Florida TOD Guidebook

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Florida Department of Transportation
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We would also like to acknowledge the contributions of the local governments, agencies, and stakeholders in the Place Type Analyses for Collier County, Daytona Beach, Miami, Orlando, Pasco County, Sebring, Tallahassee, and West Palm Beach.
# Florida TOD Guidebook

December 2012

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Chapter 1
Introduction
Executive Summary & Overview
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Transit Oriented Development

Transit Oriented Development (TOD) focuses on the land use patterns located within a quarter- to a half-mile of transit stations and corridors served by a premium transit system. TOD maintains a strong emphasis on mobility, walkability, connectivity, urban form, and a mix of uses arranged in a pattern of higher density and intensity than typically found beyond the half-mile “transit shed.” In addition to providing higher ridership potential, well-designed TOD offers a range of uses accessible by pedestrians, thereby reducing demand for vehicular traffic and parking while enhancing mobility and access by other modes (e.g., walking, cycling, riding transit). By closely coordinating land use with transit systems, TOD patterns of development provide a stronger economic return on transit investments, frequently yielding higher rents and property values, and better-developed markets for a range of uses. These economic benefits help reinforce TOD development activity, expanding both the real estate market as well as ridership for the transit service, which in turn, increase further demand for TOD land development in a cyclical fashion.

A Framework for TOD in Florida

The Florida Department of Transportation (FDOT), in conjunction with the former Florida Department of Community Affairs and a state-wide TOD committee, developed “A Framework for Transit Oriented Development in Florida” in 2011. According to the TOD Framework, the purpose of the document is to address how TOD can be a part of transforming Florida’s existing auto-oriented, largely suburban patterns of development into more compact, livable patterns that support walking, biking, transit, and shorter-length auto trips. Other goals of the TOD Framework are to support significant investments in multi-modal systems and to help local governments and agencies respond to increasing interest in TOD from elected officials, partner agencies, developers/investors, and the public. While the Framework focuses on the general concepts and characteristics of successful TOD, the TOD Guidebook is intended to provide a “how-to” manual for Florida’s local governments and agencies to implement TOD in the Florida context.

While TOD is not new at the national scale, it remains a fairly new concept for many Sun Belt states, including Florida. In the most recent Florida Transportation Plan (FTP), “2060 FTP,” (adopted in December 2010), a high priority is placed on the integration of land use/transportation connections, with a focus on “transportation decisions that support and enhance livable communities” as a primary long-term state goal, which creates a direct correlation to transit-supportive conditions and TOD. This direction reinforces the importance of TOD as a key component in Florida’s long-term transportation mobility and development strategies. The 2060 FTP is a plan for all of Florida – including local, regional, and private partners responsible for transportation planning and funding decisions. Local governments and agencies within Florida have begun to address TOD and the necessary synchronization of land use and transportation to improve efficiency, increase transit ridership, reduce vehicle miles travelled, and provide economic development opportunity.

The TOD Framework established a baseline set of expectations regarding TOD, including a common definition of TOD, emphasis on the implementation of TOD at various levels (i.e., at the system, corridor, and station levels), and a detailed discussion of three distinct TOD place types to address the varying land use and settlement conditions in Florida. The TOD place types include Regional Centers, Community Centers, and Neighborhood Centers, and for each, the Framework describes density/intensity standards, urban design considerations, and correlation with different transit modes or “technologies.” Each of these key points from the Framework is summarized in this Chapter, and the full-text TOD Framework is available from FDOT at no cost.

In the development of this Guidebook, a “place type” methodology was developed to further assess TOD conditions in the Florida context. A more detailed understanding of Florida’s TOD conditions resulted from this analysis, which considered the place type “scale” variations (Regional, Neighborhood, and Community Center) along with differing development patterns (Urban Infill, Suburban Retrofit, and Greenfield/Rural). These distinctions are described generally within the summary in this chapter and carried through the balance of this Guidebook as a core theme.

FDOT has transit oriented development resources available at no cost, including the Framework document, a collection of TOD research, and Place Type Analyses.
Introduction

Following the TOD Framework summary, the Guidebook is presented as follows:

Chapter 2: Review of Literature and Best Practices related to TOD
This Chapter provides a review of the academic literature covering the history and evolution of transit and TOD in Florida and the nation, a detailed compilation of various planning and urban design considerations for TOD, and implementation best practices.

Chapter 3: Florida “Place Type” Methodology & Summary of Florida Case Studies
This Chapter sets forth a GIS-based methodology for the assessment of transit-supportive conditions in any Florida community as well as a summary of the evaluation findings from the application of the “place type methodology” to eight sample Florida communities. Sample communities include Regional, Community, and Neighborhood Centers as well as a classification of settlement conditions (Urban Infill, Suburban Retrofit & Greenfield/Rural) and a discussion on general strategies to facilitate TOD within the station areas.

Chapter 4: Model Regulatory Language for the Florida Planning Context
This Chapter provides model regulatory language to advance TOD in the Florida planning context, including Comprehensive Plan Goals, Objectives & Policies and form-based Land Development Regulations.

Chapter 5: Overview of Implementation & Next Steps (alt title: Implementation Roles, Techniques & Strategies
This Chapter identifies specific implementation roles, techniques and strategies for TOD stakeholders to help remove obstacles and advance TOD at the system, corridor, and station levels.

What is TOD?
The TOD Framework establishes that TODs are compact areas of development, with moderate to high intensity and density, and comprised of a mix of uses occurring within 1/2 mile of a premium transit stop or station. They are expressly designed to maximize pedestrian activity, increase access to transit, and provide a “park-once” environment that reduces the need for automobile circulation. TODs are characterized by well-defined streetscapes and an urban form that is oriented to pedestrians to promote walking trips to and from stations and other uses within station areas. Development within TODs tends to be more concentrated in the inner quarter-mile radius (termed the “Transit Core”), stepping down with reduced densities and intensities to the one-half mile radius (the “Transit Neighborhood”), and ultimately to a one-mile radius around the station (the “Transit Supportive Area”). The Transit Core and Transit Neighborhood reflect the area pedestrians can typically traverse comfortably within a five- to ten-minute walk, with additional pedestrian and bicycle catchment extending into the “Supportive Area” and beyond.
Executive Summary & Overview

Figure 1-1 below illustrates the relationship of these components surrounding stations. It should be noted the focus of this Guidebook is on the Transit Core and Transit Neighborhood, which together comprise the “TOD Station Area.”

Figure 1-1
Planning Terms Associated with a Transit Station

Premium Transit Station: means a transit station serving a premium type or types of transit (e.g., commuter rail, light rail, or bus rapid transit) or a station that functions as a local bus hub serving a minimum of three fixed local bus routes operating with headways of 21-30 minutes or less.

TOD Station Area: the area within one-half mile (approximately 500 acres) around a Premium Transit Station, comprised of the Transit Core and Transit Neighborhood.

NOTE: The model regulations presented in this Guidebook focus on this 500-acre area.

Transit Core: the area within the first quarter-mile (approximately 125 acres) around a Premium Transit Station.

Transit Neighborhood: the area within the second quarter-mile (approximately 375 acres) surrounding a Transit Core.

Transit Supportive Area: area within a one-mile radius surrounding a Transit Neighborhood and Transit Core.

Source: A Framework for TOD in Florida.

Figure 1-1: The diagram above illustrates the various planning terms associated with a Transit Station.

Florida Statutes provides the following definition of “Transit Oriented Development”:

“Transit-oriented development” means a project or projects, in areas identified in a local government comprehensive plan, that is or will be served by existing or planned transit service. These designated areas shall be compact, moderate to high density developments, of mixed-use character, interconnected with other land uses, bicycle and pedestrian friendly, and designed to support frequent transit service operating through, collectively or separately, rail, fixed guideway, streetcar, or bus systems on dedicated facilities or available roadway connections (Chapter 163.3164(46), F.S.).

The Framework also establishes that development characteristics within a TOD, including the mix of uses and the density or intensity of development, will vary depending on the type of premium transit service (either planned or in place) that services the area (e.g., commuter rail, heavy rail, light rail, modern streetcar, bus rapid transit, local/express bus) as well as the station spacing and phasing along a transit corridor, community context, and transit ridership goals. For example, a TOD at the end of a commuter rail line that connects outer neighborhoods to a downtown job center may contain significant residential development of moderate density, along with an ample supply of parking. In contrast, a TOD in a downtown core may function as an end-of-the-line collection point in a transit system, providing substantial jobs along with higher intensities and densities of development but limited parking.
The mix of uses within a TOD Station Area, such as residential, office, or retail, is also influenced by the location of a station relative to the surrounding community context, the role of a particular transit corridor as part of the larger transit system, and the type or types of transit serving the station. Ridership potential from the mix of uses in a Station Area is generated from the density and intensity of development, ideally with the greatest concentration of uses in the Transit Core. The TOD Framework presented a range of quantitative station area metrics to help produce desired ridership levels in various TOD Place Types and according to differing transit modes. These metrics, which are presented later in this chapter, can be varied according to surrounding community context, and they are integrated into the model regulatory language presented in Chapter 4. The relationship of density, intensity and station area are illustrated in Figure 1-2, which represents the Ballston Metro Station in Arlington County, Virginia.

What are the Benefits of TOD?

As described in the TOD Framework, the benefits of TOD are far-reaching, including economic, transportation, land use, and environmental rewards. The primary goal of TOD is to create compact, walkable development patterns that will maximize transit ridership potential, which, in turn, can create a strong return from transit investments and promote economic development and redevelopment in TOD areas. Viable transit infrastructure reduces both transportation costs for individual households and dependency on fossil fuel. In addition, increased ridership produces increased farebox revenues to augment transit operational costs. When combined with other land use and transportation strategies that support more compact, walkable development patterns, TOD can help change travel behaviors by making the walking or transit trip as efficient and desirable as an auto trip. This convenience is often reflected in higher property values, rents, and home sales for properties within TOD. In addition, compact development preserves open space while reducing the need for and cost of roadway widening and parking. TOD is evolutionary, and it can take years or decades for TODs to reach their full potential as the mix of jobs, housing, and other destinations infill within Station Areas, along transit corridors, and across transit systems. Market conditions can expedite or delay development activity; however, TOD nonetheless provides beneficial uses incrementally over time.
What are the Benefits of TOD?

- Encouraging a more sustainable transportation system over the long-term by creating viable options for people to get to destinations other than automobile.
- Reducing reliance on the traditional strategy of building new roadways or widening existing roadways to meet transportation needs as Florida continues to grow.
- Providing a design and development strategy that will help convert suburban, auto-dominated patterns into more urban, compact, walkable patterns in post-World War II Florida cities.
- Reducing the costs of delivering public services by encouraging infill and redevelopment in existing urban areas with existing infrastructure.
- Creating incentives, such as reduced parking requirements and increased intensities or densities, to promote private sector investment in existing urban areas and economic development.
- Creating opportunities for diverse housing options with a range of prices located within walking distance, an easy transit ride, or a shorter-length auto trip to a variety of destinations.
- Reducing combined housing and transportation costs for households by providing options to auto travel.
- Providing new locations for housing options that reflect Florida-specific demographic trends.
- Encouraging more healthy lifestyles by creating a pattern of development in which walking and biking are a part of everyday travel behaviors.
- Reducing vehicles miles traveled (VMT), dependence on fossil fuels, and associated greenhouse gas emissions through increases in walking and biking trip, transit trips, and shorter-length auto trips.
- Providing a more compact development pattern overall that preserves open space and natural resources and protects Florida’s critical groundwater recharge areas and wildlife habitats.
- Providing a positive impact on property values - both residential and commercial property values rise with proximity to transit stations (source: Sustainable Cities Institute).

– A Framework for TOD in Florida
Why is it Important to Plan for TOD at the System, Corridor, and Station Levels?

The TOD Framework notes that TODs are broad, one-half mile areas centered on transit stations. Ideally, these areas are defined in local government comprehensive plans to advance coordinated inter-agency planning and implementation; however, some TOD activity occurs in the absence of specific comprehensive plan directives. In addition to individual TOD Station Areas, it is important to recognize that transit stations connected to transit corridors, which together form a transit system. The transit system, in turn, is part of a larger, multi-modal transportation system. These interrelated components are illustrated in Figure 1-3.

In that individual TODs are also components of the larger multi-modal transportation system, a rational differentiation appropriately occurs between and among TODs of varying scales, form, and mode of transit. The mix of uses, and the intensity and density at which they occur, will vary from an urban downtown TOD versus a suburban edge.

In the Florida context, many existing station areas are located in developed areas, some of which are intensely developed in urban patterns while others exist with lower density/intensity and suburban characteristics. Accordingly, it is important to emphasize the evolutionary nature of TOD and the long-term infill and redevelopment patterns that can accompany transit investments. Current densities and intensities in Florida’s potential TOD areas may fall well below the development targets established for TOD. However, the implementation of more compact and varied land development activity and corresponding transportation infrastructure improvements will help achieve TOD conditions over time. This introduces a new dimension to the planning and implementation of TOD, with consideration of individual TODs at transit stations and along transit corridors, as well as the long-term capture of development activity – appropriately located and designed – to produce desired ridership in these areas.
TOD Planning and Design

Several organizational constructs to help explain how TOD can be implemented in the Florida context. Many factors in station area planning influence both the design and scale of TOD, including transit types (e.g., heavy rail, commuter rail, light rail, modern streetcar, bus rapid transit, local/express bus); design requirements for station facilities; station location, surrounding community context; existing and desired levels of activity; and connectivity to other modes of transportation.

One of the key planning considerations is the pedestrian character of a TOD Station Area, as the walk-access to the station is a primary factor in achieving ridership potential. To improve pedestrian conditions, a primary goal of TOD is to intensify development activity in the Station Area, especially within the Transit Core (quarter-mile radius around a station). There is a transit adage that suggests “every transit trip starts and ends as a pedestrian.” Consequently, the more pedestrian-supportive the station area environment is, the higher the level of activity, and accordingly, the greater the number of origins and destinations that can be accessed from the station with a walking trip. For Florida, the effects of heat and rain play a factor in walkability and must be considered in the built environment of station areas.

The physical development character of a TOD, determined by building placement, form, and design, contributes to the walkability of a place. Denser street networks with a greater number of small, walkable blocks, contribute to walkability as do “complete streets” and “context sensitive street design.” These design-oriented concepts help promote both pedestrian and bicycle access and safety. To expand catchment for transit stations, these physical development characteristics should be addressed throughout a Station Area as well as beyond the half-mile radius into the Transit Supportive Area. These planning considerations are addressed in Chapter 2 and detailed in the model regulatory language presented in Chapter 4.

TOD Place Types: The Florida Typology

TOD is not a “one-size-fits-all” development pattern, but rather, TOD exists at varying scales, forms, and compositions relative to the setting in which it is located. Accordingly, to enable TOD to be implemented in Florida’s diverse conditions, the TOD Framework set forth three TOD Place Types – Regional Centers, Community Centers, and Neighborhood Centers — to help organize the discussion of TOD in Florida, enable appropriate analysis of transit-supportive conditions, and differentiate goals and characteristics depending on context. For each TOD Place Type, the Framework recommends targets – to be achieved at build-out – for levels of density and intensity, mix of use, urban form, street networks, and parking. Each Place Type is further differentiated according to different types of transit to help illustrate the relationships among cost, ridership, and development. As noted in the Framework, the higher the cost of the transit investment (typically increasing from rubber-tire technologies to BRT to fixed-rail systems), the higher the desired ridership, and consequently, the more intense and dense the level of development. These three Place Types constitute the Florida TOD Typology.
The TOD Place Types consider three major areas of influence: Activity and Accessibility, Transit Type, and Community Context, as discussed below.

**Activity and Accessibility:** Access to a transit station and the desired level of activity within a Station Area helps determine the appropriate scale for a TOD along with its position within a larger network. A Regional Center tends to have a high concentration and mix of uses, thereby requiring more transit modes and regional accessibility. On the other hand, a Neighborhood Center tends to have a lesser concentration of uses, often tending towards residential versus workplace, which reduces the scale of accessibility.

**Transit Type:** Transit mode and service characteristics also influence ridership potential and station area design. For purposes of the Framework and this Guidebook, the focus is on “premium transit” modes, which include fixed-rail modes (e.g., heavy rail, commuter rail, intercity passenger rail, light rail, streetcar), other fixed-guideway modes (e.g., bus rapid transit), and high frequency local/express bus. These modes represent a range of transit investment costs, station design features, and operating characteristics that influence station area intensities, densities, and mix of uses.

**Community Context:** The location of Station Areas within urban, suburban, or transitional (mix of urban and suburban characteristics) settings is a third general influence on design and development/redevelopment of TOD. Given the extensive review of Florida Place Types (presented in Chapter 3), Florida’s development patterns can be grouped into three broad “context categories”: Urban Infill, Suburban Retrofit, and Greenfield/Rural. Each of these contexts can influence urban form, interconnectivity, and the ability to accommodate density, intensity, and a mix of uses within Station Areas. Further, the existing context of Station Areas can influence the degree of challenge for developing station area concept plans and gaining consensus among property owners, agencies, and other stakeholders.
To assist with station area planning, the Framework provided two sets of “targets” for each of the three Place Types, grouped as “station area targets” and “site level targets.” These measures are intended to be achieved at build-out within a Station Area, and accordingly, these metrics are useful to assess current conditions relative to long-term goals as well as provide policy and development direction to guide development activity over time. At the macro Station Area level, the targets for the broad 500-acre scale include gross intensity and density along with the mix of uses. In contrast, the site-level targets focus upon the net density and intensity, street network, building design, and parking. Each of the target tables are provided in the following section.

Source: A Framework for TOD in Florida.
Regional Center

Regional Centers are centers of economic and cultural significance, including downtowns and central business districts, which serve a regional travel market and are served by a rich mix of transit types ranging from high speed, heavy or commuter rail to BRT to local bus service. Usually emphasizing employment uses, Regional Centers increasingly are being sought out for residential uses in response to changing demographics and housing preferences. Regional Centers are larger in size than Community Centers and Neighborhood Centers and tend to contain more than one transit station and multiple bus stops. Small block sizes, more lot coverage, higher intensities and densities of development, civic open spaces, and minimal surface parking result in a highly urban development pattern in Regional Centers. The bottom of Figure 1-6 illustrates a prototypical Regional Center urban form that reflects application of the station area and site level targets identifies for the Regional Center TOD place type (Table 1-1).

A Framework for TOD in Florida

<table>
<thead>
<tr>
<th>Table 1-1</th>
<th>A Framework for TOD in Florida - Regional Center</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>Regional Center</strong></td>
<td></td>
</tr>
<tr>
<td>Gross Intensity/Density</td>
<td></td>
</tr>
<tr>
<td>Gross Residential Density (Res/Unit)</td>
<td>55 - 75</td>
</tr>
<tr>
<td>Gross Area Total Employment</td>
<td>60,000 - 80,000</td>
</tr>
<tr>
<td>Gross Transportation Employment</td>
<td>200 - 250</td>
</tr>
<tr>
<td>Mix of Uses</td>
<td></td>
</tr>
<tr>
<td>Mix of Uses (%) Residential / Non-Residential</td>
<td>35% / 65%</td>
</tr>
<tr>
<td>Net Intensity/Density</td>
<td></td>
</tr>
<tr>
<td>Net Commercial Floor Area (BFU)</td>
<td>4.0 - 6.0</td>
</tr>
<tr>
<td>Net Residential Density (Dwelling Units/Residential)</td>
<td>85 - 115</td>
</tr>
<tr>
<td>Site Level Measures</td>
<td></td>
</tr>
<tr>
<td>Grid Density - Blocks per Square Mile for Vehicular, Bicycle, and Pedestrian Circulation Network</td>
<td>&gt; 350</td>
</tr>
<tr>
<td>Building Height (in feet)</td>
<td>&gt; 4</td>
</tr>
<tr>
<td>Minimum Lot Coverage</td>
<td>80% - 90%</td>
</tr>
<tr>
<td>Minimum Street Frontage</td>
<td>80% - 90%</td>
</tr>
<tr>
<td>Parking</td>
<td></td>
</tr>
<tr>
<td>Maximum Residential Parking - Spaces per Residential Unit</td>
<td>1</td>
</tr>
<tr>
<td>Maximum Non-Residential Parking - Spaces per 1,000 square feet</td>
<td>1</td>
</tr>
<tr>
<td>Park &amp; Ride</td>
<td>No</td>
</tr>
</tbody>
</table>
Figure 1-6

*Regional Center*

*Downtown Jacksonville, Florida*

*METRO Light Rail, Phoenix, Arizona*

*Metrorail Station, Downtown Miami, Florida*

*Thornton Park Neighborhood, Downtown Orlando, Florida*

*Source: A Framework for TOD in Florida.*
Community Center

Community Centers function as sub-regional or local centers of economic and community activity and include urban and town centers served by one or more transit types. Residential densities in Community Centers are typically lower than residential densities in Regional Centers, but the mix of uses in them is more balances between residential and employment uses. More intense and dense development in Community Centers tends to be concentrated within walking distance of the transit station. The pattern of development in Community Centers ranges from urban to suburban. Block sizes, lot coverage, and development intensities and densities all tend to be moderate. Parking is typically structured and located close to the transit stations. The bottom of Figure 1-7 illustrates a prototypical Community Center urban form that reflects application of the station area and site level targets identified for the Community Center TOD place type (Table 1-2).

– A Framework for TOD in Florida

Table 1-2

A Framework for TOD in Florida - Community Center

<table>
<thead>
<tr>
<th></th>
<th>Heavy Rail</th>
<th>Commuter/Light Rail</th>
<th>Bus Rapid Transit/Bus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross Intensity/Density</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Station Area Employment and Residential Units</td>
<td>23,000 - 30,000</td>
<td>15,000 - 23,000</td>
<td>7,000 - 15,000</td>
</tr>
<tr>
<td>Gross Residential Density (Dens/Acre)</td>
<td>35 - 65</td>
<td>25 - 35</td>
<td>10 - 20</td>
</tr>
<tr>
<td>Station Area Total Employment</td>
<td>18,000 - 24,000</td>
<td>12,000 - 18,000</td>
<td>6,000 - 12,000</td>
</tr>
<tr>
<td>Gross Employment Density (Jobs/Acre)</td>
<td>65 - 90</td>
<td>45 - 65</td>
<td>20 - 45</td>
</tr>
<tr>
<td>Mix of Uses</td>
<td>I: N</td>
<td>3: 1</td>
<td></td>
</tr>
<tr>
<td>Mix of Uses - % Residential / % Non-Residential</td>
<td>45% / 55%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net Intensity/Density</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net Commercial Floor Area Ratio (FAR)</td>
<td>4.0 - 6.0</td>
<td>2.0 - 4.0</td>
<td>1.0 - 2.0</td>
</tr>
<tr>
<td>Net Residential Density (Dwelling Units per Acre)</td>
<td>60 - 80</td>
<td>60 - 60</td>
<td>20 - 40</td>
</tr>
<tr>
<td>Site Level Measures</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grid Density - Blocks per: Square Mile for Vehicular, Bicycle, and Pedestrian Street Network</td>
<td>&gt; 350</td>
<td>&gt; 230</td>
<td>&gt; 150</td>
</tr>
<tr>
<td>Building Height (in Floors)</td>
<td>&gt; 3</td>
<td>&gt; 2</td>
<td>&gt; 2</td>
</tr>
<tr>
<td>Maximum Lot Coverage</td>
<td>80% - 90%</td>
<td>60% - 70%</td>
<td>40% - 50%</td>
</tr>
<tr>
<td>Minimum Street Frontage</td>
<td>80% - 90%</td>
<td>70% - 80%</td>
<td>60% - 70%</td>
</tr>
<tr>
<td>Parking</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum Residential Parking - Spots per Residential Unit</td>
<td>1</td>
<td>1.5</td>
<td>2</td>
</tr>
<tr>
<td>Maximum Non-Residential Parking - Spots per 1,000 square feet</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
Figure 1-7
Community Center

Civic plaza, west coast of Florida
Light Rail, St. Kilda, Melbourne, Australia

Bus Rapid Transit, Public Square in Cleveland, Ohio
Downtown Tallahassee, Florida

Source: A Framework for TOD in Florida.
Neighborhood Center

Neighborhood Centers are dominated by residential uses and are served by some type of premium transit. Non-residential uses in them are limited to local-serving retail and services. Residential densities in Neighborhood Centers tend to be lower than in Community Centers and at their highest within walking distance of the transit station. Neighborhood Centers are found in older urban areas and newer suburban developments. Open space is usually abundant in them, and parking is mostly in surface lots. The bottom of Figure 1-8 illustrates a prototypical Neighborhood Center urban form that reflects application of the station area and site level targets identified for the Neighborhood Center TOD place type (Table 1-3).

– A Framework for TOD in Florida

Table 1-3

<table>
<thead>
<tr>
<th>Framework for TOD in Florida - Neighborhood Center</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Gross Intensity/Density</td>
</tr>
<tr>
<td>Station Area Employment and Residential Units</td>
</tr>
<tr>
<td>Gross Residential Density (Jobs/acre)</td>
</tr>
<tr>
<td>Station Area Total Employment</td>
</tr>
<tr>
<td>Gross Employment Density (Jobs/acre)</td>
</tr>
<tr>
<td>Jobs/Housing Ratio (Jobs/Residential Unit)</td>
</tr>
<tr>
<td>Mix of Uses</td>
</tr>
<tr>
<td>Mix of Uses (% Residential / % Non-Residential)</td>
</tr>
<tr>
<td>Net Intensity/Density</td>
</tr>
<tr>
<td>Net Commercial Floor Area Ratio (FAR)</td>
</tr>
<tr>
<td>Net Residential Density (Dwelling Units per Acre)</td>
</tr>
<tr>
<td>Urban Form and Building Design</td>
</tr>
<tr>
<td>Grid Density - Blocks per Square Mile for Vehicular, Bicycle, and Pedestrian Network</td>
</tr>
<tr>
<td>Building Height (in Floors)</td>
</tr>
<tr>
<td>Maximum Lot Coverage</td>
</tr>
<tr>
<td>Maximum Street Frontage</td>
</tr>
<tr>
<td>Parking</td>
</tr>
<tr>
<td>Maximum Residential Parking - Spots per Residential Unit</td>
</tr>
<tr>
<td>Maximum Non-Residential Parking - Spots per 1,000 Square Feet</td>
</tr>
<tr>
<td>Fork &amp; Erie</td>
</tr>
</tbody>
</table>
Figure 1-8
Neighborhood Center

Source: A Framework for TOD in Florida.
Introduction

The Station Area and Site Level measures associated with each Place Type have been utilized in the Analysis of Florida Place Types (presented in Chapter 3) to assess current TOD conditions in sample communities across Florida. Subsequently, informed by the literature and the findings in the Place Type analysis, these measures have been incorporated into the model regulations presented in Chapter 4. Finally, Chapter 5 defines stakeholder roles for implementation and identifies strategies to establish TOD over time.

Executive Summary & Overview

Transit & TOD “Fun Facts”

- TOD households are twice as likely not to own a car, and overall own half as many automobiles as non-TOD households.
- TOD commuters typically use transit 2 to 5 times more often than other commuters in the region.¹
- In a California study, a 10 percent increase in population density around transit stations increased ridership by five percent, and doubling the density reduced vehicle miles traveled (VMTs) by 20 percent.²
- Over typical weekday period, TOD housing projects average 44% fewer vehicle trips than estimated by the Institute of Transportation Engineer’s Trip Generation manual.³
- In a Bay Area TOD study, 90 percent of rail commuters walked to the rail transit station.⁴
- On average, suburban mixed-use employment centers increase transit use 3.4% more than comparable single land use employment centers.⁵
- Since the 1970s, transit commuting has increased by more than three times in established areas with heavy rail.⁶
- TODs generate about 3.5 times more pedestrian and bicycle trips than generally found to occur within the same metropolitan statistical areas in which they are located.⁷
- AARP reports that 71 percent of older households want to live within walking distance of transit.⁸
- Proximity to public transit leads to higher home values and rents in many cases.⁹
Endnotes

8 Reconnecting America’s Center For Transit-Oriented Development. (2004). Hidden in Plain Site, Capturing The Demand For Housing Near Transit.
Chapter 2

Literature Review
TOD Research & Case Studies
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Introduction

The term “Transit Oriented Development,” or “TOD,” was first coined by Peter Calthorpe in the late 1980s, becoming a part of the common planning vocabulary in 1993 with the publication of Calthorpe’s The New American Metropolis. Along with other general terms such as “transit-focused” and “transit-supportive” development, TOD became generally defined as “a mixed-use community that encourages people to live near transit services and to decrease their dependence on driving.”

The integration of transportation systems with the built environment dates back to the origins of human civilization, with riverbank developments in ancient times and continued with the extension of roadways and railways serving clusters of settlements in significant locations in later eras. Modern land use/transit relationships became evident in the US with the “streetcar suburbs” of the early 1900s. These evolved to mixed-use bus routes by mid-century, followed by fixed-rail systems in the 1970s that were leveraged with private development to offset operating costs. More recently, a renewed interest in multi-modal transportation and investment in transit systems, combined with successful downtown redevelopment as well as America’s maturing suburbs, has yielded new markets for TOD.

TOD is a broad topic in the literature and practice, with great variety across Florida and the U.S. It is interdisciplinary with influences from the fields of engineering, planning, urban design, architecture, and finance among others. To organize the broad array of research and on-the-ground examples of TOD, this chapter is organized into the following general sections:

Section I: Transit - The “T” in TOD
This section provides a history of TOD and an overview of different types of transit along with transit trends in Florida and the nation.

Section II: TOD Typology - Different Scales, Forms and Types of TOD
As established in the TOD Framework, this section provides a review of the TOD Typology, with cross-references to the literature and applied practice across the U.S.

Section III: TOD Design Principles – Physical Characteristics of Successful TOD
Successful TODs are typically characterized by an urban environment that promotes multi-modal transportation (including walking and biking), accommodates appropriate densities and intensities of development, provides compatibility through a broad mix of uses, and provides a superior pedestrian experience. Accordingly, this section provides a review of the key urban design elements that help promote high ridership, increased property values, and sustainability for TOD.

Section IV: Implementation – How to Achieve TOD as an Inter-Agency Outcome
The integration of transit and land use requires coordination and collaboration among different agency partners for TOD to emerge as an outcome. The relationship among agencies is reciprocal, with well-planned land uses helping to produce higher ridership and greater trip capture, and likewise, well-designed transit and transportation systems yielding greater land use efficiencies. TOD policy leadership can occur at the state, regional, and local...
levels, as evidenced in a review of policies across the U.S. This section provides a review of policy approaches to help organize interagency efforts and achieve TOD as a desired outcome.

Appendix A: A Review of Best Practices - U.S. Case Studies & Florida Codes
To provide guidance for Florida communities and as part of the literature review for this guidebook, a summary of TOD best practices currently underway in the United States was assembled. The transit systems surveyed both include mature and emerging transit systems and regions, from coast to coast, with varied TOD projects. The Appendix includes information on TOD efforts in the following locations:

- Boston, MA
- Charlotte, NC
- Cleveland, OH
- Dallas, TX
- Denver, CO
- Los Angeles, CA
- New Jersey
- Portland, OR
- San Francisco, CA
- Washington, D.C.
Section I: Transit - The “T” in “TOD”

The Evolution of Transit and TOD in the U.S.

Mass transit history in the U.S. dates back to the 1830s, with the introduction of horse-drawn “omnibuses” (modified stagecoaches) and streetcars in cities along the Eastern seaboard. By the later 1800s, wealthy suburban commuters could travel by steam locomotives into core downtowns, with the first elevated railroad (the “El”) constructed in New York in 1876. The “El” represented the first rapid transit system in the U.S., with local transit operating on an exclusive right-of-way, servicing fixed stations.3

Electric streetcars or trolleys began replacing horse-drawn coaches in 1889 and by 1902, 94 percent of the nation’s total street railway mileage was electrically powered. The shift from private enterprise to transit as a public undertaking began to occur in the late 1800s as well. As the capacity of city streets presented a limitation to expanded transit activity, the Boston Transit Commission, which was a public agency, proposed construction of a tunnel for streetcars under the public street system. Agency costs would be recouped with rents charged to the privately-owned streetcar companies utilizing the tunnel, setting in motion a public/private relationship that continues to bear relevance to public transit service today. Nearby New York voters approved public bonding for transit tunnels in 1894, which were ultimately combined with private funding to accommodate electric trains throughout the city.

Scrag (2002) notes the early relationship between land use and transportation as related to land values. “The growth of street railways was closely tied to real estate development and speculation … Each line extension brought new land within commuting distance of the employment core, sharply raising real estate values.”4 These systems were privately run, with several companies building amusement parks at the end of the line to off-set weekday commutes into town with weekend demand outbound.

Dittmar and Ohland (2004) reinforce the focus on the land use/transit relationship, noting that communities have always been shaped, at least in part, by their transportation modes – walking, streetcars, or automobiles.5 They suggest the early “streetcar suburbs” that emerged in the American landscape in the 1900s were more aptly described as “development oriented transit” rather than “transit oriented development” as private developers tended to build transit to serve their developments rather than the current model, which often includes the reintroduction of transit in areas with concentrated development. The relationship between “place” and transit “mode” became evident with these early developments, whereby small retail nodes collocated with streetcar stops to serve commuters as well as nearby residents.

The widespread introduction of automobiles in the early 1900s began to consume market share for transit riders. Cars consumed operating space on the same city streets used by streetcars, which reduced average speeds for transit. Private autos also provided jitney service to commuters. These forces, combined with rapidly expanding auto ownership, led to transit peaking in the 1920s, with ridership falling from 17.2 billion in 1926 to 11.3 billion in 1933. Private ownership of transit began converting to public ownership as early as the 1910s, and falling profitability required public
intervention as a public service. However, beginning in the 1930s, the “interdependence” among housing, jobs, and transit that characterized the early streetcar suburbs was redirected by the advent of the automobile. Eventually, roads and highways became the dominant transportation mode in the U.S.6

Bus service began to expand by mid-century; however, buses operated with lower capacity than streetcars, and exhaust fumes in subway tunnels eliminated these shortcut routes to the crowded street conditions. Automobile production was suspended during World War II, shifting travel demand back to transit. However, post-War, auto production resumed and vast, scattered suburban housing developments were located far from central employment nodes, rendering transit impractical. While many rail systems were dismantled, auto travel was further reinforced by accelerated roadway and interstate construction, further reducing transit demand.

As transit profitability evaporated, municipal governments began to establish public transit authorities to provide transit service. Federal funding had financed road building, including the expansive Interstate Highway System. While federal funding for transit had been limited, 1964’s Urban Mass Transportation Act enabled federal participation in transit project capital costs, requiring a 2:1 federal:local match for project costs.

By the 1970s, the new generation of transit systems geared towards congestion relief had begun to emerge, notably in urban cores like San Francisco’s BART system, Atlanta’s MARTA system, and Washington, D.C.’s WMATA. These “auto-oriented transit” systems were developed without additional land acquisition for future development activity, but instead, stations were designed with an expectation that most riders would drive to suburban stations. As a result, suburban stations were typically surrounded by fields of surface parking lots, which disconnected them from the surrounding communities. This separation was further exacerbated by the design of the newer communities, which anticipated automobile travel as the primary mode of transport, with buildings and uses arranged further apart from each other and from transit stops than in pre-WWII eras.

The 1970s also brought attention to the annual operating deficit of transit in the U.S., estimated to be $300 million by 1970. Through the decade, urban issues were highlighted nationally, with the expansion of broad federally-funded domestic programs, including transit operating and capital assistance, in response.7 By the 1980s, public/private “joint development” had began to appear in conjunction with transit stations as a measure to help capture value around stations to offset operating costs. Early examples included San Diego, Washington, D.C., and Portland. The typical joint development project included dense, profitable development activity to generate revenue for the transit agency and the federal government, and “highest and best use” of land outweighed other land use sensitivities with respect to surrounding neighborhoods.

With federal funding and flexibility for state capital investments, transit ridership began to rise again by the mid-1970s, reaching a ridership of 8 billion by 1984. Legislation since the 1990s has enabled increased transit funding with flexibility for state governments, enabling federal transportation dollars to be invested in transit, bicycle, and pedestrian projects with potentially less construction of new roadways.
Beginning in the 1990s, Calthorpe helped redefine the transit station development patterns in a “transit oriented” sense, with a greater focus on accommodating increased pedestrian activity at stations to facilitate non-motorized access, a broad mix of uses, and appropriately increased density. Calthorpe’s work was followed by Robert Cervero’s studies, documented in *Transit Villages in the Twenty-First Century* (co-written with Michel Bernick) and *Transit Metropolis*, advancing the discussion to include urban form and the types of transit best geared for various urban conditions. These topics are addressed generally in this chapter.

**Overview of TOD Transit Modes**

There are a variety of transit modes in place across Florida and the nation today. However, for the purpose of TOD, the range of modes, and their operating characteristics, exists as a subset of the universe of transit options. Appropriate transit service for TOD can be provided by a variety of different modes depending on the demand characteristics in a particular location. As noted in the TOD Framework,

> “Transit technology and transit service characteristics influence the type, spacing, and intensity of station areas. … While the type of transit is often determined by transit system needs, capital costs, ridership estimates, and corridor right-of-way attributes, factors associated with TOD around stations can heavily influence ridership potential for the transit system as a whole. Therefore, transit system design and technology decisions also need to consider plans for future development and redevelopment in station areas.”

The TOD Framework describes a series of factors that differentiate among various types of transit service as follows:

- **Transit technology** relies upon a series of technical specifications for classifications, including vehicle type, energy source, size and adaptability, right-of-way requirements, and capital costs.

- **Transit service characteristics** include operational factors such as:
  - **Travel Shed:** the total distance efficiently served by transit type based on speed and optimal travel time.
  - **Station Spacing:** the optimal spacing between stations based on speed and start/stop efficiency of vehicles.
  - **Station Service Area:** the distance from a station that people are willing to walk, bicycle, or drive to access transit.

The various transit modes that are typically correlated with TOD are described below. Input regarding the selection of transit types with respect to TOD was derived from Reconnecting America, a national nonprofit focused upon education, research, and policy development regarding TOD across the U.S.

### EXPRESS AND INTER-CITY PASSENGER RAIL

| Description | An urban passenger train service operating with electric or diesel propelled rail cars. Service consists of medium-to-long distance travel, often operating between city centers. Travel shed is regional, with large station areas that allow for more driving access to stations. Service tends to utilize existing rail, which typically produces lower capital costs than heavy rail. |
| Operating Speed | 45-90 MPH |
| Service Type | Regional, Intra-Urban, Inter-City |
| Station Type | Station, Platform |
| Station Spacing | 20-30 miles (can be greater for express) |
| Service Frequency | 60 minutes (peak express), up to 12 daily (inter-city) |
| Vehicle Length | 500 – 1,000 feet with a combination of engines and coaches or “diesel motorized units” (DMU), which are self-propelled passenger cars. |
| Alignment | Generally built on existing railroad tracks with at-grade street crossings. (FRA* compliant) Example (Inter-City Passenger Rail): Amtrak (West Palm Beach, FL) |

### HEAVY RAIL

| Description | These are rail-based systems, typically consisting of steel-wheeled, electric powered vehicles operating in trains of two or more cars on a fully grade-separated right-of-way. Travel shed is regional, with large station areas that allow for more driving access to stations. Heavy rail requires electrified tracks, which produces high capital costs. |
| Operating Speed | 50-80 MPH |
| Service Type | Regional, Urban |
| Station Type | Station, Platform |
| Station Spacing | Urban Core: less than 1 mile Periphery: 1-5 miles |
| Service Frequency | 5-10 minutes (peak) |
| Vehicle Length | 40-70 feet per car; Up to 10-car trains |
| Alignment | Separate Right-of-Way (not FRA compliant) Example (Heavy Rail): MetroRail (Miami, FL) |

NOTE: “FRA Compliant” indicates compliance with the Federal Transit Administration guidelines enabling transit vehicles to run on tracks with freight trains.
## COMMUTER RAIL

**Description**
An urban passenger train service operating with electric or diesel propelled rail cars. Service consists of local short distance travel, often operating between a central city (or cities) and adjacent suburbs.

- Travel shed is regional, with large station areas that allow for more driving access to stations. Service tends to utilize existing rail, which typically produces lower capital costs than heavy rail.

<table>
<thead>
<tr>
<th>Operating Speed</th>
<th>30-60 MPH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service Type</td>
<td>Regional, Intra-Urban</td>
</tr>
<tr>
<td>Station Type</td>
<td>Station, Platform</td>
</tr>
<tr>
<td>Station Spacing</td>
<td>2-5 miles (can be closer in urban areas)</td>
</tr>
<tr>
<td>Service Frequency</td>
<td>20-30 minutes (peak)</td>
</tr>
<tr>
<td>Vehicle Length</td>
<td>150-500 feet with a combination of engines and coaches or “diesel motorized units” (DMU), which are self-propelled passenger cars.</td>
</tr>
<tr>
<td>Alignment</td>
<td>Generally built on existing railroad tracks with at-grade street crossings. (FRA* compliant)</td>
</tr>
</tbody>
</table>

*Example (Commuter Rail): Tri-Rail (South Florida)*

---

## LIGHT RAIL

**Description**
This is a rail-based technology that operates in dedicated rail corridors or shared right-of-way. “Light” refers to this mode’s relative simplicity and operational flexibility rather than actual vehicle weight or cost. Service operates with smaller cars and lower passenger capacity as compared to heavy rail or commuter rail.

- Stations tend to be located closer together, emphasizing walk access, with travel sheds that vary depending on regional and local conditions and connectivity needs.

<table>
<thead>
<tr>
<th>Operating Speed</th>
<th>20-60 MPH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service Type</td>
<td>Regional, Urban</td>
</tr>
<tr>
<td>Station Type</td>
<td>Sidewalk Sign, Station, Platform</td>
</tr>
<tr>
<td>Station Spacing</td>
<td>&lt; 1 mile</td>
</tr>
<tr>
<td>Service Frequency</td>
<td>5-30 minutes</td>
</tr>
<tr>
<td>Vehicle Length</td>
<td>50-80 feet per car, with trains of up to 4 cars per train</td>
</tr>
<tr>
<td>Alignment</td>
<td>Aligned center of side of street corridor on separate right-of-way or in shared right-of-way (mixed with automobile traffic). (Not FRA compliant)</td>
</tr>
</tbody>
</table>

*Example (Light Rail): Lynx Blue Line (Charlotte, N.C.)*

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*Image Source: TCRPC*

### MODERN STREETCAR

**Description**
An electric vehicle-based technology that runs on rails typically located in existing rights-of-way, but vehicles can also be operated in dedicated rights-of-way. Modern streetcars often function as urban circulators oriented toward shorter trips. Vintage vehicles used for this type of service are also referred to as “Heritage Trolleys.”

Stations are located closer together with heavy emphasis on walk access.

<table>
<thead>
<tr>
<th>Operating Speed</th>
<th>8-12 MPH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service Type</td>
<td>Urban Circulator</td>
</tr>
<tr>
<td>Station Type</td>
<td>Sidewalk Sign, Station, Platform</td>
</tr>
<tr>
<td>Station Spacing</td>
<td>0.25 miles</td>
</tr>
<tr>
<td>Service Frequency</td>
<td>8-15 minutes</td>
</tr>
<tr>
<td>Vehicle Length</td>
<td>35-60 feet</td>
</tr>
<tr>
<td>Alignment</td>
<td>Typically in street with traffic but can also be located in dedicated rail right-of-way (not FRA compliant)</td>
</tr>
</tbody>
</table>

**Example (Vintage Streetcar):**
TECO Line Streetcar System (Ybor City, FL)

![Modern Streetcar Image](Image Source: TCRPC)

### BUS RAPID TRANSIT (BRT)

**Description**
Rubber wheel-based technology where buses provide premium transit service on existing roadways or in dedicated rights-of-way. Service can be enhanced with transit signal priority and other means to expedite travel time.

Lower capital costs than other forms of premium transit as vehicles do not require rail infrastructure.

<table>
<thead>
<tr>
<th>Operating Speed</th>
<th>8-12 MPH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service Type</td>
<td>Regional, Urban</td>
</tr>
<tr>
<td>Station Type</td>
<td>Sidewalk Sign, Station, Platform</td>
</tr>
<tr>
<td>Station Spacing</td>
<td>0.25 – 2 miles</td>
</tr>
<tr>
<td>Service Frequency</td>
<td>8-20 minutes</td>
</tr>
<tr>
<td>Vehicle Length</td>
<td>30-50 feet</td>
</tr>
<tr>
<td>Alignment</td>
<td>HOV lanes or separated right-of-way in median or on curb (not FRA compliant)</td>
</tr>
</tbody>
</table>

**Example (BRT):**
LYMMO (Orlando, FL)

![Bus Rapid Transit Image](Image Source: TCRPC)
TOD Mobility Factors

The function of transit within a TOD environment has a direct relationship with the success of TOD. Because transit service must be able to compete with the convenience of automotive travel, transit frequency, reliability, and accessibility are some key mobility features of successful TOD. Generally, a minimum transit service frequency threshold of 10-15 minute peak hour headways is ideal to sustain adequate transportation options for TODs. However, as illustrated in Table 2-1 below, transit mode and frequency can vary according to station area.

Table 2-1

<table>
<thead>
<tr>
<th>FL TOD Typology</th>
<th>Dittmar/Ohland Typology</th>
<th>Transit Modes</th>
<th>Frequencies</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional</td>
<td>&quot;Urban Downtown&quot;</td>
<td>All modes</td>
<td>&lt; 10 minutes</td>
<td>Printers Row (Chicago), LoDo (Denver), South Beach (San Francisco)</td>
</tr>
<tr>
<td></td>
<td>(corresponds to Regional in Florida Typology)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community</td>
<td>Urban Neighborhood</td>
<td>Light-Rail, Streetcar, Rapid Bus, Local Bus</td>
<td>10 minutes peak, 20 minutes off peak</td>
<td>Mockingbird (Dallas), Fullerton (Chicago), Barrio Logan (San Diego)</td>
</tr>
<tr>
<td>Suburban Center</td>
<td>Rail, Streetcar, Rapid Bus, Local Bus</td>
<td>10 minutes peak, 10-15 minutes off peak</td>
<td>Arlington County (Virginia), Addison Circle (Dallas), Evanston (Illinois)</td>
<td></td>
</tr>
<tr>
<td>Neighborhood</td>
<td>Suburban Neighborhood</td>
<td>Light-Rail, Rapid Bus, Local Bus</td>
<td>20 minutes peak, 30 minutes off peak</td>
<td>Crossings (Mountain View, CA), Ohlone-Chynoweth (San Jose, CA)</td>
</tr>
<tr>
<td></td>
<td>Commuter Town Center</td>
<td>Commuter Rail, Rapid Bus</td>
<td>Peak service, demand responsive</td>
<td>Prairie Crossing (Illinois), Suisun City (California)</td>
</tr>
</tbody>
</table>

Transit accessibility also maintains high influence on station area resident choices to travel by transit. In their TOD analysis, Arrington et.al. found that improved accessibility to transit increased ridership among Bay Area suburban TOD residents from 35% to 60%. Littman (2012) drew similar conclusions in his review of public transit benefits and costs, finding that more motorists would “drive somewhat less and choose alternative modes more if the alternatives were convenient, comfortable, and affordable.”

The presence of multi-modal transportation options also influences the success of transit within TODs. Although the TODs are concentrated around transit, infrastructure must also adequately support the automobile, bicyclists, and pedestrians when designing and planning for transit-supportive development, as evidence shows TOD residents are much more likely travel by transit than by an automobile. Further research by Arrington et.al. also indicates that a significant proportion of TOD residents are derived from single-car or car-free households, emphasizing the importance for safe, efficient pedestrian-oriented infrastructure connections between the station area and near-by neighborhoods.

The transit mode itself also provides influence on the mobility within a TOD Station Area and the ultimate performance of a particular TOD. Dittmar and Poticha (2004) set forth a general hierarchy of transit modes in their review of TOD across the U.S. They correlate rail modes more closely to higher density and larger scale development while bus-based modes (with lower frequencies) correspond to lower density/intensity development forms. This tendency towards rail-based TOD is due in part to the permanence of rail and the corresponding perceived reduction of risk for TOD investors. As noted by Littman (2012), “rail transit can be compared to a luxury vehicle: it costs more initially but provides higher quality service and greater long-run value.”

“Rail transit can only provide service to a limited number of stations. Those stations tend to stimulate more intense development, with increased density (residents, employees and business activity per acre), higher per capita transit ridership and walking trips, and lower per capita vehicle ownership and trips. Bus transit can serve more destinations, including some dispersed, suburban activity centers, but attracts fewer riders per capita, and by itself has little or no effect on land use patterns. Which will attract the most riders and be most cost effective depends on the circumstances: rail tends to attract more riders in the area it serves, but buses can directly serve more destinations over a larger area.”

Bus-based TOD is a more recent focus of study, with a shorter track record of progress. However, as noted by Currie (2006), while bus transit has weaknesses regarding TOD versus rail, it nonetheless offers greater flexibility, adaptability, and cost-effectiveness, with BRT adding service frequency and transfers as strengths with regards to TOD. Bus-based TOD opportunities may provide land development programs with lower densities than rail-based TOD where desired by communities as well as provide interim steps to build ridership and establish transit-supportive land development patterns in advance of higher cost BRT or rail-based transit systems.
All transit modes can influence land development activity; however, rail-based transit produces higher per capita transit ridership and walking trips, exerting a greater influence on land development activity and TOD than bus-based transit. While bus-based transit has greater flexibility and adaptability, it lacks the attraction and permanence of higher-cost rail infrastructure, which is reflected in lower per capita ridership and a lesser influence on land use activity.


Current U.S. Transit Trends in the US

Public transit in the United States has grown significantly in the past decade, with more than 7,000 transit organizations documented in the most recent Public Transit Fact Book, published by the American Public Transit Administration in 2011.25 Systems range from large multi-modal networks to single-vehicle paratransit services, and public transportation represented a $55 billion investment for service provision and capital investment in 2009 (the most recent year of analysis). Transit provided more than 10.4 billion passenger trips nation-wide, representing 55.2 billion miles of service. A summary of the U.S. transit industry and the wide range of transit modes is illustrated in Table 2-2.

Public transit ridership in the U.S. has risen on average over the past fifty years, with a significant increase in ridership since the 1970s and accelerated federal funding towards transit. Bus transit provides a significantly greater proportion of transit service across the Nation over time.

Table 2-2
Number of Public Transportation Service Systems by Mode, Report Year 2009

<table>
<thead>
<tr>
<th>Mode</th>
<th>Number of Systems (a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerial Tramway</td>
<td>2</td>
</tr>
<tr>
<td>Automated Guideway Transit</td>
<td>7</td>
</tr>
<tr>
<td>Bus</td>
<td>1,988</td>
</tr>
<tr>
<td>Cable Car</td>
<td>1</td>
</tr>
<tr>
<td>Commuter Rail</td>
<td>27</td>
</tr>
<tr>
<td>Ferryboat</td>
<td>32</td>
</tr>
<tr>
<td>Heavy Rail</td>
<td>45</td>
</tr>
<tr>
<td>Inclined Plane</td>
<td>3</td>
</tr>
<tr>
<td>Light Rail</td>
<td>35</td>
</tr>
<tr>
<td>Monorail</td>
<td>2</td>
</tr>
<tr>
<td>Paratransit (b)</td>
<td>6,700</td>
</tr>
<tr>
<td>Publico</td>
<td>1</td>
</tr>
<tr>
<td>Trolleybus</td>
<td>5</td>
</tr>
<tr>
<td>Vangpool</td>
<td>77</td>
</tr>
<tr>
<td>Total (b,c)</td>
<td>7,200</td>
</tr>
</tbody>
</table>

Excluding paratransit, the vast majority of public transportation systems in the United States offer bus service.

When the transit modes are compressed into general categories, it is quickly evident that bus transit provides the greatest number of trips and service in the U.S. The chart below represents such a general categorization.

Figure 2-2
Transit Ridership at Highest Level in Five Decades

Bus transit has consistently provided the greatest share of all transit service in the U.S. in the past fifty years. It is important to note the American Public Transportation Association indicates transit ridership is at its highest level in five decades.

Source: APTA – 2011 Public Transit Fact Book (page 10)

After more than a decade of continued increases, transit ridership in the U.S. fell recently during the “Great Recession” - from 2009 through 2011 – as ridership tends to be highly correlated with the price of gas as well as levels of employment. Nationally, transit ridership had grown exponentially before 2009, following increases in gas prices, which exceeded $4.00 per gallon by January of that year. However, ridership plunged in response to both falling gas prices and employment levels, triggered by the global economic challenges of the past several years. The trend towards increasing ridership began again in early 2011 and has continued to rise as gas prices and employment levels have begun to climb again. The following chart, taken from a National Transit Database presentation, illustrates transit ridership and its relationship to U.S. gas prices and employment levels.
As illustrated in the chart above, public transit ridership in the U.S. peaked in early 2009, partially in response to the peak in gas prices. With the falling economy, both transit ridership and employment fell in response; however, national data suggests both have stabilized and are beginning to climb again.

Source: National Transit Database – 2010 Summary of NTD Data (and trends).
Transit & TOD: The Florida Experience

The development of transit in Florida has many similarities to the evolution of transit across the U.S. Until the 1870s, Florida remained a relatively undeveloped state, with transportation access limited to horse-drawn wagon, marine vessels, and a limited network of railroads. Florida’s intercity passenger rail network began in the early 19th century. Florida’s early rail lines traversed the Panhandle, from Pensacola through Tallahassee to Jacksonville, with connections north into Georgia in the 1830s. Later in the 1850s, the state authorized rail lines from Fernandina (south of Jacksonville) on the east coast to Cedar Key on the west coast. Regularly scheduled passenger service was provided on these rail lines, with scheduled departures and arrivals several times daily.

Following the Civil War and Reconstruction, the state began significantly expanding its rail network in the 1880s, with expansions to Tampa and the West Coast (Henry Plant) and from Jacksonville south down the East Coast (Henry Flagler). Passenger train service dominated the state’s intercity travel from the 1880s through the 1920s, helping establish new towns and cities in Florida as well as expanding the state’s freight distribution within Florida and beyond. These rail lines also included regularly scheduled service, with some stations receiving up to twelve trains daily. Diesel-electric locomotives largely replaced steam engines by the 1940s, and automobile and aircraft travel began to replace train service for much of the state’s intercity travel.26 Passenger rail service was eventually phased out, with the Florida...
Literature Review

East Coast railway running its last passenger trains in 1968. However, the passage of the Rail Passenger Service Act in 1970 established Amtrak, operated by the for-profit National Passenger Railroad Corporation beginning in 1971, which operates several daily long-distance trains through Florida today (discussed later in this chapter).

Within Florida’s cities, local transit began in the form of horse-drawn stagecoaches, as illustrated below in the City of Tallahassee (circa 1890s). Electric streetcars began to emerge in the late 1800s as well, as Florida’s cities began to urbanize, some of which operated within cities while others became interurban, connecting several cities together. Local governments tended to award exclusive operating franchises to private firms, resulting in a wide range of independent streetcar firms across the state. Streetcar service continued in some cities through the 1940s, when automobile transportation became the dominant mode of travel. As the state’s roadway network expanded, widespread automobile use and bus service replaced streetcars throughout Florida, and the trolley systems were disbanded.

Consistent with the first forms of transit across the nation, early Florida transit existed with horse-drawn stagecoaches as well. Pictured above is an 1894 image of the Tallahassee Railway Company, which provided service from Tallahassee’s railroad depot to a downtown hotel. (Painted on the streetcar is a “No Smoking” sign.)

Source: FDOT, http://www.dot.state.fl.us

Jacksonville (left) boasted a series of electric streetcar lines that traversed the city, operating from the late 1890s through the 1930s.
Source: http://www.metrojacksonville.com

Streetcars were first operated in Miami in 1906, as indicated in the image above. This early form of transit was replaced in 1915 by battery-powered trolleys on rails, and subsequently, with streetcars powered by overhead wires, initiating Miami’s electric railway era. Miami and its surrounding cities had extensive service through 1940, when streetcars were replaced by bus service.27
Source: FDOT
The Florida Transportation Commission authored a report on “Public Transit in Florida” in 1989, which details the general evolution of transit in Florida. According to the report, and similar to the U.S. transportation mode shifts that occurred in the 1940s, transit usage began to decline in Florida as automobile ownership increased, and the street and highway network was improved and expanded. While World War II’s impact on the rationing of resources bolstered transit ridership, the post-War conditions restored the shift to automobile travel as the dominant mode, and private transit services eventually went out of business. Government financial involvement in transit grew as private transit investment in capital maintenance and upkeep declined, stimulated in part by the Urban Mass Transportation Act of 1964, which provided substantial capital assistance for local transit buy-outs. Accordingly, Florida’s local governments began to purchase the assets of private transit companies in the early 1970s, establishing public transit authorities to provide mainly local bus service. Early examples of transit authorities include:

- **Jacksonville, 1955** (merger of Jacksonville Expressway Authority with several private bus companies, becoming the precursor to today’s Jacksonville Transportation Authority)
- **Miami, 1960** (establishment of Metropolitan Transit Authority, which ultimately became today’s Miami-Dade Transit)
- **Orlando, 1972** (creation of the Orange Seminole Osceola Transportation Authority, which evolved into today’s Central Florida Regional Transportation Authority)
With the provision of federal matching funds for capital equipment, local authorities were indirectly encouraged to increase levels of transit service. By 1975, the federal participation rate for capital projects increased from 66% to 80%, and operating assistance was added as well, stimulating further expansion until funds were cut-back in the 1980s. Federal funding has continued to peak and wane through the current federal funding environment.

State financial participation began in 1970 with contributions to transit capital projects; however, state operating assistance was not provided until 1988.

Current Transit Trends in Florida

Florida’s transportation network today consists of a complex combination of road, rail, transit, air and seaports, and bicycle/pedestrian facilities. The state has twenty-nine public agencies operating fixed-route transit service across the state’s immense roadway network (totaling more than 120,000 centerline miles of roadways and highways) as well as grade-separated transit rights-of-way. Florida also has one commuter rail system in operation (Tri-Rail, which operates along 72 miles in southeast Florida) with a second commuter rail system, SunRail, under construction. Intercity passenger rail service is also provided by Amtrak currently, which services eighteen stations with daily service. Significant expansions for transit service in Florida are being evaluated, planned, or designed across the state. Together, this range of transit activity enables extensive opportunity for TOD across the State of Florida today and into the future.

Statistically, public transit provided more than 245 million trips in 2010, which is the most recent year of transit accounting. FDOT’s 2011 Public Transit Handbook indicates these trips accounted for nearly 1.4 billion passenger miles in 2010, dispersed among the state’s 29 fixed-route transit operators, including the four systems that operate at least one rail mode. Figure 2-3 indicates the location of the state’s fixed-route operators, which are geographically dispersed across Florida.
Similar to national trends, Florida’s transit ridership rose through 2008, but transit boardings fell in 2009. Florida’s transit ridership remained relatively constant in 2010 and 2011, and it is anticipated ridership will begin rising again in 2012 in a manner consistent with national trends. Florida’s ridership is illustrated in Figure 2-4. Not included in these statistics is Amtrak’s daily service, which provided approximately one million boardings in 2011 among its eighteen stations in Florida.

Figure 2-5

*Florida Annual Transit Boardings*

Florida’s transit ridership, as represented by annual transit boardings, climbed from 2004 through 2008, and consistent with national trends, ridership fell from 2009 through 2011 in response to lower fuel prices and employment levels. Source: FDOT Florida Transportation Indicators from the Florida Transit Information System

Figure 2-6

*Amtrak’s Silver Service Route in Florida*

Amtrak’s “Silver Star” route, which provides intercity passenger rail service in Florida several times daily, is illustrated in the map above. Source: www.amtrak.com
The Future of Transit in Florida

The FDOT recently completed 2060 FTP, which is a fifty-year transportation plan for the State of Florida. The plan details the state’s broad, long-range goals for transportation given the changing demographic, economic, and sociospatial conditions anticipated in Florida’s future. Six main goals are included in the 2060 FTP, which are listed in the inset box on this page. Emphasized in the goals and throughout the plan are the relationship between transportation decisions (and investments) and the support and enhancement of livable communities, which points directly to transit-supportive land development patterns and TOD. The following key observations relevant to transit and TOD are noted:

*Florida’s transportation system in 2060 will be as profoundly different as today’s system is from the one 50 years ago, including:*

- A statewide, multimodal transportation system which supports Florida’s economic and livability goals by providing better connectivity to both urban and rural areas;
- Greater reliance on public transportation systems for moving people, including a statewide passenger rail network and enhanced transit systems in Florida’s major urban areas.33

The state’s emphasis on expanded transit, especially premium transit, along with transit-supportive land development patterns is also reflected in the long-range transportation plans of the state’s metropolitan planning organizations, transit authorities, and local governments. This policy direction is anticipated to yield increased transit activity with a heightened focus on TOD and transit-supportive environments corresponding to expanded transit systems.

Thus, from a national and Florida-centric perspective, the “T” in TOD has varied greatly over time, from the “streetcar suburbs” of the early 1900s to the modern and robust multi-modal transportation networks present in today’s environment. Different transit modes produce and require different land development conditions to yield the greatest ridership and efficiency. These modes exist in varying land development conditions, whereby community conditions range from highly urbanized to decentralized suburban to rural. The scale of transit environments differs as well, with large-scale regional centers, moderate-scale community centers, and lower-scale neighborhood centers. Each of these factors has been integrated into a TOD Typology for the State of Florida, which is detailed in the following section.

2060 Florida Transportation Plan Goals

- Invest in transportation systems to support a prosperous, globally competitive economy
- Make transportation decisions to support and enhance livable communities
- Make transportation decisions to promote responsible environmental stewardship
- Provide a safe and secure transportation system for all users
- Maintain and operate Florida’s transportation system proactively
- Improve mobility and connectivity for people and freight

FDOT recently adopted the 2060 Florida Transportation Plan, which contains the six key goals noted above. Throughout the Plan, there is strong emphasis on livable communities, transit-oriented development, and a stronger correlation between transportation and land use.

Source: 2060 Florida Transportation Plan (Horizons 2060), available at http://www.2060ftp.org
Section II: TOD Typology

TOD is often categorized into specific “typologies” that identify and group station areas based on their intensity and role in terms of both the community and the transit system. Typologies range from dense, urban cores containing significant concentrations of regional commerce and/or government uses to lower-density, primarily residential areas housing largely commuter populations that travel to central areas for work. TOD station typology terminology varies among TOD practitioners and local governments, as individual agencies have adopted their own set of criteria-based station area definitions and pertinent thresholds. While some consistencies exist, more often, thresholds overlap among varying terminology and, in some cases, the same term presents with significant differences in different applications.

Tables 2-3, 2-5 and 2-7 contain the most common TOD typology terminology with their respective defining density and intensity characteristics. In some cases, different nomenclatures define relatively similar conditions. For example, some municipalities call station areas located in major metropolitan centers “regional centers”, while others designate this same condition as “urban downtown”, despite the similar thresholds defined. Conversely, both Atlanta, GA, and Sacramento, CA, use “Urban Core” typologies, yet the prescribed urban development densities and intensities for Sacramento pale in comparison to those defined for Atlanta, suggesting a level of flexibility and local calibration may be necessary.

TOD literature frequently discusses the differences in density and intensity between the Transit Core (the first quarter mile surrounding a station) and the Transit Neighborhood (the second quarter mile, which extends beyond the Transit Core). The core optimally contains the most intense development in the Station Area, stepping down to meet the lower scale of nearby neighborhoods. It is interesting to note, many defined typologies do not differentiate density, intensity, or building height within the station area to reflect or achieve this generally expected change in character. One example that does expressly guide development in this manner is the Sacramento Regional Transit Action Plan. This plan provides a graduated system of thresholds, with higher minimum densities and commercial FARs prescribed for the Transit Cores than called for in the Transit Neighborhoods of most TOD typologies.

Conclusions for Florida TOD Typologies

For Florida, the Framework document defines three station typologies: Regional, Community, and Neighborhood. This broad classification recognizes the primary distinctions in character among the vast station typology nomenclature in use nationally. The Florida typologies are further defined by correlating development targets to the mode of transit serving the station area – an important consideration for a number of reasons, including infrastructure cost, potential land use impact, and ridership capture. The result is a palette of typologies that can be applied to the varying conditions that exist across the state. Perhaps more importantly, the Florida typologies guide the potential evolution of both TOD and transit systems. For example, as an area grows over time, the mode of transit may evolve as a result of the increased population (i.e. transition from a BRT system to a light rail system).
### Table 2-3

**Station Typologies - Regional Scale**

<table>
<thead>
<tr>
<th>Station Type</th>
<th>Transit Mode(s)</th>
<th>Station Area Targets</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Regional Center</strong></td>
<td>Light Rail/ Commuter Rail/BRT</td>
<td>75-300 du/acre, 5.0 FAR&lt;sup&gt;35&lt;/sup&gt;</td>
<td>San Francisco Bay Area, CA</td>
</tr>
<tr>
<td></td>
<td>Light Rail/ Commuter Rail/BRT</td>
<td>75-300 du/acre, 5.0 FAR&lt;sup&gt;36&lt;/sup&gt;</td>
<td>Reconnecting America</td>
</tr>
<tr>
<td><strong>Regional Mixed Use Center</strong></td>
<td>Light Rail/BRT</td>
<td>75-200 du/acre, 2.5-7.5 FAR&lt;sup&gt;37&lt;/sup&gt;</td>
<td>Hillsborough County, FL</td>
</tr>
<tr>
<td><strong>Urban Core</strong></td>
<td>Heavy Rail/ Light Rail/ BRT/ Streetcar</td>
<td>75+ du/acre, 8-40 stories, 8-30.0 FAR&lt;sup&gt;38&lt;/sup&gt;</td>
<td>Atlanta, GA</td>
</tr>
<tr>
<td></td>
<td>Light Rail/ BRT/ Streetcar</td>
<td>36 du/acre, 2.0 FAR&lt;sup&gt;39&lt;/sup&gt;</td>
<td>Sacramento, CA</td>
</tr>
<tr>
<td><strong>Urban Downtown</strong></td>
<td>All Modes</td>
<td>&gt; 60 du/acre&lt;sup&gt;40&lt;/sup&gt;</td>
<td>Best Practices in TOD Manual</td>
</tr>
<tr>
<td></td>
<td>Light Rail/ Commuter Rail/ BRT</td>
<td>75-150 du/acre, 3-15.0 FAR&lt;sup&gt;41&lt;/sup&gt;</td>
<td>Denver, CO</td>
</tr>
<tr>
<td></td>
<td>Streetcar/ Bus</td>
<td>5+ stories&lt;sup&gt;42&lt;/sup&gt;</td>
<td>Denver, CO</td>
</tr>
<tr>
<td><strong>City Center</strong></td>
<td>Heavy Rail/ LRT/ Streetcar/ BRT/ Commuter Rail/ Bus</td>
<td>50-150 du/acre, 2.5 FAR min&lt;sup&gt;43&lt;/sup&gt;</td>
<td>San Francisco Bay Area, CA</td>
</tr>
<tr>
<td></td>
<td>Commuter Rail/ BRT/ Bus</td>
<td>&gt; 25 du/acre, &gt;10.0 FAR&lt;sup&gt;44&lt;/sup&gt;</td>
<td>South Florida East Coast Corridor Study</td>
</tr>
<tr>
<td><strong>Urban Center</strong></td>
<td>Heavy Rail/ LRT/ Streetcar/ BRT/ Commuter Rail/ Bus</td>
<td>50-150 du/acre, 2.5 FAR min&lt;sup&gt;45&lt;/sup&gt;</td>
<td>Reconnecting America</td>
</tr>
<tr>
<td></td>
<td>Heavy Rail/ LRT/ Streetcar/ BRT/ Commuter Rail/ Bus</td>
<td>15-20 du/acre min, 1-1.5 FAR min, 12 stories max&lt;sup&gt;46&lt;/sup&gt;</td>
<td>Sacramento, CA</td>
</tr>
<tr>
<td></td>
<td>Heavy Rail/ LRT/ Streetcar/ BRT/ Commuter Rail/ Bus</td>
<td>40+ du/acre, 4-30 stories, 100% site coverage&lt;sup&gt;47&lt;/sup&gt;</td>
<td>“TOD Distinctiveness” PB Placemaking Guidelines</td>
</tr>
</tbody>
</table>

### Table 2-4

<table>
<thead>
<tr>
<th>Region</th>
<th>Heavy Rail</th>
<th>Commuter/Light Rail</th>
<th>Bus Rapid Transit/Bus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area</td>
<td>70,000 - 95,000</td>
<td>45,000 - 70,000</td>
<td>23,000 - 45,000</td>
</tr>
<tr>
<td>Residential Employment and Residential Units</td>
<td>50,000 - 15,000</td>
<td>5,000 - 10,000</td>
<td>3,000 - 5,000</td>
</tr>
<tr>
<td>Gross Residential Density (Sta/Acre)</td>
<td>55 - 75</td>
<td>35 - 55</td>
<td>20 - 35</td>
</tr>
<tr>
<td>Gross Area Total Employment</td>
<td>60,000 - 80,000</td>
<td>40,000 - 60,000</td>
<td>20,000 - 40,000</td>
</tr>
<tr>
<td>Gross Employment Density (Units/Acres)</td>
<td>200 - 290</td>
<td>100 - 200</td>
<td>50 - 125</td>
</tr>
<tr>
<td>Mix of Uses</td>
<td>Residential / Non-Residential</td>
<td>35% / 65%</td>
<td></td>
</tr>
</tbody>
</table>
### Table 2-5

**Station Typologies - Community Scale**

<table>
<thead>
<tr>
<th>Station Type</th>
<th>Transit Mode (s)</th>
<th>Station Area Targets</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community Center (Urban)</td>
<td>Light Rail, BRT</td>
<td>40-60 du/acre, 1.5-3.0 FAR, 2-8 stories</td>
<td>Hillsborough County, FL</td>
</tr>
<tr>
<td></td>
<td>Light Rail, Streetcar, BRT</td>
<td>50-150 du/acre, 2.5 FAR min, 1-2.5 stories max</td>
<td>Reconnecting America</td>
</tr>
<tr>
<td></td>
<td>Light Rail, BRT, Bus</td>
<td>10-15 du/acre, min, 1-1.5 FAR min, 2-8 stories max</td>
<td>Sacramento, CA</td>
</tr>
<tr>
<td></td>
<td>Commuter Rail, BRT, Bus</td>
<td>&gt; 25 du/acre, 2.5 FAR, 3-5 stories</td>
<td>South Florida East Coast Corridor Study</td>
</tr>
<tr>
<td></td>
<td>Light Rail, BRT</td>
<td>No density, 0.6-3.0 FAR, 3-12 stories</td>
<td>Hillsborough County, FL</td>
</tr>
<tr>
<td>Employment Center</td>
<td>Light Rail, Commuter Rail, BRT</td>
<td>35-100 du/acre, 4.0 FAR</td>
<td>San Francisco Bay Area, CA</td>
</tr>
<tr>
<td></td>
<td>Light Rail, Commuter Rail, BRT</td>
<td>35-100 du/acre, 4.0 FAR</td>
<td>Reconnecting America</td>
</tr>
<tr>
<td></td>
<td>Heavy Rail, Light Rail, Streetcar, Commuter Rail, Bus</td>
<td>30+ du/acre, 2-20 stories, 90% site coverage</td>
<td>“TOD Distinctiveness” PB Placemaking</td>
</tr>
<tr>
<td>Suburban Center</td>
<td>Light Rail, BRT</td>
<td>40-60 du/acre, 1.5-3.5 FAR, 3-12 stories</td>
<td>Hillsborough County, FL</td>
</tr>
<tr>
<td>Community Center (Suburban)</td>
<td>Light Rail, BRT</td>
<td>15-40 du/acre, 1.0-2.5 FAR, 2-8 stories</td>
<td>Hillsborough County, FL</td>
</tr>
<tr>
<td>Transit/ Commuter Town Center</td>
<td>Light Rail, Commuter Rail, BRT</td>
<td>20-75 du/acre; 2.0 FAR</td>
<td>Reconnecting America</td>
</tr>
<tr>
<td></td>
<td>Heavy Rail, Light Rail, BRT, Streetcar</td>
<td>25-75 du/acre, 3.0-10.0 FAR, 4-15 stories</td>
<td>Atlanta, GA</td>
</tr>
<tr>
<td></td>
<td>Commuter Rail, Bus</td>
<td>&gt; 1.5 du/acre, &gt; 2.5 FAR</td>
<td>South Florida East Coast Corridor Study</td>
</tr>
<tr>
<td>Commuter Town Center</td>
<td>All Modes</td>
<td>&gt; 12 du/acre</td>
<td>Best Practices in TOD</td>
</tr>
<tr>
<td></td>
<td>Heavy Rail, Light Rail, BRT, Streetcar</td>
<td>25-75 du/acre, 3.0-10.0 FAR, 4-15 stories</td>
<td>Atlanta, GA</td>
</tr>
<tr>
<td></td>
<td>Light Rail, BRT</td>
<td>10 du/acre min, 0.5 FAR, 6 stories max</td>
<td>Sacramento, CA</td>
</tr>
</tbody>
</table>

### Table 2-6

**A Framework for TOD in Florida - Community Center**

<table>
<thead>
<tr>
<th>Community Center</th>
<th>Heavy Rail</th>
<th>Commuter/Light Rail</th>
<th>Bus Rapid Transit/Bus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross Intensity/Density</td>
<td>23,000 - 30,000</td>
<td>5,000 - 6,000</td>
<td>15,000 - 19,000</td>
</tr>
<tr>
<td>Net Intensity/Density</td>
<td>4.0 - 6.0</td>
<td>2.0 - 4.0</td>
<td>1.0 - 2.0</td>
</tr>
<tr>
<td>Net Commercial Floor Area Ratio (FAR)</td>
<td>60 - 80</td>
<td>40 - 60</td>
<td>20 - 40</td>
</tr>
<tr>
<td>Mix of Uses</td>
<td>45% / 55%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mix of Uses - % Residential / % Non-Residential</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Street Network and Building Design</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grid Density - Blocks per Square Mile for Vehicular, Bicycle, and Pedestrian Street Network</td>
<td>&gt; 350</td>
<td>&gt; 230</td>
<td>&gt; 150</td>
</tr>
<tr>
<td>Building Height (in Floors)</td>
<td>&gt; 3</td>
<td>&gt; 2</td>
<td>&gt; 2</td>
</tr>
<tr>
<td>Maximum Lot Coverage</td>
<td>80% - 90%</td>
<td>60% - 70%</td>
<td>40% - 50%</td>
</tr>
<tr>
<td>Minimum Street Frontage</td>
<td>80% - 90%</td>
<td>70% - 80%</td>
<td>60% - 70%</td>
</tr>
</tbody>
</table>
### Table 2-7

**Station Typologies - Neighborhood Scale**

<table>
<thead>
<tr>
<th>Station Type</th>
<th>Transit Mode(s)</th>
<th>Station Area Targets</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Urban Neighborhood</strong></td>
<td>Heavy Rail, Light Rail Streetcar, BRT, Commuter Rail, Bus</td>
<td>15-100 du/acre, 3-10 stories⁶¹</td>
<td>“TOD Distinctiveness” PB Placemaking</td>
</tr>
<tr>
<td></td>
<td>Light Rail, BRT</td>
<td>20-30 du/acre, 1.0-2.5 FAR, 2-5 stories</td>
<td>Hillsborough County, FL</td>
</tr>
<tr>
<td></td>
<td>Light Rail, Commuter Rail, BRT</td>
<td>40-100 du/acre, 1.0 FAR⁶²</td>
<td>San Francisco Bay Area, CA</td>
</tr>
<tr>
<td></td>
<td>Light Rail, Commuter Rail, BRT</td>
<td>40-100 du/acre, 1.0 FAR⁶³</td>
<td>Reconnecting America</td>
</tr>
<tr>
<td><strong>Transit Neighborhood</strong></td>
<td>Light Rail, Streetcar, BRT, Commuter Rail, Bus</td>
<td>20-50 du/acre, 1.0 FAR⁶⁴</td>
<td>San Francisco Bay Area, CA</td>
</tr>
<tr>
<td></td>
<td>Light Rail, Streetcar, BRT, Commuter Rail, Bus</td>
<td>20-50 du/acre, 1.0 FAR⁶⁵</td>
<td>Reconnecting America</td>
</tr>
<tr>
<td><strong>Suburban Neighborhood</strong></td>
<td>Light Rail, BRT</td>
<td>&gt; 12 du/acre⁶⁶</td>
<td>Best Practices in TOD</td>
</tr>
<tr>
<td></td>
<td>Light Rail, BRT</td>
<td>10-20 du/acre, 0.5-1.5 FAR, 2-3 stories⁶⁷</td>
<td>Hillsborough County, FL</td>
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<tr>
<td><strong>Neighborhood</strong></td>
<td>Commuter Rail, Bus</td>
<td>&gt; 8 du/acre</td>
<td>South Florida East Coast Corridor Study</td>
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<tr>
<td><strong>Neighborhood Transit Zone</strong></td>
<td>Heavy Rail, Light Rail, BRT, Streetcar</td>
<td>15-50 du/acre, 1.5-5.0 FAR, 2-8 stories⁶⁸</td>
<td>Atlanta, GA</td>
</tr>
<tr>
<td><strong>Neighborhood Transit Zone</strong></td>
<td>All Modes</td>
<td>&gt; 7 du/acre⁶⁹</td>
<td>Best Practices in TOD</td>
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### Table 2-8

**A Framework for TOD in Florida - Neighborhood Center**

<table>
<thead>
<tr>
<th>Intensity/Density</th>
<th>Heavy Rail</th>
<th>Commuter/Light Rail</th>
<th>Bus Rapid Transit/Bus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross Employment and Residential Units</td>
<td>5,000 - 8,000</td>
<td>4,000 - 6,000</td>
<td>2,000 - 4,000</td>
</tr>
<tr>
<td>Station Area Total Residential Units</td>
<td>3,000 - 4,500</td>
<td>2,000 - 3,000</td>
<td>1,000 - 2,000</td>
</tr>
<tr>
<td>Gross Residual Density (Du/Acre)</td>
<td>15 - 15</td>
<td>9 - 12</td>
<td>7 - 9</td>
</tr>
<tr>
<td>Station Area Total Employment</td>
<td>2,000 - 3,500</td>
<td>2,000 - 3,000</td>
<td>1,000 - 2,000</td>
</tr>
<tr>
<td>Gross Employment Density (Du/Acre)</td>
<td>20 - 30</td>
<td>15 - 20</td>
<td>10 - 15</td>
</tr>
<tr>
<td>Mix of Uses</td>
<td>Residual / Non-Residential</td>
<td>75% / 25%</td>
<td></td>
</tr>
<tr>
<td>Net Intensity/Density</td>
<td>1.5 - 2.0</td>
<td>1.0 - 1.5</td>
<td>0.5 - 1.0</td>
</tr>
<tr>
<td>Net Commercial Floor Area Ratio (FAR)</td>
<td>13 - 20</td>
<td>12 - 15</td>
<td>10 - 12</td>
</tr>
<tr>
<td>Street Network and Building Design</td>
<td>Grid Density - Blocks per Square Mile for Vehicles, Bicycle, and Pedestrian Network</td>
<td>&gt; 200</td>
<td>&gt; 130</td>
</tr>
<tr>
<td>Building Height (in Floors)</td>
<td>&gt; 2</td>
<td>&gt; 2</td>
<td>&gt; 1</td>
</tr>
<tr>
<td>Maximum Lot Coverage</td>
<td>60% - 70%</td>
<td>40% - 50%</td>
<td>40% - 50%</td>
</tr>
<tr>
<td>Minimum Street Frontage</td>
<td>70% - 80%</td>
<td>60% - 70%</td>
<td>60% - 70%</td>
</tr>
</tbody>
</table>

Florida TOD Guidebook 2-23 December 2012
Section III: TOD Design Principles

The development of vibrant, livable places around multi-modal transportation hubs can be a challenging endeavor. A balance is necessary between creating safe, desirable places and accommodating the various needs of the transit system. Areas for passenger pick-up, waiting, and drop-off, parking, ticketing, and other transit service needs are integrated into a neighborhood comprised of homes, workplaces, and shops. Essentially, transit-oriented development (TOD) is unique in that it must simultaneously address key issues associated with both public transportation (mobility) and attractive urban land development (livability), at the same time, in the same place.70

Effective urban design can enhance walkability, promote transit ridership, and foster a stronger market for dense, compact development.71 In addition to enhanced mobility accommodations, successful TOD follows fundamental urban design principles to establish distinct, memorable, “livable” places. In Transit Villages, authors Michael Bernick and Robert Cervero identify the key elements of successful TOD as the “three D’s”- density, diversity (mixed uses), and design (the public realm), while also noting parking location and a reduction in quantity as cardinal issues. Many of the same design principles championed by the New Urbanism planning movement are also evident in successful TODs, including the “three D’s.”72 Moderately high densities, interconnected street networks, mixed land uses, superior pedestrian environments, varied housing types, attractive public open spaces, and priority for non-automobile forms of mobility are common goals of both TOD and New Urbanism.73 These fundamental planning principles apply to all scales of development and have been proven over time to establish successful, desirable places. Good urban planning and successful TOD follow interrelated, core principles: Compact Development, Interconnected Blocks and Streets, Enhanced Multi-modal Mobility, Appropriate Density, Mixed Uses, Strong Urban Form, Public Open Spaces, and Parking. Each of these principles is discussed in this section.

Compact Development

Compact development concentrates shopping, workplaces, housing, and public open spaces in close proximity to each other and, in the case of TOD, to a premium transit station. A TOD at its basics is a traditional neighborhood intrinsically linked to a transit station.74 The size of the area considered “compact” corresponds to the distance most people can comfortable traverse by walking, often called a “pedestrian shed” or “walkable catchment area.” The pedestrian shed is generally accepted as the area within a quarter-mile radius or 1320 feet from the origin. This is generally accepted as the distance most people will walk, usually in about 5 minutes, to satisfy daily needs. Access to premium modes of transit increases the pedestrian shed. Peter Calthorpe’s original model for TOD suggests the pedestrian shed extends to at least 2000 feet. Today, planners generally accept that the average person will walk up to a half-mile, or 10 minutes, to access transit if the environment is safe, convenient, and interesting.75 76 Accordingly, for
the purposes of TOD, most typologies apply to the area within a half-mile radius surrounding a station, or approximately 500 acres (the “station area”), with an added emphasis on development located within the first quarter mile surrounding the station. For practical purposes, a “compact” area varies in size and form in response to both natural and manmade features.

High concentrations of residences and jobs within the station area are necessary to support the initial cost of transit infrastructure, provide ridership, and contribute to long-term system viability. It is important to note that scale of the buildings containing needed density and intensity can vary dramatically in height and massing, not only from place to place but also within the compact area itself. When land use mix and urban design are taken into consideration, studies find that decentralized residential and occupational locations are difficult to serve with traditional fixed-route public transit because transit works best when a large number of people are traveling to and from concentrated nodes of activity. Not surprisingly, dense, compact development is found to be more conducive to efficient transit operations than dispersed and sprawling patterns of development.

Interconnected Network of Streets and Blocks

As is noted throughout the literature and practice, a key component of successful TOD is walkability. Transit users inevitably access stations and their destinations as pedestrians. An interconnected street and block system is a core component for achieving a walkable environment. Using the number of intersections within the station area, areas with dense street networks (comprised of small streets) were compared to areas with sparse street networks (comprised of large streets), revealing a measurable, statistically significant increase in transit ridership in denser, more walkable environments.

When streets intersect with other streets, a fine-grain network results with multiple routes facilitating access for all modes of transportation. A well-connected street network with smaller block sizes shortens travel distances for pedestrians and cyclists, allowing travel times to better compete with personal automotive transportation. Another benefit of utilizing a dense street network is both street and intersections widths can be small and, therefore, safer to cross for both pedestrians and motorists.
The following analysis by Dover, Kohl & Partners, Vince Graham, and Casey Hawthorne illustrates the power of an interconnected street network. Given one origin and one destination (points A & B), with two roads connecting them, only one possible route is available. If two additional roads, parallel to each of the original roads are added, then two possible routes exist between points A & B. As the grid or network of streets increases to a six-road grid, the number of potential routes grows exponentially to six possible routes between point A and point B. A grid of nine roads results in 35 routes, and the complete grid represented in these diagrams (a 12 x 16 road grid) results in 12,870 routes. The grid illustrated in the example is, in fact, the street network in the Town of Beaufort, South Carolina, which maintains a highly celebrated, beautiful physical character while providing easy, safe access throughout the town for pedestrians, cyclists, and drivers.

The increased walkability afforded by smaller block sizes in American settlement patterns has been commonly established since 1961 when Jane Jacobs published her observations of cities. In terms of the specific metrics that ensure appropriate block sizes for walking, recommendations vary, including limiting maximum block faces to 400 feet; maintaining an average overall block size of less than four acres; and having an average block perimeter of 1000 to 2000 feet.

In addition to block sizes, the intensity of block grids (blocks per square mile) or the number of intersections per square mile are considered when measuring the walkability index of a place. The higher the number of blocks in the block grid density, the more interconnected the place. Intersections catalyze connectivity, thereby enhancing walkability. Similar to block size thresholds, recommendations vary regarding the number of intersections needed to be considered “walkable.” For example, LEED-ND standards recommend at least 90 intersections per square mile, while other research recommends slightly higher (e.g. 150 intersections per square mile), or slightly lower figures (e.g. 78 intersections per square mile). Considered together or individually, block size, number of blocks, and number of intersections provide measurable indicators of how walkable a station area is and how easily transit can be accessed.
Figure 2-6 - Interconnectivity Analysis

An analysis of the street grid of Beaufort, South Carolina, by Dover Kohl & Partners, et.al.
Interconnected Street and Block Networks: Three Case Studies

Portland, San Francisco, and Washington DC, are widely considered three of the most walkable, transit-supportive cities in the country. The street and block networks of these cities were analyzed for interconnectivity and block size. Maps delineate a sample area of each city’s downtown core. Circles with quarter-mile radii are provided for reference, which represent 125 acres or the area generally traversable within a five-minute walk. For comparison purposes, the sample case study areas are each presented at the same scale, and all of the areas contain at least one rail and multiple bus stops.

It is interesting to note that while each city presents a strong TOD environment, the built scale and character varies considerably among the areas analyzed. Building height in the areas sampled range from two to eighteen stories in Portland, from two to forty stories in San Francisco, and a highly consistent street façade of three to eleven stories in Washington, DC.

The block size of each city was evaluated in comparison to recommendations identified in the TOD literature. Although each study area contained at least one block face measuring more than 400 feet, overall block sizes were significantly less than the recommended four-acre maximum. Portland averages block sizes of 1.1 acres; San Francisco averages block sizes of 2.4 acres; and Washington, DC has slightly larger average block sizes at approximately three acres. Additionally, each city demonstrates walkable block perimeters with Portland averaging about 888 feet, San Francisco averaging 1,359 feet, and Washington DC averaging 1,415 feet. Only Portland had an average block perimeter of less than 1,000 feet, but all cities had block perimeters well below 1,500 feet.
Literature Review

Portland OR: View of the area analyzed. Image Source: Bing.com

San Francisco, CA: View of the area analyzed. Image Source: Bing.com

Washington, DC: View of the area analyzed. Image Source: Bing.com
In order to measure interconnectivity, the intersection intensity and block grid density were analyzed for each city. Portland measures as highly walkable with 92 intersections and 99 blocks within the quarter-mile radius area. This pattern correlates to approximately 471 intersections per square mile, which is three times higher than any recommended target. The block grid density of Portland measures 507. San Francisco has the second highest measure with 48 intersections and 49 blocks within the quarter-mile radius area, correlating to approximately 245 intersections per square mile and a block grid density of 250. Washington, DC has 37 intersections and 38 blocks within the quarter-mile area, correlating to 189 intersections per square mile and a block grid density of 195. It is interesting to note that the urban fabric of Washington DC contains numerous diagonal thoroughfares that enable pedestrians to efficiently navigate areas with larger blocks.
Street Design

Streets have an active role in the “place making” aspect of TOD and are responsible for far more than providing adequate travel lanes for automobile travel. Within TOD, streets are considered to be civic spaces that foster activity and provide opportunities for social interaction. Streets must present pedestrians with a sense of place through thoughtful building scale proportions, streetscape elements, and accessibility to complementary uses such as parks and town squares. Various local government-led TOD planning efforts finance streetscape beautification projects as a preliminary revitalization strategy in catalyzing private sector investments.

Streets in TOD must focus on multi-modal transportation, prioritizing pedestrian travel over all other modes, whereas conventional roadway design concentrates primarily on automobile travel and circulation. In 2003, a planning and design movement known as “complete streets” surfaced, advocating for roadways that accommodate multi-modal transportation including pedestrians, bicyclists, transit, and automobiles. While successful streets can vary in form, hierarchy, detail, and design, the common elements of complete streets are important in all TOD streets, including narrow vehicular travel lanes, on-street parking, bicycle lanes, wide sidewalks, landscaping, and transit infrastructure.

Streets in TOD areas must be inviting for pedestrians and cyclists, as well as accommodate vehicular traffic. In order to improve pedestrian and bicycle safety, vehicular traffic must travel at a calm speed. An Institute of Traffic Engineers study found that pedestrian injury risks increase significantly as speed limits increase from 20 to 30 mph. Driving speeds increase as travel lane widths increase. Narrowing automobile travel lanes naturally slows traffic, creating a safer mobility environment for bicyclists and pedestrians. These street design considerations are especially important for residential areas in TOD, as traffic should be even slower than in commercial areas. Since TOD could occur in areas with both state and local roads, two state resources guide road-
way design, including lane widths. The Plans Preparation Manual informs design for roads that are part of the State Highway System and the Manual of Uniform Minimum Standards for Design, Construction, and Maintenance for Streets and Highways (Commonly known as the “Florida Greenbook”) offers guidance for local roads.97

On-Street Parking

On-street parking is an important component of many streets in TOD. On-street parking provides a shared parking arrangement, decreasing the need for on-site parking and providing visibility and access to commercial uses. Properly managed, each on-street space can accommodate 18 to 22 cars per day, which is the equivalent of three to five off-street parking spaces.98 Perhaps most important, on-street parking provides a physical buffer between pedestrians and moving traffic and helps decrease travel speeds.99 On thoroughfares with transit running in exclusive bus lanes, on-street parking may not be possible and may be accommodated on other streets within the TOD.

Cyclists

Accommodating bicyclists can expand transit station catchment areas far beyond the typical pedestrian shed.100 As such, most station area planning efforts extend at least a mile from the transit station. Cyclists need safe, convenient, and enjoyable routes and adequate parking facilities.101 Bicycle travel can be accommodated in street designs in several arrangements, including on-street bike lanes, shared travel lanes (with or without markings), and multi-use paths.102

The type, location, and width of the bike lane is a consideration of the overall street design. For streets with higher travel speeds, a designated bike lane may be preferred. Streets with high volumes of traffic and/or higher speeds may require wider bike lanes than those with less...
traffic or slow speeds. 103

On streets designed for slower speed, bikes can share the travel lane, with or without “sharrows” (shared lane markings). Sharrows serve a number of purposes: they guide cyclists to the proper location in the lane, they remind motorists of potential cyclists using the travel lane, and they remind cyclists of the correct direction of travel.104

Multi-use or shared use paths provide the benefit of separating both pedestrians and cyclists from automobile traffic.105 Multi-use paths are generally wider than sidewalks in order to accommodate both modes of travel, frequently utilizing pavement markings to minimize potential conflicts. In order to balance all modes of transportation, the right-of-way widths in TOD should be divided 50/50 between the automobile and pedestrians/cyclists, sharing equal ownership of user capacity. 106

Short-term bicycle parking should be included in public right-of-way design. Bicycle parking should be located prominently, at all transit stations and near the entrance of buildings, and preferably sheltered from the elements.107 In retrofit areas, it may be appropriate to replace vehicular parking spaces with bicycle parking – approximately twelve bicycles can fit in a single vehicle parking space.108

Wide Sidewalks

The Florida Greenbook and Accessing Transit Design Handbook for Florida provide guidance on minimum standards for sidewalks. Wide sidewalks are important support the high levels of pedestrian activity associated with TOD. Wide sidewalks in TOD also provide room for outdoor café seating, retail displays, transit shelters, and street furniture. Clear crosswalks at intersections are an important element of street design. The use of bulb-outs, or sidewalk/curb extensions, increases the sidewalk area around transit stops, reduces crossing distances, and
calms traffic, creating safer pedestrians environments.\textsuperscript{109,110} Mid-block crossings and medians providing areas for pedestrian refuge have been also proven successful at slowing traffic and allowing pedestrians to comfortably and safely cross streets.\textsuperscript{111}

Properly planted, street trees serve three purposes in the urban environment: beautification, safety, and shelter. Street trees planted between sidewalks and roadways both psychologically and physically shield pedestrians from traffic, improving the pedestrian experience. Strong alignments of regularly spaced street trees provide visual enclosure, which tends to cause drivers to slow down; this is especially important when building heights are not adequate to establish spatial definition of the street. Installing shade trees on streets provides shelter from the sun in tropical climates, reduces urban heat index, and improves air quality.\textsuperscript{112}

\textit{Transit-Friendly Streets}

Transit-friendly streets involve balancing all of users, rather than having any single mode dominate the space.\textsuperscript{113} The best condition creates equilibrium among all the modes of a street: transit, car, bicycle, and pedestrian. In addition to the full complement of street elements discussed above, transit-friendly streets require well-designed, sheltered waiting areas, with accurate transit system information. Where shelters are located, sidewalk widths must be adequate to accommodate shelter, seating, and queuing passengers while allowing a sufficient route for passers-by. The \textit{Accessing Transit Design Handbook for Florida} provides guidance on these for sidewalks. Utilizing “bulb-outs” (sidewalk extensions) can be a useful tool at transit stops. Bulb outs increase sidewalk areas and improve efficiency by enabling transit vehicles to stop in travel lanes rather than pulling into bus bays, which can reduce passenger boarding time and eliminate the need to weave in and out of traffic, thereby improving travel time and reducing potential conflicts with automobiles.

Rather than balance all users, the concept of streets serving only pedestrians (“pedestrian malls”) or pedestrians with transit (“transit malls”) were introduced in the late 1960s. More than 200 cit-
ies closed shopping streets to through traffic, transforming them into pedestrian-only landscaped thoroughfares – and fewer than 20 have proven successful. According to the Transit Cooperative Research Program, Report 33, “Transit agencies, in particular, need to be careful not to rely on transit-only solutions. The effort expended on Chicago’s State Street to make it a transit mall in the early 1980s failed to acknowledge the other uses on the street, and additional millions had to be spent to correct it. A total redesign of the State Street Mall has recently been completed to return it to a mixed-traffic street, made possible in part because the construction of a new subway line reduced the number of buses on the street.” In nearly every city where they have been built, transit malls are being rethought or have been altered from their original concept. Portland, one the country’s most transit-friendly cities, upgraded their transit mall in 2007, adding light rail to the extensive bus service and allowing private vehicles and bikes to travel the full length of the mall in the left side lane. Today, buses, trains, cars and bikes all share the road on the Portland Transit Mall.

Density

Residential density provides an acceptable measure informing transit service levels, given that logically, ridership levels increase as more people have access to the transit. The table below illustrates the generally accepted correlations between minimum residential densities and the type and frequency of transit they support. TOD requires premium transit service, which is not achieved by the lower densities (e.g. 4-5 du/ac). Peter Calthorpe’s highly regarded TOD research recommends an average of 10 units per acre for neighborhood TODs, a minimum average of 15 units per acre in urban TODs, and suggests maximum densities be dependent upon local plans. In addition, for successful TOD, these densities must be compressed into a compact area. Conversely, low-density areas tend to have greater separation from other land uses, which encourages automobile use as the longer distances tend to deter traveling via walking and biking (particularly important given that bus transit systems are most frequently accessed via walking or biking).

Table 2-10

<table>
<thead>
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<th>Type of Transit Service</th>
<th>Density Threshold (Dwelling Units/Acre)</th>
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</thead>
<tbody>
<tr>
<td>Not TOD-Supportive</td>
<td>Local Bus (1 bus per hour)(^1)</td>
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<tr>
<td>T TOD-Supportive</td>
<td>Intermediate Bus (1 bus every 30 minutes)(^1,2)</td>
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<tr>
<td></td>
<td>Premium Bus Service (1 bus every 10 minutes)(^1,2)</td>
</tr>
<tr>
<td></td>
<td>Light Rail Services(^2)</td>
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\(^1\) Institute of Transportation Engineers (1989)
\(^2\) Reid Ewing (1996)

The amount of density prescribed must be appropriate for the scale and context of the community, its location, and transit function. Generally, the greatest density is encouraged in the core of the station area, immediately surrounding the station, transitioning downward toward the edges of the district, where it meets the surrounding neighborhoods. A range of building types can occur within station areas, which contributes to increased affordability. A range of appropriate densities is presented by station typology in the Typology section, starting on page 2-20.
High density (the threshold of which varies by community) is often a contentious issue, prompting fears of parking scarcities, traffic congestion, and reduced property values. In fact, research suggests a premium associated with property located in walking distance to transit, especially for residential uses. The long term availability of workforce and affordable housing in TODs frequently emerges as a concern. Higher density or building height in exchange for diverse price points or requiring a percentage of units offered at lower prices to income-restricted applicants are common tools in TOD planning and implementation. Alleviating misconceptions and educating the public about the benefits associated with dense, compact development is an important part of the community visioning aspect, and should be executed early on in the TOD planning process. Without public support to increase densities, especially in suburban communities, development cannot be transit-supportive, inhibiting any potential for TOD.

Mix of Uses

A wide mix of uses including residential, office, and retail is necessary to support both the livability and mobility aspects of TOD. In terms of “place-making, a mix of uses ensures interesting activities occur at all hours throughout the day, contributing to the vitality of the area. Though a full mix of uses is not needed and probably will not occur in every station along a transit corridor, communities with “24/7” uses make the most of the link between transit and development.
In terms of mobility, mixed use increases transit efficiencies and facilitates walking. By combining origins (housing) with destinations (employment, shopping, and schools), mixed-use development patterns balance peak transit ridership flow, carrying rush-hour commuters in both directions, serving more riders with the same infrastructure. When mixed uses occur within a compact area, pedestrians and transit patrons have opportunities to internalize multiple trips (e.g. buy lunch, run errands) within TODs, instead of driving outside of the station area.

Mixed uses can be organized both vertically and horizontally. A vertical arrangement distributes different uses within different stories of a single building. Horizontal arrangements occur when a single building contains one use, but is located adjacent to other buildings containing distinctly different uses. The arrangement most likely to occur is affected by the type of TOD and financial market forces.

TOD typologies anticipate varying ratios of mixed-use development, as a neighborhood TOD will likely have more residential uses than a regional employment center. Expert opinions vary on general guidelines for appropriate ratio of mixed-use development in TODs. Some argue that since every TOD is unique, it is impossible to have a “one size fits all” land use formula to follow. However, there is consensus that land use decisions should result from market feasibility analysis, community visions, and be sensitive to adjacent development patterns.

Market cycles ultimately determine the pace and type of development that can be absorbed and financed. Market forces will cause some station areas to have more residential uses, and others to have more commercial or employment-based uses. The implementation plan for TOD must anticipate periods when one use...

Mixed-use buildings lining a commercial street in downtown Delray Beach.

Mixed use building integrating retail office and residential uses in Palm Beach, Florida.

Mixed use can occur both vertically within a building, or horizontally within a given block. The image above shows a single block that accommodates a diversity of uses.
will develop ahead of others – and allowing mixed land uses can position a community to capitalize on current cycles. Further, an effective TOD strategy recognizes market forces and tries to balance them, if necessary.

Some uses are contrary to TOD, while others can be accommodated with adjustments to their conventional form. Inactive or auto-oriented uses such as, storage facilities and car sales are generally not appropriate for TOD. Other uses, like large large-format retailers or grocery stores can contribute to TOD, provided they forgo their traditional “big box” built form and combine with other uses. Some uses are discouraged within the core station area, but could be accommodated within the transit neighborhood areas (i.e. banks utilizing drive-through establishments could be designed to use alleyways or other secondary access drives to minimize conflicts with pedestrians). Other uses like surface parking lots and industrial uses have negative impacts on the public realm and are therefore generally excluded.

In TOD, the most intense development is typically concentrated around a transit
station, with building scale, mass, and the intensity of uses gradually decreasing from the core to the edge of the station area. Careful attention in establishing an appropriate hierarchy and transitions is needed. In order to ensure compatibility, buildings of similar scale and massing containing compatible uses should face each other across a street. Transitions between differing intensities, uses, and scales should occur at the rear of buildings or at alleys.

**Urban Form**

For centuries, architecture has been used to frame streets and civic spaces, providing a sense of enclosure, spatial definition, and establishing a comfortable scale for pedestrians. The minimum building height-to-street width ratio is one-to-three, with the street width no greater than three times the height of the adjacent buildings. As a general rule, the smaller the ratio, the greater the sense of place, which often results in higher real estate values.\(^{133}\) At a minimum, the ratio should not be greater than one-to-six, with streets being six times wider than adjacent building heights. This ratio range is based on how a

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As stated in *Architectural Graphic Standards*, a height to width ratio of one-to-three is the minimum height to width ratio if a sense of spatial enclosure is to result. The smaller the ratio, the higher sense of place and generally the higher the property values.

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human eye interprets vertically enclosed space from a ground-angled view.\textsuperscript{134} Along wider thoroughfares and in residential areas where building are set back further from the sidewalk, street tree canopies can be used to successfully creating a sense of enclosure.\textsuperscript{135} Thriving TODs tend to have average enclosure ratios as their minimum, and in many cases, have some of the tightest ratios in the country, significantly contributing to the success for TOD “place making” livability.

Building form can vary within TOD, depending upon the intensity of the station typology and location within the station area. While lot coverage, building setback, and building height may vary among and within TOD station areas, most TOD areas are characterized by strategically placed multi-story buildings often with minimal setbacks and non-intrusive parking arrangements. In all instances, building façades are oriented toward the street with the primary entries accessed from the sidewalk.\textsuperscript{136} Windows and doors facing the street provide natural oversight of the area. Architectural features such as store fronts, balconies, awnings, and colonnades provide visual interest and protection from the weather.\textsuperscript{137} In order to ensure this built form occurs, many local governments are using Form-Based Codes instead of conventional zoning in TOD planning efforts, as they offer greater influence over urban building form, with a lesser focus on use.\textsuperscript{138}

Open Space

Open space is an essential amenity and social catalyst for TOD.\textsuperscript{139} A variety of public open spaces strategically sewn into the urban fabric is an essential feature of livable, compact development.\textsuperscript{140} Moreover, integrating open space within a well-connected street grid offers pedestrians and cyclists additional safe and efficient travel path opportunities.\textsuperscript{141} Urban open space can be in the form of public plazas, active and passive parks, or open green space. Public open space should be located near transit stations, public streets, residential development, and retail uses to attract users at all times of the day.\textsuperscript{142} Like streets, open spaces should be lined by the fronts of buildings, with windows and doors ensuring natural surveillance of the space.

\textbf{Open Space: Three Case Studies}

The block samples from Portland, San Francisco, and Washington DC were also analyzed for the amount of public open space. The study reveals that while Portland may have the most walkable urban form, with smaller blocks and an abundance of intersections, it has the least amount of green space of the three samples. Within the quarter-mile radius, or core area, Portland has 4 acres of open space, or roughly 3.2 percent of the area. San Francisco has an abundance of pocket parks and plazas, totaling 9.2 acres or roughly 7.4 percent of the core area. Washington DC has 5.9 acres.
of pocket parks and public plazas within the core area, comprising 4.7 percent. These spaces provide places to enjoy as well as pedestrian routes reducing travel distances across the larger block structure.

**Parking**

Parking is an essential component of development. Sufficient parking must be provided in reasonable proximity to the destination it serves. In regard to TOD, the quantity, location, and cost of parking are critical factors affecting both the livability and mobility aspects of a station area.

**Quantity**

Studies examining parking conditions within various TODs provide empirical evidence that transit oriented developments require less automobile use and, therefore, demand fewer parking accommodations. Peter Calthorpe’s (1993) work in TOD concludes that TOD parking ratios can be

**Benefits of Reduced Parking Requirements in TOD**

Lowering residential parking ratios by 50 percent for TODs in station areas with quality transit service can result in a number of benefits:

- An increase in the residential density of a TOD by 20 to 33 percent, depending on the building type
- Savings of 5% to 36% on parking costs (after accounting for the additional number of units to be parked from the increased residential density)
- Potentially greater developer profits and/or increased housing affordability from higher densities, lower capital costs for parking, and reduced traffic impact fees
- Local officials and neighborhoods may be more apt to support increases in residential densities near transit with proof that less traffic results from TODs than conventional development
- Lower levels of traffic generated from TODs reduce the need to widen roadways

Image Source: TCRPC
much lower than traditional suburban parking requirements prescribe, recommending that residen-
tial parking requirements be based on a detailed parking analysis and traffic study for individual
TOD sites. In slight contrast, other studies recommend reducing transit station area parking by
20 to 50 percent. It is important to note that appropriate parking ratios will vary and likely
be determined by individual station area needs and circumstances. For example, a satellite
Community Center with a large residential population using transit to travel to work may require
more parking than a station located in the core of a large city.

Another factor affecting parking quantity requirements is the prevalence of post-WWII automo-
bile-oriented suburban development patterns of the past few decades. This pattern has, over time,
imposed a development standard requiring high parking quantities by both lenders and local gov-
ernments. In some areas, there has been a reluctance to reduce conventional parking ratio require-
ments for TODs, despite the demonstrated decrease for demand. In contrast, communities
intent on fostering TOD are adopting maximum parking allowances rather than minimum require-
ments to avoid an oversupply of parking.

On-Street Parking

On-street parking should be provided in com-
mercial, mixed-use, and higher density areas,
like TOD, whenever possible. On-street
parking allows for quick, convenient access
to buildings, and acts as an effective traffic
calming device. By physically shielding pe-
destrians from traffic, this parking configura-
tion improves the pedestrian experience.

Off-Street Parking

Parking should be consolidated to utilize
minimal land area within station areas. Sur-
face parking lots can diminish the quality of
urban realms and should be limited, espe-
cially within the core areas of TOD. Off-
street parking should be shielded from the view of the street to ensure an attractive, interesting
pedestrian environment. Parking garages should be lined by other uses along main pedestrian
routes.

District-Wide Parking Strategy

Within TOD, parking solutions should use a district-wide strategy to meet the parking needs of
both the transit station and the overall station area. A coordinated approach improves land uti-
ilization and increases efficiency over providing parking on a parcel-by-parcel basis. For areas
like TOD, that become “park once” environments, individual requirements should be reduced.
“Park once” areas are places that easily allow a person to park and then walk or utilize transit to
travel among multiple destinations, instead of driving to and parking at each specific destination. District-wide strategies usually combine public on-street parking, municipal parking options, and mixing land uses to share spaces. Mixed-use development foster multi-purpose trips, allowing one parking space to serve several different uses, reducing parking demands. For example, in areas with commercial, office and residential uses, the residents generally vacate parking spaces during working hours, freeing them for use by businesses. Or workers/customers live nearby, lessening the parking demand.

Parking Cost

The free and plentiful availability of parking spaces at desired destinations encourages continued automobile use. As parking availability decreases and, subsequently, parking has an associated fee, transit ridership is proven to increase. Interestingly, the increased cost of parking has been found to have a greater impact on transit ridership than the level of service or frequency. Cervero found that transit ridership declines if residents have access to a private vehicle and parking is free at a resident’s workplace. For on-street parking, meters ensure frequent turn-over of parking space, improving the visibility of businesses and access for patrons.

Implementing the TOD Principles

In order to successfully execute the TOD principles, several implementation tools are available for local governments, partner agencies, and private investors. Station area plans can be a highly useful resource to help establish coordinated implementation efforts. Generally, station area plans analyze a variety of elements affecting the viability of TOD such as the housing market, demographic conditions, the local economy, multi-modal circulation patterns, urban form, parking supply, and both existing and planned land uses, identifying both opportunities and challenges to implementing TOD. Drawing from both analysis and public input, station area plans usually include a visualization of the desired physical form of a TOD station area. This vision may be a narrative discussion of the intended qualitative characteristics supported by images from other places, and may include a site-specific master plan that graphically illustrates the intended built-out condition. Station area plans include recommendations for various land use, planning, economic, and design components to realize the vision. This tool allows community stakeholders to visualize the proposed development and minimizes the opposition that can occur to projects without a clear vision.

In addition, the related planning process can promote interaction among local governments, agencies, investors, and others who will ultimately be responsible for bringing the concept from paper to construction. Phasing and implementation strategies, specifically those identifying funding sources and timelines for construction, are frequently included in station area plans. Ultimately, station area plans guide changes to comprehensive plans and land development regulations and help inform capital improvement expenditures in long range transportation plans and capital improvement plans to implement transit-supportive development over time. These varied implementation tools and strategies are discussed in the following section.
Section IV: TOD Implementation

TOD is a multi-disciplinary public policy goal and outcome that corresponds to the symbiotic relationship between transit investments and land use development patterns. Early examples of TOD emerged organically, as documented by the natural land use/transportation relationships that have existed since the dawn of civilization, from the riverbank developments along rivers used for transport in ancient civilizations to the “streetcar suburbs” of the late 19th century. These land use/transportation correlations were products of market demand and real estate response, occurring in the absence of direct land use regulation.

Zoning and land use regulation emerged in the 20th century, initially designed to prevent nuisances and distance select neighborhoods and districts from “undesirable” land uses. This approach segregated land uses, which precipitated the sprawling land development patterns that began to emerge in post WWII era. Coupled with highway expansion and the dismantling of fixed-guideway transit systems, the suburbanization that began in the 1950s initially resulted in low-density residential neighborhoods surrounding jobs-heavy urban cores. However, over time, this trend contributed to a decentralization of workplaces as well, resulting in inefficient land development patterns characterized by extended commutes, deteriorating environmental conditions, and inconsistent land use patterns. “Smart Growth,” “Traditional Neighborhood Development” and related modern approaches to land use regulation began to appear in the 1980s, partially in reaction to the negative externalities of prevailing land use trends. These and related modern zoning and land use regulations provide useful tools to implement TOD in today’s land development arena.

In the U.S., early land use plans emerged as broad, visionary initiatives to establish beneficial and mutually supportive relationships among land use and districts. Early 19th century examples included Olmstead’s “city beautiful” plans for cities with open spaces, well-defined transportation networks, and integrated public infrastructure that conferred value on private properties. Burnham’s celebrated plan for Chicago set forth a distinct relationship among land use, multi-modal transportation systems, and public spaces. Howard’s “garden city” design emphasized real estate development with rail as the primary connection between developed areas. Graphic land use planning advanced in the U.S. with detailed arrangement of land use, transportation networks, and other physical components at the site, city, regional, and mega-regional scale. Modern application of these site planning techniques have strong applicability for TOD in today’s environment, offering a opportunity to visually illustrate relationships between and among transit systems and the corresponding land use environment.
Another component of TOD implementation involves the financial tools and strategies to build and operate transit and the transit-supportive land development that correlates to successful transit. While historic transit systems were privately funded, modern transportation infrastructure and its operation requires funding subsidies for it to be maintained as a public good that is commonly available to all users. The financing of transit through joint development initially occurred in the 1970s with federal/local transit financing relationships, and the advent of other varied public/private financial partnerships have continued over time. Financing mechanisms and strategies are discussed in this section relative to TOD implementation.

Finally, as has been discussed through this chapter, there is a range of stakeholders, both public and private, that interact to implement TOD, including governments at all levels (local, regional, state, and federal), agencies, the development community, and the public (residents, citizens, business and property owners). This breadth of actors can present logistical challenges for TOD implementation, and the literature provides strategies and approaches to help balance complementary and competing interests to accomplish desired outcomes.

**TOD Policy Environment - Varying Scale & Focus of Regulations**

From ancient times to the modern era, rules and regulations have helped shape societies in form, function, and appearance. At the earliest point in recorded history, the “Law of the Indies,” established in 1573 by the Spanish Emperor Phillip II, was designed to address the spatial development of Spanish settlements in their American colonies. This mid-millenium doctrine addressed multi-modal transportation in an early form, stipulating street patterns to enable pedestrian and cart traffic, with an anticipation of future right-of-way needs and building placement to accommodate it. Although colonial settlements in the U.S. occurred in the absence of planning, development parcels were nonetheless arranged in a grid pattern to increase the number of higher-valued corner lots. In advance of the automobile, development in the U.S. was characterized by a traditional European settlement pattern, with a mixed-use, pedestrian-friendly arrangement of buildings and transportation networks.

As the country became more urbanized, the regulation of land use by policy began to appear in the early 1900s, designed primarily to address nuisances and restrict land development activities that became apparent with an unregulated mix of uses in cities. At the site-level, zoning first emerged with New York City’s zoning resolution in 1916, which set in motion the legal basis for the regulation of land use in the U.S. “Euclidean” zoning was upheld by the courts in the hallmark “Euclid v. Ambler” ruling in 1926, enabling the distinct separation of uses by type. Early zoning tended towards land use segregation, intentionally separating the range of uses within cities (e.g., single- and multi-family housing, commercial, public, institutional). A de facto result of this zoning approach became an exaggerated separation of uses, which unintentionally jeopardized successful transit service over time.

As discussed in section one in this chapter, transit networks gave way to automobile dependence as the primary mode of transportation in the U.S. by the 1950s. With this shift, land development activity became decentralized, characterized by sprawling single-use residential subdivisions at the...
edge of urban areas. Extensive freeway construction beginning in the 1950s contributed to an expanded, low-density development settlement pattern, coinciding with the rapid population growth of the post-war baby boom in the U.S., which exacerbated this form of settlement across the nation.

By the 1970s, the effects of extensive roadway/freeway construction, rapid population growth, and decentralized settlement patterns became one of the targets of new environmental concern in the U.S. Federal funding had created transit systems in several major metropolitan areas, including Atlanta, Washington, and San Francisco. However, as described by Cervero, these “auto-oriented transit” systems were designed as commute alternatives to deliver suburban commuters from the suburban landscape into downtowns, utilizing transit stations as park-and-ride access. At multiple levels – among policy-makers, academics, and citizens – an environmentally-conscious, anti-suburb, anti-sprawl sentiment began to develop in reaction to the growing concerns over negative suburban land use impacts. Studies such as California’s analysis of commuting patterns indicated the growing disparity between the long-distance commutes from the suburbs versus the efficient convenience of inner-ring neighborhoods proximate to transit, and the negative effect on efficiency, economics, and quality of life.

As the academic and environmental community coalesced, broad public policy initiatives began to address the breakdown of sprawling land development patterns and their negative effects on environmental conditions. Passage of the federal environmental policy in the 1970s required federally funded projects address clean air and water issues. At the state level,
states began to address growth management, beginning with comprehensive planning legislation in Hawaii, Vermont, Florida, and Oregon (adopted between 1961 and 1975).\textsuperscript{169} DeGrove (2005), a growth management pioneer in Florida, proffers these early growth management frameworks were established with the premise that state governments maintained the ultimate authority, with limited exceptions, in the public policy arena dealing with land use and planning. Further, his broad review of growth management legislation across the nation, DeGrove suggests environmental concern was the key factor that mobilized stakeholders to advocate for growth management legislation.\textsuperscript{170} Stakeholders involved with growth management efforts began with residents and homeowners, spreading to local governments, agencies, and ultimately the development industry, with recognition of the negative economic consequences of sprawl development patterns. These early efforts set the stage for broad land use regulation.

By the 1980s, a series of new planning initiatives raised further awareness of the land use/transportation dynamic. “Traditional Neighborhood Development” was introduced as a planning approach most notably by Duany and Plater-Zyberk (DPZ), with the design of “Seaside” (Florida) as a traditional, pedestrian-friendly return to classic planning conditions. Portland, Oregon’s regional study of the transportation and land-use connection was published in the 1988 “Making the Land Use, Transportation, Air Quality Connection,” becoming known as LUTRAC.\textsuperscript{171} The following year, Calthorpe’s California-based design charrettes led to the “Pedestrian Pocket Book,” which integrated DPZ’s TND work and identified the strengths of a “a simple cluster of housing, retail space and offices within a quarter-mile walking radius of a transit system.”\textsuperscript{172} Carlton (2007) also notes that in 1989, Bay Area Rapid Transit (BART) commissioned a study of high-rise housing near BART stations, finding potential benefits from an improved “jobs-housing balance,” leading to policies to promote higher density (70-90 dwelling units per acre) apartments with ground-floor retail for value-capture and rider amenities. These separate but related actions, combined with complementary environmental and academic initiatives of the era, led to a rethinking of the planning approach across the nation along with a policy basis for TOD, especially among state and local governments, regional councils, and transit agencies.

\begin{figure}
\centering
\includegraphics[width=\textwidth]{image}
\caption{Calthorpe’s studies of “pedestrian pockets” in conjunction with rail stations incorporated the quarter-mile pedestrian shed advocated by Duany and Plater-Zyberk along with a pedestrian-friendly mix of higher-density uses in conjunction with transit to improve efficiency, ridership, and land values. \hspace{1cm} Source: www.wikipedia.org}
\end{figure}
The concept of “Smart Growth” emerged in the 1990s in response to environmental concerns, widespread suburbanization, and related impacts on congestion, air quality, disconnected land uses, and deteriorating quality of life. As a land use tool, the Environmental Protection Agency developed a series of ten “Smart Growth Principles” (see graphic in this section) to help re-establish land use directions that better supported the intrinsic land use/transportation interdependencies that make for more sustainable environments.

The regulatory basis to promote TOD exists at the local, regional, and state levels of governance with great variety. At the state level, AASHTO’s “Role of State DOTs in Support of Transit-Oriented Development (TOD), published in 2006, provides a comprehensive review of state-level TOD activities.173 Although TOD is typically viewed as a local activity, AASHTO’s report finds state agencies, including state departments of transportation, have begun to take more active roles to help plan for and promote TOD, and Florida DOT is noted as a leader among the nation. The report summarizes various state-level activities to promote TOD, including:

- Changing agency policies and practices, such as roadway design and project prioritization practices;
- Establishing partnerships;
- Conducting education and outreach on TOD principles, methods, etc.;
- Advocating state legislative and policy changes;
- Providing technical assistance to municipalities;
- Leading or providing funding for planning efforts, including station area planning as well as corridor or area-level planning that considers land use and transit accessibility;
- Funding TOD-supportive transportation improvements, such as bicycle and pedestrian access to transit, structured parking, or station-area streetscaping;
- Collaborating with land purchase and sale for TOD projects; and
- Sponsoring research and/or decision-support tools that provide information on TOD benefits and impacts.

Dittmar and Poticha (2004) place emphasis on the regional scale of planning as a cornerstone of broad TOD policy, with an array of neighborhoods (urban and suburban), job centers, downtowns, and activity centers interconnected across a metropolitan region by quality transit.174 The regional
scale enables a market-supported variety of destinations, with a balance of jobs and housing, varying densities and housing types, and development appropriate for the variety of economic and demographic conditions that create sustainability. The regional scale is further supported by Duany, Speck and Lydon in “The Smart Growth Manual,” as appropriate to address transit corridors as well as natural systems and designated urban centers in the prevention of sprawl.175

To organize planning conditions across the region, enabling a transitional view from macro corridor-length (or network) issues to the micro site-level, Duany et.al. emphasize use of the transect is suggested as a mechanism to correlate varying densities, intensities, uses, and complexity from rural settings to the urban core. At the smallest scale, the neighborhood becomes the site-level implementation tool to address walkability, diversity of use, and an interconnected multi-modal transportation system as the basic building block for villages, towns, and cities.176 The regional scale activity tends towards corridor-length planning, to establish broad relationships across a given transit system to balance ridership, travel characteristics, and capital costs.

A range of policy implementation tools are identified in the AASHTO survey that are evident in a review of sample planning frameworks at the municipal and regional scale. The study notes these as follows:

**TOD Zoning** – To promote mixed-use and higher density development around transit stations, local governments can adopt zoning regulations that require (or at least allow) this type of land use.

**TOD Overlay Zones** – Rewriting zoning regulations can be prohibitively cumbersome. Therefore, some municipalities choose to adopt overlay zones around transit stations which will modify, eliminate, or add regulations to existing zoning regulations.

**Transit-Supportive Land Uses** – Moving one step beyond TOD zoning, local governments can specify the types of land uses that are permitted (e.g., banks, childcare centers, retail) and those that are not compatible and thus not permitted (e.g., automobile repair, gas stations, drive-through restaurants).

**Minimum Densities** – TOD zoning codes may specify minimum density thresholds for development, as well as the more common maximum densities. Minimum residential densities can range from seven units per acre for bus-based TOD to 30 units per acre or more for rail-based TOD.

**Form-Based Zoning Codes** – Form-based codes have received renewed interest within the past two or three years as an alternative way of regulating land use that can also be directed at transit-supportive objectives. Form-based codes de-emphasize land use in favor of building form and typology, and therefore make it easier to implement mixed-use projects. They also focus on the streetscape and public realm, and are meant to be applied in a participatory manner.

**Parking Requirements** – Although TOD can include park and ride lots to capture ridership, generally municipal governments reduce parking minimum requirements in TOD zones. A more aggressive approach is to cap the maximum number of parking spaces per dwelling unit or square foot of commercial development. Municipalities have also adopted minimum bicycle parking requirements.
**Land Use Policies:** As TOD relies heavily on pedestrian traffic and street-level activity, the integration of a high-density mix of land uses is a key component to create and maintain the viability of a station area. As noted in this Sample Land Use Policy table, a review of typical policy language yields typical language to address minimum densities, street-level activity, a broad mix of uses, and high degrees of commercial activity in station areas and along transit corridors. The land use policy directives are typically supplemented by neighborhood and station area plans, which outline transit-supportive policies geared towards a particular district or community.

<table>
<thead>
<tr>
<th>Location</th>
<th>Policy Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portland</td>
<td>Provide a mixture of activities along major transit priority streets, transit access streets, and main streets to support the use of transit. Encourage development of commercial uses and allow labor-intensive industrial activities that are compatible with the surrounding area. Increase residential densities on residentially zoned lands within one-quarter of existing planning transit routes to transit-supportive levels. Require development along transit routes to relate to the transit line and pedestrians and to provide on-site pedestrian connections.</td>
</tr>
<tr>
<td>Portland</td>
<td>Encourage transit-oriented development patterns at transit stations and at transit centers to provide for easy access to transit service. Establish minimum residential densities on residentially zoned lands within one-half mile of transit stations and one-quarter mile of transit centers that support the use of transit. The design and mix of land uses surrounding transit stations and transit centers should emphasize a pedestrian and bicycle-oriented environment and support transit use.</td>
</tr>
<tr>
<td>Portland</td>
<td>Through the community planning process, establish minimum residential densities of 15 units per acre within one-quarter mile of existing and planned transit streets, Main Streets, town centers, and transit centers. Establish average minimum residential densities of 25 units per acre within one-half mile of light rail stations and regional centers. Establish minimum floor area ratios for non-residential development at light rail centers of 0.5:1. Where these densities are not realistic or desirable due to existing, well-established development patterns or environmental constraints, use other methods to increase densities such as encouraging infill through accessory units in single-family zones or increase density on long-vacant lots.</td>
</tr>
<tr>
<td>San Diego</td>
<td>Design infill projects along transit corridors to enhance or maintain a “Main Street” character through attention to site and building design, land use mix, housing opportunities, and streetscape improvements.</td>
</tr>
<tr>
<td>San Diego</td>
<td>Revitalize transit corridors through the application of plan designations and zoning that permits a higher intensity of mixed-use development. Include some combination of: residential above commercial development, employment uses, commercial uses, and higher density residential development.</td>
</tr>
<tr>
<td>Seattle</td>
<td>Establish special pedestrian districts that may vary to reflect different characteristics and conditions of pedestrian-oriented commercial zones in order to preserve or encourage intensely retail and pedestrian-oriented shopping districts where non-auto modes of transportation to and within the district are strongly favored.</td>
</tr>
<tr>
<td>Seattle</td>
<td>Promote the integration of high capacity transit stations into the neighborhoods surrounding them and foster development appropriate to significant increases in pedestrian activity and transit ridership. Use overlay districts to other adjustments to zoning to cultivate transit-oriented communities.</td>
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<tr>
<td>DC</td>
<td>Concentrate redevelopment efforts on those Metrorail station areas, which offer the greatest opportunities for infill development and growth, particularly stations in areas with weak market demand, or with large amounts of vacant or poorly utilized land in the vicinity of the station entrance. Ensure that development above and around such stations emphasizes land uses and building forms, which minimize the necessity of automobile use and maximize transit ridership while reflecting the design capacity of each station and respecting the character and needs of the surrounding areas.</td>
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<tr>
<td>DC</td>
<td>Ensure that parking requirements for residential buildings are responsive to the varying levels of demand associated with different unit types, unit sizes, and unit locations (including proximity to transit). Parking should be accommodated in a manner that maintains an attractive environment at the street level and minimizes interference with traffic flow. Reductions in parking may be considered where transportation demand management measures are implemented and a reduction in demand can be clearly demonstrated.</td>
</tr>
<tr>
<td>Minneapolis</td>
<td>Discourage uses that diminish the transit and pedestrian character of areas around station areas, such as automobile services, surface parking lots, and drive-through facilities.</td>
</tr>
<tr>
<td>Minneapolis</td>
<td>Encourage investment and place making around transit stations through infrastructure changes and the planning and installation of streetscape, public art, and other public amenities.</td>
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</tbody>
</table>
**Transportation Policies:** TOD offers a range of transportation benefits, including increased trip capture and reduced VMT which are evident at local and regional scale. Well-designed, multimodal transportation networks provide increased access to and within station areas, which can increase ridership and further reduce demand on the roadway network. A review of transportation policy examples indicates a number of incentives to promote transit use combined with strong emphasis on non-motorized capacity and accommodation (for pedestrians and bicyclists). Reductions in or limitations upon parking demand further reinforce transit’s primary role in the transportation hierarchy within station areas and along transit corridors. Select regional/municipal transportation policies are noted below.

<table>
<thead>
<tr>
<th>SELECT TRANSPORTATION POLICIES TO IMPLEMENT TOD</th>
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**Urban Design Policies:** The form and function of successful TOD is inextricably reliant on its urban design and careful arrangement of streets, buildings, public spaces, and uses. Well-planned urban conditions can accommodate high densities and intensities in a TOD core that transition appropriately into TOD edges and ultimately neighborhood-scale settings. Street-level activity can be promoted or detracted by the building frontage, design, articulation, and permeation of adjacent structures that contribute to place-making in TOD environments. Select urban design policies to promote TOD are noted below.

<table>
<thead>
<tr>
<th>CITY</th>
<th>POLICY</th>
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<tbody>
<tr>
<td>San Francisco</td>
<td>Moderation of major new development to complement the city pattern, and the resources to be conserved.</td>
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<tr>
<td>San Francisco</td>
<td>Make use of street space and other unused public areas for recreation, particularly in dense neighborhoods, such as those close to downtown, where land for traditional open spaces is more difficult to assemble.</td>
</tr>
<tr>
<td>Portland</td>
<td>Give form to the city and extend the intimate and human scale that typifies Portland. Retain the variety of alternative routes between locations that is produced by using a small block size. Focus new development at locations where necessary services already exist such as near transit stations and along transit streets.</td>
</tr>
<tr>
<td>San Diego</td>
<td>Use open space and landscape to define and link communities.</td>
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<tr>
<td>San Diego</td>
<td>Create street frontages with architectural and landscape interest to provide visual appeal to the streetscape and enhance the pedestrian experience.</td>
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<tr>
<td>San Diego</td>
<td>Design or retrofit streets to improve walkability, bicycling, and transit integration; to strengthen connectivity; and to enhance community identity.</td>
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<tr>
<td>San Diego</td>
<td>Design surface parking lots to allow for potential redevelopment to more intensive uses. For example, through redevelopment, well-placed parking lot aisles could become internal project streets that provide access to future parking structures and mixed land uses.</td>
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<tr>
<td>San Diego</td>
<td>Retrofit existing large-scale development patterns, such as “superblocks” or “campus-style” developments, to provide more and improved linkages among uses in the superblock, neighboring developments, and the public street system.</td>
</tr>
<tr>
<td>DC</td>
<td>Establish and maintain scale and density transitions between downtown and adjacent lower density neighborhoods. Use variations in height, massing, and architectural quality to ensure that the fine-grained pattern of adjacent neighborhoods is protected.</td>
</tr>
<tr>
<td>DC</td>
<td>Create attractive and interesting commercial streetscapes by promoting ground level retail and desirable, making walking more comfortable and convenient, ensuring sidewalks are wide enough to accommodate pedestrian traffic, minimizing curb cuts and driveways, and avoiding windowless facades and gaps in the street wall.</td>
</tr>
<tr>
<td>DC</td>
<td>Provide urban squares, public plazas, and similar areas that stimulate vibrant pedestrian street life and provide a focus for community activities.</td>
</tr>
<tr>
<td>DC</td>
<td>Treat the design of mass transit systems, including the proposed streetcar and bus rapid transit systems, as an important form of public architecture. Bus shelters, waiting platforms, signage, on-street bicycle facilities, pedestrian connections, and other improvements should contribute to the citywide urban design goals.</td>
</tr>
</tbody>
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**Housing Policies:** Transit ridership benefits from a rich mix of housing types and densities in close proximity to stations and along transit corridors. Local governments, transit agencies, and developers maintain different but complementary roles in the promotion of workforce and affordable housing as a key component of TOD, providing pedestrian access to transit for transit-dependent residents. Sample housing policies to implement TOD are noted below.

<table>
<thead>
<tr>
<th>SELECT HOUSING POLICIES TO PROMOTE TOD</th>
</tr>
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<tbody>
<tr>
<td>San Francisco</td>
</tr>
<tr>
<td>Support new housing projects, especially affordable housing, where households can easily rely on public transportation, walking and bicycling for the majority of daily trips.</td>
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<tr>
<td>San Francisco</td>
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<tr>
<td>Encourage new housing that relies on transit use and environmentally sustainable patterns of movement.</td>
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<tr>
<td>San Francisco</td>
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<tr>
<td>Support &quot;smart&quot; regional growth that locates new housing close to jobs and transit.</td>
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<tr>
<td>DC</td>
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<tr>
<td>Promote mixed use development, including housing, on commercially zoned land, particularly in neighborhood commercial centers, along Main Street mixed use corridors, and around appropriate Metrorail stations.</td>
</tr>
<tr>
<td>Minneapolis</td>
</tr>
<tr>
<td>Support housing density in locations that are well connected by transit, and are close to commercial, cultural and natural amenities.</td>
</tr>
</tbody>
</table>

**Financing TOD**

The concept of financing of TOD by and with local governments, transit agencies, DOTs, and others became best-known in the 1970s with the joint development programs to convert former park-and-ride lots into housing developments to yield operating revenue for transit service. These projects were structured as public/private partnerships, defined by TRB as “any formal agreement or arrangement between a public transit agency and a private individual or organization that involves either private-sector payments to the public entity or private-sector sharing of capital costs in mutual recognition of the enhanced real estate development potential or market potential created by the siding of a public transit facility”. These partnerships are possible through incentives and intricate agreements, which allow both the developer and the local agency to gain benefits in a win/win scenario resulting from project implementation.

TOD and transit joint development (transit JD) are both benefitted by transit-focused development; however, they vary in the scale of implementation. While TOD districts are typically comprised of multiple city blocks and neighborhoods, transit JD is more site and project specific. Transit JD refers to public and private partnership between local agencies and a real estate developer, which utilize both parties’ resources to implement a TOD project. Transit JD partnerships are created to share the high costs of capital infrastructure, station connection fees, and/or land acquisitions, enabling TOD projects to “pencil out” for the developer. Transit JDs can be structured in a variety of ways, organized to meet the individual needs of a project. Revenue-sharing arrangements and cost-sharing arrangements are the two major components to transit JD agreements. Revenue sharing can include land leases, air rights development, station connection fees, concession leases, and benefit assessment districts, whereas cost sharing includes construction costs, density bonuses and joint use of infrastructure. Transit JDs are more common in cities with planned or newer public transportation systems. Larger metropolitan areas such as Boston and New York do not need much assistance to develop TODs, as those regions already have existing public transportation infrastructure to support TOD projects.
In 2011, Reconnecting America published the “2010 Review of TOD Programs: A National Review of State, Regional and Local Programs that Fund Transit-Oriented Development Plans and Projects” to begin to establish a national inventory of financing examples and approaches to advance TOD.\(^{237}\) Forty-two programs are reviewed, including eighteen state-level, fifteen regional and transit agency, and nine local programs. Among the sample are programs that provide funding for implementation, planning, and/or property acquisition, or a combination thereof. Reconnecting America drew three main conclusions from the analysis:

1. TOD programs must be carefully tailored to fit the needs of the place they are designed to serve, considering the scale and quality of the transit network, market factors, and successful precedent for TOD;
2. TOD financial assistance is one of many important components for successful TOD, with recognition of the need for a properly supportive policy environment, interagency and public/private dialogue, and removal of policy barriers; and
3. Strong consideration should be given to the inclusion of workforce/affordable housing as appropriate for TOD to avoid unintended exclusion of lower income persons.

TOD financial assistance may also vary according to the maturity of TOD markets in a region. Parzen and Sigal (2004) note that “first generation” TOD projects often require greater financial assistance than regions with established TOD success. Value capture associated with TOD projects can be conferred on the local government and transit agency, with evolved deal structures including equity positions for the public sector in TOD deals.\(^{238}\) There is a broad range of financial assistance approaches to advance TOD, which include the following:

- Financial assistance for land assembly and holding costs\(^{239}\)
- Sliding-scale impact fees to reduce required infrastructure costs\(^{240}\)
- Streamlined review processes, which reduces time and costs for the developer\(^{241}\)
- Decreased parking requirements, which reduce construction costs\(^{242}\)
- Provision of density bonuses\(^{243}\)
- Varied tax incentives (e.g., tax abatements, tax-increment financing, tax-exempt bonds, enterprise zones)\(^{244}\)
- Funding for project-related capital improvements (e.g., sidewalks, enhanced streetscapes)\(^{245}\)

A listing of varied financial incentive programs at the federal, state, regional/local scale is included in the Appendix.

**Stakeholders Relationships and Roles**

The implementation of TOD in the modern planning environment involves a broad array of public, private, and institutional actors, each with different goals, priorities, and protocols. Actors include multiple levels of governments (local, regional, state, federal), transit agencies, the development community (investors, developers), and the public, which can create significant logistical challenges for implementation. Belzer et.al. (2004) note that no single entity can set the agenda for a project exclusively, which can create a demand for policy leadership.\(^{246}\) The careful stakeholder
balance necessary to advance a project can be complicated by a TOD’s role as a “node” within a larger regional context versus its individual development priority as a “place” unto itself.

The Florida TOD Framework provides a clear, concise illustration of the many public stakeholders in the Florida context of TOD. As noted, each agency maintains its own planning documents, and individual agency protocols set forth coordination activities with partner agencies. These inter-agency relationships and communications are further detailed in local government comprehensive plans for interagency coordination as well as the standard protocols among agencies.

As illustrated in the Florida TOD Framework, there are a variety of stakeholder entities at the local, regional, state, and federal levels of governance that maintain different roles in the implementation of TOD. Stakeholder responsibilities vary across the system, corridor, and station scales, with varied planning and regulatory documents to help promote TOD as an agency priority.

Source: A Framework for TOD in Florida

For effective intergovernmental, inter-agency coordination to advance TOD at the local and regional scale, dialogue among stakeholder agencies is necessary to help define roles, expectations, resources, and protocol. Transit agencies are typically the lead agency regarding development on agency-owned lands, and Belzer et.al. (2004) suggest transit agencies view themselves as more than merely providers of transportation services. Instead, a broader perspective should recognize the critically important linkages between the station and land uses within the station area. Further, agencies should help plan for and implement TOD at the system wide scale, with consideration of station areas as individual places as well as nodes within a transit network. Transit agencies have been taking a leadership role since the 1980s with the development of design guidelines for station areas, and this broad view of their activity in TOD increases the efficiency of their resource role.
Local governments are in the central role regarding visioning, planning, land assembly, place-making amenities, and the land development process regarding TOD. Accordingly, local governments, including municipal entities such as redevelopment agencies, should maintain the broadest agenda of all stakeholder entities according to Belzer (2004). By facilitating the development of station area plans, local governments can comprehensively evaluate development needs and revenues, balance parking considerations across a district rather than a site-specific basis, enable infrastructure improvements in comprehensive and capital plans, and help facilitate project approval, especially with newer higher-density forms of TOD adjacent to lower density neighborhoods. At the regional scale, metropolitan planning organizations (MPOs), which are the federally designated agencies to plan, fund, and implement broad transportation investments for urbanized areas in excess of 50,000 persons, also maintain specific roles in TOD implementation. In its 2010 publication regarding TOD and MPO roles, the Center for Transit-Oriented Development suggests MPOs play a central role for TOD policy advocacy as well as the allocation of funding for transit and related infrastructure improvements. Further, however, given the complex array of institutional actors involved in TOD, MPOs can help convene regional elected officials to advance TOD as a regional priority.

State governments maintain a different role in TOD implementation that varies from passive support to active advocacy. The role for state governments, particularly through their departments of transportation, has increased over time, with the opportunity for an increased presence in this policy area. Specific actions recommended for state government by AASHTO include prioritization of TOD, alignment of agency policies and practices, establishing partnerships with other agencies, conducting education and outreach, technical assistance, and funding. In addition, state governments are in a unique position to advocate for statewide legislative changes to improve the TOD policy environment at a broad scale.

Finally, there are specific roles for the non-governmental stakeholders in TOD implementation, including the development community (e.g., developers, lenders, investors) as well as citizens, which are perhaps the largest beneficiaries for TOD outcomes. TOD is still a fairly new concept in many regions of the US, especially in Florida, and extended educational efforts with the development community should be initiated by the public sector to expand TOD awareness, define expectations, and build the necessary partnerships for success.

On the other end of the public sector is the citizenry, and community involvement is a cornerstone component in establishing TOD visions, understanding community desires, and building an advocacy base to deliver TOD outcomes that respond to needs and delivers equitable outcomes. Opportunities for community engagement exist throughout the TOD implementation process, from problem identification and prioritization, to visioning and station area planning, to policy development and adoption, to advocacy and end-user roles with built TOD. Community participation includes outreach by public agencies and meaningful involvement opportunities for the community in the planning process, participation in and collaboration regarding long-term strategies, and the establishment of clear implementation steps so progress is visible to all parties.
Summary

TOD has a rich history in the United States over time, and a review of prior practice offers many lessons to implement TOD in Florida. While TOD is not a new concept on the national scale, it is fairly new for Florida, and a thorough understanding of TOD’s evolution, application, and implementation in various settings is helpful to inform the appropriate approach for Florida. The state has a range of premium transit services in place and on the horizon, and each offers TOD opportunity in a proper context, scale, and form. There are significant planning, policy, and urban design considerations to implement TOD successfully, and the roles of the various stakeholders need to be well-defined and orchestrated to address the collection of public and private needs and priorities.

The lessons derived from the literature and best practices have been utilized to create the Place Type Methodology presented in Chapter 3 and applied to Florida’s sample communities. Subsequently, the academic, practical, and Florida-specific data has been integrated into the Model Comprehensive Plan and Land Development Regulations (presented in Chapter 4). And finally, the key directives for successful implementation in the Florida context have been incorporated into the Implementation and Next Steps conclusion of the Guidebook (presented in Chapter 5).
Endnotes

1 Carlton, Ian. (Fall 2007). *Histories of Transit Oriented Development: Perspectives on the Development of the TOD Concept - Real Estate and Transit, Urban and Social Movements, Concept Protagonist*. University of California - Berkeley: Institute or Urban and Regional Development


4 Ibid.

5 Dittmar and Ohland (2004).

6 Carlton (2007).


9 Wood, Jeff. (September 2013). New Media Director and Chief Cartographer of Reconnecting America. Personal Communications.


30 http://www.heritagegetrolley.org/planTampaAndYbor.htm


TOD Research & Case Studies


Literature Review

Literature Review

164 Frelich, Robert et.al. (2008).
166 Frelich et.al., 2008.
169 Frelich et.al., 2008.
175 Duany, Andres et.al. (2010)

Florida TOD Guidebook 2-63 December 2012
Literature Review

246 Carlton, Ian. 2007.
247 Belzer et.al. 2006.
Chapter 3

TOD Place Type Analysis
Methodology, Findings & Conclusions
Methodology, Findings & Conclusions

Place Type Analysis

Introduction

The implementation of TOD in any community requires a thorough understanding of the community features that contribute to transit-supportive and transit-ready conditions. As defined in the “TOD Framework,” a TOD Station Area includes roughly 500 acres within a half-mile radius around a transit station, which generally represents a comfortable range of access to the transit station by pedestrians and cyclists. However, each specific TOD area is defined by the local community based on its unique characteristics and the geography of the area. Although there are many ways in which a community can evaluate its existing and planned conditions relative to TOD, the Framework identified several key features to consider within the TOD Station Area. The Framework further suggested a series of quantifiable targets for various station area measures, which are generally correlated to the ridership necessary for different modes of transit to operate successfully in regional, community, and neighborhood centers. The select station measures include the following:

- Residential Development (number of residential units, residential density)
- Non-Residential Intensity
- Employment Intensity (number of jobs, density of jobs/acre)
- Jobs-to-Housing Ratio
- Mix of Uses

The TOD Framework also identified site level measures, which consider the characteristics of individual projects located within the Station Area, including:

- Net Residential Density
- Floor Area Ratio (FAR)
- Street Network
- Building Design
- Residential and Non-Residential Parking
- Transit Network

In addition to these quantifiable measures, successful TOD also requires desirable urban conditions, typically measured qualitatively, within Station Areas to improve the pedestrian environment, quality of place, and economic sustainability. As discussed in the “Design Principles for TOD” section of the Guidebook, these measures are typically evaluated on a case-by-case basis.

This Chapter sets forth the goals of the Place Type Analysis, the methodology by which the analysis was conducted, and provides a summary of the key findings and observations derived from the analysis for consideration in the development of Comprehensive Plan Goals Objectives and Policies (GOPs) and Land Development Regulations (LDRs).
Goals of the Place Type Analysis

A TOD “Place Type” Analysis was conducted as part of the TOD Guidebook. The purpose of this analysis was to demonstrate a methodology for evaluating existing land use, current land development patterns, and codes with respect to TOD implementation and challenges and progress towards achieving the targets and goals set forth in the TOD Framework. These analyses were used to help identify common elements and themes for inclusion in the model comprehensive plan and land development regulations to support future public transportation systems. This exercise helped assess the degree to which transit-supportive land uses exist in certain areas around the state. Florida has great diversity, with varying land use conditions surrounding transit stations - historic downtowns, suburban communities, emerging greenfield developments, and even rural nodes. Accordingly, with input from the FDOT Statewide TOD Committee, a representative sample of eight communities was selected for the TOD Place Type Analysis. These eight communities included varying scales of development (regional, community, and neighborhood centers), varying types of land use conditions (urban, suburban, and rural/emerging urbanized areas), and varying types of transit systems at varying stages of implementation.

TOD Place Types Analyzed

**Regional Centers**
- Miami
- Orlando

**Community Centers**
- Daytona Beach
- Tallahassee
- West Palm Beach

**Neighborhood Centers**
- Collier County
- Pasco County
- Sebring

Goals of the TOD Place Type Analysis

1. Establish a representative sample of Florida’s varied land use and transportation conditions that is geographically dispersed; includes regional, community, and neighborhood-scale places; and represents urban, suburban, and rural/emerging urbanized areas conditions around station areas;

2. Develop and apply a consistent methodology for evaluation of transit-supportive conditions that can be replicated on a state-wide basis;

3. Assess the range of transit-supportive conditions in Florida (both existing and planned);

4. Derive key regulatory strategies and transit-supportive metrics to inform the model Comprehensive Plan and Land Development Regulations; and

5. To establish baseline conditions within the Place Types for reference as Florida communities implement the model Comprehensive Plan and Land Development Regulations contained in this guidebook and to gauge the progress of TOD over time.
Methodology

A primary purpose of the TOD Place Type Analysis is to provide local governments with a simple, clear methodology by which local transit-readiness can be assessed in advance of the adoption and implementation of TOD-supportive regulations. As Florida’s communities vary greatly in their size, complexity, and staffing, the Place Type Methodology was carefully constructed to ensure it could be easily replicated across the state with efficiency, consistency, and accuracy. All data sources utilized in the analysis are commonly available to local governments at no cost. GIS software was utilized to develop maps and tables that maintain a consistent scale, are easy to manipulate, and enable multiple layers of data to be analyzed simultaneously. Field research was conducted in each community along with reviews of local regulatory documents. In addition, interviews were conducted in each community with representatives of local governments, transit agencies, metropolitan planning organizations, regional planning councils, and the Florida Department of Transportation. Input was also received from the Department of Economic Opportunity. Each component of the methodology is detailed below.

Geographic Information Systems (GIS) Analysis

The analysis of a community’s progress towards implementing TOD focuses upon at its core the relationship between land use and transportation. Utilizing geographic information system (GIS) data, a series of geospatial analyses were conducted to provide insight into the various TOD measures established by the Framework. These analyses considered both the macro (station area) and micro (site level) conditions of the study area.

GIS enables the visualization, analysis, and interpretation of various factors related to potential successful TOD. GIS allows the integration of spatially-referenced parcel boundaries (at the “site level”) with site-specific information, such as physical address, property use, and building square footage. To further refine analyses using GIS, data from other sources can be integrated. The geospatial capabilities of GIS allow an analysis to study a range of conditions from the site level (an individual parcel) to the station area level (half-mile radius around a transit station).

Across the State of Florida, GIS is commonly used by local governments, state and regional agencies, private sector firms, and universities, and it is common for smaller municipalities to work collaboratively with larger-scale governments and agencies for GIS analyses. Accordingly, as suggested by the TOD Framework, the Place Type Methodology relies upon GIS as a common tool in the analysis.
Data Collection

Across the State of Florida, GIS data exists at the local, county, regional, and state level, and these are supplemented by a range of national GIS databases. GIS data is typically available at no cost for local governments and public agencies, with most GIS data available as a free download from agency websites. To maintain consistency and the ability for the Place Type Methodology to be easily replicated, most of the data utilized in this analysis were derived from pre-existing GIS databases routinely maintained by local governments and public agencies. The key common denominator for all site-level data is its relationship to a particular parcel of property, denoted by a parcel control number. A small data library was assembled for each subject community in the TOD Place Type Analysis, beginning with an aerial imagery, parcel boundaries, property information, employment establishments, roadway networks, and both existing and proposed transit routes.

The base information for each for each Place Type Map is a parcel layer, obtained from the Florida Geographic Data Library (FGDL), which is a statewide GIS database warehoused and maintained at the University of Florida’s GeoPlan Center. FGDL includes more than 400 data layers available for public use at no cost through its website: www.fgdl.org. For each community in Florida, the FGDL includes a data layer published by the Florida Department of Revenue (DOR) that contains extensive county-level property appraiser data used for tax revenue purposes. Examples of DOR data for individual parcels include ownership, property use, type of use, intensity of use (e.g., number of residential units, building square footage), and property transactions.

Additional data for the map series was derived from a variety of public sources, including local governments, property appraisers, transit agencies, and state agencies. State-level DOR data was also vetted with local agencies to confirm its accuracy. Each data source is described below in conjunction with its corresponding map. It is important to note all data is commonly available for local governments that are both large and small, regardless of context (urban, suburban, or rural).
In addition to the electronic data collection, qualitative data was also collected in each community through field research, reviews of local regulatory documents, and interviews with local government and agency staff knowledgeable of local conditions. In addition to representatives from various departments within each local government, other interviewees included representatives from local transit agencies, other local agencies such as community redevelopment agencies, metropolitan planning organizations, regional planning councils, and the Florida Department of Transportation. Additional input was received from the Department of Economic Opportunity. Jurisdictions undertaking this type of analysis should supplement this data with information on building permitting, as well as land use and development approvals.

Defining the Station Area

The TOD Station Area is defined as an area extending a half-mile in all directions from a transit station. This produces an area of roughly 500 acres. Within the TOD Station Area, the “Transit Core” is the quarter-mile area surrounding a transit station, which equates to approximately 125 acres. The Transit Core includes the area that is within roughly a five-minute walk (the pedestrian shed) from the transit station. The “Transit Neighborhood” includes the second quarter-mile around a transit station, totaling approximately 375 acres. The “Transit Core” and “Transit Neighborhood” together constitute the TOD Station Area of approximately 500 total acres.

For each subject community, the GIS map series was centered on an existing or proposed transit station. Two circles were included on each map: the Transit Core (a circle with a quarter-mile radius) and the TOD Station Area (a circle with a half-mile radius). Using a scale of 1:1000, this enabled maps to be printed legibly on letter-sized paper. To maintain consistency and following similar analyses produced by transit agencies and others, all parcels intersecting the boundary of the half-mile circle were included as part of the study area dataset. It should be noted that due to differing block and parcel sizes, the total acreage varied from the 500-acres yielded by a theoretical half-mile radius. Instead, total acreages of the eight generalized station areas subject to the place type analysis ranged from 537 acres in Miami to 1,323 acres in Pasco. This variation was addressed by including measures at both the quarter-mile Transit Core and the half-mile TOD Station Area, as well as the conversion of raw data to ratios wherever possible.

Map Creation

As described in this chapter, a specified series of maps was provided for each of the eight TOD Place Type communities. The general location of each place analyzed is shown on the map to the right. Each map is described in the following pages along with the relevant data sources and general instructions for map creation. A matrix depicting the maps from all of the locations studied is included as a reference.
Place Type Analysis

Existing Conditions Map

This map provides a general overview of the existing conditions in the station area using aerial imagery. The aerial imagery was provided by the internet-based ArcGIS online mapping service and the World Imagery base map. The World Imagery base map presents satellite and high resolution imagery for the United States and other areas around the world. The version used to create the Place Type maps was last updated in July 2010. The aerial depicts development patterns, areas of intensity, and unique geographic features such as water bodies, major infrastructure, large campuses, and other significant uses in the station area. The transportation network is identified in a white overlay on the aerial imagery to help differentiate buildable blocks and parcels from rights-of-way. A data table is included with each map indicating net acres in the quarter-mile TOD Core and half-mile TOD Station Area.

Street Network & Block Structure Map

This map provides a graphic depiction of the street and block network within the station area to help evaluate station accessibility, mobility, and interconnectivity. To create the map, individual parcel polygon outlines were identified and filled with a black color, and all public rights-of-way included in the parcel layer were removed. This produced a map of stark contrasts, with blocks denoted in black offset by a street network shown in white. To assess transit-supportive conditions, this map enables evaluation of block size, spacing, grid density, and general interconnectivity throughout the TOD Station Area. In addition to the measures prescribed by the TOD Framework, this map provides the ability to count the number of intersections, which is used as an indicator of interconnectivity by LEED-ND (Leadership in Energy and Environmental Design – Neighborhood Development).
**Place Type Analysis**

**Figure Ground Map**

A figure ground map is a two-dimensional illustration of an urban space that shows the relationship between built and unbuilt space. It is a fairly simple map that helps organize the primary components of an urban landscape – plots of land, streets, constructed spaces, and open spaces – into a black-and-white diagram of solid spaces and voids. The figure ground map helps indicate how public space is perceived, especially at the pedestrian scale, as well as “gaps” in the pedestrian experience. To create the map, all buildings and structures within a half-mile of the transit station were identified via aerial imagery, digitized, and converted into a polygon layer. The “constructed” spaces were then rendered in black, and all other components of the city (e.g., streets, parks, plazas) were left as white.

**Existing Land Use Map**

The map of existing land uses was used to indicate existing conditions around the subject transit stations. The data source used to create the existing land use maps is the Department of Revenue data layer, which includes existing land use from local property appraisers and is available at no charge from the FGDL website. As the data layer contains nearly one hundred different property use codes, the land use codes were consolidated into eleven generalized categories to enable the predominant land use types within the TOD Station Area to be identified. The generalized categories included single family, multi-family, hotel/motel, mixed use, office, retail, commercial, institutional, industrial, open space/recreation, and vacant. For the purpose of this analysis, the “mixed-use” category was assigned to all parcels that had a residential component in addition to another use. Institutional uses included hospitals, government buildings (e.g., schools, libraries), religious organizations, transportation/infra-
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structure facilities, and other civic uses (e.g., museums, convention centers). A standardized color coding was applied to the eleven categories for the eight subject communities. In addition, locally significant uses, as identified by DOR data, field research, and interviews with local staff representatives, are identified on each map as well.

Pie charts were developed using GIS that indicate the percentage of each of the existing land use categories within the TOD Station Area. This analysis provided insight to key development conditions (e.g., percentage of open space, concentrations of institutional use in “government centers,” amount of vacant land).

The TOD Framework included a recommended ratio of residential-to-non-residential uses intended to be achieved over time within a TOD Station Area (varied by scale), which are summarized in the table to the right. The pie charts were used to determine the ratio of the current development pattern, enabling comparison of this measure to the targets established in the TOD Framework.

Future Land Use Map

While the existing land use map is helpful to understand current conditions, the future land use map helps indicate the anticipated mix and intensity of land use as established by a local government in its comprehensive plan. Used in combination with the existing land use map, the future land use map enables a comparison of current conditions to future (planned) conditions as well as progress towards the station area targets for mix of use as established in the TOD Framework. These maps also help identify the need for regulatory mechanisms at the local level (e.g., policies or regulations to require or prevent a particular land use, incentives to promote a missing land use).
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The data used for the future land use maps was mostly derived from pre-existing GIS data layers developed by local governments. In some cases, where GIS data was not available, hardcopy maps were used as reference to develop new future land use GIS layers. As future land use categories differ among municipalities, the evaluation of future land uses requires an analysis of the adopted Comprehensive Plan for each community. The future land use maps include the actual categories as adopted locally in each community; however, a standardized color coding scheme was applied in the maps for consistency. As future land use definitions tend to differ significantly among communities, the maps provide a graphic indication of the variation of land use designations within TOD Station Areas.

Residential Units Map (existing)

Ridership generated from a TOD Station Area relies heavily on the presence of residential units within walking distance from a transit station. The desired number of residential units increases from neighborhood centers, to community centers, to regional centers while the amount of land allocated to residential uses decreases, reflecting the higher density residential development anticipated in more intense TOD Station Areas. These variations correlate to the notion of diversity along a transit corridor. While a central transit station in a regional center may provide a high concentration of jobs, entertainment venues, and institutional activities, an edge transit station, classified as a neighborhood center, can provide a higher percentage of residential uses, which balances the corridor.

The TOD Framework established station area targets for longterm build-out (10-25 years), differentiated by TOD scale and transit mode, as well as individual site-level density targets as follows:

Table 3-2

<table>
<thead>
<tr>
<th>TOD Place Type</th>
<th>Desired Number of Residential Units per Transit Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Heavy Rail</td>
</tr>
<tr>
<td>Regional Center</td>
<td>10,000 – 15,000 units</td>
</tr>
<tr>
<td>Community Center</td>
<td>5,000 – 6,000 units</td>
</tr>
<tr>
<td>Neighborhood Center</td>
<td>3,000 – 4,500 units</td>
</tr>
</tbody>
</table>

Table 3-3

<table>
<thead>
<tr>
<th>TOD Place Type</th>
<th>Desired Net Residential Density (Site Level) per Transit Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Heavy Rail</td>
</tr>
<tr>
<td>Regional Center</td>
<td>85 – 115 du/ac</td>
</tr>
<tr>
<td>Community Center</td>
<td>60 – 80 du/ac</td>
</tr>
<tr>
<td>Neighborhood Center</td>
<td>15 – 20 du/ac</td>
</tr>
</tbody>
</table>
Place Type Analysis

The data source for the existing residential intensity maps was the DOR parcel layer, which contains residential unit counts for all parcels. This data was also verified by local government planning staff to confirm its accuracy. For each subject community, the total number of residential units within the half-mile TOD Station Area was calculated and compared to the station area target established in the TOD Framework.

In addition, at the site-level, the number of units for all residential parcels was represented on the corresponding parcel on the map. To reflect the level of residential intensity, a color coding system was applied to all residential parcels based on the number of units on the site: 0-2 units (light yellow), 3-24 units (medium yellow), 25-99 units (orange), and 100+ units (red). The allocations could be further refined based on local conditions (i.e., 3-15 units and 16-24 units to indicate low-rise and mid-rise buildings). Evaluating the number of units per parcel depicts the distribution of units across the station area, illustrates large concentrations of units, suggests the building typology, and allows the site-level density to be easily calculated. A residential property in each category was analyzed to enable comparisons to the Site Level Density prescribed in the Framework.

Residential Density Map (existing)

In addition to the mere presence number of residential units within a TOD Station Area, the density at which residential units occur is another key measure of transit-supportive quality. Higher residential densities are critical for TOD Station Areas to achieve the station area targets for residential units as infill development and new development occur. The TOD Framework establishes gross residential density targets for the station area for portions anticipated to be residential (i.e., 35% of Regional Centers are anticipated to contain residential use). To simplify the application of this measure and to add
another point of reference, these density figures were converted to apply across the entire half-mile TOD Station Area, with the resulting residential densities listed in the table below.

The data source for the existing residential density maps was the DOR parcel layer and local property appraiser information, which was vetted by reviews of local property appraiser data and local government planning staff. For legibility, parcels included within the quarter-mile TOD Core were shaded pink, while the remaining parcels that comprised the half-mile TOD Station Area were shaded yellow. For each subject community, the total number of residential units and gross residential density were calculated for the TOD Core TOD Station Area to enable comparison with the respective measures from the TOD Framework.

### Table 3-4

<table>
<thead>
<tr>
<th>TOD Place Type</th>
<th>Heavy Rail</th>
<th>Commuter/Light Rail</th>
<th>BRT/Bus</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Density Target for Residential Portion Only of Station Area</strong></td>
<td><strong>Average Residential Density Target for Entire Station Area</strong></td>
<td><strong>Percentage of Station Area Residential (Framework)</strong></td>
<td><strong>Average Residential Density Target for Entire Station Area</strong></td>
</tr>
<tr>
<td>Regional Center</td>
<td>55-75 du/ac</td>
<td>35%</td>
<td>35-55 du/ac</td>
</tr>
<tr>
<td>Community Center</td>
<td>35-65 du/ac</td>
<td>45%</td>
<td>16-29 du/ac</td>
</tr>
<tr>
<td>Neighborhood Center</td>
<td>12-15 du/ac</td>
<td>75%</td>
<td>9-11 du/ac</td>
</tr>
</tbody>
</table>

*The Framework specifies a percentage of each Station Area for Residential Uses (Table 3-1) and specifies density ranges for the residential portion in order to achieve the residential unit targets set forth in Table 3-2. The calculated average assumes all parcels in the Station Area have residential uses, specifying a lower minimum density to achieve the total residential unit targets in Table 3-2. The ultimate strategy to achieve the residential unit targets will be calibrated to local conditions and preferences.*

**Non-Residential Intensity Map (existing)**

In addition to high levels of residential use, transit-supportive conditions are correlated with high levels of non-residential use as well. The targeted intensity of non-residential use varies depending upon the scale of the TOD. The TOD Framework described various targets for non-residential intensity, including (1) targets for Floor/Area Ratio, or FAR, which is a ratio of total developed area within a building to property size, and (2) minimums for building height (which can apply to residential, non-residential, and mixed-use properties). Non-residential intensity can also be measured by the square footage of total development on a property with non-residential use, which can also be useful in concert with market analyses. All of the various measures of non-residential intensity help indicate the location of significant employment centers and retail destinations, a char-
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characteristic that is further reinforced by job counts (measured in the employment intensity map).

The data source to measure the location and quantity of non-residential built space was the DOR parcel layer, which includes building square footage for all parcels. This data was vetted by reviews of local property appraiser data and local government planning staff. A color coding system was applied to all non-residential parcels reflecting the quantities of non-residential square footage as follows: 0-4,999 SF (light yellow), 5,000–24,999 SF (medium yellow), 25,000-99,000 SF (orange), and 100,000+ SF (red). Color shades were increasing to highlight the highest concentrations of non-residential use within the subject communities. It should be noted that the square footage figures tend to include structured parking but exclude surface parking when provided on separate parcels, which prevents a consistent conversion to FAR. Consistent calculation of FAR would require individual parcel-by-parcel identification of all parking structures and lots, which can occur at the local level during implementation.

Employment Intensity Map (existing)

Transit ridership is highly correlated to concentrations of employment, and the intensity of jobs within a TOD Station Area is one measure of this transit-supportive characteristic. The TOD Framework established station area targets for employment which are listed in the table on the following page.

Data to create the employment intensity maps was derived from an InfoUSA database, which provides national business and consumer listing data, including type of employer and number of employees, for parcel-specific data. The data layer has historically been acquired by the Florida Department of Transportation, and with formal requests for a specific public purpose,
the data has been made available at no charge to public agencies. The data enables development of a point layer that displays the general location of employment establishments and the number of employees within each establishment. Data tables were generated in GIS to indicate the total number of jobs as well as the number of jobs/acre for the quarter-mile TOD Core and half-mile TOD Station Area.

<table>
<thead>
<tr>
<th>TOD Place Type</th>
<th>Employment Target</th>
<th>Heavy Rail</th>
<th>Commuter/Light Rail</th>
<th>BRT/Bus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional Center</td>
<td>Station Area Total Employment</td>
<td>60,000 - 80,000</td>
<td>40,000 - 60,000</td>
<td>20,000 - 40,000</td>
</tr>
<tr>
<td></td>
<td>Gross Employment Density (jobs/acre)</td>
<td>200 - 250</td>
<td>100 - 200</td>
<td>50 - 125</td>
</tr>
<tr>
<td>Community Center</td>
<td>Station Area Total Employment</td>
<td>18,000 - 24,000</td>
<td>12,000 - 18,000</td>
<td>6,000 - 12,000</td>
</tr>
<tr>
<td></td>
<td>Gross Employment Density (jobs/acre)</td>
<td>65 - 90</td>
<td>45 - 65</td>
<td>20 - 45</td>
</tr>
<tr>
<td>Neighborhood Center</td>
<td>Station Area Total Employment</td>
<td>2,000 - 3,500</td>
<td>2,000 - 3,000</td>
<td>1,000 - 2,000</td>
</tr>
<tr>
<td></td>
<td>Gross Employment Density (jobs/acre)</td>
<td>20 - 30</td>
<td>15 - 20</td>
<td>10 - 15</td>
</tr>
</tbody>
</table>

Transit Service Map

Successful TOD requires the provision of convenient and reliable transit service to influence land use patterns, regulations, and investment. The location of transit routes, and their interconnectivity with transit stations, provides significant influence on land development patterns. As defined in the TOD Framework, “a transit station, as distinct from a bus stop, is defined as a station serving a premium type or types of transit (e.g., commuter rail, light rail, or bus rapid transit) or a station that functions as a local bus hub. A local bus hub or transfer station is considered to be a premium transit station if it serves a minimum of three fixed routes operating with headways of 21-30 minutes or less … Transit stations also serve as intermodal hubs, typically connecting two or more modes of transportation.”

For each subject community, a transit service map was created to illustrate existing and planned transit service within the TOD Station Area.
Place Type Analysis

Methodology, Findings & Conclusions

Area. Data for these maps was derived from the local transit agencies, local governments, metropolitan planning organizations, and FDOT. Using transit system maps, other maps, and interview data, GIS layers were developed to represent the existing trolley routes, local bus routes, light rail and heavy rail service, and any existing or planned passenger rail service routes. The color and thickness of the map lines was correlated to the type (transit mode) and amount of transit service (frequency, headways) provided along a particular route.

Field Research, Document Reviews & Interviews

A comprehensive assessment of transit-supportive conditions requires GIS analysis as well as “on-the-ground” research. For each community, this research began before the development of GIS maps with local interviews to confirm data availability and awareness of the place type evaluation. Subsequently, after development of draft GIS maps, interviews and reviews of the work were completed with various individuals in each community deemed knowledgeable of local conditions. In addition to local government staff, interviews were conducted with representatives of transit agencies, metropolitan planning organizations, regional planning councils, and district representatives of FDOT. Local governments also identified additional agencies for consultation, including community redevelopment agencies and county departments. Additional input was received from the Department of Economic Opportunity early in the research process.

Reviews of all applicable regulatory documents were conducted for each community, including comprehensive plans, land development regulations, transit development plans, community redevelopment plans (where applicable), MPÖ long-range transportation plans and transportation improvement programs, and relevant portions of FDOT work programs. Further, within each community and as identified through the interviews process, additional planning and engineering documents were reviewed (e.g., corridor plans, overlay plans, special district plans).

Field research was conducted in each community to assess transit-supportive conditions “on the ground.” Walking through each station area provided critical insight into the pedestrian environment, development patterns, transit facilities, pedestrian quality, roadway networks, bicycle amenities, street frontage, and related urban design characteristics, including building height. It
Findings and Observations

As noted earlier in this chapter, the TOD Place Type Analysis focused on eight communities selected with input from the statewide TOD Steering Committee. The communities were geographically dispersed and varied according to land development patterns, socioeconomic conditions, and function within their larger regional contexts. The subject communities included the three scales of TOD as identified in the TOD Framework (Regional, Community, and Neighborhood Centers), and as such, they included central business districts, emerging downtowns, suburban “edge” developments, and greenfield areas. The eight subject communities were also varied according to transit mode, and they represent different scales of potential TOD associated with all modes, including intercity passenger rail, commuter rail, heavy rail, bus rapid transit, and high frequency (intermodal hub) local bus.

The selection of diverse place type locations was intended to provide a representative sample of actual conditions in Florida. Accordingly, to be as effective as possible for implementation, the sample was intended to include at least one relevant example that would be consistent with the current local condition of most communities. Despite the variation in the sample (with different development conditions, intensities, transit modes, and regulatory contexts), common themes were identified to help guide communities of all sizes and types to remove obstacles to TOD and promote transit-supportive environments:

- Integrity of the street and block network correlates to the community context (urban infill, suburban retrofit, greenfield)
- Higher pedestrian activity levels observed in areas with more defined urban
- Florida is in the beginning stages of establishing premium transits system; therefore, neighborhood centers are difficult to identify
- Future land use designations tend to accommodate TOD in the long-term, suggesting market and other regulatory conflicts (i.e., land development regulations) have prevented TOD
- Geographical features other than transit station affect the location of residential uses
- Number of residential units tends to be below defined targets
- Places with higher numbers of residential units had focused public investment on establishing a desirable residential “address” and utilized incentives to attract developers
- Major government facilities are frequently located within station areas
- Broad variation in building scale exists across all station areas with all transit modes
- Surface parking is a prominent feature in most place type locations
- Substantial vacant/underutilized land is available in all place type locations
Existing Conditions

Florida’s development conditions range tremendously across the state, and the review of existing conditions confirmed the varied conditions relative to transit. Aerial imagery provided an overview of the existing conditions of each subject station area as well as the general context of the transit station within the larger TOD Station Area. The locations of both natural and manmade features that may facilitate or challenge TOD are visually depicted on the existing conditions maps as well as their influence on development patterns. Given the desirability for waterfront views, the existing conditions maps reflected high concentrations of development activity along the water’s edge in several Station Areas, which demonstrated development patterns that, without knowledge of these features, could otherwise be interpreted as incongruent with the importance of the station. For example, in Miami, the existing conditions map illustrates the more intense development is located along Biscayne Boulevard, which borders a waterfront park. These sites absorbed much of the demand for development, thereby leaving the transit station with a lower concentration within the quarter-mile TOD Core. In addition, the location of highways within Station Areas generally tended to limit development activity. Acting as both a visual and physical barrier, the impact of highways located within station areas is evident in the development patterns in both downtown Miami and Orlando.

**Existing Conditions: Miami**

Biscayne Boulevard, the easternmost thoroughfare in the Station Area, has a park overlooking Biscayne Bay to its east. The most intense development in the downtown takes advantage of the water views and access. To the west, Interstate 95 bifurcates the Station Area, physically impacting the development pattern, despite the largely interconnected street network which continues below the elevated highway.

**Existing Conditions: Orlando**

The impact of Interstate 4 and the East-West Expressway on the development pattern in downtown Orlando is evident in the aerial. Both the scale and quantity of new projects differ between the west and east sides of Interstate 4. Crossing under the elevated highway is possible, although it is not as attractive as many other downtown pedestrian routes. The SunRail station will establish a new, significant link in this area.
Street Network & Block Structure

An interconnected street network and well-defined block structure are critical components for creating physical environment that is conducive to TOD, particularly within the pedestrian shed. These characteristics also contribute to the ease by which a transit station can be accessed by automobiles and buses. The Block Structure maps for the subject communities clearly depict how easy a station area is to navigate, especially as a pedestrian or cyclist. Street networks with a fine grain provide multiple routes for all users and enable traffic to disperse, which in turn allows streets to be smaller and thus more pedestrian and bicycle-friendly. A well-connected street network with smaller block sizes shortens routes for pedestrians and cyclists, allowing travel times to better compete with personal automotive transportation. Block structure provides a different impact upon mobility, where smaller blocks (ideally with a perimeter of 1000 to 1600 feet) shorten pedestrian and bicycle routes, thereby improving pedestrian safety, interest, and facilitating non-motorized access to transit. The Framework identifies grid density and block size as important factors to promote TOD. Other organizations suggest the number of intersections informs connectivity, with LEED-ND recommending a minimum of 90 per square mile. The corresponding maps provide perspective on the arrangement of streets and blocks, and further, they enable the calculation of a quantitative measure - the grid density and number of intersections per square mile – to assess this condition.

The street and block structure appeared stronger and better defined in the older, established communities, especially within the historic downtown areas that were settled in the late 19th and early 20th centuries. These communities tended to have greater grid density and more intersections per square mile (see Table below, noting Sebring and Miami). Station areas developed more recently (post 1960s) tended to have larger block sizes and fewer, wider streets, which resulted in less interconnectivity and challenges to mobility (see Table below, noting Collier County). A clear contrast in block design is evident in the Sebring analysis, which has an original, dense block structure, connected to a more recent cul-de-sac development. It is important to note that in many communities with strong street and block networks, agglomerations of property, including some public rights-of-way, created dead-end streets, reduced the number of intersections, and increased block perimeters well beyond the recommended maximum. These alterations to the grid are evident in

<table>
<thead>
<tr>
<th>Station Area Interconnectivity Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOD Place Type</td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td><strong>Regional Centers</strong></td>
</tr>
<tr>
<td>Miami</td>
</tr>
<tr>
<td>Orlando</td>
</tr>
<tr>
<td><strong>Community Centers</strong></td>
</tr>
<tr>
<td>Daytona Beach</td>
</tr>
<tr>
<td>Tallahassee</td>
</tr>
<tr>
<td>West Palm Beach</td>
</tr>
<tr>
<td><strong>Neighborhood Centers</strong></td>
</tr>
<tr>
<td>Collier County</td>
</tr>
<tr>
<td>Pasco</td>
</tr>
<tr>
<td>Sebring</td>
</tr>
</tbody>
</table>
communities with high block measures, including downtown West Palm Beach, Daytona Beach, and Sebring, suggesting an important focus for established areas may be to establish policies to protect the existing urban fabric.

For areas settled without a dense network of streets and blocks, although challenging, it is possible to augment and retrofit roadway networks to reduce block sizes and increase both grid density and the number of intersections per square mile. This change may present the biggest impediment to establishing a TOD-supportive environment in existing suburban and greenfield locations. It is important to note that the grid density levels suggested in the TOD Framework are extremely high targets, especially in communities developed in the 20th century and later. Even at grid densities and intersection counts below the targeted goals, the mobility and interconnectivity of station areas can be significantly increased with reduced block sizes and the establishment of alternate routes within the street network. In order to introduce new rights-of-way within these newer areas that have been developed with limited grids, multi-agency and private property owner cooperation is necessary and may require a more in-depth public process than needed in urban areas with a strong, existing street network and block structure.

---

**Block Structure: Sebring**

Sebring’s initial radial design from 1911 is still intact today. Sebring had a grid density of 194, the highest of the places studied. The typical block perimeter is roughly 1,400 feet, and the streets are well-connected with 173 intersections per square mile (the highest of the places studied). The western portion of the Station Area is mostly undeveloped, although a more recent development introduces the first cul-de-sac to street network.

**Block Structure: Collier County**

The block structure in the Collier County Government Complex and surrounding areas is comprised of many “super-blocks.” These large blocks are not conducive to efficient travel by pedestrians or cyclists, with block perimeters ranging from 1,620 to more than 12,000 feet. Of the developed areas analyzed, Collier had the lowest degree of connectivity, measuring only 30 intersections per square mile.
Methodology, Findings & Conclusions

Place Type Analysis

Figure Ground

The Figure Ground analysis depicts the relationship between the built and un-built areas of the station area and is an effective tool for assessing the perceived urban condition of a place. Figure Ground analyses also clearly indicate where land is vacant or under-utilized, thereby highlighting areas that may be available for development or redevelopment. The Place Type Analyses indicated that station areas where streets are physically defined by buildings tended to have the highest levels of pedestrian activity. Examples of station areas with areas establishing this environment include West Palm Beach, Orlando, and Miami. With respect to vacant and underutilized land, it was surprising to find that all eight subject communities, including those that had experienced tremendous construction in the last Florida building boom, were found to have significant areas available for development and redevelopment. This infill potential suggests opportunities exist for every place type location studied in this analysis to improve transit-supportive conditions with carefully located buildings and improvements over time.

Figure Ground: West Palm Beach

The areas with the highest levels of pedestrian activity are clearly defined by buildings, as depicted on the Figure Ground analysis. Within the West Palm Beach station area, the two areas with the highest amount of street definition are evident in the map: CityPlace, a mixed-use infill project comprised of the four blocks west of the transit station, and Clematis Street, which is the City’s historic main street that ends at the water’s edge.

Figure Ground: Miami

Although the core of the Urban Central Business district in downtown Miami is well-defined by buildings, significant areas suitable for potential redevelopment remain in the TOD Core area. The extensive transit system in the downtown area will facilitate redevelopment as the City’s new land development regulations reduce or eliminate parking requirements and allow significant density and intensity in the area.
Place Type Analysis

Existing Land Uses

The TOD Framework suggests an optimal mix of uses by place type, focusing on the relationship between residential and nonresidential uses. Generally, a higher percentage of nonresidential land uses is recommended for the more intense place types. For example, Regional Centers are anticipated to have a higher amount of nonresidential land use than Neighborhood Centers. The Framework also identifies targets for the intensity of use by type. Higher densities are recommended for residential development in Regional Centers, which yield a greater number of residential units on less land area.

The analysis of existing land uses yielded fairly consistent results in all eight subject communities. Regardless of TOD place type category or urban/suburban character, all subject communities fell well below the residential targets identified in the Framework. Several of the communities have comprehensive plan policies and land development regulations in place to incentivize additional residential development. Pasco County, which contains the only greenfield area studied, has adopted land development regulations consistent with the mix of land uses recommended by the TOD Framework document. West Palm Beach, in response to the requirements of its TCEA, has utilized both CRA investments and zoning incentives to attract more residential uses its station area.

<table>
<thead>
<tr>
<th>TOD Place Type</th>
<th>Station Area - Target Ratio % Residential / Non-Residential</th>
<th>Station Area - Actual Ratio % Residential / Non-Residential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional Centers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Miami</td>
<td>35% / 65%</td>
<td>25% / 75%</td>
</tr>
<tr>
<td>Orlando</td>
<td>35% / 65%</td>
<td>13% / 87%</td>
</tr>
<tr>
<td>Community Centers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daytona Beach</td>
<td>45% / 55%</td>
<td>20% / 80%</td>
</tr>
<tr>
<td>Tallahassee</td>
<td>45% / 55%</td>
<td>24% / 76%</td>
</tr>
<tr>
<td>West Palm Beach</td>
<td>45% / 55%</td>
<td>16% / 84%</td>
</tr>
<tr>
<td>Neighborhood Centers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collier County</td>
<td>75% / 25%</td>
<td>45% / 55%</td>
</tr>
<tr>
<td>Pasco</td>
<td>75% / 25%</td>
<td>5% / 95% (undeveloped)</td>
</tr>
<tr>
<td>Sebring</td>
<td>75% / 25%</td>
<td>25% / 75%</td>
</tr>
</tbody>
</table>

Table 3-7

Residential to Non-Residential Land Use Analysis
Future Land Uses

Future Land Use designations are required by statute to be contained in local government comprehensive plans. However, as these documents are locally defined, there is significant variation in nomenclature, character descriptions, and the permitted land uses and densities contained within each category. A review of the future land use categories in each subject community was conducted to determine whether or not future land use categories in the TOD Station Area were supportive or contrary to TOD patterns. Generally, the Station Areas studied in this effort have been assigned locally defined future land uses that promote a mix of uses consistent with the goals for TOD. The categories include designations such as “central business district,” “downtown redevelopment,” “central urban,” and “mixed-use,” all of which can be conducive to TOD development. This finding suggests that future land use designations, as determined in the comprehensive plans of the subject communities, do not appear to be a key obstacle to the implementation of TOD in communities where a premium transit station has been identified.

**Future Land Use: Collier County**

Collier County’s Future Land Use designation of “Mixed Use Activity Center” (shown in purple) establishes the possibility for redeveloping the TOD Core area in a manner consistent with TOD. The Transit-Supportive area is largely residential in nature, with a high priority on using TDRs to attract development to the Urban Residential Subdistrict (shown in yellow), away from coastal areas (shown in orange) and conservation lands.

**Future Land Use: Tallahassee**

Tallahassee utilizes future land use categories “Central Core” (shown in red) and “Central Urban” (shown in pink) for most of its Station Area. Both categories promote a development pattern consistent with the goals of TOD. Central Core allows high density (150 du/ac), mixed-use development. Central Urban also promotes the same type of development, but with a greater emphasis on providing compatible transitions to surrounding areas.
**Minimum Density/Intensity Requirements**

Orlando was the only place type studied with minimum density and intensity criteria in the Future Land Use designations. However, it is important to note that Orlando does not require vertical mixed use in every development. Rather, if residential use is proposed, a minimum density must be met and/or if non-residential uses are proposed, a minimum FAR requirement must be met. This strategy positions the station area to maximize market trends (allowing either use or a mixed configuration) and prevents low-density and intensity development from occurring on prime TOD land. To a lesser degree, some places including West Palm Beach, require a minimum building height of two stories in certain locations to ensure a minimum building scale occurs.

Tables 3-8, 3-9, and 3-10 compare the densities and intensities adopted by communities in their comprehensive plans to the site level targets established in the Framework.

**Table 3-8**

*Regional Center Future Land Use Analysis*

<table>
<thead>
<tr>
<th>TOD Place Type</th>
<th>Land Use Designation</th>
<th>FAR</th>
<th>Net Density (du/ac)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional Center with Heavy Rail</td>
<td>TOD Framework Site Level Measures</td>
<td>4.0-6.0</td>
<td>85-115</td>
</tr>
<tr>
<td>Miami</td>
<td>Central Business District</td>
<td>40.0 max.</td>
<td>1000 max.</td>
</tr>
<tr>
<td></td>
<td>Restricted Commercial</td>
<td>37.0 max.</td>
<td>300 max. (Overtown)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>500 max. (Brickell)</td>
</tr>
<tr>
<td></td>
<td>Major Institutional</td>
<td>37.0 max.</td>
<td>300 max. (Overtown)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>500 max. (Brickell)</td>
</tr>
<tr>
<td></td>
<td>Medium Density Multifamily Residential</td>
<td>Not Regulated</td>
<td>65 max.</td>
</tr>
<tr>
<td>Regional Center with Light/Commuter Rail</td>
<td>TOD Framework Site Level Measures</td>
<td>2.0-4.0</td>
<td>55-85</td>
</tr>
<tr>
<td>Orlando</td>
<td>Downtown Activity Center</td>
<td>.75 min. - 4.0 max.*</td>
<td>75 min. -200 max.*</td>
</tr>
<tr>
<td></td>
<td>Urban Activity Center</td>
<td>.5 min. – 1.0 max.*</td>
<td>30 min. -100 max.*</td>
</tr>
<tr>
<td></td>
<td>Public/Recreational/Institutional</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Residential Medium</td>
<td>.3 max</td>
<td>12 min. – 30 max.</td>
</tr>
</tbody>
</table>

* minimums apply to use proposed
### Table 3-9
Community Center Future Land Use Analysis

<table>
<thead>
<tr>
<th>TOD Place Type</th>
<th>Land Use Designation</th>
<th>FAR</th>
<th>Net Density (du/ac)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community Center with BRT/Amtrak</td>
<td>TOD Framework Site Level Measures</td>
<td>1.0-2.0</td>
<td>20-40</td>
</tr>
<tr>
<td>Daytona Beach</td>
<td>High Intensity Mixed Use</td>
<td>10.0 max.</td>
<td>25 max.</td>
</tr>
<tr>
<td></td>
<td>Commercial Mixed Use</td>
<td>3.0 max.</td>
<td>40 max.</td>
</tr>
<tr>
<td></td>
<td>Office</td>
<td>2.0 max.</td>
<td>20 max.</td>
</tr>
<tr>
<td></td>
<td>Retail</td>
<td>3.0 max.</td>
<td>40 max.</td>
</tr>
<tr>
<td></td>
<td>Level 1 Residential</td>
<td>N/A</td>
<td>8 max.</td>
</tr>
<tr>
<td></td>
<td>Level 2 Residential</td>
<td>N/A</td>
<td>20 max.</td>
</tr>
<tr>
<td>Community Center with BRT/Bus</td>
<td>TOD Framework Site Level Measures</td>
<td>1.0-2.0</td>
<td>20-40</td>
</tr>
<tr>
<td>Tallahassee</td>
<td>Central Urban</td>
<td>N/A</td>
<td>45 max.</td>
</tr>
<tr>
<td></td>
<td>Central Core</td>
<td>Not Limited</td>
<td>150 max.</td>
</tr>
<tr>
<td></td>
<td>Suburban</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Residential Preservation</td>
<td>N/A</td>
<td>6 max.</td>
</tr>
<tr>
<td>Community Center with Light/Commuter Rail</td>
<td>TOD Framework Site Level Measures</td>
<td>2.0-4.0</td>
<td>40-60</td>
</tr>
<tr>
<td>West Palm Beach</td>
<td>Flagler Waterfront District</td>
<td>2.75 (3.75 max. w/bonus)</td>
<td>Not Limited (5-15 story height)</td>
</tr>
<tr>
<td></td>
<td>Quadrille Garden District</td>
<td>2.75 (3.75 max. w/bonus)</td>
<td>Not Limited (10-15 story height)</td>
</tr>
<tr>
<td></td>
<td>Quadrille Business District</td>
<td>1.75 (6.5 max. w/bonus)</td>
<td>Not Limited (7-15 story height)</td>
</tr>
<tr>
<td></td>
<td>TOD District</td>
<td>2.75 (3.25 max. w/bonus)</td>
<td>Not Limited (8-story height)</td>
</tr>
<tr>
<td>Urban Central Business District Future Land Use Subdistricts</td>
<td>CityPlace District</td>
<td>DRI Approval</td>
<td>DRI Approval</td>
</tr>
<tr>
<td></td>
<td>Cultural Arts District</td>
<td>2.75</td>
<td>Not Limited (5-story height)</td>
</tr>
</tbody>
</table>
**Table 3-10**  
*Neighborhood Center Future Land Use Analysis*

<table>
<thead>
<tr>
<th>TOD Place Type</th>
<th>Land Use Designation</th>
<th>FAR</th>
<th>Net Density (du/ac)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neighborhood Center with BRT/Bus</td>
<td>TOD Framework Site Level Measures</td>
<td>.5-1.0</td>
<td>10-12</td>
</tr>
<tr>
<td><strong>Collier County</strong></td>
<td>Urban Residential (plus Potential TDRs)</td>
<td>Not Specified</td>
<td>16 (+1)</td>
</tr>
<tr>
<td></td>
<td>Urban Coastal Fringe (plus Potential Bonuses)</td>
<td>Not Specified</td>
<td>4 (+3)</td>
</tr>
<tr>
<td></td>
<td>Mixed Use Activity Center</td>
<td>Not Specified</td>
<td>16</td>
</tr>
<tr>
<td>Neighborhood Center with BRT/Bus</td>
<td>TOD Framework Site Level Measures</td>
<td>.5-1.0</td>
<td>10-12</td>
</tr>
<tr>
<td><strong>Pasco County</strong></td>
<td>Neighborhood TOD</td>
<td>.6 - 1.35</td>
<td>20-30 du/ac</td>
</tr>
<tr>
<td>Neighborhood Center with BRT/Bus</td>
<td>TOD Framework Site Level Measures</td>
<td>.5-1.0</td>
<td>10-12</td>
</tr>
<tr>
<td><strong>Sebring</strong></td>
<td>Downtown Mixed Use Redevelopment (100 feet Height Limit)</td>
<td>Not Specified</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>Residential High</td>
<td>Not Applicable</td>
<td>10-40</td>
</tr>
<tr>
<td></td>
<td>Residential Medium</td>
<td>Not Applicable</td>
<td>5-12</td>
</tr>
</tbody>
</table>
Mix of Uses Requirements

Most place types studied did not utilize a required mix of uses for development by either zoning or the future land use category. However, measures were used at the macro-level in both Orlando and West Palm Beach to ensure a mix of uses within the overall station area. Orlando has established goals to improve the mix of uses within the downtown activity center as a whole, which include at least doubling the percentage of residential use from a minimum of 2.5% to 5% by 2025. West Palm Beach has a TCEA (transportation concurrency exception area) in place that requires monitoring of the balance between the number of residential units and the square footage of nonresidential use, with incremental targets established over time. The city used this monitoring requirement to identify a need for additional residential uses in 2000 and established a limited duration incentive program offering additional building height to attract residential development. Conversely, certain streets in West Palm Beach were required to provide retail uses on the ground floor, which remain vacant more than five years later, prompting reconsideration of the extent of the area subjected to that policy.

<table>
<thead>
<tr>
<th></th>
<th>2010 Min.</th>
<th>2010 Max.</th>
<th>2025 Min.</th>
<th>2025 Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>2.5%</td>
<td>10%</td>
<td>5%</td>
<td>10%</td>
</tr>
<tr>
<td>Office</td>
<td>20%</td>
<td>25%</td>
<td>15%</td>
<td>25%</td>
</tr>
<tr>
<td>Commercial</td>
<td>40%</td>
<td>55%</td>
<td>35%</td>
<td>50%</td>
</tr>
<tr>
<td>Pub/Rec/Inst.</td>
<td>5%</td>
<td>20%</td>
<td>5%</td>
<td>20%</td>
</tr>
<tr>
<td>Hospitals</td>
<td>1%</td>
<td>5%</td>
<td>1%</td>
<td>5%</td>
</tr>
<tr>
<td>Industrial</td>
<td>5%</td>
<td>15%*</td>
<td>5%</td>
<td>12%</td>
</tr>
</tbody>
</table>

*This percentage applies only in activity centers in which industrial uses are permitted.

Policy 1.2.1 in Orlando’s Growth Management Plan sets mixed use policy in the Downtown Activity Center.

Total Residential Units

The TOD Framework identifies station area targets for the number of residential units, correlated to the scale of TOD (regional, community, neighborhood) and the type of transit system serving the station area. In each analysis, the total number of residential units in each place type analysis was illustrated using a color ramp to graphically depict the location and concentration of units within the station area. Several common observations were identified related to quantity and location of residential units within the study areas.
Place Type Analysis

Methodology, Findings & Conclusions

Table 3-11
Station Area - Residential Unit Targets vs. Actual Counts

<table>
<thead>
<tr>
<th>TOD Place Type</th>
<th>Mode</th>
<th>Station Area Unit Targets</th>
<th>Actual Number Residential Units</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Regional Centers</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Miami</td>
<td>Heavy Rail/Light Rail/Bus</td>
<td>10,000 - 15,000</td>
<td>9,509</td>
</tr>
<tr>
<td>Orlando</td>
<td>BRT/Commuter Rail</td>
<td>5,000 - 10,000</td>
<td>3,808</td>
</tr>
<tr>
<td><strong>Community Centers</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daytona Beach</td>
<td>BRT/Amtrak</td>
<td>1,000 - 3,000</td>
<td>955</td>
</tr>
<tr>
<td>Tallahassee</td>
<td>Bus/BRT</td>
<td>1,000 - 3,000</td>
<td>1,762</td>
</tr>
<tr>
<td>West Palm Beach</td>
<td>Commuter Rail/Bus/Amtrak</td>
<td>3,000 - 5,000</td>
<td>6,935</td>
</tr>
<tr>
<td><strong>Neighborhood Centers</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collier County</td>
<td>Bus</td>
<td>1,000 - 2,000</td>
<td>1,708</td>
</tr>
<tr>
<td>Pasco</td>
<td>Bus/Planned BRT</td>
<td>1,000 - 2,000</td>
<td>255</td>
</tr>
<tr>
<td>Sebring</td>
<td>Bus/Amtrak</td>
<td>1,000 - 2,000</td>
<td>961</td>
</tr>
</tbody>
</table>

In the eight place types studied, most locations needed additional residential units to meet the station area targets as identified in the TOD Framework. The Collier County station area, which meets the target number of units for a Neighborhood Center, is likely to evolve into a Community Center station, which increases the residential target to 1,000 to 3,000 units, suggesting additional densification will be necessary over time. Similarly, West Palm Beach exceeded the recommended station area target when classified as a Community Center and meets the residential target for the more intense Regional Center. The residential unit target in West Palm Beach was accomplished within a wide variety of housing types: 8 to 20-story condominiums (usually with mixed-use in the first story), 3 to 5-story apartments, townhouses, and single-family houses within dense (14 du/ac), historic districts at the edge of the transit neighborhood area. West Palm Beach utilized a focused strategy of both private and public investment to attract residential uses into the station area. A significant CRA-led urban infill project (CityPlace) created more than 500 new residential units in the downtown, and a “residential incentive program” offered zoning bonuses for private projects with residential uses in upper stories. More than 3,500 units were added to the station area under these programs within the last ten years. West Palm Beach is an example of a community in the process of growing from one type (Community Center) to a more intense one (Regional Center).

The City of Miami had the highest number of residential units within the station areas studied, with more than 9,500 units, approaching the station area target of 10,000. Although Miami operates one of the most extensive multi-modal transit systems in the state, it is important to note when evaluating the location of these units, most of them are located outside of the TOD Core area to take advantage of water views. The City and CRA helped establish an attractive residential environment by investing in public spaces, streetscapes, and adopting high urban design standards within the land development code. Under the recent Miami 21 planning initiative, incentives for residential uses within designed TOD nodes (including this station area) ensure densification will continue within both the transit core and transit neighborhood areas.

It should be noted the residential targets for the various place types increase by context (from neighborhood to community to regional) as well as by capacity of transit mode (from bus/BRT to commuter/light rail to heavy rail). This criteria provides a measurement for residential develop-
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ment in station areas to help indicate when they have intensified sufficiently to support a higher capacity mode of transit. Orlando exemplifies this evolution. Orlando currently operates LYMMO, a BRT system, through the station area, and the current unit count (approximately 3,800 units) is within the 3,000-5,000 unit range for BRT in regional centers. The station area will also soon be served by a SunRail commuter rail station, for which the targeted residential unit range is 5,000-10,000 units. The place type analysis confirms the city’s current residential counts are sufficient for BRT (evidenced in part by the system’s high ridership), and further, given the city’s regulations promoting high density residential development, the station area would be expected to progress towards the higher residential unit counts targeted for commuter rail.

A surprising range of housing affordabilities and types appeared to be available within most station areas, though it is important to note that residential market studies were not conducted for each place type. Even though the recent, unprecedented national real estate adjustment has reduced the immediate concern for workforce housing, the need for long-term planning remains evident within most station areas. Some communities, including Miami and West Palm Beach, have adopted height incentives into their Comprehensive Plans and land development codes in order to attract workforce and affordable housing into the station areas. The use of “set aside” requirements, where a certain percentage of new units is required to be offered at prices attainable to income-qualified buyers, was not evident in the places studied. Incorporating various types of long-term policies to ensure a range of housing price points is important to maintain affordability, especially when the market recovers.

Existing Conditions: Daytona Beach

The analysis of Daytona Beach revealed the importance of considering student populations when planning for TOD and transit. The largest concentrations of residential units are in the Bethune-Cookman University campus and in an affordable housing complex in the southwest portion of the study area. Market rate developments have located on sites with water views.

Existing Conditions: Miami

The Miami transit station is located within a significant government employment center, including local, county, and state facilities. Residential development is located outside of the TOD Core area to take advantage of water views. The sophisticated transit system, including a light rail circulator, provides easy access to the station throughout the Station Area.
**Place Type Analysis**

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**Calculated Average Residential Density**

Residential targets were established in the TOD Framework to help ensure sufficient quantities of residential use would occur in TOD Station Areas to create vibrant, transit-supportive areas with high potential ridership. The TOD Framework recognized the intensity and characteristics of residential uses vary depending upon the type of TOD. As a result, the Framework established density targets for the portion of Station Areas allocated for residential uses under the prescribed mix of uses by TOD place type.

The Framework specifies a percentage of each Station Area for residential uses (Table 3-1) and specifies density ranges for the residential portion in order to achieve the residential unit targets set forth in Table 3-2. In order to consider the widespread use of vertically integrated mixed-use anticipated within many TODs, the calculated average residential density (Table 3-4) which assumes all parcels in the Station Area have residential uses, can also be a useful measure. Additionally, the density of the TOD Core of each place type was evaluated individually to analyze the land closest to the station for potential residential uses. Combined with the Residential Unit maps, this analysis provides a significant amount of information regarding where residential uses tend to be located as well as where additional density appears necessary.

It is important to note that gross residential targets (e.g., calculated gross density) are much lower than the density of individual parcels (“the site level”), as gross density measures includes land utilized for roads, water, parks, and similar uses. In order to achieve these gross densities, land development codes must allow higher densities on individual parcels. Evaluating gross residential density, whether as a calculated average of the station area or on specific portions of the station area planned to include residential uses, provides a tool for planners to determine and maintain a balance among diverse uses and scales within each station area. For example, West Palm Beach meets or exceeds the gross residential density targets with more than 4,000 units located within the

<table>
<thead>
<tr>
<th>TOD Place Type</th>
<th>Residential Density Targets</th>
<th>Actual Residential Densities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Density Target for Residential Portion Only of Station Area (Framework)</td>
<td>Percentage of Station Area Residential (Framework)</td>
</tr>
<tr>
<td><strong>Regional Centers</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Miami</td>
<td>55-75 du/ac</td>
<td>35%</td>
</tr>
<tr>
<td>Orlando</td>
<td>35-55 du/ac</td>
<td>35%</td>
</tr>
<tr>
<td><strong>Community Centers</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daytona Beach</td>
<td>10-20 du/ac</td>
<td>45%</td>
</tr>
<tr>
<td>Tallahassee</td>
<td>10-20 du/ac</td>
<td>45%</td>
</tr>
<tr>
<td>West Palm Beach</td>
<td>25-35 du/ac</td>
<td>45%</td>
</tr>
<tr>
<td><strong>Neighborhood Centers</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collier County</td>
<td>7-9 du/ac</td>
<td>75%</td>
</tr>
<tr>
<td>Pasco</td>
<td>7-9 du/ac</td>
<td>75%</td>
</tr>
<tr>
<td>Sebring</td>
<td>7-9 du/ac</td>
<td>75%</td>
</tr>
</tbody>
</table>
station area. Properties within the TOD-Core exceed the gross density target, measuring 25 du/ac, while the Transit Supportive Area meets the target measuring 12 du/ac. It is important to note that the recommended density thresholds are easily met using a wide range of housing options, from 20-story buildings (330 du/ac) within the TOD-Core to single-family homes (8 du/ac) with accessory units (12 du/ac) at the edge of the Transit-supportive Neighborhood.

### Table 3-13

<table>
<thead>
<tr>
<th>TOD Place Type</th>
<th>Target Site Level Net Density</th>
<th>Existing Site Level Net Density</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional Centers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Miami</td>
<td>85 - 115</td>
<td>7 - 458</td>
</tr>
<tr>
<td>Orlando</td>
<td>55 - 85</td>
<td>4 - 411</td>
</tr>
<tr>
<td>Community Centers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daytona Beach</td>
<td>40 - 60</td>
<td>8 - 47</td>
</tr>
<tr>
<td>Tallahassee</td>
<td>20 - 40</td>
<td>6 - 459</td>
</tr>
<tr>
<td>West Palm Beach</td>
<td>40 - 60</td>
<td>12 - 330</td>
</tr>
<tr>
<td>Neighborhood Centers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collier County</td>
<td>10 - 12</td>
<td>5 - 12</td>
</tr>
<tr>
<td>Pasco</td>
<td>10 - 12</td>
<td>N/A</td>
</tr>
<tr>
<td>Sebring</td>
<td>12 - 15</td>
<td>8 - 121</td>
</tr>
</tbody>
</table>

Using the Residential Units and Residential Density maps together provides an overview of the current development pattern related to residential development. Developments with high amounts of units are concentrated within the TOD Core, which is a desirable arrangement. Across the station area, residential uses are located within varied forms, including condominium towers, low-rise buildings, townhouses, dormitories, and dense single-family units. The site level densities of these different types of residential developments range from 330 du/ac to 12 du/ac, yielding aggregate unit counts across the station area that exceed the recommended target.
Non Residential Intensity (existing)

The TOD Framework recommends a mix of non-residential to residential uses within each TOD place type. In general, all of the subject station areas appeared to exceed the allocation of non-residential uses and needed more residential uses to balance the mix. While the non-residential uses provide significant ridership within the TODs, the residential uses help balance the economic sustainability, street-level function, natural surveillance, and trip capture characteristics of station areas. The large concentrations of non-residential development that exist within each station area tend to be correlated with employment centers, many of which are institutional (e.g., government administrative complexes, educational facilities). This suggests one key to TOD is improving the “livability” aspect of station areas to ensure a balance of jobs and housing occurs over time.

**Non-Residential Use Analysis: Tallahassee**

The most intense non-residential development is located around Pensacola Street, reflecting the government employment district, which includes the Florida Capitol Complex, FSU Law School, and the Leon County Civic Center. The Tallahassee Station Area currently has 76% Non-Residential Uses. 32% of the Station Area is for Institutional Use, reflecting the City’s position as the state capitol and County seat.
Areas with high amounts of Non-Residential Intensity are located on both sides of Interstate 4. The central business district is located on the east side of the highway, while significant government facilities are dispersed throughout the Station Area. The Orlando Station Area currently is 87% Non-Residential Uses. 30% of the Station Area is Institutional Use, reflecting the City's position as the County seat.

### Table 3-14

<table>
<thead>
<tr>
<th>TOD Place Type</th>
<th>Target % Residential / Non-Residential</th>
<th>Actual % Residential / Non-Residential</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Regional Centers</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Miami</td>
<td>35% / 65%</td>
<td>25% / 75%</td>
</tr>
<tr>
<td>Orlando</td>
<td>35% / 65%</td>
<td>13% / 87%</td>
</tr>
<tr>
<td><strong>Community Centers</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daytona Beach</td>
<td>45% / 55%</td>
<td>20% / 80%</td>
</tr>
<tr>
<td>Tallahassee</td>
<td>45% / 55%</td>
<td>24% / 76%</td>
</tr>
<tr>
<td>West Palm Beach</td>
<td>45% / 55%</td>
<td>16% / 84%</td>
</tr>
<tr>
<td><strong>Neighborhood Centers</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collier County</td>
<td>75% / 25%</td>
<td>45% / 55%</td>
</tr>
<tr>
<td>Pasco</td>
<td>75% / 25%</td>
<td>5% / 95% (un-developed)</td>
</tr>
<tr>
<td>Sebring</td>
<td>75% / 25%</td>
<td>25% / 75%</td>
</tr>
</tbody>
</table>
Employment Intensity

The TOD Framework considers several aspects related to employment within station areas: number of jobs, employment density (jobs/acre), and jobs-to-housing ratio. The quantity of jobs is a key ridership indicator for successful transit, and the intensity at which jobs exist within a TOD Station Area helps indicate the property utilization rate and efficiency of use. The jobs-to-housing ratio suggests an optimal relationship between employment opportunities and nearby housing options and is a strong planning tool for overall station area uses.

The place type findings regarding employment intensity were the most varied of all the TOD measures evaluated. Three of the subject communities - Tallahassee, Collier County, and Sebring - exceed the targeted number of jobs for their TOD place type due to the significant presence of government facilities. Collier County is likely evolving to a Community Center type, which increases the target to 6,000-12,000 jobs, suggesting more jobs will be needed in the future. West Palm Beach and Orlando are also central cities within their regions, with West Palm Beach’s employment well within the recommended range and Orlando’s nearing the minimum recommended quantity. These two place types are also likely to evolve to meet higher employment targets as the transit capacity increases and community context changes over time.

With respect to the jobs-to-housing ratios, the residential analyses for each community indicated that five of the eight subject station areas were deficient with respect to the residential unit targets set forth in the TOD Framework. As would be expected from that characteristic, most of the subject communities also exceed the jobs-to-housing ratio, with some communities containing significantly increased employment versus residential use. The high jobs-to-housing ratio for Pasco County is due to the largely undeveloped condition of the Station Area, which currently has little housing and agricultural, retail, and service jobs. At build-out, this Station Area is intended for intense development with a balance of uses (35% Residential to 65% Non-residential) and will likely have a balanced ratio. Conversely, the developed station areas in Tallahassee, Collier County, and Sebring contained almost three times the jobs versus residential units recommended.

### Table 3-15

<table>
<thead>
<tr>
<th>TOD Place Type</th>
<th>Target Employment</th>
<th>Existing Employment</th>
<th>Target Jobs to Housing Ratio</th>
<th>Existing Jobs to Housing Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Regional Centers</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Miami</td>
<td>60,000 - 80,000</td>
<td>36,702</td>
<td>6 : 1</td>
<td>4 : 1</td>
</tr>
<tr>
<td>Orlando</td>
<td>40,000 - 60,000</td>
<td>37,417</td>
<td>6 : 1</td>
<td>9.8 : 1</td>
</tr>
<tr>
<td><strong>Community Centers</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daytona Beach</td>
<td>6,000 - 12,000</td>
<td>4,954</td>
<td>3 : 1</td>
<td>5.2 : 1</td>
</tr>
<tr>
<td>Tallahassee</td>
<td>6,000 - 12,000</td>
<td>18,219</td>
<td>3 : 1</td>
<td>10.3 : 1</td>
</tr>
<tr>
<td>West Palm Beach</td>
<td>12,000 - 18,000</td>
<td>16,268</td>
<td>3 : 1</td>
<td>2.3 : 1</td>
</tr>
<tr>
<td><strong>Neighborhood Centers</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collier County</td>
<td>1,000 - 2,000</td>
<td>4,510</td>
<td>1 : 1</td>
<td>2.6 : 1</td>
</tr>
<tr>
<td>Pasco</td>
<td>1,000 - 2,000</td>
<td>1,455</td>
<td>1 : 1</td>
<td>5 : 1*</td>
</tr>
<tr>
<td>Sebring</td>
<td>1,000 - 2,000</td>
<td>3,309</td>
<td>1 : 1</td>
<td>3.4 : 1</td>
</tr>
</tbody>
</table>

* Greenfield condition
Methodology, Findings & Conclusions

in the TOD Framework. The Orlando and Daytona Beach station areas contained 50% more jobs/housing than the TOD Framework recommends. These findings reinforces the need for a strong planning, financial, and regulatory focus on the attraction and retention of housing uses within TOD Station Areas.

Aggregated Employment & Residential Uses

In addition to benchmarks for employment (total number of jobs) and residential use (total number of units), the TOD Framework also set forth recommended targets for the aggregated jobs and housing units within Station Areas as another transit-supportive measure. This is level of activity is a strong indicator of potential transit ridership within a station area. The aggregation of these two counts also highlights the separation of station area contexts, from regional to community to neighborhood centers.

The findings related to this measure were mixed across the sample communities. Tallahassee, West Palm Beach, Collier County, and Sebring all exceeded the aggregated upper-end targets for their place type and transit mode. Three of these communities surpassed the target due to employment (Tallahassee, Collier County, and Sebring), whereby each community functioned as a county seat for public employment. West Palm Beach, on the other hand, surpassed the target by virtue of its high residential uses. Orlando was nearing its aggregated base target for regional commuter rail, a figure that will likely be exceeded as the city continues to implement its intense redevelopment plans, policies, and codes. The remaining communities – Miami, Daytona Beach, and Pasco – were below the aggregated base targets for their place type and transit mode. This finding corresponds to the continued availability of vacant and underutilized properties within these station areas, which will lend themselves to infill development and redevelopment over time, thereby intensifying these station areas.

Table 3-16
Station Area - Aggregated Employment & Residential Uses

<table>
<thead>
<tr>
<th>TOD Place Type</th>
<th>Target Employment and Residential Units</th>
<th>Existing Employment and Residential Units</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Regional Centers</strong></td>
<td>Miami</td>
<td>70,000-95,000</td>
</tr>
<tr>
<td></td>
<td>Orlando</td>
<td>45,000-70,000</td>
</tr>
<tr>
<td><strong>Community Centers</strong></td>
<td>Daytona Beach</td>
<td>7,000-15,000</td>
</tr>
<tr>
<td></td>
<td>Tallahassee</td>
<td>7,000-15,000</td>
</tr>
<tr>
<td></td>
<td>West Palm Beach</td>
<td>15,000-23,000</td>
</tr>
<tr>
<td><strong>Neighborhood Centers</strong></td>
<td>Collier County</td>
<td>2,000-4,000</td>
</tr>
<tr>
<td></td>
<td>Pasco</td>
<td>2,000-4,000</td>
</tr>
<tr>
<td></td>
<td>Sebring</td>
<td>2,000-4,000</td>
</tr>
</tbody>
</table>
Place Type Analysis

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Transit Intensity

Florida is a state that is evolving the types of transit operating in its communities. For the purposes of TOD, the Framework specifies that a transit station must either (1) serve a premium type or types of transit (e.g., commuter rail, light rail, or bus rapid transit), or (2) the station must function as a local bus hub, serving a minimum of three fixed routes operating with headways of 21-30 minutes or less. The Framework further notes that transit stations also serve as intermodal hubs, providing connections for two or more modes of transportation. The TOD place type evaluation indicated the presence or anticipation of all modes operating in the State of Florida. Among the eight communities, transit modes included a wide range of options:

- **Heavy rail**: Miami (Metrorail)
- **Light rail**: Miami (Metromover)
- **Intercity passenger rail**: West Palm Beach and Sebring (Amtrak), Daytona Beach (planned Amtrak)
- **Express Intercity Service**: Miami and West Palm Beach (planned All Aboard Florida), Daytona Beach (planned Amtrak)
- **Commuter rail**: West Palm Beach (Tri-Rail, planned FEC commuter service), Orlando (SunRail)
- **BRT**: Orlando (LYMMO), Pasco County (planned), and Daytona Beach (under study)
- **Local Bus Hubs**: Tallahassee, Collier County

Because the transit intensity maps also illustrate the street network, the maps provide insight for the level of transit integration and the overall transportation conditions within the study area. For example, West Palm Beach has a robust multi-modal system that includes a local trolley augmenting county, regional, and intercity transit options. In addition, the City’s development pattern facilitates walking and biking through the station area. Fairly limited transit options were evident in other station areas. Collier County was found to have a low amount of transit service and also the least connected environment (excluding Pasco County’s undeveloped condition).

![Transit Intensity: West Palm Beach](image-url)
Conclusions

The TOD Place Type Analysis provides unique and comprehensive insight into the varying development conditions, land use contexts, and potential obstacles that exist with respect to transit-supportive challenges and opportunities in the State of Florida. After analyzing eight distinctly different place types regarding their readiness for TOD, it is clear that Florida communities have evolved from very different settlement patterns. The analysis indicated that overall, each community appeared to be progressing towards the various targets established in the TOD Framework; however, there was a clear imbalance in the relationship of jobs-to-housing. The TOD Station Areas were job-heavy and housing-light, indicating a need for this issue to be addressed aggressively in the model comprehensive plans and land development regulations through strategies including incentives and minimum densities where market conditions are likely to respond. The subject communities with more residential development also tended to have well-developed urban design standards, which appear to have effectively increased the desirability of living in the station areas. Finally, inter-agency planning and collaboration seemed to be a key characteristic, especially in the communities with more advanced multi-modal transportation systems, highlighting the need for emphasis on intergovernmental coordination in the model policies.

Development Patterns, Mobility & Interconnectivity

Perhaps Florida’s greatest challenge to the creation of transit-supportive environments over time will be the interconnectivity and mobility of its station areas. The Place Type analysis confirmed a range of development patterns: Urban Infill, Suburban Retrofit, and Greenfield. These three place type conditions exhibited different development patterns with varying degrees of transit-supportive quality.

Urban Infill: Communities with an urban infill pattern tend to have evolved from 19th and early 20th century city plans, with orderly streets, defined nodes and districts, and predetermined relationships among land uses. These areas reflect a high-degree of street interconnectivity with smaller block sizes, resulting in extensive mobility for all users (motorized and non-motorized). Existing urban communities emerging from this background, such as Daytona Beach, West Palm Beach, Orlando, and Tallahassee, had mostly retained their historic street/block patterns and transportation grid. However, the evaluation identified instances in most urban infill station areas where streets had been removed, suggesting policies protecting existing street networks may be necessary to protect this important transit-supportive quality.

Suburban Retrofit: More recently developed station areas, especially those without a historic downtown core, tend to have prioritized automobiles as the primary mode of transportation, often compromising mobility by other modes as a result (Collier County). These environments tend to be characterized by wide thoroughfares connecting large, often single-use, blocks. This results in sparser street grids offering less interconnectivity. Further, transportation planning in these environments has often overlooked pedestrian activity as a mode choice, resulting in longer routes and poorly defined pedestrian spaces.

Instances of this development pattern were also found to have occurred in some urban infill areas.
As clearly evidenced in the block structure maps for Daytona Beach, Orlando, and West Palm Beach, the street grid has been discontinued to accommodate more recent, larger-scale developments. This finding was confirmed by field work in these communities. To prepare these areas for successful TOD, community-wide visioning and coordinated, multi-agency efforts will likely be required to protect and augment the current street and block network, suggesting additional policies supporting a collaborative planning process may be needed.

**Greenfield:** “Greenfield” conditions are undeveloped lands, commonly in large tract agriculture use, adjoining or surrounded by development. Greenfield areas present significant opportunity to establish transit-supportive conditions as these areas develop (Pasco County, Sebring). The evaluation of Pasco County identified the community’s prioritization of TOD through extensive advanced planning for transit corridors, intended to develop with interconnected streets, compact mixed-use nodes, and large areas of conservation. These priorities are reinforced by the County’s transit-supportive regulatory framework. A contrasting example was found in Sebring, where a recent development at the periphery of the station area established a suburban, cul-de-sac pattern, rather than an expansion of the historic, well-connected street grid. To ensure greenfield areas develop in a TOD-supportive manner, focused outreach to large land owners may be necessary to develop consensus regarding future transit corridors, transit nodes, and a commitment to land uses that will maximize this infrastructure. This input will help facilitate the adoption of policies and regulations to establish the desired future development pattern over time.

**Urban Design**

The urban design quality of a place is important to ensure successful TOD as it relates to a number of factors, including enhancing pedestrian access and comfort, creating a desirable residential address, and ensuring compatibility among diverse uses. A high amount of street enclosure is a TOD characteristic that helps promote street-level activity and pedestrian mobility. Streets lined by the fronts of buildings help define the urban environment for people, rather than automobiles, and typically shield parking and service uses from view. Figure ground diagrams in the subject communities illustrate the level of definition of streets by building location. The urban infill communities appeared more likely to contain areas with strong street definition. Field research confirmed this finding, and further, streets lined by buildings with windows and doors facing wide, shaded sidewalks were found to be the most active portions of the station areas. Buildings of compatible massing, scale, and disposition along streets were found to harmoniously accommodate mixes of uses, both in vertical and horizontal arrangements. The height of the buildings in relation to the width of the street creates an overall sense of spatial enclosure. This was observed to be a factor in establishing optimal conditions. These findings indicate a need to address building location, height, and percentage of frontage along the street in land development codes, as well as parking quantities and location.

**Regulatory Environments**

The implementation of TOD regulations in several Florida municipalities was underway at the time of this analysis. Among the subject communities, those with rigorous TOD policies and codes included Miami 21, Orlando, West Palm Beach, Tallahassee and Pasco County. These regulations
**Methodology, Findings & Conclusions**

addressed many of the station area measures identified in the TOD Framework, including densities and intensities, urban design, building form and placement, street networks, parking, and land use mix. The place type analysis provided an opportunity to benchmark conditions in the eight subject communities and measure effectiveness over time. It would be anticipated that given constant market conditions, the communities with existing transit-supportive regulations would reach or surpass the station area targets established in the TOD Framework more quickly than others. The regulations in the subject communities, along with others identified in other parts of the state, have been utilized in the model policies and codes contained in the Guidebook.

**Place Type Analysis**

**Mix of Uses**

A mix of uses by type, scale, and location helps establish sustainable station areas that promote trip capture, active streets, and potentially higher transit ridership. A 1/2 mile TOD Station Area is comprised of 500 acres, which is a substantial amount of land area within any community. Mixed-use land development patterns allow communities to respond to market changes over time, enabling property owners and municipalities to be well-positioned to respond to market forces. The Place Type analysis found the greatest success among communities (West Palm Beach, Miami, portions of Daytona Beach) that maintained an aggregated focus on land use mix rather than regulating use on a parcel-by-parcel basis. Over-regulation on a building-by-building basis, with required minimum percentages of use, appeared to slow or prevent redevelopment in some instances. For example, in West Palm Beach, a requirement for ground-floor retail in some areas produced empty storefronts which remain vacant years later, awaiting market demand to fill the spaces (while the upper-story residential units are occupied). Instead, when the city opted for flexible use standards for the ground-floor, some buildings attracted street-level residential units, which are active and occupied. This finding indicates a need for both flexible land uses and aggregate Station Area monitoring to inform local government whether or not policies and incentives are needed to balance the land use mix.

**Residential Deficits & Jobs/Housing Imbalance**

A strong finding across the eight subject communities was an imbalance of land uses versus the recommended ratios in the TOD Framework. The ratios of residential to non-residential use were highly skewed towards non-residential use as measured by existing uses in the station areas. Even though residential uses are permitted across most of the subject station areas, the development of those areas has consistently yielded far more non-residential use. While more mature transit systems across the country may have helped prime residential market conditions in station areas, it does not appear the market in the subject Florida communities responded to the presence of a transit station. In the last two decades of growth, the urban infill areas that attracted the higher quantities of new residential units tended to have strong commitments toward urban design and quality of place standards, as well as a focused effort on attracting residential development. Miami, Orlando, and West Palm Beach, the places with higher residential unit counts, contain a variety of strong attractors beyond the transit itself. Significant opportunity exists in each station area for infill development and redevelopment, which underscores the need for strong regulations and incentives regarding the development of residential uses over time.
**Place Type Analysis**

**Multi-Disciplinary Planning Among Many Partners**

The place type analyses indicated a high degree of multi-disciplinary planning underway in each of the eight subject communities. For successful TOD to occur, there is a need for shared goal-setting among agencies as well as implementation. Transit operations are complemented or challenged by land use and transportation plans, projects, and activities. Multiple agencies were interviewed in each of the subject communities, including the local governments, transit agencies, MPOs, regional planning councils, ancillary agencies, and the respective FDOT districts. Each agency appeared knowledgeable of the plans of other agency partners, and many staff served together on advisory committees and project teams. Proposed plans for land use development as well as capital improvements were routinely reviewed by the other agencies, indicating a high degree of interagency communication. Continued collaboration and inter-agency dialogue is critical to establish and maintain transit-supportive environments, a measure that can be emphasized in the model Comprehensive Plan goals, objectives, and policies related to intergovernmental coordination.

**Evolution of Place Types over Time**

The TOD place types defined by the Framework and reinforced by the literature review are intentionally broad to capture the varied characteristics and functions that exist across Florida’s array of development conditions. As defined, the Regional, Community, and Neighborhood Center place types are differentiated by desired development quantities to be achieved at build out, correlated to the transit mode servicing a given station area. The defined place type construct provides initial targets to be achieved over time (at build-out) and establishes a system through which places can evolve considering the land use/transportation relationship necessary to support successful TOD.

Evolution of an individual place can be achieved either by surpassing thresholds necessary to support higher capacity transit service or by exceeding development quantities that suggest identification as a more intensely scaled “place”. The place type “targets” are tiered with lower quantities anticipated for lower capacity transit modes and increasing quantities identified as transit modes increase capacity. This graduation allows for transit system to evolve over time, and as the development targets for a particular transit mode are met, provides evidence that a higher capacity transit mode can be supported (i.e., from BRT/Bus to Commuter/Light Rail to Heavy Rail).

This tiered relationship among development targets also exists by place type, whereby smaller development targets are prescribed for less intense place types (e.g., Neighborhood Center with BRT/Bus service) versus more intense place types serviced by the same transit mode (e.g., Community Center with BRT/Bus, followed by Regional Center with BRT/Bus). For example, in the analysis of the West Palm Beach station area, its current categorization as a Community Center is likely to evolve into a Regional Center over time. The station area currently exceeds the 23,000 jobs and units threshold for a Community Center/Commuter Rail place type, putting it on its way toward the threshold of 45,000 jobs and units as prescribed for a Regional Center/Commuter Rail place type.

Neighborhood Centers serviced by transit, existing or planned, were difficult to identify given the relative newness and limited service areas of Florida’s premium transit systems. Given their primarily residential land use, Neighborhood Centers rely upon a transit corridor with other, more...
intense nodes, most of which are the initial development stage in the state.

Though three areas were initially identified as Neighborhood Centers (Collier County, Pasco, and Sebring), the Place Type evaluation indicates each is likely to evolve into Community Centers over time, clearly evidenced by their quantitative trends. For example, while Pasco presents as a greenfield condition, the progressive planning efforts by the County encourage future TOD of greater density and intensity than would be anticipated in a Neighborhood Center. Collier County’s station area with a major government employment facility and intense future land use plans could easily develop into a Community Center as well.

Conclusions

The key findings from the place types provide insight into how land use, development patterns, and transportation are interrelated to produce viable TOD. These findings suggest long-range planning is incorporating appropriate land uses for TOD in areas with premium transit services. In order to realize the intention behind these plans, several key aspects must be addressed:

Land Use
a. Ensure a wide mix of uses can be accommodated in both horizontal and vertical arrangements
b. Ensure appropriate levels of density are permitted and establish minimum density requirements within Transit Core areas.
c. Establish a regulatory framework that will allow for a diverse station area and reinforce the unique characteristics of varying places
d. Create a monitoring system to assist communities in balancing land uses, attaining ridership targets, and meeting transportation demands over time.

A Transit-supportive Physical Environment
a. Public Infrastructure:
   • Protect, maintain, and expand interconnected street networks;
   • Reduce block sizes
   • Invest in creating “complete” streets, which provide superior environments for all users.
b. Private Development: Ensure buildings are oriented to the street by adopting and utilizing form-based urban design standards
c. Parking: reduce the quantity and prominence of parking within station areas.

Attract Residential Uses
a. Invest in streetscapes, landscape, and public spaces to help establish an attractive residential environment
b. Allow for a range of building types to serve a diverse demographic and meet a wide range of market preferences
c. Create incentives, such as zoning bonuses and expedited review process, to attract residential development to station areas.
d. Include a long-term strategy to measure and meet workforce housing needs using incentives and/or requirements.
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Chapter 4

Model Transit Oriented Development
Comprehensive Plan
Goals, Objectives & Policies
and
Land Development Regulations
for Florida

December 2012
Purpose of the Chapter

The implementation of TOD, and the establishment of transit-supportive land development patterns, requires coordinated activity by many stakeholders, both public and private, to be effective. Within the State of Florida, local governments play the primary role in helping guide land development activity in relation to the transportation network. At the municipal level, two key regulatory documents guide land development: (1) comprehensive plans, which are long-range planning documents adopted by local governments to guide and manage future development in the community, and (2) land development regulations, which contain specific provision necessary or desirable to implement the adopted Comprehensive Plan. These two documents work in tandem to affect land development patterns at the site and station level as well as along transit corridors. Further, in conjunction with other local governments and when combined with other large-scale regional planning efforts by other agencies, these regulatory documents can ultimately affect transit-supportive conditions across an entire transportation network.

Florida TOD Place Types

As discussed in Chapter 3 (Place Type Analysis) and throughout the TOD Framework, Florida communities represent different settlement patterns as they relate to TOD:

- **Urban Infill** conditions tend to exist in established communities with an intact, interconnected street and block network. Many of these communities can support premium transit service in their current condition.

- **Suburban Retrofit** conditions tend to occur in communities characterized by large parcels typically dedicated to single uses, with sites that are disconnected from adjacent development and a settlement pattern that relies upon a limited street network for access. These areas often include large districts of low-density residential development, which are challenging to serve with premium transit as they lack well-defined nodes with a high concentration of potential riders.

- **Greenfield** conditions often exist in areas comprised of largely undeveloped or agricultural areas, where close proximity to existing developed areas makes them likely to develop in the future. While they do not tend to have premium transit in their current condition, TOD development patterns can be established as these areas are developed over time.
Comprehensive Plan Policies

As part of this introduction, it is important to note the model regulations presented in this chapter are designed for application in any of these conditions, whether a community has a century-old tradition of premium transit, a fairly new transit system, or is positioning itself for a transit system in the future. Further, the model regulations provide a methodology to tailor potential TOD to reflect the different scales of communities and station areas, from regional to community to neighborhood centers.

When Should My Community Start Planning for TOD? Today!

Across Florida and the nation, extensive TOD planning has occurred or is underway at all phases of the transit project lifecycle. Florida’s development patterns are varied, as described above, and communities across the state are in different stages of evolution regarding transit as part of transportation networks. TOD land use planning should be consistent with long-range transportation plans and coordinated with the long-range plans of the MPO and transit agency or authority. TOD land development patterns can improve transit performance at all stages of a transit project as follows:

- Transit Project Planning & Design: Becoming “transit-ready” in advance of transit is a goal in many communities. Further, federal funding guidelines award communities with TOD policies and codes in place and improving TOD patterns over time.

- Transit Project Construction: When transit projects are constructed, joint development opportunities are created for public/private station development. Also, the physical construction of transit infrastructure provides clear commitment for developers and investors to construct TOD.

- Transit Project Long-Term Operations: Once transit systems are operational, TOD land development patterns provide a natural complement to the service, expanding ridership, funding potential and improved access over time.

The mutually beneficial relationship between TOD and transit has been well documented in Chapter 2 (Literature Review). Accordingly, for TOD implementation in Florida, this chapter provides model comprehensive plan goals, objectives, and policies as well as a form-based land development code to promote TOD, which in turn yields greater ridership and maximizes the efficiency of transit investments.
Model TOD Regulations

Introduction

Model Comprehensive Plan Language

The first section of this chapter contains model Comprehensive Plan goals, objectives, and policies (referred to collectively as “policies”), including those designed to generally advance transit and TOD planning as well as specific language to implement the model TOD Land Development Code also presented in this chapter. Florida Statutes direct each local government in Florida to maintain a comprehensive plan to guide future development and growth pursuant to Chapter 163, Part II (163.3167, F.S.). Comprehensive plans are intended to be long-term planning documents, with a planning horizon of at least ten years, and in some cases, twenty to fifty years. Section 163.3177 includes the required and optional elements of comprehensive plans, and all plans must include elements that address future land use, transportation, housing, capital improvements, and intergovernmental coordination, which are the focus of the TOD-related language in this chapter.

For the purposes of comprehensive planning, Chapter 163.3164(46), F.S. provides the following definition for “transit-oriented development,” or TOD:

“a project or projects, in areas identified in a local government comprehensive plan, that is or will be served by existing or planned transit service. These designated areas shall be compact, moderate to high density developments, of mixed-use character, interconnected with other land uses, bicycle and pedestrian friendly, and designed to support frequent transit service operating through, collectively or separately, rail, fixed guideway, streetcar, or bus systems on dedicated facilities or available roadway connections.”

In addition to the statutory definition for TOD, Florida Statutes also identify TOD as a strategy to discourage the proliferation of urban sprawl. Chapter 163, Part II, F.S. identifies several measures by which local governments can assess urban sprawl, with two key measures related to TOD: (1) the promotion of “walkable and connected communities (with) compact development and a mix of uses at densities and intensities that will support a range of housing choices and a multimodal transportation system, including pedestrian, bicycle, and transit, if available (Section 163.3177(6)(a)9.b.(III)) and (2), F.S.) the use of “innovative development pattern(s) such as TODs (as defined by statute)” (Section 163.3177(6)(a)9.b(VIII), F.S.). These measures further reinforce TOD as a beneficial and desired development pattern for Florida’s local governments.

Comprehensive Plans in Florida enable local governments to establish a range of long-term planning strategies for TOD along with mechanisms to measure progress over time. Four Comprehensive Plan elements are the focus of the model language in this chapter:

Future Land Use Element: This element addresses land use patterns and station areas generally, their relationship to multi-modal transportation networks, station area master plans, and the mixing of land uses, both vertically (within a single structure) and horizontally (across a parcel or district). In addition, as transit efficiency increases with greater residential density and employment intensity, this element sets forth recommended minimum densities and intensities, and mix of use for each TOD Place Type; long-term goals for total residential units, jobs, and the ratio of jobs-to-housing; and strategies to monitor progress towards these measures.
Transportation Element: This element addresses transit as part of a multi-modal transportation network, complete streets to improve walkability and access to transit stations, parking requirements, financing options for local governments, and reinforces the TOD planning concepts of the future land use element.

Capital Improvements Element: This element contains a capital improvements program addressing necessary and desired infrastructure improvements, including local, agency, and other funding sources. While capital improvements elements are required to specify capital projects for a minimum of five years, for successful TOD implementation, a ten- to twenty-year horizon, consistent with the long range planning timeframe, is recommended.

Housing Element: This element addresses density and workforce housing, both of which have been found to have strong correlations with successful transit.

Intergovernmental Coordination Element: This element addresses coordination with various stakeholder agencies, roles for various agencies regarding development and review of TOD plans.

The model Comprehensive Plan policies set forth in this chapter include recommended policy language for each of these elements.

Model Land Development Regulations

Following the adoption of a comprehensive plan, Florida Statutes also direct local governments to adopt land development regulations (LDRs) that are consistent with and implement adopted comprehensive plans (Section 163.3202(1), F.S.). While comprehensive plans are intended to provide long-term policy guidance for local governments, LDRs are focused on implementation of land development activity within the community consistent with the policies of the adopted plans.

In many areas of Florida, LDRs follow a Euclidean strategy, which relies upon the separation of uses and densities to ensure compatibility among development. In its earliest application in the 1920s, Euclidean zoning was intended to prevent noxious uses and illegal overcrowding from occurring in cities, which presented genuine life-

*The unintended outcome of Euclidean zoning tends to be an exaggerated separation of use, as illustrated above, which over time results in wider and wider roadways, further separating uses and creating complications for other modes (e.g., transit, pedestrian, bicycle).*
safety issues in that era. The consequence of Euclidean zoning has been the widespread regulation of land by use in the United States.

In today’s cities, the inadvertent result from the exaggerated focus on the use of land as the primary regulation for ensuring compatibility is an extreme, often unnatural, separation of uses and densities. At its broadest level, non-residential and residential uses are distinctly segregated, with mixed-use development occurring as an exception to the rule. This segregation is exacerbated by the further distinction among different types of residential development (based on both density as measured by units/acre as well as by building type). As a result, single-family residences are isolated from townhouses, which are isolated from multi-family buildings (which are further subdivided into rental and owner-occupied clusters). Across much of Florida, this type of planning has resulted in automobile-dependent environments with excessive parking demands, which can create conflicts for other transportation modes (e.g., transit, pedestrian, bicycle).

To establish a regulatory framework that encourages TOD, LDRs must maintain a broader focus, including uses as well as detailed instructions regarding the desired form of development. Successful TOD requires the high activity levels that result from accommodating a wide range of uses, including high density residential, within a compact area. In order to facilitate TOD, LDRs must allow mixed-use development by right and also focus on the interrelationship of building form and street design. This will help ensure compatibility among varying uses and densities and establish the superior pedestrian environment needed for viable TOD.

The second section of this chapter contains model LDRs designed to establish and improve a TOD pattern of land development, focusing on the following key aspects of land development:

**Zoning Districts:** Four distinct TOD zoning districts are defined within the model LDRs, providing communities with a palette of TOD in varying scales and intensities. The intensity of each district, informed by the prescribed building type and height, density, and uses, allows customization in the application of the code to reflect the station area type (Regional, Community, or Neighborhood Center) as well as each community’s unique character. A TOD Station Area, which extends a half-mile from a premium station, is not homogenous; but instead, it is comprised of gradations of scale and intensity which tend towards the greatest intensity at the center and a graduated reduction in intensity towards the outer edges. To reflect this diversity, the LDRs include four distinct districts: TOD-Urban Core, TOD-Urban Center, TOD-General, and TOD-Edge.

**Uses:** Successful TOD requires a broad range of uses to maximize transit investments and balance travel along transit corridors. The model LDRs identify appropriate uses, prohibited uses, and include strategies to accommodate necessary service uses without compromising the physical environment. Uses can be mixed vertically (within individual buildings) or horizontally (across blocks or districts).

**Density (vs. Design):** Conventional LDRs typically control residential uses by capping density using a specified ratio (i.e., 15 dwelling units per acre) while the design of development can vary wildly within the prescribed maximums, without necessarily
providing a desirable physical form supportive of TOD. This also lacks meaningful predictability regarding the anticipated building typology (i.e., single-family versus multi-family), which can further compromise the built environment over time. This creates inconsistent and frequently unpredictable land development patterns, which can cause existing homeowners worry (and an inevitable desire for separation) and leave potential investors and community leaders without clear direction. Conversely, successful TOD benefits from high concentrations of residential use. The model LDRs provide clear instructions regarding the form of residential and mixed-use building types and include both minimum and maximum densities for the TOD districts.

**Frontage Standards**: In order to ensure a superior pedestrian environment, development along roadways should augment and reinforce the design of public rights-of-way. The Frontage Standards define the design for the entrances to buildings and the area between buildings and streets. A palette of frontage types is keyed by appropriateness to each TOD zoning district.

**Civic Open Space Standards**: Properly designed public open spaces contribute significantly to the livability of TOD. The Civic Open Space Standards ensure sufficient public open spaces, properly composed and detailed, are included within the TOD zoning districts.

**Parking and Access Standards**: By promoting a mix of uses and emphasizing broad, multi-modal transportation options, a fundamental characteristic of TOD is a reduction in the amount of off-street parking versus conventional development. In addition, TOD carefully controls the location of parking to help protect the pedestrian environment. The Parking and Access Standards contain regulations to control the amount, location, and access to vehicular and bicycle parking.
Street and Block Standards: In order to establish (or maintain) an environment that is comprised mostly of narrow, pedestrian-friendly streets, an interconnected street network is needed. Depending on the current land development condition (Urban Infill, Suburban Retrofit, or Greenfield), varying levels of intervention may be necessary. The Street and Block standards provide guidance on the design of streets to accommodate walking, bicycling, and transit facilities as well as the appropriate size of blocks to ensure a street network that encourages multi-modal transportation options are improved over time.

Since successful TOD requires both high densities and a broad mix of uses within an attractive built environment, a form-based approach is recommended as the most effective tool to promote TOD:

“Form-based codes foster predictable built results and a high-quality public realm by using physical form (rather than separation of uses) as the organizing principle for the code. Form-based codes offer a powerful alternative to conventional zoning. Form-based codes address the relationship between building facades and the public realm, the form and mass of buildings in relation to one another, and the scale and types of streets and blocks.”

- Form-Based Code Institute

By ensuring a harmonious built environment, a wide range of uses and densities can be accomplished, which helps set the stage for successful TOD patterns. This code addresses the arrangement and design of streets and blocks; the placement, scale, and mass of buildings; the quantity and location of parking; and land use, including density and intensity.

TOD vs. TND

Many of the concepts and strategies set forth in the model policies and regulations are similar to those identified in conjunction with “traditional neighborhood development,” (TND) and the concept of “new urbanism.” Both TOD and TND prioritize compact development with a mix of uses (with greater intensity in a core located within well-connected, walkable neighborhoods with a high level of street activity, especially geared for pedestrians). TND focuses on an orderly arrangement of streets and blocks that are physically designed to promote pedestrian comfort. Compatible buildings line streets while parking areas are relegated to the side or rear of lots. These components are all addressed in the model language in this chapter.

It is important to reiterate the distinctions, however, between TOD and TND, which are described in detail in Chapter 2 (Literature Review). First, TOD is intrinsically linked to a transit station offering premium transit service. Second, while the density and intensity of development is variable in TND, minimums are established in TOD, designed specifically to increase potential ridership around premium transit stations and corridors. Third, parking in TOD development patterns is highly restricted to prevent an oversupply of on-site and surface parking, which can undermine transit success, and further, to reflect the lesser need of the automobile for mobility. Finally, auto-oriented uses are more restricted in TOD than in TND. Each of these components is addressed in the model language in this chapter as well.
**Recommended Process to Adopt Model Regulations**

Achieving successful TOD requires a multi-disciplinary effort, including a range of stakeholder interests, from both public and private sectors. The dialogue to establish successful TOD occurs at various scales of transit planning - from the regional transportation network to the linear transit corridor to site-specific station-level planning. Understanding the context of TOD station areas helps inform policy discussions, yielding a more effective and balanced regulatory environment for local governments and their partners. Accordingly, given the complexity and range of policy actors, a suggested process for local governments, leading to the adoption of the model TOD policies and regulations, is detailed on the following pages.

In addition to the recommended adoption protocol, there are various additional implementation activities available to local governments and agencies, which are discussed in Chapter 5 (TOD Implementation), including continued coordination activities, financing options, structural aspects of implementation, and the establishment of other TOD-related local priorities. These other implementation activities provide additional opportunity to advance TOD and successful transit across Florida’s communities as part of the state’s transportation network.
Process to Adopt TOD Model Comprehensive Plan Amendments & Regulations

**STEP 1: Prioritize Transit and TOD.** The first steps occur in the Comprehensive Plan, where the local government identifies transit and TOD as a local priority. This can occur at any stage of the transit lifecycle – ahead of transit, as part of visioning, or during transit project planning, evaluation, construction, or after service is operational.

**STEP 2: Commit to Inter-Agency Coordination.** Coordination among local governments, transit agencies, MPOs, the Department of Transportation, and other relevant agencies, both public and private, is necessary to identify and support potential transit modes, alignments, and resolve related issues.

**Step 3: Identify Potential TOD Station Areas & Analyze Using the Place Type Methodology (See Chapter 2).** Conduct an evaluation of potential transit station locations and the surrounding land use context. This analysis will help ascertain the limitations and opportunities for TOD based on the unique conditions of the area. Use this analysis to inform the creation of a Station Area Vision or Master Plan. Sample evaluation diagrams below.
Step 4: Development of TOD “Vision” (or Station Area Master Plan) (OPTIONAL). Engaging the public and partner agencies to create a unified vision for the station area is recommended to successfully accomplish TOD. Working with property owners and other stakeholders, consensus should be sought regarding a wide range of issues (e.g., the scale of new buildings, acceptable density/intensity, desired urban form, uses, improving interconnectivity throughout the area). Determining areas where redevelopment is not desirable or likely to occur (e.g., established neighborhoods with multiple owners, recently-constructed offices) is also important and part of this process.

A significant part of this step, especially in Suburban Retrofit or Greenfield areas, is the identification of improvements to the street and block network of the Station Area. This component of the Station Area plan typically requires coordination among private property owners and various government agencies. Accordingly, public outreach activities must be carefully structured and inclusive to achieve a consensus strategy for the Station Area.

Step 5: Adoption of TOD-Supportive Comprehensive Plan Goals, Objectives, and Policies. The local government amends its Comprehensive Plan to guide TOD, ideally as identified in its TOD Vision or Station Area Master Plan.
**STEP 6: Adoption of TOD-Supportive Land Development Regulations.** The local government advances the TOD Vision or Station Area Master Plan by adopting land development regulations to direct site-level development in support of TOD. Following the model code, this is a two-step process:

**STEP 6A: Adoption of the Street Network Overlay.** To implement the vision or master plan established for the station area, the Street Network Overlay identifies the location of existing streets and planned connections to enhance mobility throughout the TOD Station Area over time. The Street Network Overlay identifies the ultimate design for thoroughfares and denotes primary street designations (which are used to orient new buildings in the TOD Zoning districts) and specific frontage types assigned to certain streets.

**STEP 6B: Rezone to the TOD Zoning Districts.** Using the TOD Vision or Station Area Master Plan as a guide, the appropriate TOD zoning districts (TOD-Urban Core, TOD-Urban Center, TOD-General, TOD-Edge) are assigned to each parcel as appropriate for future TOD within the Station Area. Together with the Street Network Overlay, the regulatory framework is then established to create a transit-supportive environment and advance TOD geared to the local community.
**Note to Users:**
The following model comprehensive plan goals, objectives, and policies (hereinafter referred to in similar notes collectively as “policies”) may be considered by local governments in Florida which have inadequate plan provisions to advance transit oriented development (TOD) in their communities. Any local government may also consider implementing these as plan amendments to an existing Comprehensive Plan. In order to provide additional guidance, commentaries and explanations are provided, distinguished from model regulations by green boxes like this one with text typed in Italicized Times New Roman Font. Text within [brackets] suggests alternative language to customize the code for differing conditions.

**DEFINITIONS**

The following definitions are provided for the model Comprehensive Plan policies, with reference to Florida Statutes and the Florida TOD Framework where applicable.

“Multimodal Transportation System” means a well-connected network of transportation modes reflecting a high level of accessibility between modes and proximity to supportive land use patterns (Chapter 343.91(1)(j), F.S.).

“Station Area, TOD” means the area within one half-mile around a premium transit station, totaling approximately 500 acres, which is comprised of a “transit core” and a “transit neighborhood”. The “Transit Core” includes the approximately 125 acres that lie within the inner quarter-mile around a station and the “Transit Neighborhood” includes the approximately 375 acres that lie within the outer quarter-mile.

“Transit Core” means the area within one quarter-mile around a transit station (approximately 125 acres).
“Transit Mode” means a type of transit system characterized by right-of-way requirements, technological and operational features. Technological features include the vehicle type and size (e.g., train, bus, streetcar), energy source (e.g., diesel, electric), adaptability (e.g., grade-separated railway, bus operating in exclusive lane, bus operating in mixed traffic). Operational features include service frequency, headway, travel shed (i.e., area from which riders are drawn), station spacing, and station service area (i.e., the distance from the station that people are willing to walk, bike, or drive to access the transit service) (Florida TOD Guidebook, p. 31).

“Transit Mode, Premium” means those transit system operating at sufficient frequencies and headways to qualify associated transit stations as “Premium Transit Stations,” and thereby determined to be appropriate for the application of TOD. For the purposes of this comprehensive plan, Premium Transit Modes are generally grouped as (1) “Heavy Rail;” (2) “Commuter/Light Rail,” which may also include intercity passenger rail and modern streetcar; and (3) “Bus Rapid Transit (BRT)/Bus,” which may also include high-frequency local transit (e.g., no fewer than three fixed local bus routes, operating at headways of 21-30 minutes or less) (Florida TOD Framework, p.3).

“Transit Neighborhood” means the area that extends approximately a quarter-mile from the “transit core,” which includes approximately 375 acres.

“Transit Oriented Development” (TOD) means a project or projects, in areas identified in a local government comprehensive plan, that is or will be served by existing or planned transit service. These designated areas shall be compact, moderate to high density developments, of mixed-use character, interconnected with other land uses, bicycle and pedestrian friendly, and designed to support frequent transit service operating through, collectively or separately, rail, fixed guideway, streetcar, or bus systems on dedicated facilities or available roadway connections (Chapter 163.3164(46), F.S.). (NOTE: Florida Statutes also provide the following definition: “transit-oriented development neighborhood” as one that typically has “a center with a train station, tram stop, or bus station surrounded by relatively high-density development with progressively lower-density development spreading outward from the center, typically within 1/2 mile of the stop or station” (Chapter 343.91(1)(m), F.S.). The components of this definition have been integrated into the definition for “Station Area”).

“TOD Place Type” means a general set of characteristics within a TOD Station Area, including density, intensity, diversity of use, and design that denotes a typical transit supportive pattern. For the purposes of this comprehensive plan, the TOD Place Types are identified in order of decreasing density and intensity as “Regional Center,” “Community Center,” and “Neighborhood Center.”

“Transit Station” means a public transportation passenger facility that is accessible either at street level or on above-grade platforms and often surrounded by pedestrian-friendly, higher-density development or park-and-ride lots. (Chapter 343.91(1)(n), F.S.).

“Transit Station, Premium” means a transit station that serves a premium type or types of transit.

“Transit Supportive Area” means the area that extends approximately one-half mile to one-mile around a transit station.
FUTURE LAND USE ELEMENT (FLUE)

The purpose of the TOD Goals, Objectives, and Policies of the Future Land Use Element is to encourage the creation of a compact, high-intensity mix of residential, commercial, employment, and civic/institutional uses to maximize the use of transit, reduce the use of single-occupancy vehicles, increase pedestrian activity, and improve access and mobility. The policies are designed to require compact urban growth, expand opportunities for increased choice of transportation modes, increase the density and intensity of development to increase the potential transit ridership base, establish a safe and pleasant pedestrian environment by ensuring an attractive streetscape, attract a functional mix of complementary uses, and provide facilities that support transit use, bicycling, and walking. The policies in this element encourage a more intense and efficient use of land, with increased densities, to promote the mutual reinforcement of public investments and private development of land. The policies herein are specifically designed to promote TOD within TOD Station Areas, which tend to represent a ten to fifteen-minute walk-area around a station.

FLUE GOAL 1: To promote integrated, transit-supportive land use patterns in conjunction with premium transit stations and corridors to improve efficiency and function of transportation networks, attract economic development, enhance sustainability, and contribute to the quality of life of business owners, visitors, and residents.

FLUE OBJECTIVE 1.1: Throughout the planning period, the [Name of Local Government] shall support development of transit oriented development patterns in support of a multi-modal transportation system.

FLUE Policy 1.1.1: PUBLIC TRANSIT AND LAND USE: [Name of Local Government] acknowledges the interconnected effects of public transit investments and land uses by identifying all existing and proposed Premium Transit Modes in this comprehensive plan. Premium Transit Modes, as defined in this Plan, include intercity passenger rail, commuter rail, heavy rail, light rail, and bus rapid transit systems, as well as high-frequency bus corridors (which contain no fewer than three bus routes operating at headways of 21-30 minutes or less). Operation of Premium Transit Modes may occur in exclusive rights-of-way or share streets with automobile use.
FLUE Policy 1.1.2: GUIDING PRINCIPLES FOR TOD
The following principles are provided to help guide the establishment of TOD in [Name of Local Government]:

A. TOD is recognized as a compact, urban form of development that is desirable around premium station areas and corridors to improve transit ridership, expand pedestrian access to stations, promote increased land values, and provide natural surveillance with a vibrant mix of uses and street-level activity.

B. TOD Station Areas should be located within a half-mile of an existing or planned transit station and/or corridor to be served by [Name of Premium Transit Service].

C. Where possible, land development patterns, including land use, density/intensity, urban form, and related planning considerations, should be established in advance of transit service to establish transit-ready conditions.

D. To maximize the location efficiency of transit investments, TOD Station Areas should be compact and contain a mix of residential, commercial, and public uses of higher density/intensity than surrounding areas that are appropriate for the respective station type (e.g., Regional, Community, Neighborhood) and character.

E. Uses within TOD Station Areas should be mixed both vertically, within a single building, and horizontally, across a district, where appropriate, to promote transit ridership, sustainability, vibrant street-level activity, and the natural surveillance that results from the economic and social activity of different users throughout a 24-hour cycle.

F. To improve the efficiency of land use, minimum densities and intensities of use should be utilized in conjunction with reduced parking ratios to increase the average yield of habitable space within TOD Station Areas.

G. TOD Station Areas should include a mix of residential densities, housing types, ownership patterns, and prices, with the highest density of residential use occurring in the quarter-mile “Transit Core” immediately surrounding a transit station.

H. To maximize the potential ridership base within TOD Station Areas and reduce potential auto/pedestrian conflicts, auto-oriented uses shall be discouraged to facilitate their redevelopment with transit-supportive uses over time.

I. The street network within TOD Station Areas, and extending into the surrounding Transit Supportive Areas where possible, should be designed as “complete streets” that are highly interconnected, multi-modal, and with strong emphasis on street-level design and superior transit and bicycle access and pedestrian quality.

J. Urban design within the TOD Station Area should promote the placement of buildings that are oriented to the street, creating a continuous linear façade geared to pedestrians, with parking areas located to the rear of structures where possible.

K. While smaller development parcels may contain single-use buildings, larger development parcels (in excess of two acres) should provide a high-intensity mix of uses to increase average TOD Station Area densities and intensities over time.
FLUE Policy 1.1.3: [NAME OF PREMIUM TRANSIT SYSTEM]:
The [Name of Premium Transit Service] has been incorporated into this comprehensive plan as follows:

A. The (Name of Premium Transit System) and corresponding station locations within the corridor have been mapped and added to the future transportation and future land use maps.

B. [OPTION 1 – DESIGNATE SPECIFIC TOD-SUPPORTIVE FUTURE LAND USE CATEGORIES AROUND PREMIUM TRANSIT STATION AREA(S)]: The TOD Station Area surrounding each Premium Transit Station has been identified with the [Name of TOD-Supportive FLU category (e.g., Downtown Activity Center, Urban Central Business District, Mixed Use) or categories] on the future land use map.

Example of FLU Policy 1.1.3 - Option 1
City of West Palm Beach

The downtown area, which is currently served by premium transit in the form of inter-city and commuter rail, is designated with an Urban Central Business District (UCBD) future land use category (shown in purple), which provides for a wide mix of uses and densities within a transit-supportive, pedestrian-friendly environment. The planned premium transit station is denoted by a red dot at the center of the half-mile TOD Station Area.
[OPTION 2 – ESTABLISH TOD OVERLAY] Each TOD Station Area surrounding each Premium Transit Station has been identified with the [Name of TOD Overlay] in the future land use map series. Maximum density levels otherwise established by this comprehensive plan do not apply to development and redevelopment within this overlay that is carried out in accordance with the form-based zoning districts that support transit oriented development, and policies established for TOD, including minimum densities and intensities as established in Policy 1.4.1.

Example of FLU Policy 1.1.3 - Option 2
Pasco County

Pasco County used this strategy in its recent TOD planning efforts. The County amended its Comprehensive Plan to include Map 2-24, which established a Transit Emphasis Corridor and Transit Center Overlay as part of a larger, progressive mobility effort that includes facilitating TOD. The overlay is also reflected on the Future Land Use Map, a portion of which is shown below with arrows calling out some of the areas within the Transit Center Overlay.
Future Land Use Options

Future land use categories have historically been used to “cap” development by setting maximums for density and intensity. Successful TOD works differently, as premium transit operates with the greatest efficiency serving high concentrations of potential riders. This redirects the focus on density and intensity towards achieving minimums rather than applying caps, with long-term targets for certain numbers of residential units and jobs surrounding transit stations. In response to this, two strategies for designating future land use within TOD areas are offered. Option 1 assigns a FLU category, like “Urban Central Business District (UCBD),” which typically describes a vibrant, active area with a wide range of uses, without express limitations on density. Option 2 establishes a TOD Overlay, which provides a release from density limitations that may exist in the underlying FLU category for properties within the overlay.

The image below is from Plan El Paso and depicts the long range goal for TOD areas along Sun-Metro “Brio” transit corridor. Note that each TOD Station Area is denoted by a “fuzzy” circle representing a half-mile station area. The boundaries identifying each Station Area are purposefully vague until the assignment of density and intensity can be accomplished at a local level, which will occur after an in depth public process including detailed station area master planning efforts.
Comprehensive Plan Policies

FLUE Objective 1.2: Throughout the planning period, the [Name of Local Government] shall utilize consensus-building activities which encourage broad public and private participation, in the development of a long-range vision for Transit Oriented Development in conjunction with [Name of Premium Transit Service] or [Name of Premium Transit Modes].

FLUE Policy 1.2.1: TOD STATION AREA VISION (or STATION AREA MASTER PLAN) - OPTIONAL:
Using a high degree of public participation and urban design expertise, the [Name of Local Government] shall create a vision or master plan for the TOD Station Areas located within its jurisdiction to provide for transit oriented development and redevelopment around the station. The [Name of Local Government] may conduct workshops, charrettes, or other appropriate public input formats to help achieve consensus regarding the TOD Station Area Vision (or Master Plan).

A. Each TOD Station Area Vision (or Master Plan) shall extend at least a half-mile from the station location and graphically depict the locations of the Premium Transit Station, roadways, buildings, public spaces, and civic spaces within a half-mile radius of the transit station. This radius may be expanded according to parcel size, ownership pattern, and the presence of supporting transit modes such as fixed-route buses, local trolleys, or transit services.

B. Each TOD Station Area Vision (or Master Plan) shall graphically illustrate the intended physical character of the area, taking into account the expected transit mode, anticipated ridership, existing physical conditions, the potential for intensification and diversity of land uses around the station, and any phasing that would aid in an orderly transformation toward transit oriented development. If extensive park-and-ride facilities are proposed, the Vision (or Master Plan) shall identify whether they are temporary or permanent and ensure that the placement and design of parking facilities will not unnecessarily interfere with transit oriented development around the station.

C. Each TOD Station Area Vision (or Master Plan) shall provide sufficient urban design detail for the [Name of Local Government] to use as:
   (1) The basis for rezoning each station area into form-based zoning districts of varying intensities; and as
   (2) The basis for the simultaneous adoption of a Street Network Overlay or similar mechanism that covers the same geographic area.

D. Each TOD Station Area Vision (or Master Plan) and subsequent implementing regulations must ensure the predictable creation, over time, of a pedestrian-friendly street and block structure and complementary zoning regulations that will carry out the land use and transportation strategies of the Vision (or Master Plan) while providing superior access to the transit station from the surrounding area.

E. Each TOD Station Area Vision (or Master Plan) shall include an aerial photograph depicting all uses within the Transit Supportive Area that extends in a one-mile radius from the station, including identification of major employers, residential developments, institutional/educational uses, entertainment destinations, and other potential generators of concentrated ridership for the transit system.

See pages 4-9 to 4-11 for a graphic illustration of a Station Area Master Plan, Street Network Overlay, and application of the form-based zoning districts.
F. Each TOD Station Area Vision (or Master Plan) shall be developed in a collaborative manner with input from the Florida Department of Transportation, [Name of Local Government], Metropolitan Planning Organization, [Local Transit Provider], [Regional Transit Provider], [Region] Regional Planning Council, adjacent local governments, and other agencies and entities as appropriate.

G. [OPTIONAL: Each TOD Station Area Vision (or Master Plan) should include a market analysis and potential aggregated development program illustrating a preferred mix of uses to assist in the evaluation of individual TOD projects within the station areas.]

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**Market Studies**

Local governments are increasingly utilizing market studies and overviews to help inform land development decisions and establish reasonable expectations for future growth within communities and districts, such as TOD planning areas. The analyses typically include a range of development “sectors,” such as residential, office/commercial, retail, lodging/hospitality, and industrial. Using data that identifies target trade areas, existing and projected demand, existing inventory, median incomes, market trends, etc., these studies equip local governments with realistic growth expectations and identify areas of strength and weakness within the marketplace. As an example, one TOD planning area may have future growth potential in the retail and office markets while another may be over-saturated with retail and office. A detailed market analysis can also identify specific types of uses (e.g., groceries, pharmacy, men’s or women’s apparel) and the specific quantities, in square feet, of future development potential within a given timeframe. Typically, market analyses can provide relevant, useful industry projections for a three- to five-year planning horizon. Depending on the dynamics or volatility of local market conditions, updated market data is generally required after that timeframe.

By identifying the strengths, weaknesses, and future development potential of a specified geographic area, the results of market analyses can assist local governments and agencies in successfully implementing TOD in a number of ways. The information aids in establishing public policies regarding station area targets, uses, and development instructions; prioritizing capital improvements; preparing requests for development proposals; and negotiations with potential developers in private/public efforts. Market analyses can be especially useful in crafting policies and incentives to balance jobs and housing opportunities and can help inform the best strategy for attracting needed uses. For example, if a residential market analysis indicates that the market-rate price points are in a range higher than attainable for the local workforce, a local government may consider incentives-based strategies (e.g., additional building height and/or density) or requirements for new development to provide a certain percentage of new units as workforce housing. Whatever the particular needs of a TOD station area, the information gleaned from a market analysis can guide local governments in pursuing the most appropriate mix of uses and intensities to ensure healthy and successful TOD districts.
FLUE OBJECTIVE 1.3: To establish land development patterns that provide Transit Oriented Development the greatest efficiency of land use in conjunction with premium public transit [or Name of Premium Transit System], the [Name of Local Government] shall adopt land development regulations that emphasize compact urban form, mix of uses, and superior pedestrian environments that protect and enhance the street network.

FLUE Policy 1.3.1: FORM-BASED ZONING DISTRICTS:
The [Name of Local Government] shall apply form-based zoning districts within each TOD Station Area [and may be applied to each Transit Supportive Area] through the rezoning process to achieve the following characteristics:

A. The zoning districts must emphasize the proper placement and design of buildings to maximize the value of the transit service to a variety of users and to ensure pedestrian and bicycle friendly streets and civic spaces. The zoning districts must also include standards to ensure the creation, over time, of walkable block sizes and the development of “complete streets”.

B. Several different zoning districts should be provided in most TOD Station Areas, with the highest levels of density and intensity assigned in the Transit Core closest to the station and compatible transitions in physical scale in the Transit Neighborhood toward surrounding Transit Supportive Area that should retain the existing character.

C. The selection of zoning districts should foster a variety of urban habitats:
   (1) High density and intensity areas with predominantly retail, office, and employment uses;
   (2) Multi-story mixed-use areas with a “Main Street” character;
   (3) Areas with a wide variety of housing types, including multi-story and attached buildings; and
   (4) Primarily residential areas with transit-supportive densities

D. The form-based zoning districts are designed to produce an environment that encourages walking, cycling, and using transit as the primary means of mobility.
The arrangement of the uses within each TOD Station Area is likely to be as unique as each place. Residential units could be dispersed in relatively low-rise buildings across the majority of the station area, consolidated into taller buildings in response to physical characteristics like water views, or located in diverse neighborhoods of varying scales. TODs accommodate a wide range of commercial uses that may not always include a residential component. Using form-based regulations ensures compatibility occurs among a wide range of densities and intensities. Allowing mixed-use options positions TODs as attractive development locations throughout changing markets.

Further, monitoring the aggregate balance of residential and non-residential uses over time helps inform the need to introduce or expand incentive programs to encourage the market to provide desired uses in advance of market demand.
FLUE Policy 1.3.2: STREET NETWORK OVERLAY:
The Street Network Overlay to be created in the land development code and applied to each TOD Station Area shall have the following characteristics:

A. Define a completely interconnected block pattern that protects existing streets and ensures a well-defined, interconnected network is created over time, by identifying locations of existing and new streets; alleys; transit infrastructure; bicycle lanes, paths, and wide shoulders; and pedestrian passageways, including sidewalks and shared-use paths, to ensure that blocks are easily walkable to maximize pedestrian and bicycle access to the transit station from the station area and beyond.

B. Identify transit-, pedestrian-, and bicycle-friendly design standards for new streets and for retrofitting existing streets to match their new function.

C. Where appropriate, designate primary and secondary streets so that most buildings are oriented to primary streets to create superior pedestrian environments while service functions such as parking and loading can be accommodated along secondary streets.

TOD and the Importance of an Interconnected Street Network

A key component of TOD is the quality of the pedestrian realm. Typically transit riders will walk a half-mile, which represents the distance that can be covered in about a ten-minute walk, to access premium transit service. Accordingly, the area extending a half-mile from the transit station is the primary area suggested for study in a Station Area Master Plan using an appropriate public process.

The design of the street network is the key aspect of the pedestrian realm. Smaller roadways are easier for pedestrians to cross, and they tend to have lower automobile speeds. Smaller blocks create permeability within the urban fabric, facilitating walking. If designed properly, buildings “enclose” the street to further increase the comfort of pedestrians.

While traditional neighborhoods and older communities tend to be characterized by a highly interconnected street network, newer suburban patterns of development have tended towards large parcels, often developed with single-uses with limited points of access. As a result, the roadway network in these conditions developed with fewer, wider connecting roadways fronting large, single-use mega-blocks, often creating a compromised pedestrian realm.

In order to achieve a highly walkable district, especially in areas in need of new connections, the most important outcome of the public process for each station area is the Street Network Overlay. Street Network Overlay identifies new connections between and through parcels that were resolved at a high level of detail during the Station Area Master Plan process. These connections are typically smaller, more local in nature than those planned for on Future Thoroughfare Maps. As such, the Street Network Overlay is intended for adoption into the land development code to ensure ongoing cooperation among various property owners, community stakeholders, and agencies.

The model land development regulations contain block and street standards to guide the creation of and amendments to the overlay. Pages 4-9 and 4-12 provide a graphic illustration of a Station Area Master Plan, Street Network Overlay, and the application of form-based zoning districts.
FLUE Objective 1.4: Throughout the planning period, the [Name of Local Government] shall achieve a compact urban form to support transit oriented development by maintaining the highest average density and intensity of development in areas served by premium transit modes [or Name of Premium Transit System]. This shall be accomplished in part by adhering to the following development expectations:

A. minimum residential density and intensity standards for larger parcels (a half acre or more) within the Transit Core of a Station Area;
B. minimum average residential density and intensity standards for Transit Neighborhood [and may be applied to the Transit Supportive Areas];
C. long-term goals for quantities of residential use and employment in TOD Station Areas, as measured by numbers of residential units and jobs, to be achieved at build-out; and
D. jobs/housing ratios to maintain appropriate mixes of use in TOD Station Areas to support transit oriented development.

Density and Intensity Standards

The efficiency of a transit system increases as the number of jobs and housing units within walking and biking distance of stations increases. For the greatest utility of transit systems, station areas should accommodate the highest densities of residential use, highest intensity of non-residential use, and highest concentration of jobs within the municipality. Within this section, model comprehensive plan policies are provided to establish station area targets for the total number of residential units and total number of jobs. As developed in the TOD Framework, these figures are differentiated by station type (regional, community, and neighborhood) as well as by transit mode (heavy rail, commuter rail / light rail, and bus rapid transit / bus) as they are designed to produce ridership quantities correlated to those distinctions. In the policies, the metrics are presented as long-term goals for a local government to work towards over time as a station area builds out.

Conventional comprehensive planning tends to establish maximum limits for density and intensity for development; however, the approach within TOD districts is somewhat inverted. Premium transit service requires substantial capital costs for infrastructure, which requires justification in ridership and development activity. TOD station areas with higher density and intensity create greater land use efficiencies to help produce and accommodate the ridership needed for viable premium transit modes. Additionally, well-planned development of greater density/intensity also tends to result in higher property values and rents. Minimum, not maximum, development expectations are intended to prevent underutilization of the land area within a TOD station area. However, it is important to also maintain flexibility to respond to local conditions, such as ensuring smaller parcels can densify appropriately and preventing the inadvertent assignment of desirable conditions as “nonconforming” (e.g. historic structures and neighborhoods).

To address these goals, the model Comprehensive Plan policies provide a recommended approach for establishing minimum development expectations for the inner quarter-mile Transit Core and the overall half-mile TOD Station Area. Within the Transit Core, the recommended policies establish minimum density and intensity for “larger parcels” (i.e., more than a half-acre in size). For the Transit Neighborhood, model policies suggest an average minimum density (gross dwelling units per acre across the total acreage), which allows the flexibility of combining areas of varying levels of density to achieve goals for the station area as a whole.
FLUE Policy 1.4.1: MINIMUM DENSITY & INTENSITY
Within Transit Cores of TOD Station Areas, residential uses shall comply with the minimum densities established in FLUE Policy 1.4.1(a) and non-residential uses shall comply with the minimum intensity standards established in FLUE Policy 1.4.1(b) for larger parcels [one-half acre or more]. Within the Transit Neighborhoods [and Transit Supportive Areas], residential uses shall comply with the minimum average residential densities established in FLUE Policy 1.4.2(a) and non-residential uses shall comply with the minimum intensity standards established in FLUE Policy 1.4.2(b). Mixed-use development is strongly encouraged, with a horizontal and/or vertical arrangement, and said development may comply with either standard.

<table>
<thead>
<tr>
<th>TOD Place Type</th>
<th>Heavy Rail</th>
<th>Commuter/Light Rail</th>
<th>BRT/Bus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional Center</td>
<td>85 du/ac</td>
<td>55 du/ac</td>
<td>30 du/ac</td>
</tr>
<tr>
<td>Community Center</td>
<td>60 du/ac</td>
<td>40 du/ac</td>
<td>20 du/ac</td>
</tr>
<tr>
<td>Neighborhood Center</td>
<td>15 du/ac</td>
<td>12 du/ac</td>
<td>10 du/ac</td>
</tr>
</tbody>
</table>

FLUE Policy 1.4.1(b): MINIMUM INTENSITY STANDARDS FOR TRANSIT CORES
Throughout the planning period, the [Name of Local Government] shall seek to maximize the efficiency of the [Name of Premium Transit System] by establishing minimum intensity standards for parcels that are [one-half acre or larger] within a Transit Core surrounding a Premium Transit Station, varied according to TOD Place Type and Premium Transit Mode, as follows:

<table>
<thead>
<tr>
<th>TOD Place Type</th>
<th>Heavy Rail</th>
<th>Commuter/Light Rail</th>
<th>BRT/Bus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional Center</td>
<td>4.0 FAR</td>
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<td>1.5 FAR</td>
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<tr>
<td>Community Center</td>
<td>4.0 FAR</td>
<td>2.0 FAR</td>
<td>1.0 FAR</td>
</tr>
<tr>
<td>Neighborhood Center</td>
<td>1.5 FAR</td>
<td>1.0 FAR</td>
<td>0.5 FAR</td>
</tr>
</tbody>
</table>
FLUE Policy 1.4.2(a) - AVERAGE MINIMUM RESIDENTIAL DENSITIES FOR TRANSIT NEIGHBORHOODS [AND TRANSIT SUPPORTIVE AREAS]

Throughout the planning period, the [Name of Local Government] shall seek to maximize the efficiency of the [Name of Premium Transit System] by establishing average minimum densities for smaller parcels [less than one-half acre] located within a Transit Core and for all parcels located in a Transit Neighborhood [and may include the Transit Supportive Area], varied according to TOD Place Type and Premium Transit Mode, as follows:

FLUE Table 3

<table>
<thead>
<tr>
<th>TOD Place Type</th>
<th>Heavy Rail</th>
<th>Commuter/Light Rail</th>
<th>BRT/Bus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional Center</td>
<td>25 du/ac</td>
<td>15 du/ac</td>
<td>10 du/ac</td>
</tr>
<tr>
<td>Community Center</td>
<td>20 du/ac</td>
<td>12 du/ac</td>
<td>7 du/ac</td>
</tr>
<tr>
<td>Neighborhood Center</td>
<td>10 du/ac</td>
<td>8 du/ac</td>
<td>6 du/ac</td>
</tr>
</tbody>
</table>

Average minimum residential densities shall also be used by [Name of Local Government] to monitor development activity in the TOD Station Area(s) to ensure the residential goals established in FLUE Policy 1.4.5 are achieved over time. The required average minimum residential densities can be achieved using a wide range of building types of varying scale and density.

FLUE Policy 1.4.2(b) - MINIMUM INTENSITIES FOR TRANSIT NEIGHBORHOODS [AND TRANSIT SUPPORTIVE AREAS]

Throughout the planning period, the [Name of Local Government] shall seek to maximize the efficiency of the [Name of Premium Transit System] by establishing minimum intensity standards for smaller parcels [less than one-half acre] located within a Transit Core and for all parcels located within a Transit Neighborhood [or Transit Supportive Area], varied according to TOD Place Type and Premium Transit Mode, as follows:

FLUE Table 4

<table>
<thead>
<tr>
<th>TOD Place Type</th>
<th>Heavy Rail</th>
<th>Commuter/Light Rail</th>
<th>BRT/Bus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional Center</td>
<td>2.0 FAR</td>
<td>1.0 FAR</td>
<td>0.75 FAR</td>
</tr>
<tr>
<td>Community Center</td>
<td>2.0 FAR</td>
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<tr>
<td>Neighborhood Center</td>
<td>0.75 FAR</td>
<td>0.5 FAR</td>
<td>0.5 FAR</td>
</tr>
</tbody>
</table>
FLU Policy 1.4.3: ENCOURAGING INCREASED DENSITY AND INTENSITY ON EXISTING DEVELOPMENT AND SMALLER PARCELS
Smaller parcels, parcels with existing development, and parcels with existing development intended to maintain its current physical characteristics (e.g. buildings with historic designations) are encouraged to increase density and intensity, even if the minimum density and intensity requirements set forth FLUE Policies 1.4.1 (a) and (b) and FLUE Policies 1.4.2(a) and (b) cannot be achieved without additional land or substantial redevelopment. These properties shall not be considered “nonconforming” based upon minimum density or FAR requirements.

FLU Policy 1.4.4: MIX OF USE TARGETS FOR TOD STATION AREAS
Throughout the planning period, the [Name of Local Government] shall seek to maximize the efficiency of the [Name of Premium Transit System] by establishing desired goals for the balance of residential and non-residential uses, varied by TOD Place Type, to be achieved at build-out of a TOD Station Area as follows:

FLUE Table 5

<table>
<thead>
<tr>
<th>TOD Place Type</th>
<th>Residential Percentage</th>
<th>Nonresidential Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional Center</td>
<td>35%</td>
<td>65%</td>
</tr>
<tr>
<td>Community Center</td>
<td>45%</td>
<td>55%</td>
</tr>
<tr>
<td>Neighborhood Center</td>
<td>75%</td>
<td>25%</td>
</tr>
</tbody>
</table>

FLU Policy 1.4.5: RESIDENTIAL UNIT GOALS FOR TOD STATION AREA
Throughout the planning period, the [Name of Local Government] shall seek to maximize the efficiency of the [Name of Premium Transit System] by establishing desired goals for the minimum number of residential units, varied by TOD Place Type and Premium Transit Mode, to be achieved at build-out of a TOD Station Area as follows:

FLUE Table 6

<table>
<thead>
<tr>
<th>TOD Place Type</th>
<th>Heavy Rail</th>
<th>Commuter/Light Rail</th>
<th>BRT/Bus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional Center</td>
<td>10,000 units</td>
<td>5,000 units</td>
<td>3,000 units</td>
</tr>
<tr>
<td>Community Center</td>
<td>5,000 units</td>
<td>3,000 units</td>
<td>1,000 units</td>
</tr>
<tr>
<td>Neighborhood Center</td>
<td>3,000 units</td>
<td>2,000 units</td>
<td>1,000 units</td>
</tr>
</tbody>
</table>
Both residential and employment targets should be established with consideration of the transit mode, the station type, its position along the transit corridor and within the transit network, and adjacent station types. These targets may be need to be adjusted to reflect the unique characteristics of the community (i.e., the presence of brownfields that could limit residential development).

The employment target policies are provided to help inform local governments and agencies as they plan, design, market, recruit, and partner with other public entities as well as the private sector to achieve a desirable build-out condition that is supportive of transit. The goal of these targets is to establish an appropriate balance of jobs and residential units within each station area.

FLUE Policy 1.4.6: Employment Goals for TOD Station Area
Throughout the planning period, the [Name of Local Government] shall seek to maximize the efficiency of the [Name of Premium Transit System] by establishing desired goals for employment, as measured by the number of jobs, to be achieved at build-out in a TOD Station Area as follows:

<table>
<thead>
<tr>
<th>TOD Place Type</th>
<th>Heavy Rail</th>
<th>Commuter/Light Rail</th>
<th>BRT/Bus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional Center</td>
<td>60,000 jobs</td>
<td>40,000 jobs</td>
<td>20,000 jobs</td>
</tr>
<tr>
<td>Community Center</td>
<td>18,000 jobs</td>
<td>12,000 jobs</td>
<td>6,000 jobs</td>
</tr>
<tr>
<td>Neighborhood Center</td>
<td>2,000 jobs</td>
<td>2,000 jobs</td>
<td>1,000 jobs</td>
</tr>
</tbody>
</table>

FLUE Policy 1.4.7: Jobs/Housing Ratio Goals for TOD Station Area
Throughout the planning period, the [Name of Local Government] shall seek to maximize the efficiency of the [Name of Premium Transit System] by maintaining a long-term balanced ratio of employment to residential units to be achieved and maintained at build-out in a TOD Station Area as follows:

<table>
<thead>
<tr>
<th>TOD Place Type</th>
<th>Heavy Rail</th>
<th>Commuter/Light Rail</th>
<th>BRT/Bus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional Center</td>
<td>6 : 1</td>
<td>6 : 1</td>
<td>6 : 1</td>
</tr>
<tr>
<td>Community Center</td>
<td>3 : 1</td>
<td>3 : 1</td>
<td>3 : 1</td>
</tr>
<tr>
<td>Neighborhood Center</td>
<td>1 : 1</td>
<td>1 : 1</td>
<td>1 : 1</td>
</tr>
</tbody>
</table>
FLUE Objective 1.5: To support the [Name of Premium Transit System] and its role in shaping land development activity, the [Name of Local Government] shall identify land-based mechanisms to assist in funding transit service.

FLUE Policy 1.5.1 - Transit System Funding
The [Name of Local Government] shall review the applicability of creative financing mechanisms tied to land development that can help provide funding for [Name of Premium Transit System] service in TOD Station Areas. These mechanisms may include public/private development, joint development, tax increment financing, special assessment districts, or other measures as appropriate and available through Florida Statutes.

FLUE Objective 1.6: To monitor the progress towards the high-intensity, balanced pattern of development desired in TOD Station Areas, the [Name of Local Government] will establish monitoring assessment criteria and mechanisms for TOD, which shall be coordinated with the Florida Department of Transportation, Metropolitan Planning Organization, and [Name of Transit Agency or Authority].

FLUE Policy 1.6.1: Monitoring of TOD Development Activity
In order to ensure a mixture of high-intensity land uses within TOD Station Areas as specified in FLU Objective 1.3, the [Name of Local Government] shall monitor changes over time in the density and intensity of development (cumulatively for TOD Station Areas and on individual parcels), total numbers of residential units and jobs, and the percentage composition of land uses, including ratio of jobs-to-housing. Data presented in the most recent evaluation and appraisal of the comprehensive plan, land use analyses, and/or market analyses shall serve as the baseline data. Monitoring shall be conducted every five years and distributed to relevant public agencies as described in the Intergovernmental Coordination Element (ICE Policy 1.1.6).

FLUE Policy 1.6.2: Encouraging TOD Activity
The [Name of Local Government] shall use the results of the monitoring analysis to consider whether changes in TOD policies and land development regulations are needed, including the introduction or expansion of incentives to encourage specific types or forms of desired TOD development activity. Incentives could be offered through financial arrangements (i.e., tax increment financing, public/private partnership) or zoning programs (i.e., offering increased building height for certain uses).
TRANSPORTATION ELEMENT (TE)

TE GOAL 1
To develop an integrated, multi-modal transportation system, coordinated with future land use, that provides for the safe, efficient, and effective movement of people, goods, and services in [Name of Local Government].

TE Objective 1.1: Throughout the planning period, the [Name of Local Government] shall encourage the development and efficient use of its transportation infrastructure.

TE Policy 1.1.1 – [NAME OF PREMIUM TRANSIT SYSTEM]:
The [Name of Premium Transit System and insert transit system map] has been incorporated into this comprehensive plan as follows:

A. This Premium Transit System including station locations and corridors has been added to the future transportation and future land use maps.

B. [OPTION 1] The land surrounding each Premium Transit Station encompassing the TOD Station Area has been identified with the [Name of TOD-Supportive FLU Category] on the future land use map.

[OPTION 2] The TOD Station Area surrounding each Premium Transit Station has been identified with the [Name of TOD Overlay] in the future land use map series. Maximum density levels otherwise established by this comprehensive plan do not apply within this overlay to development and redevelopment that is carried out in accordance with the form-based zoning districts that support transit oriented development, and consistent with TOD Policies, including minimum densities and intensities apply as established in Policies 1.4.1 and 1.4.2.

TE Policy 1.1.2: MULTI-MODAL TRANSPORTATION SYSTEM
Providing for an efficient transportation system is essential for long-term sustainability. The [Name of Local Government] shall improve transportation accessibility, air quality and energy conservation by developing a multimodal transportation system, improving transit service, and using an investment approach to transportation funding.

TE Policy 1.1.3: MULTI-MODAL MITIGATION REQUIREMENTS
The [Name of Local Government] shall require site and building design for new developments within the TOD Station Area [and may be applied to the Transit Supportive Area], including Developments of Regional Impact, to be coordinated with public transit, bicycle, and pedestrian systems. Requirements may include, but not be limited to, pedestrian crossings and access to transit stations, access to transit vehicles, transit vehicle access to buildings, transfer centers, shelters, sidewalks, and bicycle facilities including dedicated bicycle or shared-use paths.

TE Policy 1.1.4: CREATE AND IMPLEMENT STREET NETWORK OVERLAYS FOR TOD STATION AREAS
The [Name of Local Government] shall adopt and encourage the implementation of a Street Network Overlay to be created as part of a Vision or Master Plan and applied to each TOD Station
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Area in the land development code. Street Network Overlays shall have the following characteristics:

A. Define a completely interconnected block pattern that protects the existing street network, and allows a well-defined, interconnected roadway network to be created over time, identifying locations for new streets, alleys, and pedestrian passageways to ensure that blocks are easily walkable to maximize pedestrian and bicycle access to the transit station from the station area and beyond.

B. Develop “complete streets” interconnected to surrounding developments and neighborhoods in the TOD Station Area.

C. Identify pedestrian- and bicycle-friendly design standards for new streets and for retrofitting existing streets to match their new function.

D. Where appropriate, designate primary and secondary streets so that most buildings are oriented to primary streets to create superior pedestrian environments while service functions such as parking and loading can be accommodated along secondary streets.

TE Policy 1.1.5: COMPLETE STREETS

For roadways within TOD Station Areas, Street and Block Overlays, or leading to transit nodes and corridors, the [Name of Local Government] shall encourage the development of “complete streets,” which include provisions for transit infrastructure and amenities, bicycle and pedestrian facilities (e.g., paths, sidewalks, crosswalks, bicycle lanes, wide shoulders, shared-use paths) and amenities (e.g., bicycle shelters, lockers), landscaping, streetscaping, and traffic calming improvements. These improvements shall be implemented as possible to all appropriate phases of roadway projects (e.g., operations, maintenance, new construction, reconstruction, retrofits, repaving, rehabilitation, changes in the allocation of pavement space on existing roadways) as well as privately-built roads intended for public use.

Complete Streets

“Complete Streets” are streets for everyone. They are designed and operated to enable safe access for all users. Pedestrians, bicyclists, motorists, and public transportation users of all ages and abilities are able to safely move along and across a complete street. Complete Streets make it easy to cross the street, walk to shops, and bicycle to work. They allow buses to run on time and make it safe for people to walk to and from train stations. While each street is unique and responds to its community context, a complete street may include: sidewalks, bike lanes (or wide paved shoulders) and bicycle-related amenities, special bus lanes, comfortable and accessible public transportation stops, frequent and safe crossing opportunities, median islands, accessible pedestrian signals and marked pedestrian crossings, curb extensions, narrower travel lanes, roundabouts, and more. Complete Streets improvements can occur with new roadway construction or incrementally over time as roadway facilities are retrofitted or reconstructed, with funding from developers, public agencies, or other sources. More information is available at www.completestreets.org.
TE Policy 1.1.6: MAXIMIZING RESIDENTIAL AND EMPLOYMENT USES IN TOD STATION AREA
The [Name of Local Government] shall encourage development that contributes to achieving the minimum development expectations with the TOD Station Area identified in the FLUE (Objective 1.4) to enhance the efficiency and viability of transit performance. These targets include minimum density and intensity standards in the Transit Core of the TOD Station Area; average minimum density and intensity in the Transit Neighborhood [and Transit Supportive Area] of the TOD Station Area, total number of residential units, total number of jobs, and jobs-to-housing ratio to be achieved at build-out in the TOD Station Area.

TE Policy 1.1.7: MULTI-MODAL DEVELOPMENT REQUIREMENTS
The [Name of Local Government] shall require developments to provide the following, if applicable:

A. Full accommodations for pedestrian access and movement
B. Full accommodations for bicycles, including lockers and racks
C. Well designed accommodations for transfer of passengers at designated transit facilities
D. Bus bays and accommodations for transit pull-outs
E. Preferential parking for rideshare participants
F. Well designed access for motor vehicle passenger drop-offs and pick-ups at designated transit facilities and at commercial and office development sites
G. Full accommodation for the mobility impaired, including parking spaces, sidewalks and ramps for handicapped access
H. Weather protection at transit stops

TE Policy 1.1.8: COMPATIBILITY OF NEW DEVELOPMENT WITH MULTI-MODAL TRANSPORTATION GOALS
The [Name of Local Government] shall require that new development be compatible with and further the achievement of the Transportation Element. Requirements for compatibility may include but are not limited to:

A. Implementing the Street Network Overlay adopted for each TOD Station Area and corridor
B. Providing pedestrian access to existing or planned Premium Transit Stations and transit routes
C. Locating parking [within structures] to the side or behind development to prioritize pedestrian access to building entrances from the street
D. Providing clearly delineated routes through parking lots and structures to safely accommodate pedestrian and bicycle circulation

TE Policy 1.1.9: REDUCED PARKING REQUIREMENTS FOR TOD STATION AREA
The [Name of Local Government] shall provide reduced or alleviated parking requirements within the Land Development Code for development located within a TOD Station Area in recognition of the more extensive use of walking, cycling, ridesharing, transit use, and shared parking options. Within a TOD Station Area, specific measures to accommodate this policy shall include:
A. The number of parking spaces required for new development and redevelopment in a TOD Station Area shall be reduced, and the maximum number of allowable parking spaces shall be limited.

B. New surface parking lots are prohibited as a primary use within a TOD Station Area.

C. To reduce the parking burden for individual parcels, the [Name of Local Government] shall plan a district-wide parking solution in each TOD Station Area, which may including public parking structures with hourly and daily fees, on-street parking options, and an option for new development to pay a fee [to the municipal parking fund] in lieu of providing on-site parking.

TE Policy 1.1.10: INDICATORS OF TRANSPORTATION MODE CHOICE
The [Name of Local Government] shall establish indicators, which track the trends in promoting transportation choice on an annual basis. Such indicators may include, among others, transit ridership, jobs/housing balance, mode split, and motor vehicle registrations within the TOD Station Area(s).

TE OBJECTIVE 1.2: The [Name of Local Government] shall design, promote, and maintain an efficient and interconnected roadway system that accommodates pedestrian(s), bicyclists, and transit users as part of its multi-modal transportation network.

TE Policy 1.2.1: CONNECTIONS AMONG NEW DEVELOPMENT
The [Name of Local Government] shall ensure that existing and new development is connected by roadways, bikeways, and pedestrian systems that encourage travel between neighborhoods and access to transit without requiring use of the major thoroughfare system.

TE Policy 1.2.2: PLANNED INTERCONNECTIONS FOR TOD STATION AREAS
The [Name of Local Government] shall ensure that new development implements the adopted Street Network Overlay for each TOD Station Area, including sharing access, connecting to existing roadways or stubouts to adjacent development, or establishing new stubouts to provide connections to future adjacent development/redevelopment.

TE OBJECTIVE 1.3: The [Name of Local Government] shall plan, develop, and maintain an efficient and effective public transit system as part of its multi-modal transportation network.

TE Policy 1.3.1: ESTABLISHMENT OF PUBLIC TRANSIT SYSTEM
The [Name of Local Government] shall work with the [Name of Transit Agency and/or Authority], [Metropolitan Planning Organization], and the Florida Department of Transportation to promote the [Name of Premium Transit System] to provide efficient, effective transit service for the citizens, residents, and visitors to [Name of Local Government].

TE Policy 1.3.2: TRANSIT PASSENGER AMENITIES AND ENHANCEMENTS
The [Name of Local Government] shall support provisions for transit passenger convenience such
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as:
A. Information programs which acquaint travelers with transit routes and available services
B. Weather protection at selected stops along transit routes
C. Clear signage which identifies transit stops
D. Lighting and emergency call boxes at selected stops
E. Route map signs at designated transit stops
F. Pre-boarding fare payment systems
G. Electronic fare payment systems
H. More direct bus routing, if necessary, in order to extend service to major residential areas and traffic generators

TE Policy 1.3.3: TRANSIT FACILITIES AS PART OF ROADWAY DESIGN
The [Name of Local Government] shall require that transit facilities, such as turn-out bays, pre-emptive signals, high-occupancy vehicle lanes, bus-only lanes, and transit shelter locations, be included in roadway design proposals, as appropriate.

TE Policy 1.3.4: PROMOTION OF TRANSIT STATION DEVELOPMENT
The [Name of Local Government] shall seek opportunities for TOD around Premium Transit Stations in an effort to encourage public transit ridership. Opportunities may include transit-supportive land uses designed to facilitate the linkages between other transportation modes, network connectivity, intermodal access, transit oriented development, pedestrian-oriented design and intermodal connections between land uses.

TE Policy 1.3.5: ROUTING COORDINATION WITH (TRANSIT AGENCY AND/OR AUTHORITY)
The [Name of Local Government] shall encourage the [Transit Agency and/or Authority] to coordinate routing of local and regional transit services and location of corresponding transit facilities with the location of TOD Station Areas, designated activity centers, high intensity mixed use corridors, and other modal hubs as identified in the Future Land Use Element.

TE Policy 1.3.6: PROTECTION OF FUTURE TRANSIT CORRIDORS
The [Name of Local Government] shall protect planned public transit rights-of-way and exclusive transit corridors, including railroad and utility rights-of-way which have been identified for the construction of rail transit lines, express bus lanes, or high occupancy vehicle (HOV) lanes.

TE OBJECTIVE 4: To develop and enforce innovative planning techniques and land development regulations designed to protect residential neighborhoods, enhance the economic viability of the community, promote the efficient use of infrastructure, preserve natural resources, and reduce the proliferation of urban sprawl, the [Name of Local Government] recognizes the need to facilitate transit oriented development at TOD Station Areas to provide alternate modes of travel by providing a mix of transit-supportive uses that focus on accessibility for the elderly and special needs community.
TE POLICY 1.4.1: TOD STATION AREA MASTER PLANS - OPTIONAL
Using a high degree of public participation and urban design expertise, the [Name of Local Government] shall create a TOD Master Plan (or Vision) for the area surrounding each major transit station within its jurisdiction to provide for transit oriented development and redevelopment around the station as described in FLUE Policy 1.2.1 and to create a Street Network Overlay as described in TE Policy 1.1.4 and FLUE Policy 1.3.2.

TE POLICY 1.4.2: TRANSIT ORIENTED FORM-BASED ZONING DISTRICTS
The [Name of Local Government] shall amend the Land Development Code by [date certain] to include form-based zoning districts. The form-based zoning districts will be determined through the rezoning process around each TOD Station Area as described in FLUE Policy 1.3.1.

INTERGOVERNMENTAL COORDINATION ELEMENT (ICE)

ICE GOAL 1: To engage partners and stakeholders in the establishment of a multi-modal transportation network.

ICE OBJECTIVE 1.1: The [Name of Local Government] shall work with its public and private partners to establish and maintain a multi-modal transportation network.

ICE POLICY 1.1.1: COORDINATION WITH [TRANSIT AGENCY AND/OR AUTHORITY]
The [Name of Local Government] shall work with the [Transit Agency and/or Authority] and other modal partners (e.g., airport authority, seaport authority) to help identify and fund the infrastructure improvements necessary to support the TOD Station Area and [Name of Premium Transit System].

ICE Policy 1.1.2: INTER-AGENCY REVIEW OF TOD
The [Name of Local Government] shall work with the [Transit Agency and/or Authority], [Metropolitan Planning Organization], [Names of Adjacent Local Governments], and Florida Department of Transportation (if applicable) in the review of transit oriented development activities in TOD Station Areas and along designated transit corridors.

ICE Policy 1.1.3: COMPLETE STREETS
Within TOD Station Areas, and for all roadways within Transit Supportive Areas that are interconnected with TOD Station Areas, the [Name of Local Government] shall work with the [Metropolitan Planning Organization], [Transit Agency and/or Authority], and the Florida Department of Transportation towards the development of “complete streets,” including the provision of bicycle and pedestrian facilities and amenities, transit infrastructure, landscaping, streetscaping, and traffic calming improvements.

ICE Policy 1.1.4: RESIDENTIAL GOALS FOR TOD STATION AREAS
The [Name of Local Government] shall work with transportation partners, business and community
groups, and stakeholders to facilitate and maintain residential and mixed-use development to meet the TOD development goals for TOD Station Areas set forth in FLUE Objective 1.4 related to residential unit goals, average minimum densities for TOD Station Areas, and minimum densities for the Transit Core of TOD Station Areas.

ICE Policy 1.1.5: EMPLOYMENT GOALS FOR TOD STATION AREAS
The [Name of Local Government] shall work with transportation partners, business and community groups, and stakeholders to facilitate and maintain non-residential development to meet the TOD development goals for TOD Station Areas set forth in FLUE Objective 1.4 related to total number of jobs and minimum development intensity.

ICE Policy 1.1.6: MONITORING OF TOD DEVELOPMENT ACTIVITY
The [Name of Local Government] shall monitor changes over time regarding TOD as specified in Future Land Use Policy 1.6.1, and this data, which shall include existing and planned residential and non-residential development activity, total number of residential units, and total number of jobs within TOD Station Areas, shall be shared with relevant stakeholders as following:

a. Monitoring data shall be provided to the [Name of Transit Agency and/or Authority] on an annual basis, with a focus on transit routing and improvements, to help inform the design, planning, funding, and prioritization of future multi-modal transportation improvements, both existing and planned.

b. Monitoring data shall be provided to the [Metropolitan Planning Organization] on an annual basis for the refinement of “traffic analysis zones,” the development of long-range planning documents, and to help inform the design, planning, funding, and prioritization of future multi-modal transportation improvements, both existing and planned.

c. Monitoring data shall be provided to the [Name of Neighboring Local Governments] on an annual basis, with a focus on transit routing.
HOUSING ELEMENT (HE)

HE GOAL 1: To maximize the ridership potential of existing and planned premium transit systems and correlate housing opportunities with transportation modes.

HE OBJECTIVE 1.1: The [Name of Local Government] shall increase housing opportunities in conjunction with multi-modal transportation opportunities.

[OPTION 1]

HE Policy 1.1.1: ENCOURAGEMENT OF WORKFORCE HOUSING IN TOD STATION AREAS
Where appropriate, the [Name of Local Government] shall encourage the development of workforce housing (as defined locally) in TOD station areas using incentives such as, [but not limited to, increases in building height, density, tax increment financing benefits, land trusts, etc.]

[OPTION 2]

HE Policy 1.1.1: REQUIREMENT FOR WORKFORCE HOUSING IN TOD STATION AREAS
Where appropriate, the [Name of Local Government] shall ensure the development of workforce housing (as defined locally) in TOD station areas by requiring new development to provide a minimum of [25%] of all new residential units as workforce housing (as defined locally). An inventory of workforce housing in the TOD station area shall be maintained on an annual basis.

Workforce Housing

Though the recent, unprecedented national real estate adjustment has reduced the immediate concern for workforce housing in most areas of Florida, successful TOD typically results in increased property values and higher rents, which can create obstacles to maintaining housing attainable to the workforce and lower-income segments of the population over time. Two strategies are presented to ensure workforce/affordable housing options are provided within TOD station areas. The first option uses an incentive-based approach by offering increases in building height or density or financing mechanisms. The second option uses a regulatory approach whereby a certain percentage of new units would be required to be offered at prices attainable to income-qualified buyers. In either case, the strategy should be calibrated to local conditions and will be most successful utilizing a residential market analysis.

HE Policy 1.1.2: SEPARATION OF DEEDS FOR RESIDENTIAL UNITS AND PARKING
To maximize the number of residential units and increase the efficiency of land use in TOD districts, the [Name of Local Government] shall adopt reduced parking ratios for residential uses and encourage residential units to be deeded separately from residential parking spaces where possible.

HE Policy 1.1.3: INCENTIVES FOR RESIDENTIAL DEVELOPMENT WITHIN TOD STATION AREAS
To maximize the number of residential units and residential density within TOD Station Areas, the [Name of Local Government] shall allow residential uses by right and evaluate the provision of incentives for public, public/private, and private residential development, including but not limited to streamlined and expedited permitting, development pre-approvals, reduced development and impact fees, and density bonuses for the provision of workforce housing.
**CAPITAL IMPROVEMENTS ELEMENT (CIE)**

**GOAL 1:** To advance TOD through the provision of funding for transit-supportive infrastructure.

**OBJECTIVE 1.1:** To support the [Name of Transit System] and its role in shaping land development activity, the [Name of Local Government] shall identify land-based mechanisms to assist in funding infrastructure improvements within the TOD Station Area to make the area more transit-supportive and pedestrian-friendly.

**CIE Policy 1.1.1: STREET NETWORK ACCESS TO TRANSIT STATIONS**

To improve access to Premium Transit Stations and make TOD Station Areas more transit-supportive and pedestrian-friendly, the [Name of Local Government] shall work with transportation partner agencies to assess deficiencies in the street network and identify necessary capital improvements to implement street network improvements.

**CIE Policy 1.1.2: FUNDING FOR STREET NETWORK ACCESS TO TRANSIT STATIONS**

To improve access to Premium Transit Stations and make TOD Station Areas more transit-supportive and pedestrian-friendly, the [Name of Local Government] shall identify both regulatory and incentive-based mechanisms to fund and construct necessary street network improvements connecting to or within TOD Station Areas. These mechanisms may include [special assessment districts, developer contributions, multi-modal impact fees, mobility fees, expedited permitting, reduced development fees, tax abatements or reductions, tax increment financing, density bonuses] or other measures as available through Florida Statutes.

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**Separating Parking from Residential Units**

Conventional development patterns and financing mechanisms often require more parking than necessary in districts served by evolving transit networks. Accordingly, residential developments, especially multi-family, that are accompanied by a common parking lot or structure, typically assign parking spaces to individual units, linking particular residential units with assigned parking spaces in a single deed. For residents requiring fewer spaces, the parking is unnecessary and costly. Assigned spaces also prevent shared parking arrangements, which can reduce the amount of parking needed in a district, thereby increasing the use of land by other uses and further improving walkability. By separating the ownership documents of units and parking, market forces can work more effectively to enable residents to purchase fewer spaces, or none if desired, and allow surplus parking to ultimately be used in a common parking pool as transit systems mature.
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Model Land Development Regulations

The fundamental needs of all places intending to promote transit as a competitive option are similar: establish a public realm conducive to accessing public transit, walking, cycling as well as driving; provide a mix of land uses and density supportive of multi-modal transportation; and foster development opportunities. Following the creation of a TOD Station Area Vision or Master Plan, these model LDRs can be applied and customized to facilitate TOD in any existing condition: Urban Infill, Suburban Retrofit or Greenfield environments.

The model LDRs are for application to the Transit Core and Transit Neighborhood surrounding each station and may be applied to the Transit Supportive Area. The model LDRs are comprised of two main components: Zoning Regulations and a Street Network Overlay.

Four Zoning Districts: TOD-Urban Core, TOD-Urban Center, TOD-General, and TOD-Edge

Four TOD Zoning Districts are defined in these model regulations that provide a range of density and intensity to fit any station area. In addition to the range of intensity by station type (Regional, Community, Neighborhood) and transit mode (heavy rail, commuter/light rail, and BRT/bus), a TOD Station Area is a mixed-use center that varies in character and scale internally. The TOD Station Area (approximately 500 acres) is not a homogenous building height or density. Instead, a TOD Station Area includes a graduation of intensities that is determined and affected by many factors. In the most intense areas, buildings tend to be tall, attached, and contain a wide range of vertically-mixed uses. In less intense areas, buildings tend to be lower, detached, and less diverse in use. Ranging from most intense to least, the TOD zoning districts are TOD Urban-Core, TOD Urban-Center, TOD General, and TOD-Edge.

Supporting Regulations

Regulations referenced by all zoning districts are contained in supporting sections of the LDRs as follows:

**Frontage Types** define the design standards for the entrances to buildings and the area between the building and the street. A palette is included and keyed to each zoning district.

**Civic Open Space Standards** contain the standards necessary to ensure green areas are properly composed to enhance the livability aspects of a TOD.

**Parking Standards** provide guidance for regulating parking in TOD areas.

**Street and Block Standards** provide guidance for proper block size and street design to establish the fundamental framework for the physical environment of the station area.
Street Network Overlay

The Street Network Overlay works in conjunction with the zoning regulations and is guided by the TOD Station Area Vision or Master Plan and the Street and Block Standards section of these regulations. Successful TOD requires a highly coordinated transportation and land use strategy. The intent for each TOD Station Area is to have a fine-grain, interconnected network of streets and blocks that can easily accommodate access to public transit. The Street Network Overlay depicts the location and design of new streets, alleys, and pedestrian passages and designates which streets are Primary Streets and which are Secondary Streets. Primary Streets are those intended to establish superior pedestrian environments and accordingly, are held to higher standards in the zoning district regulations regarding building form and placement and the location of parking and service uses. Secondary Streets can accommodate service functions and vehicular-oriented needs. Designating streets as either Primary or Secondary is a powerful tool in organizing development within the station areas, especially given that TOD accommodates a wide range of uses.

How to Customize These Regulations for Any Condition

These regulations are easy to customize for varying conditions by using only the zoning districts that reflect the appropriate level of building scale and intensity. The Frontage Types, Civic Open Space, Parking, and Street and Block Standards apply to all conditions. The complexity and extent of the role of the Street Network Overlay varies by condition.

In an Urban Infill condition, the Street Network Overlay may contain only a few new streets, alleys, or pedestrian passages, with its main function being the designation of Primary and Secondary Streets.

In a Suburban Retrofit area, establishing and then adopting the location for new connections requires coordination among different property owners and competing interests, which may prove to be the most challenging part of the process. Once a consensus is reached, the agreed-upon network must be adopted to solidify these strategies into the future. As with all conditions, amendments to the overlay are evaluated using the Street and Block Standards.

Greenfield environments are typically comprised of large land owners, which tend to be fewer in number than Suburban Retrofit areas. This smaller collection of stakeholders can make the process of establishing a future street and block network easier. Connections to and extension of existing thoroughfares is necessary; however, the relatively blank land development canvas provides ample options for designing solutions that can satisfy diverse interests.

Note to Users:
The following pages contain model land development regulations to advance transit-oriented development (TOD) in communities in Florida. In order to provide additional guidance, commentaries and explanations are provided, distinguished from model regulations by green boxes like this one with text typed in Italicized Times New Roman Font. Text within [brackets] suggests alternative language to customize the code for differing conditions.
Section 1. TOD Station Area Regulations

A. Purpose and intent. The purpose and intent of the TOD Station Area regulations is to guide the [re]development of each TOD Station Area into a vibrant place that:

1. Promotes the optimum use of transit by [maintaining and enhancing or establishing] an interconnected transportation network that effectively links transit station(s), bike paths, sidewalks, buildings, and open spaces;
2. [Maintains and enhances or Creates] a continuous, inter-connected network of narrow, pedestrian- and bicycle-friendly streets with shaded sidewalks, appropriate landscaping and street details, including on-street parking;
3. Provides a mix of uses within a pedestrian-friendly environment to meet the daily needs of workers, residents, and visitors;
4. Establishes a desirable residential location with a variety housing types to accommodate a diverse population;
5. Provides public open spaces in the form of civic parks, plazas, or greens;
6. Encourages investment by accommodating new development at a range of scales including individual infill buildings and large redevelopment projects.

B. TOD Zoning Districts Described. To create the vibrant character envisioned for the Station Area(s), four zoning districts are hereby created and are being assigned to all land within the boundaries of each TOD Station Area located within the TOD Overlay Zone on the Comprehensive Plan’s Future Land Use Map. Table 1-1 indicates the appropriate location for each of the following TOD districts:

1. TOD-Urban Core. The TOD-Urban Core district is the most intense zone, comprised of the tallest, mostly attached buildings that create a continuous street facade and accommodate a wide range of uses, including major employment, shopping, civic, or entertainment destinations as well as residential uses in multi-family buildings or in the upper stories of mixed-use buildings.
2. TOD-Urban Center. The TOD-Urban Center district is compact, comprised of multi-story mostly attached buildings that create a continuous street facade and accommodate a wide range of uses, including shopping, offices, and residences compatibly adjacent to each other or within mixed-use buildings.
3. TOD-General. The TOD-General district accommodates a mixture of uses within multi-story buildings, but is primarily residential accommodating transit-supportive densities within a range of compatible housing types, including townhouses, multi-family buildings, and live-work units.
4. TOD-Edge. The TOD-Edge district is generally used to provide a compatible transition to historic neighborhoods, existing adjacent residential, or natural areas, while maintaining transit-supportive densities. The district is primarily residential in nature, accommodating predominantly within detached houses with ancillary units and live-work uses.
Assigning TOD Zoning Districts

TOD Zoning districts are assigned using the TOD Station Area Vision or Master Plan as a guide. Each TOD Station Area Vision or Master Plan is prepared considering a wide range of factors that affect appropriate building scale, density, and uses, including the community’s vision for future growth, surrounding development patterns, planned transit infrastructure, and existing zoning designations. Each station area will function as a mixed-use center, and will typically vary in character internally requiring multiple zoning districts. Some station areas may be more intense and have a higher percentage of TOD-Urban Core or TOD-Urban Center while others may have a higher percentage of TOD-General. Additionally, factors beyond transit affect where uses will tend to concentrate. For example, features such as desirable water views or undesirable high-speed arterial roads can influence the location of residential uses.

Careful assignment of the zoning districts can ensure compatibility with surrounding development and implement other provisions of the Comprehensive Plan. These guidelines should be followed when zoning/rezoning the station area:

- Compatible building scales and intensities should face across streets. Changes in zoning districts generally occur along rear or side property lines or alleys.
- The more intense zoning districts, TOD-Urban Core and TOD-Urban Center, are generally located closest to the transit station and along arterial streets.
- Where station areas abut existing or approved development, the zoning district assigned to abutting parcels should establish similar or compatible conditions.

The scale of the station area, whether a Regional, Community, or Neighborhood Center, affects the assignment of zoning districts, as demonstrated in the diagrams below. Each diagram depicts one quadrant of a typical station area, with 1/4-mile and 1/2-mile radii extending from the transit stop. Although there are no hard rules for the quantity of land that should be assigned to each district, a generally appropriate range is suggested for each station type.

### Regional Center
- TOD-Urban Core: 40% to 90%
- TOD-Urban Center: 10% to 60%
- TOD-General: 10% to 30%
- TOD-Edge: 0%

### Community Center
- TOD-Urban Core: 0% to 20%
- TOD-Urban Center: 20% to 70%
- TOD-General: 30% to 50%
- TOD-Edge: 0% to 10%

### Neighborhood Center
- TOD-Urban Core: 0%
- TOD-Urban Center: 1% to 50%
- TOD-General: 50% to 85%
- TOD-Edge: 0% to 20%
C. Street Network Overlay. A Street Network Overlay is adopted for each TOD Station Area and works in conjunction with the zoning regulations. Successful TOD requires a highly coordinated transportation and land use strategy. The intent is for each TOD Station Area to develop over time a fine grain, interconnected network of streets and blocks that easily accommodates access to existing or anticipated public transit. The Street Network Overlay depicts the following information:

1. Primary and Secondary Streets. Primary Streets are intended to develop over time as superior pedestrian environments and, as such, are held to higher standards in the zoning district regulations regarding building form and placement and the location of parking and service uses. Streets not designated as Primary Streets are considered Secondary Streets, which will accommodate service functions and vehicular-oriented needs including parking, loading, and drive-through facilities.

2. Future Streets, Alleys, and Pedestrian Passages. Future streets, alleys, and pedestrian passages are desired new vehicular and/or pedestrian connections to, or extensions of, existing streets that will improve the overall transportation network. Future street, alley, and pedestrian passage designations are not precise alignments, but are new connections that must be provided in a form consistent with the TOD Station Area Vision or Master Plan at the time of development.

3. Frontage Types for Certain Streets. Some streets may be designated with a specific Frontage Type in order to achieve a coordinated outcome among properties (e.g. Enhanced Sidewalk, Slip Streets, Arcade). Properties without a specific frontage type designation may choose the type as described in Section 4.

D. Standards for all TOD Districts.

1. Specific Standards. Specific Standards unique to each district are found in Section 2.

2. General Standards. General Standards that apply to more than one district are found in

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### Table 1-1

**Appropriate TOD Zoning Districts per Place Type & Location**

<table>
<thead>
<tr>
<th>Place Type &amp; Location</th>
<th>TOD-Urban Core</th>
<th>TOD-Urban Center</th>
<th>TOD-General</th>
<th>TOD-Edge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional Center</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transit Core</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transit Neighborhood</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Community Center</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transit Core</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Transit Neighborhood</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Neighborhood Center</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transit Core</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Transit Neighborhood</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

An “X” indicates the zoning district is appropriate for that location. A blank cell indicates the district is not recommended in that location.
TOD Zoning Districts

Section 2A, Section 4 “Uses and Density Regulations,” Section 5 “Frontage Standards,” Section 6 “Civic Open Spaces,” Section 7 “Parking and Access,” Section 8 “Streets and Blocks.”

3. Conflicts. Where the requirements of these zoning districts conflict with other portions of this code, the requirements of these districts shall prevail; however, no development may be approved that conflicts with the Comprehensive Plan.

A powerful tool to facilitate development in the desired form is to offer an expedited review process for projects that are consistent with the community vision established in the TOD Station Area Vision or Master Plan. One of the benefits of planning for TOD using the recommended public process is the potential for using an administrative approval process when development proposals meet the zoning district regulations and implement the Street Network Overlay. Evaluating projects under a form-based code requires building design information beyond what is typically required for site plan review. The following section describes one way to incorporate an administrative review process into the land development regulations.

E. Review Process for TOD Districts. The purpose of site plan review is to ascertain whether a proposed new development follows the pattern of development described in each TOD Station Area Vision or Master Plan and conforms to all provisions of the Comprehensive Plan and this code. Development applications shall be processed administratively as follows:

1. The Planning Director shall review plans, including the exhibits listed below, for completeness and compliance with the provisions of this code, including the Street Network Overlay referenced in Section 1(C). The Planning Director shall issue a final decision. Denials shall be in writing and shall specifically set forth the grounds for the denial. Any final decision of the Director may be appealed to the Zoning Board of Adjustment in accordance with the procedures established in this code for appeals of administrative decisions.

2. Applications for site plan review under this article shall be accompanied by exhibits prepared by qualified professionals, which shall include the following:
   a. A survey of existing conditions providing the following information:
      1. Gross land area (to the nearest one-hundredth (1/100) of an acre).
      2. Substantial, visual improvements (in addition to buildings) such as signs, parking structures, swimming pools, etc.
      3. Parking areas and number of parking spaces.
      4. Indication of access to a public way on land such as curb cuts and driveways, and to and from waters adjoining the surveyed tract, such as boat slips, launches, piers and docks.

   b. In addition to any other application requirements, drawings of the proposed conditions shall be provided depicting the following:
      1. Vicinity map showing the property in reference to nearby streets and street intersections.
      2. Location of the property lines, location of existing and proposed rights-of-way, lo-
cation and dimension of existing/proposed easements, water courses and other essential features.
3. Indication of Primary or Secondary street designations for all rights-of-way and any future street, alley, or pedestrian connections provided.
4. Cross section and street design type for new and existing streets and alleys as described in Section 3(D).
5. Location of vehicular access to site including driveways and curbs cuts.
6. The outlines of all existing and proposed buildings showing setbacks, percentage of building frontage, dimensions, and points of pedestrian access.
7. Identification and dimensions of frontage types for all primary pedestrian entrances.
8. Building elevations and sections, showing overall building height and number of stories.
9. Location and dimensions of all proposed signage.
10. Location and dimensions of all perimeter treatments (sidewalks, pedestrian walkways, street trees, fences, streetwalls, and/or landscaping).
11. Location of all off-street parking, loading facilities, and waste collection areas.
12. Schematic of drainage system.
13. Location, type, and size (in square feet) of civic open spaces.
14. Landscaping plans, including specifications of species, of plant material, location, and size.

c. A data table which indicates the following:
   1. Future land use category and zoning district
   2. Total acres of the project
   3. Number of dwelling units
   4. Square feet of non-residential uses
   5. Parking computations
   6. Floor Area Ratio (FAR)
   7. Percentage of building frontage required and provided on Primary Streets as described in Section 3 for each TOD district

d. Such other design data as may be needed to evaluate the project’s compliance with the requirements of this code.

3. Relief from certain requirements of this article may be permitted pursuant to the variance standards of [reference section] of this code.
Section 2. Standards for all TOD Districts

A. Building Height. Unless otherwise specified herein, the height of buildings shall be measured in and regulated by the number of stories. Increasing the maximum number of stories allowed in a TOD district may not be approved as a variance, but may be accomplished through a Public Benefit Height Incentive. Stories are measured from the floor to the bottom of the lowest structural member that supports the story above. See Figure 2-2 and Table 2-a.

1. The ground story of commercial or mixed-use buildings shall be 10 feet to 18 feet tall.
2. The ground story of residential buildings shall be from 9 feet to 14 feet tall.
3. Each story above the ground story in all buildings must be from 8 feet to 12 feet tall; any upper story taller than 12 feet will count as two stories for the purpose of measuring building height.
4. Mezzanines that exceed 15% of the floor area are counted as stories for the purpose of measuring height.
5. Each parking garage level exposed to a street or civic open space shall be counted as a story for the purposes of measuring height. Parking levels fully concealed from view by a habitable story and active use are not counted as stories for the purpose of measuring height. See Figure 2-1.

Regulating building height by the number of stories, rather than the number of feet, results in a built scale that is predictable to both lay-people and potential developers. Limiting overall building height solely by the number of feet can inadvertently encourage developers to maximize building height, and then subdivide into as many stories as possible. Conversely, limiting building height by the number of stories results in authentic architectural variation among buildings and higher, more desirable ceiling heights. Some codes utilize both feet and the number of stories.
Figure 2-2
Measuring Building Height

Table 2-a
Building Height

<table>
<thead>
<tr>
<th></th>
<th>Maximum Number of Stories</th>
<th>Varies By District</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Ground Floor Finish Level</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Commercial &amp; Office Uses and Lobbies/Common Areas in Multi-unit buildings in all zones</td>
<td>6” max.</td>
</tr>
<tr>
<td></td>
<td>Residential Units</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Core</td>
<td>18” min.</td>
</tr>
<tr>
<td></td>
<td>Center</td>
<td>18” min.</td>
</tr>
<tr>
<td></td>
<td>General</td>
<td>18” min.</td>
</tr>
<tr>
<td></td>
<td>Edge</td>
<td>12” min.</td>
</tr>
<tr>
<td>C</td>
<td>Ground Story Height</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Commercial and Mixed-Use Buildings</td>
<td>10’ min. / 18’ max.</td>
</tr>
<tr>
<td></td>
<td>Residential Buildings</td>
<td>9’ min. / 14’ max.</td>
</tr>
<tr>
<td>D</td>
<td>Upper Story Height</td>
<td>8’ min. / 12’ max.</td>
</tr>
<tr>
<td>E</td>
<td>Parapet Height</td>
<td>42” max. / 10’ max.</td>
</tr>
</tbody>
</table>
B. **Building Placement.** Each district contains dimensional requirements that regulate the disposition of new buildings on lots.

1. Front setbacks shall be measured from the property lines coinciding with public rights-of-way or from a civic open space that meets the requirements in Section 6. See Figure 2-3.

2. In districts that allow development with no side or rear setback, the following limitations also apply:
   a. Side and rear setbacks are required only when an abutting property has a building existing as of the effective date of this ordinance [date] with windows facing the adjoining lot line. Then, new development shall set back to provide at least 10 feet of separation between the existing and new buildings.
   b. All light and air shafts necessary per the percentage of openings shall be provided within the lot.
   c. In the Core and Center districts, buildings taller than five stories in height have additional side and rear setback requirements for the upper stories, as described in Section 3.

C. **Building Frontage.** Building frontage is the percentage of the total width of a lot which is required to be occupied by the primary façade of a building. Each zoning districts provides minimum building frontages.

1. The primary façade shall be parallel to the right-of-way, located in accordance with the minimum and maximum front setback requirements of the zoning district.

2. The location of the primary façade is not changed by architectural elements such as cornices.
nices, bay windows, awnings, porches, balconies, stoops, colonnades, arcades or fore-courts.
3. The primary façade may adjust around a Civic Open Space that meets the requirements in Section 6 as shown in Figure 2-3.

D. Density. In order to achieve the desired concentration of residences over time, TOD Zoning districts regulate density for both minimum thresholds and maximum limits. See Section 4 for requirements per district. In all districts, the maximum and/or required number of residential units shall be determined as follows:
1. For parcels with density expressed as dwelling units per acre, the following calculation, with the result rounded to the nearest whole number, determines the number of units:
   \[(\text{Parcel Size in square feet} / 43,560) \times \text{Density} = \text{number of units}\]
2. In mixed use buildings, the maximum number of units is not reduced by floor space dedicated to other uses.
3. Each dwelling unit must meet the following minimum floor areas:
   a. Efficiency 400 square feet
   b. One-bedroom 525 square feet
   c. Two-bedroom 800 square feet

E. Frontage Standards. The main pedestrian entrance to every building shall be accessible directly from and face a public right-of-way or civic open space. The manner in which buildings are disposed along the street is a critical component of this code and is coordinated with the setback requirements for each district and the Street and Block Standards contained in Section 8. Frontage Standards, contained in Section 4, define architectural and design components for the entrance(s) to buildings and the area between primary façades and property lines.
F. **Civic Open Space.** Civic open spaces provide privately owned and maintained outdoor spaces, which are accessible by the general public, improve the pedestrian environment, are aesthetically pleasing, and serve as an amenity for the area as a whole, as well as for occupants of the building. On sites 1 acre or more in size, new buildings and some additions shall provide civic open space. Civic Open Space Standards, contained in Section 5, defines the amount, location, and design criteria for civic open spaces.

G. **Building Façade Standards.** In all TOD zoning districts, the following façade regulations apply:

1. Building façades facing streets or civic open spaces must have transparent windows covering between 20% and 75% of the wall area of each story as measured between finished floors. Transparent windows transmit at least 50% of visible daylight.

2. Windows and doors shall be vertically proportioned. Horizontal fenestration openings can meet this requirement by using muntins to subdivide glazed areas into vertical or square areas, or by using a series of vertically proportioned windows within the opening. Transom windows may be horizontal. Circular, square, and semi-circular windows may be used as limited accent elements within the facade.

3. All parapets shall have a cornice molding extending a minimum of two inches from the surface plane of the wall.

4. When required by the district, expression lines shall be moldings extending a minimum of two inches from the surface plane of the building wall. Expression lines are intended to be continuous façade elements and may not be covered by awnings or signs. Significant architectural features may interrupt expression lines.

![Figure 2-4 Building Facade Standards](image)

H. **Parking Standards.** TOD requires fewer parking spaces and accommodates diverse arrangements than other areas. See Section 7 “TOD Parking and Access.”
Appropriate Building Height

Building height is an issue that is hotly debated in many communities. The “appropriate” height is affected by many perspectives: citizens wary of change, developers who frequently propose taller heights than currently exist in the area, and public officials charged with balancing these sometimes opposing forces while weighing the limitations of roadway capacity and market conditions. After studying the conditions of various places in Florida (See Chapter 3 Place Type Analyses), it is clear that every place studied, even those that benefitted from a tremendous number of infill projects in the last building boom, have under-developed or vacant parcels throughout the subject station areas. These “gaps” in the urban fabric, which are to continue, (frequently used as surface parking lots), detract from the intended vibrant, pedestrian-friendly environment needed to establish successful TOD.

In terms of fostering TOD, building height must balance providing high concentrations of density and intensity to support premium transit with the amount of infill development to shape the needed station area into a true “place.” If the height is too tall, the market will be absorbed within fewer projects, limiting their ability to improve the built environment.

The TOD-Urban Core district accommodates the most intense development in the tallest buildings and is intended to be assigned within station areas in Regional Centers and some Community Centers. These land development regulations recommend a maximum building height in the TOD-Urban Core of 20 stories with a maximum density of 300 du/ac; however, height and density should be calibrated locally during the TOD Station Area Vision or Master Plan effort and take the transit mode into consideration. Some Regional Centers, like Miami, have building heights up to 48 stories (with density permitted up to 1000 du/ac), while others have a substantially lower built scale. The key is determining the maximum height for the district and applying it to every parcel within the district. Predictability in building height, a hallmark of form-based codes, creates an attractive, equitable investment environment for developers, allows for expedited review processes, and eliminates un-expected development proposals for the general public.
Section 3. Regulations for Each TOD District

A. TOD-Urban Core District. The TOD-Urban Core district is the most intense zone, comprised of tall, mostly attached buildings that create a continuous street facade and accommodate a wide range of uses, including major employment, shopping, civic, and entertainment destinations as well as residential uses located within multi-family buildings or the upper stories of mixed-use buildings.

1. Place Type and Location. The TOD-Urban Core district is appropriate for the Transit Core and Transit Neighborhood in Regional Centers and for the Transit Core in Community Centers. This district is typically not recommended for Neighborhood Centers.

2. Lot Size and Building Placement. Table 3-A provides the dimensional requirements regarding lot size and building placement for the TOD-Urban Core district. Figure 3-1 illustrates the dimensional requirements from the table.

3. Building Size, Height and Massing Standards. Table 3-A provides dimensional requirements regarding building height and mass for the TOD-Urban Core district. Figure 3-1 illustrates the dimensional requirements from the table.
   a. Buildings shall have a minimum FAR of 1.5 and a maximum FAR of 6.0.
   b. Minimum building height is two stories.
   c. Maximum building height is 20 stories.
   d. Buildings over five stories are subject to additional requirements in order to ensure architectural articulation control over building mass. At the top of the fifth story, additional building setbacks are required as described in Table 3-A and illustrated in Figure 3-1.
   e. Above the fifth story, the building floorplate dimensions are limited as follows:
      (i) 15,000 square feet maximum for residential or lodging uses
      (ii) 30,000 square feet maximum for commercial uses
      (iii) 250 feet maximum building length in any direction.
      (iv) A minimum of 60 feet in separation between buildings is required above the fifth story, including in projects developing more than one building.

4. Uses and Density Regulations. Use and density in the TOD-Urban Core District shall conform to the regulations contained in Section 4.

5. Frontage Standards
   a. The front setback and side setbacks facing streets shall be hardscaped. The hardscape design shall have the following characteristics:
      1. Street trees shall be installed as set forth in Section 5, consistent with the appropriate street type designated on the Street Network Overlay and detailed in Section 7.
### Table 3-a

**TOD-Urban Core Dimensional Requirements**

<table>
<thead>
<tr>
<th>Lot Size</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Lot Width</td>
<td>40 ft. min</td>
</tr>
<tr>
<td>Lot Area</td>
<td>5,000 sf. min</td>
</tr>
</tbody>
</table>

**Lot Coverage**

| Maximum Lot Coverage | 80% |

**Maximum Floorplate Size Above the 5th Story**

| Residential & Lodging Uses | 18,000 sf. max. |
| Commercial Uses           | 30,000 sf. max. |
| Maximum Building Length   | 250 ft. |

**Building Size**

| FAR                    | 1.5 min. to 7.0 max. |

**Building Placement**

<table>
<thead>
<tr>
<th>Building Place</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A Front Setback</td>
<td></td>
</tr>
<tr>
<td>Secondary Streets</td>
<td>5 ft. min</td>
</tr>
<tr>
<td>Primary Streets</td>
<td>5 ft. - 12 ft. max.</td>
</tr>
<tr>
<td>Enhanced Sidewalk Frontage</td>
<td>20 ft.</td>
</tr>
<tr>
<td>Slip Street Frontage</td>
<td>60 ft.</td>
</tr>
<tr>
<td>Above the 5th Story</td>
<td>20 ft. min.</td>
</tr>
<tr>
<td>B Side Setback</td>
<td>0 ft.²</td>
</tr>
<tr>
<td>C Rear Setback</td>
<td>5 ft. min.</td>
</tr>
<tr>
<td>D Building Frontage</td>
<td>80% min. on Primary Streets</td>
</tr>
</tbody>
</table>

**Building Height**

| Minimum Height | 2 Stories |
| Maximum Height | 20 Stories |

1. Side lot lines facing streets are regulated by the front setback requirements.
2. See Section 2(2)(b)
3. May be reduced to 20 ft. if abutting a public alley

### Building Setbacks

*Buildings in TOD-Urban Core and TOD-Urban Center districts should line streets positioned using small front setbacks. On streets with wide sidewalks, front setbacks could be as little as 5 feet to accommodate opening doors. On streets with sidewalks too narrow to serve the high level of pedestrian activity associated with TOD, front setbacks should be deeper to augment the ROW. See Frontage Standards and Street and Block Standards.*
2. A pedestrian walkway shall be accommodated between the face of curb of the street and the front of the building, as set forth in Section 5.

3. Any remaining setback area, unnecessary for accommodating a pedestrian walkway, may be landscaped adjacent to the building using potted plants in removable planters or ground planting that does not obstruct views into storefront windows. These areas may also be used to accommodate merchandise displays or outdoor dining areas.

b. The main entrance(s) to ground story commercial space(s) shall be directly adjacent to and face a public right-of-way or civic open space. Doors allowing public access shall occur at intervals no greater than 75 feet.

c. Building entrances shall use at least one of the following frontage types detailed in Section 4:
   1. Stoop
   2. Forecourt
   3. Bracketed Balcony
   4. Storefront
   5. Arcade/Colonnade

d. Cross-Block Connections. Sites with more than 300 feet of street frontage shall provide a pedestrian a cross-block connection not less than 8 feet in width. Sites with more than 650 feet of street frontage shall provide a vehicular cross-block connection not less than 22 feet in width.

6. Architectural Standards
   a. An expression line shall be provided at the top of the first or second story.

   b. Buildings taller than five stories shall design and compose building elevations facing side property line(s) as building façades. The building façade from the fifth story and higher shall provide a minimum façade transparency of 15%.

   c. In the absence of a building façade, a streetwall is required along both Primary and Secondary Streets. Streetwalls shall be three feet (3’-0”) to three feet six inches (3’-
Example of TOD Development in Kendall, Florida

The area adjacent to the Metrorail station in Kendall evolved into TOD following a detailed master plan implemented by a form-based code. Dover Kohl & Partners, an author of the plan with DPZ & Co., notes, “The plan for Downtown Kendall was initiated by the local chamber of commerce, property owners, and neighbors. In a public charrette in June 1998, Dadeland Mall area business leaders and citizens gathered together to chart a course for evolving the thriving suburban mall and surrounding sprawl into a metropolitan center that better leverages its unique place in the regional transportation system.”
B. **TOD-Urban Center District.** The Center district is compact and appropriate for multi-story, mostly attached buildings that create a continuous street facade and accommodate a wide range of uses, including shopping, offices, and residences compatibly adjacent to each other or within mixed-use buildings.

1. **Place Type and Location.** The TOD-Urban Center district is appropriate in the Transit Core and Transit Neighborhood of both Regional Centers and Community Centers. This district is appropriate in the Transit Core of Neighborhood Centers.

2. **Lot Size and Building Placement.** Table 3-B provides the dimensional requirements regarding lot size and building placement for the TOD-Urban Center district. Figure 3-5 illustrates the dimensional requirements from the table.

3. **Building Size, Height, and Massing Standards**
   a. Buildings shall have a minimum FAR of 1.5 and a maximum FAR of 2.75.
   b. Building size may increase to a maximum FAR of 3.25 under the Public Benefit Height Incentive described below.
   c. On Primary Streets, the minimum building height is two stories.
   d. Maximum building height is 5 stories.

**Zoning increases can be a powerful tool to accomplish a wide range of community needs. The “Public Benefit Height Incentive” (described below) could also be used in the TOD-Urban Core district, in which case it would be contained in a separate section allowing multiple districts to reference the policy. The language is included here both to clearly demonstrate how to apply the bonus to the base district and for brevity of the model LDRs. The model language focuses on open space and workforce/affordable residential units as the majority of the areas studied for TOD needed additional residential units to optimally support transit, but the same technique could be used to encourage other uses or needs based on each community’s unique circumstances (e.g., new streets, Class A office space).**

   e. **Public Benefit Height Incentive.** Bonus height and FAR shall be permitted if the proposed development contributes toward the specified public benefits, above that which is otherwise required by this Code, in the amount and in the manner as set forth herein. In order to encourage more workforce and affordable housing options, civic open space, and transit use, building height may be increased in the Center District to a total of 8 stories, and FAR may be increased to a total of 3.2 using one or a combination of the following options:

   i. Affordable/workforce housing on-site of the development. For each square foot of affordable/workforce housing (including pertaining shared space such as parking and circulation) provided on site, the development shall be allowed two square feet of additional building area up to the bonus height and FAR.

   ii. Affordable/Workforce housing off-site. For each square foot of affordable /work-
Table 3-B
TOD-Urban Center Dimensional Requirements

<table>
<thead>
<tr>
<th>Lot Size</th>
</tr>
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<tbody>
<tr>
<td>Lot Width</td>
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<table>
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<th>Lot Coverage</th>
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<tr>
<td>Maximum Lot Coverage</td>
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<table>
<thead>
<tr>
<th>Maximum Floorplate Size Above the 5th Story</th>
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<tr>
<td>Residential &amp; Lodging Uses</td>
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<tr>
<td>Commercial Uses</td>
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<table>
<thead>
<tr>
<th>Building Size</th>
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<tr>
<td>FAR</td>
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<table>
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<tbody>
<tr>
<td>A Front Setback¹</td>
</tr>
<tr>
<td>Secondary Streets</td>
</tr>
<tr>
<td>Primary Streets</td>
</tr>
<tr>
<td>Enhanced Sidewalk Frontage</td>
</tr>
<tr>
<td>Slip Street Frontage</td>
</tr>
<tr>
<td>Above the 5th Story</td>
</tr>
<tr>
<td>B Side Setback</td>
</tr>
<tr>
<td>30 ft. min. above 5th Story</td>
</tr>
<tr>
<td>C Rear Setback</td>
</tr>
<tr>
<td>30 ft. min. above the 5th³</td>
</tr>
<tr>
<td>D Building Frontage</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Building Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Height</td>
</tr>
<tr>
<td>Maximum Height by Right</td>
</tr>
<tr>
<td>Maximum w/Public Benefit⁴</td>
</tr>
</tbody>
</table>

¹ Side lot lines facing streets are regulated by the front setback requirements.
² See Section 2(2)(b)
³ May be reduced to 20 ft. if abutting a public alley
⁴ See Section 2(c)

Figure 3-5
TOD-Urban Center Building Placement & Height

The minimum and maximum floor area ratio set forth in the TOD-Urban Core and TOD-Urban Center districts should be calibrated at the local level to reflect the ultimate building height (see page 4-53) envisioned for the TOD Station Area and the transit mode (see pages 4-26 and 4-27.)
force housing (including pertaining shared space such as parking and circulation) provided off site, in a location within the City [County] approved by the City Manager [Planning Director], the development shall be allowed an equivalent square footage of additional area up to the bonus Height and FAR. No additional allowance is given for the purchase of the site.

iii) Civic Open Space off-site. Civic Open Space provided through purchase and in an area of need identified by the City Parks and Open Space Master Plan and the City’s Parks Department. For each square foot of dedicated public park or Civic Open Space provided above the base requirement in Section 5, the development shall be allowed two square feet up to the bonus Height and FAR. The Civic Open Space may be a Park, Green or Square, and shall meet the standards in Section 6.

iv) Civic Open Space [New Street or Pedestrian Passage] provided on-site. In order to use the Public Benefit Height Incentive, civic open spaces must be at least 2,000 square feet in size. Dedicated rights-of-way, building setbacks, and civic open space provided to meet the requirements set forth Section 5 shall not count toward fulfilling this amount. The development shall be allowed two square feet of development up to the bonus Height and FAR for each square foot of qualifying civic open space. The Civic Open Space may be a Park, Green or Square, and shall meet the standards in Section 5. [For projects providing a New Street or Pedestrian Passage as identified in the Street Network Overlay, the development shall be allowed two square feet of development up to the bonus Height and FAR].

v) Brownfields. One additional story of height shall be permitted for redevelopment on a designated Brownfield site.

f. Buildings over five stories are subject to additional requirements in order to ensure architectural articulation control overall building mass. At the top of the fifth story, additional building setbacks are required as described in Table 3-B and illustrated in Figure 3-5.

g. Above the fifth story, the building floorplate dimensions are limited as follows:
   (i) 15,000 square feet maximum for residential or lodging uses.
   (ii) 30,000 square feet maximum for commercial uses.
   (iii) 250 feet maximum building length in any direction.
   (iv) A minimum of 60 feet in separation between buildings is required above the fifth story, including in projects developing more than one building.

4. Uses and Density Regulations. Use and density in the TOD-Urban Center district shall conform to the regulations contained in Section 4.
5. Frontage Standards
   [THE FRONTAGE STANDARDS ARE THE SAME AS IN THE TOD-URBAN CORE DISTRICT]

6. Architectural Standards
   [THE ARCHITECTURAL STANDARDS ARE THE SAME AS IN TOD-URBAN THE CORE DISTRICT]

7. Other applicable Standards. See Section 2 and Sections 4 through 8 for general standards that also apply to the TOD-Urban Center district.
C. **TOD-General District.** The TOD-General district accommodates a mixture of uses within multi-story buildings, but is primarily residential accommodating transit-supportive densities within a range of compatible housing types, including townhouses, multi-family buildings, and live-work units.

1. **Place Type and Location.** The TOD-General district is appropriate in the Transit Neighborhood of Regional Centers. In Community Centers and Neighborhood Centers, the TOD-General district is appropriate in the Transit Core and the Transit Neighborhood.

2. **Building Types.** This district anticipates a mix of single and multi-family buildings. In order to ensure compatibility, new development shall be in form of one of the following building types:
   a. **Mixed-Use Building.** An attached or detached building accommodating dwellings in upper stories and various commercial uses in any story.
   b. **Live-Work Building.** An attached or detached building with residential, commercial uses, or a combination of the two within individually occupied units, all of which may occupy any story of the building.
   c. **Townhouse.** A single-family building, attached to an adjoining building on at least one side with a private rear yard.
   d. **Apartment House.** A detached building resembling a large house, but containing multiple dwellings above and/or beside each other.
   e. **Courtyard Building.** A building designed to accommodate multiple dwellings above and beside each other, arranged around a central garden or patio that is partially or wholly open to the street.

3. **Lot Size, Principle Building Placement and Height.**
   a. **Table 3-c** provides the dimensional requirements for lot size, building placement, frontage, and height for the allowable building types in the TOD-General district.
### Table 3-c
TOD-General District - Dimensional Requirements for Lot Size & Principle Building Placement

<table>
<thead>
<tr>
<th>Building Type</th>
<th>Lot Size</th>
<th>Principle Building Placement (feet)</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lot Width¹ (min / max in feet)</td>
<td>Lot Area¹ (min / max in s.f.)</td>
<td>Lot Coverage (max)</td>
<td>A</td>
<td>B</td>
<td>C</td>
</tr>
<tr>
<td>Mixed Use Building</td>
<td>60 / 200</td>
<td>1,800 / 24,000</td>
<td>80%</td>
<td>12 / 25</td>
<td>0¹,²</td>
<td>30</td>
</tr>
<tr>
<td>Live-Work Building</td>
<td>16 / 60</td>
<td>1,800 / 7,200</td>
<td>80%</td>
<td>12 / 25</td>
<td>0¹,³</td>
<td>30</td>
</tr>
<tr>
<td>Townhouse</td>
<td>20 / 36</td>
<td>2,000 / 4,000</td>
<td>80%</td>
<td>12 / 25</td>
<td>0¹,³</td>
<td>20</td>
</tr>
<tr>
<td>Apartment House</td>
<td>50 / 120</td>
<td>4,800 / 15,000</td>
<td>70%</td>
<td>12 / 25</td>
<td>5</td>
<td>20</td>
</tr>
<tr>
<td>Courtyard Building</td>
<td>120 / 320</td>
<td>12,500 / No max.</td>
<td>70%</td>
<td>12 / 25</td>
<td>5</td>
<td>20</td>
</tr>
</tbody>
</table>

¹ These sizes reflect a fee-simple arrangement. In a condominium development, the lot sizes should be illustrated on the site plan, though not necessarily platted.
² Corner lots must meet front setbacks on both streets. Front setbacks on infill lots shall either match the front setback of one of the adjacent buildings or shall be located between the setbacks.
³ See Section 2(2)(b).
⁴ See Section 3(C)(2)(d) for dimensional criteria for the courtyard.

### Table 3-d
TOD-General District - Dimensional Requirements for Accessory Dwellings

<table>
<thead>
<tr>
<th>Building Type</th>
<th>Footprint (in s.f.)</th>
<th>Accessory Dwelling Placement (feet)</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Front Setback² (from building facade)</td>
<td>Side Setback</td>
<td>Rear Setback</td>
<td>Separation from Principle Building</td>
<td>Building Height in Stories (min / max)</td>
</tr>
<tr>
<td>Live-work Building</td>
<td>625</td>
<td>20</td>
<td>0¹,²</td>
<td>5</td>
<td>10</td>
<td>1 / 2</td>
</tr>
<tr>
<td>Townhouse</td>
<td>625</td>
<td>N/A</td>
<td>0¹,²</td>
<td>5</td>
<td>10</td>
<td>1 / 2</td>
</tr>
</tbody>
</table>

¹ These sizes reflect a fee-simple arrangement. In a condominium development, the lot sizes should be illustrated on the site plan, though not necessarily platted.
² See Section 2(2)(b)
b. **Accessory Dwelling Footprint, Placement and Height.** Each Live-Work and Townhouse is permitted one principle building and one accessory dwelling. Accessory dwellings are not counted for the purpose of limiting density. **Table 3-d** provides the dimensional requirements for footprint, building placement, and height for Accessory dwellings in the TOD-General district.

c. **Courtyard Buildings** have the following additional criteria:
   1. A courtyard, open to the sky, of at least 12% of the lot area shall be provided.
   2. The longer dimension of the courtyard shall be at least 30 feet if oriented east-west and at least 40 feet if oriented north-south.
   3. The main entrance to ground story dwellings shall be directly from the street or the common courtyard.
   4. In courtyards at least 35 feet wide, open-air porches, stoops, and balconies may encroach from two sides. In courtyards less than 35 feet wide, encroachment is permitted from one side.
   5. An open-air covered pedestrian passageway, at least 10 feet wide, may connect the courtyard, through the building to the street. The passageway may be gated.

d. **Townhouses** have the following additional criteria:
   1. Townhouses must have or install a rear alley to accommodate vehicular access and parking.
   2. Townhouses shall occur in an array of at least three, side by side.
   3. No more than eight contiguous townhouses shall occur without a pedestrian accessway of at least 10 feet.

4. **Uses & Density Regulations.** Use and density in the TOD-General district shall conform to the regulations contained in Section 4.

5. **Frontage Standards.**
   a. The front setback and side setbacks facing streets shall be landscaped and shall have the following characteristics:
      1. Street trees shall be installed as set forth in Section 5, consistent with the appropriate street design in Section 8.
      2. A pedestrian walkway shall be accommodated between the face of curb of the street and the front of the building, as set forth in Section 5.
      3. Any remaining setback area not used to accommodate a pedestrian walkway, shall be landscaped.
   b. Building entrances shall use at least one of the following frontage types detailed in Section 5.
      1. Porch
      2. Stoop
      3. Bracketed Balcony

6. **Other applicable Standards.** See Section 2 and Sections 4 through 8 for general standards that also apply to the TOD-General district.
Figure 3-6
Mixed-Use Placement and Height

Figure 3-7
Mixed-Use Character Examples
TOD Zoning Districts

Figure 3-8
Live-Work Placement and Height

Figure 3-10
Townhouse Placement and Height

Figure 3-9
Live-Work Character Example

Figure 3-11
Townhouse Character Examples
Figure 3-12
Apartment House Placement & Height

Figure 3-14
Courtyard Building Placement and Height

Figure 3-13
Apartment House Character Examples

Figure 3-15
Courtyard Building Character Examples
D. **TOD-Edge District.** The TOD-Edge district is primarily residential in nature and is used to provide compatible transitions to existing, adjoining residential areas, while maintaining transit-supportive densities.

1. *Place Type and Location.* The TOD-Edge district is generally not appropriate in Regional Centers. In Community Centers and Neighborhood Centers, the TOD-Edge district is appropriate for the Transit Neighborhood.

2. Building Types. This district anticipates a mix of residential buildings. New development shall be in form of a House. A House is a single-family detached building with front, side and rear yards.

3. Lot Size, Building Placement and Height.
   a. **Table 3-e** provides the dimensional requirements for lot size, building placement, frontage, and height for the House building type
   b. Accessory Dwellings. Each House is permitted one accessory dwelling. **Table 3-f** provides the dimensional requirements for footprint, building placement, and height for accessory dwellings in the TOD-Edge District.

<table>
<thead>
<tr>
<th>Building Type</th>
<th>Lot Width (min / max in feet)</th>
<th>Lot Area (min / max in s.f.)</th>
<th>Lot Coverage (max)</th>
<th>Front Setback¹ (min/max)</th>
<th>Side Setback</th>
<th>Rear Setback</th>
<th>Building Frontage Percentage (min/max)</th>
<th>Building Height in Stories (min/max)</th>
</tr>
</thead>
<tbody>
<tr>
<td>House</td>
<td>40 / 70</td>
<td>4,000 / 8,400</td>
<td>50%</td>
<td>12 / 25</td>
<td>5</td>
<td>20</td>
<td>40% - 70%</td>
<td>1 / 3</td>
</tr>
</tbody>
</table>

¹ Corner lots must meet front setbacks on both streets. Front setbacks on infill lots shall either match the front setback of one of the adjacent buildings or shall be located between the setbacks.
Table 3-f
TOD-Edge District - Dimensional Requirements for Accessory Dwellings

<table>
<thead>
<tr>
<th>Building Type</th>
<th>Footprint (in s.f.)</th>
<th>E</th>
<th>B</th>
<th>F</th>
<th>G</th>
<th>Building Height in Stories (min / max)</th>
</tr>
</thead>
<tbody>
<tr>
<td>House</td>
<td>625</td>
<td>20</td>
<td>5</td>
<td>5</td>
<td>10</td>
<td>1 / 2</td>
</tr>
</tbody>
</table>

Accessory dwellings provide an important tool for viable TOD. Adding an accessory dwelling to a single-family lot (50 x 120) can increase density from 7 du/ac to (minimum for premium transit) to a much healthier density of 14 du/ac. Paired with a townhouse, and density levels can increase beyond 40 du/ac. An accessory dwelling unit is not only an affordable housing type, but also helps reduce the cost of the main home. While not always necessary, requiring the property owner live on-site is an option to consider to ensure proper oversight of the unit.

3. *Uses & Density Regulations.* Use and density in the TOD-Edge district shall conform to the regulations contained in Section 4.

4. *Frontage Standards.*
   a. The front setback and side setbacks facing streets shall be landscaped and shall have the following characteristics:
      1. Street trees shall be installed as set forth in Section 5, consistent with the appropriate street design in Section 8.
      2. A pedestrian walkway shall be accommodated between the face of curb of the street and the front of the building, as set forth in Section 5.
      3. Any remaining setback area not used to accommodate a pedestrian walkway, shall be landscaped.
   b. Building entrances shall use at least one of the following frontage types detailed in Section 5:
      1. Porch
      2. Stoop

5. Other applicable Standards. See Section 2 and Sections 4 through 8 for general standards that also apply to the TOD-Edge District.
Figure 3-14
House Placement and Height

Figure 3-15
House Character Examples
Section 4. Use and Density Regulations for TOD Zoning Districts.

A. Uses and Density by TOD Zoning District. The desired use pattern within TOD accommodates a mixture of residential, commercial and employment uses to maximize transit use. Table 4-a regulates density and uses for TOD Zoning Districts.

1. In order to achieve the concentration of residential units necessary to optimally support transit ridership, minimum density thresholds are regulated in addition to maximum density limitations in TOD zoning districts.
   a. Residential developments on sites one-half acre or more in size are required to provide a minimum residential density; mixing uses is encouraged.
   b. Residential developments on sites less than one-half acre in size do not have a minimum residential density; mixing uses is encouraged.
   c. Ancillary dwellings, if permitted, shall not count for purpose of limiting density.
   d. All developments shall meet minimum FAR standards set forth in TOD zoning districts.

2. The first column identifies the use category or specific use described or defined in the zoning regulations. The letter(s) in the row below each TOD Zoning district regulate the use.
   a. The letter “P” indicates the use is permitted by right on all streets within the district.
   b. The letter “S” means the use is permitted on Secondary Streets by right and with limitations on Primary Streets.
   c. The letter “E” means the use is permitted by Special Exception only.
   d. The letters “PXR” mean the use is permitted with additional requirements.
   e. A “-“ indicates the use is not permitted in the TOD zoning district.

See Table on Following Page

### Density Requirements

The model code provides four zoning districts, which accommodate varying building scales, land use intensities, and densities, establishing a “palette” to assign to land within TOD station areas. As discussed in the Model Comprehensive Plan Policies, minimum densities are suggested for larger parcels. These minimums are intended to help produce the ridership needed for viable premium transit modes and to prevent the underutilization of the land area within a TOD station area. The ultimate density and building height regulations in the TOD-Urban Core and TOD-Urban Center districts should be calibrated at a local level to reflect community character and the mode of transit (See pages 4-26 and 4-27).
## Table 4-a

### TOD Uses & Density Table

<table>
<thead>
<tr>
<th>Density (du/ac)</th>
<th>TOD - Urban Core</th>
<th>TOD - Urban Center</th>
<th>TOD - General</th>
<th>TOD - Edge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sites less than 1/2 acre</td>
<td>300 max.</td>
<td>150 max.</td>
<td>40 max.</td>
<td>15 max.</td>
</tr>
<tr>
<td>Sites 1/2 acre or more</td>
<td>40 min. to 300 max.</td>
<td>20 min. to 150 max.</td>
<td>12 min. to 40 max.</td>
<td>6 min. to 15 max.</td>
</tr>
</tbody>
</table>

### Residential Uses

<table>
<thead>
<tr>
<th>Use</th>
<th>P</th>
<th>S</th>
<th>E</th>
<th>PXR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-Family Detached</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>P</td>
</tr>
<tr>
<td>Single-Family Attached</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>-</td>
</tr>
<tr>
<td>Upper Story Residential</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>-</td>
</tr>
<tr>
<td>Multi-family Housing</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>-</td>
</tr>
<tr>
<td>Nursing/Convalescent Home</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>E</td>
</tr>
<tr>
<td>Community Residence</td>
<td>P</td>
<td>P</td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td>Dormitory</td>
<td>P</td>
<td>P</td>
<td>E</td>
<td>-</td>
</tr>
<tr>
<td>Home Office</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>Live-Work</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>-</td>
</tr>
<tr>
<td>Ancillary Dwelling</td>
<td>-</td>
<td>-</td>
<td>P</td>
<td>P</td>
</tr>
</tbody>
</table>

### Lodging

<table>
<thead>
<tr>
<th>Use</th>
<th>P</th>
<th>P</th>
<th>P</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bed &amp; Breakfast</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>E</td>
</tr>
<tr>
<td>Inn</td>
<td>P</td>
<td>P</td>
<td>E</td>
<td>-</td>
</tr>
<tr>
<td>Hotel</td>
<td>P</td>
<td>P</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

### Office & Commercial Uses

<table>
<thead>
<tr>
<th>Use</th>
<th>P</th>
<th>P</th>
<th>PXR</th>
<th>-</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office</td>
<td>P</td>
<td>P</td>
<td>PXR</td>
<td>-</td>
</tr>
<tr>
<td>Auto-Related Commercial Establish</td>
<td>-</td>
<td>S, PXR</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>General Commercial (excluding drive through facilities)</td>
<td>P</td>
<td>P</td>
<td>PXR</td>
<td>-</td>
</tr>
<tr>
<td>General Commercial with ancillary drive through facilities</td>
<td>-</td>
<td>S, PXR</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Alcohol Service Establishment</td>
<td>P</td>
<td>E</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Food Service Establishment (drive through facilities prohibited)</td>
<td>P</td>
<td>P</td>
<td>PXR</td>
<td>-</td>
</tr>
<tr>
<td>Open Air Retail</td>
<td>E</td>
<td>E</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Place of Assembly</td>
<td>S</td>
<td>S</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Recreational Establishment</td>
<td>P</td>
<td>P</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Park Lot as principle use</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Park Garage, whether principle or accessory use</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>-</td>
</tr>
</tbody>
</table>

### Civic Uses

<table>
<thead>
<tr>
<th>Use</th>
<th>P</th>
<th>P</th>
<th>P</th>
<th>P</th>
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</thead>
<tbody>
<tr>
<td>Community Facility</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>Recreational Facility</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>Religious Facility</td>
<td>P</td>
<td>P</td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td>Educational Facility</td>
<td>P</td>
<td>P</td>
<td>E</td>
<td>E</td>
</tr>
</tbody>
</table>

### Open Space

<table>
<thead>
<tr>
<th>Use</th>
<th>P</th>
<th>P</th>
<th>P</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parks, Playgrounds and recreational facilities under the supervision of the [city, county]</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>Civic Open Space</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
</tr>
</tbody>
</table>

**Legend**

- **P** = Permitted by Right on All Streets
- **S** = Permitted on Secondary Streets and with Limitations on Primary Streets (see Section 4.B)
- **E** = Permitted by Special Exception
- **PXR** = Additional Requirements Apply (see Section 4.C)
- **-** = Prohibited Use
Building Uses

Many conventional zoning codes rely upon simply listing specific uses in each district. This method was introduced all over Florida in the 1950s by Fred Bair and others, and remains popular today. This method is self-explanatory and easy to use in residential districts. In commercial districts, where a large universe of uses could be acceptable, the lists either require interpretation, which introduces a lack of certainty for potential businesses, or become unwieldy and long over time. It is not uncommon to find a code that permits both “stationery stores” and “book sellers,” uses, which via market forces consolidated over time and, more importantly, are equally benign.

This document recommends collapsing the universe of potential uses into defined categories and relying upon the built form to ensure compatibility. The best and most recent application of this type of strategy is the Miami 21 code. Miami 21 consolidated 360 separate uses into 45 specific use terms and assigns them to one of the following eight categories: residential, lodging, office, commercial, civic, civil support, education, or industrial. A table clearly assigns uses to zoning districts.

These model regulations utilize the same concept of consolidating uses. In addition, special instructions are included to achieve the desired TOD pattern. Uses are designated as appropriate for either Primary or Secondary streets to reinforce main pedestrian routes and a minimum density requirement ensures a critical mass and mix of uses will occur over time.

<table>
<thead>
<tr>
<th>MIAMI 21</th>
<th>AS ADOPTED - APRIL 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ARTICLE 4. TABLE 3 BUILDING FUNCTION: USES</td>
</tr>
<tr>
<td></td>
<td>T1 SUB-URBAN</td>
</tr>
<tr>
<td></td>
<td>R L O</td>
</tr>
<tr>
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<td>COMMUNITY RESIDENCE</td>
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</tr>
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<td>R</td>
</tr>
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<td>MULTI FAMILY HOUSING</td>
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<td>LIVE - WORK</td>
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<td>WORK - LIVE</td>
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<td>BED &amp; BREAKFAST</td>
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<td>OFFICE</td>
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<td>OFFICE</td>
<td></td>
</tr>
<tr>
<td>COMMERCIAL</td>
<td></td>
</tr>
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<td>AUTOMATED COMMERCIAL ESTABLISHMENT</td>
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<td>ENTERTAINMENT ESTABLISHMENT, ADULT</td>
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<td>FOOD SERVICE ESTABLISHMENT</td>
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<tr>
<td>ALCOHOL, BEVERAGE SERVICE ESTABLISHMENT</td>
<td></td>
</tr>
<tr>
<td>GENERAL COMMERICAL</td>
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<tr>
<td>SERVICE RELATED COMMERCIAL ESTABLISHMENT</td>
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<td>OPEN AIR RETAIL</td>
<td></td>
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<tr>
<td>PLACE OF ASSEMBLY</td>
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<tr>
<td>RECREATIONAL ESTABLISHMENT</td>
<td></td>
</tr>
<tr>
<td>CIVIC</td>
<td></td>
</tr>
</tbody>
</table>
Density...Done Right!

Appropriate density and intensity are necessary to achieve the thresholds needed to support transit as a viable option. In the regulatory process for residential use, common practice assigns a maximum allowable density - a numerical ratio of units per acre – to each zoning district and land use designation. While this provides a simple method of regulation, the actual measurement can be an arbitrary number that fails to control the resulting character of development. Measured density is often very different from perceived density, and design plays a fundamental role in the perception of impact. Areas settled with poor design and segregated uses have led many to associate high density with congestion and an overall reduction in the quality of life. Yet, authentic architecture, using appropriate proportions and scale, can accommodate densities that would seem numerically extreme, yet are intrinsic parts of many desirable places.

The image to the right depicts a multi-family building within a historic neighborhood. The four-unit structure sits in a 45’ x 125’ lot, but the setbacks, scale, mass and height are compatible with the adjacent house built on a 50’ x 125’ lot. By the numbers, the multi-family building is 30 units/acre, while the neighboring house is only 9 units/acre. The existing zoning district also permits limited retail and office uses in either structure; however, the architecture ensures harmony, regardless of density or use.

For successful TOD, higher density is desirable and necessary to maximize transit ridership. The model code recommends using minimum and maximum density requirements within a form-based code format. This strategy ensures a mix of uses as well as the proper arrangement of the buildings, which is critical for successfully creating an environment favorable to walking. Three examples of transit-supportive densities in differing building scales are illustrated below.
B. Uses permitted on Secondary Streets and permitted with limitations on Primary Streets. The following uses are permitted in the Core district on Secondary Streets. On Primary Streets, these uses are permitted provided they are separated from the street and/or civic open space for at least 20 feet by a use permitted on Primary Streets on all stories as depicted in Figure 3-2.

1. Parking Garages and Lots, whether principle or accessory use.
2. Places of Assembly such as theaters, cinemas, or bowling allies which require large expanses of blank facades; however, the lobbies, concession areas, conference rooms, and ticket facilities associated with these uses may be located on Primary Streets.

Primary Streets

Parts of Florida may require retrofitting settlement patterns to achieve a successful TOD environment. Depending upon both the physical and regulatory situations, accommodating uses that are typically contrary to traditional TOD may be part of the transition. Utilizing “Primary” and “Secondary” street designations allows municipalities to accommodate and organize a wide range uses without compromising the main pedestrian routes. Designating the streets leading to transit stations as “Primary,” ensures those areas will be lined by the fronts of buildings containing active uses.
C. Uses Permitted with Additional Requirements.

1. Within the TOD-General zone, office, general commercial, and food service establishment uses shall be located within Mixed Use or Live-Work building types.

2. Gas Stations. Gas stations are permitted [by special exception] in accordance with the following additional criteria:
   a. Gas Stations shall not be located within the Transit Core.
   b. Gas Stations shall not be located at the intersection of two Primary Streets. Gas Stations may be located at the intersection of a Secondary Street and a Primary Street.
   c. A ground-story shop must be located along the street, with the gas pumps to the rear of the lot (See Figure 4-2). The shop shall have the primary entrance facing and directly accessible from the street; an additional entrance facing the gas pumps is permitted. [Gas Stations may be one story in height.]

Gas Stations in Urban Environments

Gas stations are typically a prohibited use in TOD and should not be permitted within the Transit Core. However, in parts of Florida, development patterns will evolve over time into TOD. Gas stations may be necessary or already allowed in the land use in some station areas. If this is the case, controlling the site design is key to ensuring compatibility. Proper placement of the building and pumps can prioritize the presence of the store, while maintaining access to fuel. Under these requirements, new stations will likely occur if the demand is high.
3. **Drive Through Facilities.** Drive through facilities serving pharmacies and banks are permitted [by special exception] with the following additional criteria:

a. Drive through facilities shall not be located within the Transit Core.

b. The stacking area is accommodated along the side and/or in the rear of the lot.

c. The drive-through window shall be located either in the rear or to the side of the building, close to the frontage street. Figure 4-3 illustrates appropriate arrangements for incorporating drive through facilities.

---

**Drive Throughs in Urban Environments**

The power of the Primary and Secondary Street designation system is that vehicular-oriented uses can be accommodated within station areas, if necessary, without disrupting the urban fabric that prioritizes transit access. The bank below maintains its presence and pedestrian access on a Primary Street, while accommodating a drive through facility, queuing, and parking from a Secondary Street.

---

**Figure 4-3**

Drive Through Configurations

- **Drive Through Configuration 1**
  Drive through stacking occurs in the rear of the lot. Circulation is from an alley, exiting on to a secondary street.

- **Drive Through Configuration 2**
  Circulation and stacking occurs along the side of the building. Cars enter from an alley, exiting on to a primary street.

- **Drive Through Configuration 3**
  Circulation and stacking travel through the building. Cars enter from an alley, exiting on to a primary street.
Section 5. Frontage Standards for TOD Zoning Districts.

The TOD zoning districts establish a predictable spatial framework to create a pedestrian-friendly environment supportive of infill redevelopment and multi-modal transportation options. Frontage standards ensure a superior pedestrian environment develops over time that improves the visual appearance and use of streets. These standards define architecture and design components for the entrance(s) to buildings and the area between building facades and streets.

A. **Frontage Types.** The entrance(s) of every building shall be directly accessible from and face a public right-of-way or civic open space. Frontage Types define architectural characteristics for the detailing of these building entrances. Eight distinct frontage types have been identified, which are appropriate for different types of buildings and uses. Table 5-a identifies the frontage types appropriate for each zoning district by an “X”. Using one or more of frontage types identified is required. The Street Network Overlay may require the use of a specific frontage type on certain streets.

<table>
<thead>
<tr>
<th>Zoning District</th>
<th>Frontage Types</th>
<th>Frontage Types</th>
<th>Frontage Types</th>
<th>Frontage Types</th>
<th>Frontage Types</th>
<th>Frontage Types</th>
<th>Frontage Types</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Porch</td>
<td>Stoop</td>
<td>Bracketed Balcony</td>
<td>Forecourt</td>
<td>Storefront</td>
<td>Arcade/Colonnade</td>
<td>Enhanced Sidewalk</td>
</tr>
<tr>
<td>TOD-Urban Core</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>TOD-Urban Center</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>TOD-General</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mixed Use Building</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Live-Work Building</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Apartment House</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Courtyard Building</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Townhouse</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOD-Edge</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table 5-a**

*Frontage Types per Zoning District*

**Frontage Types are included in a number of form-based codes, including Smart Code and Miami 21. Palm Beach County has adopted special frontage types (Enhanced Sidewalk and Slip Street) to help retrofit existing collectors and arterial thoroughfares into more pedestrian-friendly, transit-supportive, attractive places. Including Frontage Types as part of the land development regulations ensures that buildings properly engage the street, establishing a superior public realm that raises pedestrian travel to an option equal to or better than a driving experience. The standards ensure, regardless of overall architectural quality of buildings, the front of the buildings are properly designed for TOD.**
1. Porch. A porch is an open-air structure attached to a building forming a covered entrance large enough for comfortable use as an outdoor room. Porches are generally appropriate for single-family attached or detached houses. The main building façade is typically setback from the property line, creating a private front yard. Table 5-b provides the dimensional requirements and the maximum allowable encroachment permitted by the zoning district. Figure 5-1 illustrates the dimensional requirements from Table 5-b.

<table>
<thead>
<tr>
<th>Porch Dimensions</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Building Setback</td>
<td>varies by zoning district</td>
<td></td>
</tr>
<tr>
<td>B Porch Depth</td>
<td>8 feet</td>
<td>12 feet</td>
</tr>
<tr>
<td>C Porch Width</td>
<td>40% Facade</td>
<td>100% Facade</td>
</tr>
<tr>
<td>D Porch Floor Elevation</td>
<td>1.5 feet</td>
<td>3 feet</td>
</tr>
</tbody>
</table>

Table 5-b

<table>
<thead>
<tr>
<th>Maximum Allowable Encroachment per District</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Edge</td>
<td>50% of Setback</td>
</tr>
<tr>
<td>General</td>
<td>50% of Setback</td>
</tr>
</tbody>
</table>

Figure 5-1

Porch Frontage Type

Figure 5-2

Porch Character Example
2. **Stoop.** A stoop is a small staircase leading to the entrance of a building that may be covered. The elevation of the stoop is necessary to ensure privacy for residential uses in the ground story of buildings. Stoops should provide sufficient space for a person to comfortably pause before entering or after exiting the building. Stoops are frontage types typically associated with townhouses and other residential building types. **Table 5-c** provides the dimensional requirements and the maximum allowable encroachment permitted by the zoning district. **Figure 5-3** illustrates the dimensional requirements from **Table 5-c**.

<table>
<thead>
<tr>
<th>Stoop Dimensions</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>A  Building Setback</td>
<td></td>
<td>varies by zoning district</td>
</tr>
<tr>
<td>B  Stoop Depth</td>
<td>5 feet</td>
<td>8 feet</td>
</tr>
<tr>
<td>C  Stoop Width</td>
<td>4 feet</td>
<td>No Max.</td>
</tr>
<tr>
<td>D  Stoop Floor Elevation</td>
<td>1.5 feet</td>
<td>4 feet</td>
</tr>
</tbody>
</table>

**Maximum Allowable Encroachment per District**

<table>
<thead>
<tr>
<th></th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edge</td>
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</tr>
<tr>
<td>General</td>
<td>0 feet</td>
<td>5 feet</td>
</tr>
<tr>
<td>Center</td>
<td>0 feet</td>
<td>5 feet</td>
</tr>
<tr>
<td>Core</td>
<td>0 feet</td>
<td>5 feet</td>
</tr>
</tbody>
</table>

**Figure 5-3**  
Stoop Frontage Type  

**Figure 5-4**  
Stoop Character Example
3. **Bracketed Balcony.** A bracketed balcony is second-story platform projecting from the building wall, enclosed by a railing or balustrade, supported by brackets. The bracketed balcony is located over the main building entry, which provides cover for a person entering or exiting the building, emphasizes the entryway, and creates a semi-public space overlooking the street. Bracketed balconies are typically associated with buildings with commercial uses in the ground story; however, bracketed balconies can be used on residential building types when combined with a stoop.

a. **Table 5-d** provides the dimensional requirements and the maximum allowable encroachment permitted by the zoning district. **Figure 5-5** illustrates the dimensional requirements from Table 5-d.

b. **Bracketed Balcony Elements**
   1. Brackets shall be made of wood, pre-cast concrete or steel.
   2. Brackets shall be designed to reflect their intended structural role and to define the entryway.

<table>
<thead>
<tr>
<th>Table 5-d</th>
<th>Dimensional Requirements for Bracketed Balcony</th>
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<tbody>
<tr>
<td></td>
<td>Minimum</td>
</tr>
<tr>
<td>A Building Setback</td>
<td>varies by zoning district</td>
</tr>
<tr>
<td>B Depth</td>
<td>-</td>
</tr>
<tr>
<td>C Width</td>
<td>4 feet</td>
</tr>
<tr>
<td>D Floor Elevation</td>
<td>0</td>
</tr>
</tbody>
</table>

**Figure 5-5**
*Bracketed Balcony Frontage Type*

**Figure 5-6**
*Bracketed Balcony Character Example*
4. **Forecourt.** A forecourt is an open area in front of the main building entrance(s) designed as a small garden or hardscaped plaza. The forecourt may afford access to one or more first floor units and may incorporate storefronts for retail uses. The forecourt is suitable for outdoor seating for residents or restaurants. Forecourts are typically associated with multifamily, mixed-use, and commercial buildings.

   a. **Table 5-e** provides the dimensional requirements and the maximum allowable encroachment permitted by the zoning district. **Figure 5-7** illustrates the dimensional requirements from **Table 5-e**.

   b. **Forecourt Elements**

      1. Low walls or balustrades may extend in line with the building facade or along the front setback and shall be two feet six inches tall to three feet six inches in height. Low walls shall be constructed of similar material as the principal building or be composed of a continuous, maintained hedge.

      2. Forecourts may be combined with the storefront frontage type.

      3. Awnings, if proposed, shall project at least four feet to no more than two feet from the edge of curb. Awnings shall be consistent with the architecture of the building. Internally illuminated or vinyl awnings are prohibited.

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>A</td>
<td>Building Setback</td>
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<tr>
<td>B</td>
<td>Forecourt Depth</td>
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</tr>
<tr>
<td>C</td>
<td>Forecourt Width</td>
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<tr>
<td>D</td>
<td>Forecourt Floor Elevation</td>
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</tr>
</tbody>
</table>

**Maximum Allowable Encroachment per District**

Not Applicable
(5) **Storefront.** The storefront is a frontage type placed along the property line, and is typically associated with retail and mixed-use buildings. The storefront must be designed in a way that promotes an attractive, convenient shopping experience. Storefronts are typically at sidewalk grade and are usually shaded by awnings or arcades.

a. **Storefront Dimensions.** Table 5-f provides the dimensional requirements and the maximum allowable encroachment permitted by the zoning district. Figure 5-9 illustrates the dimensional requirements from Table 5-f.

1. Storefronts shall extend across at least 70% of the commercial/retail space.
2. Storefronts shall be directly accessible from sidewalks; storefront doors may be recessed up to six feet.

<table>
<thead>
<tr>
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<th>Dimensional Requirements for Storefronts</th>
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</thead>
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<td>A</td>
<td>Building Setback</td>
</tr>
<tr>
<td></td>
<td>varies by zoning district</td>
</tr>
<tr>
<td>B</td>
<td>Storefront Width</td>
</tr>
<tr>
<td></td>
<td>70%</td>
</tr>
<tr>
<td></td>
<td>100%</td>
</tr>
<tr>
<td>C</td>
<td>Storefront Base</td>
</tr>
<tr>
<td></td>
<td>1.5 feet</td>
</tr>
<tr>
<td></td>
<td>3 feet</td>
</tr>
<tr>
<td>D</td>
<td>Glazing Height</td>
</tr>
<tr>
<td></td>
<td>8 feet</td>
</tr>
<tr>
<td></td>
<td>No Max.</td>
</tr>
<tr>
<td>E</td>
<td>Glazing Area</td>
</tr>
<tr>
<td></td>
<td>70%</td>
</tr>
<tr>
<td></td>
<td>100%</td>
</tr>
<tr>
<td>F</td>
<td>Maximum Allowable Encroachment of Elements in All Districts</td>
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<td>G</td>
<td>Pedestrian Blade Sign Projection</td>
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<td></td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>4 feet</td>
</tr>
</tbody>
</table>

**Figure 5-9**
*Storefront Frontage Type*

**Figure 5-10**
*Storefront Character Example*
3. Storefronts shall have transparent glazing of at least 70% of the sidewalk level facade area, comprised of storefront windows and doors. Storefront windows shall have a base one foot six inches to three feet high with transparent glazed areas extending from the base to at least eight feet in height as measured from sidewalk grade. Transparent glazing transmits at least 50% of visible daylight.

b. **Storefront Elements**

1. Awnings shall project a minimum of four feet from the building facade and no more than to within two feet from the face of curb.

2. Awnings shall be sympathetic to the building's architecture and designed as an integral component of the overall signage package. All awnings shall be sloped 30 degrees from the horizontal plane and have both ends open. All awnings on street level shall have an eight inch vertical valance with concealed weight to prevent excessive movement in high winds. Internally illuminated or vinyl awnings are prohibited.

3. Each ground story business may have one wall sign per street front. The wall sign shall be no greater than three feet in height by 60% of the width of the tenant space along the street front. The wall sign shall be located over the first story, below the second story. A name or logo printed on the awnings shall be considered as square footage against the overall permitted dimensions of the sign band.

4. Each ground story business may have one pedestrian blade sign per street front. Pedestrian blade signs may extend up to four feet from the building façade and shall not exceed three feet in vertical dimension, including all mounting brackets and hardware. Pedestrian Blade Signs shall be set back at least two feet from the end of the building or storefront. Pedestrian blade signs may not be internally illuminated.

5. Window signs advertising special sales, events or services, store hours, and store name may be affixed to the inside of a window provided that their total area does not exceed 20% of the window area.

6. Storefronts may be combined with forecourts or arcade/colonnades.

---

**Figure 5-11**

*Storefront Composition and Signage Examples*
6. **Arcade/Colonnade.** An arcade/colonnade is a covered, unglazed, linear hallway attached to the front of a building, supported by columns or pillars. The arcade/colonnade extends into the public right-of-way, over the sidewalk, creating a shaded environment ideal for pedestrians and conducive to retail. In arcades, upper stories of the building extend over the passageway. This frontage type is typically associated with retail and mixed-use buildings.

   a. **Arcade/Colonnade Dimensions.** Table 5-g provides the dimensional requirements and the maximum allowable encroachment permitted by the zoning district. Figure 5-12 illustrates the dimensional requirements from Table 5-g.

   1. Arcades/colonnades shall extend over the sidewalk. A sidewalk should not run parallel to an arcade or colonnade, which allows pedestrians to bypass retail or commercial windows. Use of the arcade/colonnade requires entering into a right-of-way agreement between the property owner and the City. This agreement shall establish liability and insurance responsibilities in a form acceptable to the City attorney.

<table>
<thead>
<tr>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Building Setback</td>
</tr>
<tr>
<td>B</td>
<td>Arcade/Colonnade Depth</td>
</tr>
<tr>
<td>C</td>
<td>Arcade/Colonnade Height</td>
</tr>
<tr>
<td>D</td>
<td>Column/Pillar to Face of Curb</td>
</tr>
</tbody>
</table>

   **Maximum Allowable Encroachment of Elements in All Districts**

<table>
<thead>
<tr>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>Arcade/Colonnade</td>
</tr>
<tr>
<td>F</td>
<td>Pedestrian Blade Sign Projection</td>
</tr>
</tbody>
</table>

   ![Figure 5-12](Arcade/Colonnade)

   ![Figure 5-13](Arcade/Colonnade Character Example)
2. Arcades/colonnades shall have a clear depth between the interior face of the columns and the building facade of at least 10 feet and no more than 20 feet. If the distance between the property line and the face of curb is not sufficient to accommodate the minimum depth required for an arcade/colonnade, the building shall set back accordingly. If the distance between the property line and the face of curb is wide enough that using the minimum building setback results in an arcade with a clear depth greater than 12 feet, the minimum front setback may be administratively reduced by the Planning Director, taking into consideration the ultimate location of the face of curb based on the street design standards set forth in Section 7.

3. Arcades/colonnades shall have a clear height above the sidewalk of at least 12 feet.

4. Support columns or pillars shall be placed no farther apart than they are tall, and shall be placed two to four feet from the face of the curb.

5. Open-air terraces and habitable areas may extend over arcades, up to the third story.

6. Arcade/colonnade ceilings shall be designed with coffers or exposed beams extruding at least six inches, aligned with columns or pillars.

b. Arcade/Colonnade Elements

1. The height and proportions of the arcade/colonnade shall be consistent with the style and proportions of the building to which it is attached.

2. Each ground story business may have one wall sign not exceeding three feet in height by 60% of the tenant space on the first story of the building facade.

3. Each ground story business may have one wall sign under the covered area, not exceeding two feet in height by 60% of the storefront width.

4. Each ground story business may have one pedestrian blade sign under the covered area. Pedestrian blade signs may extend up to four feet from the building façade and shall not exceed three feet in vertical dimension, including all mounting brackets and hardware. Pedestrian Blade Signs shall be set back at least two feet from the end of the building or storefront. Pedestrian blade signs may not be internally illuminated.

5. Potted landscaping or ground planting shall be provided between the face of the columns or pillars and the face of curb.

Figure 5-14
Arcade/Colonnade Signage Examples
7. **Enhanced Sidewalk.** An enhanced sidewalk frontage type uses the setback area to augment the streetscape typically provided within the public right-of-ways on arterial or large collector corridors. This frontage type retrofits these large thoroughfares into more pedestrian-friendly environments. This frontage type is typically associated with retail, office, and mixed-use buildings and may be combined with other frontage types.

a. **Enhanced Sidewalk Dimensions.** Table 5-h provides the dimensional requirements permitted for all zoning districts. Figure 5-15 illustrates the dimensional requirements from Table 5-h.

1. If the existing sidewalk in the public right-of-way adjoins the back of curb, without the benefit of street trees and/or on-street parking to shield pedestrians from vehicular travel lanes, the enhanced sidewalk type will redefine the desirable pedestrian route. As such, using the enhanced sidewalk requires entering into a right-of-way agreement between the property owner and the City. This agreement shall establish liability and insurance responsibilities in order to protect property owners willing to utilize or offer property to retrofit the area into a TOD pattern.

2. Street trees and street lights shall be located adjacent to the existing public right-of-way. Street trees shall be installed using the standards in Section 8.

<table>
<thead>
<tr>
<th>Enhanced Sidewalk Dimensions</th>
<th>Minimum</th>
</tr>
</thead>
<tbody>
<tr>
<td>A  Building Setback</td>
<td>20 feet</td>
</tr>
<tr>
<td>B  Existing ROW sidewalk</td>
<td>5 feet typ.</td>
</tr>
<tr>
<td>C  Area for new Street Trees &amp; Lights</td>
<td>5 feet</td>
</tr>
<tr>
<td>D  New Sidewalk Area</td>
<td>15 feet</td>
</tr>
</tbody>
</table>

**Figure 5-15**

*Enhanced Sidewalk*
8. **Slip Street.** A slip street frontage type uses the setback area to redefine an adjacent arterial or large collector thoroughfare into a boulevard. This frontage type provides parking in front of businesses using an access lane with parallel parking spaces. Faster-moving through traffic remains on the corridor. This technique creates a more bicycle and pedestrian-friendly environment and supports businesses with more access and exposure to passersby. A coordinated effort among adjoining property owners is necessary to successfully implement a slip street frontage. This frontage type is typically associated with retail, office, and mixed-use buildings and shall be combined with other frontage types.

a. **Slip Street Dimensions.** Table 5-i provides the dimensional requirements permitted for all zoning districts. Figure 5-16 illustrates the dimensional requirements from Table 5-i.

1. One or more properties comprising at least 350 linear feet along the street ROW is required to implement a slip street frontage. Access points shall be determined in coordination with the [City or County] Engineer and Planning Director.

2. A slip street frontage includes four elements: landscape, a multi-use path, a one-way parking aisle (in the direction of the adjacent street travel lanes) with parallel spaces, and a wide sidewalk with uniform shade trees and street lights.

3. Street trees and street lights shall be installed using the standards in Section 5(C).

<table>
<thead>
<tr>
<th>Table 5-i</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensional Requirements for Slip Street in All Districts</td>
<td>Minimum</td>
</tr>
<tr>
<td>Slip Street Dimensions</td>
<td></td>
</tr>
<tr>
<td>A Building Setback</td>
<td>60 feet</td>
</tr>
<tr>
<td>B Existing ROW</td>
<td>varies</td>
</tr>
<tr>
<td>C New Multi-Use Path</td>
<td>10 feet</td>
</tr>
<tr>
<td>D New Landscape Area</td>
<td>5 feet</td>
</tr>
<tr>
<td>E New One Way Aisle with Parallel Parking</td>
<td>20 feet</td>
</tr>
<tr>
<td>F New Sidewalk Adjacent to Building</td>
<td>20 feet</td>
</tr>
</tbody>
</table>

**Figure 5-16**

*Slip Street*
B. Pedestrian Walkway. In order to ensure a superior pedestrian realm develops overtime, a pedestrian walkway may be required on-site to augment public sidewalk widths, especially along narrow rights-of-way. A pedestrian walkway is an area that forms a continuous route for pedestrians, which is unobstructed by trees, landscaping, street lights or utility poles. Pedestrian walkways may be composed of public sidewalks, hardscape on private property, or a combination of the two.

1. **Width of Pedestrian Walkway.** The minimum width of pedestrian walkway shall be provided as set forth in Table 5-j. The route and location of the pedestrian walkway shall be demonstrated on site plans. In order to accommodate the required width of the pedestrian walkway, increasing the front setback beyond the minimum amount allowed by the zoning district may be necessary; however, buildings shall not setback further than the maximum allowed per zoning district. In the event the maximum front setback does not provide adequate width, the arcade/colonnade frontage type shall be used; if the arcade/colonnade frontage is not appropriate (i.e. for residential uses), the Planning Director may administrately approve a reduction in pedestrian walkway width or increase in building setback.

2. Where an existing public sidewalk adjoins the property line, the paved area of the public sidewalk and the pedestrian walkway shall connect, thereby expanding the perceived width of the public sidewalk to meet the minimum pedestrian walkway width. Where an existing public sidewalk does not adjoin the property line and does not meet

---

**Pedestrian Walkway requirements are particularly effective in developed areas with rights-of-way too narrow to provide the generous sidewalk widths necessary for the high pedestrian activity associated with TOD. The building setback is used to augment the streetscape.**

---

**Table 5-j**

<table>
<thead>
<tr>
<th>TOD District</th>
<th>Minimum Width for Pedestrian Walkways per TOD District</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOD-Urban Core</td>
<td>10 feet</td>
</tr>
<tr>
<td>TOD-Urban Center</td>
<td>10 feet</td>
</tr>
<tr>
<td>TOD-General</td>
<td>6 feet</td>
</tr>
<tr>
<td>TOD-Edge</td>
<td>5 feet</td>
</tr>
</tbody>
</table>

---

**Figure 5-17**

*Example of Pedestrian Walkway Width in Center District*
the minimum pedestrian walkway width, yet sufficient right-of-way exists to accommodate the required width in future public improvements, the Planning Director may administratively approve a variance to reduce the required pedestrian walkway width.

3. All paving materials for the pedestrian walkway shall be compliant with ADA accessibility standards, and shall be constructed of concrete consistent with the adjacent sidewalk and acceptable to the [City, County] Engineer.

4. Where a sidewalk or a pedestrian walkway crosses vehicular ingress/egress points, the pedestrian crossing shall be paved with material consistent with the paving material of the sidewalk or walkway, and shall be different from the vehicular surface.

C. Street Trees  Street trees are intended to provide a shaded environment for the pedestrian, provide a physical separation between pedestrians and vehicles, and improve the overall visual appearance of the street.

1. All new construction, relocation of a building, or addition equal to or greater than 20% of the gross floor area of an existing building shall install street trees at the time of development. One street tree shall be required per every 25 feet of street frontage. Street trees shall be planted in the public right-of-way directly in front of the property line(s), uniformly spaced no greater than 25 feet on center. Spacing of trees may only exceed 25 feet in order to accommodate curb cuts, fire hydrants, utilities, existing trees, and other infrastructure elements.

2. Street trees shall be planted in planting strips, landscaped planters or tree grates consistent with the street design standards contained in Section 7. Street trees shall be located along the curb side, in order to separate pedestrians from vehicular travel lanes.

3. Street trees shall be of canopy species. Street trees shall be no less than 14 feet in height with a clear trunk space of 5 feet and a spread of no less than 6 feet at planting. Consistency in street tree species shall be established on both sides of the street along a block face. The first to develop shall establish the species. Palm varieties may be used at corners, crosswalks, or to accent building entrances.

4. In the event that site constraints such as utility easements prevent the installation of required street trees, removable planters of small palms, shrubs, vines, or seasonal flowers shall be installed. In addition, the building shall provide devices such as awnings or roof overhangs to establish a shaded pedestrian environment.

Requiring new private development to install and maintain street trees within the public right-of-way has been successfully implemented in the City of West Palm Beach, Florida.
Section 6. Civic Open Spaces

A. Purpose and Intent. Civic open spaces are maintained outdoor spaces which are accessible by the general public, improve the pedestrian environment, are aesthetically pleasing, and serve as an amenity for the city as a whole as well as for occupants of the building which the open space serves. Civic open spaces are generally constructed by land owners when they build on the property.

1. Amount. On sites 1 acre or more in size, new buildings or additions of gross floor area equal to 20 percent or more to existing buildings, shall provide at least 5 percent of the size of the site as a civic open space. Dedicated rights-of-way and building setbacks may not count toward fulfilling the required amount.

2. Location. Civic open space may be provided either on site or off site, provided the civic open space is located within 660 feet of the building site, within the same zoning district, and within the Station Area boundary.

3. Types of Civic Open Spaces. Civic open space shall be designed as one of the following types:
   a. Green. A green is at least 2,000 square feet in size and adjoins streets on at least two sides. Greens are designed primarily for passive uses, consisting primarily of lawn with either formally or informally arranged landscaping.
   b. Plaza. A plaza is at least 2,000 square feet in size and adjoins a street on at least 2 sides. Plazas are mostly hardscaped with formal landscaping and a water feature.
   c. Playground. A playground shall be at least 2,500 square feet in size. Playgrounds shall provide children’s play equipment and shaded seating. Playgrounds adjoin a street on at least one side and the proposed configuration should ensure easy surveillance of the area from the adjacent buildings and streets.
   d. Square. A square is at least 10,000 square feet and adjoins streets on at least 3 sides. Squares may be up to 50% hardscaped, with formal landscaping. Squares accommodate both passive uses and community gatherings.
   e. Attached Green. The attached green is approximately 6,000 square feet and spans the entire length of a block. Attached greens shall be at least 30 feet wide and are appropriate on the short end of a block. Attached greens are formally landscaped, with trees arranged in an allee or staggered allee configuration.

4. Configuration. Civic open spaces shall be configured as follows:
   a. The civic open space shall adjoin a street front property line for no less than 30 linear feet.
   b. Except for attached greens, civic spaces shall have a proportion so that the depth is no more than 2.5 times the frontage width, and the width is no more than 5 times the depth;
   c. Civic open spaces shall be lined by building facades or streets on all sides. In order to provide oversight of the space, buildings facing civic open spaces shall contain habitable uses; parking lots, parking garages, and storage areas are not considered habitable uses.
Figure 6-1

Types of Civic Open Space

- Green
- Plaza
- Playground
- Square
- Attached Green
- Waterfront Green
5. **Additional Standards.** Civic open spaces shall meet the following minimum standards:
   a. Civic open spaces must be accessible to the public during all daylight hours;
   b. Civic open spaces must be situated to allow easy ingress and egress by pedestrians. Except for playgrounds, which may be fenced, no streetwalls, gates, fences or other impediments to pedestrian accessibility shall be permitted along the frontage line;
   c. Civic open spaces must be located at the sidewalk level;
   d. Civic open spaces must be open to the sky; however, open-air garden structures such as gazebos or band shells are permitted within civic open spaces;
   e. Landscaping shall be arranged in a manner reflective of description of the type of civic open space. One shade tree per 20 feet of perimeter of the space is required. Trees may be arranged in regular spacing or in informal clusters, depending on the type of open space. Trees shall be installed to provide shade along walkways and for benches. Substituting shade trees for multiple palm species is not permitted; however, adding palms to the landscape design is permitted.
   f. Each civic open space shall provide the following street furniture elements, specifications subject to approval by the [Planning Director]:
      1. 1 bench per 350 square feet of area;
      2. 1 drinking fountain;
      3. 1 bicycle rack with no less than four spaces;
      4. 1 trash receptacle;
      5. 1 pet clean up station.
   g. Fences are permitted only to enclose playgrounds or dog parks. Fences may be composed of wood or metal pickets and shall not exceed four feet in height.
   h. Vehicular traffic shall not be permitted within a civic open space.
   i. Civic open spaces shall be designed to enhance user safety and security using Crime Prevention Through Environmental Design (CEPTED) principles by
      1. being well lighted;
      2. having one or more focal points within the open space visible from all perimeter streets;
      3. having a clear landscape zone between three feet and eight feet in height providing sightlines unobstructed by berms or bushes into the space from streets and buildings.

6. **Availability.** Civic open space shall be developed and open for use prior to issuance of a certificate of occupancy for the building(s) for which the open space is required.
Section 7. TOD Parking Standards

A. **Purpose and Intent.** This subsection provides modified parking regulations for off-street parking within the TOD Zoning Districts. These regulations recognize that TOD is a compact, interconnected area with multimodal transportation options, and that improper placement of parking and mandatory duplication of the parking supply for each building site separates the various land uses from each other. This separation reduces the viability of the mixed-use districts and harms the walkability of the streets in the area. These regulations reflect the needs of a TOD district.

Parking needs are generally much lower in TOD districts than in other areas for a number of reasons: transit is a viable transportation option, the physical environment facilitates walking among various destinations (a “park once environment”), and the mix of uses allows a parking space to be shared by different users throughout the day. There are two methods to reduce parking requirements within the LDRs. The first applies a factor to the existing parking requirements defined by the code to reduce the overall number of spaces required. The second redefines the requirements expressly for each use within the TOD district. Both methods are effective.

B. **Required Off-street Parking:** The number of parking spaces required in Section [reference parking section] are modified by this section for use in the TOD Zoning Districts.

[OPTION 1]

1. The minimum off-street parking requirements contained in Section [reference parking section] will be multiplied by the following factors to produce modified off-street parking requirements for the TOD districts. Development and redevelopment shall not provide more parking than required without the reduction offered by the factor.

<table>
<thead>
<tr>
<th>Location in TOD Station Area</th>
<th>Factor Applied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within 500 feet of Light Rail System</td>
<td>0 (no parking required)</td>
</tr>
<tr>
<td>Transit-Core</td>
<td>.50</td>
</tr>
<tr>
<td>Transit Neighborhood</td>
<td>.75</td>
</tr>
</tbody>
</table>

[OPTION 2]

1. Table 7-a provides the minimum parking requirements for development and redevelopment for the TOD Districts. On-site parking shall not exceed 1.75 spaces per residence or more than 1.5 times the standards for other uses contained in Table 7-a.

[APPLICABLE TO BOTH OPTIONS]

2. Within the TOD-Urban Core and TOD-Urban Center zoning districts, lots 50 feet in width or less are not required to provide off-street parking, regardless of building use.

3. In all TOD districts, on-street parking located directly in front of the property line(s) may be counted toward fulfilling the total parking requirement.
### Table 7-a [Option 2]
Minimum Parking Requirements for All TOD Districts per Location in TOD Station Areas

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Transit-Core</th>
<th>Transit-Neighborhood</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential dwellings</td>
<td>0</td>
<td>1.5 spaces per unit plus 1 visitor space per every 10 units</td>
</tr>
<tr>
<td>ALF, Nursing or Convalescent Home</td>
<td>1 space per every 2 staff members plus 1 space per 4 residents.</td>
<td>1 space per staff member plus 1.5 spaces per every 4 residents</td>
</tr>
<tr>
<td>Community Residence</td>
<td>1 space per every 2 staff members plus 1 space per unit</td>
<td>1 space per staff member plus 1.5 spaces per resident</td>
</tr>
<tr>
<td>For Live/Work uses</td>
<td>1 space per unit</td>
<td>1.5 spaces per unit</td>
</tr>
<tr>
<td>Ancillary Unit</td>
<td>1 space</td>
<td>1 space</td>
</tr>
<tr>
<td>Non-Residential Uses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lodging</td>
<td>1 space for every 2 lodging units</td>
<td>1 space for every 2 lodging units plus 1 space per every 5 lodging units</td>
</tr>
<tr>
<td>Office &amp; Commercial</td>
<td>1 space per 1000 square feet</td>
<td>2 spaces per 1000 square feet</td>
</tr>
<tr>
<td>Places of Assembly</td>
<td>1 space per each eight 10 fixed seats</td>
<td>1 space for every 5 seats of assembly uses.</td>
</tr>
<tr>
<td>Civic Uses</td>
<td>1 space for every 1,000 square feet of exhibition or recreation area.</td>
<td>2 spaces for every 1,000 square feet of exhibition or recreation area.</td>
</tr>
<tr>
<td>Educational Facilities</td>
<td>Minimum of two (2) parking spaces for every 1,000 square feet</td>
<td>Minimum of two (2) parking spaces for every 1,000 square feet</td>
</tr>
<tr>
<td>Schools: 1 space for every 3 faculty or staff members plus 1 visitor space per 100 students, 1 space per 10 students in grades 11 and 12 or College/University.</td>
<td>Schools: 1 space for every 2 faculty or staff members plus 1 visitor space per 100 students, 1 space per 5 students in grades 11 and 12 or College/University.</td>
<td></td>
</tr>
<tr>
<td>Childcare Facilities: 1 space for the owner/operator plus 1 space for every 2 employees and 1 drop-off space for every 10 clients.</td>
<td>Childcare Facilities: 1 space for the owner/operator plus 1 space for every 2 employees and 1 drop-off space for every 10 clients.</td>
<td></td>
</tr>
<tr>
<td>Civic open space</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
C. Location and Access. Parking and service areas shall be accessed and located at the rear or side of the building(s).

1. Parking is not permitted in front setbacks or in side setbacks facing streets, parks or civic open spaces.

2. Parking lots may be located on the side of buildings provided the minimum building frontage requirement by the zoning district is met and the parking lots are screened from view of the street by a streetwall. Streetwalls are composed of either an opaque wall of the same material and color as the building or of a continuous, maintained hedge and are three feet (3'-0'') to three feet six inches (3'-6'') in height. One shade tree per 20 lineal feet, uniformly spaced, shall be installed along the length of the streetwall within a planting area at least five feet (5'-0'') wide. Streetwalls may have openings to accommodate automobile and pedestrian access.

3. On Primary Streets, parking garages shall be lined by a use permitted by right for Primary Streets by the zoning district for at least 20 feet of depth on all stories. On secondary streets, parking garages not lined by such a use shall be screened by a façade design consistent with the main building design and/or shall employ landscaping planters with irrigation as an integral part of the façade design.

4. Alleys, when present, shall be the primary source of vehicular access to off-street parking. Alleys shall be a minimum width of 20 feet, and may be incorporated into parking lots and garages as standard drive aisles. Access to all properties adjacent to the alley shall be maintained.

5. When alleys are not present, primary vehicular access to off-street parking shall be from Secondary streets. Access drives shall not exceed 24 feet in width.

6. When neither alleys nor secondary streets are present, primary vehicular access may be from a Primary street. Access drives from Primary streets shall not exceed 24 feet in width. In the instance that site constraints necessitate access from a Primary Street, and the provision of an access drive precludes meeting the minimum building frontage percentage

Figure 7-1
Parking Access Diagrams
required by the zoning district, the Planning Director may administratively approve a variance request in order to allow vehicular access to the site.

7. When an alley is not present, vehicular access between adjacent parcels across property lines is required, and shall be accommodated within the site layout. The first property owner to develop shall be required to make an irrevocable offer of cross-access to the adjacent parcels prior to issuance of a development order. When adjacent property develops, a reciprocal cross-access agreement is required, and the physical connection shall be completed.

8. Required parking may be provided on off-site parking locations, through lease or ownership, provided the parking spaces are located within 1000 feet of the site. The Planning Director may administratively review and approve arrangement if sufficient documentation of the availability and the number of spaces is provided.

9. Parking lots and structures shall provide pedestrian access directly from a street. In addition, pedestrian access may also be provided directly from a building.

10. Buildings with more than 300 feet of street frontage on a block face shall provide a pedestrian accessway at least 8 feet wide connecting the rear parking to the sidewalk area.

11. Public sidewalks may not be interrupted or deviated to accommodate drop-off or valet parking.

D. Bicycle Parking Requirements. To augment bicycle racks located within public rights-of-way, bicycle parking and support facilities shall be provided as set forth in this section.

1. Quantity. A minimum of one (1) bicycle space shall be provided for every 20 vehicular parking spaces required.

2. Standards.
   a. Bicycle parking facilities shall be visible to the intended users.
      (i) The facilities shall not encroach on any area in the public right-of-way intended for use by pedestrians.
      (ii) The facilities for employee, resident, and visitor bicycle parking must be visible from a building entrance, a full-time parking attendant, a full-time security guard or a visitor/customer entrance. The Planning Director shall review the location, design, and details of the bicycle spaces as part of the site plan review.
      (iii) A one (1) square foot directional sign shall be required if the bicycle parking area is not visible from the street or main building entrance. Said sign must be posted at the main building entrance indicating the location of the bicycle parking.
      (iv) Residential condominium covenants shall not prohibit the storage of bicycles inside individual condominium units.
   b. When required bicycle parking is provided in racks, one (1) standard U-rack will accommodate two (2) bikes and each rack must meet the following standards:
      (i) The bicycle frame and one (1) wheel can be locked to the rack with a high security, U-shaped shackle lock if both wheels are left on the bicycle;
      (ii) A bicycle six feet long can be securely held with its frame supported so that the bicycle cannot be pushed or fall in a manner that will damage the wheels or components; and
(iii) The rack must be securely anchored.

   c. When required bicycle parking is provided in lockers, the lockers must be securely anchored.
   d. When required off-street vehicular parking is covered, the required bicycle parking shall also be covered.

3. *Parking and maneuvering areas.*
   a. Each required bicycle parking space must be accessible without moving another bicycle;
   b. An aisle of at least five (5) feet wide shall be provided behind all required bicycle parking to allow room for bicycle maneuvering;
   c. The area devoted to bicycle parking must be hard surfaced.

4. *Support Facilities.* Offices greater than 50,000 square feet shall provide one shower per gender, up to a maximum of three showers per gender. Also, a minimum of one clothes storage locker per gender shall be installed for every required bicycle parking space. The lockers shall be installed adjacent to showers in a safe and secured area.
Section 8. Street and Block Standards

A. Block Standards. Smaller block sizes are encouraged to promote walkability and facilitate easy access to transit stations. The standards that guide the creation and proposed amendments to the Street Network Overlay are contained in this section.

1. Except as otherwise provided, the maximum block length shall not exceed 660 feet, and the average perimeter of all blocks within the Station Area shall not exceed 1,600 feet as measured along the inner edges of each street right-of-way. Block perimeters may exceed this limit, up to a maximum of 2000 linear feet, only if one or more of the following conditions apply:
   a. The block is assigned to the TOD-Urban Core zoning district;
   b. The block has at least one face on an arterial street that limits access points;
   c. The block contains a parking facility serving the public; or
   d. The block contains valuable natural features or significant historic resources that should not be crossed by a street.

2. The portion of any block between intersecting streets may not exceed 600 feet, without a publicly dedicated pedestrian passage not less than 8 feet in width that provides access to another street. Sites with more than 300 feet of street frontage shall provide a pedestrian a cross-block connection not less than 8 feet in width. Sites with more than 660 feet of street frontage shall provide a vehicular cross-block connection not less than 22 feet in width, with a pedestrian walkway on both sides.

3. Proposed plats of blocks shall result in lot sizes and arrangements that ensure similar buildings face one another across streets and establish compatible transitions between differing scales and uses (see Figure 8-2). Proposed plats shall create lot sizes consistent with the dimensions permitted by the zoning district and include alleys.

B. Street Network Standards.

1. The interconnected network of streets must extend into adjoining areas except where the general goal of integration with surrounding uses is deemed inappropriate for a particular site by the [municipal body]. Street stubs must be provided to adjoining undeveloped areas to accommodate future street connectivity.

2. Streets do not have to form a rectangular grid; they may be curved or bent but must connect to other streets. Intersections with designated arterials and collectors must have centerline offsets of not less than 150 feet. This requirement does not apply to intersections that are limited to alleys, lanes, or local streets.

3. New dead-end streets are not permitted except where physical conditions such as highways or sensitive natural resources allow no practical connection alternatives. Each dead end must be detailed as a close (a small green area surrounded by a common driveway serving adjoining lots) and should provide pedestrian connectivity to the maximum extent practicable (see Figure 8-1).
Figure 8-2
Lot Size and Orientation Examples

I Block Type

I Block Type Character Example

T Block Type

T Block Type Character Example

H Block Type

H Block Type Character Example
4. All streets must be publicly dedicated. New private streets or closed or gated streets are prohibited.

5. New streets shall provide sidewalks and rows of street trees on both sides of all streets, consistent with the Street Design Standards in Section D.

6. Alleys. A continuous network of rear and side alleys must serve as the primary means of vehicular ingress to individual lots in the TOD-Urban Core and TOD-Urban Center zoning districts.

C. General Street Design Standards. All new streets and reconstructed streets should be designed in accordance with the Florida Greenbook and Plans Preparation Manual within the TOD station area and shall be designed to promote all forms of travel including non-vehicular modes. In order to encourage walking, cycling, and the use of mass transit options, downtown streets shall be designed to maintain a steady, calm flow of vehicular traffic, while establishing a pleasant walking and cycling environment. For successful TOD, specific design elements should be considered:

1. Sidewalks shall be installed on both sides of the street. Wide sidewalks are required in areas with high intensity pedestrian traffic. Table 8-a contains the minimum recommended sidewalk widths per TOD zoning district.

<table>
<thead>
<tr>
<th>TOD District</th>
<th>Minimum Sidewalk Width</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOD-Urban Core</td>
<td>10 feet</td>
</tr>
<tr>
<td>TOD-Urban Center</td>
<td>10 feet</td>
</tr>
<tr>
<td>TOD-General</td>
<td>6 feet</td>
</tr>
<tr>
<td>TOD-Edge</td>
<td>5 feet</td>
</tr>
</tbody>
</table>

2. On-street parking shall be installed whenever possible within the TOD-Urban Core and TOD-Urban Center districts to support businesses, calm vehicular traffic, and to shield pedestrians from moving traffic.

3. Street trees and pedestrian-scaled lighting shall be installed to provide a safe, pleasant, and aesthetically pleasing environment.

4. An appropriate bicycle route shall be accommodated, whether alongside travel lanes, on a separated multi-use path (Figure 8-3), or within shared lanes for streets with slow design speeds. Figure 8-4 depicts an optional shared lane marking.

5. The use of bulb-outs, especially on streets with on-street parking lanes, is recommended to reduce pedestrian travel distances, calm traffic speeds, provide areas for landscaping, and to augment transit stop areas (see Figures 8-4 and 8-5).
D. **Street Network Overlay.** As redevelopment occurs within the station area(s), new streets and alleys will be installed, and existing infrastructure will be improved. To guide the appropriate cross-section designs of streets and alleys, detailed street designs have been developed [for specific streets and] for [general] rights-of-way. The Street Network Overlay assigns a Street Type to each thoroughfare anticipated to be installed or improved within the station area(s).

E. **Street Types.** The street designs are coordinated with the development standards for private development in this code, including building setbacks, frontage types, and building height to establish a cohesive, superior public realm. The street design for new and reconstructed streets shall be consistent with the following typical sections (see the following illustrations). In the event that site features, including the location of existing buildings or utilities, limited right-of-way width, or transitions to existing streets, restrict the full implementation of the downtown street designs, the Planning Director, in consultation with the City Engineer, may administratively adjust the street designs. The following acronyms are used on each illustration:

- bl: bicycle lane
- c: curb and gutter
- g: planting area
- lrt: light rail transit
- mdn: median
- mup: multi-use path
- pl: property line
- pvmnt: pavement
- row: right-of-way
- s: sidewalk
- sb: setback
- p: parking

---

**Figure 8-4**  
*Mid-Block Crosswalk with Bulb-Outs to Shorten Pedestrian Crossing Distance*

**Figure 8-5**  
*Bulb-Out Used to Enhance Bus Boarding Area*
Figure 8-6  is similar to the designs for the new WAVE streetcar system in Ft. Lauderdale, Florida (image to the left). New streetcar rails will be added to existing downtown streets. The transit lanes will be accessed from each side of the street, with vehicular travel lanes located in the center lanes. The proposed street section incorporates a multi-use path on both sides of the street for pedestrians and cyclists.
Figure 8-7
Street with Dedicated Transit in Median (option 1)
Figures 8-7 and 8-8 accommodate dedicated transit lanes in a center median with vehicular travel lanes located alongside the sidewalk areas. Transit stations are located within the center median, utilizing one station for access in both directions. Figure 8-7 is similar to the New Orleans street car system, which also incorporates on-street parking. Figure 8-8 is similar to the METRORail in Houston, Texas, which retrofitted downtown streets to accommodate the new electric transit system.
Figure 8-9 depicts an exclusive transit way with wide sidewalks to accommodate high levels of pedestrian activity. In contrast to the other street sections with dedicated transit lanes, Figure 8-9 does not accommodate private vehicular travel, either in shared or separate lanes, or supporting on-street parking. It is important to note that in order for a street to be successful, significant visibility is necessary for the businesses. In his book, Principles of Urban Retail Planning and Development, Robert Gibbs notes that more than 200 cities closed their primary shopping streets, transforming them into pedestrian-only landscaped thoroughfares - and fewer than 20 have proven successful.

This street section adds transit into that dynamic, increasing both access and visibility. In areas with high ridership, the number of passers-by necessary to create viable commercial conditions could occur. A transit only way is more likely to be successful in areas that have high numbers of pedestrians (i.e. college towns, built-out Regional Centers).

16th Street Mall: Denver, Colorado
Figures 8-7 depicts the ultimate multi-modal street. A multi-use path is detailed with wide shaded sidewalks and pavement patterns clearly distinguishing the bicycle route from the pedestrian area. A bulb-out replaces the on-street parking lane to augment the transit station area and to shorten the pedestrian crossing distance of the street.
A “sharrow” is a shared-lane pavement marking used to enhance the safe travel of bicycles and motor vehicles in the same traffic lane. On streets without sufficient right-of-way for a bike lane, this marking reminds drivers to share the road with cyclists and helps properly position cyclists to the safest riding location (i.e., to the center of narrow lanes where passing is not possible or to a safe distance from on-street parking lanes to reduce injury from being hit by opened car doors).
The street section depicted in Figure 8-12 provides a dedicated bicycle lane and on-street parking. The two images below depict two arrangement options. The bottom image from Miami shows the typical arrangement, with bike lane between the vehicular travel lane and the parking lane. The top image shows an arrangement in New York City, whereby the bike lane is between the sidewalk and the parking lane. This arrangement could offer more protection to cyclists from moving traffic and might reduce potential conflicts with parked vehicles (i.e., the opening of car doors on the driver’s side.)
On slow-moving thoroughfares (less than 30 mph), cyclists can safely share the road with vehicles. Part of the design concept for these types of streets is having narrow lanes. Travel lanes should be less than 10’-6” in width. In this example, the concrete gutter runs between the on-street parking lane and the vehicular travel lane, which visually narrows the roadway to drivers.
Chapter 5
Implementation & Next Steps
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Implementation & Next Steps

The Florida TOD Framework provided a thorough discussion of the roles of various stakeholder entities and the associated planning, development, and implementation activities of each. Accordingly, the implementation references from the Framework have been incorporated entirely in this section.

Implementation Overview

Effective implementation of TOD in Florida requires significant coordination and communication among multiple stakeholders, both public and private sector, for successful outcomes. There are varying agency roles at all levels – federal, state, regional, and local, and the level of involvement depends in part upon how far along a particular area is. In Florida, the key objective is to achieve interagency cooperation – among public and private entities - to help advance TOD. Table 5-1 identifies the core public and private entities along with their general role in advancing TOD implementation.

Table 5-1

Core Implementation Stakeholders

<table>
<thead>
<tr>
<th>Florida Department of Transportation</th>
<th>Lead state agency for transportation planning, funding, and implementation</th>
<th>Responsibilities identified in Florida Statutes</th>
<th>Florida Transportation Plan (statewide, 50-year planning horizon, updated every 10 years or as directed by Legislature) emphasizes multi-modal transportation with associated TOD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Assists transit agencies with Transit Development Plans, which also address TOD</td>
<td>Implementation assistance, funding and resource provision for TOD at the local &amp; regional level</td>
</tr>
<tr>
<td>Department of Economic Opportunity</td>
<td>Lead state agency for land use planning</td>
<td>Provides assistance for adoption of TOD-supportive comprehensive plan policies at the local level</td>
<td>Utilizes State Comprehensive Plan for policy guidance</td>
</tr>
<tr>
<td>Metropolitan Planning Organizations</td>
<td>Lead local/regional agencies for long-term transportation planning &amp; funding prioritization</td>
<td>Implement Long-Range Transportation Plans (20+ year planning horizon, updated every 5 years) which can help advance TOD planning and implementation</td>
<td>Maintain increasing emphasis on land use considerations for transportation efficiency and effectiveness, providing direct influence on TOD potentials</td>
</tr>
<tr>
<td>(a.k.a. Transportation Planning Organizations)</td>
<td></td>
<td>Maintain increasing emphasis on land use considerations for transportation efficiency and effectiveness, providing direct influence on TOD potentials</td>
<td>Adopt Transportation Improvement Programs (5-year planning horizon, updated annually) which provide funding for transportation projects</td>
</tr>
<tr>
<td>Transit Agencies</td>
<td>Lead transit providers operating within a single county or regional (as a regional transportation authority)</td>
<td>Adopt Transit Development Plans (5-10 year planning horizon, updated annually)</td>
<td>Improved effectiveness with inter-agency partnerships (e.g., MPOs, local governments, FDOT, other transit agencies) to advance shared TOD goals and responsibilities.</td>
</tr>
<tr>
<td>Local Governments</td>
<td>Lead agencies for local land use control</td>
<td>Implement Comprehensive Plans and Land Development Regulations which establish baseline TOD requirements</td>
<td>Maintain land use control over site-level and station-level TOD implementation</td>
</tr>
</tbody>
</table>
Implementation at the Corridor Level

At the corridor scale, extensive transportation and land use are necessary to inform TOD planning for implementation. The TOD Typology, as contained in this Guidebook, can be used to assess existing and planned conditions to develop a balanced approach to TOD at the corridor scale. The common funding path for premium transit projects includes the Federal Transit Administration’s (FTA’s) Alternatives Analysis (AA) Study process, which requires applicants to conduct analyses and conceptual design. FTA measures include cost effectiveness, transit user benefits, transit supportive land uses and policies, and economic development potential. Additional FTA measures are anticipated to include multimodal connectivity, adherence to Livable Communities principles, consistency with regional plans, and the existing local/regional policy framework to support transit and TOD.

Implementation at the Station Level

Station area planning combines policy and design considerations, stakeholder interests, and understanding of the position of a particular station area within the larger transit context to ensure that TOD does its part in maximizing the transit ridership potential for a given area and supports community livability goals. Key considerations for station level implementation include development density and intensity, the balance of jobs and housing, the design of streets and places to maximize access and circulation by pedestrians, opportunities for mixed income housing, parking supply and management, building form and urban design, and other public infrastructure needs, all of which can be addressed in a local government comprehensive plan.

A best practice recommended in the model regulations is the development of a station area plan to help identify appropriate locations for various uses, the appropriate range of densities and intensities, and build consensus for TOD implementation. The station area planning process is typically led by local governments, as they maintain the regulatory framework that most directly affects land development, but participation by other TOD stakeholder agencies can enrich these efforts, increase efficiency, and introduce other planning considerations that help improve TOD implementation over time.

Local government structures for TOD implementation may also include ancillary public agencies, such as community redevelopment agencies, downtown development authorities, and private/civic organizations (e.g., main street organizations, business improvement districts) that can be helpful allies in TOD advocacy and provide resources to assist in implementation, funding, and the establishment of public/private partnerships to advance development.
Financing Transit and TOD

Nationally and within Florida, funding for public infrastructure and services presents constant challenge for agencies, local governments, and the public as a balance among competing interests is sought. While all modes of transportation require capital and operating funding, transit is often evaluated on the basis of farebox collections, which distinguish transit from other modes. There are financing roles available to each of the TOD stakeholders identified in this chapter, includ-

Table 5-2
Potential Public Transport Funding Options

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fares</td>
<td>Increase fares or change fare structure to increase revenues</td>
<td>Already applied. Is a user fee (considered equitable).</td>
<td>Discourage transit use. Is regressive.</td>
</tr>
<tr>
<td>Property taxes</td>
<td>Increase local property taxes</td>
<td>Already applied. Distributes burden widely.</td>
<td>Supports no other objectives. Is considered regressive.</td>
</tr>
<tr>
<td>Sales taxes</td>
<td>A special local sales tax</td>
<td>Distributes burden widely.</td>
<td>Supports no other objectives. Is regressive.</td>
</tr>
<tr>
<td>Fuel taxes</td>
<td>An additional fuel tax in the region</td>
<td>Already applied. Reduces vehicle traffic and fuel use.</td>
<td>Is considered regressive.</td>
</tr>
<tr>
<td>Vehicle fees</td>
<td>An additional fee for vehicles registered in the region</td>
<td>Charges motorists. Applied in some jurisdictions.</td>
<td>Does not affect vehicle use.</td>
</tr>
<tr>
<td>Utility levy</td>
<td>A levy to all utility accounts in the region</td>
<td>Is easy to apply. Distributes burden widely.</td>
<td>Is small, regressive and supports no other objectives.</td>
</tr>
<tr>
<td>Employee levy</td>
<td>A levy on each employee within a designated area or jurisdiction</td>
<td>Charges for commuters.</td>
<td>Requires collection system. Can reduce city center development if only applied there.</td>
</tr>
<tr>
<td>Road tolls</td>
<td>Tolls on some roads or bridges</td>
<td>Reduces traffic congestion.</td>
<td>Costly to implement. Can reduce city center development if only applied there.</td>
</tr>
<tr>
<td>Vehicle-Km tax</td>
<td>A distance-based fee on vehicles registered in the region</td>
<td>Reduces vehicle traffic.</td>
<td>Costly to implement.</td>
</tr>
<tr>
<td>Parking taxes</td>
<td>A special tax on commercial parking transactions (when parking is priced)</td>
<td>Is applied in other cities.</td>
<td>Discourages parking pricing and downtown development.</td>
</tr>
<tr>
<td>Parking levy</td>
<td>A special property tax on parking spaces throughout the region</td>
<td>Large potential. Distributes burden widely. Encourages compact development.</td>
<td>Costly to implement. Opposed by suburban property owners.</td>
</tr>
<tr>
<td>Development cost charges (DCCs)</td>
<td>A fee on new development to help finance infrastructure, including transit improvements</td>
<td>Charges beneficiaries.</td>
<td>Limited potential.</td>
</tr>
<tr>
<td>Land value capture</td>
<td>A special taxes on property that benefit from the rapid transit service</td>
<td>Large potential. Charges beneficiaries.</td>
<td>May be costly to implement. May discourage transit-oriented development.</td>
</tr>
<tr>
<td>Station rents</td>
<td>Collect revenues from public-private development at stations</td>
<td>Charges beneficiaries.</td>
<td>Limited potential.</td>
</tr>
<tr>
<td>Station air rights</td>
<td>Sell the rights to build over transit stations</td>
<td>Charges beneficiaries.</td>
<td>Limited potential.</td>
</tr>
<tr>
<td>Advertising</td>
<td>Additional advertising on vehicles and stations</td>
<td>Already used.</td>
<td>Limited potential. Sometimes unattractive.</td>
</tr>
</tbody>
</table>

This table includes a range of financing mechanisms available for the construction and operations/maintenance of transit systems.
Source: Local Funding Options for Public Transportation, Victoria Transport Policy Institute
Overview

Implementation & Next Steps

ing local, regional, state, and federal financing mechanisms for both construction and operations/maintenance of transit service. A recent publication by the Victoria Policy Transport Institute (September 2012) lists seventeen varied financing sources for transit, which are provided in this section for reference. Some options are tied to TOD implementation while others are corridor-scale or regional in nature.

Developing and Maintaining Residential Affordability

The challenge of maintaining affordability is a conundrum as land values in station areas and along transit corridors tend to increase, sometimes exponentially, versus like properties beyond transit capture areas. Prioritization of affordability helps produce higher ridership, reduce parking demand, expand the mix of uses within a station area, and accomplish equity goals for transit. In its study of mixed-income residential development within TODs nationwide, the Center for TOD identified specific implementation roles for TOD stakeholders to help develop and maintain workforce housing as part of the housing inventory in Station Areas. Key activities are noted below along with the identification of appropriate lead agencies.

Table 5-3

<table>
<thead>
<tr>
<th>WORKFORCE HOUSING STRATEGY</th>
<th>LEAD AGENCY &amp; ROLE</th>
</tr>
</thead>
</table>
| Incentives For Proactive Station Area Planning And Zoning — A Strategy For The State Or Region | • All Agencies: policy leadership  
• Local Governments: Provision of incentives and streamlining of development reviews & approvals |
| Public-Private Partnerships — A Strategy For The Site                                    | • All agencies: identify funding opportunities for necessary public infrastructure  
• FDOT, RTA, local government: Land assembly, project funding  
• Local Governments: Rezoning                                                              |
| Target Existing Funding To Preserve And Create Affordable Housing Along Transportation Corridors - A Strategy For The Corridor | • Local Governments, State Agencies: Establish station areas and transit corridors as priority for funding |
| Inclusionary Housing - A Strategy For The Region                                          | • Local Governments: Adoption of Inclusionary housing in zoning or other regulation |
| Modify Low Income Housing Tax Credits To Offer Incentives For Locating Near Transit — A Strategy For The State Or Region | • State Agencies: Establish Low Income Housing Tax Credit in station areas and along transit corridors |
| Infill Development Or Redevelopment In Transit Zones — A Strategy For The Corridor, Neighborhood And Site | • Local Governments: Prioritize infill development and redevelopment in transit zones |
| Facilitate Use Of Value Capture To Fund Affordable Housing — A Strategy For The Corridor, Neighborhood And Site | • State Agencies, Local Governments: Enable leveraged funding to contribute towards workforce housing development  
• All Agencies: Provision of project-supportive infrastructure as leverage |
| Land Acquisition/Land Banking Funds — A Strategy For The Corridor, City And Neighborhood | • State Agencies, Transit Agencies, RTAs, Local Governments: land acquisition and retention for housing development |
| Incentive-Based Zoning — A Strategy For The Region                                         | • Local Governments: Adoption of incentive-based zoning                            |
| Tax-Increment Financing — A Strategy for the Corridor And Neighborhood                    | • RTAs, Local Governments: Establishment and assignment of TIF for housing in station areas and along transit corridors |
| Reduced Parking Requirements — A Strategy For The Neighborhood And Site                  | • All Agencies: policy leadership, especially with development community and lending institutions, to promote reduction of parking requirements  
• Local Governments: adopt parking requirement reductions |

The Center for TOD’s report “TOD 202: Mixed-Income Housing Near Transit – Increasing Affordability with Location Efficiency” included a list of specific actions for TOD stakeholders for the development and retention of workforce housing in Station Areas and along transit corridors. These implementation actions have been suggested for relevant Florida stakeholders as noted above.1


The model regulations include both incentive-based and regulatory approaches to implement workforce housing strategies depending on local needs.
Florida’s TOD Future - Progress Over Time

The implementation of successful TOD in Florida requires coordination and collaboration among many different stakeholders from the local level to the federal level. As discussed in this chapter, there are multiple, overlapping policy, planning and regulatory documents maintained at the local, regional, state, and federal agencies that are updated periodically to reflect adjustments in current and forecasted conditions. Continued evaluation and monitoring of transit performance, development patterns and density/intensity, mix of uses, population forecasts, market conditions, transportation measures, and financial implications will be required periodically and in perpetuity to gauge the TOD progress of station areas, transit corridors and systems, and the larger multi-modal transportation networks.

Florida’s transportation and land use history has evolved remarkably from its sparsely developed conditions a century ago, through eras with dominance by streetcars, passenger rail, and automotive expansion. The current era appears to be one with a high degree of multi-modal enthusiasm. While the majority of today’s trips in most markets continue to be taken by automobile, the state’s extensive planning and development for the other modes, including all forms of transit as well as pedestrian and bicycle activity, position the state for a more sustainable, livable future. The implementation of TOD will be critical to the success of this alternative future for the state, and with the provision of this Guidebook, Florida’s local governments, agencies, and others have the tools to help make that desired future a reality.
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