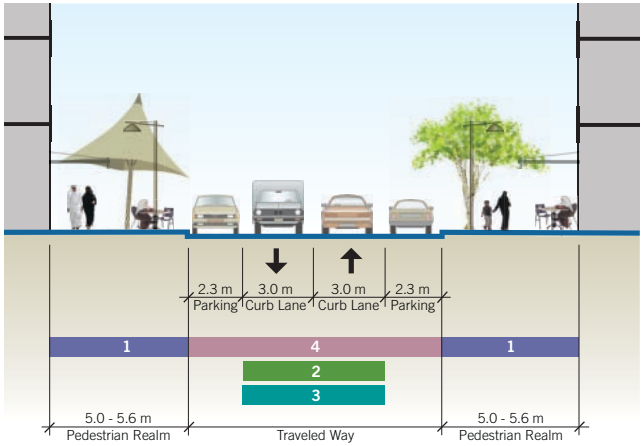
Standard City Access Lane



Standard City Avenue



Standard City Street



Street Design Elements

- 1 **Pedestrians** Section 5.6
- 2 **Transit Users** Section 5.7
- 3 **Bicyclists** Section 5.8
- 4 **Motor Vehicles** Section 5.9
- 5 **Medians** Section 5.8.9

5.3.2 Town Context

Definition

Mixed use areas with medium levels of pedestrian activity, where buildings are typically three to six stories.

Design Considerations

Considerations are the same as the City context, but somewhat lower pedestrian volumes are expected and pedestrian realm dimensions are slightly narrower.

Examples

The Al Ain CBD. The retail centers of many Abu Dhabi City neighborhoods, such as in Khalifa City A.

Development Code Designations

Medium Density Mixed Use, Medium Density Residential (MU-DC / R25 / R15C / R15B)

Standard Town Dimensions

Street Family	Pedestrian Realm					Frontage Lane			Traveled Way				
	Frontage	Through	Furnishings	Cycle Track [2]	Edge [2]	Parking [1] Curb Extension	Travel Bicycle	Side Median	Parking Curb Extension	Bicycle Lane [2]	Curb Lane Bus [3]	Travel Lane(s)	Center Median [4]
Boulevard	0.8	3.5	1.5 - 3.0	2.0	0.5 - 1.5	n/a	n/a	n/a	n/a	n/a	3.5	3.3	6.0
with Frontage Lane	0.8	3.5	1.8 - 3.0	n/a	0.5	2.3	2.8	2.0	n/a	n/a	3.5	3.3	6.0
Avenue	0.8	3.0	1.5 - 2.0	2.0	0.5 - 1.5	n/a	n/a	n/a	2.5	2.0	3.5	3.3	6.0
with Frontage Lane	0.8	3.0	1.5 - 2.0	n/a	0.5	2.3	2.8	2.0	2.5	2.0	3.5	3.3	6.0
Street	0.5	2.4	1.2 - 1.8	n/a	0.5	n/a	n/a	n/a	2.3	2.0	3.0	n/a	n/a
Access Lane	n/a	1.8	n/a	n/a	0.5	n/a	n/a	n/a	n/a	n/a	3.0	n/a	n/a

1 Parking along pedestrian realm.

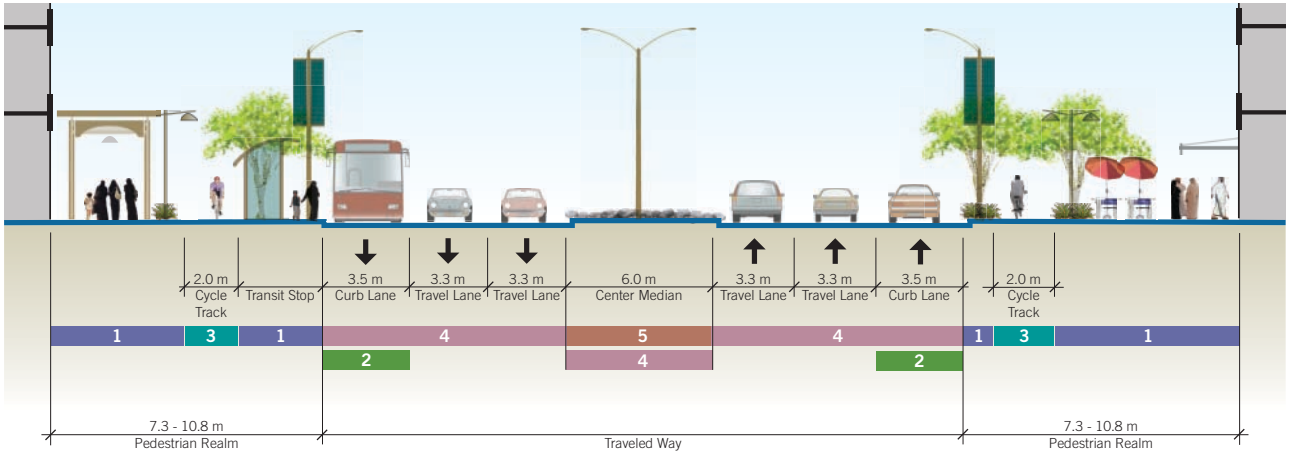
2 Designers to determine type of bicycle facility per Section 5.8 and consult with the DOT. If cycle track is used, the edge zone will be 1.5 m. If a bicycle lane is used, the edge zone will be 0.5 m. Streets and Access Lanes may have bicycle lanes or bicycles may share the curb lane. Where there is on-street parking, the edge zone will be 1.5 m.

3 Use 3.5 m if buses use curb lane as part of a regular transit route.

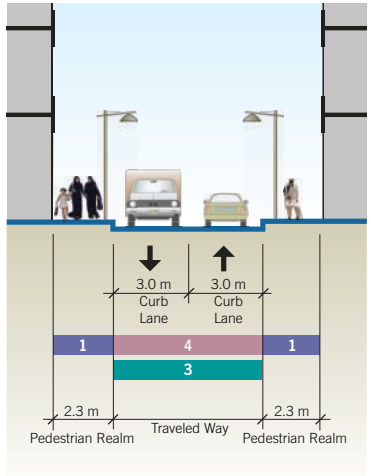
4 Median dimensions include 3.0 m left turn lane.

Optional

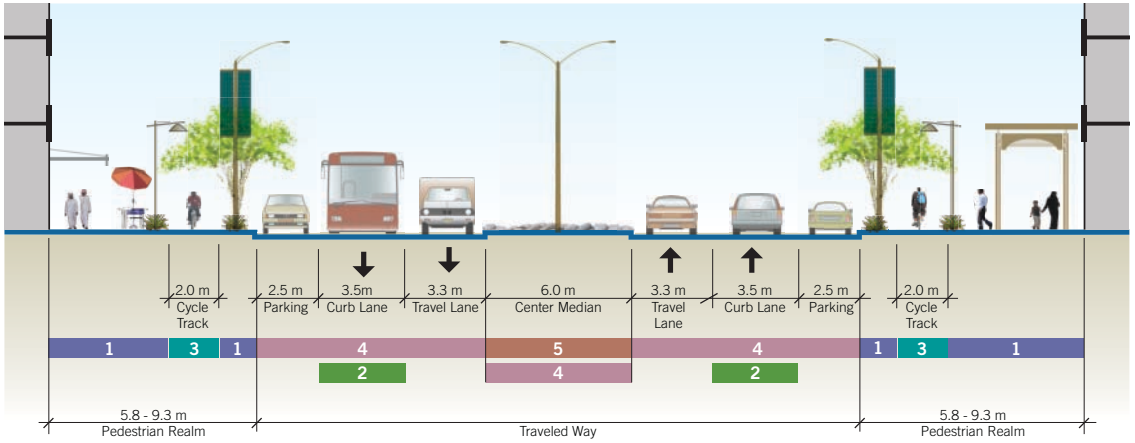
Standard Town Boulevard



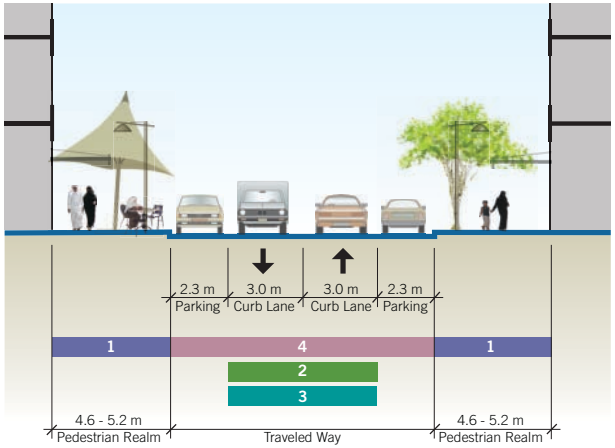
Standard Town Access Lane



Standard Town Avenue



Standard Town Street



Street Design Elements

- 1 **Pedestrians** Section 5.6
- 2 **Transit Users** Section 5.7
- 3 **Bicyclists** Section 5.8
- 4 **Motor Vehicles** Section 5.9
- 5 **Medians** Section 5.8.9

5.3.3 Commercial Context

Definition

Areas throughout the city intended to provide a variety of working, shopping, and service options and convenience.

Design Considerations

While land uses in this zone may be auto-oriented, pedestrians must still be accommodated, and walking should be safe and comfortable along all streets. Care should be taken to minimize the number of driveways and reduce the speed of motorists at pedestrian crossings. Landscape investment should focus on providing shade and comfort to pedestrians.

Examples

Auto-oriented retail zones along Airport Road in Abu Dhabi City and the commercial strip along Liwa Road in Madinat Zayed in Al Gharbia.

Development Code Designations

Low Density Mixed Use Commercial Employment (MU-NC / SC / O-MD)

Standard Commercial Dimensions

Street Family	Pedestrian Realm					Frontage Lane			Traveled Way				
	Frontage	Through	Furnishings	Cycle Track [2]	Edge [2]	Parking [1] Curb Extension	Travel Bicycle	Side Median	Parking Curb Extension	Bicycle Lane [2]	Curb Lane Bus [3]	Travel Lane(s)	Center Median [4]
Boulevard	0.5	2.5	1.5 - 1.8	2.0	0.5 - 1.5	n/a	n/a	n/a	n/a	n/a	3.5	3.3	6.0
with Frontage Lane	0.5	2.5	1.5 - 1.8	n/a	0.5	2.3	2.8	2.0	n/a	n/a	3.5	3.3	6.0
Avenue	0.5	2.2	1.5 - 1.8	2.0	0.5 - 1.5	n/a	n/a	n/a	2.5	2.0	3.5	3.3	6.0
with Frontage Lane	0.5	2.2	1.5 - 1.8	n/a	0.5	2.3	2.8	2.0	2.5	2.0	3.5	3.3	6.0
Street	0.5	2.0	1.2 - 1.5	n/a	0.5	n/a	n/a	n/a	2.3	2.0	3.0	n/a	n/a
Access Lane	n/a	1.8	n/a	n/a	0.5	n/a	n/a	n/a	n/a	n/a	3.0	n/a	n/a

1 Parking along pedestrian realm.

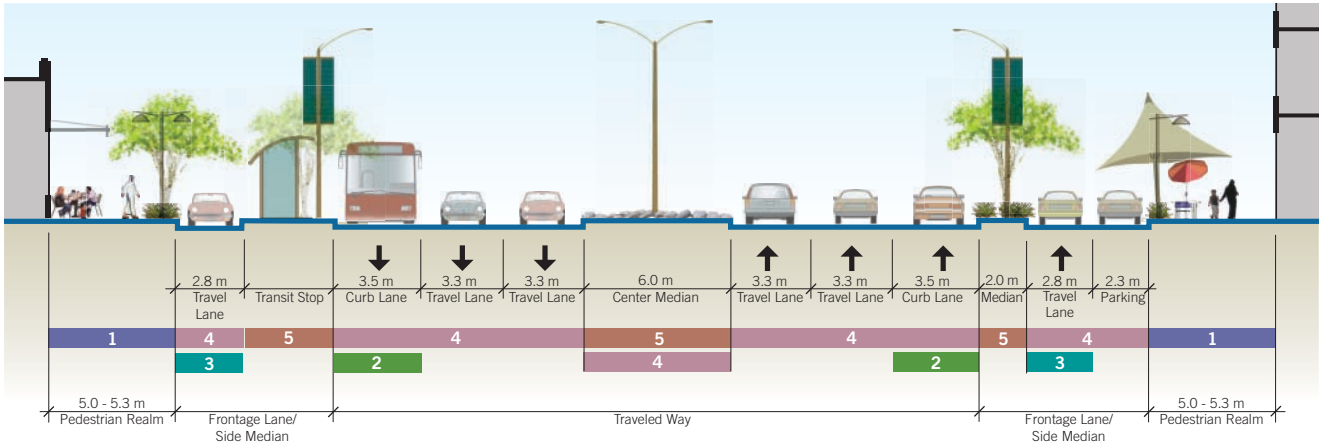
2 Designers to determine type of bicycle facility per Section 5.8 and consult with the DOT. If cycle track is used, the edge zone will be 1.5 m. If a bicycle lane is used, the edge zone will be 0.5 m. Streets and Access Lanes may have bicycle lanes or bicycles may share the curb lane. Where there is on-street parking, the edge zone will be 1.5 m.

3 Use 3.5 m if buses use curb lane as part of a regular transit route.

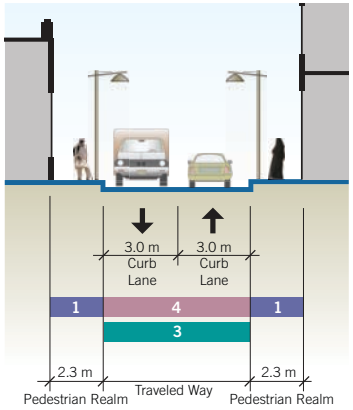
4 Median dimensions include 3.0 m left turn lane.

Optional

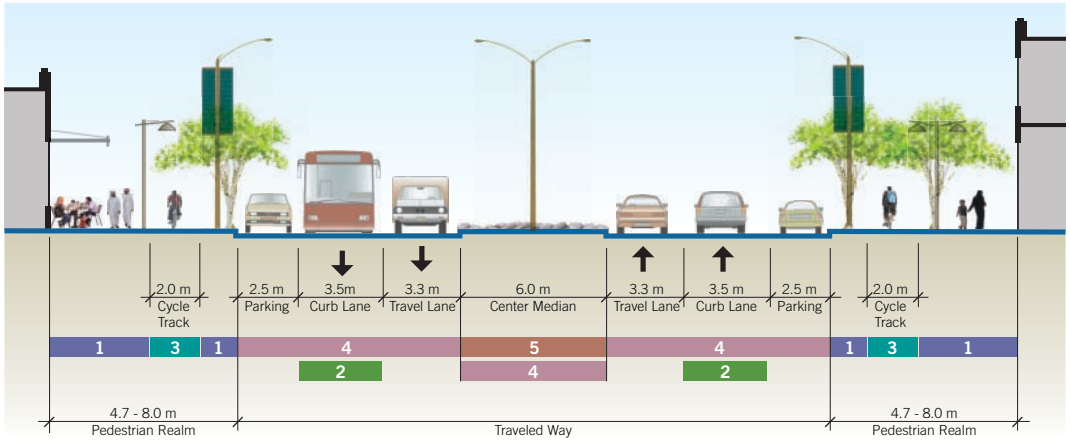
Standard Commercial Boulevard (with Frontage Lane)



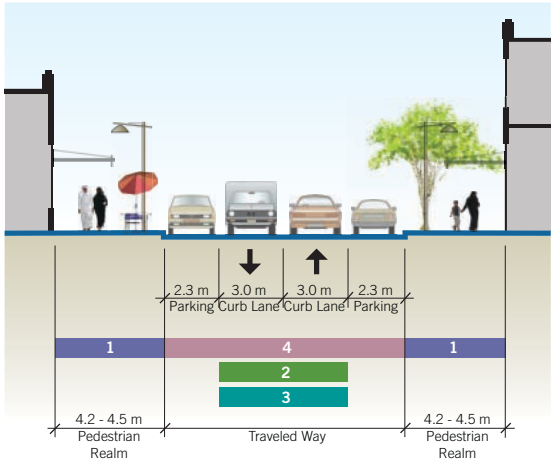
Standard Commercial Access Lane



Standard Commercial Avenue



Standard Commercial Street



Street Design Elements

- 1 **Pedestrians** Section 5.6
- 2 **Transit Users** Section 5.7
- 3 **Bicyclists** Section 5.8
- 4 **Motor Vehicles** Section 5.9
- 5 **Medians** Section 5.8.9

5.3.4 Residential Context

Definition

Areas that provide a variety of housing opportunities, allowing for densities varying from villa to multi-dwelling residential buildings.

Design Considerations

Pedestrian safety is of paramount importance. On some Residential Streets and all Residential Access Lanes, children's play should be accommodated in the street by ensuring very low speeds for automobiles. Landscape should provide shade for pedestrians and enhance residential quality of life. High levels of street connectivity, including use of Sikkas and other pedestrian-only ways, should be provided to allow direct access for all residents to transit stops, retail centers, mosques, and schools.

Examples

Low density residential neighborhoods, including most of Madinat Zayed, Al Mirfa, Al Ain, and Emirati neighborhoods in Abu Dhabi City.

Development Code Designations

Low Density Residential (R15A / VR)

Standard Residential Dimensions

Street Family	Pedestrian Realm					Frontage Lane			Traveled Way				
	Frontage	Through	Furnishings	Cycle Track [2]	Edge [2]	Parking [1] Curb Extension	Travel Bicycle	Side Median	Parking Curb Extension	Bicycle Lane [2]	Curb Lane Bus [3]	Travel Lane(s)	Center Median [4]
Boulevard	0.5	2.2	1.5	2.0	0.5 - 1.5	n/a	n/a	n/a	n/a	n/a	3.5	3.3	5.0
with Frontage Lane	0.5	2.2	1.5	n/a	0.5	2.3	2.8	2.0	n/a	n/a	3.5	3.3	5.0
Avenue	0.5	2.0	1.5	2.0	0.5 - 1.5	n/a	n/a	n/a	2.3	2.0	3.5	3.3	5.0
with Frontage Lane	0.5	2.0	1.5	n/a	0.5	2.3	2.8	2.0	2.3	2.0	3.5	3.3	5.0
Street	0.3	1.8	1.2 - 1.5	n/a	0.5	n/a	n/a	n/a	2.3	2.0	3.0	n/a	n/a
Access Lane	n/a	1.8	n/a	n/a	0.5	n/a	n/a	n/a	n/a	n/a	3.0	n/a	n/a

1 Parking along pedestrian realm.

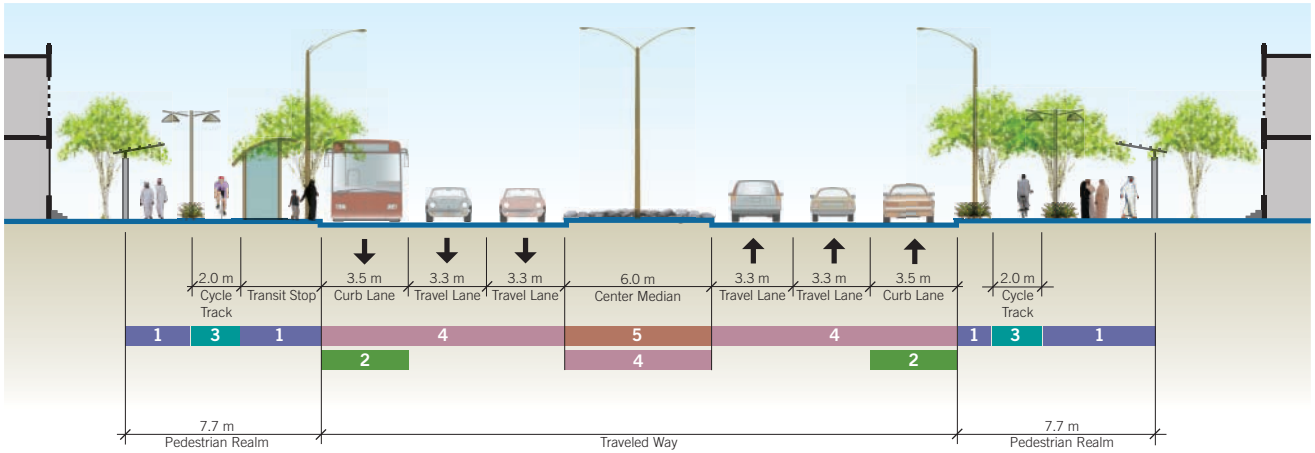
2 Designers to determine type of bicycle facility per Section 5.8 and consult with the DOT. If cycle track is used, the edge zone will be 1.5 m. If a bicycle lane is used, the edge zone will be 0.5 m. Streets and Access Lanes may have bicycle lanes or bicycles may share the curb lane. Where there is on-street parking, the edge zone will be 1.5 m.

3 Use 3.5 m if buses use curb lane as part of a regular transit route.

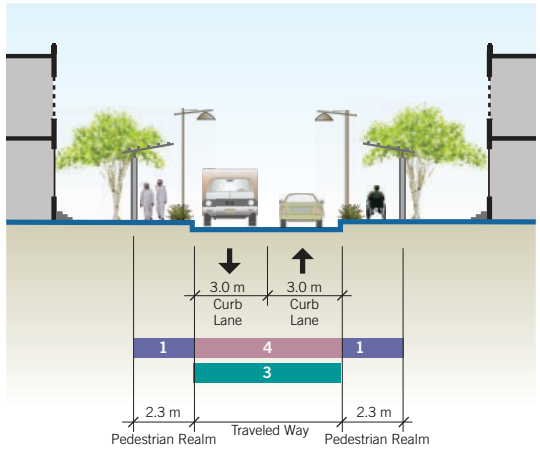
4 Median dimensions include 3.0 m left turn lane.

Optional

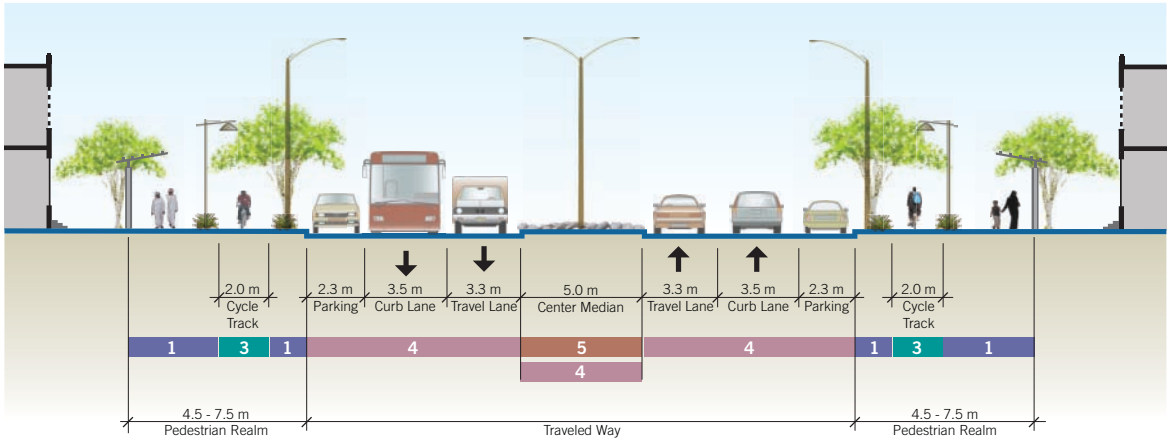
Standard Residential Boulevard



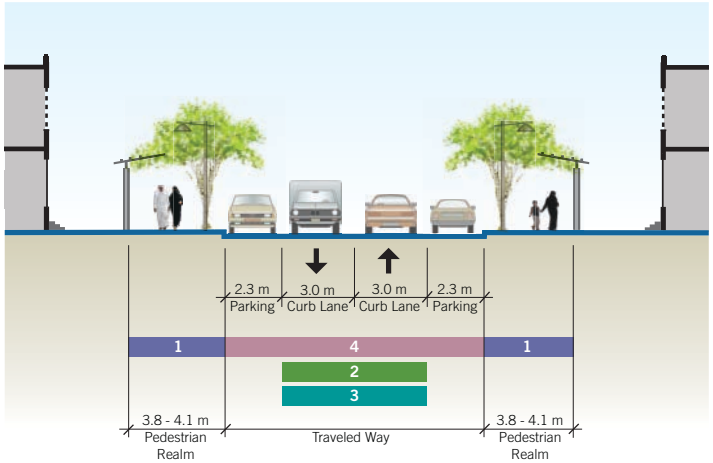
Standard Residential Access Lane



Standard Residential Avenue



Standard Residential Street



Street Design Elements

- **1 Pedestrians** Section 5.6
- **2 Transit Users** Section 5.7
- **3 Bicyclists** Section 5.8
- **4 Motor Vehicles** Section 5.9
- **5 Medians** Section 5.8.9

5.3.5 Industrial Context

Definition

Areas for businesses that have potential to create adverse visual, noise, or other impacts to adjoining public and residential properties. Uses include warehousing and distribution with support commercial services, ancillary office space, and labor camps.

Design Considerations

While land uses in this zone are auto-oriented, pedestrians must still be accommodated, and walking should be safe and comfortable along all streets. Care should be taken to minimize driveways and reduce speed of motorists crossing the pedestrian realm. Landscape investment should be limited and focused on providing shade and comfort to pedestrians.

Examples

Industrial zones and labor camps in Mussaffah in Abu Dhabi City and an industrial street in Sila'a in Al Gharbia.

Development Code Designations

General and Heavy Industrial (GI / HI)

Standard Industrial Dimensions

Street Family	Pedestrian Realm					Frontage Lane			Traveled Way				
	Frontage	Through	Furnishings	Cycle Track [2]	Edge [2]	Parking [1] Curb Extension	Travel Bicycle	Side Median	Parking Curb Extension	Bicycle Lane [2]	Curb Lane Bus [3]	Travel Lane(s)	Center Median [4]
Boulevard	0.5	2.0	1.2 - 1.5	2.0	0.5 - 1.5	n/a	n/a	n/a	n/a	n/a	3.5	3.5	5.0
with Frontage Lane	0.5	2.0	1.5	n/a	0.5	3.5	4.0	2.0	n/a	n/a	3.5	3.5	5.0
Avenue	0.5	2.0	1.2 - 1.5	2.0	0.5 - 1.5	n/a	n/a	n/a	3.5	2.0	3.5	3.5	5.0
with Frontage Lane	0.5	2.0	1.5	n/a	0.5	3.5	4.0	2.0	3.5	2.0	3.5	3.5	5.0
Street	0.3	1.8	1.2	n/a	0.5	n/a	n/a	n/a	3.5	2.0	3.5	n/a	n/a
Access Lane	n/a	1.8	n/a	n/a	0.5	n/a	n/a	n/a	n/a	n/a	3.5	n/a	n/a

1 Parking along pedestrian realm.

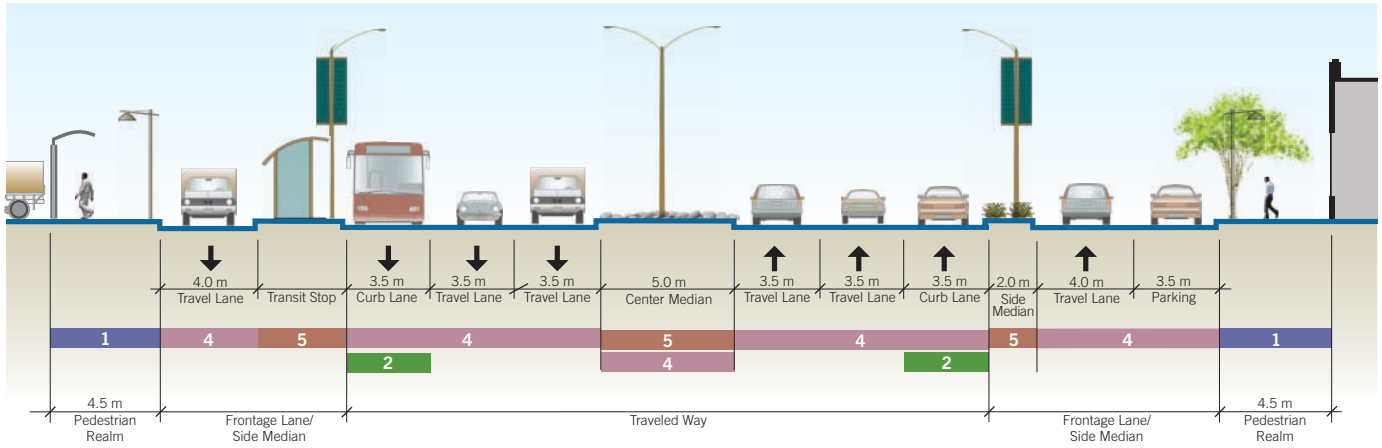
2 Designers to determine type of bicycle facility per Section 5.8 and consult with the DOT. If cycle track is used, the edge zone will be 1.5 m. If a bicycle lane is used, the edge zone will be 0.5 m. Streets and Access Lanes may have bicycle lanes or bicycles may share the curb lane. Where there is on-street parking, the edge zone will be 1.5 m.

3 Use 3.5 m if buses use curb lane as part of a regular transit route.

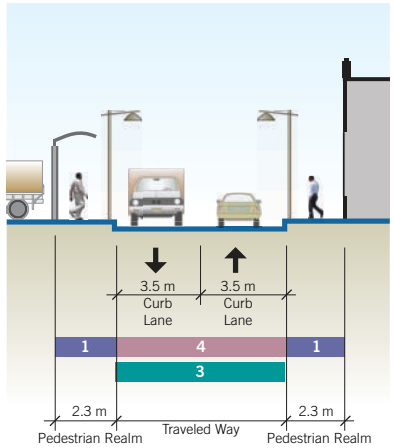
4 Median dimensions include 3.0 m left turn lane.

Optional

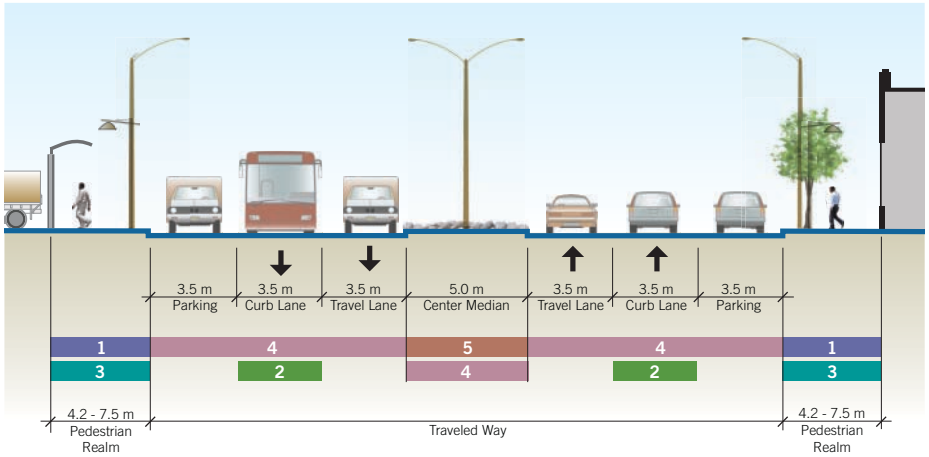
Standard Industrial Boulevard (with Frontage Lane)



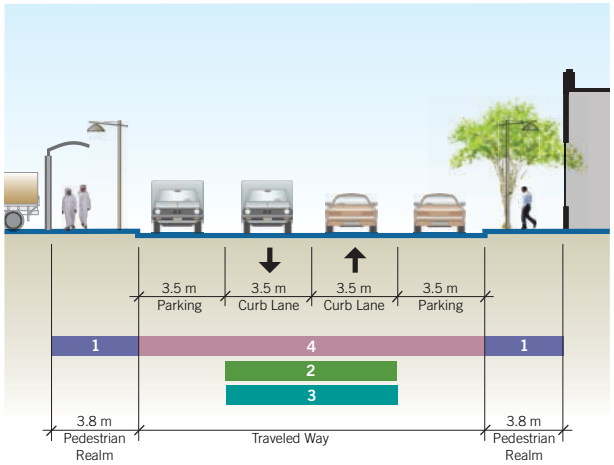
Standard Industrial Access Lane



Standard Industrial Avenue



Standard Industrial Street



Street Design Elements

- 1 **Pedestrians** Section 5.6
- 2 **Transit Users** Section 5.7
- 3 **Bicyclists** Section 5.8
- 4 **Motor Vehicles** Section 5.9
- 5 **Medians** Section 5.8.9

5.3.6 No Active Frontage

Definition

Places where no buildings or land uses front onto the street, such as a perimeter wall around a palace or residential neighborhood. These areas experience low levels of pedestrian activity.

Design Considerations

Compared to other context areas, the lowest level of pedestrian amenity should be provided here. However, pedestrians must still be accommodated safely along all these streets. Many No Active Frontage streets may also serve significant volumes of bicyclists traveling from one neighborhood to another. Transit may also serve these streets, and particular care should be taken to ensure personal security and comfort of passengers waiting at transit stops.

Examples

The streets along the perimeter villa walls around Khalifa City A in Abu Dhabi City and the palaces of Al Ain.

Development Code Designations

Palace wall, Open Space (EC / HR / RR / DI / NI)

Standard No Active Frontage Dimensions

Street Family	Pedestrian Realm					Frontage Lane			Traveled Way				
	Frontage	Through	Furnishings	Cycle Track [2]	Edge [2]	Parking [1] / Curb Extension	Travel / Bicycle	Side Median	Parking / Curb Extension	Bicycle Lane [2]	Curb Lane / Bus [3]	Travel Lane(s)	Center Median [4]
Boulevard	n/a	2.0	1.2 - 1.5	2.0	0.15 - 1.5	n/a	n/a	n/a	n/a	n/a	3.5	3.3	5.0
with Frontage Lane	Street Type Not Applicable												
Avenue	n/a	2.0	1.2 - 1.5	2.0	0.15 - 1.5	n/a	n/a	n/a	2.3	2.0	3.5	3.3	5.0
with Frontage Lane	Street Type Not Applicable												
Street	n/a	1.8	1.2 - 1.5	n/a	0.15 - 0.5	n/a	n/a	n/a	2.3	2.0	3.0	n/a	n/a
Access Lane	n/a	1.8	n/a	n/a	0.5	n/a	n/a	n/a	n/a	n/a	3.0	n/a	n/a

1 Parking along pedestrian realm.

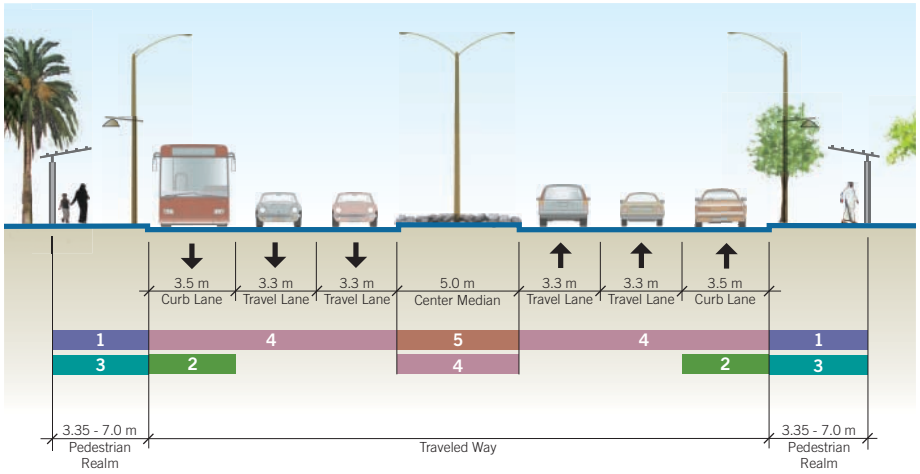
2 Designers to determine type of bicycle facility per Section 5.8 and consult with the DOT. If cycle track is used, the edge zone will be 1.5 m. If a bicycle lane is used, the edge zone will be 0.5 m. Streets and Access Lanes may have bicycle lanes or bicycles may share the curb lane. Where there is on-street parking, the edge zone will be 1.5 m.

3 Use 3.5 m if buses use curb lane as part of a regular transit route.

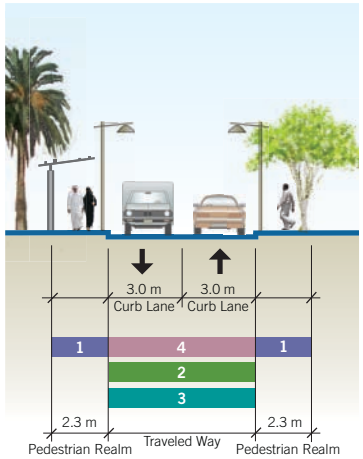
4 Median dimensions include 3.0 m left turn lane.

Optional

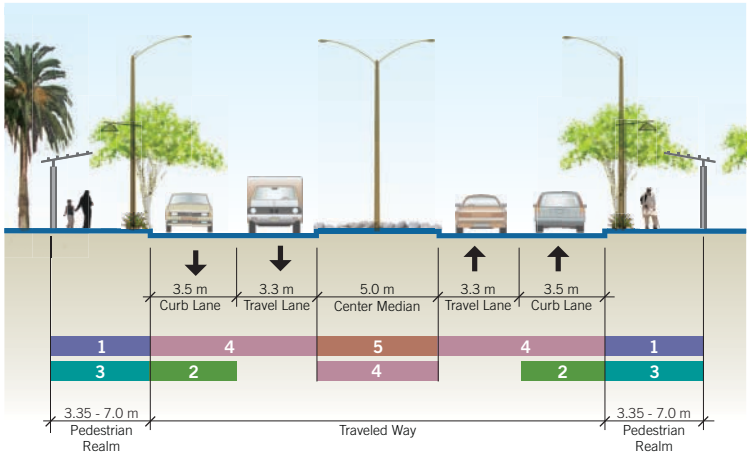
Standard No Active Frontage Boulevard



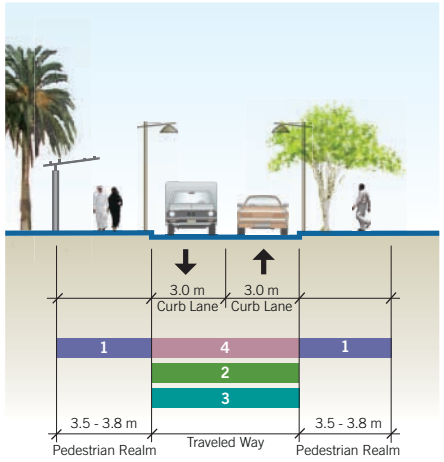
Standard No Active Frontage Access Lane



Standard No Active Frontage Avenue



Standard No Active Frontage Street



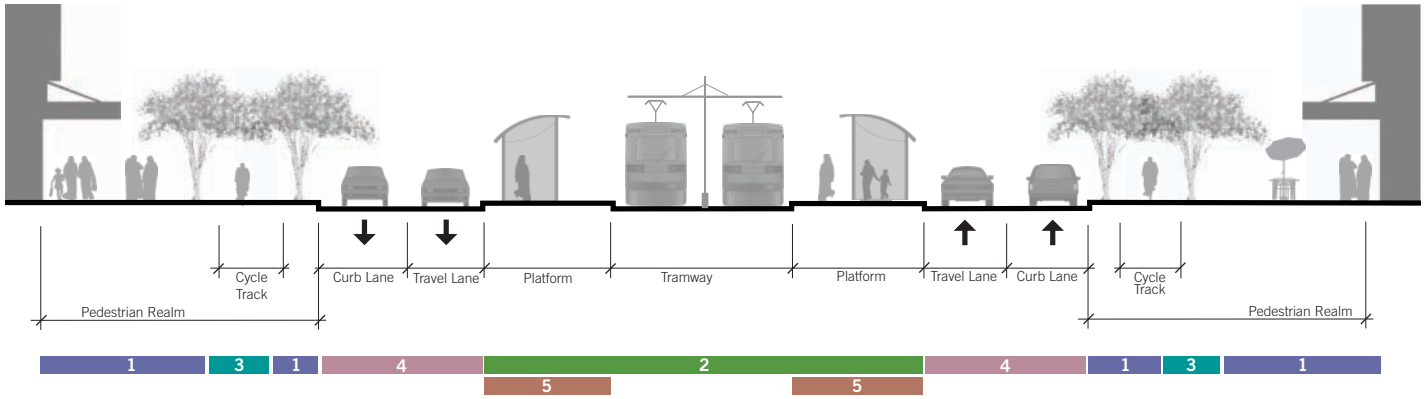
Street Design Elements

- 1 **Pedestrians** Section 5.6
- 2 **Transit Users** Section 5.7
- 3 **Bicyclists** Section 5.8
- 4 **Motor Vehicles** Section 5.9
- 5 **Medians** Section 5.8.9

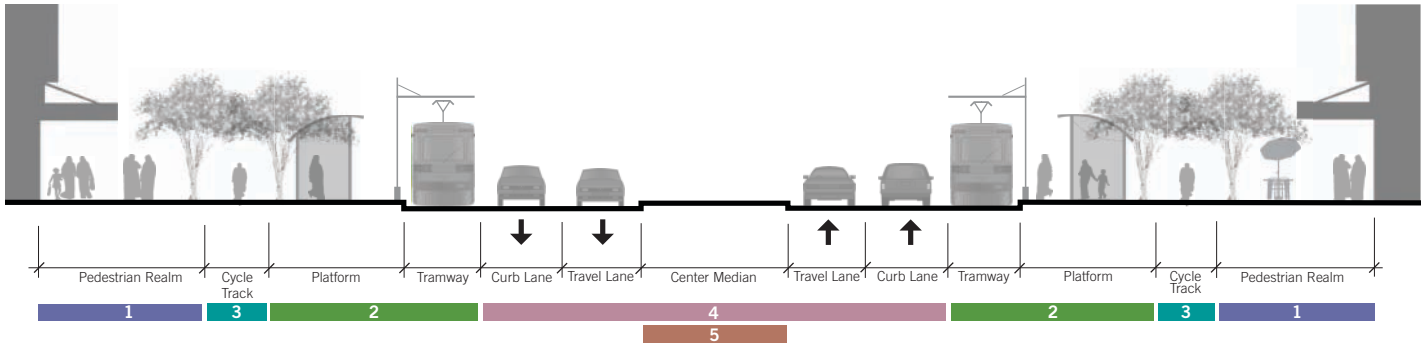
5.3.7 Transit Dedicated Lanes

Transit accommodation may be provided on a street through the addition of dedicated travel lanes for trams or buses, as required by the DOT. Transit lanes may be accommodated in the center median or side travel lanes. Transit streets may benefit from a wider pedestrian realm than the standard dimensions in order to accommodate stops, shelters, and high pedestrian activity. Design guidance for transit facilities within the right-of-way is provided, however design standards from the DOT will take precedence and shall be used over these dimensions.

Example of a City Transit Avenue with Center-Running Tram



Example of a City Transit Avenue with Side-Running Tram



5.4 Flexible Dimensions for Restricted Right-of-Way

In cases where existing conditions prevent the use of standard dimensions, design flexibility has been provided through the use of the minimum and maximum dimensions provided in Table 5.1. The use of these tables requires a Category 1 Exception, as described in Section 4.7.1. The Category 2 Exception detailed in 4.7.2 addresses street designs that go outside these ranges.

Table 5.1 Minimum and Maximum Dimensions

Street Family	Pedestrian Realm										Frontage Lane						Traveled Way									
	Frontage		Through		Furnishing		Cycle Track		Edge [1]		Parking Curb Extension		Travel Lane Bicycle		Side	Median	Parking Curb Extension		Bicycle Lane		Curb Lane Bus		Travel Lane(s)		Center Median [2]	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
City Context																										
Boulevard	0.5	1.5	2.8	4.0	1.2	3.5	1.5	2.5	0.15	2.0	2.0	2.3	2.5	3.0	0.5	4.0	n/a	n/a	n/a	n/a	3.3	3.5	3.3	3.3	2.0	6.0
Avenue	0.5	1.5	2.4	4.0	1.2	3.0	1.5	2.5	0.15	2.0	2.0	2.3	2.5	3.0	0.5	4.0	2.1	2.5	1.5	2.5	3.3	3.5	3.3	3.3	2.0	6.0
Street	0.5	1.5	2.4	3.0	1.0	2.4	1.5	2.5	0.15	2.0	n/a	n/a	n/a	n/a	n/a	n/a	2.1	2.4	1.5	2.5	3.3	3.5	3.0	3.3	n/a	n/a
Access Lane	n/a	n/a	1.8	2.5	n/a	n/a	n/a	n/a	0.15	0.5	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	2.7	3.0	n/a	n/a	n/a	n/a
Town Context																										
Boulevard	0.5	1.5	2.4	3.5	1.2	3.0	1.5	2.5	0.15	2.0	2.0	2.3	2.5	3.0	0.5	4.0	n/a	n/a	n/a	n/a	3.3	3.5	3.3	3.3	2.0	6.0
Avenue	0.5	1.5	2.0	3.0	1.2	2.4	1.5	2.5	0.15	2.0	2.0	2.3	2.5	3.0	0.5	4.0	2.1	2.5	1.5	2.5	3.3	3.5	3.3	3.3	2.0	6.0
Street	0.5	1.5	2.0	2.4	1.0	2.0	1.5	2.5	0.15	2.0	n/a	n/a	n/a	n/a	n/a	n/a	2.1	2.4	1.5	2.5	3.0	3.5	n/a	n/a	n/a	n/a
Access Lane	n/a	n/a	1.8	2.5	n/a	n/a	n/a	n/a	0.15	0.5	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	2.7	3.0	n/a	n/a	n/a	n/a
Commercial Context																										
Boulevard	0.5	1.5	2.4	3.0	1.2	3.0	1.5	2.5	0.15	2.0	2.0	2.3	2.5	3.0	0.5	4.0	n/a	n/a	n/a	n/a	3.3	3.5	3.3	3.3	2.0	6.0
Avenue	0.5	1.5	2.0	3.0	1.2	2.4	1.5	2.5	0.15	2.0	2.0	2.3	2.5	3.0	0.5	4.0	2.1	2.5	1.5	2.5	3.3	3.5	3.3	3.3	2.0	6.0
Street	0.5	1.5	2.0	2.4	1.0	2.0	1.5	2.5	0.15	2.0	n/a	n/a	n/a	n/a	n/a	n/a	2.1	2.4	1.5	2.5	3.0	3.5	n/a	n/a	n/a	n/a
Access Lane	n/a	n/a	1.8	2.5	n/a	n/a	n/a	n/a	0.15	0.5	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	2.7	3.0	n/a	n/a	n/a	n/a
Residential Context																										
Boulevard	0.5	1.0	1.8	2.8	1.2	2.0	1.5	2.5	0.15	1.8	2.0	2.3	2.5	3.0	0.5	4.0	n/a	n/a	n/a	n/a	3.3	3.5	3.3	3.3	2.0	5.0
Avenue	0.5	1.0	1.8	2.0	1.2	2.0	1.5	2.5	0.15	2.0	2.0	2.3	2.5	3.0	0.5	4.0	2.1	2.4	1.5	2.5	3.3	3.5	3.3	3.3	2.0	5.0
Street	0.3	1.5	1.8	2.0	1.0	1.8	1.5	2.5	0.15	2.0	n/a	n/a	n/a	n/a	n/a	n/a	2.1	2.4	1.5	2.5	3.0	3.5	n/a	n/a	n/a	n/a
Access Lane	n/a	n/a	1.8	2.5	n/a	n/a	n/a	n/a	0.15	0.5	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	2.7	3.0	n/a	n/a	n/a	n/a
Industrial Context																										
Boulevard	0.3	0.5	2.0	3.6	1.2	2.4	1.5	2.5	0.15	2.0	3.3	3.7	3.7	4.0	0.5	4.0	n/a	n/a	n/a	n/a	3.3	3.7	3.3	3.7	2.0	5.0
Avenue	0.3	0.5	2.0	3.4	1.2	2.4	1.5	2.5	0.15	2.0	3.3	3.7	3.7	4.0	0.5	4.0	3.3	3.7	1.5	2.5	3.3	3.7	3.3	3.7	2.0	5.0
Street	0.3	0.5	2.0	3.0	1.0	1.5	1.5	2.5	0.15	2.0	n/a	n/a	n/a	n/a	n/a	n/a	3.3	3.7	1.5	2.5	3.3	3.7	n/a	n/a	n/a	n/a
Access Lane	n/a	n/a	1.8	2.5	n/a	n/a	n/a	n/a	0.15	0.5	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	2.7	3.0	n/a	n/a	n/a	n/a
No Active Frontage																										
Boulevard	0.3	0.5	1.8	3.5	n/a	n/a	1.5	2.5	0.15	0.5	2.0	2.3	2.5	3.0	0.5	4.0	n/a	n/a	n/a	n/a	3.3	3.5	3.3	3.3	2.0	5.0
Avenue	0.3	0.5	1.8	3.0	n/a	n/a	1.5	2.5	0.15	0.5	2.0	2.3	2.5	3.0	0.5	4.0	n/a	n/a	1.5	2.5	3.3	3.5	3.3	3.3	2.0	5.0
Street	0.3	0.5	1.8	2.4	n/a	n/a	1.5	2.5	0.15	0.5	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1.5	2.5	3.0	3.5	n/a	n/a	n/a	n/a
Access Lane	n/a	n/a	1.8	2.5	n/a	n/a	n/a	n/a	0.15	0.5	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	2.7	3.0	n/a	n/a	n/a	n/a

Optional

5.5 Additional Street Types

Variations from the preferred cross sections may be permitted, along with unique, custom-designed streets. All of the detailed design guidance in this Manual applies to these custom-designed streets, and the dimensional guidance of individual elements of the example cross sections may also apply. Sikkas, Mushtaraks, and Shared Access Lanes do not require an exceptions process. Provided other variants and custom-designed streets stay within the minimum and maximum dimensions in Table 5.1, they fall into the Category 1 Exception process detailed in section 4.7.1.

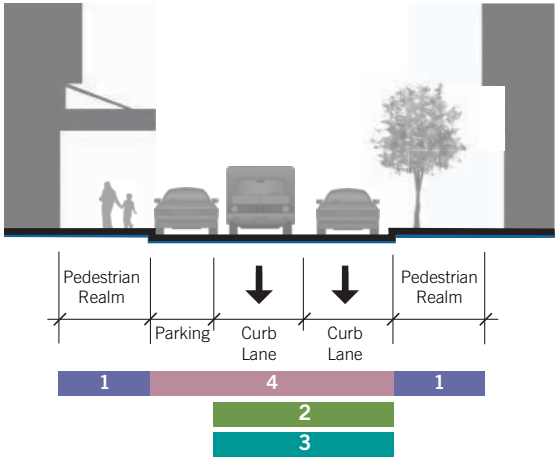
5.5.1 One-way Streets

One-way streets accommodate traffic moving in only one direction. One-way streets may be designed using the sample cross-sections above, by removing the median and one direction of travel lanes and increasing lane widths. One-way streets in the Emirate require a Category 2 Exception process.

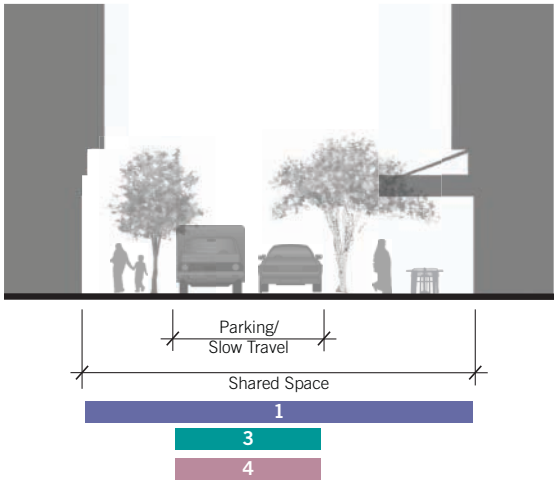
5.5.2 Shared Streets/Mushtaraks

Mushtarak is the Arabic word for a space that is shared by multiple modes. These streets are typically narrower and intended primarily for pedestrian use, but they can accommodate motor vehicles at very low speeds. They are generally an exception to the vertical separation design method mentioned in Chapter 3, as all modes share the same paved surface so that there are no defined travel lanes. For design guidance on Shared Streets, see the UK publications on "Home Zones" and the Dutch publications on "Woonerfs."

Example of a One-Way Street



Example of a Mushtarak



Example of a Mushtarak in Abu Dhabi

5.5.3 Sikka

A Sikka is a pedestrian passageway between properties common throughout the Emirate in historic and new neighborhoods. No motor vehicles are accommodated in a Sikka, however bicyclists may share this space. They can be a useful tool for increasing the walkability of a neighborhood. The narrow width of the Sikka (typically 2.5 – 5.0 m) increases the amount of shading for pedestrians.

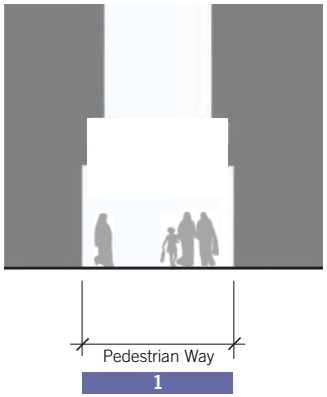
5.5.4 Shared Access Lane

The Shared Access Lane is a variation of the Access Lane in that it provides a single wide lane that accommodates both directions of travel. The pedestrian realm dimensions on a Shared Access Lane are the same as the standard Access Lane, but the standard travel lane dimension is a maximum of 4.2 m in order to allow a motor vehicle and bicycle to pass each other when traveling in opposite directions. The minimum travel lane width is 2.7 m. Shared Access Lanes are only used on very low volume streets.

5.5.5 Special Condition Streets

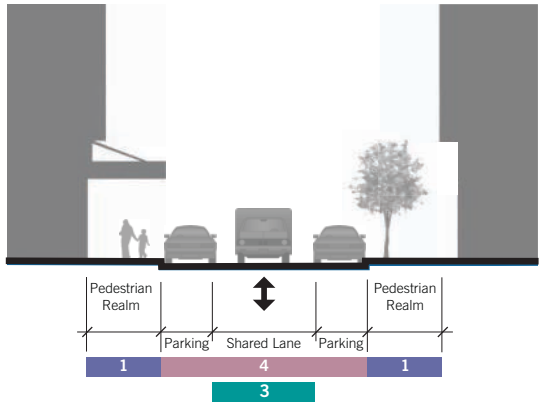
Special streets may include ceremonial streets, parkways (4+4), and other unique streets. Ceremonial streets may have wider travel lanes than the standard cross sections and significantly wider medians. The pedestrian realm may also be wider with greater attention to landscape. Water budget requirements, as referred to in section 4.2.4, are especially important on these streets and will need to be confirmed at the beginning of the design process.

Example of a Sikka



Sikka in Abu Dhabi.

Example of a Shared Access Lane



5.6 Designing for Pedestrians

Pedestrians require movement not only along the street in the pedestrian realm but also at interaction areas where multi-mode user movements cross. As pedestrians are the most vulnerable of all street users, special care and consideration is needed to identify potential issues and to design facilities accordingly.

5.6.1 Pedestrian Crossing Locations

Pedestrian crossings are located at junctions and sometimes mid-block where significant pedestrian movement is anticipated. To provide a high-quality pedestrian environment and ensure pedestrian safety, pedestrian crossings shall be provided on all streets to accommodate primary pedestrian desire lines and must meet the spacing standards below.

- Provide at all traffic-controlled junction legs.
- Locate along desire lines:
  - Align with entrances to buildings, parks, walkways, etc.
  - Use to delineate preferred pedestrian route.
- Spacing maximums by land use:
  - 120 m City, Town, and Commercial
  - 150 m Residential
  - 200 m Industrial
- If u-turns are included, consider locating pedestrian crossings to minimize conflicts with turning traffic.

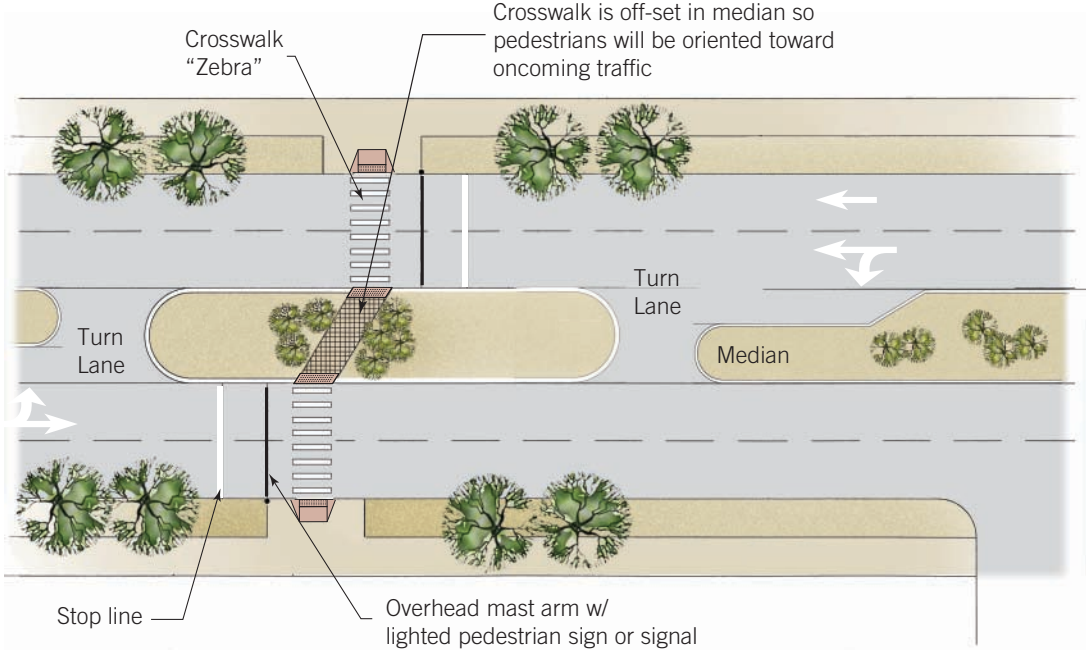


Figure 5.4 Offset mid-block crossing, oriented so that pedestrians face oncoming traffic

Mid-Block Crossings

- Locate mid-block crossings based on pedestrian movement, building entrances, attractions, etc.
- Include overhead signage and lights (see Figure 5.4).
- Provide curb extensions where there is on-street parking to maintain pedestrian visibility.
- Provide raised crossings where traffic calming is necessary.

5.6.2 Crossing Design

Pedestrian crossings range from raised speed table style crosswalks to informal crossings. Table 5.2 provides recommendations for facility type, based on street family.

- Maximum uninterrupted crossing distance shall not exceed 13.1 m. To reduce crossing distance:
  - Provide curb extensions;
  - Narrow width of travel lanes (see section 5.9.1);
  - Reduce the number of travel lanes; and/or
  - Install refuge islands located within clearly visible areas.

Table 5.2 Recommendations for Installing Pedestrian Crossings at Mid-Block Locations

Street Family	Vehicle ADT < 9,000			Vehicle ADT > 9,000 to 12,000			Vehicle ADT >12,000 to 15,000			Vehicle ADT > 15,000		
	Speed Limit											
	≤ 30 km/h	40 km/h	60 km/h	≤ 30 km/h	40 km/h	60 km/h	≤ 30 km/h	40 km/h	60 km/h	≤ 30 km/h	40 km/h	60 km/h
Street	●	●	N/A	●	●	N/A	●	●	N/A	●	○	N/A
Avenue	●	●	○	●	○		○	○				
Boulevard												

● Acceptable to use marked uncontrolled crossing

○ Consider traffic calming, signal, or other Do not use marked crosswalk without a signal, and consider additional traffic calming measures

- Provide curb ramps to accommodate the change in grade at the ends of crossings.
- Place in line with and at the same width as the adjoining walkway or curb ramp.
  - The pedestrian route may diverge by no more than 1:5.
- Typical width: 3 m; 5 m on Boulevards.
- Vehicle stop lines 3 m ahead of the crosswalk, 10 m ahead at mid-block crosswalks.

Signalized Crossings

- Use fixed-time (no push buttons; exception may be made at mid-block crossings).
- Prioritize pedestrians over vehicles or provide exclusive phase.
- Provide dynamic timing (countdown) signals.
- Provide audible pedestrian signals.

Pedestrian Refuges

- Minimum width: 2 m (typically 10 m^2; 12 m^2 on Boulevards).
- Extend median tips/noses past crossings at junctions (see Figure 5.5).
- Crossing area to be flush (cut-through).
- Crossing may be off-set or angled to orient pedestrians to oncoming traffic.

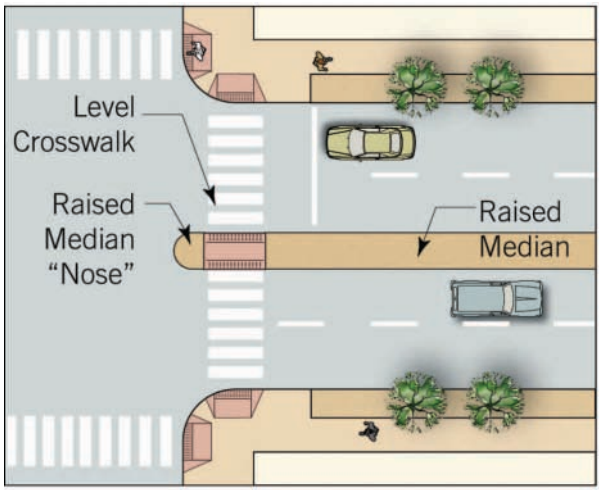


Figure 5.5 Typical Crosswalk Elements

Raised crosswalk aligned with pathway, Abu Dhabi; this is a preferred approach.