

EXHIBIT A

Note: This Exhibit is an excerpt from "Connecting Casselberry: The Casselberry Multimodal Transportation Master Plan", adopted August 22, 2016.

9.3 Complete Streets Policy and Design Guidelines

The City of Casselberry affirms that all road projects should be designed to comfortably accommodate all users to the fullest extent possible; that bicycling, walking, the disabled, and public transit accommodations are a routine part of the city planning, design, construction, maintenance, and operating activities; and that bicycle and pedestrian ways should be considered in new construction, reconstruction, resurfacing or other retrofit projects. In developing these accommodations, the latest, best, and context-sensitive design standards will be used, while recognizing the need for flexibility in balancing user needs.

The following section expands significantly upon the Complete Streets Policy within the TCE, adding specificity and guiding implementation.

Note: This Complete Streets Policy is modeled after a 2015 draft MetroPlan Orlando Complete Streets Policy plus certain elements of the City of Longwood's Complete Street Policy, with additional content and adjustments to suit the City of Casselberry and its Comprehensive Plan.

9.3.1 Purpose

The City, through this Complete Streets Policy, shall design, build, and maintain a safe, reliable, efficient, integrated and connected multimodal transportation network that will provide access, mobility, safety and connectivity for all users. Complete Streets design will promote improved health, economic growth, public safety, recreational opportunity, and social equality throughout the City of Casselberry, and will ensure that the safety and convenience of all users of the transportation system are accommodated. The City of Casselberry will fund and support the planning, design and construction of complete streets as a fundamental component of its transportation program. This policy ensures that officials, planners, engineers, developers, and other stakeholders working on projects and programs within the City of Casselberry plan and design roadways with consideration for all users. This policy also helps ensure consistency among planned/future complete streets projects within the City of Casselberry .

9.3.2 Background

Today's changing financial, environmental, social, and economic realities are requiring regions throughout the country to rethink the previous approach towards transportation planning and decision-making. Increasingly, communities are being asked to develop project solutions that address the multimodal mobility, economic development, health, and livability needs of a community. The City of Casselberry recognizes this new challenge and seeks to incorporate "Complete Streets" thinking throughout the City's transportation investments.

Complete Streets support vibrant, sustainable communities. Complete Streets expand travel choices; increase safety and comfort for pedestrians, cyclists, and transit users; and introduce more community recreational opportunities. Consequently, Complete Streets can support economic growth by providing the multimodal and efficient connections that can strengthen the region's activity centers. Various case studies provide supporting evidence that Complete Streets can increase property values and have a positive economic impact on a community. Implementing Complete Streets supports the following overarching goals:

- Safety
- Balanced Multi-Modal System
- Integrated Regional System
- Quality of Life
- Efficiency and Cost Effectiveness
- Energy and Environmental Stewardship
- Economic Vitality

The City's Traffic Circulation Element (TCE) within the Comprehensive Plan contains the following Complete Streets Policy:

Policy TCE 3.8 Complete Streets. Implement a "complete streets" policy, as established by the Federal Highway Administration, to accommodate all modes of transportation in plans for roadway modifications within the City. The intent of this policy is to develop a comprehensive, integrated, multimodal street network by coordinating transportation planning strategies and private development activities as follows:

- ***Provide safe and convenient on-site pedestrian circulation such as sidewalks and crosswalks connecting buildings, parking areas, and existing or planned public sidewalks.***
- ***Provide cross-access connections/easements or joint driveways where available and cost effective.***

- ***Deed land or convey required easements, as requested by the City, for the construction of public sidewalks, bus turn-out facilities, and/or bus shelters with appropriate credits toward developer contribution requirements.***
- ***Where appropriate, developers shall provide for the following improvements with credits toward contribution requirements:***
 - Project turn lanes***
 - Bus Shelters***
 - Adjacent sidewalks***
 - Streetscaping/landscaping within the public right-of-way***
 - Additional bicycle parking***

While the overall intent of the TCE's policy is clear, its specificity is focused on Complete Streets implementation mainly from a development perspective. It is the intent of this MTMP Complete Streets Policy to provide additional policy and guidance to achieve the systemwide intent of Complete Streets, both from a public investment and private development perspective.

9.3.3 Definition

Complete Streets are planned, designed, operated, and maintained to enable safe access for all users of all ages and abilities, meaning that pedestrians, cyclists, the disabled, motorists, freight and service operators, and public transportation users are able to safely and efficiently move through the transportation network. Complete Streets provide access to all users in a manner that promotes safe, efficient movement of people and goods whether by car, truck, transit, assistive device, foot, or bicycle. This Complete Streets Policy recognizes that, depending on context, streets may serve diverse activities, functions, and intensity of uses, and that not all uses are necessarily appropriate for all streets.

9.3.4 Vision

The City of Casselberry's Complete Streets vision is: *a safe, reliable, efficient, integrated and connected multimodal transportation network that will provide access, mobility, safety and connectivity for all users while supporting a vibrant local community.*

9.3.5 Goals

The goals of this Complete Street Policy are:

- 1) Create a network of roads and trails for all users.
- 2) Provide safe travel alternatives for vulnerable users of all ages and abilities.
- 3) Support redevelopment of and connectivity to activity centers.
- 4) Provide safe and effective walking and bicycling access to transit.

9.3.6 Applicability

This Complete Street Policy applies to all City-owned transportation facilities in the public right-of-way and public easements including, but not limited to, streets, sidewalks, and all other connecting pathways. All phases of project implementation are covered, including planning, design, right-of-way acquisition, construction, and operations and maintenance. (The City considers maintenance and operations activities as opportunities to provide safer and more accessible transportation options for all users.)

New and redeveloped privately constructed streets and parking lots should also adhere to this policy and related policies as expressed through the City of Casselberry Comprehensive Plan, City Code/Unified Land Development Regulations, and other relevant documents, with a key focus on achieving a viable interface between private development and the City's multimodal transportation system.

To the extent practicable, these guidelines and standards should also apply to State and County transportation facilities within the City of Casselberry, as coordinated with appropriate agencies including the Florida Department of Transportation and Seminole County. The City understands that these facilities are not under the City's purview and ultimately policy, standards, planning, design, and construction decisions rest with their respective jurisdictions.

The City of Casselberry recognizes the need for interdisciplinary and cross-jurisdictional coordination to effectively develop, operate, and maintain bicycle and pedestrian networks and transit facilities. The City of Casselberry supports a systems approach to developing road projects, especially to ensure coordination with nearby jurisdictions, projects, and plans. If projects are linking to or in proximity to each other, the projects should be coordinated to ensure a facility's consistency and to allow for utmost resource efficiency in project implementation.

9.3.7 Design Standards and Guidelines

Designs shall consider accommodations for all users and be sensitive to the context of the project setting. Complete Streets may look different for every project and road type. Facilities will be designed and constructed in accordance with current applicable laws and regulations, using best practices and guidance from a variety of organizations, including but not limited to the following:

- **FDOT guidelines and manuals, including the *Florida Greenbook (Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways)***
- American Association of State Highway and Transportation Officials (AASHTO) publications, including ***AASHTO Guide for the Development of Bicycle Facilities, Fourth Edition*** and ***Guide for the Planning, Design, and Operation of Pedestrian Facilities***
- ***FHWA Manual on Uniform Traffic Control Devices*** (MUTCD)
- ***Americans with Disabilities Act Accessibility Guidelines*** (ADAAG)
- ***Public Rights-of-Way Accessibility Guidelines*** (PROWAG)
- ***Urban Bikeway Design Guide*** and the ***Urban Street Design Guide*** by the National Association of City Transportation Officials (NACTO)
- ITE (www.ite.org) publications and guidance, including ***Designing Walkable Urban Thoroughfares: A Context Sensitive Approach: An ITE Recommended Practice*** and ***Recommended Design Guidelines to Accommodate Pedestrians and Bicycles at Interchanges***
- Association of Pedestrian and Bicycle Professionals ***Essentials of Bicycle Parking*** (www.apbp.org)
- **Smart Growth America publications** (www.smartgrowthamerica.org)
- **Pedestrian and Bicycle Information Center** (www.pedbikeinfo.org)
- FHWA Office of Safety (www.safety.fhwa.dot.gov)
- NHTSA (www.nhtsa.gov)
- **Crash Modification Factors Clearinghouse** (www.cmfclearinghouse.org)
- TRB Highway Safety Performance Committee (www.safetyperformance.org)
- ***Highway Capacity Manual (HCM) 2010***
- ***Highway Safety Manual*** (www.highwaysafetymanual.org)

Context Sensitivity

The City of Casselberry recognizes that Complete Streets solutions vary according to each street's land use context. Appropriate design standards and input from community members should be considered within each context that provide for a flexible, innovative, and balanced approach resulting in safety for all users.

Additional Design Guidance

Additional design standards and policy updates are recommended as a future task (see Chapter 10), but below is specific guidance on certain key issues. This should not be construed as exhaustive guidance, as the above design standards and guidance references should be employed. Rather, these specific points serve as a quick reference tool for planners, engineers, and developers in designing certain transportation components within the City of Casselberry. It is important to note that feasibility and appropriateness in context should be considered when applying these design standards and guidelines; not all will apply to every project.

1. **PROWAG** (Public Rights-of-Way Accessibility Guidelines) should be used in the design of all public streets. PROWAG is currently in draft form and is anticipated to be adopted later in 2016, but use of draft guidance now is encouraged: <https://www.access-board.gov/guidelines-and-standards/streets-sidewalks/public-rights-of-way/proposed-rights-of-way-guidelines/>.
2. **Curb ramps and other accessibility improvements** necessary for ADA/PROWAG compliance should be provided concurrently with microsurfacing or more advanced road rehabilitation.
3. Where **level of service (LOS)** is evaluated, the HCM 2010 multimodal approach to LOS evaluation should be used.
4. The **sidewalk zone system** (curb, furniture, pedestrian, frontage zones) should be employed in streetscape/sidewalk design.
5. **New sidewalks** should generally be 6 feet or greater in width where feasible.
6. **Driveways** should be built as driveways not intersections, i.e., use of concrete aprons and integrated sidewalk (as opposed to asphalt with a striped crossing); this type of design encourages slow-speed turns.
7. **Facilities Connectivity**
 - a. At a minimum, accessible paths should be provided from street sidewalk systems to public and private facilities.
 - b. Where feasible, direct pedestrian access should be provided to public and private facilities with no vehicular conflicts.
8. **Crosswalks**
 - a. Crosswalks must be designed for vehicular visibility, including:

- i. For textured/brick/paver crossings, white transverse lines should be placed along the border (typically on ribbon curb).
 - ii. For asphalt or concrete crossings, white longitudinal and transverse markings should be used, especially at midblock/unprotected crossings.
 - iii. Advance stop lines should be properly placed a sufficient distance from the actual crossing on multilane roads to reduce risk from “multiple threat” crash scenarios at crossings.
 - iv. Use of rectangular rapid flash beacons (RRFB’s) may be appropriate at certain crossing locations on low speed roads.
 - b. Design should consider realistic crossing behavior, including:
 - i. Placement of at-grade crosswalks should be at logical crossing points that are likely to be used by pedestrians.
 - ii. Planning and design for potential pedestrian bridges/grade separated crossings should consider potential for actual use vs. avoidance by pedestrians and cyclists.
 - c. Road alignments, radii, curb extensions, and other design elements should facilitate short pedestrian crossing paths and avoid awkward skew angles that decrease visibility.
 - d. Curb ramps for crosswalks should be directional in placement, i.e., typically two channelized ramps (one in each direction of pedestrian travel) are preferred at each intersection corner as opposed to a single, diagonally oriented curb ramp.
 - e. Crosswalk materials should be evaluated for safety and comfort of all users during the design phase of a project (including pavers and striping materials).

9. Signalized Intersections

- a. Signalized intersections should have marked and signalized pedestrian crosswalks on all legs of the intersection.
- b. Cyclist detection should be provided.
- c. Proper pushbutton and pedestrian signal head placement must be provided.
- d. Pushbuttons should have visible, tactile, and/or audible cues to communicate with pedestrians.
- e. Accessible Pedestrian Signals (APS) are encouraged.
- f. To help discourage pedestrians from walking against signals, signal cycles should factor in pedestrians, balancing vehicular traffic flow with reasonable wait times for pedestrians.

- g. Pedestrian detection and dilemma zone detection, where feasible, allowable, and appropriate in context, should be considered.
- h. Where feasible and appropriate in context, use of ITS (intelligent transportation systems) technology to adjust signal timing (including pedestrian signals) is encouraged.
- i. Signage and various other countermeasures (such as “No turn on red”, leading pedestrian intervals, and protected-only left turns when pedestrian buttons are pushed) should be considered to reduce pedestrian/vehicle conflicts.

10. Streetlighting

- a. Streetlighting should be designed to also effectively serve pedestrians, not just vehicles.
- b. Crosswalks should be effectively illuminated and lighting positioned to eliminate the “silhouette” effect on pedestrians.

11. Vehicular & Bicycle Parking

- a. Parking lots should not be configured such that sidewalks are encroached upon for backing.
- b. Where angled parking is proposed on public streets, back-in style (“heads out”) parking should be considered for improved safety.
- c. When used, on-street parking (and bike lanes, if provided) should be designed to mitigate door zone/cyclist conflicts.
- d. The Association of Pedestrian and Bicycle Professionals *Essentials of Bicycle Parking* should be used as a guide in the provision, placement, and design of bicycle parking facilities.

12. Transit stops should be placed to avoid “multiple threat” scenarios to pedestrians on multilane roads.

13. Construction Zone Maintenance of Traffic (MOT)

- a. MOT must consider and accommodate pedestrians, cyclists, and motorists and must meet accessibility requirements.
- b. Use of steel plates for cyclists, motorcyclists, and pedestrians is discouraged due to potential slip hazards.

9.3.8 Implementation

- A. All public transportation projects funded by the City shall be analyzed from the perspective of this Complete Streets Policy & Design Guidelines during the design phase. This analysis may not necessarily need to be in-depth, especially for small projects, but documentation of what analyses were completed and the outcomes should be a standard operating procedure for each project design.

- B. To the extent that the City is involved in the review process of transportation projects not under the City's purview (e.g., FDOT, Seminole County), reviews performed by the City shall include analysis from the perspective of this Complete Streets Policy & Design Guidelines, and relevant resulting comments shall be provided to the appropriate jurisdiction.
- C. The City shall incorporate Complete Streets into budgeting processes, work plans, and staffing projections and consider Complete Streets one of the priorities in roadway planning and funding decisions.
- D. In addition to using its own readily available funding sources, the City will actively seek additional sources of funding to implement Complete Streets, including but not limited to MetroPlan Orlando, FDOT, Seminole County, Federal agencies, and private foundations.
- E. In planning for capital transportation and maintenance projects, the City shall give extra weight to those projects that can provide a meaningful benefit to improvement of the transportation network consistent with this policy.
- F. The City shall prioritize the safe movement of pedestrians, bicycle, the disabled, and public transportation traffic in decisions regarding the use of limited public right-of-way, with consideration given to roadway context and land use.
- G. City staff shall reference this Complete Streets Policy during the Development Review process as a guide to developers.
- H. As appropriate, the City will participate in and support efforts conducted by MetroPlan Orlando and other agencies to assist local agencies in implementing Complete Streets policies; training elected officials, community leaders, and private development partners on the benefits of Complete Streets; and distributing current best practice information on Complete Streets design.

9.3.9 Evaluation/Performance Measures

The City of Casselberry shall, at a minimum, evaluate this policy every five years. The City of Casselberry will report the performance of the Complete Streets policy based on the measures listed below, compared to the previous review period, in order to evaluate the success of the policy's implementation:

- Total mileage of bike lanes and trails built or designated
- Total mileage of shared lane markings installed
- Linear feet of new or improved sidewalks
- Number of new curb ramps installed
- Number of new pedestrian and/or bicycle wayfinding and safety signs



installed

9.3.10 Interagency Coordination and Policy Updates

Complete Streets is a regional vision, not just a local one. It is important that Complete Streets Policies from various jurisdictions are congruent and coordinated sufficiently to achieve regional goals.

The Florida Department of Transportation (FDOT) recently completed both a statewide Complete Streets Policy and a Complete Streets Implementation Plan. In 2015, MetroPlan Orlando established a Complete Streets Task Force and is working to complete and adopt its own regional Complete Streets Policy in 2016. (As previously noted, the MTMP's Complete Streets Policy is based in part on a draft policy from MetroPlan Orlando.)

The City of Casselberry is also working with the Winter Park Health Foundation, Smart Growth America, the City of Winter Park, the City of Longwood, the City of Maitland, the City of Orlando, and other stakeholders to strategize implementation of Complete Streets.

All of these efforts are important to an efficient and effective regional transportation system that promotes vibrant communities. As regional work continues on Complete Streets, future updates to the City's Complete Streets Policy, guidelines, and programs may be needed to ensure policies and plans are well coordinated. (See also Chapter 10 for recommended additional tasks.)