48-2 GENERAL DESIGN ELEMENTS

48-2.01 Design Speed

The most common design speed for urban streets is 30 mph (50 km/h). In relatively undeveloped locations in urban or closed suburban areas and where economics, environmental conditions, and signal spacing permits, consider using a minimum design speed of 40 mph (60 km/h). Design speeds of 45 mph to 50 mph (70 km/h to 80 km/h) are common in open suburban areas.

48-2.02 Median Types

Section 34-3 discusses the various medians that are used in urban and suburban areas and guidelines for selecting medians and widths. In addition, for medians in suburban and urban arterials, the designer should consider the following:

1. Flush/Traversable Medians. These median types may be used in both the urban and suburban areas in conjunction with curb and gutter along the outside edges of the traveled way. For most applications, the flush TWLTL should be used. However, in larger metropolitan areas, a traversable TWLTL may be used. Section 48-4 further discusses the use of both types of TWLTL.

2. Depressed Medians. In open suburban areas, a depressed median may be used. This design is typically used with left shoulders and where the design speed is 50 mph (80 km/h). Section 34-3.03 and Chapter 47 provide further guidance on depressed medians.

3. Raised-Curb Medians. Usually, a raised-curb median is proposed in suburban and urban areas where managed access to the street, control of left-turn movements, and pedestrian refuge area are desired. Section 34-3.03 provides guidance on the selection and design of raised-curb medians. Figure 48-3A discusses the advantages and disadvantages of raised-curb medians as compared to TWLTL medians. Chapter 36 illustrates typical treatments for left-turn lanes within raised-curb medians.

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48-2.03 Typical Sections

Figures 48-2A through 48-2H present the typical cross sections for the various urban facilities. For a typical six-lane urban arterial with a raised-curb median, see Figure 34-3B. Safe accommodation of pedestrians and bicyclists also must be included during the development of the project. Chapter 17 provides detailed guidelines for these issues.

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48-2.04 Sidewalks

Sidewalks are integral parts of the urban environment. In these areas, travelers frequently choose to make their trip on foot, and pedestrians desire to use a paved surface for the trip. When constructing sidewalks, the designer should provide the following:

1. Warrants. If pedestrian activity is anticipated, provide sidewalks along all curbed suburban and urban facilities in accordance with guidelines in Section 17-1. Extend all sidewalks to logical termini. If sidewalks are not provided in the initial design, grading should be completed so that sidewalks can be added in the future. If sidewalks will not be installed, the designer should document and confirm with local officials to ensure that sidewalks are not required or desired.

New sidewalks, or sidewalks replaced because of deterioration, which meet these warrants, will only be constructed if the local agency is willing to participate financially and assume the maintenance responsibility for the sidewalk in accordance with the criteria in Chapter 5.

2. Widths. The standard sidewalk is 5 ft (1.5 m) wide. If no buffer area is provided, the sidewalk should be a minimum of 7 ft (2.0 m) wide to accommodate any appurtenances which may be included in the sidewalk; see Item #4 below. High pedestrian volumes will warrant greater widths in business areas and school zones. In these cases, a detailed capacity analysis may be required to determine the sidewalk width. Use the *Highway Capacity Manual* for this analysis.

3. Buffer Areas Buffer areas should be provided between the back of curb and sidewalk. These areas provide necessary space for snow storage, utilities, and allow a greater separation between vehicles and pedestrians. The buffer area should follow the guide:

2’	Signs
4’	Trees
6’	Street Furniture and Snow Storm
8’	

*Source: Public Right of Way Access Guidelines (PROWAG) Course.

Buffer areas may also be used for the placement of roadside appurtenances. If buffer areas cannot be provided, include justification as part of the variance process.

4. Appurtenances. Where a buffer area cannot be provided, the designer must consider the impact of roadside appurtenances within the sidewalk (e.g., mailboxes, fire hydrants, parking meters, utility poles). These elements will reduce the effective usable width because they interfere with pedestrian activity and an accessible route for the disabled. Typically, a 1 ft (300 mm) minimum width is provided between the sidewalk and right-of-way line. Utility poles usually can be located behind the sidewalk in this area providing a clear sidewalk width of 5 ft (1.5 m).

5. CBD Areas. In central business districts, the entire area between the back of curb and the front of buildings is fully paved as a sidewalk.

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6. Disabled Accessibility. Wherever a sidewalk is designated as an accessible route, sidewalk widths, cross slopes, longitudinal grades, curb ramps, etc., along public rights-of-way must meet the ADA criteria presented in Chapter 58.

7. Bridges. In general, if there is or expected to be pedestrian activity across a bridge, include sidewalks on both sides of the bridge. On long bridges, it may be more cost effective to provide a single sidewalk on one side, but this option only should be pursued after thorough analysis of the feasibility of whether one side only will satisfy the current and future travel demand. The analysis also must consider safety and convenience factors of forcing pedestrians to cross the roadway twice. If the one side only option is pursued, safe crossings must be provided in advance of the bridge if there is evidence of pedestrian activity on both sides of the roadway. See Chapter 39 for typical sections.

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