This fact sheet introduces planning, engineering, and design practitioners to the Institute of Transportation Engineers’ recommended practice (RP) Designing Walkable Urban Thoroughfares: A Context Sensitive Approach as a tool for designing urban streets that are compatible with and supportive of the surrounding context and community. The aim of this fact sheet is to highlight some of the factors that influence the design of thoroughfares in highly urban contexts.

Traditional urban centers and cores are often composed of dense grids or networks of boulevard and avenue thoroughfares. Within these highly urbanized mixed-use contexts, these thoroughfare types accommodate a mix of pedestrians, bicycles, transit, and automobile traffic. Urban cores, including the central business districts of large cities, experience higher concentrations of pedestrians and transit than any other context. Designers of these truly multimodal thoroughfares are challenged with balancing multiple, often conflicting, needs within restricted rights of way.

Defining Highly Urban Contexts
As used in this RP, highly urban contexts are based on the transect developed by Duany Plater-Zyberk & Company (see Fact Sheet 2). Highly urban contexts are represented by two of the transect’s context zones, urban centers (C-5) and urban cores (C-6). Urban centers consist of high-density, mixed-use buildings that accommodate retail, offices, and residential in the form of rowhouses and midrise to highrise apartments. The C-5 context zone usually is framed by a network of streets formed with small- to moderate-sized blocks. These blocks contain moderately high to tall buildings. Thoroughfares in C-5 contexts have wide sidewalks, uniform street tree plantings in treewells, and buildings set close to the street frontage. Urban cores consist of the highest density of all contexts, with the greatest variety of uses, and often have civic buildings of regional importance. In large cities, the C-6 context contains the tallest buildings. This context zone may have a combination of large and small pedestrian-scaled blocks, uniform street tree plantings, and buildings directly adjacent to street frontages. In both contexts, buildings create a sense of definition and enclosure on thoroughfares—an important urban design element that helps create the experience of being in a city and in a place that is comfortable for pedestrians. Also, in both contexts, thoroughfares provide a primary source of short-term parking for the adjacent mixed-use buildings. Off-street parking is typically located in structures, underground, or in surface lots behind buildings. Figure 1 further describes the characteristics of these context zones.

Boulevards in Highly Urban Areas
Boulevards are typically the largest multilane thoroughfares within urban centers and cores. They usually have medians and may serve as urban parkways with lush urban landscaping. They serve a mix of regional and local traffic and carry the most important transit routes. Multiway boulevards separate their high-capacity central roadways from low-speed one-way access lanes on either side with medians (see Figure 2). The central roadways provide for through traffic while the access lanes provide a pedestrian-oriented street for local access to fronting mixed-use buildings. Both types of boulevards are walkable, low- to moderate-speed (35 mph or less), divided arterial thoroughfares that serve multimodal travel. They may be long corridors, typically four lanes but sometimes wider, serve predominantly longer trips, and provide limited access to adjacent development enforced with vehicular access management techniques. Boulevards may be high-ridership transit corridors or primary goods movement and emergency response routes. Curb parking may be encouraged on boulevards depending on the needs of the adjacent land uses.

Avenues and Streets in Highly Urban Areas
Avenues and streets are similar to each other in form, but avenues can be up to a maximum of four lanes while streets...
are never more than two lanes. Some avenues feature a raised landscaped median. Avenues are walkable, low- to moderate-speed (25 to 35 mph) urban arterial or collector thoroughfares, generally shorter in length than boulevards. Streets are restricted to 25 mph in commercial and residential districts. Both avenues and streets are primary pedestrian and bicycle routes. Avenues may serve local transit routes. On both types, goods movement is restricted to local deliveries. Both avenues and streets serve commercial or mixed-use areas and usually provide curb parking.

Characteristics of Thoroughfare Design in Highly Urban Areas

Of all contexts, highly urban areas have the largest share of transit and walking modes of travel. Therefore, boulevards and avenues in these areas emphasize transit and pedestrian facilities and may do so at the cost of automobile travel lanes. Key design elements include:

- **Target speed**: Low to moderate (25 to 35 mph).
- **Design vehicle**: Standard 40-foot bus along transit routes and 35-foot single-unit truck elsewhere. However, because of the height of buildings in urban centers and cores, the width of thoroughfares needs to accommodate large fire vehicles (aerial ladder trucks with extended outriggers).
- **Public spaces**: Thoroughfares in C-5/C-6 contexts include public spaces in the right of way in the form of plazas, squares, and the streetside (the area between the curb and property line).
- **Traveled way**: Compact without excess pavement. With low to moderate target speeds, travel lanes may be 10- to 11-feet wide except on bus routes. Boulevards are generally two-way thoroughfares, but avenues may be part of a one-way system. Boulevards usually have landscaped medians or may contain exclusive transit rights of way. Bicycle lanes may be provided in the traveled way of both boulevards and avenues.
- **Transit**: Boulevards and avenues can be high-frequency transit corridors. Buses and trains or trolleys usually stop in the travel lane to maximize the streetside passenger waiting area and to improve operating efficiency (see Figure 3). Traffic signals may be part of a transit signal priority system, or the corridor may serve bus rapid transit in exclusive bus lanes.
- **On-street parking**: The relative scarcity of parking in highly urban areas reinforces the importance of on-street parking to provide convenient short-term parking to serve adjacent land uses. On-street parking may be restricted during peak hours to increase capacity or allowed overnight to accommodate residents who otherwise would not have access to parking.
- **Streetside**: Accommodates substantial pedestrian travel, waiting areas for transit users, public spaces and entries into buildings, serves the economic activity of the adjacent land uses, and contains aboveground and underground utilities. The streetside is one of the few opportunities for landscaping in urban areas. Streetside widths need to support multiple functions. Transit stops require ample streetside space to accommodate large numbers of passengers, shelters, seating, and amenities. See Figure 4 for streetside dimensions.
- **Intersections**: More constrained than in suburban or general urban areas and may not provide turning lanes. Crosswalks should be provided on all approaches, and intersections may integrate pedestrian-only signal phases at very active pedestrian crossings. Intersections must meet ADA requirements addressing diverse individual mobility challenges. Often, because of the high volume, pedestrian signals are a function of traffic movement rather than pedestrian actuation. Curb return radii tend to be small due to constrained rights of way, and curb extensions may be provided to shorten pedestrian crossings, provide bus stops, prevent on-street parking, and/or facilitate the movement of fire emergency and other special service vehicles.
Design Constraints in Highly Urban Areas
Highly urban areas may be older areas of central cities, redeveloping land uses, new urban cores, or town centers. Older and redeveloping areas have established block patterns and thoroughfare right of way. The practitioner, therefore, needs to assess the tradeoffs of balancing right-of-way width to accommodate all users. Addressing these constraints reinforces the benefits of using a multidisciplinary design approach.
Examples of typical tradeoffs include:

- Fewer lanes versus wider sidewalks and on-street parking;
- Large vehicles versus lane width and smaller curb return radii;
- Exclusive transit lanes versus number of mixed-flow travel lanes;
- Accommodation of bicyclists versus width of other design elements;
- Provision of on-street parking versus median and wider sidewalks;
- Preservation of adjacent land versus right-of-way acquisition to accommodate desirable features;
- Acceptance of congestion versus parking restrictions during peak hours for additional vehicular capacity;
- Landscaping versus utility placement versus the placement of street furniture in the streetside; and
- Efficiency/safety benefits of turn lanes and protected left-turn signal phasing versus shared lanes at intersections, potential pedestrian conflicts, and associated shorter crossing distances for pedestrians.

Creating Quality Public Spaces
Civic, economic, and community functions require additional space in the streetside to serve these activities and/or to accommodate high pedestrian flows. Public spaces in the streetside are often used for these functions and are an important complement to the transformation of the thoroughfare into a place. Public spaces include public plazas, squares, outdoor dining, transit stops, and urban open spaces. Public spaces should be designed to serve functions that enhance the surrounding context, such as public gathering, special events, farmers’ markets, or quiet contemplation (see Figures 5 and 6). Example guidance includes:

- Public spaces in private property adjacent to the thoroughfare should be visible and accessible from the streetside and include entries to buildings or retail centers;
- Public spaces in the streetside should not impede through circulation of pedestrians on sidewalks and should provide seating and lighting to make them attractive and functional places; in some cases, they may temporarily occupy the on-street parking lane;
- Special paving and materials can be used to unify the look of the sidewalk, parking lane, and crosswalks; and
- Street trees, light fixtures, public art, and other elements with a unified design can highlight that the thoroughfare is designed to function as a public gathering place.

Figure 5 Open space is at a premium in highly urban contexts. Well maintained plazas should be implemented where ever possible. Source: Arup.

Figure 6 Even the densest urban cores need space for shady plazas to escape from the heat and the bustle of the city. Source: Arup.