

chapter four

Bringing It All Together





Bringing It All Together

This chapter depicts a number of typical development scenarios where many of the Chapter 3 Design Elements may be applied in the same context and illustrates how the application of multiple design elements can significantly improve the function and aesthetics of any proposed development towards accommodating all transportation modes.

The sample contexts are a cross section of development patterns where multimodal design is applicable, including:

- Commercial Centers;
- Corporate & Employment Centers;
- Major Residential Subdivisions; and,
- Streetscapes.

A Land Development Review Checklist at the end of this chapter provides a quick reference regarding the applicability of certain design elements based on the location and/or size of the proposed development.



Example of a centrally located 'Hub Stop' in a commercial development.

Commercial Centers



Example of a large retail/big box commercial development and application of various design elements.

The development of large shopping/commercial centers almost always includes a significant amount of surface parking spaces designed to meet the peak holiday shopping season demand. While this handbook recommends various ways to reduce these parking space requirements, following the standards of many current ordinances results in these commercial centers having large expanses of paving which can create detriments to both the natural environment and the human experience. Application of the design elements indicated in the image above can make the circulation components of these commercial centers be truly multimodal and the overall site better designed for the human experience.

When applied to this development scenario the following design elements will better provide for all transportation modes:

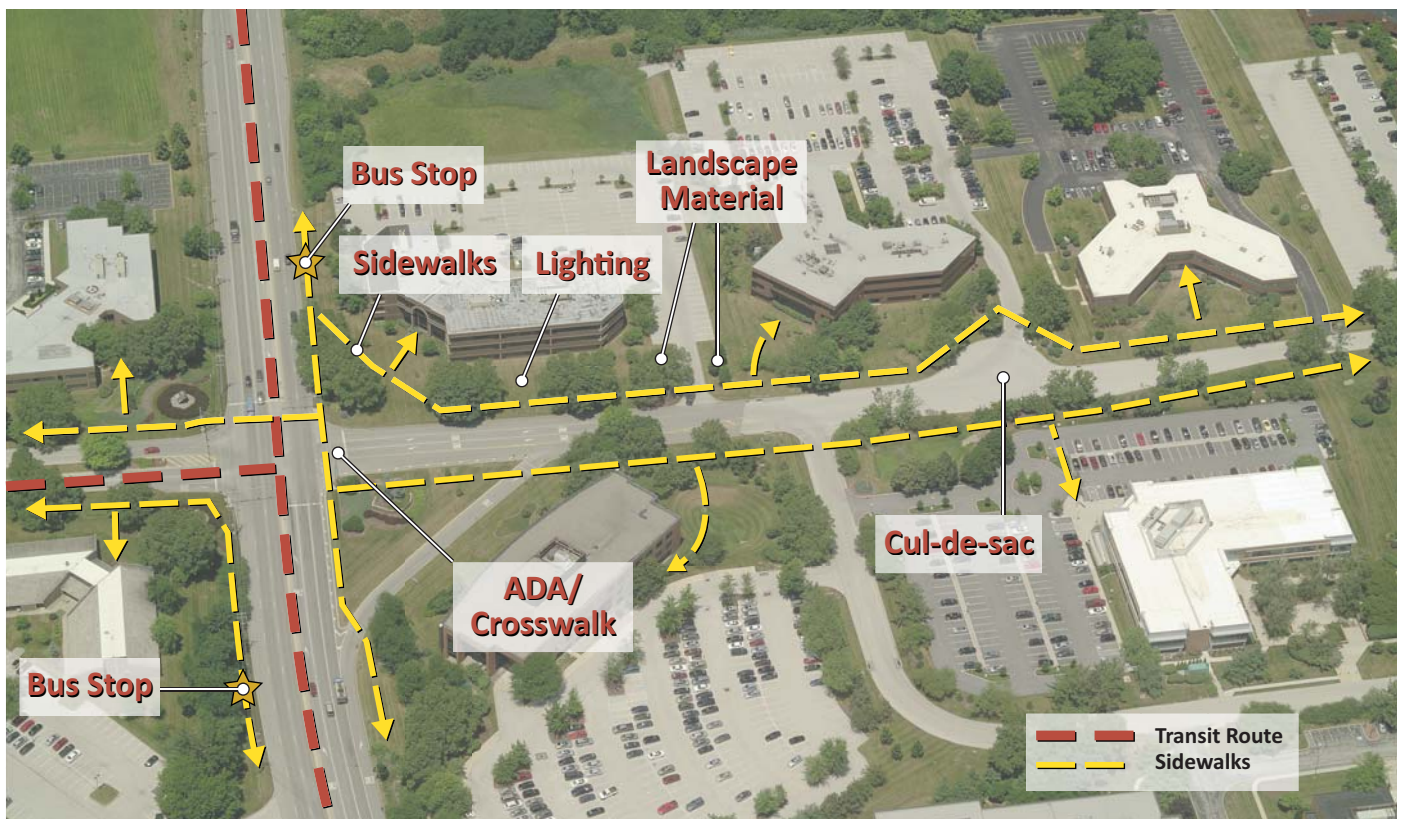
- A **Bus (Hub) Stop** allows for access to the site for public transit. Centrally locating this transit stop balances the need to access the site with the need for route efficiency which is essential to a timely and reliable transit system;
- ADA accessible **Walkways** and **Crosswalks** emanating from the transit stop and connecting to all building entrances provide for a safe pedestrian –only environment for the ‘last mile’ connection between public transit and the destinations. **Walkways** located between parking bays aligned with building entrances provide for a similar pedestrian-only environment which minimizes potential interactions between pedestrians and automobiles;
- **Bicycle Parking** at all destinations, preferably nearest the building entrances and well lit provide the necessary bicycle storage (and thus the option) for patrons who should choose to ride their bicycles to these centers; and,
- Parking areas located furthest away from building entrances that are typically available outside of the peak shopping season may have a shared use as a **Park and Ride** facility. These underused parking locations should also have a pedestrian connection to the transit stop where feasible.

Other design elements that enhance the human experience of commercial developments and their safety include:

- **Lighting** – essential for safe nighttime use of the facility; and,
- **Landscape Material** that has many benefits for these large parking lots, including the creation of a more comfortable human scale by visually breaking up the large expansive views of paving and providing some buffer between pedestrians and automobiles, but perhaps more importantly through reduction of the heat island effect resulting in a more comfortable microclimate.

One of the more important, but often unseen components to the circulation system associated with parking lots are the stormwater management measures that help to slow, cool and infiltrate stormwater runoff before it enters either the natural stream or groundwater systems. The better these systems are designed – often incorporating multiple best management practices (BMPs) – the more sustainable these developments will be with less impact on the natural environment.

Corporate & Employment Centers



Example of how a corporate center developed in the 80's could benefit from various design elements.

Corporate & Employment Centers are unique in the fact that many of those locations developed in the 1980's and early 1990's were A) designed for the automobile as the primary (if not only) mode of transportation that would be used to access them, and B) have little or no associated mixed uses such as bars/restaurants, coffee shops, or other service industries within walking distance. This resulted in developments that are devoid of any pedestrian facilities because they were simply not envisioned to be necessary and incurred additional development costs. The same goes for public transit facilities – the vast majority of building occupants work in relatively high-paying white collar jobs, and with ample free parking provided, public transportation was the far less desirable transportation mode alternative for the everyday commute.

When applied to this development scenario the following design elements will better provide for all transportation modes:

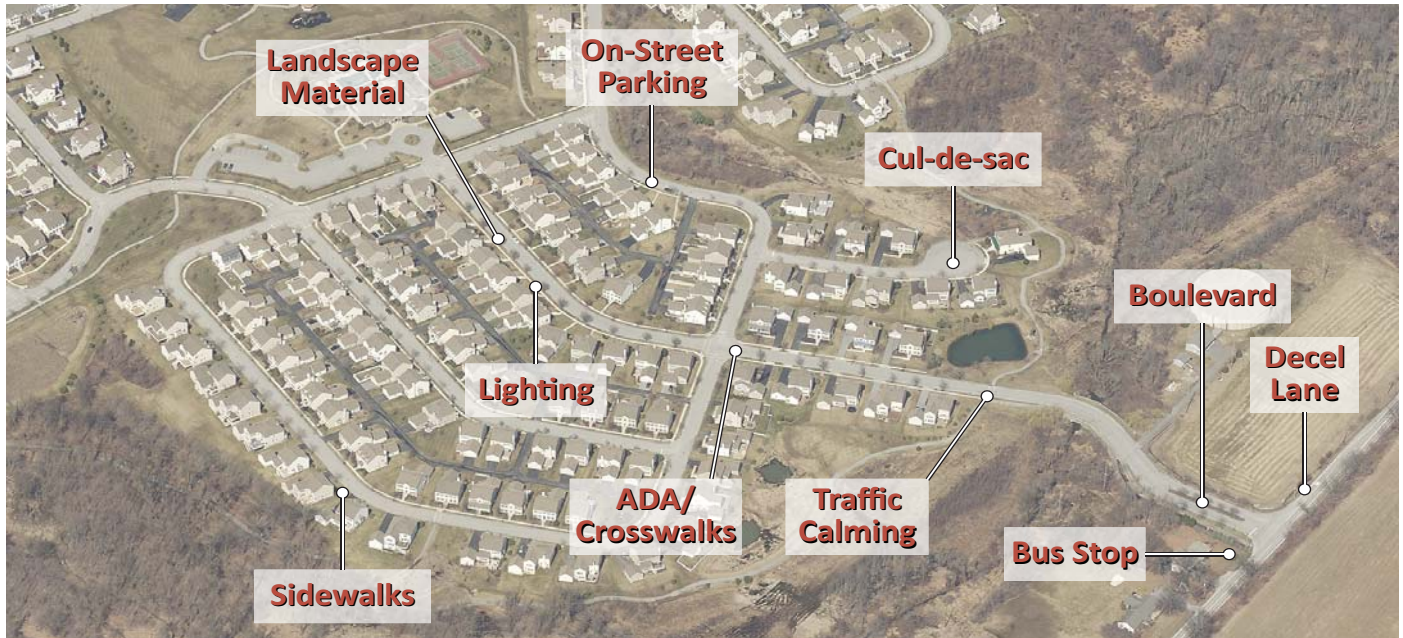
- A **Bus Stop** allows for access to the site for public transit. As these corporate centers are redeveloped and/or diversify to include more service related uses, and as development density around these campuses resulting in more highway congestion, public transit facilities will have much more demand;
- **ADA** accessible **Walkways** and **Crosswalks** emanating from the transit stop and connecting to all building entrances provide for a safe pedestrian –only environment for the ‘last mile’ connection between public transit and the destinations.
- **Bicycle Parking** at all destinations, preferably nearest the building entrances and in combination with locker/shower facilities located within the buildings would encourage an increase in bicycling as a more amenable transportation mode alternative; and,
- **Cul-de-sacs** and other **internal roadways** should be designed appropriately to provide for the ample turning radii for the vehicles accessing these sites while limiting the development footprint and creation of impervious surfaces that generate excess stormwater runoff.

Other design elements that can enhance the human experience of these corporate centers include:

- **Lighting, Landscape Material**, and the creation of outdoor gathering spaces will provide for better human experience of the developments by injecting the visual presence of life and vitality to what may otherwise be perceived as a sterile campus-like environment. While many of the existing corporate centers have a nice array of landscape material that creates an aesthetically pleasant appearance, the lack of pedestrian facilities and gathering spaces does not permit users of these centers to interact with that environment.

Like many of the of the previously mentioned large/big box retail centers that are developed in the suburban environment, traditional corporate centers were developed to a larger scale that is difficult to integrate into the community fabric. Therefore, the application of these and other design elements described herein through either a retrofit or redevelopment process will only make these corporate/employment centers more viable and sustainable for long term integration with their adjacent communities.

Major Residential Subdivisions



Example of a major residential subdivision's application of various design elements.

Many of the more modern residential developments have adopted many smart growth initiatives to minimize impacts to the natural environment and reduce infrastructure development costs. These 'New Urbanist' residential developments also strive to combine traditional suburban development amenities with those of more dense urban residential neighborhoods in an effort towards community building and greater social interaction. This results in the provision for a multitude of different multimodal circulation options within these developments.

When applied to the residential development scenario, the following design elements will better provide for multimodality and a better quality of life for its residents:

- A **Bus Stop** connected by a walkway could serve as both public transit and a school bus stop. Like transit agencies, school bus routing strives to achieve an efficiency with their routes to increase efficiency and minimize excess operation and maintenance costs associated with longer routing;
- ADA accessible **Walkways** and **Crosswalks** provide for safe pedestrian routes to and between all locations within the community. These walkways provide not only transportation routes between all possible locations within the development, but also serve as additional recreational amenities contributing to the health and well-being of its residents;

- **Multi-Use** or **Use-Restricted Trails** are common elements within these PRDs that provide a recreational resource residents can walk to from their homes without the need to drive their cars. These trail systems may also have connections to adjacent planned residential development (PRD) trail systems or access to a regional publicly owned multi-use trail system that helps to integrate the development into the community fabric;
- **On-Street Parking** and **Traffic Calming Measures** help to limit the speed of automobiles traveling through these communities thus making them safer; and,
- **Deceleration Lanes** and **Boulevard** entrances provide a buffer and transition from the highway system and an aesthetically pleasing gateway into these communities.

Application of these and other appropriate design elements into PRD developments can not only provide for better accessibility and circulation options, but also create more cohesiveness within the communities themselves through increased opportunities for social interaction.

Streetscapes

The following are three examples of streetscape development across the range of development density and intensity from Village/Rural to Suburban to Urban.



Example of a Village/Rural streetscape development applying various design elements.

Village/Rural streetscape developments are typically the least intensive developments relative to the application of design elements as compared to more densely developed streetscapes in suburban or urban locations. Village Streetscapes may simply be a tree lined walkway that provides the simple utility of connecting destinations and a visual definition between the street and the adjacent buildings or residences. Some may, as in the example shown above, incorporate **On-Street Parking** to accentuate that buffer as a traffic calming element.



Example of a Suburban streetscape development incorporating an increased level of design elements.

Suburban streetscapes typically offer an increased level of amenities such as pedestrian **Lighting**, increased use of **Landscape Material**, pedestrian level navigation **signage**, and where located along an existing transit route, a **Bus Stop** with shelter. Due to the higher speeds of the adjacent roadways without on-street parking, a minimum 5 foot wide buffer space is located between the sidewalk and the roadway. Where long distances are required to cross multi-lane entrances, traffic islands may be used to provide relief for pedestrians to cross them incrementally.



Example of an Urban streetscape development and application of design elements.

Urban streetscapes are the most intensely developed streetscapes as there are many more factors to consider in their design and implementation. This is driven primarily by urban density and the need to fit many different elements into a relatively smaller amount of available space. Urban streetscapes typically have very wide walkways extending from building face to curb offering opportunities to create public gathering spaces with outdoor cafes, pocket parks, and seating areas with the addition of site furniture including benches and trash receptacles.

Land Development Review Checklist

General

- ☐ Is the project site located within a Landscapes2 Growth Area?
- ☐ Is the primary site access roadway a State Road or a Local Road?
- ☐ What is the functional classification of the primary access roadway?
- ☐ Is the project site located within more than one municipality?

Bicycle/Pedestrian

- ☐ Does the project site have an adjacent existing sidewalk/walkway system?
- ☐ Does the project site municipality have a bicycle/pedestrian mobility plan, or have any bicycle/pedestrian elements indicated on their Official Map or Comprehensive Plan?
- ☐ Is there an existing or planned regional multi-use trail located adjacent to or within a ¼ mile of the project site?
- ☐ Is there a proposed internal walkway system included with the proposed development?
- ☐ Does the proposed internal walkway system adhere to ADA standards (including required number of parking spaces, if applicable)?
- ☐ Is the proposed development a commercial, industrial, or institutional land use with equal to or greater than fifty-thousand (50,000) square feet, OR a multifamily residential development with 50 or more dwelling units? If yes, is there proposed Bicycle Parking?
- ☐ If not within the thresholds noted above, would Bicycle Parking be appropriate for the proposed development/land use?

Public Transportation

- ☐ Is the project site/proposed development located along an existing public transit route? Within ¼ mile?
- ☐ Is there an existing bus stop located at or adjacent to the proposed development? If yes, how many daily boards are associated with that stop?
- ☐ Is there a bus stop proposed with the development? If yes, are there sidewalks/walkways connecting the proposed bus stop to the nearest building entrance or existing pedestrian system?
- ☐ Is the proposed development a commercial, industrial, or institutional land use with equal to or greater than fifty-thousand (50,000) square feet? If yes, is there a proposed bus stop?

- ☐ Is the proposed development a residential development equal to or greater than one hundred (100) dwellings units? If yes, will the proposed community have school age children? If yes to one or both, is there a proposed bus stop(s)?
- ☐ Is there an opportunity to provide for a shared use Park and Ride facility?

Infrastructure & Amenities

- ☐ Is Emergency Access included in the proposed land development plans?
- ☐ Will the proposed land use generate significant night time use? If yes, is there a lighting plan included with the land development plans?
- ☐ Is the proposed number of parking spaces appropriate for the proposed land use?
- ☐ Are there any opportunities for shared use parking?
- ☐ Are there any required buffers for adjacent land uses?
- ☐ Does the land development proposal include a Landscape Plan prepared by a landscape architect?

Vehicular Circulation

- ☐ Does the proposed development's street design match/comply with Multimodal Handbook standards?
 - ☐ Acceleration/Deceleration Lanes
 - ☐ Boulevard
 - ☐ Cul-de-Sac/Spur Roads
 - ☐ Lane Design (Local & Internal Roadways)
 - ☐ Roundabouts
 - ☐ Traffic Calming Measures
- ☐ Do the proposed driveways/intersections provide for clear sight triangles and adequate sight and stopping distances?
- ☐ Are the proposed local and internal roadway lane widths appropriate for the development?
- ☐ Does the proposed development's circulation system provide the proper turning radii for all vehicle types that will use the development, including service and emergency vehicles?
- ☐ Is the adjacent public right-of-way(s) wide enough to accommodate future widening of the roadway?