CONTEXT CLASSIFICATION GUIDE

February 2022

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Message from the Secretary

July 26, 2021

The mission of the Florida Department of Transportation is clear. We are to provide a safe transportation system that accommodates all who use it – including motorists, freight handlers, transit users, pedestrians, and cyclists – and we are passionate about our work. FDOT remains committed to ensuring that Florida's roadways are safe for everyone, whether embracing and implementing new technologies or planning for our state's growing population.

Using a 360° approach that considers both location characteristics and user needs, FDOT plans, designs, constructs, and operates context-sensitive roadways that prioritize safety and are tailored to the unique areas of Florida. This commitment echoes in our Complete Streets and context classification principles that are the foundation of the ***FDOT Design Manual***, which governs every department project. Complete Streets also encompass FDOT's Vital Few by improving safety, enhancing mobility, and inspiring innovation.

Our Complete Streets mission is to inform, educate, inspire, and implement. FDOT is dedicated to accommodating our state's ever-evolving mobility needs. We will continue to lead the way in the advancement of Complete Streets, an essential part of enhancing safety and improving everyone's quality of life.

Kevin J. Thibault, P.E.
Secretary, Florida Department of Transportation

Chapter 1
Complete Streets 360°

INTRODUCTION

FDOT has embarked on a department-wide shift in transportation planning, design, and decision making. This approach is described as "putting the right street in the right place" or, more succinctly, **Complete Streets 360°**, representing that FDOT's effort is all-encompassing. This effort is ambitious and comprehensive, based on the evolving view of roadways as valuable public spaces for all users, including those using the non-motorized modes of walking and bicycling.

Complete Streets 360° is FDOT's response to today's transportation challenges. Florida is the third most populous state in the nation, and we continue to grow by nearly 1,000 people each day. Our population is diverse, and the impacts of emerging technologies, an aging population, and consistent societal evolution are changing the way Floridians move in and around their communities. Aside from its increasing number of residents, the State has also seen strong growth in visitors. The number of visitors to Florida surged from 82 million in 2010 to more than 131 million in 2019.[1] This growth is coupled with shifting transportation demands led by demographic changes; the rise in pedestrian and bicycling fatalities on state roads[2]; declining local and Federal funding streams requiring more creativity and partnerships to implement projects; rapidly changing technologies that can lead to travel patterns different from historical trends; growth focused in urban centers and rural employment centers; and increasing development pressure on the State's unique natural environment.[3] These are the challenges of the 21st century, and **Complete Streets 360°** is how FDOT is addressing these realities.

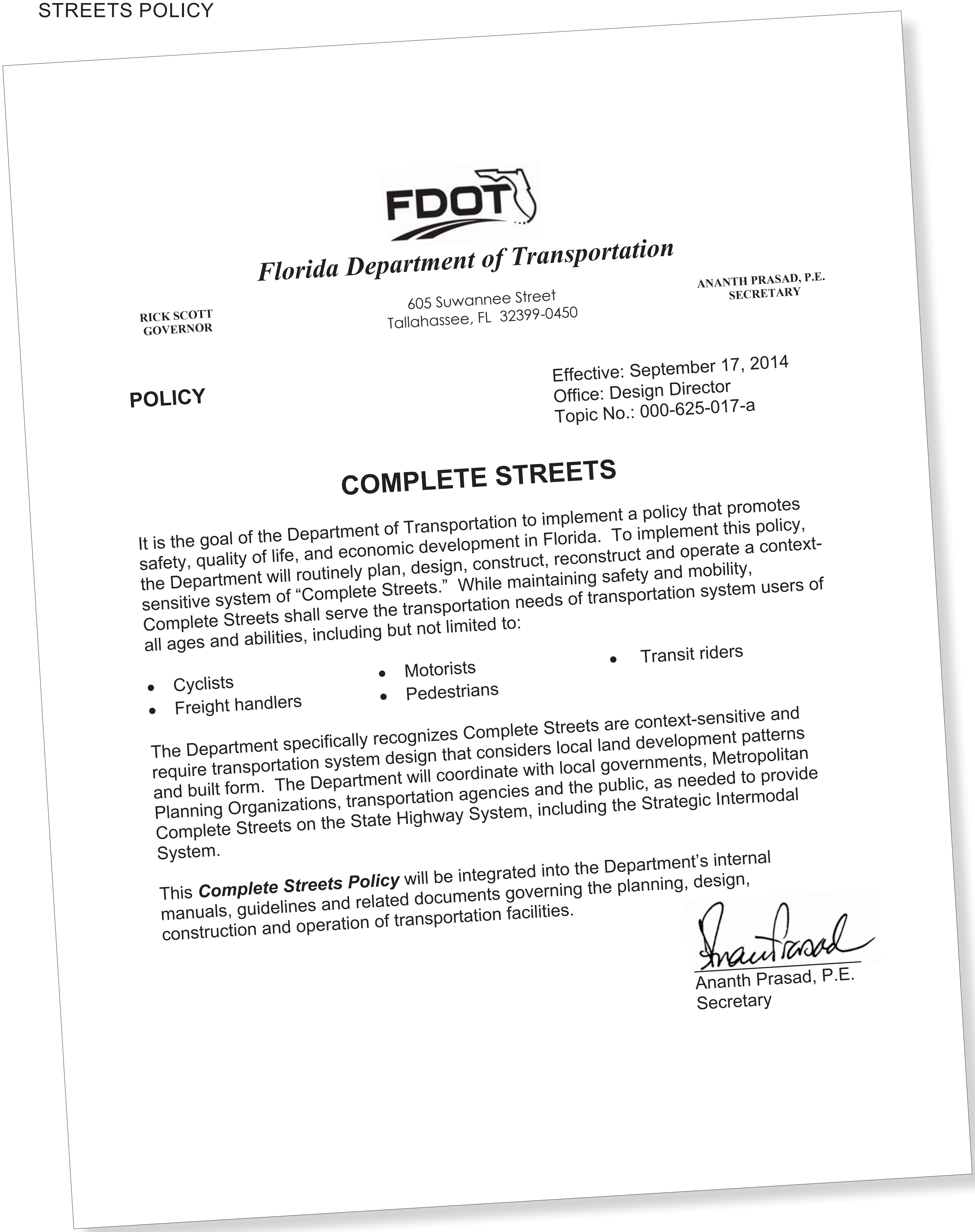
This Guide provides background and overarching guidance for why and how FDOT policies, standards, and procedures are being refined to implement **Complete Streets 360°** through the context classification system. It provides guidance on how context classification can be used, describes the measures to determine the context classification of a roadway, and describes how context classification relates to the ***FDOT Design Manual*** (***FDM***) and other FDOT guidance.

COMPLETE STREETS POLICY

In September 2014, FDOT adopted the Statewide Complete Streets Policy (Topic No. 000-625-017) (see **Figure 1**), making a commitment to planning, designing, and operating their transportation system for all users. The Policy was a formal acknowledgment that each roadway location is unique, requiring its own customized solution through context-sensitive Complete Streets.

[1] Florida Department of Transportation, Florida Strategic Highway Safety Plan, March 2021.
[2] Both pedestrian and bicycle fatalities have increased since 2017. In 2018, Florida had the most bicycle facilitates of any US state. Florida Department of Transportation. (2021). Strategic Highway Safety Plan.
[3] Florida Department of Transportation, Florida Transportation Plan Vision Element, 2015.

FIGURE 1 FDOT COMPLETE STREETS POLICY



FDOT

Florida Department of Transportation

RICK SCOTT
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

ANANTH PRASAD, P.E.
SECRETARY

POLICY

Effective: September 17, 2014
Office: Design Director
Topic No.: 000-625-017-a

COMPLETE STREETS

It is the goal of the Department of Transportation to implement a policy that promotes safety, quality of life, and economic development in Florida. To implement this policy, the Department will routinely plan, design, construct, reconstruct and operate a context-sensitive system of "Complete Streets." While maintaining safety and mobility, Complete Streets shall serve the transportation needs of transportation system users of all ages and abilities, including but not limited to:

- Cyclists
- Freight handlers
- Motorists
- Pedestrians
- Transit riders

The Department specifically recognizes Complete Streets are context-sensitive and require transportation system design that considers local land development patterns and built form. The Department will coordinate with local governments, Metropolitan Planning Organizations, transportation agencies and the public, as needed to provide Complete Streets on the State Highway System, including the Strategic Intermodal System.

This ***Complete Streets Policy*** will be integrated into the Department's internal manuals, guidelines and related documents governing the planning, design, construction and operation of transportation facilities.

Ananth Prasad, P.E.
Secretary

COMPLETE STREETS ACCOMPLISHMENTS TO DATE

The journey to complete Florida's streets...

Florida is a leader in Complete Streets and has been for decades. As our state's population has grown and evolved over the years, so has our approach to transportation planning.

1984

Florida was the second state in the nation to adopt a statewide "routine accommodation" law, requiring that bicyclists and pedestrians be considered in road construction projects. This same statute also charged the state with developing a statewide "integrated system of bicycle and pedestrian ways." According to a study published in the American Journal of Public Health (AJHP), after adoption of this law concluded: "Florida's pedestrian fatality rates decreased significantly...resulting in more than 3,500 lives saved across 29 years."

1999

FDOT adopted its Transportation Design for Livable Communities (TDLC) policy, requiring transportation designers to consider each specific community's needs when selecting features for a roadway, as well as prioritizing the safety of all transportation users – including pedestrians, bicyclists, motorists, and public transit users. This balancing of community values and mobility needs became the foundation of FDOT's context-sensitive design today.

2014

FDOT adopted an official Complete Streets Policy, a formal acknowledgment that each location is unique, requiring its own customized solution through context-sensitive Complete Streets. Further, the Policy was integrated into FDOT's manuals to govern the planning, design, construction, and operation of Florida's transportation facilities at the local level as well as within the State Highway System. This ensured that context-sensitive design and Complete Streets principles are the standard for all FDOT projects.

2018

After two years of development, FDOT published a new Design Manual that incorporates context-based design criteria and decision making. The new manual helps provide more context-sensitive roads throughout Florida by putting "the right street in the right place."

COMPLETE STREETS 360°

In 2021, FDOT officially rolled out **Complete Streets 360°**, emphasizing consideration of all roadway users as well as the context of the road. For example, the needs of Floridians who live, work, and play among the forests, prairies, and rivers of the Nature Coast are significantly different than the needs of Floridians in downtown Fort Lauderdale.

For FDOT, Complete Streets are not a specific type of project. Instead, the Department utilizes a 360° approach to ensure that all roadway projects are context-sensitive and consider the needs of all users, regardless of age and ability. This means that everything the Department undertakes – whether developing an entirely new corridor or resurfacing an existing road – is done to help promote safety, enhance mobility, improve quality of life, and promote economic development based on the roadway's context.

2018 – Today

With an average of 1,000 people moving to the Sunshine State each day, FDOT remains committed to enhancing the safety and mobility of all of our residents and visitors of all ages and abilities. Over the past several years, in addition to updating the Design Manual, we've made the following changes to integrate context classification and Complete Streets:

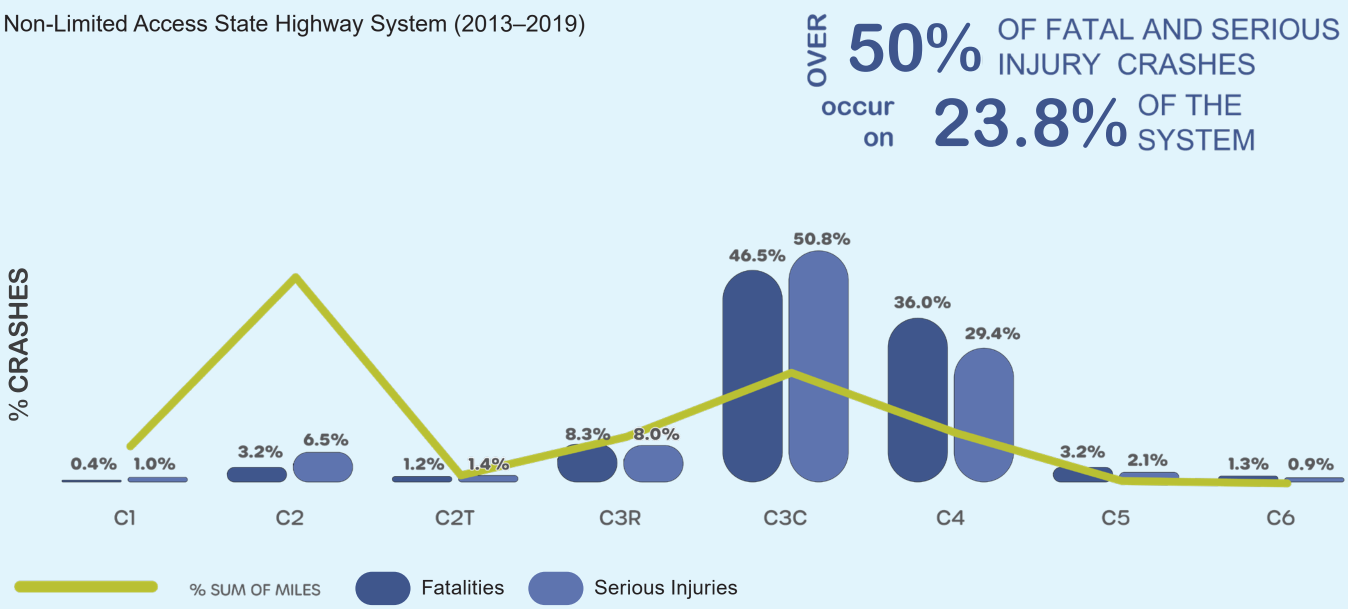
- Updated the ***FDOT Traffic Engineering Manual*** (TEM)
- Updated the ***FDOT Access Management Guidebook***
- Introduced revisions to the ***Project Development and Environment Manual*** (***PD&E Manual***)
- Updated the ***FDOT Lane Repurposing Guidebook***
- Released the Context Classification Framework for Bus Transit
- Developed preliminary context classification designation for all state roadway segments and kept an up-to-date database as part of the FDOT Roadway Characteristics Inventory (RCI)
- Launched **Complete Streets 360°** website at www.FLcompletestreets.com
- Launched ConnectPed
- Conducted comprehensive internal FDOT training

TARGET ZERO

Florida's safety vision is simple: to eliminate all transportation-related fatalities and serious injuries for all modes of travel. This priority includes pedestrians, bicyclists, motorcyclists, micromobility device users, drivers, freight handlers, and transit users using the roadway system, as well as connections between the roadway system and other modes of transportation.

The personal and societal costs of traffic crashes in Florida today are unacceptably high. Additionally, bicycle and pedestrian crashes are not evenly distributed across roadway types and context classifications within Florida. According to the Florida Pedestrian and Bicycle Strategic Safety Plan, pedestrian and bicyclist exposure and risk on the non-limited access state highway system shows that corridors with C3C or C4 context classification, higher posted speeds, and higher transit frequency have the highest likelihood of bicycle and pedestrian crashes based on the exposure and risk in these areas. For example, although only 24% of the state roadway system is classified as C3C-Suburban commercial, 50% of fatal bicycle and pedestrian crashes occur on these roadway miles (see **Figure 2**).[1]

FIGURE 2 CRASHES BY CONTEXT CLASSIFICATION



Source: Florida Pedestrian and Bicycle Strategic Safety Plan

[1] Florida Department of Transportation, Florida Pedestrian and Bicycle Strategic Safety Plan, September 2021

SAFE SYSTEM APPROACH

The ***FDOT Strategic Highway Safety Plan*** (***SHSP***) calls for the development of a systematic approach for identifying locations and behaviors related to fatal and serious injury crashes, including locations and behaviors prone to pedestrian and bicycle crashes, to implement multi-disciplinary countermeasures. The Safe System approach aims to eliminate fatalities & serious injuries for all road users through a holistic view of the road system.[1]

Safe System

The Safe System approach aims to eliminate fatalities and serious injuries of all users of the transportation system through a holistic model of multiple elements working together to safeguard against tragic crash outcomes. There are five elements of the Safe System: Safe Road Users, Safe Vehicles, Safe Speeds, Safe Roads, and Post-Crash Care. Each element is interrelated, and weaknesses in one element may be compensated with strengths in another.

The criteria within the ***FDM*** have been developed with the Safe System approach in mind as related to Safe Speeds and Safe Roads. The term “Safe System” may not be specifically mentioned; however, it is inherent within the criteria and important to keep in mind when making engineering decisions that vary from the criteria. The Safe System approach begins with a foundational acknowledgment that transportation system users, as humans, will inevitably make mistakes. These mistakes may lead to crashes on our transportation system. FDOT’s Target Zero goal is to eliminate fatalities and serious injuries.

To achieve zero fatalities and serious injuries, crash forces induced on the human body must be kept below the tolerable limits. When designing and operating the transportation system, it is critical to manage crash kinetic energy. Human error is to be expected; therefore, the transportation infrastructure should be designed and operated to eliminate fatalities and serious injuries. This may be achieved by first reducing the risk of error and secondly, when crashes do occur, to maintain collision forces on the human body within tolerable levels by managing speed and crash angles to reduce injury severity.

The following are six foundational principles for understanding and applying the Safe System approach:

1. **Fatalities and serious injuries are unacceptable** – While no crashes are desirable, the Safe System approach emphasizes a focus on crashes resulting in fatalities and serious injuries. Regardless of road users’ socio-economic backgrounds, their abilities, and the modes of transportation they use, no one should experience fatalities or serious injuries when using the transportation system.

2. **Humans make mistakes** – Road users will inevitably make mistakes, and those mistakes can lead to crashes. The Safe System approach expects the transportation system be planned, designed, and operated to be forgiving of inevitable human error, so that fatal and serious injury outcomes are unlikely to occur.

3. **Humans are vulnerable** – Humans have a limited ability to tolerate the energy involved in crash impacts. Although the exchange of kinetic energy in collisions among vehicles, objects, and road users has multiple determinants, applying the Safe System approach involves managing the kinetic energy of crashes to avoid fatal and serious injury outcomes.

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[1] Federal Highway Administration. The Safe Systems Approach. Accessed on September 25, 2021. https://safety.fhwa.dot.gov/zerodeaths/docs/FHWA_SafeSystem_Brochure_V9_508_200717.pdf

4 **Responsibility is shared** – All stakeholders (transportation system users and managers, vehicle manufacturers, emergency responders, etc.) must work collaboratively to ensure that crashes do not lead to fatalities or serious injuries.

5 **Safety is proactive** – Proactive and data-driven tools should be used to identify and mitigate latent risks in the system, rather than waiting for crashes to occur and reacting afterwards.

6 **Redundancy is crucial** – Reducing the risk of severe crash outcomes requires all parts of the system be strengthened so that if one element fails, the others protect transportation system users.

When you consider the vulnerability of a pedestrian or bicyclist without the protection of a vehicle—especially one equipped with safety technologies design to protect the passengers—reduced speeds and increased visibility have significant impacts on the severity of injuries and likelihood of surviving a crash. Nearly 22% of all fatalities on FDOT streets are pedestrians.[2]

When a Safe System approach is taken, the inevitability of human mistakes is anticipated and accommodated, resulting in less severe injury crashes. Safe Systems acknowledges the responsibility that rests with transportation planners and engineers as well as policymakers in designing and maintaining a safe system for people to function within. Everyone shares the responsibility to abide by the systems, laws, and policies set. If safety problems persist, then the responsibility comes back to the designers and policymakers to take further measures to improve safe conditions. A Safe Systems approach is a paradigm shift in approaching roadway safety as an “upstream” systemic issue, not one simply resting with individual users of the roadways. It is the crux of what makes Target Zero a different and effective approach to saving lives.

FDOT can leverage the context classification system, as described in this Guide, to implement this proactive approach to safety. Context classification can inform the types of users anticipated, what their travel needs may be, and typical safety challenges. Through this, FDOT can more proactively implement safety treatments to systematically improve the safety of our roadways for all users, even before evidence of occurrence of safety challenges.

Traditional Approach

- **Traffic deaths are inevitable**
- **Perfect human behavior**
- **Individual responsibility**
- **Saving lives is expensive**

VS

Vision Zero

- **Traffic deaths are preventable**
- **Integrate human failing in approach**
- **Systems approach**
- **Saving lives is not expensive**

Source: Adapted from Vision Zero Network

[2] E. Goughnour et al.. Primer on Safe System Approach for Pedestrians and Bicyclists. Federal Highway Administration. May 2021.

FIGURE 3 THE FIVE ELEMENTS OF THE SAFE SYSTEM APPROACH AND THEIR RELEVANCE TO PEDESTRIANS AND BICYCLISTS

SAFE ROAD USERS	SAFE VEHICLES	SAFE SPEEDS	SAFE ROADS	POST-CRASH CARE
The Safe System approach addresses the safety of all road users, including those who walk, bike, drive, ride transit, and travel by other modes.	Vehicles are designed and regulated to minimize the occurrence and severity of collisions using safety measures that incorporate the latest technology.	Humans are unlikely to survive high-speed crashes. Reducing speeds can accommodate human injury tolerances in three ways: reducing impact forces, providing additional time for drivers to stop, and improving visibility.	Designing to accommodate human mistakes and injury tolerances can greatly reduce the severity of crashes that do occur. Examples include physically separating people traveling at different speeds, providing dedicated times for different users to move through a space, and alerting users to hazards and other road users.	When a person is injured in a collision, they rely on emergency first responders to quickly locate them, stabilize their injury, and transport them to medical facilities. Post-crash care also includes forensic analysis at the crash site, traffic incident management, and other activities.

What does this mean for pedestrians and bicyclists?

The Safe System approach considers the safety of all road users, but particularly those who are at most risk of fatalities or serious injuries in the event of a crash, such as bicyclists and pedestrians.	Vehicle technology has made crashes more survivable for passengers inside the vehicle. Those same advances have not yet benefited pedestrians and bicyclists to the same degree.	Pedestrians and bicyclists are particularly vulnerable to death or severe injury as vehicular speed increases.	Given their vulnerability to fatalities and serious injuries, it is important to separate bicyclists and pedestrians in time and space from vehicles with a heavier mass that travel at greater speeds.	Pedestrians and bicyclists are more likely to be killed or injured in a crash, so post-crash care is even more important to their survival.

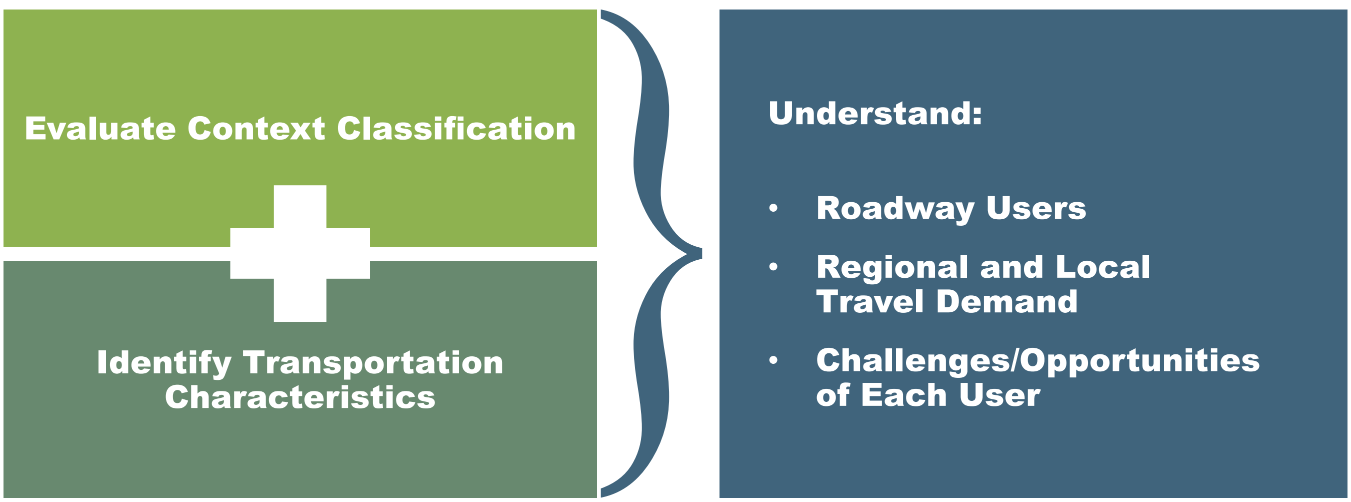
Source: Adapted from FHWA (2020) The Safe System Approach [FHWA-SA-20-015]

“Complete Streets means putting the right road in the right place.”

Chapter 2 FDOT Context Classification

To support the implementation of **Complete Streets 360°**, FDOT uses a context-based approach to planning, designing, and operating the state transportation network. FDOT has adopted a roadway classification system comprised of eight context classifications for all non-limited access state roadways. The context classification of a roadway must be considered, along with its transportation characteristics and the built form to understand who the users are, what the regional and local travel demand of the roadway is, and the challenges and opportunities of each roadway user (see **Figure 4**). The context classification and transportation characteristics of a roadway will determine key design criteria for all non-limited access state roadways.

FIGURE 4 STEPS TO UNDERSTANDING USES AND USERS OF THE CORRIDOR PRIOR TO DESIGN



INTRODUCTION TO CONTEXT CLASSIFICATION

The context classification system broadly identifies the various built environments existing in Florida, as illustrated in **Figure 5**. State roadways extend through a variety of context classifications. FDOT's context classification system describes the general characteristics of the land use, development patterns, and roadway connectivity along a roadway, providing cues as to the types of uses and user groups that will likely utilize the roadway. **Figure 5** should not be taken literally to imply all roadways will have every context classification or that context classifications occur in the sequence shown. Identifying the context classification is a step in the planning and design processes, as different context classifications will have different design criteria and standards.

FIGURE 5 FDOT CONTEXT CLASSIFICATIONS

C1-Natural
Lands preserved in a natural or wilderness condition, including lands unsuitable for settlement due to natural conditions.

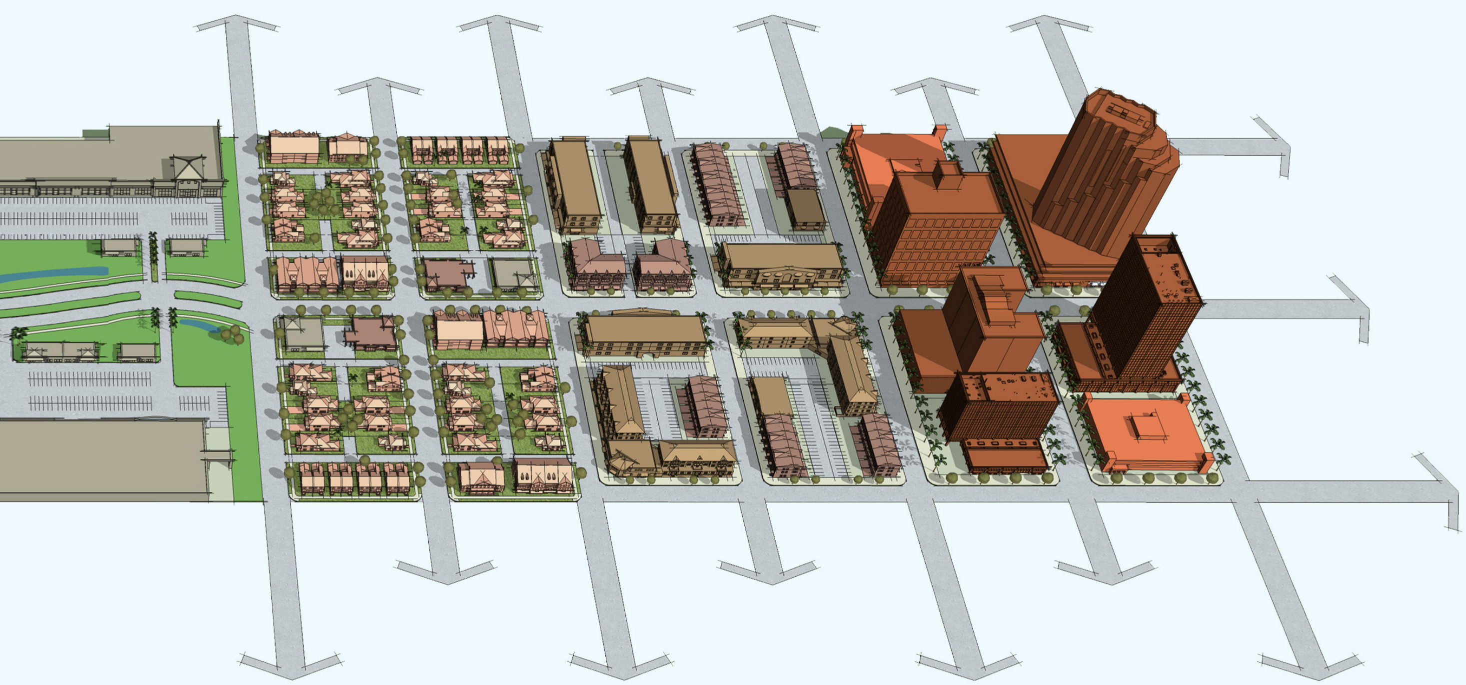
C2-Rural
Sparsely settled lands; may include agricultural land, grassland, woodland, and wetlands.

C2T-Rural Town
Small concentrations of developed areas immediately surrounded by rural and natural areas; includes many historic towns.

C3R-Suburban Residential
Mostly residential uses within large blocks and a disconnected or sparse roadway network.

The use of context classifications to determine criteria for roadway design elements is consistent with national best practices and direction, including the ***2018 American Association of State Highway and Transportation Officials (AASHTO) Green Book*** and the ***National Cooperative Highway Research Program (NCHRP) Report 855: An Expanded Functional Classification System for Highways and Streets***, which proposes a similar context-based approach to design that incorporates context, user needs, and transportation functions into the design process. This research was born out of a need to better define contexts beyond urban and rural classifications, and to incorporate multimodal needs into the existing functional classification system. Ongoing NCHRP research projects continue to refine the system and outline context-based design criteria.

This chapter outlines the steps to determine a roadway's context classification, including measures used to determine the context classification.



C3C-Suburban Commercial
Mostly non-residential uses with large building footprints and large parking lots within large blocks and a disconnected or sparse roadway network.

C4-Urban General
Mix of uses set within small blocks with a well-connected roadway network. May extend long distances. The roadway network usually connects to residential neighborhoods immediately along the corridor or behind the uses fronting the roadway.

C5-Urban Center
Mix of uses set within small blocks with a well-connected roadway network. Typically concentrated around a few blocks and identified as part of a civic or economic center of a community, town, or city.

C6-Urban Core
Areas with the highest densities and building heights, and within FDOT classified Large Urbanized Areas (population greater than one million). Many are regional centers and destinations. Buildings have mixed uses, are built up to the roadway, and are within a well-connected roadway network.

HOW CONTEXT CLASSIFICATION INFORMS PROJECTS

Context classification helps identify the anticipated users of the roadway. As such, a roadway's context classification informs decisions made during FDOT's various project development phases, so that each state roadway is planned, designed, constructed, and maintained to support safe and comfortable travel for its anticipated users.

Project Origins

It is important that roadway users and their respective needs are understood early in the life of a project. Understanding the needs of all users at these early phases can help assure that the project scope of services defines all necessary improvements and that the budget is adequate for design, right-of-way, and construction. The context classification and users inform key design elements, such as the design speeds, lane widths, and types of pedestrian, bicycle, transit, and freight facilities to be included in the design concept.

Projects go through various phases of the project development process. The context classification should be determined and/or confirmed at the beginning of each project phase, including planning, PD&E, and design.

Projects that *go through* PD&E

It is helpful to understand the context classification prior to the start of PD&E to understand the needs of the anticipated users of a roadway and to ensure that a full range of potential solutions to address these needs is explored during PD&E. This can be accomplished through a streamlined project-level transportation planning phase that identifies the context classification, the needs of anticipated users, and recommends a target speed. This level of planning offers an opportunity to incorporate Complete Streets principles and establish the framework for a Complete Streets approach for the life of the project.

Projects that *do not go through* PD&E

There are many FDOT projects, including rehabilitation (RRR), traffic operations, and safety projects, that do not qualify for an Efficient Transportation Decision Making (ETDM) screening and may or may not have a formal planning phase. Context classification and target speed must still be identified, and these should be established prior to the development of the scope of services for the project's design phase. Understanding the context classification and target speed will inform roadway elements and criteria that can significantly improve the safety of all users. Knowing this information at the early stages of any project will ensure that project budgets are accurate from the beginning and will help stabilize the work program.

Preliminary Context Classification Designations

Preliminary existing context classification designations have been developed for the state roadway system by each FDOT District. These districtwide assessments serve as the foundation for understanding the context classification for state roadways from a system perspective and are intended to be refined on a project-by-project basis.

The districtwide preliminary context classification was developed with a subset of the measures specified in the Context Classification Matrix (**Table 2**), based on each District's available GIS data. Before the design criteria are applied to a project, the preliminary context classification of a project roadway should be evaluated based on the most recent data available, with the complete set of context classification measures outlined in the matrix, and using the steps outlined in the following sections. This project-level evaluation confirms the most appropriate context classification for a roadway reflecting up-to-date existing and/or future conditions as precisely as possible (see **Table 1**). To ensure statewide consistency, contact the State Complete Streets Program Manager if the District believes a modification to this approach is needed for any reason.

Statewide Context Classification Database in the RCI

The Roadway Characteristics Inventory (RCI) is a database of information related to the roadway environment maintained by FDOT Central Office. The database includes information on a roadway's features and characteristics*. The preliminary context classification is stored in the RCI as Feature 126 – Preliminary Context Classification. This feature includes two characteristics:

Preliminary Context Classification

This feature was initially populated with the preliminary context classification from each districtwide data set. Each District will update this dataset with the project-level context classification as project-level evaluations are completed.

Future Context Classification

This characteristic contains the future context classification. It is populated by the District, as applicable, when project-level future context classifications are completed. Not all roadway segments will have a future context classification assigned.

RCI information may be a starting point for research and planning purposes in evaluating a roadway's context classification. However, as this dataset is dynamic and constantly being updated, project-level context classification information must be confirmed with the District Complete Streets Coordinator.

*Feature 124-Urban Classification and Feature 481-Highway Maintenance Classification may describe land use contexts in different ways but do not contain context classification.

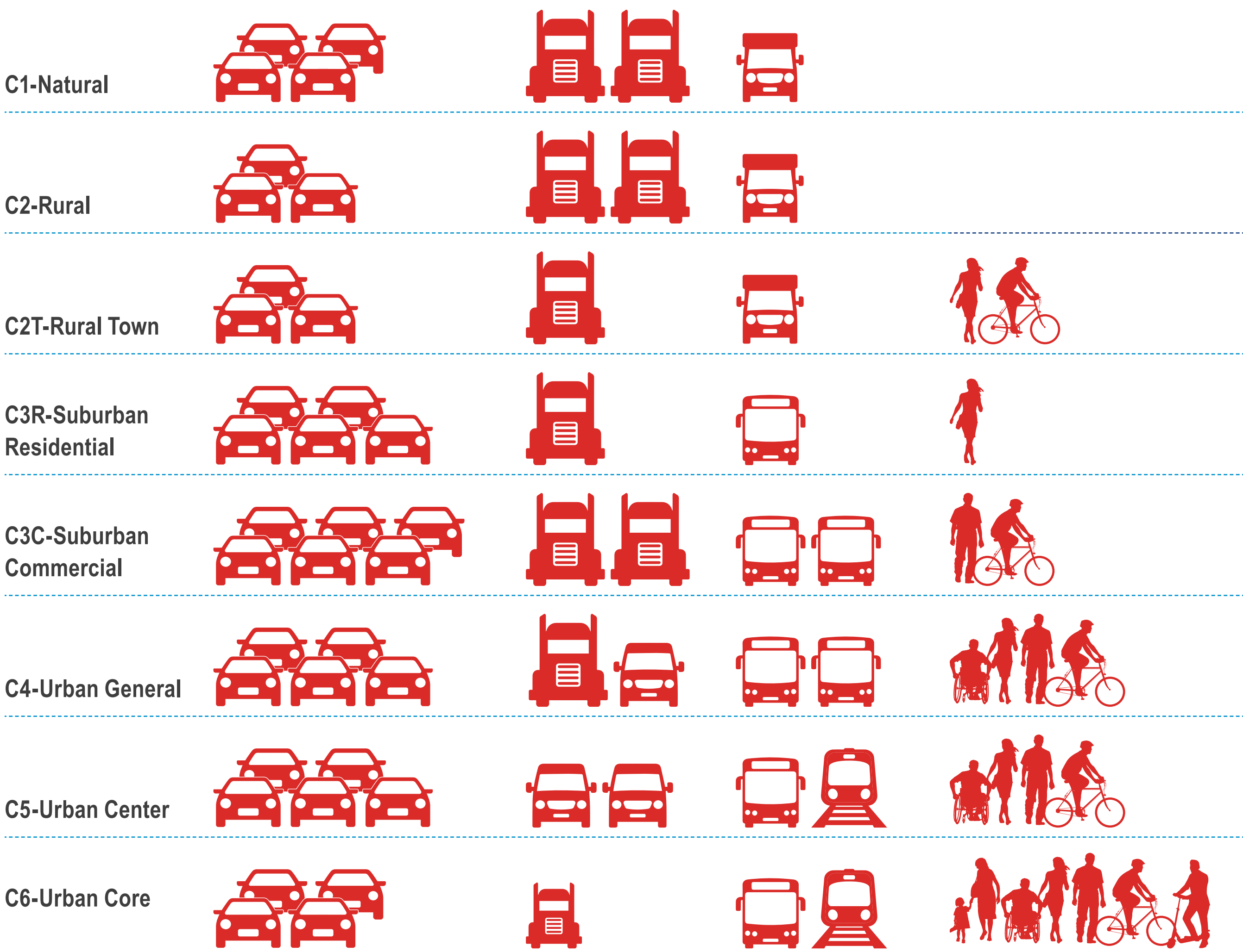
TABLE 1 CONTEXT CLASSIFICATION DESIGNATIONS

Time Period	Preliminary Method	Project-Level Method
Existing	Districtwide evaluation based on existing conditions, using readily available GIS data	Project specific evaluation based on existing conditions, using the most recent data available
Future	Districtwide evaluation based on future conditions, using readily available GIS data	Project specific evaluation based on forecasted/planned future conditions, using the most recent data available

CONTEXT CLASSIFICATION AND ROADWAY USERS

The context classification of a roadway informs planners and engineers of the types of users and the intensity of use expected along the roadway. **Figure 6** illustrates the user types and intensities expected in each context classification. For example, the C6-Urban Core Context Classification is anticipated to have more pedestrians, bicyclists, and transit users than in a C2-Rural Context Classification. Therefore, design and posted speeds towards the lower end of the speed range, signal spacing, crossing distances, lane widths, and other design elements such as bicycle facilities, on-street parking, and wide sidewalks should be provided to increase the safety and comfort of bicyclists, pedestrians, and transit users. For the C2-Rural Context Classification, vehicles and freight are primary users; the infrequent bicyclists and pedestrians are accommodated with paved shoulders or sidepaths. A state roadway in C2-Rural Context Classification is expected to have relatively higher speeds, wider lanes, and fewer pedestrian and bicycle crossings.

FIGURE 6 EXPECTED USER TYPES IN DIFFERENT CONTEXT CLASSIFICATIONS

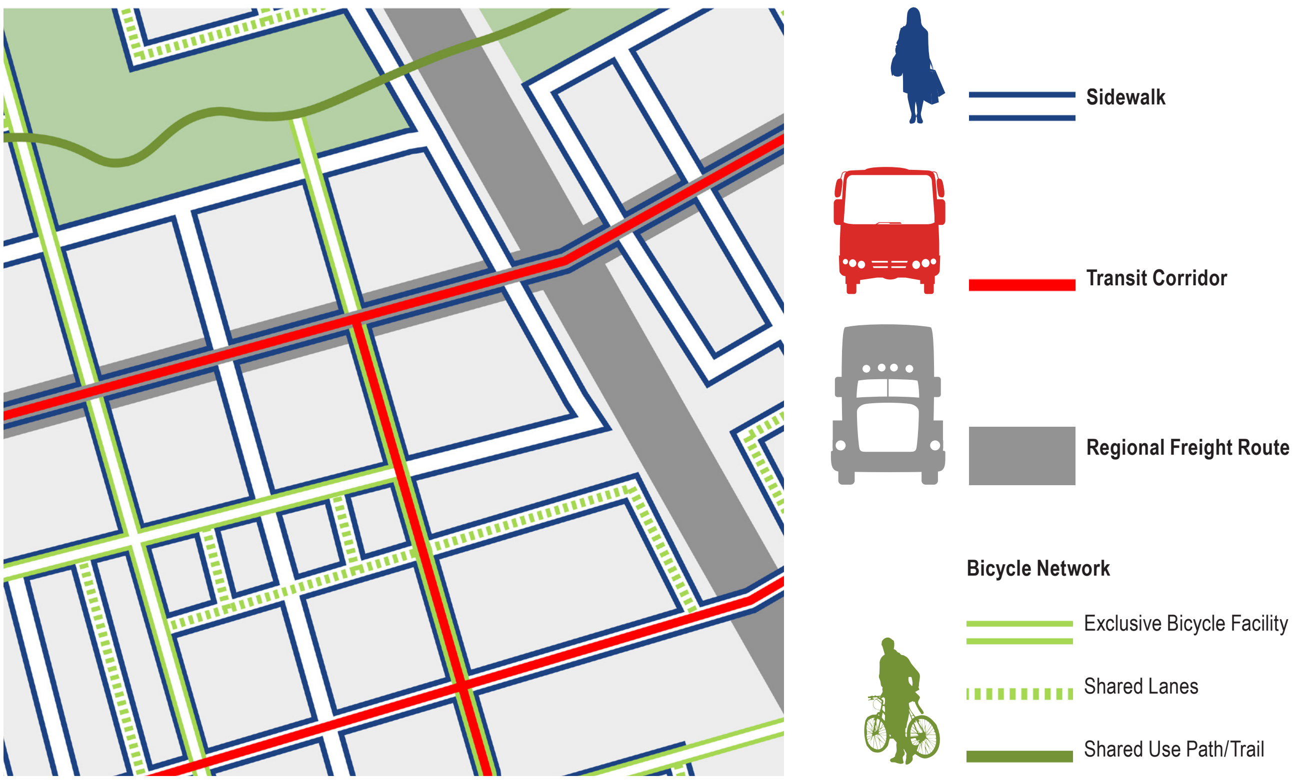


BUILDING A COMPLETE STREETS NETWORK

Every Complete Street is uniquely planned and designed to serve the context of that roadway. Although Complete Streets focus on the safety of all users, each Complete Street will strike a different balance of user comfort, based on existing and desired future contexts. For instance, in urban contexts, where high volumes of pedestrians, bicyclists, and transit users are expected or desired, a roadway may include wide sidewalks, special bus lanes, and transit shelters. The ***FDOT Design Manual***, ***Traffic Engineering Manual***, and ***Access Management Guide*** contain standards, criteria, and guidance to be used for planning, designing, and operating roadways in each context classification.

Figure 7 illustrates a conceptual idea of a complete network of roadways, where each roadway contributes to the system's ability to serve all users.

FIGURE 7 CONTEXT-SENSITIVE SYSTEM OF COMPLETE STREETS



Well-designed, connected roadway networks make travel more efficient by providing choice not only in modes, but also in routes. Pedestrians, bicyclists, and transit riders are especially motivated to find direct routes to their destination or their transit stop. A fine-grained network of roadways and crossing opportunities provides more direct paths to destinations, reduces delay, and creates redundancy of path options for all users. A network of connected roadways also disperses vehicular travel along multiple roadways.

With a number of intersections and roadways sharing the traffic demand, there is reduced need to construct wider roadways and large intersections that can potentially create barriers to walking and bicycling and increase crash rates and severity for all users. Lastly, a fine-grained network allows for roadways to complement each other, with some roadways providing better quality of service for high-speed travel, and other parallel roadways providing comfort, safety, and access for bicyclists and pedestrians.

Many roadways in Florida are built in suburban contexts (C3R-Suburban Residential and C3C-Suburban Commercial), with limited roadway connectivity and land uses dispersed over large areas of land. In these suburban contexts, the existing arterial roadway network supports both local access and regional mobility, concentrating most vehicular trips, both local and regional, onto the arterial roadways. Critical transit service, major employers, and retail services are also often located on these roadways, even though the large setbacks on large lots and wide, high-speed roadways may not be optimal for pedestrian circulation. Therefore, as investments are made along the major arterial roadways, design elements that support walking, bicycling, and transit use should be integrated. In addition to these on-roadway investments, network alternatives in the form of new local roadway connections and shared use paths should be developed to complement the arterial roadway system, to provide high quality, safe, and comfortable travel for all modes.

Due to local context, right-of-way, and financial constraints, it may not be possible to provide similar levels of high quality facilities for all modes along all FDOT roadways. In some locations, it may be necessary to rely upon parallel networks to provide additional travel options for all modes. The network approach requires close coordination between FDOT and local communities, as all partners work together to develop a system of Complete Streets comprised of State and local roadways.

DETERMINING PROJECT-SPECIFIC CONTEXT CLASSIFICATION

CONTEXT CLASSIFICATION MATRIX

Table 2 Context Classification Matrix presents a framework to determine the context classifications along state roadways. This Context Classification Matrix outlines (1) distinguishing characteristics, (2A/B) primary measures, and (2C) secondary measures. The distinguishing characteristics give a broad description of the land use types and street patterns found within each context classification. The primary and secondary measures provide more detailed assessments of the existing or future conditions along the roadway. The primary measures can be evaluated through a combination of a field visit, internet-based aerial, and street view imagery. The secondary measures require map analysis and review of future land use or zoning information, which may not be readily available on every project. The Context Classification Matrix presents the thresholds for the primary and secondary measures for the eight context classifications.

Appendix A illustrates the FDOT context classifications through case studies. These case studies illustrate real-world values for the primary and secondary measures that determine a roadway's context classification.

The context classification will be updated or confirmed at the beginning of each project phase, including planning, PD&E, and design. Each District can assign staff to oversee the determination of context classification. It is recommended that an interdisciplinary team within each District help determine the context classification. For projects where FDOT currently coordinates with local governments, FDOT will coordinate with those local governments to confirm context classification. The final determination of context classification will be made by FDOT District staff. For smaller projects, such as traffic operations push-button projects, the context classification may be determined without additional local coordination. Refer to the ***Public Involvement Handbook***, ***FDM***, and ***PD&E Manual*** for guidance on local government coordination.

When to Use Existing Versus Future Context Classifications

The measures in **Table 2** can be evaluated based on existing or future conditions. In general, the horizon year for the context classification should match the horizon year for the traffic analysis being conducted on projects. Districts may choose to use future context classification for other projects at their discretion. Some Districts have completed a districtwide preliminary future context classification assessment. The preliminary future context classification can serve as a starting point for many projects, and may be an efficient way to explore future conditions.

Project types that qualify for ETDM screening, per the ETDM Manual Section 2.3.1, are considered qualifying projects (see **Figure 8**). These are projects that go through the PD&E process. Qualifying projects in all project development phases should evaluate future conditions of the measures and utilize future context classification. See page 16 for more discussion on evaluating context classification for new roadways.

Non-qualifying projects, or projects that do not go through ETDM screening, may be evaluated based on existing conditions, and utilize existing context classification. However, Districts may choose to use future context classification based on a longer project timeline. For example, a Resurfacing, Restoration, and Rehabilitation (RRR) project with an expected 15-year design life may consider future conditions expected in that time frame. See page 10 for more information about determining future context classification.

Figure 8 lists a sample of qualifying and non-qualifying projects. This is not a complete list of qualifying and non-qualifying projects. Please review the ETDM Manual for a complete list: https://www.fdot.gov/environment/pubs/etdm/etdmmanual.shtm.

FIGURE 8 CONTEXT CLASSIFICATION DESIGNATIONS

Qualifying Projects

- A highway which provides new access to an area
- New roadway
- New or reconstructed arterial highway (e.g. realignment)
- New circumferential highway that bypasses a community
- New bridge which provides access to an area/bridge replacements

Conduct a future context classification evaluation

Non-qualifying Projects

- Projects that do not go through ETDM screening
- RRR
- Lighting
- Intersection Improvement
- New or reconstruction of bicycle and pedestrian facilities

Conduct an existing context classification evaluation

TABLE 2 CONTEXT CLASSIFICATION MATRIX

Context Classification	(1) Distinguishing Characteristics	(2 A/B) Primary Measures: Roadway Connectivity – Intersection Density (Intersections/Square Mile)	Roadway Connectivity – Block Perimeters (Feet)	Roadway Connectivity – Block Length (Feet)	Land Use (Description)
C1-Natural	Lands preserved in a natural or wilderness condition, including lands unsuitable for settlement due to natural conditions.	N/A	N/A	N/A	Conservation Land, Open Space, and/or Park
C2-Rural	Sparsely settled lands; may include agricultural land, grassland, woodland, and wetlands.	<20	N/A	N/A	Agricultural and/or Single-Family Residential
C2T-Rural Town	Small concentrations of developed areas immediately surrounded by rural and natural areas; includes many historic towns.	>100	<3,000	<500	Retail, Office, Single-Family Residential, Multi-Family Residential, Institutional, and/or Industrial
C3R-Suburban Residential	Mostly residential uses within large blocks and a disconnected or sparse roadway network.	<100	N/A	N/A	Single-Family and/or Multi-Family Residential
C3C-Suburban Commercial	Mostly non-residential uses with large building footprints and large parking lots within large blocks and a disconnected or sparse roadway network.	<100	>3,000	>660	Retail, Office, Multi-Family Residential, Institutional, and/or Industrial
C4-Urban General	Mix of uses set within small blocks with a well-connected roadway network. May extend long distances. The roadway network usually connects to residential neighborhoods immediately along the corridor or behind the uses fronting the roadway.	>100	<3,000	<500	Single-Family or Multi-Family Residential, Institutional, Neighborhood Scale Retail, and/or Office
C5-Urban Center	Mix of uses set within small blocks with a well-connected roadway network. Typically concentrated around a few blocks and identified as part of a civic or economic center of a community, town, or city.	>100	<2,500	<500	Retail, Office, Single-Family or Multi-Family Residential, Institutional, and/or Light Industrial
C6-Urban Core	Areas with the highest densities and building heights, and within FDOT classified Large Urbanized Areas (population > one million). Many are regional centers and destinations. Buildings have mixed uses, are built up to the roadway, and are within a well-connected roadway network.	>100	<2,500	<660	Retail, Office, Institutional, and/or Multi-Family Residential

The thresholds presented in Table 2 are based on the following sources, with modifications made based on Florida case studies:
1) *2008 Smart Transportation Guidebook: Planning and Designing Highways and Streets that Support Sustainable and Livable Communities*, New Jersey Department of Transportation and Pennsylvania Department of Transportation;
2) *2012 Florida TOD Guidebook*, Florida Department of Transportation;
3) *2009 SmartCode Version 9.2.*, Duany, Andres, Sandy Sorlien, and William Wright; and
4) *2010 Designing Walkable Urban Thoroughfares: A Context Sensitive Approach*, Institute of Transportation Engineers and Congress for the New Urbanism.
5) Colors correspond to flowchart in Figure 9.

(2 C) Secondary Measures

Building Height	Building Placement	Fronting Uses	Location of Off-street Parking	Allowed Residential Density	Allowed Office/ Retail Density	Population Density	Employment Density
Floor Levels	Description	Yes/No	Description	Dwelling Units/ Acre	Floor-Area Ratio (FAR)	Persons/Acre	Jobs/Acre
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1 to 2	Detached buildings with no consistent pattern of setbacks	No	N/A	<1	N/A	<2	N/A
1 to 2	Both detached and attached buildings with no or shallow (<20') front setbacks	Yes	Mostly on side or rear; occasionally in front	>4	>0.25	N/A	>2
1 to 2, with some 3	Detached buildings with medium (20' to 75') front setbacks	No	Mostly in front; occasionally in rear or side	1 to 8	N/A	N/A	N/A
1 (retail uses) and 1 to 4 (office uses)	Detached buildings with large (>75') setbacks on all sides	No	Mostly in front; occasionally in rear or side	N/A	<0.75	N/A	N/A
1 to 3, with some taller buildings	Both detached and attached buildings with no setbacks or up to medium (<75') front setbacks	Yes	Mostly on side or rear; occasionally in front	>4	N/A	>5	>5
1 to 5, with some taller buildings	Both detached and attached buildings with no or shallow (<20') front setbacks	Yes	Mostly on side or rear; occasionally in front, or in shared off-site parking facilities	>8	>0.75	>10	>20
>4, with some shorter buildings	Mostly attached buildings with no or minimal (<10') front setbacks	Yes	Side or rear; often in shared off-site garage parking	>16	>2	>20	>45

STEP-BY-STEP GUIDE FOR DETERMINING CONTEXT CLASSIFICATION

This page and **Figure 9** outline a step-by-step process on how to evaluate context classification at the project level. Detailed methodology for segmenting roadways, evaluating context classification measures, and common data sources needed to evaluate measures are described on the following pages. In many cases, a subset of the primary measures is sufficient to determine a roadway segment's context classification and not all measures outlined in **Table 2** may always need to be evaluated. **Figure 9** illustrates the process to evaluate context classification, focusing on the most important measures that can distinguish between context classifications.

Step 1 Review distinguishing characteristics as described in **Table 2** to identify major changes in land use types and street patterns along the project corridor. Where a major change happens, a roadway should be segmented and each segment evaluated separately.

Step 2A Once segments are defined, utilize the measures pertaining to roadway connectivity (intersection density, block perimeter, and block length) to determine if a roadway segment is in one of these three context classification groupings:

C2T, C4, C5, or C6	C3R or C3C	C1 or C2

Step 2B Use the land use measures to further refine the evaluation.

C2T, C4, C5, or C6

Determine if the land uses along the roadway segment are surrounded by rural or natural land.

- **Yes:** this can be classified as C2T context classification.
- **No:** then further evaluate using building setback measure.

Determine if non-C2T segments have less than 20' setbacks.

- **Yes:** further evaluate in Step 2C.
- **No:** this segment can be classified as C4 context classification.

C3R or C3C

Review the land uses along the roadway. Are they predominantly residential?

- **Yes:** this segment can be classified as C3R context classification. Many C3R segments have fences, walls, or landscaping immediately along the state road with residential uses behind the barrier.
- **No** (land uses are primarily commercial and/or industrial): this segment can be classified as C3C context classification. Many C3C segments have residential land use one or more blocks off the segment, but the primary land use along the segment is commercial and/or industrial.

C1 or C2

Determine if the roadway segment is surrounded by conservation land, such as a park or wildlife refuge.

- **Yes:** this can be classified as C1 context classification.
- **No:** this can be classified as C2 context classification.

Step 2C Use the land use measures to further refine the evaluation.

C5 or C6

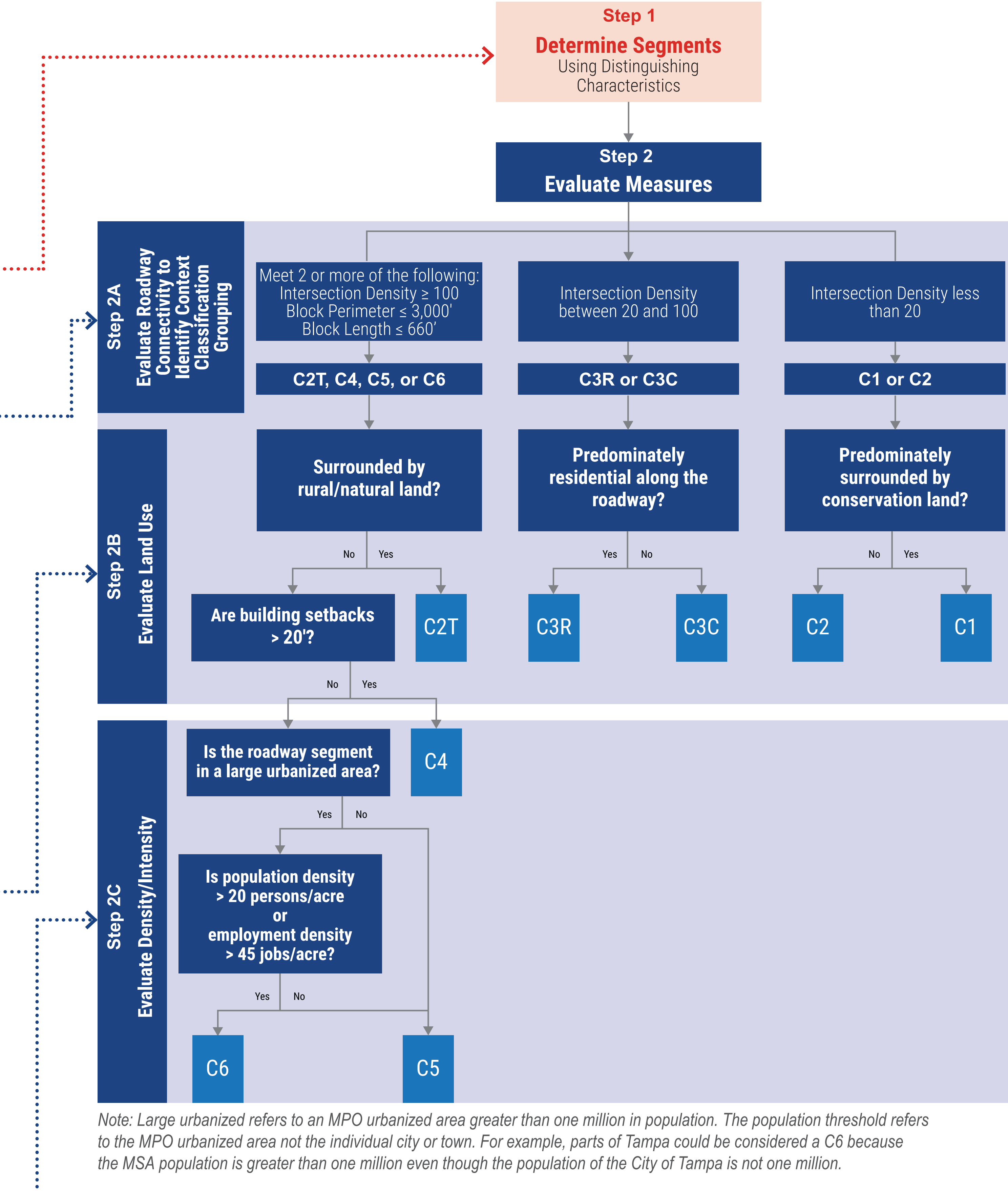
Evaluate if within a Large Urbanized Area.

- **Yes:** further evaluate using population and employment density.
- **No:** this segment can be classified as C5 context classification.

Population and employment density can be used to distinguish between the C5 and C6 context classifications in Large Urbanized Areas. Is either the population density greater than or equal to 20 persons per acre or the employment density greater than or equal to 45 jobs per acre?

- **Yes:** this segment can be classified as C6 context classification.
- **No:** this segment can be classified as C5 context classification.

FIGURE 9 STEP-BY-STEP GUIDE FOR DETERMINING CONTEXT CLASSIFICATION



Note: Large urbanized refers to an MPO urbanized area greater than one million in population. The population threshold refers to the MPO urbanized area not the individual city or town. For example, parts of Tampa could be considered a C6 because the MSA population is greater than one million even though the population of the City of Tampa is not one million.

CONTEXT CLASSIFICATION DETAILED METHODOLOGY

The distinguishing characteristics, primary measures, and secondary measures provide analytical measurements to evaluate land use characteristics, development patterns, and roadway connectivity to determine context classification. These land use and transportation measures differentiate between different contexts. Other measures were originally considered by FDOT, but ultimately not included in the methodology. Transit service, for example, can be an indicator of multimodal need since all riders are at one point a pedestrian or a bicyclist, but levels of transit service and occurrence of transit stops do not always relate to adjacent development patterns. Frequent transit service can be present in both suburban and urban contexts, and even some rural towns.

The data available to characterize existing and future context classifications will vary depending on the specificity of the roadway alignments being considered. Many projects conducted by FDOT occur along existing corridors where a single alignment is being considered. The range of alternatives for new roadways also narrows to a single alignment alternative as qualifying projects proceed from planning through PD&E and design. In planning and ETDM screening for existing roadways, and in PD&E and design for new roadways, it is possible to analyze both the existing and future conditions to determine the context classification of a roadway. For projects involving new roadways in planning and ETDM screening, multiple alternative alignments may be considered over larger areas. For these latter types of projects, a broader understanding of the context classification will be used to inform the planning process and development of alternatives.

The following are the two key steps for determining context classification at the project level:

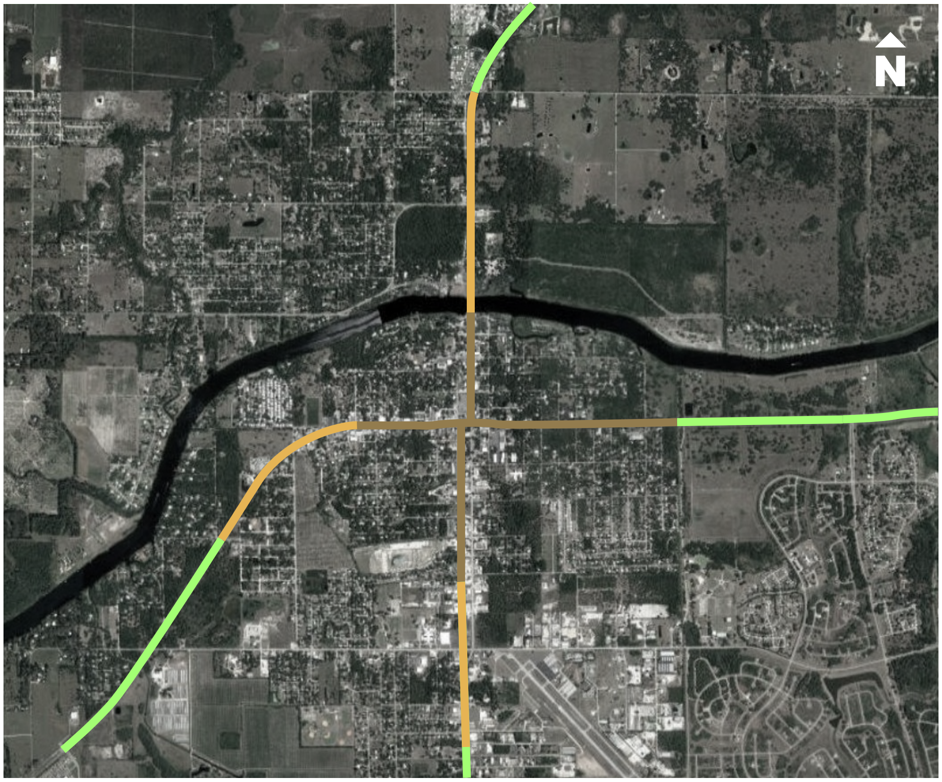
1 Define Segments by Identifying Major Changes in Context

Context classification segments are based on land development pattern changes, as characterized by land use, development density, and roadway connectivity changes. A new segment starts where the land development patterns change. Project-limits do not define the segmentation for context classification. Like access management classification, there may be several context classification segments within a single project, and the limits of those segments may extend beyond the project limits.

Use the distinguishing characteristics described in the Context Classification Matrix to identify if multiple context classifications are present along a project roadway and if a long roadway corridor needs to be segmented. Where a block structure, or grid network, is present, a context classification segment may be as short as two blocks in length. Where there is no defined block structure, a context classification segment may be as short as a quarter mile in length.

Figure 10 and **Figure 11** demonstrate cases where roadway segmentation can change based on major changes in land use and roadway connectivity.

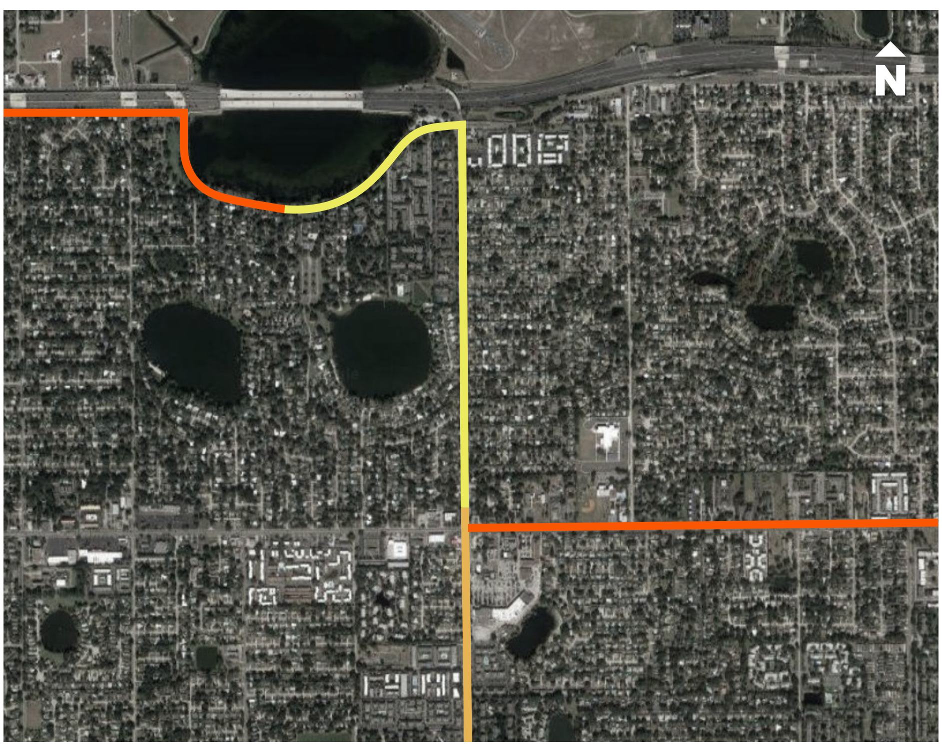
FIGURE 10 DISTINGUISHING CONTEXT CLASSIFICATION SEGMENTS BY DEVELOPMENT INTENSITY AND ROADWAY NETWORK



C2T
C3C
C2

A context classification change occurs where the development patterns change between the natural land and the concentrated developed land and again when the roadway network changes from a sparse, disconnected network to a well-connected grid network.

FIGURE 11 DISTINGUISHING CONTEXT CLASSIFICATION SEGMENTS BY TYPE OF LAND USE



C3R
C3C
C4

There is a context classification change in the suburban environment where the land use changes from predominantly residential to commercial and the block structure changes.

2 Evaluate the Measures

A roadway segment must meet most of the measures defined for a context classification in order to be assigned that context classification.

Table 3 and **Table 4** describe the methodology and data sources associated with the primary and secondary measures, respectively. Two measurement areas — the block and the parcel — are used, as explained in **Figures 12** and **13**. **Figures 14** through **18** provide guidance for evaluating some of the primary measures.

The distinction between primary and secondary measures is based on the availability of data and does not imply intended sequence of evaluation or relative importance. The primary measures can be evaluated through a combination of a field visit, internet-based aerial, and street view imagery. The secondary measures require map analysis and review of zoning information, which may not be available on every project.

Evaluation of the measures for each segment can be done based on existing conditions or updated with future conditions, if needed. For existing context classification, consider existing plus committed roadway network when evaluating roadway connectivity and existing land use plus permitted development when evaluating land use measures.

For future context classification, consider the adopted future cost-feasible metropolitan transportation plan (MTP), also known as the long range transportation plan (LRTP), and programmed local roadway network projects when evaluating roadway connectivity. Future land use should be clearly documented in a well-defined, community-supported, and implementation-focused plan or in policies such as zoning overlays, form-based codes, or community redevelopment plans. These plans detail short- and mid-term changes to the roadway and built form using established mechanisms for implementation.

The future desired conditions should be consistently documented across all appropriate local policies and should be well-understood and accepted by local stakeholders. In short, the future conditions should be those that are predictable and that will occur over an anticipated time frame rather than visionary plans or broad goals and ideas that do not have a clear timeline for actual implementation. Use of a form-based code is one indicator that significant community discussion occurred on a future vision and that future development is more likely to result based on the adopted form-based code. See page 21 for more discussion on evaluating future context classification for new roadways.

Districts with a districtwide preliminary context classification may have calculated some of the measures as part of the districtwide evaluation. Use this as a starting point where possible, adding new or updated data and measures that were not gathered during the districtwide evaluation.

TABLE 3 PRIMARY MEASURES TO DEFINE CONTEXT CLASSIFICATION

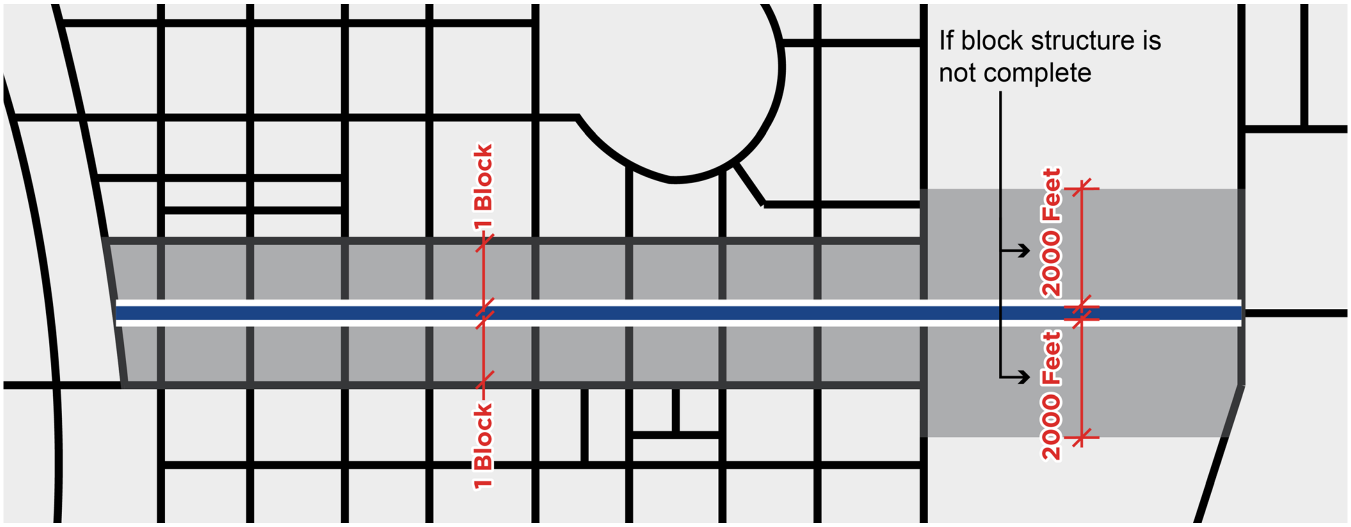
	Measure	Description	Methodology	Measurement Area*	Data Source**
Roadway-Connectivity	**Intersection Density**	Number of intersections per square mile	Calculate by dividing the total number of intersections by the area of the blocks along both sides of the street, excluding natural features and public parks; consider future roadway connectivity if an approved or permitted development plan is in place (see **Figure 14**).	The block on either side of the roadway; if the roadway and block structure is not complete, the evaluation area should extend 2000' on either side of the roadway	Street centerline GIS files or physical map, internet-based maps, plans showing programmed roadway projects, and permitted development plans
Roadway-Connectivity	**Block Perimeter**	Average perimeter of the blocks adjacent to the roadway on either side	Measure the block perimeter for the blocks adjacent to the roadway on either side and take the average; consider future roadway connectivity if an approved or permitted development plan is in place (see **Figure 15**).	The block on either side of the roadway; if the roadway and block structure are not complete, the evaluation area should extend 2000' on either side of the roadway	
Roadway-Connectivity	**Block Length**	Average distance between intersections	Measure the distance along the roadway between intersections with a public roadway, on either side, and take the average; consider future roadway connectivity if an approved or permitted development plan is in place (see **Figure 15**).	Roadway	
	Land Use	Land use mix for more than 50% of the fronting uses	Record based on existing or future adopted land uses.	Fronting parcels on either side of the roadway	Field review, GIS files, existing land use, or future land use clearly documented in a well-defined, community-supported, and implementation-focused plan or in policies such as zoning overlays, form-based codes, or community redevelopment plans.
	Building Height	The range in height of the buildings for more than 50% of the properties	Record based on existing buildings or future permitted building height requirements based on land development regulations.	Fronting parcels on either side of the roadway	Field review, internet-based aerial and street view imagery, or land development regulations
	Building Placement	Location of buildings in terms of setbacks for more than 50% of the parcels	Measure the distance from the building to the property line or future required building placement based on land development regulations (see **Figure 16**).	Fronting parcels on either side of the roadway	Field review, internet-based aerial and street view imagery, building footprint and parcel GIS files, or land development regulations
	Fronting Uses	Buildings that have front doors that can be accessed from the sidewalks along a pedestrian path for more than 50% of the parcels	Record the percentage of buildings that provide fronting uses or site design and lot layout requirements in land development regulations that require fronting uses (see **Figure 17**).	Fronting parcels on either side of the roadway	Field review or internet-based aerial and street view imagery, or land development regulations
	Location of Off-Street Parking	Location of parking in relation to the building: between the building and the roadway (in front); on the side of the building; or behind the building	Record location of off-street parking for majority of parcels or parking requirements based on land development regulations (see **Figure 18**).	Fronting parcels on either side of the roadway	Field review or internet-based aerial and street view imagery, or land development regulations

** The measurement area applies to each context classification segment. Evaluate each measure for each context classification segment. Where characteristics differ for each side of the street, use the characteristics for the side that would yield the higher context classification.*
*** Land use, zoning, streets, and other GIS data and maps are available from local government agencies, FDOT Efficient Transportation Decision Making (ETDM) Database, and regional agencies.*

TABLE 4 SECONDARY MEASURES TO DEFINE CONTEXT CLASSIFICATION

Measure	Description	Methodology	Measurement Area	Data Source
Allowed Residential Density	Maximum allowed residential density by adopted zoning	Identify which zoning district the context classification segment is within, and record maximum allowed residential density for that particular zoning district by dwelling units per acre.	Parcels along either side of the roadway	Zoning code, land development regulations
Allowed Office/ Retail Density	Maximum allowed office or retail density in terms of Floor Area Ratio (FAR), or the ratio of the total building floor area to the size of the property on which it is built	Identify which zoning district the context classification segment is within, and record allowed commercial density for that particular zoning district. In some jurisdictions, allowed commercial density might be stated based on specific regulations limiting building height and minimum setbacks. Jurisdictions also regulate minimum parcel size and building area allowed in each zoning district. Maximum allowable FAR for an area can be calculated using site design and height standards (see Appendix B for more details).	Parcels along either side of the roadway	Zoning code, land development regulations
Population Density (existing)	Population per acre based on the census block group	Download census information at the block group level. Divide the population of the census block group by the area of the block group. This area should exclude large natural features and public parks. If the roadway segment is the boundary between two block groups, average the population density of the block groups on either side of the roadway. If the roadway runs through multiple block groups, calculate the population density by the weighted average of roadway within each block group.	Census block group(s) that encompasses the roadway	US Census Bureau decennial data. If the census data is more than 5 years old, the latest American Community Survey data can be used.
Population Density (future)	Projected population per acre based on the regional travel demand model traffic analysis zone (TAZ)	Divide the population of the TAZ by the area of the TAZ. If the roadway segment is the boundary between two TAZs, average the population density of the TAZs on either side of the roadway. If the roadway runs through multiple TAZs, calculate the population density by the weighted average of roadway within each TAZ. Use 20-year forecast number from the regional travel demand model. If a regional travel demand model is not available, use University of Florida Bureau of Economic and Business Research (BEBR) population projections.	TAZ(s) that encompasses the roadway. If TAZ population density is not available, use smallest geographic area available from BEBR projections.	Regional travel demand model from MPO, BEBR
Employment Density (existing)	Total number of jobs per acre	Use GIS to map the number of jobs within the blocks adjacent to the roadway utilizing the U.S. Census Bureau's Longitudinal Employer-Household Dynamics (LEHD) website. Sum the number of jobs within the blocks along either side of the roadway, and divide by the area of the blocks. This area should exclude large natural features and public parks. Blocks can be imported as a shapefile or can be manually drawn on the census website.	One block area adjacent to either side of the roadway. If the block structure is not complete, the evaluation area should extend 500 feet from the property line along the roadway.	U.S. Census Bureau LEHD website
Employment Density (future)	Total number of jobs per acre	Divide the number of jobs of the TAZ by the area of the TAZ. If the roadway is the boundary between two TAZs, average the employment density of the TAZs on either side of the roadway. If the roadway runs through multiple TAZs, calculate the employment density by the weighted average of roadway within each TAZ. Use 20-year forecast number from the regional travel demand model. If a regional travel demand model is not available, use BEBR employment projections.	TAZ(s) that encompasses the roadway. If TAZ employment density is not available, use smallest geographic area available from BEBR projections.	Regional travel demand model from MPO, BEBR

FIGURE 12 MEASUREMENT AREA: THE BLOCK ON EITHER SIDE OF THE ROADWAY



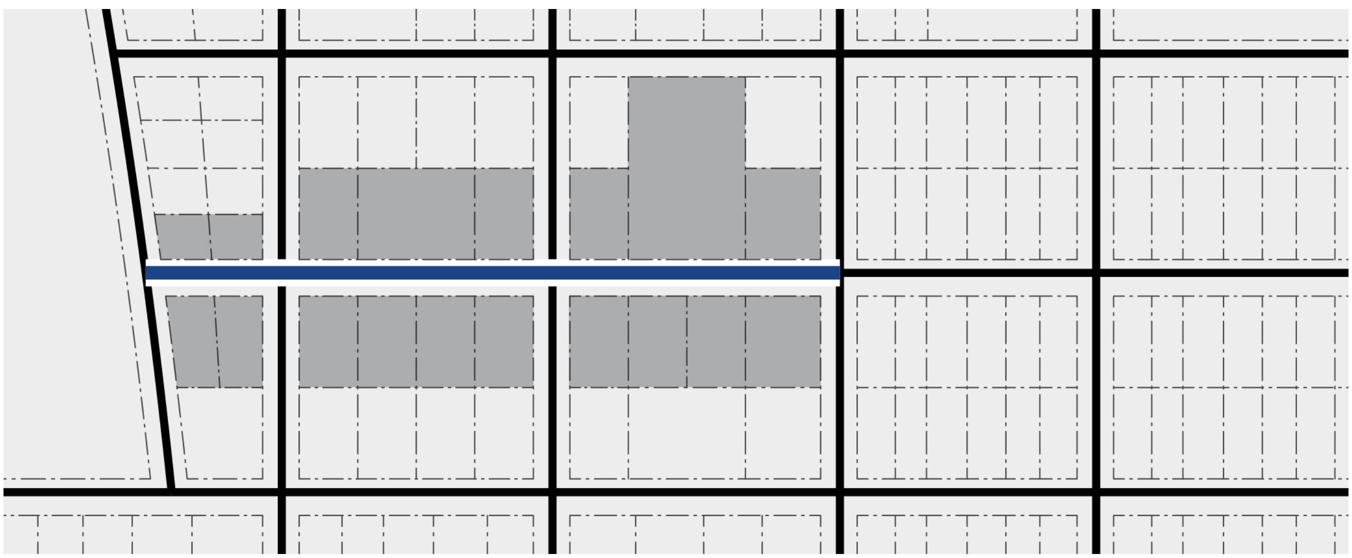
Measurement area = one block on either side of project roadway or 2000 feet, if block structure is not complete. A block is defined as the smallest area that is surrounded by public roadways on all sides. Alleys are not considered public roadways for the purposes of defining blocks.

Roadway centerline

Project roadway

One block on either side of project roadway

FIGURE 13 MEASUREMENT AREA: FRONTING PARCELS ON EITHER SIDE OF THE ROADWAY



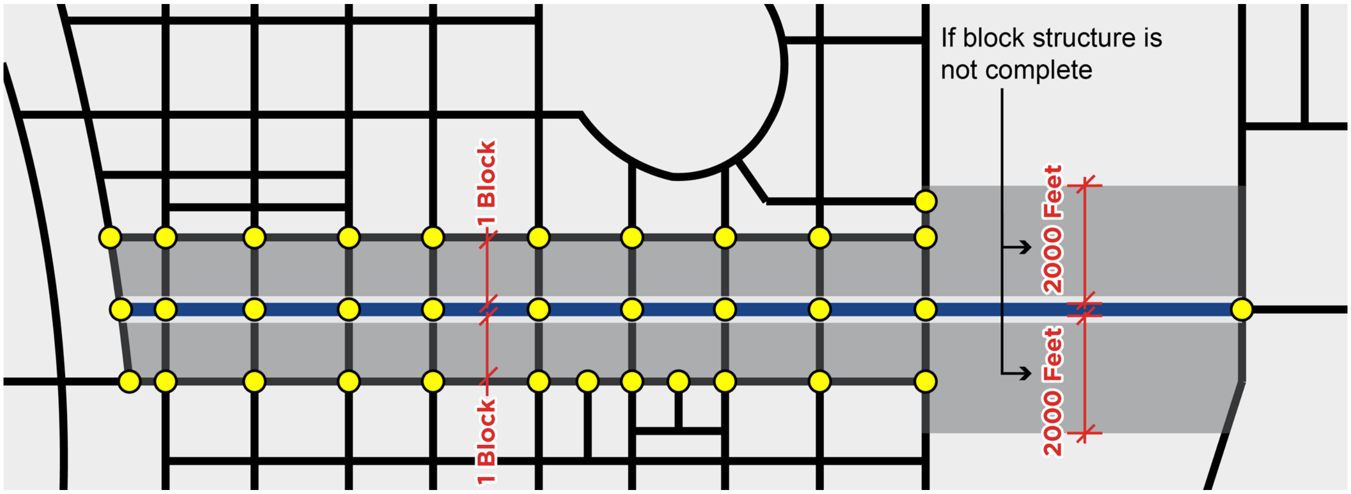
Measurement area = fronting parcels on either side of the project roadway.

Roadway centerline

Project roadway

One parcel on either side of project roadway

FIGURE 14 INTERSECTION DENSITY

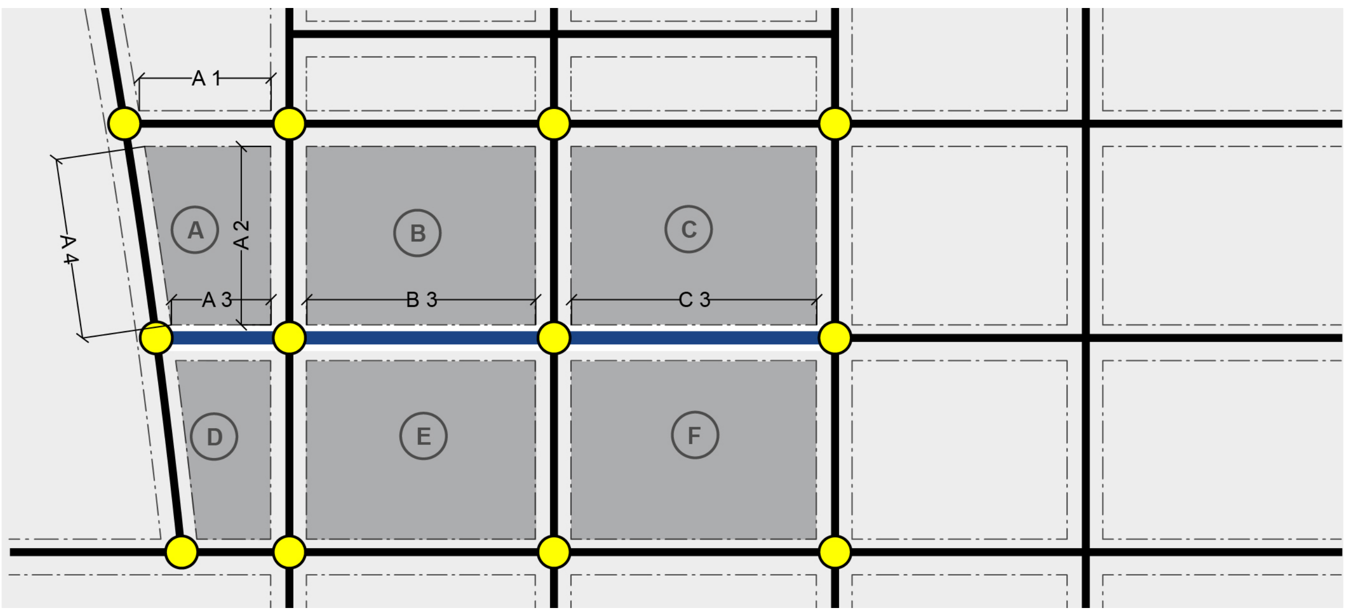


Intersection Density = $\frac{\text{Number of Intersections}}{\text{Total Area* of Blocks Along Both Sides of the Project Roadway}}$

** To calculate intersection density where the block structure is not complete, the block length will be assumed to extend 2,000 feet from the right of way line of the project roadway.*

Roadway centerline
Project roadway
One block on either side of project roadway
Intersection

FIGURE 15 BLOCK PERIMETER AND BLOCK LENGTH



Perimeter of Block A = A1 + A2 + A3+ A4

Average Perimeter of Blocks A to F = $\frac{\sum_{A}^{F} \text{Perimeter of Each Block}}{\text{Total Number of Blocks}}$

Average Block Length along the Roadway = $\frac{A3 + B3 + C3}{\quad}$

Roadway centerline
Project roadway
One block on either side of project roadway
Intersection

FIGURE 16 BUILDING PLACEMENT

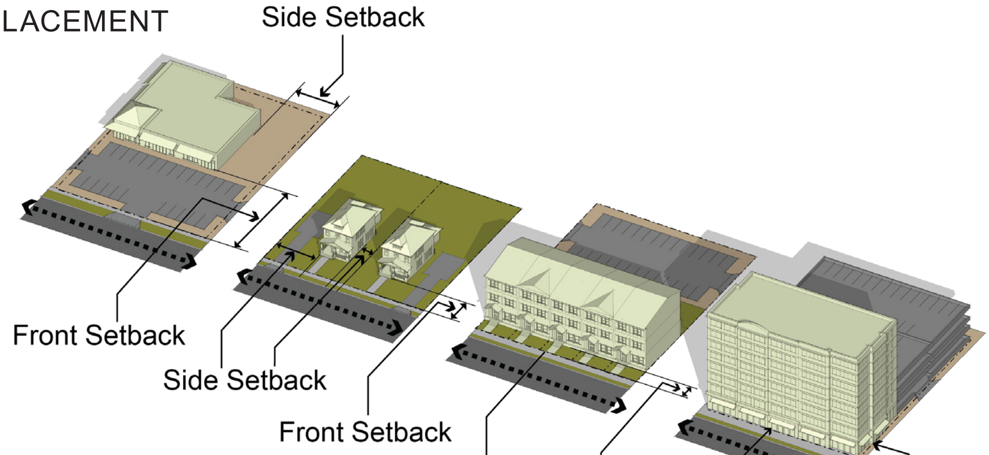


FIGURE 17 FRONTING USES

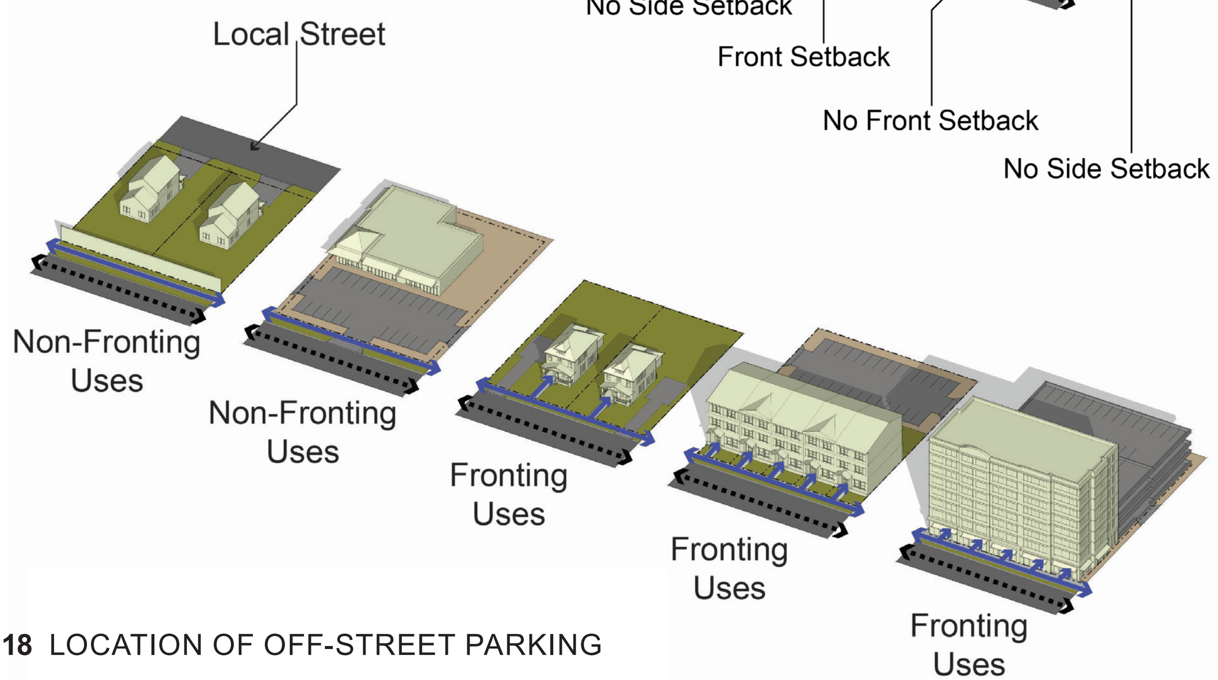
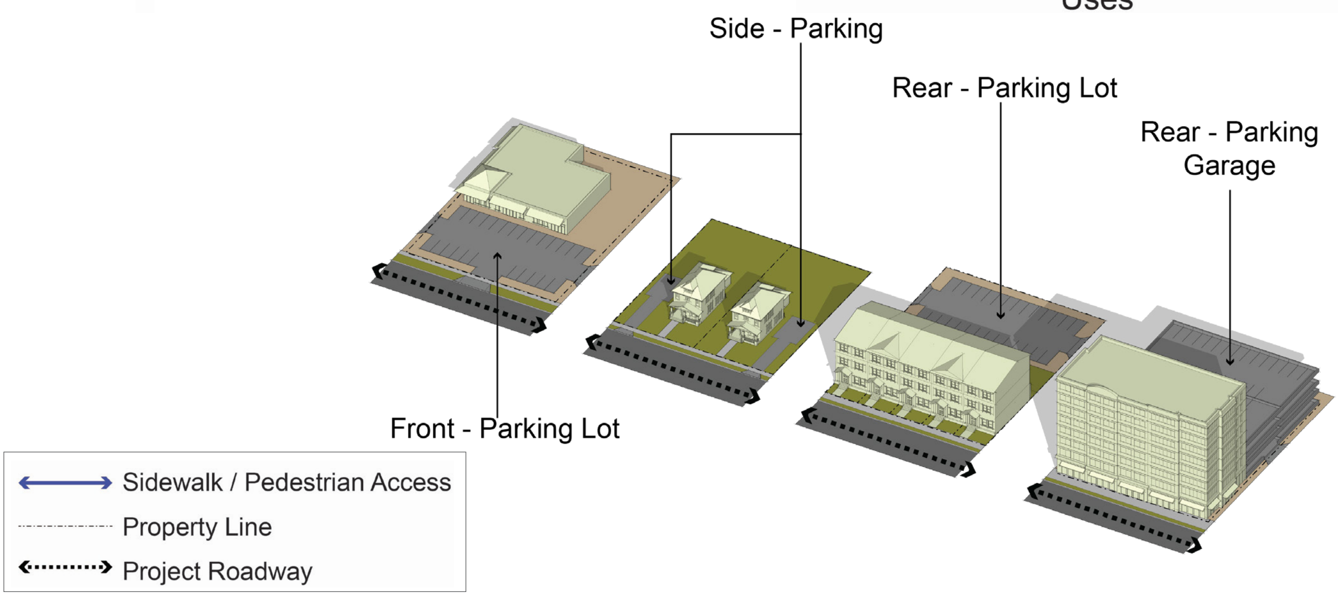


FIGURE 18 LOCATION OF OFF-STREET PARKING



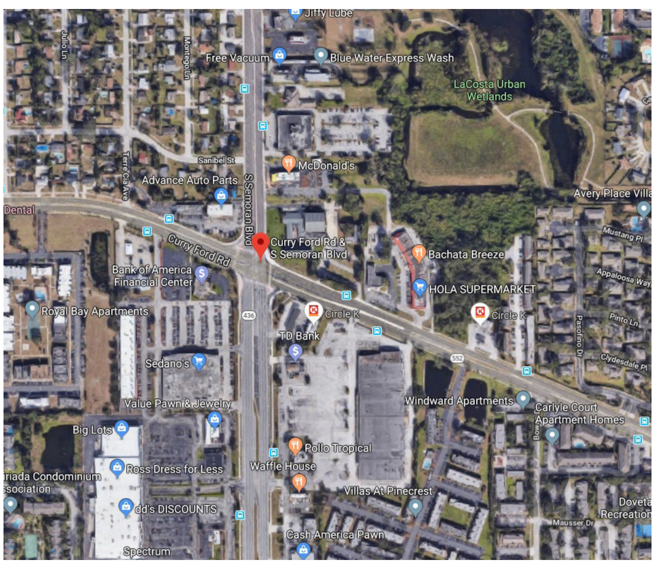
DISTINGUISHING BETWEEN C3R AND C3C SUBURBAN CONTEXT CLASSIFICATIONS

The distinction between Suburban Residential (C3R) and Suburban Commercial (C3C) is an important one because the different land uses result in different roadway users and usage patterns.

C3R corridors are characterized by low-density residential land uses and typically do not have any land uses directly fronting or accessed from the state road. Buildings are often set back from the state road with fences, walls, and/or heavy landscaping between the roadway and the residences. C3R development tends to be static and less likely to change over time. Where a roadway is more consistent with a C3C on one side and a C3R on the other, default to the higher context classification which is C3C.

In C3C corridors, the development fronting the roadway (immediately adjacent) is commercial uses, typically with large building footprints and large surface parking lots in front of buildings. C3C environments generally attract trips to and from retail and commercial establishments and have more transit ridership and transit service than C3R. As a result of transit activity and the commercial uses, C3C corridors also experience higher bicycle and pedestrian activity compared to C3R environments. Some C3C corridors also have intermittent multi-family apartments generating trips to and from the commercial uses. C3C development tends to be more dynamic, with commercial and retail uses changing over time.

With different user types (all modes), trip types (short and long trips), and vehicle speeds (through trips and local trips accessing establishments) in C3C context classifications, crashes between motorists and bicyclists/ pedestrians are more prevalent than in C3R areas. In these corridors, the combination of frequent vehicle turning movements, commercial driveways, differing operating speeds, and large blocks with long distances between crosswalks contribute to increased exposure for bicyclists and pedestrians. Large blocks, a disconnected roadway network, and the location of transit stops encourage pedestrians to cross at mid-block crossing locations.



In general, on C3C corridors, commercial land uses are the most prevalent and front the roadway, with residential land uses behind these.

In C3C environments, bicycle, pedestrian, and transit users are typically expected.

C3C corridors generally experience more bicycle and pedestrian activity compared to C3R environments.

OTHER CONDITIONS

Bridges and Tunnels

The context classification of a bridge or tunnel should be based on the higher context classification of the segments on either end of the bridge or tunnel.

Constrained Corridors/ Barrier Islands

Geographic constraints, such as water or railroad lines, may naturally limit a roadway's ability to meet the roadway connectivity measures characteristic of more urban context classifications. However, some of these constrained roadway networks still experience development density and intensity and user types commonly found in urban context classifications. These conditions often occur on barrier islands where beach access and amenities on the inland side of the roadway create high pedestrian and bicycle demand, like that found in the urban contexts. In these conditions, the mix of land uses, built form, and population and job density thresholds should be the key measures used to identify the context classification. Even if the roadway connectivity measures are not met, it may be appropriate to classify roadways on barrier islands and similarly constrained corridors as a C2T, C4, C5, or C6 context classification based on the mix of land uses, built form, and population or employment density.

Trails

According to the ***FDM***, shared use paths, or trails, are appropriate in C1 and C2 context classifications as it is anticipated there will be a lower volume of non-motorists than there are in other contexts, and in C3 where higher vehicle speeds are anticipated. A simplified context classification evaluation may be determined for trails and shared use paths moving into the design phase to determine their level of appropriateness. In cases where the shared use path or trail is not running along a roadway, assume that the trail or shared use path segment being evaluated is the corridor. Engineers and planners can follow **Figure 9** to identify the context classification grouping. In most cases, knowing the grouping provides enough information to inform trail design and an official context classification determination may not be needed.

Special Districts

Special Districts (SD) are areas that, due to their unique characteristics and function, do not adhere to standard measures identified in the Context Classification Matrix. Examples of SDs include military bases, university campuses, airports, seaports, rail yards, theme parks and tourist districts, sports complexes, hospitals, and freight distribution centers. Due to their size, function, or configuration, SDs will attract a unique mix of users and create unique travel patterns. Planning and engineering judgment must be used to understand users and travel patterns, and to determine the appropriate design controls and criteria for streets serving an SD on a case-by-case basis. If an FDOT district believes that an area does not fit within a context classification and an SD designation is required, the district should coordinate that with the State Complete Streets Program Manager. The most appropriate context classification will be determined and applied to the segment and indicated as "SD" with the appropriate context classification in RCI (e.g., SD-C4). The district will internally record both the original classification and the Special District Classification, in the event there are questions about the designation at a later time.

Local Roadways

The ***FDOT Context Classification Guide*** was developed for state roadways. Local governments may wish to adapt the FDOT context classifications for use on their streets. However, local communities should consider that the FDOT Context Classification Matrix reflects state roadways, which are primarily arterial roads. As such, if these are applied to local roadways, the measures and thresholds may need to be recalibrated to reflect the wider range of functional classes including collector and local streets. These roadways can be designed for lower traffic volumes, much lower speeds, and smaller design vehicles compared to State roadways in many cases.

Local governments seeking to apply context classification to their roadways should also refer to the 2018 ***Florida Greenbook*** for design criteria and further information on how to use these or other locally developed context classifications to implement context-based design.

Proposed New Roadways

Proposed new roadways are qualifying projects for which future context classification is determined, as seen in the flowchart of **Figure 9**. During planning phases and ETDM screening for new roadway alignments, a broad understanding of the context classification will be used to inform the planning process. For new roadways in planning and ETDM screening that include multiple alternative alignments, future land use conditions should be used to determine the context classification. The steps for determining the context classification for new roadways in planning or ETDM screening include:

1 Identify Major Changes in Context

Utilize the distinguishing characteristics to determine if multiple context classifications exist due to significant changes in the type or intensity of future land uses located along the roadway. The segment lengths should be based on the change in land use, change in density of the roadway network, or other distinguishing features. Segment lengths can vary and may be as short as two blocks or, where there is no defined block structure, longer than a mile.

2 Evaluate the Future Land Use

Evaluate the land use along the roadway based on a clearly documented, well-defined, community-supported, and implementation-focused plan such as zoning overlays, form-based codes, community redevelopment plans, or permitted development plans. These plans detail short- and mid-term changes to the roadway and built form using established mechanisms for implementation. For example, minimum block sizes indicated in a form-based code will determine the level of network connectivity in new development, which in turn will help bracket, if not determine outright, the future context classification of the area at build-out. Requirements for building orientation and setbacks in a form-based code also provide important information about the future context classification. Where well-defined, implementation-focused plans are not available, review the future land use element of the adopted local comprehensive plan using the land use description provided in **Table 2**.

3 Evaluate the Secondary Measures

Table 4 describes the secondary measures and the methodology and data sources associated with each measure. Future population and employment densities can be quantified based on the data in the regional travel demand model. If no regional model is available, utilize Bureau of Economic and Business Research (BEBR) estimates for future population and employment projections. A segment only needs to meet one of the two criteria, either population density or employment density, to be classified within a context classification. For the C3C-Suburban Commercial and C3R-Suburban Residential Context Classifications, population and employment densities vary widely from one community to another. Use the allowed residential and office/retail densities, the distinguishing characteristics, and the future land uses listed in the Context Classification Matrix to determine if a roadway is within the C3C-Suburban Commercial or C3R- Suburban Residential Context Classification.

RELATIONSHIP BETWEEN CONTEXT CLASSIFICATIONS AND CNU/ SMARTCODE™ TRANSECT SYSTEM

The SmartCode™ is a form-based land development code that incorporates Smart Growth and New Urbanist principles formed by the Congress for the New Urbanism (CNU). It is a unified development ordinance, addressing development at all scales of design, from regional planning to building signage. It is based on rural-to-urban transects, rather than separated-use zoning.

FDOT's context classifications generally align with the SmartCode™, with some critical distinctions. The SmartCode™ was developed to describe and codify desired future visions of development form by local jurisdictions. The key implementation tool for form-based codes is a regulating plan that clearly identifies different transect zones that would guide how future land use development should occur. In contrast, FDOT's context classifications are descriptive, rather than visionary or regulatory, and therefore include all land areas and types found within the State of Florida, with less local specificity. In addition, FDOT's context classifications are specific features associated with the roadway, analogous to functional classification or access management classification, and are not intended to describe overall land use patterns, provide land use controls, or serve as a regulating plan.

The general relationship between the zones used by the transect system and FDOT's context classification is outlined in **Table 5**.

TABLE 5 RELATIONSHIP BETWEEN FDOT CONTEXT CLASSIFICATIONS AND THE SMARTCODE™ TRANSECT SYSTEM

FDOT Context Classification	SmartCode™ Transect Zone	Description of SmartCode™ Transect Zone
C1 – Natural	T1 - Natural Zone	Lands approximating wilderness conditions
C2 – Rural	T2 - Rural Zone	Sparsely settled lands in open or cultivated states
C2T – Rural Town		No corresponding transect zone; may sometimes be coded as a small T5 or T4 hamlet or village
C3R – Suburban Residential **C3C – Suburban Commercial**	Coded as Conventional Suburban Development (CSD)	The SmartCode™ does not provide for this type of development pattern
FDOT context classification does not address this SmartCode™ Transect Zone	T3 - Sub-urban Zone	Lower density, primarily single-family residential with very limited non-residential uses, in a limited dispersion and directly within walking distance of a higher transect. Transect Zone T3 will be considered C4-Urban General
C4 – Urban General	T4 - General Urban Zone	Mixed use but primarily residential urban fabric in a variety of housing types and densities
C5 – Urban Center	T5 - Urban Center Zone	Higher density mixed use buildings that accommodate retail, offices, row houses, and apartments
C6 – Urban Core	T6 - Urban Core Zone	Highest density and height, with the greatest variety of uses, and civic buildings of regional importance; some T6 areas may belong to FDOT C5 because of FDOT population requirement
SD – Special District	Special Districts	Areas that, by their intrinsic size, function, or configuration, cannot conform to the requirements of any transect zone or combination of zones

TRANSPORTATION CHARACTERISTICS

The transportation characteristics define the role of a particular non-limited access roadway in the transportation system, including the type of access the roadway provides, the types of trips served, and the users served. The transportation characteristics consider regional travel patterns, freight movement, transit operations, and SIS designation. Together with context classification, transportation characteristics can provide information about who the users are along the roadway, the regional and local travel demand of the roadway, and the challenges and opportunities of each roadway user.

The context classification designations affect more than the appropriate design criteria for roadways. Roadways with the same context classification may have very different transportation characteristics. For example, a C3C with frequent transit service will have more multimodal activity than a similar corridor without transit. Corridors with frequent transit service should be planned, designed, and operated for pedestrians and bicyclists, in addition to transit vehicles. Both the context classification and transportation characteristics must be considered to understand users' needs.

FUNCTIONAL CLASSIFICATION

Functional classification defines the role that a particular roadway plays in serving the flow of vehicular traffic through the network. Roadways are assigned to one of several possible functional classifications within a hierarchy according to the character of travel service each roadway provides (see **Table 6**).[1]

The AASHTO ***A Policy on Geometric Design of Highways and Streets, 7th Edition (2018)*** presents a discussion of highway functional classifications. ***Florida Statutes, Title XXVI, Chapters 334, 335***, and ***336*** give similar definitions and establish classifications for roadway design in Florida.

Functional classification and context classification should be considered together when determining the role and function of a roadway. For example, the relationship between functional classification and access needs may be less consistent in more urban context classifications where roadways serve a wider variety of purposes beyond moving motor vehicle traffic. In evolving suburban areas, retail and commercial businesses tend to be located along arterial roadways, thereby requiring access and creating demands for short-distance and local trips that include vehicular trips as well as walking and bicycling trips. Transit service is also often located along arterial roadways due to retail and commercial uses generating high demand for transit trips. At the same time, many state roadways travel through large and small (and often historic) town centers that require multimodal mobility and access in order to thrive. Therefore, the context classification provides an important layer of information that complements functional classification when determining the transportation demand characteristics along a roadway, including typical users, trip length, access needs, and appropriate vehicular travel speeds.

[1] Federal Highway Administration, "Highway Functional Classification Concepts, Criteria and Procedures.

TABLE 6 ROADWAY FUNCTIONAL CLASSIFICATION AND ROLE IN THE TRANSPORTATION SYSTEM

Roadway Classification	Role in the Transportation System
Principal Arterial	Serves a large percentage of travel between cities and other activity centers, especially when minimizing travel time and distance is important
Minor Arterial	Provides service for trips of moderate length, serves geographic areas that are smaller than their higher arterial counterparts, and offers connectivity to the higher arterial system
Collector	Collects traffic from local streets and connects them with arterials; more access to adjacent properties compared to arterials
Local	Any road not defined as an arterial or a collector; primarily provides access to land with little or no through movement

** Federal Highway Administration, "Highway Functional Classification Concepts, Criteria and Procedures." Context classification is not applied to limited access facilities. For non-limited access roadways, the FDM provides design criteria and standards based on both context classification and functional classification.*

HOW TO IDENTIFY PROJECT-SPECIFIC TRANSPORTATION DEMANDS

While context classification and functional classification can provide a general understanding of the type and activity level of different users, additional data related to travel patterns and user demographics can help identify user needs and inform solutions to meet those needs. The anticipated users of a roadway and their travel patterns should be determined well before the design phase of a project and are best explored during the planning phase and prior to the design scoping phase. In addition, context classification often has implications for transportation and land use planning decisions, and not just roadway design decisions. For instance, C3C and C3R have the same design speed ranges and minimum lane-width requirements; however, corridors with either designation will differ in terms of land development, site design, access management, or transit considerations, among other features.

The anticipated users of a roadway and the travel patterns of those users should inform the needs and the alternatives developed for a project. Location: Fletcher Avenue, Tampa, FL
Source: FDOT

The ***Traffic Forecasting Handbook*** outlines data-collection efforts that can help planners and designers understand vehicular travel patterns. **Table 7** provides a menu of useful data sources for identifying different needs for different users. Not all the data presented in **Table 7** will be required for all projects. The data collected for a project should be tailored to the scale of the project and the users the project needs to serve.

TABLE 7 EXAMPLES OF POTENTIAL DATA TO DETERMINE USER NEEDS BY MODE

Mode	Data	
Pedestrian	• Location of signalized pedestrian crossings • Location of marked or signed pedestrian crossings • Posted, design, and operating speeds • Vehicular traffic volumes • Existing sidewalk characteristics (location, width, condition, obstacles or pinch points, gaps, separation from vehicles) • Intersection ramps and alignment/Americans with Disabilities Act (ADA) compliance • Utilities location	• Existing landscape buffer and shade trees • Pedestrian counts • Crash data • Lighting levels • Existing and future land use, building form and site layout, development scale and pattern • Existing and future pedestrian generators (e.g. schools, parks, transit stops) • Problems/needs identified on the Safety Needs List Dashboard • Activity levels (StreetLight, Strava, etc) • Transit ridership (stop level)
Bicyclist	• Local and regional bicycle network • Posted, design, and operating speeds • Vehicular traffic volumes • Number of vehicular travel lanes • Location and availability of bicycle parking • Bicycle user type • Existing bicycle facility characteristics (location, width, obstacles or pinch points, separation from vehicles) • Bicyclist counts	• Crash data • Location of destinations • Lighting levels • Pavement condition • Existing and future land use, building form and site layout, development scale and pattern • Problems/needs identified on the Safety Needs List Dashboard • Activity levels (StreetLight, Strava, etc)" • Transit ridership (stop level)
Automobile	• Design Traffic [existing and projected Average Annual Daily Traffic (AADT), K-factor (K), directional distribution (D), and traffic growth projections] • Trip lengths and origin/destination patterns • Turning movement counts • Posted, design, and operating speeds • Signal timing	• Location and availability of parking • Crash data • Lighting levels • Pavement condition • Existing and future land use, building form and site layout, development scale and pattern • Problems/needs identified on the Safety Needs List Dashboard
Transit	• Existing and future transit routes and stops • Transit service headways • Location and infrastructure at transit stops • Sidewalk and bicycle facility connection to transit stops • ADA compliant transit stops • Existing and projected ridership (route or stop level)	• Existing and future transit generators and attractors • Type of transit technology • Trip lengths, origin/destination patterns
Freight	• Designated truck routes • Truck volumes • Vehicle classification counts	• Existing and future location of industrial land uses or other generators of freight trips • Freight loading areas/truck parking

Depending on the scale, purpose, and needs of the project, the following are some examples of questions that could augment the analysis to better understand transportation travel demand and needs for all users:

- **Land uses:** What pedestrian, bicycle, or transit generators are located along the roadway? Are there large shopping destinations? Large employers? Public facilities? Are there visitor destinations? How might existing land use patterns change based on approved or planned development? Is there a redevelopment plan for the area? What land use changes are planned or anticipated to occur?
- **Demographics**: Based on census data, are there indicators that people living near the corridor will want or need to travel by walking, biking and/or transit? These include areas overrepresented—when compared to the general population—by elderly or low-income residents or households without access to automobiles.
- **Vehicular trip characteristics:** What percentage of the vehicular trips are local? What is the average trip length? Is the roadway part of the SIS?
- **Travel patterns:** Are there unique travel patterns or modes served by the corridor? Will new or emerging transportation services or technologies influence trip-making characteristics (e.g., rideshares, scooters, interregional bus service, bikeshare)?
- **Safety data:** How many and what types of crashes are occurring along the roadway? Does crash data identify bicycle or pedestrian crashes? What is the severity of crashes?
- **Types of pedestrians:** Are there generators or attractors that would suggest that younger or older pedestrians, or other special user groups, will be using the roadway (e.g., schools, parks, elderly care facilities, assisted living centers)?
- **Types of bicyclists:** Is the roadway a critical link for the local or regional bicycle network? Does the roadway connect to or cross trails or bicycle facilities? Are bicyclists using the roadway to access shopping, employment, or recreational destinations?
- **Transit:** What type of transit service exists or is planned for the area? Where are transit stops located? Can pedestrians reach these stops from either side of the street without out-of-direction travel and delays? What amount of out-of-direction travel is required? Are transit stops accessible using the network of existing bicycle and pedestrian facilities?
- **Freight:** What is the percentage and volume of heavy trucks using the roadway? Are there destinations that require regular access by heavy trucks or vehicles with wide wheelbases? Is the roadway part of a designated freight corridor? Where does loading and unloading occur along the roadway?

The two photos above are from the same roadway and illustrate an example of a high-volume roadway that balances the needs of freight traffic, transit, and pedestrians and bicyclists of varying abilities. The corridor includes a shared use path, bicycle lanes, bus pull-outs, bus shelters with benches, and other amenities. Location: US 98, Polk County, FL Source: KAI

ENVIRONMENTAL CHARACTERISTICS

Environmental characteristics, including the social, cultural, natural, and physical aspects of an area, play a role in the planning, design, and maintenance of transportation projects. FDOT is focused on responsible stewardship of Florida's environmental resources. The FDOT Mission states that FDOT will provide a safe transportation system that "enhances economic prosperity and preserves the quality of our environment and communities." Aligning with this mission, FDOT considers the social, cultural, natural, and physical impacts of its investments throughout the planning and design process.

Transportation projects that utilize federal transportation dollars (or that require a federal environmental permit such as wetlands or water quality) are subject to review under the ***National Environmental Policy Act of 1969*** (***NEPA***). FDOT developed the PD&E process to address NEPA for federally-funded transportation projects in Florida, including the identification and assessment of environmental characteristics for all projects.

Public involvement and agency coordination are required by NEPA and are part of the PD&E process. Detailed information on FDOT procedures for environmental review can be found in the following documents:

- ***PD&E Manual***
- ***ETDM Manual***
- ***Public Involvement Handbook***
- ***Sociocultural Effects Evaluation Process***
- ***Cultural Resource Management Handbook***

STRATEGIC INTERMODAL SYSTEM AND CONTEXT CLASSIFICATION

The SIS was established in 2003 to enhance Florida's economic competitiveness by focusing State resources on the transportation facilities most critical for statewide and interregional travel. The three SIS objectives identified in the ***SIS Policy Plan*** are:

- **Interregional connectivity**
  Ensure the efficiency and reliability of multimodal transportation connectivity between Florida's economic regions and between Florida and other states and nations.

- **Intermodal connectivity**
  Expand transportation choices and integrate modes for interregional trips.

- **Economic development**
  Provide transportation systems to support Florida as a global hub for trade, tourism, talent, innovation, business, and investment.

The SIS includes Florida's largest and most significant commercial service and general aviation airports, spaceports, public seaports, intermodal freight terminals including intermodal logistics centers, interregional passenger terminals, urban fixed guideway transit corridors, rail corridors, waterways, military access facilities, and highways. The SIS includes three types of facilities: hubs, corridors, and connectors.

Accommodation of freight vehicles is an important part of context-based design. Location: Estero Boulevard, Fort Myers Beach, FL Source: Rick Hall

SIS Highway corridors and connectors traverse varying context classifications. Given the purpose and intent of the SIS, the requirements of a particular context classification may not always align with the function of the SIS highway. In the case of interstates and limited access facilities, the function of the roadway is considered complete. For all others, there is a need to balance the safety and comfort of users who live and work along the SIS facility with interregional and interstate freight and people trips through the area. This is consistent with the intent of the ***SIS Policy Plan***, which specifically calls for the need to improve coordination with regional and local transportation and land use decisions by:

- Better reflecting the context of the human and natural environment.
- Balancing the need for efficient and reliable interregional travel with support for regional and community visions.
- Developing multimodal corridor plans that coordinate SIS investments with regional and local investments.
- Leveraging and strengthening funding programs for regional and local mobility needs such as the Transportation Regional Incentive Program, Small County Outreach Program, and Small County Road Assistance Program.

The ***SIS Policy Plan*** outlines that SIS improvements should consider the context, needs, and values of the communities serviced by the SIS, which may include flexibility in design and operational standards. Most importantly, communication with all parties involved is key to determining the best solution to realize the intent of both the SIS and a context-based approach within a community.

The ***FDM*** provides design standards for facilities on the SIS. Roadways located on the SIS require coordination with the District SIS Coordinator during the determination, update, or confirmation of the facility's context classification.

Chapter 3 Context Based Speeds

Vehicle speed concepts can be classified into four types:

Design speed—the selected speed used to determine various geometric elements of the roadway.[1]

Operating speed—the speed at which drivers are observed traveling during free flow conditions.[2]

Posted speed limit—established by methods described in the Speed Zoning for Highways, Roads, and Streets in Florida Manual. This manual is adopted by Rule 14-15.012, F.A.C.

Target speed—the highest speed at which vehicles should operate in a specific context, consistent with the level of multimodal activity generated by adjacent land uses, to provide both mobility for motor vehicles and a supportive environment for pedestrians, bicyclists, and public transit users.[3]

Target speeds should be within the design speed range provided in the ***FDM*** for each context classification, as shown in **Table 8**. Ideally, the target speed, design speed, and posted speed are all the same where speeds are 45 mph or less. When these speeds are different, it can result in inconsistent driver expectation about the intended operating speed. The concept of target speed is to identify a desired operating speed and develop design strategies and elements that reinforce operating speed. Design speed and posted speed may take time to change and may need to be changed over the course of several projects.

The target speed is influenced by context classification and should be selected to provide for both the safety and mobility needs of all anticipated users.

TABLE 8 FDOT CONTEXT-BASED DESIGN SPEEDS FOR ARTERIALS AND COLLECTORS

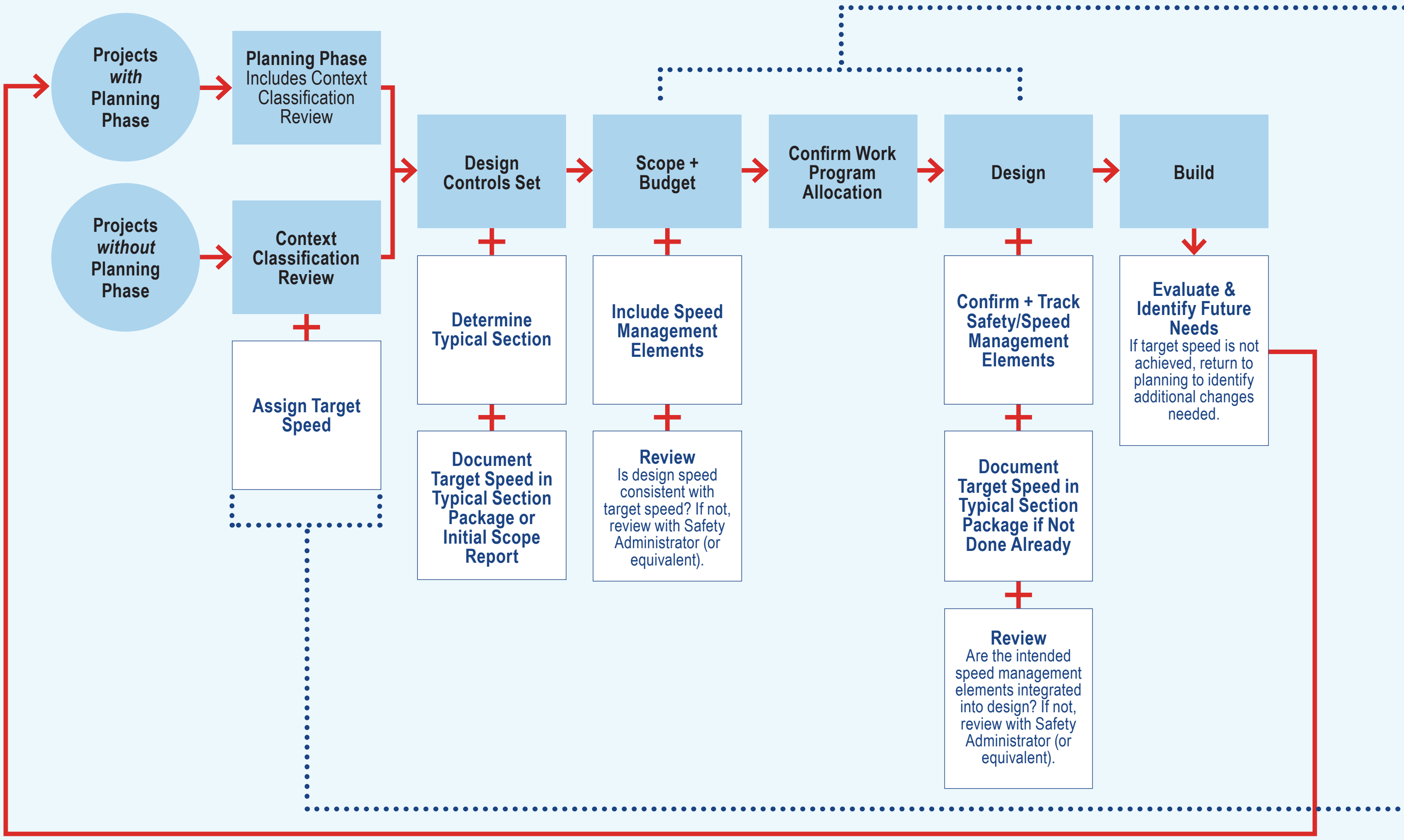
CONTEXT CLASSIFICATION	ALLOWABLE DESIGN SPEED RANGE (MPH)	SIS MINIMUM (MPH)
C1 Natural	**55-70**	**65**
C2 Rural	**55-70**	**65**
C2T Rural Town	**25-45**	**40**
C3 Suburban	**35-55**	**50**
C4 Urban General	**25-45**	**45**
C5 Urban Center	**25-35**	**35**
C6 Urban Core	**25-30**	**30**

1 American Association of State Highway and Transportation Officials, A Policy on Geometric Design of Highways and Streets, 6th Edition, 2011
2 American Association of State Highway and Transportation Officials, A Policy on Geometric Design of Highways and Streets, 6th Edition, 2011
3 FDOT Design Manual, 2021.

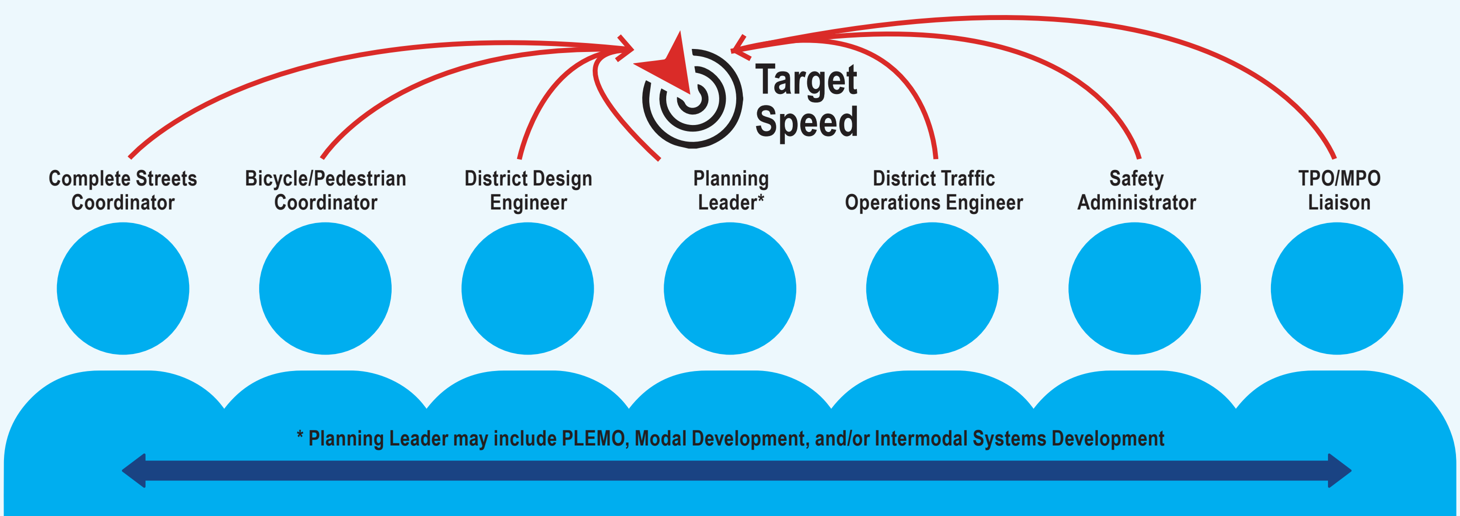
DETERMINING THE TARGET SPEED

The target speed must be identified early in the development process to inform and influence the selection and establishment of the design speed. Each District should define its own process for setting target speeds, including the individuals responsible. **Figure 19** shows an example process that identifies target speeds during the planning phase of the project and at the same time that the context classification is determined. Many datapoints used to define context classification also aid in determining target speed. **Districts should develop and adjust the process as needed to meet their unique needs, maintaining the key element of identifying and documenting target speed early in the process and prior to scope development.**

FIGURE 19 EXAMPLE PROCESS TO DETERMINE TARGET SPEED



The target speed should be identified by a multidisciplinary group of engineers and planners. This group can work together to set the target speed and make sure the elements identified to achieve the target speed are carried through scoping, design, and implementation.



- Include design elements to achieve the target speed in project scopes to limit changes after scoping. During design, scoped safety and speed management elements should be tracked for inclusion in the final project design. If elements are removed, they should be discussed with the District Safety Administrator or equivalent.

Within the design speed range, use the steps below to assign a target speed. The first two steps can be used to determine an initial target speed and may serve as a reasonable stopping point. Steps 3 through 5 help refine the target speed and arrive at a target speed that is more likely to be achieved based on project constraints.

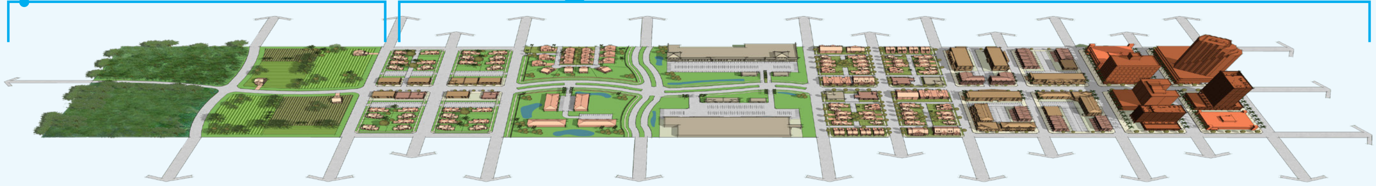
STEPS TO DETERMINING TARGET SPEED

1. **DETERMINE *FDM* CONSISTENCY:** Identify context classification, current design and posted speed, SIS designation, and ***FDM*** design speed range

2. **IDENTIFY STARTING POINT FOR TARGET SPEED:**

   In C1 and C2, start at the high end of the design speed range and **justify reduction**.

   In C2T, C3R, C3C, C4, C5, and C6 start at the low end of the design speed range and **justify increase**.



3. **IDENTIFY PROJECT NEEDS:** Refine the target speed using the following questions:

   a. Who are the intended users? Are pedestrians, bicyclists, and transit riders traveling along or across the roadway?

   b. What are potential safety challenges? Are safety needs identified on the Safety Needs List Dashboard? Does crash data identify bicycle or pedestrian crashes? What is the frequency, severity, and key crash patterns of auto crashes?

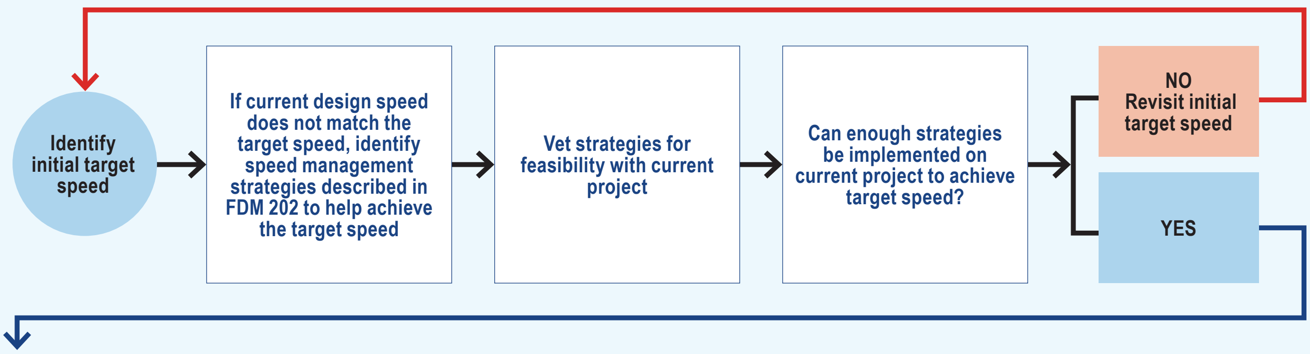
   c. Are there special population groups using the corridor (lower income, 0-car households, aging population, school age children)?

   d. What is the level of community support? Has the community requested lower speeds?

   e. What is the transportation role of the roadway in the network? Is it used to access destinations? What is the density of driveways, side streets, and signals?

> Under a safe system approach, the absence of crashes does not mean the current posted speed is appropriate. Characteristics such as conflict points and separation of users can inform potential safety challenges. The FDM allows design flexibility to support the safe system approach and proactive safety efforts.

4. **REVIEW POTENTIAL COUNTERMEASURES:**



5. **DOCUMENT TARGET SPEED:** If the initial recommended target speed value is not feasible to attain in a single project, the target speed should be as close to the initial target speed values as can be achieved within the constraints of the project.

DESIGNING TO THE TARGET SPEED

Multiple design modifications may be necessary to achieve the target speed in a single project. In some cases, it may take multiple projects. For example, on a resurfacing project, it may not be feasible to move the curb line to significantly lower the target speed, but other treatments can be added to move toward the target speed. If the roadway is reconstructed in the future, the curb line could be moved to further reduce speeds.

After a project is complete, the project team can conduct a speed study in accordance with the Speed Zoning Manual to measure the operating speed and determine if the target speed has been achieved. If the target speed has not been achieved, another project may need to be programmed with additional speed management treatments. If after all feasible roadway design and operational modifications have been tried and the target speed has not been achieved, the speed limit should be posted per the FDOT Speed Zoning Manual. The roadway should continue to be prioritized for future projects to continue to work toward the target speed.

If the target speed is not met, increased emphasis should be placed on providing facilities that can achieve safe travel at the higher operating speed. Examples include:

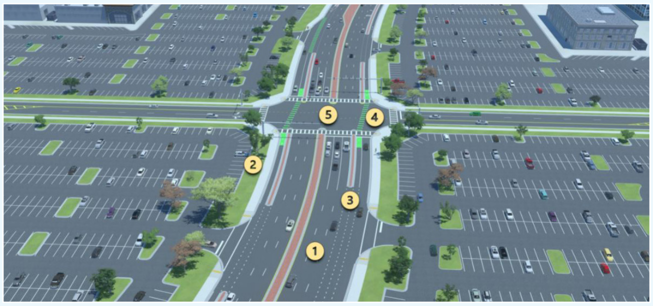
1. More frequent controlled crossings for pedestrians and bicyclists.
2. Enhanced parallel facilities for pedestrians and bicyclists
3. Greater separation between vehicle traffic and bicycle and pedestrian facilities.

The Explorer Tool on the FDOT Complete Streets Website provides examples of speed management tools for each context classification. For example, as shown in **Figure 20**, in C2T-Rural Town treatments including terminated vistas, raised crosswalks, and street trees can be used to help achieve target speeds. In C3C-Suburban Commercial treatments including raised medians, raised barriers between vehicle traffic and bicycle facilities, and median noses at intersections can be used to help achieve target speeds, as shown in **Figure 21**. Refer to ***FDM*** 202 for additional speed management tools by context classification and design speed.

FIGURE 20 C2T-RURAL TOWN SPEED MANAGEMENT

1. Terminated vista
2. Raised crosswalk
3. Shared lanes with sharrows
4. Street trees

FIGURE 21 C3C-SUBURBAN COMMERCIAL SPEED MANAGEMENT



1. Lane narrowing
2. 8’ sidewalk
3. Separated bicycle lanes
4. Green-colored pavement markings
5. Intersection refuge islands

Chapter 4 Linking Context Classification to the FDM and Other Documents

The FDOT context-based design approach is compatible with and supported by national guidance documents. The following section describes the relationship between FDOT context classification and other FDOT and national manuals and handbooks.

AASHTO'S A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS

The AASHTO ***A Policy on Geometric Design of Highways and Streets*** (***Green Book***), 7th Edition (2018) provides geometric design guidance based on established practices that are supplemented by recent research. AASHTO recognizes that different places have different characteristics regarding density and type of land use, density of street and highway networks, nature of travel patterns, and the ways in which these elements are related. AASHTO's ***Guide for the Planning, Design and Operation of Pedestrian Facilities*** (2004) and ***Guide for the Development of Bicycle Facilities*** (2012) expand significantly on the ***AASHTO Green Book***, presenting factors, criteria, and design controls for pedestrian and bicycle facilities.

Functional classification and context classification make up the framework for geometric design, presented in the ***Green Book***. In the 7th Edition, Chapter 1 was rewritten, expanding the consideration of two land use contexts (urban and rural) to five land use contexts: rural, rural town, suburban, urban, and urban core. The context classifications considered in the ***Green Book*** were initially presented in ***NCHRP Report 855***, which also influenced the FDOT context classifications. Design guidance for the context classifications presented in the ***Green Book*** is preliminary, with more comprehensive guidance planned for the 8th edition of the ***Green Book***.

The rewritten Chapter 1 encourages flexible design by asking engineers to move beyond nominal design criteria. Instead of merely meeting minimum values, engineers should consider the influence of project-specific conditions on design dimensions. Land use context (existing and future) is considered an element of the geometric design process and focuses the consideration of multimodal needs in design. In some cases, the need to serve pedestrians may conflict with the need to serve other transportation modes (*Section 1.6.1.3*). Designers should find an appropriate balance among the needs of all users, suitable for the conditions at each specific location. The ***Green Book*** identifies some general changes between context classifications that may aid in finding an appropriate balance among the needs of all users (*Section 1.5.2.1*).

Considerations as Roadways Transition between Contexts

As a roadway transitions from rural to a rural town:

- Design speed is reduced
- Pedestrian and bicyclist flows increase
- Need to blend in with the community increases
- Importance of parking increases

As a roadway transitions from suburban to more urban and eventually to urban core:

- Emphasis on high operating speed is reduced
- Pedestrian and bicyclist flows increase
- Importance of parking increases

Design speed is a key design control that impacts the geometric design features of the roadway. Speed expectations and the typical level of pedestrian, bicycle, and transit activity vary between the different context classifications. The ***Green Book*** provides general ranges for design speeds based on context classification, shown in the table below, as well as provides guidance in the selection of design speed. The selection of design speed should consider a combination of safety, mobility, environmental impacts, economics, aesthetics, and social or political impacts (*Section 2.3.6.3, p.2-23*). The selected design speed should reflect the needs of all transportation modes expected to use a particular facility (*Section 2.3.6.3, p.2-24*). Control devices and congestion regulate the traveled speed in some contexts, especially in urban areas. In these locations, arterials should be designed to permit running speeds of 20–45 mph in urban areas (*Section 2.3.6.3, p.2-26*). Streets through crowded business areas should be designed for a lower running speed, which in some cities is between 15–25 mph (*Section 2.3.6.3, p.2-27*).

TABLE 9 DESIGN SPEED RANGES BY CONTEXT FROM THE GREENBOOK

Facility Type	Rural	Rural Town	Suburban	Urban	Urban Core
Collector (Sections 6.2.1.1, 6.3.1.1)	≥50 mph	≤45 mph	35–50 mph	30–40 mph	25–35 mph
Arterial (Sections 7.2.2.1, 7.3.2.1)	≥45 mph (based on terrain)	20–45 mph	30–55 mph	25–45 mph	≤30 mph

Note: The design speed ranges from the **Greenbook are similar but not identical to the FDOT design speed ranges.*

The ***Green Book*** acknowledges that the context classification may vary along a given corridor. Each portion of a project should be designed in accordance with its corresponding context classification and with appropriate transitions between different context classifications (*Section 1.5.3*). The ***Green Book*** especially emphasizes the transition that occurs when rural highways enter a small town (*Section 1.5.1.2*). In the rural town context, it is important that a roadway meets the needs of both the community and through travelers. The ***Green Book*** provides specific guidance related to the transition of roadways from rural context to rural town context. The transition area should be designed to encourage speed reduction. Design treatments that may be implemented include: center islands, raised medians, roundabouts, roadway narrowing, lane reductions, transverse pavement markings, colored pavements, and layered landscaping (*Sections 6.2.10, 7.2.19*).

Other decisions impacted by context classification include:

- The appropriate level of service, which is also affected by functional classification, community goals, and adjacent land use types. In general, the level of service for motor vehicles in rural contexts is expected to be higher than in other contexts (*Table 2-3, p.2-37*).
- In suburban, urban, and urban core contexts, sidewalk construction should be considered as part of any street improvement (*Section 2.6.2, p.2-51*).

- High rates of superelevation are generally undesirable on high-volume roads where vehicles may need to slow substantially, such as roadways in the suburban, urban, and urban core contexts (*Section 3.3.2.1*).
- Lighting along roadways in rural contexts may be desirable, but it typically has a lower need than lighting on roadways in urban contexts. In suburban, urban, and urban core contexts where there are concentrations of pedestrians and roadside intersectional interferences, fixed-source lighting tends to reduce crashes (*Section 3.6.3, p.3-188*).

FDOT DESIGN MANUAL (FDM)

In order to design the various elements of a roadway, including its alignment and cross section, the designer must understand the basic design controls associated with the roadway to implement context-based planning and design. Context classification is used to select project standards so that facilities will function safely for all expected users (*Section 110.4, 5*). Chapter 2 of the ***FDM*** presents design criteria based on context classification, functional classification, and design speed (*Section 200.1, 1*). The selected design speed should be context-appropriate, to attain a desired degree of safety, mobility, and efficiency (*Section 201.5.1, 8*). Design speed was covered in more detail in the previous chapter. This section focuses on the design user and design vehicle.

THE DESIGN USER

Roadway users' varying skills and abilities should influence roadway design. The physical characteristics of the young, the aging, and people with different physical abilities introduce a variety of human factors that can influence driving, walking, and cycling abilities. Design users should be taken into consideration when determining design details such as sidewalk width, type of bicycle facility, design speed, signal timing and spacing, location of pedestrian crossings, number of vehicular travel lanes, intersection width, and lighting.

Driver performance informs roadway design.

FDOT has identified teen drivers (ages 15–19) and aging drivers (age 65 and up) as at-risk drivers. The 2019 American Community Survey reports that 5.7 percent of Florida's population was 15–19 years old, and 20.9 percent of Florida's population was 65 years old or older. Historically, fatalities involving teen drivers and aging drivers typically account for around one-quarter of all Florida traffic fatalities. Compared to younger drivers, older drivers tend to process information slower and have slower reaction times, deteriorated vision and hearing, and limited depth perception.[1] For additional information, refer to FHWA publications ***Highway Design Handbook for Older Drivers and Pedestrians*** and ***Guidelines and Recommendations to Accommodate Older Drivers and Pedestrians***.

Consider the pedestrian design user.

Pedestrians are among the most vulnerable roadway users. In 2019, Florida led the state rankings in annual pedestrian fatalities per 100,000 people with a recorded 5,433 pedestrian fatalities between 2008 and 2017.[2] Pedestrian characteristics that serve as design controls include walking speed, walkway capacity, and the needs of persons with disabilities. According to the U.S. Census Bureau, 27 percent of the population in the United States had a disability in 2014.[3] Age plays an important role in how pedestrians use a facility, as older adults are the most vulnerable pedestrians.[4]

1 American Association of State Highway and Transportation Officials, A Policy on Geometric Design of Highways and Streets, 6th Edition, 2011, 2–43.
2 Smart Growth America, Dangerous by Design 2019
3 United States Census Bureau, "Americans With Disabilities: 2014," November 2018 https://www.census.gov/content/dam/Census/library/publications/2018/demo/p70-152.pdf.
4 "Aging Road User," accessed September 22, 2016, http://www.safeandmobileseniors.org/AgingRoadUser.htm#Bicyclists.

Context-based design considers the pedestrian design user to represent people with a range of abilities, including the elderly, children, and persons with disabilities. This is especially true in context classifications C2T-Rural Town, C3C-Suburban Commercial, C4-Urban General, C5-Urban Center, and C6-Urban Core where a higher level of pedestrian activity is expected. People with varying abilities require a continuously paved level surface on both sides of the roadway, a network that allows multiple and direct routes to destinations, short crossing distances, and protection from the weather including shade. Several design elements have been found to assist elderly pedestrians, including accommodation for slower walking speeds and adequate median refuge islands at wide intersections. For additional information, refer to FHWA publications ***Highway Design Handbook for Older Drivers and Pedestrians*** and ***Guidelines and Recommendations to Accommodate Older Drivers and Pedestrians***.

Bicyclist characteristics vary by user skill level, which varies by age, experience, and trip purpose. Bicycling trip purposes are broadly categorized into utilitarian trips and recreational trips:

- Utilitarian trips are non-discretionary trips needed as part of a person's daily activity, such as commuting to work, school, or shopping.
- Recreational trips include trips for exercise or social interaction. Experienced riders, regular travelers, casual riders, and infrequent users all make recreational trips.

Bicyclists pose different safety and geometric considerations and must also be considered in roadway design. Bicyclist characteristics, preferences, and trip purposes may vary from rider to rider. However, in most cases the design user should reflect the casual and younger rider. Data on trip purpose and experience level provide some information on bicyclist characteristics and preferences.

Casual and younger riders tend to:

- Prefer a physical separation from vehicular traffic.
- Ride on the sidewalk.
- Achieve travel speeds of around 8–12 mph.
- Bicycle shorter distances.

Experienced adult riders tend to:

- Be more comfortable riding with vehicles on streets. Some will prefer to ride in mixed traffic on lower speed streets, while others will prefer dedicated bicycle facilities.
- Ride at speeds up to 25 mph on level ground.[5]

For bicyclists, the design user should reflect the casual and younger rider in most cases. Data that may indicate the need to accommodate casual and younger riders include:

- Origins and destinations that generate bicycle trips along or within proximity to a roadway, such as schools, parks, high-density residential housing, shopping centers, and transit stops.
- Data that indicate propensity of bicycle crashes.
- Roadways within well-connected street networks.
- Roadways that connect to local or regional dedicated bicycle facilities.
- Data that indicate bicyclists are currently riding on the sidewalk.
- Public input.

See the ***FDM*** for current FDOT criteria related to bicycle and pedestrian facilities.

[5] American Association of State Highway and Transportation Officials, Guide for the Development of Bicycle Facilities Fourth Edition, 2012, 15.

DESIGN VEHICLE

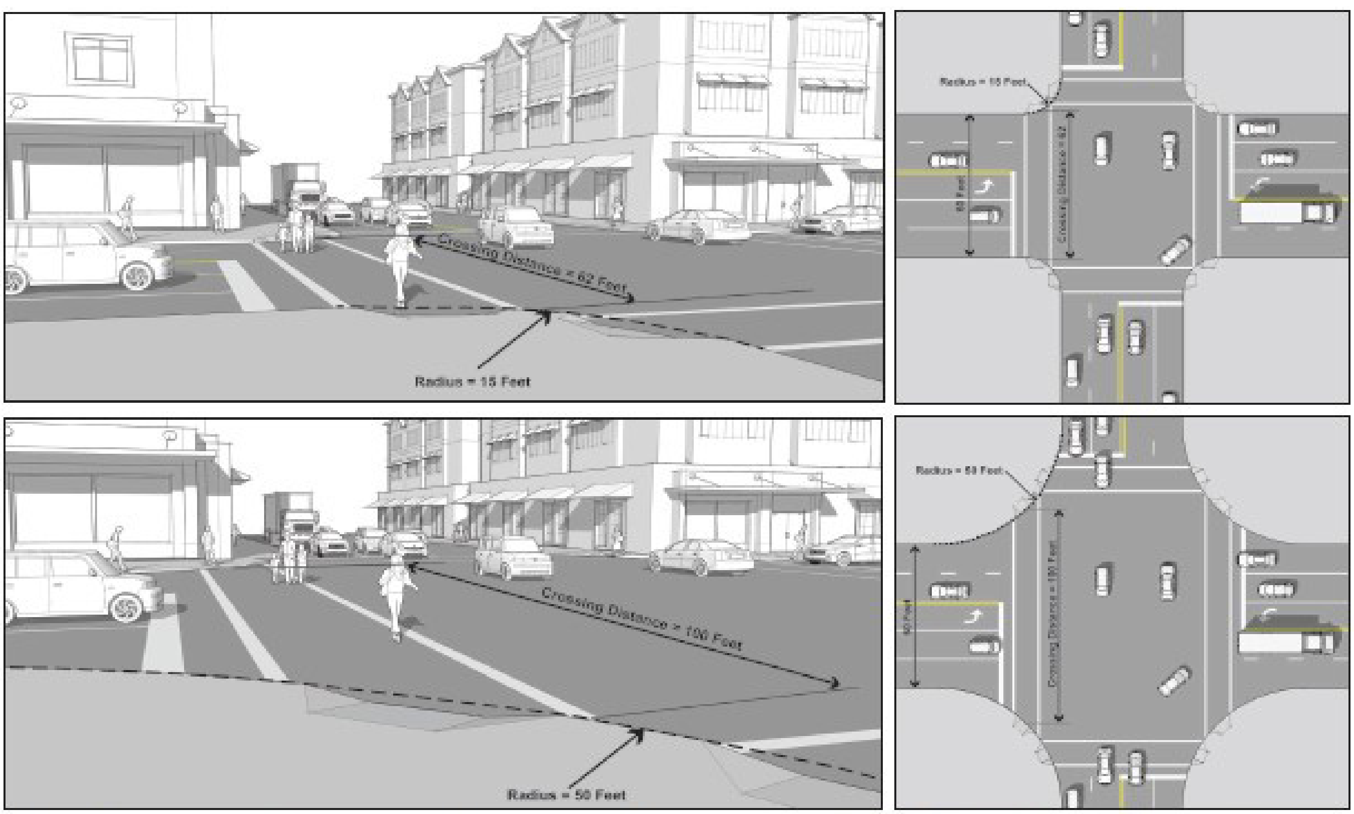
The type of design vehicle is influenced by the functional and context classification of a roadway (*Section 201.6, 13*). This guide builds on existing guidance from the ***FDM*** and the ***FDOT District 7 Draft Freight Roadway Design Considerations*** in determining the design vehicle based on context and users. The type of design vehicle is influenced by the functional and context classification of a roadway, the role of the roadway in the network, and the land uses served. The design vehicle is the largest vehicle that is accommodated without encroachment on to curbs (when present) or into adjacent travel lanes. The WB-62FL is often used as the design vehicle on state roadways. In areas where the context classification suggests a need for multimodal travel, a smaller vehicle turning template may be more appropriate for turning movements at intersections where cross streets will not be expected to have significant levels of heavy truck traffic.

All movements at all intersections may not need to be designed for WB-62FL turning movements, which are rare in urban contexts and at intersections with local or collector streets. Designs that accommodate a WB-62FL without encroachment for all turning movements may result in consequences including:

- Increased pavement resulting in higher capital and right-of-way costs, particularly in dense or constrained areas with high property values.
- Higher turning speeds for all vehicles of all sizes.
- Increased pedestrian crossing distances.
- Reduced pedestrian comfort and convenience.

The consideration of a smaller vehicle for turning movements between designated freight roadways and lower-classified urban streets can help balance goods movement with user access and comfort (see Figure 22). To address this, the ***FDM*** calls for using both a design vehicle and a control vehicle when designing roadways.

FIGURE 22 RELATIONSHIP BETWEEN CURB RADII AND PEDESTRIAN CROSSING DISTANCE



Curb radii has significant influence on the pedestrian crossing distance at intersections. Top and bottom illustrations compare the crossing distances between an intersection with 50 feet and 15 feet curb radius.

The control vehicle is the largest vehicle that can be expected to make use of the roadway. In this approach, the current FDOT design vehicle could be used as the control vehicle for curbed roadways within C4, C5, and C6 context classifications (*Section 201.6.1, 14*). For the purposes of turning movements, the control vehicle is expected to make a turn only rarely. A smaller vehicle, expected to make frequent turns to lower-class side streets, is designated the design vehicle. The intersection turning movement considers both the design vehicle and the control vehicle (see **Figure 23**):

- The **design vehicle** is the vehicle that must be accommodated without encroachment onto curbs (where present) or into opposing traffic lanes.
- The **control vehicle** is the vehicle that is infrequent and is accommodated by allowing:
  - Encroachment into opposing lanes if no raised median is present (see **Figure 24**).
  - Minor encroachment into the street side area if no critical infrastructure (traffic signal, poles, etc.) is present.

FIGURE 23 INTERSECTION DESIGN SHOULD CONSIDER BOTH DESIGN VEHICLE AND CONTROL VEHICLE

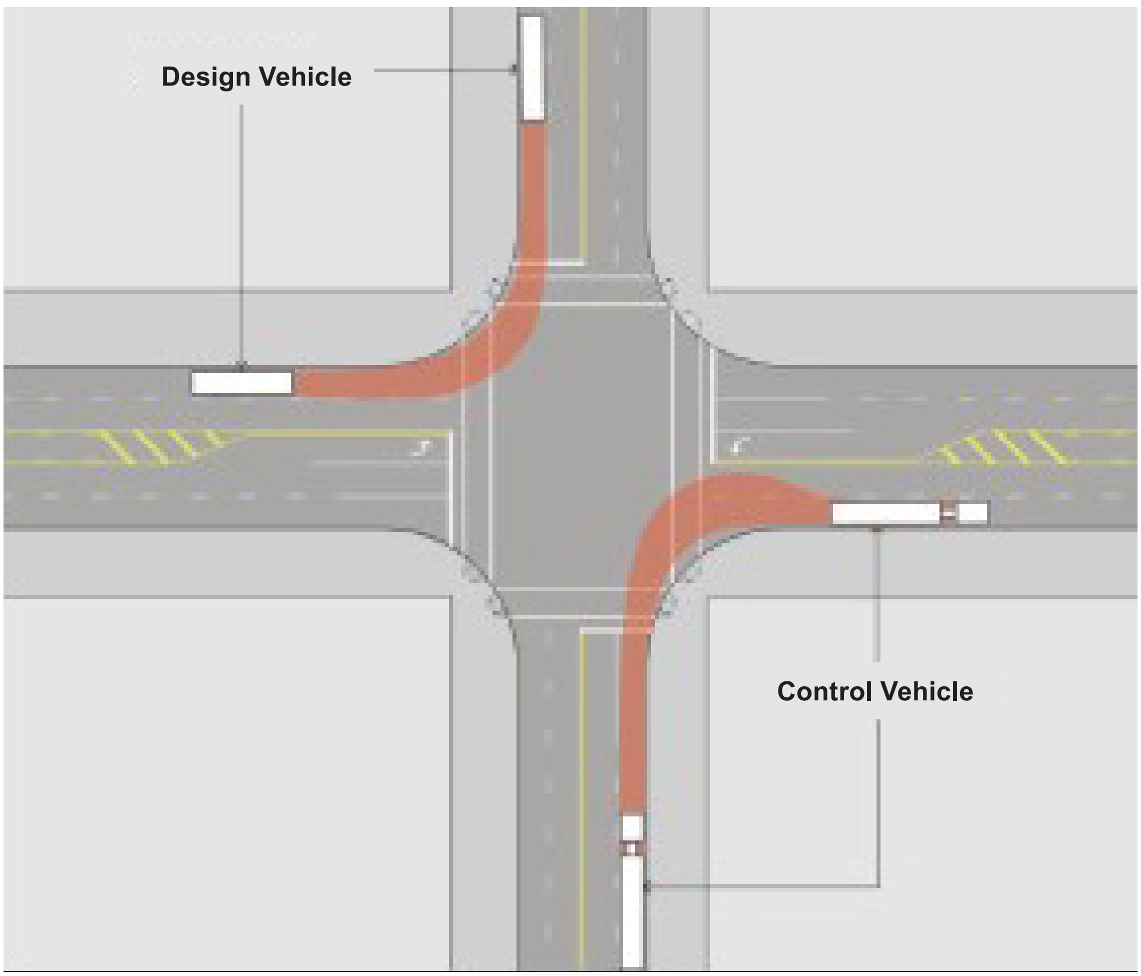
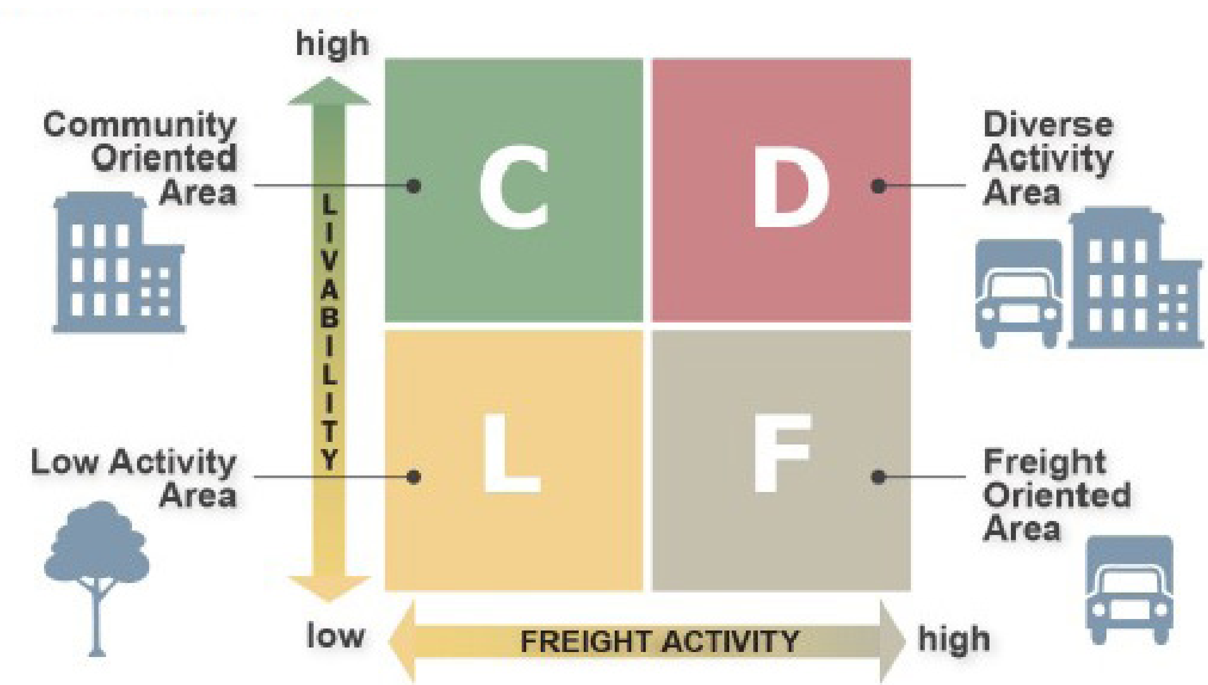


FIGURE 24 AN INFREQUENT CONTROL VEHICLE ENCROACHMENT INTO OPPOSING AND ADJACENT LANES

Source: FDOT District 7 Draft Freight Roadway Design Considerations.

FDOT District 7 Draft Freight Roadway Design Considerations outlines a context-sensitive design approach and strategies for freight accommodations. The report identifies four general area types characterized by the land uses and activities that exist or are anticipated in areas throughout the Tampa Bay region (see **Figure 25**). The report defines four freight roadway facility types and seven cross-street facility types. **Figure 26** presents the recommended design vehicle and control vehicle for the intersection of each freight roadway facility type with each cross-street facility type within four different contexts. For more information on the District 7 design vehicle and control vehicle recommendations and the type of encroachment permissible in different contexts, refer to the ***FDOT District 7 Draft Freight Roadway Design Considerations***.

FIGURE 25 FDOT DISTRICT 7 DRAFT FREIGHT ROADWAY DESIGN CONSIDERATIONS: GENERAL AREA TYPES



Source: FDOT District 7 Draft Freight Roadway Design Considerations.

FIGURE 26 DRAFT FDOT DISTRICT 7 FREIGHT DESIGN CONSIDERATIONS FOR DESIGN VEHICLE AND CONTROL VEHICLE AT INTERSECTIONS

COMMUNITY ORIENTED

What: Turning movements at intersections with lower classification cross-streets have significantly lower Control Vehicle and Design Vehicle requirements

Why: Tractor-trailer movements for lower classified cross-streets are fairly rare occurrences

DIVERSE ACTIVITY

What: Turning movements at intersections with lower classification cross-streets have significantly lower Control Vehicle and Design Vehicle requirements

Why: Tractor-trailer movements for lower classified cross-streets are fairly rare occurrences

CROSS STREET FACILITY TYPE	DESIGNATED FREIGHT ROADWAY FACILITY TYPE			
	Limited Access Facility Ramps	Freight Mobility Corridors	Other Freight Distribution Routes	FAC Streets
Limited Access Facility Ramps	DV = WB-67			
Freight Mobility Corridors	DV = WB-67	DV = WB-67		
Other Freight Distribution Routes	DV = WB-67	DV = WB-67	DV = WB-62	
FAC Streets	DV = WB-67	DV = WB-67	DV = WB-62	DV = WB-62
Other Major Arterials	DV = WB-40 CV = WB-62	DV = WB-40 CV = WB-62	DV = WB-40 CV = WB-62	DV = WB-40
Other Minor Arterials and Collectors	DV = WB-40 CV = WB-62	DV = WB-40 CV = WB-62	DV = WB-40 CV = WB-62	DV = WB-40
Local Roads and Streets	DV = SU CV = WB-40	DV = SU CV = WB-40	DV = SU CV = WB-40	DV = WB-40

LOW ACTIVITY

What: Turning movements at intersections with lower classification cross-streets have somewhat lower Control Vehicle and Design Vehicle requirements

Why: Even in low-intensity areas and freight-oriented areas, the extent of paving required for local street intersections can be reduced to minimize right-of-way and construction costs.

FREIGHT ORIENTED

What: Turning movements at intersections with lower classification cross-streets have somewhat lower Control Vehicle and Design Vehicle requirements

Why: Even in low-intensity areas and freight-oriented areas, the extent of paving required for local street intersections can be reduced to minimize right-of-way and construction costs.

CROSS STREET FACILITY TYPE	DESIGNATED FREIGHT ROADWAY FACILITY TYPE			
	Limited Access Facility Ramps	Freight Mobility Corridors	Other Freight Distribution Routes	FAC Streets
Limited Access Facility Ramps	DV = WB-67			
Freight Mobility Corridors	DV = WB-67	DV = WB-67		
Other Freight Distribution Routes	DV = WB-67	DV = WB-67	DV = WB-67	
FAC Streets	DV = WB-67	DV = WB-67	DV = WB-67	DV = WB-67
Other Major Arterials	DV = WB-67	DV = WB-67	DV = WB-67	DV = WB-67
Other Minor Arterials and Collectors	DV = WB-67	DV = WB-67	DV = WB-67	DV = WB-67
Local Roads and Streets	DV = WB-40 CV = WB-62	DV = WB-40 CV = WB-62	DV = WB-40 CV = WB-62	DV = WB-40 CV = WB-62

Source: FDOT District 7 Draft Freight Roadway Design Considerations.

OTHER DESIGN CRITERIA

Sidewalk Criteria influenced by context classification in the ***FDM*** include:

- Need to demonstrate demand for use of sidewalk in C1, C2, and C3C context classifications (*Section 222.2.1, 3*).
- Sidewalk width (*Table 222.1.1, 4*).
- Choice of the use of pedestrian fencing or railing at pedestrian drop-off hazards (*Section 222.4, 16*).
- Sidewalk width across bridge structures (*Section 260.2.2, 6*).

Bicycle Facility Criteria influenced by context classification in the ***FDM*** include:

- Marking a paved shoulder as a bicycle facility (*Section 223.2.2, 7*).
- Substitution of a shared use path for a bicycle lane in C1, C2, or C3 context classifications (*Section 223.2.3, 8*).

Other Design Criteria influenced by context classification in the ***FDM*** include:

- Speed management treatments (*Section 202 and Table 202.3.1*).
- Lane widths of travel, auxiliary, and two-way left turn lanes (*Table 210.2.1, 3*).
- Presence of on-street parking, which is a key element of urban contexts C4, C5, and C6 but also may be found in C2T. Where on-street parking is not present in C4, C5, or C6, it should be considered if in alignment with local plans, speed management needs, or parking needs (*Section 210.2.3, 4*).
- Median widths along curbed and flush shoulder roadways (*Table 210.3.1, 18*).
- Channelization island design (*Section 210.3.2.1, 20*)
- Border width along curbed and flush shoulder roadways (*Table 210.7.1, 48*).
- Maximum grade (*Table 210.10.1, 58*).
- Minimum clearance from the bottom of the roadway base course to the Base Clearance Water Elevation (*Section 210.10.3 (2), 61*).
- Intersections should be designed to accommodate the placement of trees and other vegetation in urbanized context classifications (*Section 212.11.6, 27*).
- Corner radii (Section 212.12.1, 40) and design of channelized right turn lanes (*Section 212.12.2, 42*).
- Requirements for external lighting of overhead signs (*Section 230.2.4, 3*).
- Guidelines for the installation of ITS support infrastructures and vehicle detection systems (*Section 233.4, 11; 233.9, 20*).

FDOT ACCESS MANAGEMENT GUIDEBOOK

The ***FDOT Access Management Guidebook*** provides standards for medians, median openings, and driveways along state roads. Roadways are assigned an access management classification to determine the applicable standards. Access management classifications range from 00 to 07 and 99. Class 01 reflects the highest amount of access management control (freeways), and Class 07 reflects the lowest. Class 07 is usually found on urban or suburban built-out roadways. Class 99 is assigned to roadways with a special corridor access management plan. Refer to Florida Administrative Code (FAC), Rule Chapter 14-97.003, Access Management Classification System and Standards, for more information on access management classification.

Context classification is based, in part, on the characteristics and spacing of cross-street intersections. In general, higher intensities of use, including C2T, C4, C5, and C6 may require less restrictive access management. In these context classifications, frequent intersections, smaller blocks, and a higher degree of connectivity and access support the multimodal needs of the area. More restrictive median and connection spacing is typically found in C1, C2, C3C, C3R, and in some cases, C2T. Beyond the context classification, the role of the roadway in the transportation system and safety considerations must also be considered to determine access management needs.

The guidebook identifies the context classifications that typically occur within each access management classification. The access management classification defines the allowable median type, median opening spacing, driveway spacing, and signal spacing (*Section 2.4, Table 3*). Other parameters, such as median width are set in consideration of the context classification (*Section3.4.1, Table 9*).

Additionally, the guidebook assigns modal priorities for the design of medians and driveways (*Section 3.8, Table 14 and Table 15*). In context classifications C4, C5, and C6 it is especially important to balance large vehicle needs and pedestrian needs (*Section 3.4.1, Table 9*). The modal priorities are complementary to the expected user types in different context classifications presented previously in **Figure 6**. The guidebook also identifies specific considerations regarding medians and driveways by context classification (*Section 3.8, Table 14 and Table 15*).

Other decisions that are affected by context classification include:

- The radial return or presence of turn lanes at driveways (*Section 2.2.1, 14*).
- The types of delivery areas that are available to freight traffic (*Section 7.6.1, 129*).
- Appropriateness of higher speed driveways in C1, C3, and C3C (*Section 4.2.3, 65*).
- Recommendations for offset left-turn lanes in C4, C5, and C6 (*Section 5.4.2, 91*).
- Consideration for right turn lanes at driveways (*Section 6.2.1, 98*).

FDOT TRAFFIC ENGINEERING MANUAL

The ***FDOT Traffic Engineering Manual*** (***TEM***) provides traffic engineering standards and guidelines for the State Highway System. The manual outlines the process on how traffic engineering standards and guidelines are adopted as well as provides chapters devoted to roadway signs, traffic signals, markings, and specialized operational topics.

The ***TEM*** establishes context-based criteria for the consistent installation and operation of marked pedestrian crosswalks at midblock and unsignalized intersections. The 2021 ***TEM*** requires an engineering study to install marked crosswalks at midblock or unsignalized crossing locations. Pedestrian volume data is not needed to place a marked crosswalk in context classifications C2T, C3C, C4, C5, and C6 (S*ection 5.2.5.1 (2c)*).

The ***TEM*** allows the DTOE to implement Leading Pedestrian Intervals (LPIs) at their discretion in context classifications C2T, C4, C5, and C6. In context classifications C1, C2, C3R, and C3C additional analysis is required to determine if an LPI is appropriate (*Section 3.11.4*).

The ***TEM*** aligns several additional decisions with consideration of context classification, including:

- If a site warrants a pedestrian hybrid beacon (PHB), the PHB may be substituted with a midblock traffic control signal using Warrant 8 of the MUTCD, in context classifications C4, C5, and C6 (*Section 5.2.5.2 (2e)*).
- Context classification should be considered when reviewing requests for bicycle signs (*Section 2.11.2 (4a)*).

FDOT QUALITY/LEVEL OF SERVICE HANDBOOK

The ***FDOT Quality/Level of Service Handbook*** (***Q/ LOS Handbook***) and the Generalized Service Volume Tables are intended to be used by engineers, planners, and decision makers in the development and review of street users' quality/level of service and capacity at generalized and conceptual planning levels. The ***Q/LOS Handbook*** recognizes that motorists have different thresholds for acceptable delay in rural versus urban areas.

Four broad area-type groupings are used in the ***Q/LOS Handbook*** and the Generalized Service Volume Tables:

- **Urbanized Areas**—Areas that meet FHWA's definition of Urbanized Areas, as well as the surrounding geographic area likely to become urbanized within the next 20 years, as agreed on by FDOT, FHWA, and the Metropolitan/Transportation Planning Organization (MPO/TPO). These areas consist of densely developed territory that contains 50,000 or more people. The ***Q/LOS Handbook*** further identifies areas with population over one million as Large Urbanized Areas.

- **Urban Areas**—A place with a population between 5,000 and 50,000 and not in an urbanized area. This definition helps distinguish developed areas that are not urbanized.

- **Transitioning Areas**—Areas generally considered as transitioning into urbanized/urban areas or areas with a population over 5,000 and not currently in urbanized areas. These areas can also at times be determined as areas within a Metropolitan Planning Area, but not within an urbanized area. These areas are anticipated to reach urban densities in a 20-year horizon.

- **Rural Areas**—Areas that are not urbanized, urban, or transitioning. Rural areas are further classified as rural developed areas and rural undeveloped areas. Generally, rural developed areas are populated areas with a population less than 5,000, and rural undeveloped areas are rural areas with no or minimal population or development.

For the purpose of funding considerations and other processes and procedures, FDOT will continue to define urban and rural areas following the FHWA criteria. A direct, one-to-one relationship does not exist between the classification system used in the ***Q/LOS Handbook*** and the context classifications, but generally C1-Natural, C2-Rural, and C2T-Rural Town areas will be identified as rural areas or transitioning areas, while C4-Urban General, C5-Urban Center, and C6-Urban Core will be identified as urban. C3C-Suburban Commercial and C3R-Suburban Residential can fall into any of the ***Q/LOS Handbook*** categories.

FDOT SPEED ZONING MANUAL

The FDOT Manual on Speed Zoning for Highways, Roads, and Streets in Florida (***Speed Zoning Manual***) provides guidelines and recommended procedures for establishing uniform speed zones on state, municipal, and county roadways throughout Florida. The manual encourages the consideration and implementation of facilities that are designed and operated to enable safe access for all users, including pedestrians, bicyclists, motorists and transit riders of all ages and abilities. Paramount to this effort is careful evaluation (or re-evaluation) of speed zone locations and proper selection of target speeds and appropriate posted speed limits.

This manual includes guidelines and procedures for performing traffic engineering investigations related to speed zoning. It also includes information on the philosophy of speed zoning and the identification of some of the factors to be considered in establishing realistic, safe, and effective speed zones to which meaningful enforcement can be applied.

FLORIDA GREENBOOK

The ***Draft 2018 Manual of Uniform Minimum Standards for Design, Construction, and Maintenance for Streets and Highway*** (***Florida Greenbook***) encourages context-based transportation planning and design and aligns with the FDOT context classification system. The 2018 ***Florida Greenbook's*** Context-Based Design policy captures three core concepts:

- Serve the needs of transportation system users of all ages and abilities, including pedestrians, bicyclists, transit riders, motorists, and freight handlers.
- Design streets and highways based on local and regional land development patterns and reflect existing and future context.
- Promote safety, quality of life, and economic development.

This context-based approach builds on flexibility and innovation to ensure that all streets and highways are developed based on their context classification, as determined by the local jurisdiction to the maximum extent feasible.

The ***Florida Greenbook*** identifies functional classification and context classification as playing important roles in setting expectations for and measuring outcomes for safety. Context classification may be used to evaluate relative safety and the implementation of safety improvements and programs (*Section 1C.1, p.1-9)*. The degree and type of access permitted on a facility is dependent upon its intended function and context (*Section 1C.3, p.1-9*).

The ***Florida Greenbook*** identifies several strategies to promote the creation of context-sensitive high quality interconnected streets, including (*Section 2A, p.2-2*):

- Design for target speed.
- Design geometry to achieve sufficient sight distance and appropriate cross section.
- Provide right of way for uses including pedestrian features and stormwater facilities.
- Provide reasonable control of access.

For areas that meet the description of a traditional neighborhood development, Chapter 19 of the ***Florida Greenbook*** provides design criteria appropriate to C2T, C4, C5, and C6 context classifications. See Chapter 19 and the ***FDOT Traditional Neighborhood Communities Handbook*** (https://www.fdot.gov/design/publicationslist.shtm) for more information.

FDOT LANE REPURPOSING GUIDEBOOK

The ***FDOT Lane Repurposing Guidebook*** is intended to serve as a resource for FDOT and local agency planners and engineers. The guidebook includes analysis processes, factors to consider prior to the design and implementation of a lane repurposing project, and a summary of the related documentation requirements and FDOT processes.

Context classification does not directly affect the lane repurposing process; however, it is important to understand both the current and future context classification of the roadway. This understanding aids in assessing what user needs the roadway may have. Different uses for the repurposed lane may be appropriate in different context classifications as well.

FDOT TRANSPORTATION SITE IMPACT HANDBOOK

The ***FDOT Transportation Site Impact Handbook*** was developed to assist FDOT staff in their review of developments. The review of developments is intended to be broader than traffic analysis and include the review of local government comprehensive plans, community planning responsibilities, and multimodal transportation. The handbook acknowledges that every project should consider the unique context it is in and highlights the important role intersections play in Complete Streets. The Intersection Control Evaluation (ICE) process can be used to assess intersection control alternatives considering multiple objectives, including community needs and transportation needs.

FDOT INTERSECTION CONTROL EVALUATION

The ***FDOT Intersection Control Evaluation Manual*** was developed to implement the Intersection Control Evaluation (ICE) procedure on the State Highway System. The purpose of ICE is to consistently consider multiple context-sensitive intersection control strategies when planning a new or modifying an existing intersection. The context classification is considered during Stage 1 evaluations (p. C-1). The selected intersection control type should serve all roadway users.

Chapter 5 Emerging Uses for Context Classification

In order to truly integrate Complete Streets and leverage the context classification system to its best use, FDOT must continuously evaluate its approach and evolve its established culture to respond to the changing transportation landscape. While FDOT's current focus is on addressing the shifting transportation demands and concerns over safety of all users, tomorrow will bring new challenges related to emerging technologies, the vulnerability of our infrastructure, and shifting demands once again as the nation responds to a pandemic. This chapter provides insights into some of the next challenges and what FDOT has started doing to prepare for the future.

CAV TECHNOLOGY

Connected and autonomous vehicles (CAV) technologies hold promise to provide significant benefits to safety, mobility, and economic development throughout the state. FDOT's CAV Business Plan identifies specific short-term to long-term action items needed to fulfill safety, mobility, and economic development goals in Florida. These include policies/governance, program funding, education/outreach, partnerships, standards/specifications, implementation readiness, and implementation/deployment. Each of the seven priority focus areas can be impactful on context classification.

Initial CAV deployment and integration plans address all context classifications and how technologies can be implemented in different built environments. These technologies are not only beneficial to urban context, but they can also be beneficial to rural and suburban communities. Additionally, CAV technologies can impact and change the future context classification of a facility due to possibilities such as land use changes, reduced parking needs, development densification, and potential for sprawl.

FDOT's CAV plan focuses on coordination with local, regional, and metropolitan planning agencies. This integrated approach will help create regionally-specific partnerships and allow a more nuanced approach to addressing challenges and opportunities related to emerging technologies in different contexts. FDOT's ***Considerations and Applications for Integrating CAV into Complete Streets*** is available on the Resources tab at www.FLcompletestreets.com

RESILIENCY

Resiliency includes the ability of the transportation system to adapt to changing conditions and prepare for, withstand, and recover from disruption. Disruptions are events and conditions that are often characterized as shocks and stresses. While weather and natural hazards such as hurricanes, wildfires, and sustained environmental changes such as sea level rise are often the most identified disruptions, other events such as cyberattacks and longer-term stresses such as economic downturns and pandemics also impact the transportation system.

FDOT **Policy 000-525-053, Resiliency of State Transportation Infrastructure** (https://www.fdot.gov/planning/policy/resilience/default.shtm), states:

> “It is the policy of the Florida Department of Transportation to consider resiliency of the State’s transportation system to support the safety, mobility, quality of life, and economic prosperity of Florida and preserve the quality of our environment and communities.”

A variety of factors influence the resiliency of our network:

- Since 2000, tidal flooding across Florida has increased by 352 percent.
- The amount of precipitation during heavy rainstorms has increased by 27 percent in the Southeast over the last 60 years.
- Florida is impacted by 40 percent of all U.S. hurricanes.
- Long-haul freight is expected to increase by 40 percent by 2040.
- Cyberattacks, including the 2017 attack on CSX’s Jacksonville headquarters, threaten to shut down entire transportation systems.

It is essential to plan and prepare Florida’s transportation system to adapt and recover from a wide array of disruptions and stresses. Though resiliency is important in all context classifications, we also know there are various strategies needed in each context classification. Urban contexts may focus on multimodal transportation options as a way to reduce single occupant vehicle trips and emissions. Rural and suburban transitioning contexts may have more challenges associated with conveying water with new impervious surfaces.

As we plan for the future of our transportation system, FDOT is incorporating resiliency into all areas of FDOT’s business. The **Resilience Subject Brief** provides a brief overview of planning for resiliency and how FDOT is advancing resiliency. In addition, resiliency is a cross-cutting topic shaping the overarching goals and strategies in ***The Florida Transportation Plan***, the state’s long-range plan guiding Florida’s transportation future.

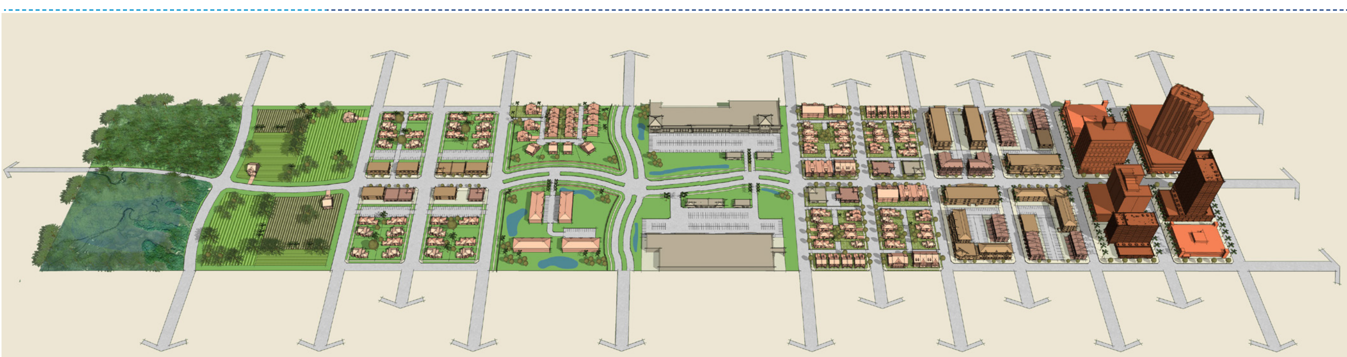
Appendix A

CONTEXT CLASSIFICATION CASE STUDIES

Context Classification System: Comprised of eight context classifications, it broadly identifies the various built environments in Florida, based on existing or future land use characteristics, development patterns, and roadway connectivity of an area. In FDOT projects, the roadway will be assigned a context classification(s). The context classification system is used to determine criteria in the ***FDM***.

The eight context classifications and their general descriptions are:

C1-Natural	Lands preserved in a natural or wilderness condition, including lands unsuitable for settlement due to natural conditions.
C2-Rural	Sparsely settled lands; may include agricultural land, grassland, woodland, and wetlands.
C2T-Rural Town	Small concentrations of developed areas immediately surrounded by rural and natural areas; includes many historic towns.
C3R-Suburban Residential	Mostly residential uses within large blocks and a disconnected/ sparse roadway network.
C3C-Suburban Commercial	Mostly non-residential uses with large building footprints and large parking lots. Buildings are within large blocks and a disconnected/ sparse roadway network.
C4-Urban General	Mix of uses set within small blocks with a well-connected roadway network. May extend long distances. The roadway network usually connects to residential neighborhoods immediately along the corridor and/or behind the uses fronting the roadway.
C5-Urban Center	Mix of uses set within small blocks with a well-connected roadway network. Typically concentrated around a few blocks and identified as part of the civic or economic center of a community, town, or city.
C6-Urban Core	Areas with the highest densities and building heights and within FDOT classified Large Urbanized Areas (population greater than one million). Many are regional centers and destinations. Buildings have mixed uses, are built up to the roadways, and are within a well-connected roadway network.



C1-NATURAL: FL 24, CEDAR KEY SCRUB STATE RESERVE, LEVY COUNTY

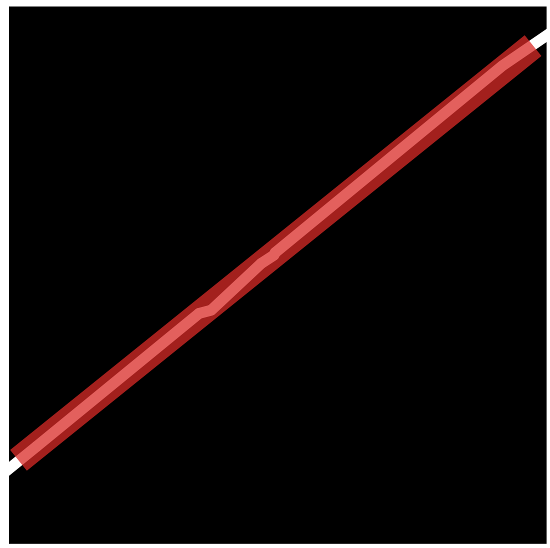
Primary Measures

Distinguishing Characteristics	Land Use	Building Height	Building Placement	Fronting Uses	Location of Off-street Parking	Roadway Connectivity		
						Intersection Density	Block Perimeter	Block Length
Description	Description	Floor Levels	Description	Yes / No	Description	Intersections/ Sq Mile	Feet	Feet
Lands unsuitable for settlement due to natural conditions	Open space				Not developed			

Aerial Satellite Image

Secondary Measures

Allowed Residential Density	Allowed Office/Retail Density	Population Density	Employment Density
DU/Acre	Floor-Area Ratio (FAR)	Persons/Acre	Jobs/Acre
Development not allowed	Development not allowed	0	0



Streets and Blocks Network

Street View

Bird's Eye View

Open Space

Existing Land Use

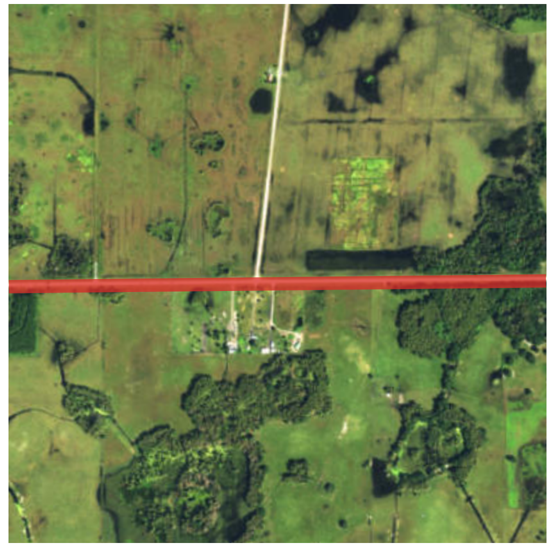
0 0.5 1 Miles

N

C2-RURAL: S.R. 52, WEST OF DADE CITY, PASCO COUNTY

Primary Measures

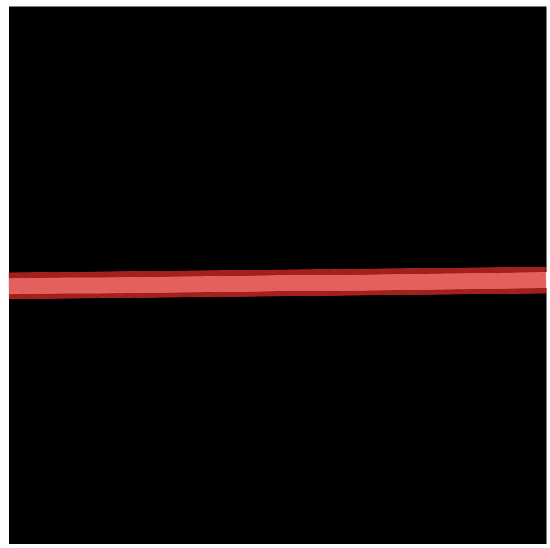
Distinguishing Characteristics	Land Use	Building Height	Building Placement	Fronting Uses	Location of Off-street Parking	Roadway Connectivity: Intersection Density	Roadway Connectivity: Block Perimeter	Roadway Connectivity: Block Length
Description	Description	Floor Levels	Description	Yes / No	Description	Intersections/ Sq Mile	Feet	Feet
Sparsely settled lands surrounded by agricultural lands	Agricultural	1	Detached buildings with no consistent pattern of setbacks	No	No consistent pattern	<1	No defined block pattern	



Aerial Satellite Image

Secondary Measures

Allowed Residential Density	Allowed Office/Retail Density	Population Density	Employment Density
DU/Acre	Floor-Area Ratio (FAR)	Persons/Acre	Jobs/Acre
0.1 (1 per 10 Acres)	Office and retail uses are not allowed	0.08	0



Streets and Blocks Network

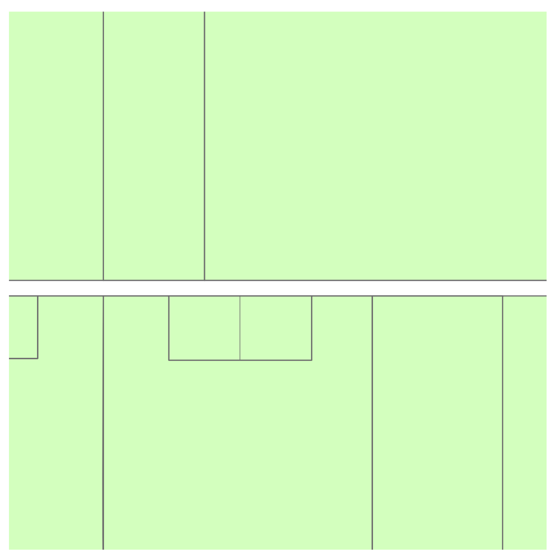
Street View

Bird's Eye View

Agriculture

0 0.5 1 Miles

N



Existing Land Use

C2T-RURAL TOWN: MAIN ST, HAVANA, GADSDEN COUNTY

Primary Measures

Distinguishing Characteristics	Land Use	Building Height	Building Placement	Fronting Uses	Location of Off-street Parking	Roadway Connectivity: Intersection Density	Roadway Connectivity: Block Perimeter	Roadway Connectivity: Block Length
Description	Description	Floor Levels	Description	Yes / No	Description	Intersections/ Sq Mile	Feet	Feet
Small concentration of developed area immediately surrounded by rural areas	Retail and commercial	1 - 2	Mostly attached buildings with no setbacks	Yes	Mostly in rear, occasionally on side	325	1,520	330


Aerial Satellite Image


Streets and Blocks Network

Secondary Measures

Allowed Residential Density	Allowed Office/Retail Density	Population Density	Employment Density
DU/Acre	Floor-Area Ratio (FAR)	Persons/Acre	Jobs/Acre
27	1.2	0.3	4

Street View


Bird's Eye View

Future Land Use

0 0.5 1 Miles

N

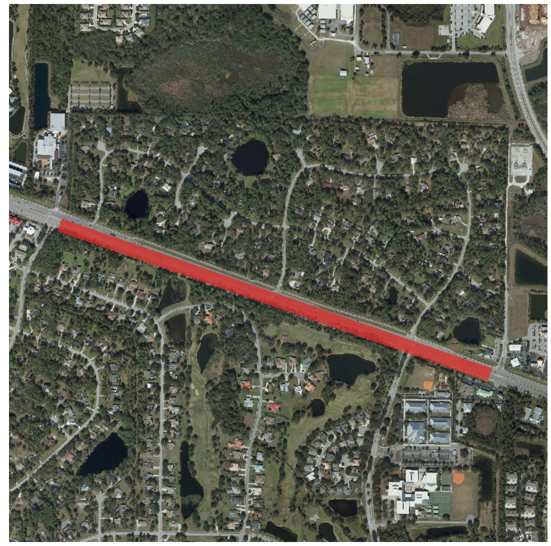
C3R-SUBURBAN RESIDENTIAL: S.R. 70, LAKEWOOD RANCH, MANATEE COUNTY

Primary Measures

Distinguishing Characteristics	Land Use	Building Height	Building Placement	Fronting Uses	Location of Off-street Parking	Roadway Connectivity		
						Intersection Density	Block Perimeter	Block Length
Description	Description	Floor Levels	Description	Yes / No	Description	Intersections/ Sq Mile	Feet	Feet
Mostly residential uses on both sides of the road with a disconnected roadway network	Single-family residential and institutional	1 - 2	Detached buildings with medium (20' to 75') setbacks on all sides	No	Front	40	6,040	1,140

Secondary Measures

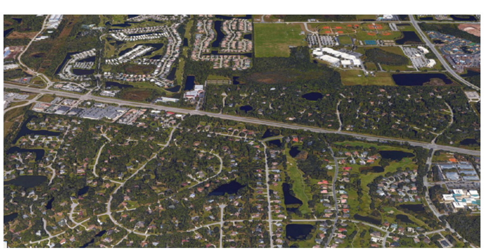
Allowed Residential Density	Allowed Office/Retail Density	Population Density	Employment Density
DU/Acre	Floor-Area Ratio (FAR)	Persons/Acre	Jobs/Acre
1	0.23	0.4	0



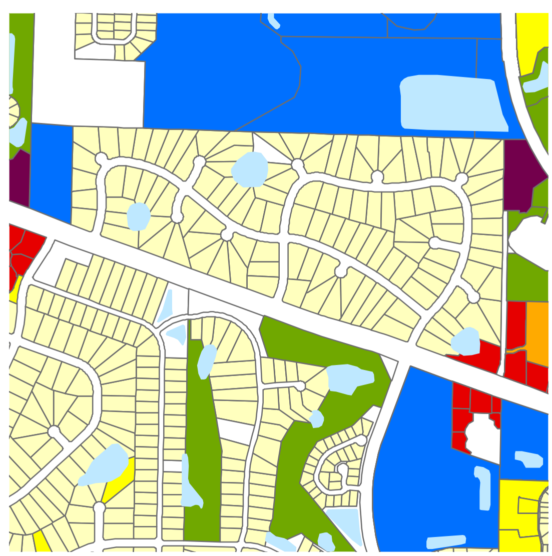
Aerial Satellite Image

Streets and Blocks Network

Street View



Bird's Eye View



Single-Family Residential
Multi-Family Residential
Commercial
Retail
Institutional/Government
Open Space
Vacant

Existing Land Use

0 0.5 1 Miles

N

C3C-SUBURBAN COMMERCIAL: ORANGE BLOSSOM TRAIL, ORLANDO, ORANGE COUNTY

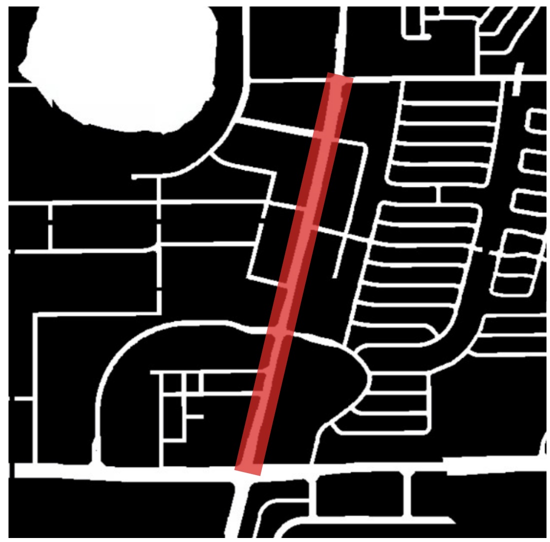
Primary Measures

Distinguishing Characteristics	Land Use	Building Height	Building Placement	Fronting Uses	Location of Off-street Parking	Roadway Connectivity		
						Intersection Density	Block Perimeter	Block Length
Description	Description	Floor Levels	Description	Yes / No	Description	Intersections/ Sq Mile	Feet	Feet
Mostly non-residential uses immediately fronting the roadway, with a disconnected roadway network	Commercial and industrial	1 - 3	Detached buildings with large (> 75') setbacks on both sides	No	Mostly in front; occasionally in the rear or side	60	5,000	800

Aerial Satellite Image

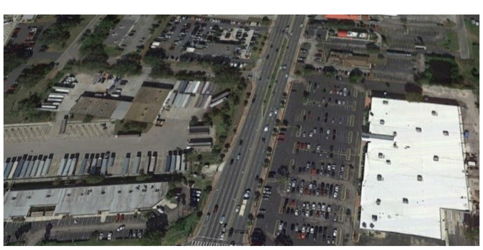
Secondary Measures

Allowed Residential Density	Allowed Office/Retail Density	Population Density	Employment Density
DU/Acre	Floor-Area Ratio (FAR)	Persons/Acre	Jobs/Acre
Not Applicable	0.75	2	28

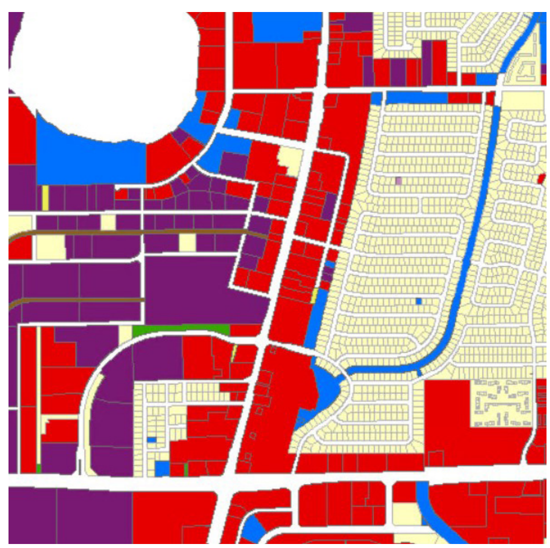


Streets and Blocks Network

Street View



Bird's Eye View



Single-Family Residential
Commercial
Institutional/Government
Industrial
Open Space
Vacant

Existing Land Use

0 0.5 1 Miles

N

C4-URBAN GENERAL: DR. MLK JR. BLVD, EAST TAMPA, TAMPA, HILLSBOROUGH COUNTY

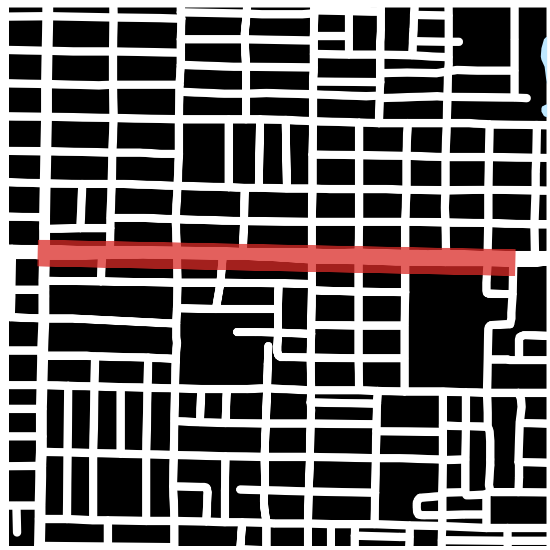
Primary Measures

Distinguishing Characteristics	Land Use	Building Height	Building Placement	Fronting Uses	Location of Off-street Parking	Roadway Connectivity: Intersection Density	Roadway Connectivity: Block Perimeter	Roadway Connectivity: Block Length
Description	Description	Floor Levels	Description	Yes / No	Description	Intersections/ Sq Mile	Feet	Feet
Mix of uses set within small blocks with a well-connected roadway network. The roadway network connects to residential neighborhoods immediately along the corridor and behind the uses fronting the roadway.	Single-family and multi-family residential, neighborhood-scale retail, and office	1 - 2	Detached buildings with minimal to shallow (10' to 20') front and side setbacks	Yes	Mostly in side, occasionally in rear or front	230	1,760	490

Secondary Measures

Allowed Residential Density	Allowed Office/Retail Density	Population Density	Employment Density
DU/Acre	Floor-Area Ratio (FAR)	Persons/Acre	Jobs/Acre
12	1.5	8.5	3

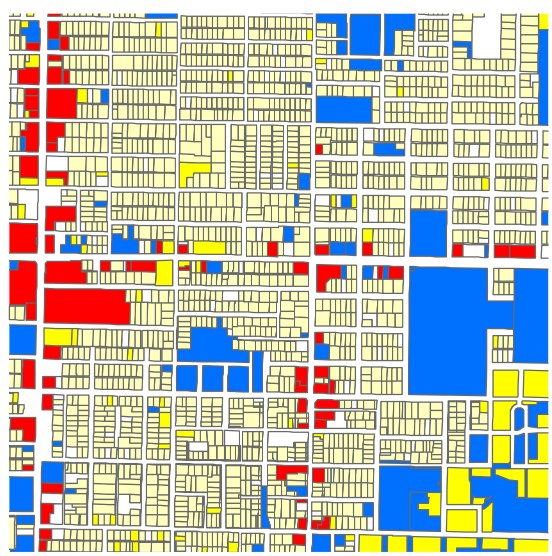
Aerial Satellite Image



Streets and Blocks Network

Street View

Bird's Eye View



Single-Family Residential
Multi-Family Residential
Commercial
Retail
Institutional/Government
Open Space
Vacant

Existing Land Use

0 | 0.5 | 1 Miles

N

C5-URBAN CENTER: MONROE ST, DOWNTOWN TALLAHASSEE, LEON COUNTY

Primary Measures

Distinguishing Characteristics	Land Use	Building Height	Building Placement	Fronting Uses	Location of Off-street Parking	Roadway Connectivity: Intersection Density	Roadway Connectivity: Block Perimeter	Roadway Connectivity: Block Length
Description	Description	Floor Levels	Description	Yes / No	Description	Intersections/ Sq Mile	Feet	Feet
Mix of uses set within small blocks with a well-connected roadway network, and part of the civic and economic center of Tallahassee	Retail, office, institutional, commercial	1 - 5 with some taller buildings	Mostly attached buildings with no setbacks and a few buildings with minimal (<10') setbacks	Yes	Rear and garage	180	1,770	380

Secondary Measures

Allowed Residential Density	Allowed Office/Retail Density	Population Density	Employment Density
DU/Acre	Floor-Area Ratio (FAR)	Persons/Acre	Jobs/Acre
150	8	2.4	90

Street View

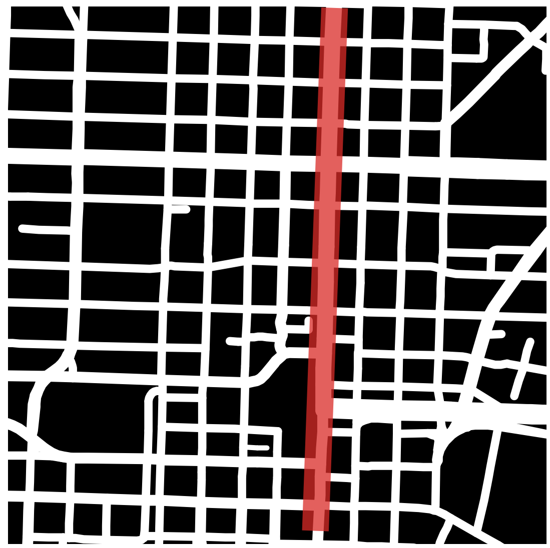
Bird's Eye View

Single-Family Residential
Multi-Family Residential
Commercial
Retail
Institutional/Government
Industrial
Open Space
Vacant

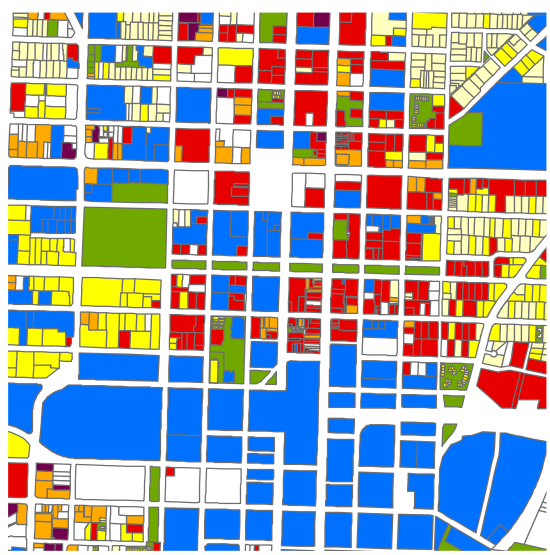
0 0.5 1 Miles

N

Aerial Satellite Image



Streets and Blocks Network



Existing Land Use

C6-URBAN CORE: ORANGE AVE, DOWNTOWN ORLANDO, ORANGE COUNTY

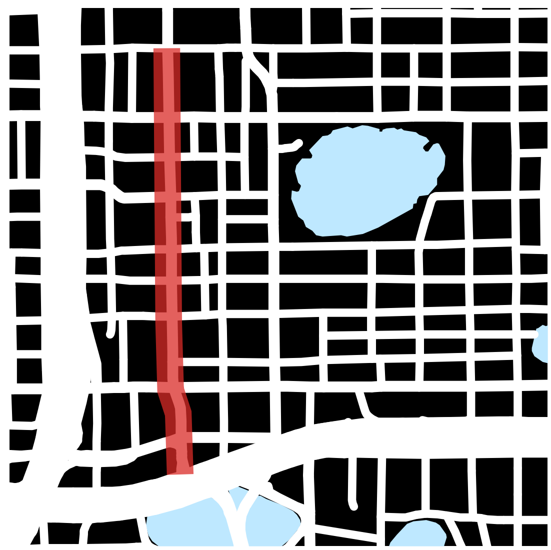
Primary Measures

Distinguishing Characteristics	Land Use	Building Height	Building Placement	Fronting Uses	Location of Off-street Parking	Roadway Connectivity		
						Intersection Density	Block Perimeter	Block Length
Description	Description	Floor Levels	Description	Yes / No	Description	Intersections/ Sq Mile	Feet	Feet
In an MPO urbanized area with population greater than 1,000,000. Multi-story buildings have mixed uses, are built up to the roadway, and are within a well-connected roadway network.	Retail, office, institutional, and multi-family residential	> 4 with some shorter buildings	Mostly attached buildings with no setbacks	Yes	Rear and garage	220	1,910	450

Secondary Measures

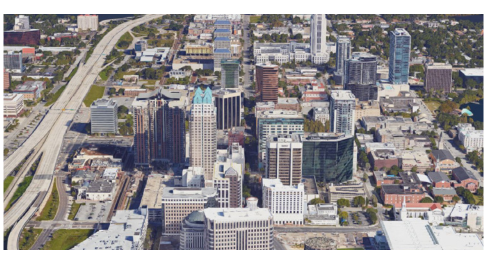
Allowed Residential Density	Allowed Office/Retail Density	Population Density	Employment Density
DU/Acre	Floor-Area Ratio (FAR)	Persons/Acre	Jobs/Acre
200	3	8.5	170

Aerial Satellite Image

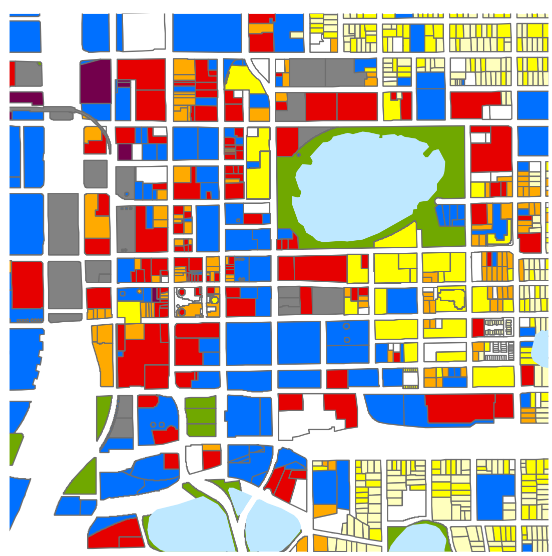


Streets and Blocks Network

Street View



Bird's Eye View



Existing Land Use

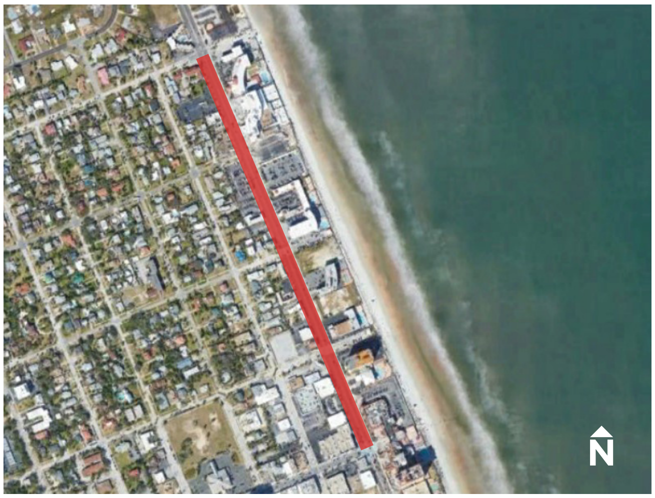
Single-Family Residential
Multi-Family Residential
Commercial
Retail
Institutional/Government
Industrial
Open Space
Vacant

0 0.5 1 Miles

N

CONSTRAINED CORRIDORS/BARRIER ISLANDS

A constrained facility has a geographic barrier that can prevent roadway connectivity measures from meeting higher context classifications. This requires special attention to the land use, employment, and population densities during context classification evaluations. This example shows S.R. A1A in Daytona Beach, Volusia County. The corridor is along a barrier island where the segment does not meet the roadway connectivity measures for a C4-Urban General context classification, but the building height, building placement, fronting uses, and location of off-street parking measures do. In this case, the C4-Urban General context classification is appropriate and acknowledges the users and user needs present.

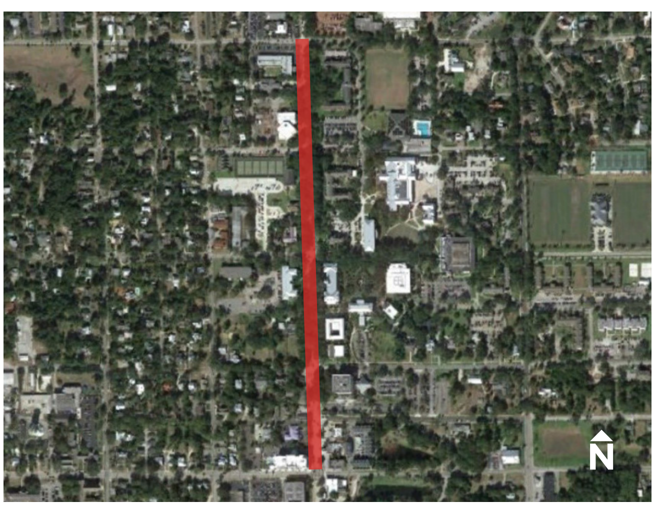


Aerial Satellite Image

Street View

SPECIAL DISTRICT

S.R. 15 through Stetson University in DeLand, Volusia County is an example of a Special District (SD). While the measures are consistent with a C4-Urban General context classification, engineering and planning judgment was used to identify this corridor as a Special District based on the university's land use, roadway users' needs, and proximity to downtown DeLand. This segment of the roadway was designated a C5-Urban Center because it is part of the civic or economic center for this community.



Aerial Satellite Image

Street View

FIGURE 27 POTENTIAL TARGET SPEEDS FOR CASE STUDIES

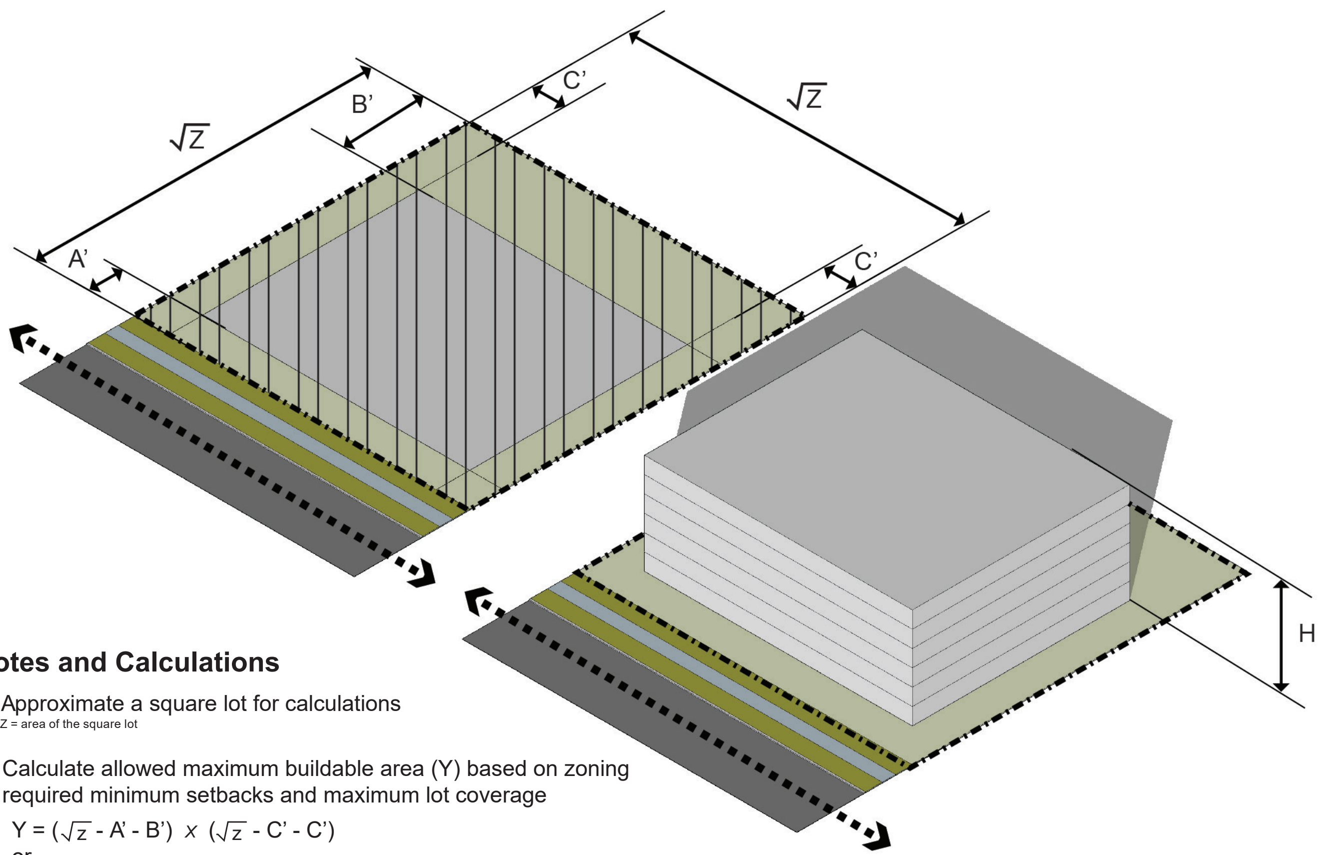
Context Classification	Location	Fronting Uses	Population Density	Vulnerable Users	Cross Section Elements	Access Classification	Transit Service	Pedestrian and Bicycle Generators	Existing Posted Speed	Target Speed
C1-NATURAL	FL 24, CEDAR KEY SCRUB STATE RESERVE, LEVY COUNTY	N/A	Low	**Low** N/A	Paved shoulder	4	None	None	60	**60**
C2-RURAL	S.R. 52, WEST OF DADE CITY, PASCO COUNTY	No	Low	**Low** N/A	Paved shoulder	3	None	None	55	**55**
C2T-RURAL TOWN	MAIN ST, HAVANA, GADSDEN COUNTY	Most parcels fronting street	Low	**Medium** Low median income	No dedicated bicycle facility (cyclists share lanes)	6	None	Downtown Havana, Havana Community Park, public library, private K-12 school	30	**30**
C3R-SUBURBAN RESIDENTIAL	S.R. 70, LAKEWOOD RANCH, MANATEE COUNTY	No	Low	**Medium** Presence of elementary and middle school students	Paved shoulder	3	None	Elementary & middle school	50	**50**
C3C-SUBURBAN COMMERCIAL	ORANGE BLOSSOM TRAIL, ORLANDO, ORANGE COUNTY	No	Low	**Medium** Presence of high school students	No dedicated bicycle facility (cyclists share lanes)	6	High frequency local service (3 routes, 4 buses per hour)	Charter high school	40	**35**
C4-URBAN GENERAL	DR. MLK JR. BLVD, EAST TAMPA, TAMPA, HILLSBOROUGH COUNTY	Most parcels fronting street	High	**High** Low median income, high poverty rate, and presence of elementary and middle school students	No dedicated bicycle facility (cyclists share lanes)	7	Lower frequency local service (One route, hourly service)	Elementary & middle school, Ragan Park, community lake, public pool, baseball fields, and tennis courts	40	**30**
C5-URBAN CENTER	MONROE ST, DOWNTOWN TALLAHASSEE, LEON COUNTY	Most parcels fronting street	Medium	**Low**	On-street parking, no dedicated bicycle facility (cyclists share lanes)	7	High frequency local service (3 local routes, 5 buses per hour)	Downtown Tallahassee, LeMoyne chain of parks, high school, Florida State Capitol, university basketball arena	25	**25**
C6-URBAN CORE	ORANGE AVE,DOWNTOWN ORLANDO, ORANGE COUNTY	Most parcels fronting street	High	**Medium** High poverty rate	No dedicated bicycle facility (cyclists share lanes)	7	High frequency local service (7 local routes, 9 buses per hour) and regional rail	Downtown Orlando, Lake Eola Park, professional basketball arena, private charter school	30	**25**

Appendix B

FREQUENTLY ASKED QUESTIONS

How is floor area ratio calculated if not defined in zoning code?

Floor area ration (FAR) can be calculated using these various site design and height standards. For example, assuming floor height of 10 feet, total number of floors can be calculated based on maximum building height measure. Based on minimum parcel size and minimum setbacks, maximum floor plate area can be calculated. Multiplying maximum floor plate area by total number of floors will give total building floor area. Finally, dividing total building floor area by minimum parcel size will provide FAR.



Notes and Calculations

1. Approximate a square lot for calculations
   Z = area of the square lot

2. Calculate allowed maximum buildable area (Y) based on zoning required minimum setbacks and maximum lot coverage
   $Y = (\sqrt{z} - A' - B') \times (\sqrt{z} - C' - C')$
   or
   Y = (Maximum lot coverage area in (%) allowed by zoning code) x (Z)
   Use the smaller of the two values as Y

3. Calculate total floor levels based on zoning allowed maximum height (J)
   $\frac{H}{\text{Height of a floor level*}}$
   * Assume 12’ for commercial land use or 10’ for residential land use

4. Calculate Floor Area Ratio (FAR)

$$\textbf{Floor Area Ratio (FAR)} = \frac{Y \times J}{Z}$$

Property Lot Line

Project Roadway

Y = Maximum allowed buildable area in square feet

A = Minimum allowed front setback in feet based on zoning code

B = Minimum allowed rear setback in feet based on zoning code

C = Minimum allowed side setback in feet based on zoning code

H = Maximum allowed height allowed by zoning code in feet

Who makes the final context classification determination?

FDM 120.2.3.2(8) indicates the FDOT District staff determine context classification, which includes concurrence from the District Intermodal Systems Development (ISD) Manager or Environmental Management Administrator. The Typical Section Package includes a checkbox and signature block for the concurrence signatures. For State projects, the project manager (or designee, such as the Complete Streets coordinator, community planning coordinator, a scoping team member, growth management liaison, or MPO/TPO liaison) is responsible for coordinating with affected local and regional governments and agencies during the determination of the context classification. Collaboration with the local and regional agencies and governments associated with a project is the key for successful projects.

Are future conditions reviewed for existing context classification evaluations?

The existing context classification looks at the measures listed in the Context Classification Matrix. Existing context classification evaluations consider permitted developments. Qualifying projects are reviewed using planned future conditions, but the Districts have the discretion to use future context classification on other appropriate projects.

How is a context classification decided on a corridor with both suburban commercial and suburban residential land uses?

In suburban environments, the land uses fronting the roadways are the distinguishing factor when designating a C3R-Suburban Residential or C3C-Suburban Commercial context classification. Typically, C3R corridors are predominantly made up of residential uses only, while C3C corridors have a greater mix of residential and commercial land uses, and residential developments are fewer or found behind the commercial land uses fronting the roadway. In C3C environments, there is expected to be a greater presence of pedestrians, bicyclists, and transit users; large building footprints with surface parking lots fronting the roadway; and a disconnected roadway network. If one side of the roadway is C3C and the other side is C3R, default to the highest context classification which is C3C.

Where are the districtwide context classification datasets stored?

The Roadway Characteristics Inventory (RCI) is a database of information related to the roadway environment maintained by FDOT. The preliminary existing context classification is stored in the RCI as Feature 126–Preliminary context classification. Each district will update this characteristic with the project-level existing context classification as project-level evaluations are completed. The future context classification characteristic is populated by the district, as applicable, when future project-level context classification evaluations are conducted. Not all roadway segments will have a future context classification assigned. Each District regularly sends updated context classification datasets to the RCI system. Preliminary context classifications for planning purposes (not to be used for design projects) can be seen using the ConnectPed GIS web application, found at http://www.flcompletestreets.com/.

Does context classification determine all the design decisions for a roadway?

Identifying context classification is the primary step in understanding the users along a roadway and will inform key design elements, such as the design speeds and lane widths. The transportation characteristics of a roadway are equally as important to understand when making design decisions such as the types of pedestrian, bicycle, transit, and freight facilities to be included in the design concept.

What should we do if the roadway network indicates a certain context classification, but land uses and development indicate another?

As shown in **Figure 9**, roadway connectivity measures should be reviewed first to understand the subset of context classifications that may be applied. Land use characteristics should then be used to identify the particular context classification within that subset.

Can we apply context classification on local roadways?

The context classification system was created to describe the state roadway network. Local governments may choose to adapt the context classification system to apply a similar evaluation to local roads, with roadway connectivity and land use measures calibrated to their roadway systems. Local governments' findings should be shared with the District to improve the context classification network. Local governments must also recognize that their local roadway networks will have a greater variety of roadway types compared to the State Highway System and be prepared to incorporate this diversity within their context classification-based criteria. For instance, yield streets, nine-foot travel lanes, and cul-de-sacs are all appropriate within a local network but would not be applied to the State Highway System. Local governments should avoid, therefore, simply replacing their local roadway standards with the ***FDOT Design Manual*** criteria. Local governments should consult the latest edition ***Florida Greenbook*** for additional guidance on the use of context classification.

Why do some measures have undefined thresholds in the Context Classification matrix?

Context Classification	Building Height, Building Placement, Fronting Uses	Location of Off-street Parking	Roadway Connectivity			Allowed Residential Density	Allowed Office/ Retail Density	Population Density	Employment Density
			Intersection Density	Block Perimeters	Block Length				
C1-Natural	No development along roadway		Sparse roadway network			No development along roadway			
C2-Rural		No consistent pattern of parking		Sparse roadway network			No consistent pattern of allowed office/ retail density		Some office/ retail may be present along the roadway
C2T-Rural Town								Population will vary based on mix of single- and multi-family residential	
C3R-Suburban Residential				No consistent block pattern			No consistent pattern of allowed office/ retail density	Population will vary based on mix of single- and multi-family residential	Some office/ retail may be present along the roadway
C3C-Suburban Commercial						No consistent pattern of allowed residential density		Population will vary based on presence of multi-family residential	Varies based on intensity of commercial development along the roadway
C4-Urban General							No consistent pattern of allowed office/ retail density		

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