



MILTON PLANNING BOARD
Regular Meeting Agenda

March 21, 2023
5:00 PM
6738 Dixon Street
Milton, FL 32570

- 1. Open Meeting with Invocation & Pledge of Allegiance**
- 2. Review and Approval of Agenda**
- 3. Approval of Minutes**
 - Item # 2023-1317
 - Approval of Minutes from February 21, 2023, meeting
- 4. Citizens to Appear Before the Board**
- 5. Economic Development Update**
- 6. New Business**
- 7. Old Business**
 - Item # 2023-1364
 - UDC Update
 - Item # 2023-1365
 - Design Pase of Hwy 90/Caroline St. Discussion
- 8. Planning Department Update**
- 9. Adjournment**

Pursuant to the provisions of the Americans with Disabilities Act, any person requiring special accommodations to participate in this meeting is asked to advise the City at least 48 hours before the meeting by contacting City Hall, 6738 Dixon Street, Milton, or by calling 983-5410.

"If any person decides to appeal any decision made by the board, agency, or commission, with respect to any matter considered at such meeting or hearing, he or she will need a record of the proceedings, and that for such purpose, he or she may need to ensure that a verbatim record of the proceedings is made, which record includes the testimony and evidence upon which the appeal is to be based." FS 286.0105



Agenda Item # 2023-1317

Approval of Minutes from February 21, 2023, meeting

MEETING DATE

March 21, 2023

PREPARED BY

BACKGROUND

SUMMARY

RECOMMENDATION

ATTACHMENTS

1. MPB February Minutes 2023

MILTON PLANNING BOARD**February 21, 2023**

The Milton Planning Board met on Tuesday, February 21, 2023, at 5:00 p.m. in the Council Chambers at City Hall.

PRESENT:

Tom Powers
Jimmy Messick
Kathy Ellis
Amber Leek
Randy Pierce

Tim Milstead, Planning Director
Jacob Hullett, Current Planner/Zoning Officer
Melissa Short, Administrative Assistant
Ashley Johnston, IT

OTHERS:

Councilman Mike Cusack, Vernon Compton

Chairman Tom Powers called the meeting to order at 5:08 p.m. The agenda was approved through motion by Kathy Ellis, seconded by Jimmy Messick; approved 5-0. The January 17, 2023, minutes were approved through motion by Jimmy Messick, seconded by Amber Leek; approved 5-0.

ECONOMIC DEVELOPMENT UPDATE:

Tim Milstead provided updates about the need for the new Wastewater Treatment Plant, the Business Improvement Grant Program, the Milton Gateway Project, the 19 new business licenses that have been issued in the City since 11/1/22, and the 2022 Downtown CRA Plan Update.

OLD BUSINESS:

Update to the City's Unified Development Code – Tim Milstead provided the draft City's Unified Development Code to the board. The board decided to continue reviewing the UDC. Staff is open to any changes that the board feels are needed to the UDC and will continue to keep the board updated to the changes made by staff for the boards review.

Design Phase of Hwy 90/Caroline St. Discussion – Vernon Compton presented the board with a design phase, planning phase, complete streets handbook, and a classification guide for their review. Tim Milstead informed the board that staff is continuing to work with the project manager of FDOT

and anticipates setting up a meeting involving the city boards that have expressed an interest about involvement in the design phase of this project.

PLANNING DEPARTMENT UPDATE:

Tim Milstead updated the board with the new Gateway Project, Ronny's Carwash, and the Public Hearing Notice of the Dogwood Development Agreement Amendment that will be reviewed by City Council on Thursday, February 23, 2023.

There was no further business to discuss, and the meeting was adjourned at 5:45 p.m.



Agenda Item # 2023-1364
UDC Update

MEETING DATE

March 21, 2023

PREPARED BY

BACKGROUND

Update

SUMMARY

RECOMMENDATION

ATTACHMENTS

None



Agenda Item # 2023-1365

Design Pase of Hwy 90/Caroline St. Discussion

MEETING DATE

March 21, 2023

PREPARED BY

BACKGROUND

SUMMARY

RECOMMENDATION

ATTACHMENTS

1. ConsorConcept
2. Hanson FTP
3. fdot-completestreets-brochure
4. FDOT2017CSIHandbookDraft
5. Context Classification Guide 2022_lo-res

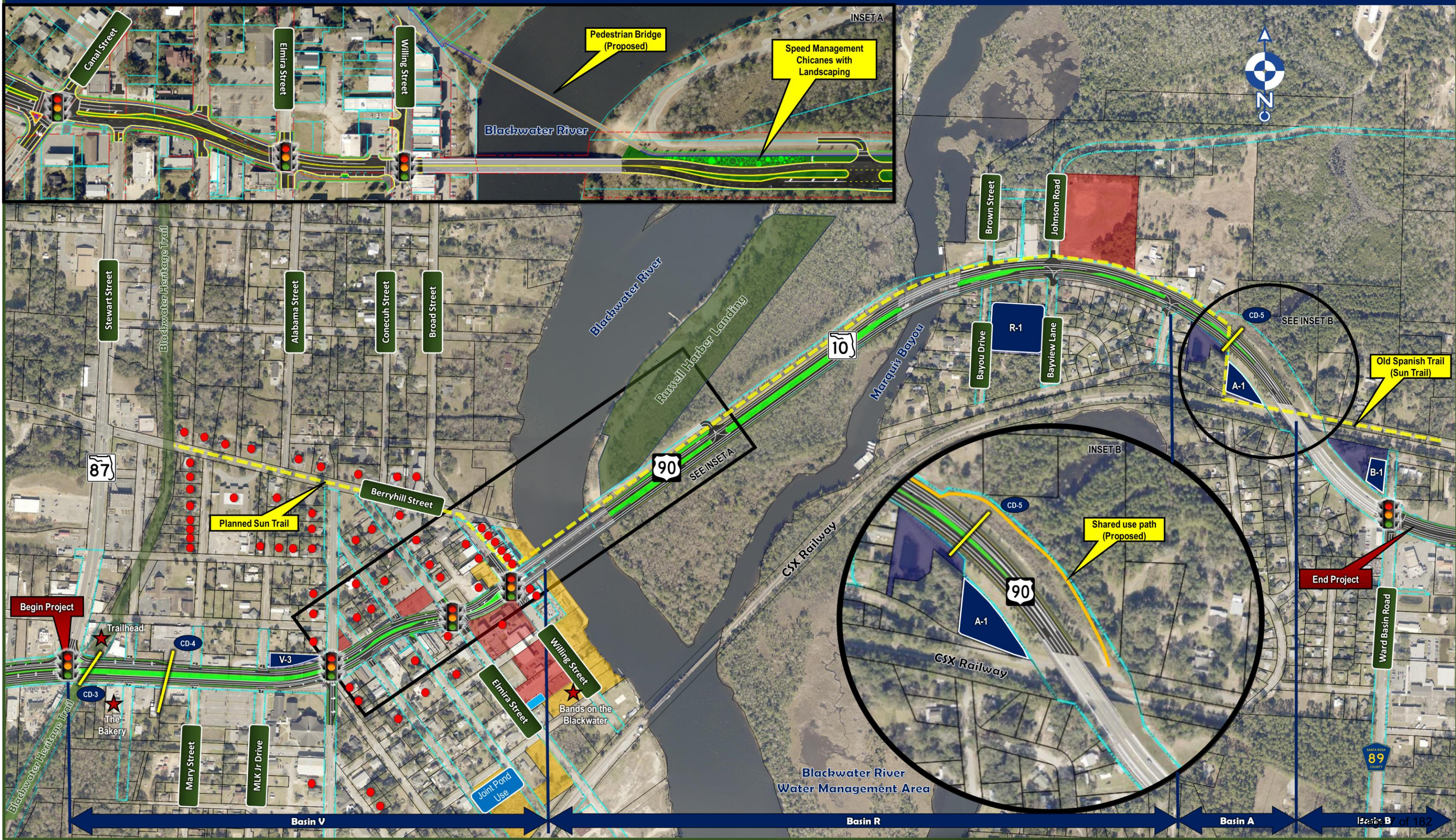


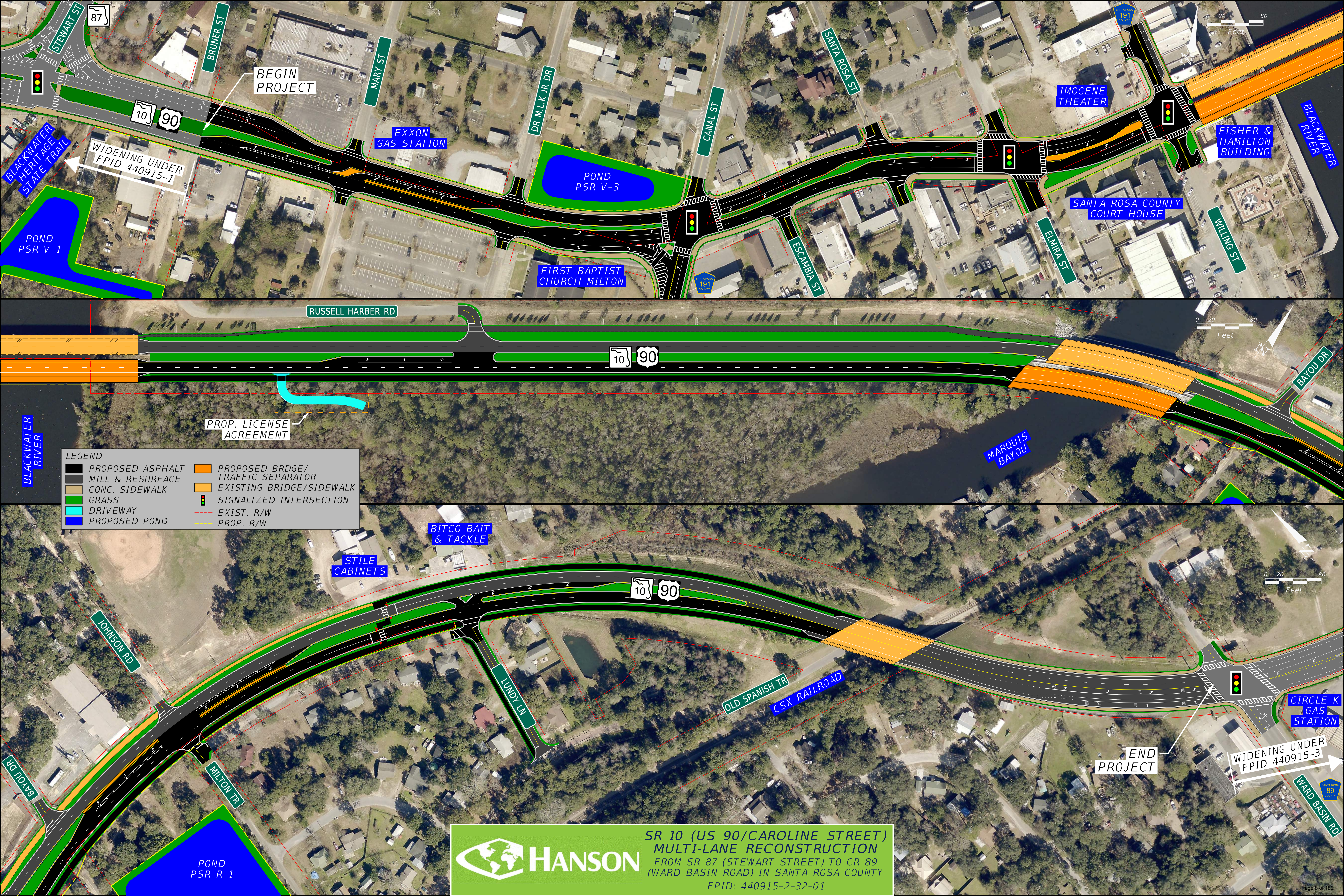
PROJECT LAYOUT MAP

State Road 10 (US 90) Caroline Street

From SR 87 to Ward Basin Road, Santa Rosa County

FPID No. 440915-2-32-01





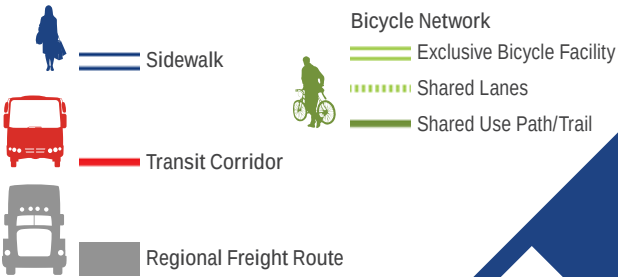
WHAT IS THE ROLE OF LOCAL PARTNERS?

A network of Complete Streets cannot be built entirely within the state roadway system and solely within FDOT's right of way. Transportation system and development pattern (such as land use, development density and intensity, building design, and site layout) are inextricably linked, and both have an effect on travel choices and mobility. A robust, connected roadway network provides options for the movement of people and goods and is the foundation for safe and comfortable travel for pedestrians, bicyclists, and transit riders.

Local governments and metropolitan planning organizations (MPOs) are responsible for land use and transportation planning to create supportive infrastructure and development patterns that match community goals and visions. Comprehensive plans, subarea plans, and land development regulations are some of the documents that will be reviewed to determine future visions and other land use-related items in evaluating context classification.

FDOT will apply criteria and standards based on the context classification. There is no separate FDOT funding category or FDOT funding source specifically for Complete Streets. Projects that require modifications to comply with criteria associated with the context classification will be funded through the funding programs currently available to Federal, State, and local roadways, as appropriate. The existing MPO funding process will remain the same. If local governments or other partners would like to include features that go beyond what is required by FDOT design criteria, such as decorative lighting or landscaping, patterned pavements, or street furniture and wayfinding, local communities must coordinate with FDOT to align local resources and projects with the FDOT project.

CONTEXT-SENSITIVE SYSTEM OF COMPLETE STREETS



WHAT IS FDOT'S APPROACH TO COMPLETE STREETS?

In September 2014, the Florida Department of Transportation (FDOT) adopted the Statewide Complete Streets Policy (Topic No. 000-625-017-a). Complete Streets serve the transportation needs of transportation system users of all ages and abilities, including pedestrians, bicyclists, transit riders, motorists, and freight handlers. A transportation system based on Complete Streets principles can help to promote safety, quality of life, and economic development.

Safety: Safety for all users is FDOT's top priority. Roadways with context-appropriate speeds can result in reduced fatalities and serious injuries. The Complete Streets approach considers the mobility, convenience, accessibility, and safety of all road users, and places an emphasis on the most vulnerable users of a given roadway.

Quality of Life: A Complete Streets approach helps to align transportation decisions with land use, resulting in quality places where transportation investments support a community's quality of life.

Economic Development: A Complete Streets approach connects communities and supports Florida's existing economic centers, employment centers, and visitor destinations by striving to provide the highest level of multimodal infrastructure in these core areas.

Implementing Complete Streets is an FDOT department-wide priority. The Complete Streets approach builds on flexibility and innovation in roadway planning and design to put the right street in the right place.

WHEN WILL COMPLETE STREETS BE IMPLEMENTED?

The determination of a roadway's context classification is required in order to utilize the criteria in the FDOT Design Manual (FDM.) The context-based criteria in the FDM will be required on projects that have not begun design by January 1, 2018, and may be applied to active design projects at the discretion of the district. For PD&E projects, implementation of context classification and the FDM is required for projects that have the Public Hearing scheduled in April 2018 or later. The 2017 Plans Preparation Manual (PPM) will apply through the completion of the PD&E studies for projects that have the Public Hearing scheduled prior to April 2018. Criteria contained in the FDM may also be applied earlier at the discretion of the district.



WHERE CAN I FIND MORE RESOURCES?

WWW.FLCOMPLETESTREETS.COM

DeWayne Carver, AICP
State Complete Streets Program Manager
(850) 414 4322
dewayne.carver@dot.state.fl.us

Revised 3/29/2018

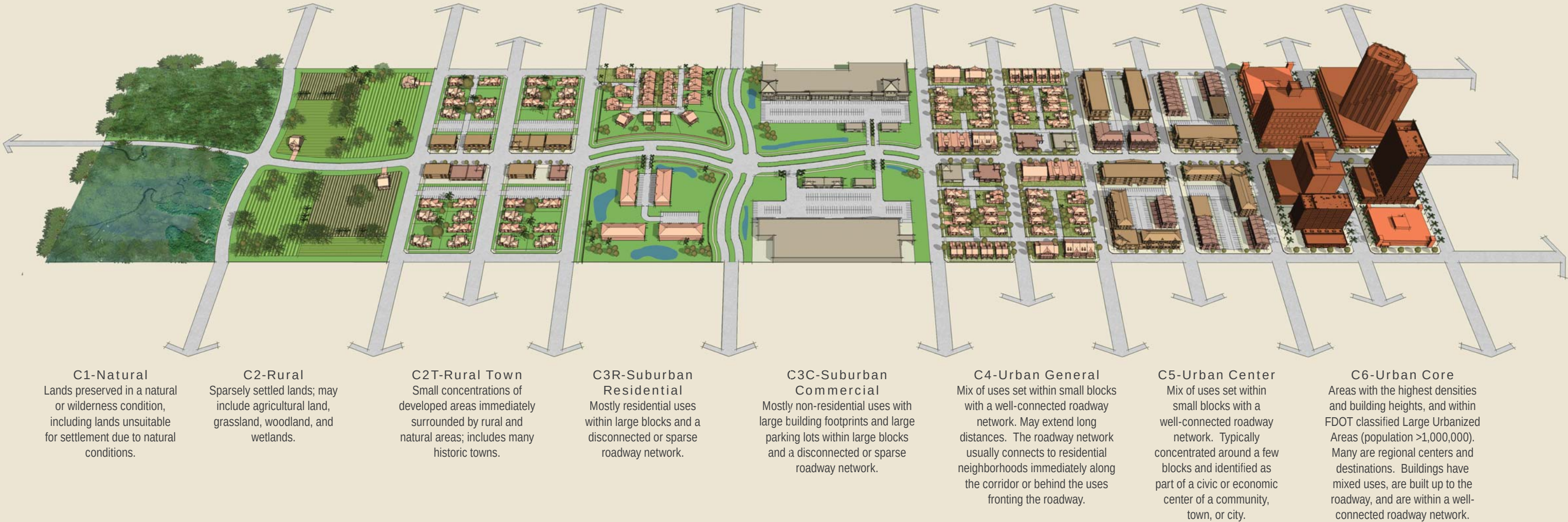
WHAT IS FDOT CONTEXT CLASSIFICATION?

Complete Streets are context sensitive, and the approach provides transportation system design that considers local land development patterns. Roadways will be planned and designed to support the safety, comfort, and mobility of all users based on the unique context of each roadway. The FDOT context classification system broadly identifies the various built environments existing in Florida. The context classification of a roadway will inform FDOT's planning, Project Development and Environment (PD&E), design, construction, and maintenance approaches to ensure that state roadways are supportive of safe and comfortable travel for their anticipated users. Identifying the context classification is a preliminary step in planning and design, as different context classifications will have different design criteria.

The Context Classification document presents and explains the Context Classification Matrix, which outlines the measures used to determine context classification. These include:

- (1) **Distinguishing Characteristics**, which give a broad description of the land use types and street patterns found within each context classification
- (2) **Primary Measures**, which measure the roadway connectivity and building use and form
- (3) **Secondary Measures**, which look at existing and allowed development intensity

FDOT CONTEXT CLASSIFICATIONS



CONTEXT CLASSIFICATION AND TRANSPORTATION CHARACTERISTICS

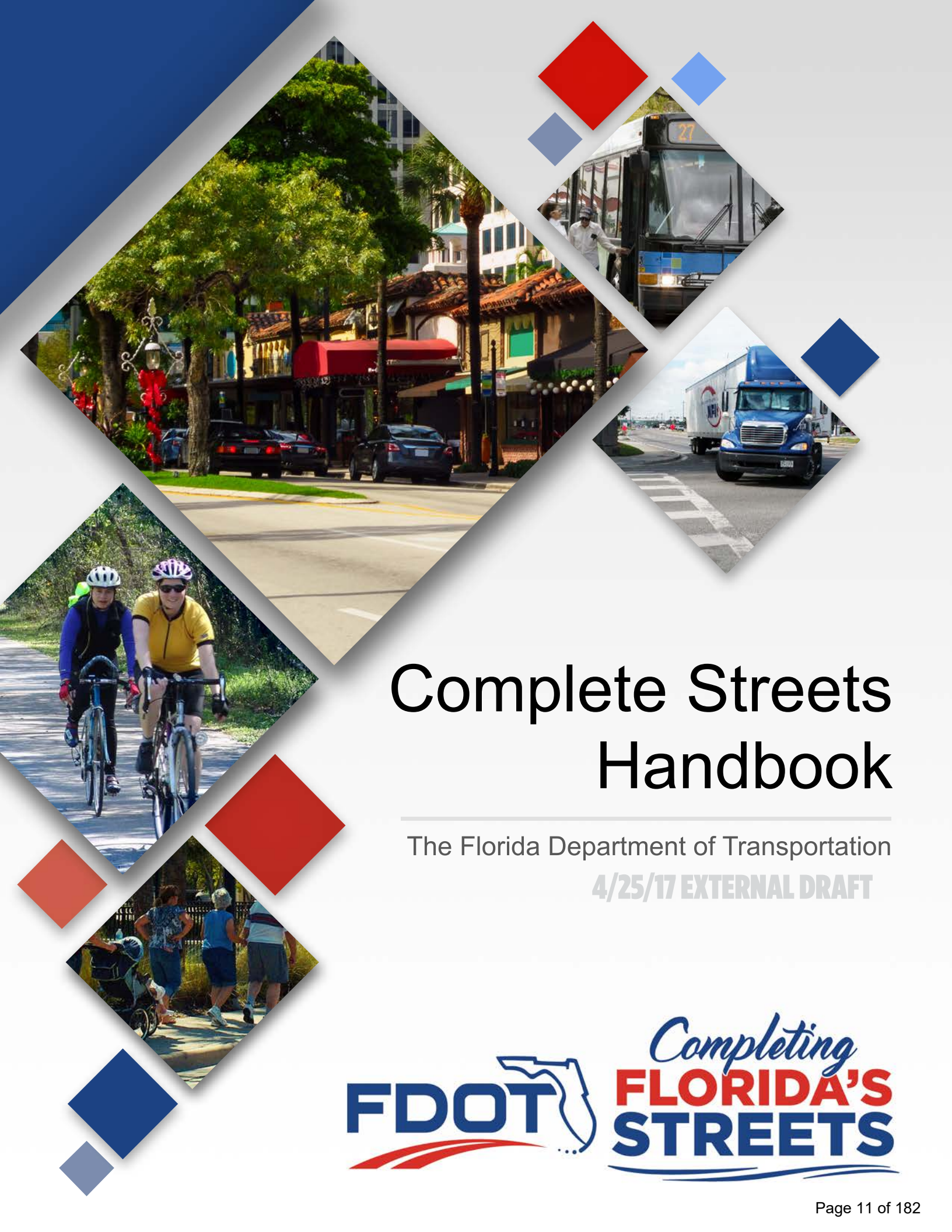


The context classification of a roadway, together with its transportation characteristics, will provide information about who the users are along the roadway, the regional and local travel demand of the roadway, and the challenges and opportunities of each roadway user.

WHAT IS THE FDOT PROCESS FOR IMPLEMENTING CONTEXT CLASSIFICATION?

Complete Streets are not a specific type of project, but rather are an approach to ensuring that projects are based on their contexts. This means that a Complete Streets approach will be implemented consistently for all non-limited access projects — from capital projects qualifying for Efficient Transportation Decision Making process (ETDM) screening to Resurfacing, Restoration and Rehabilitation (RRR), traffic operations, and safety projects.

FDOT will develop a database of context classification for all state roadways. Initially, districts will evaluate and map context classification as projects occur, while working to complete a statewide database of context classification. The context classification evaluations completed for the statewide database will utilize available data and information on existing built conditions. As FDOT projects are conducted, these initial evaluations will be updated or confirmed based on current data, as well as future conditions.

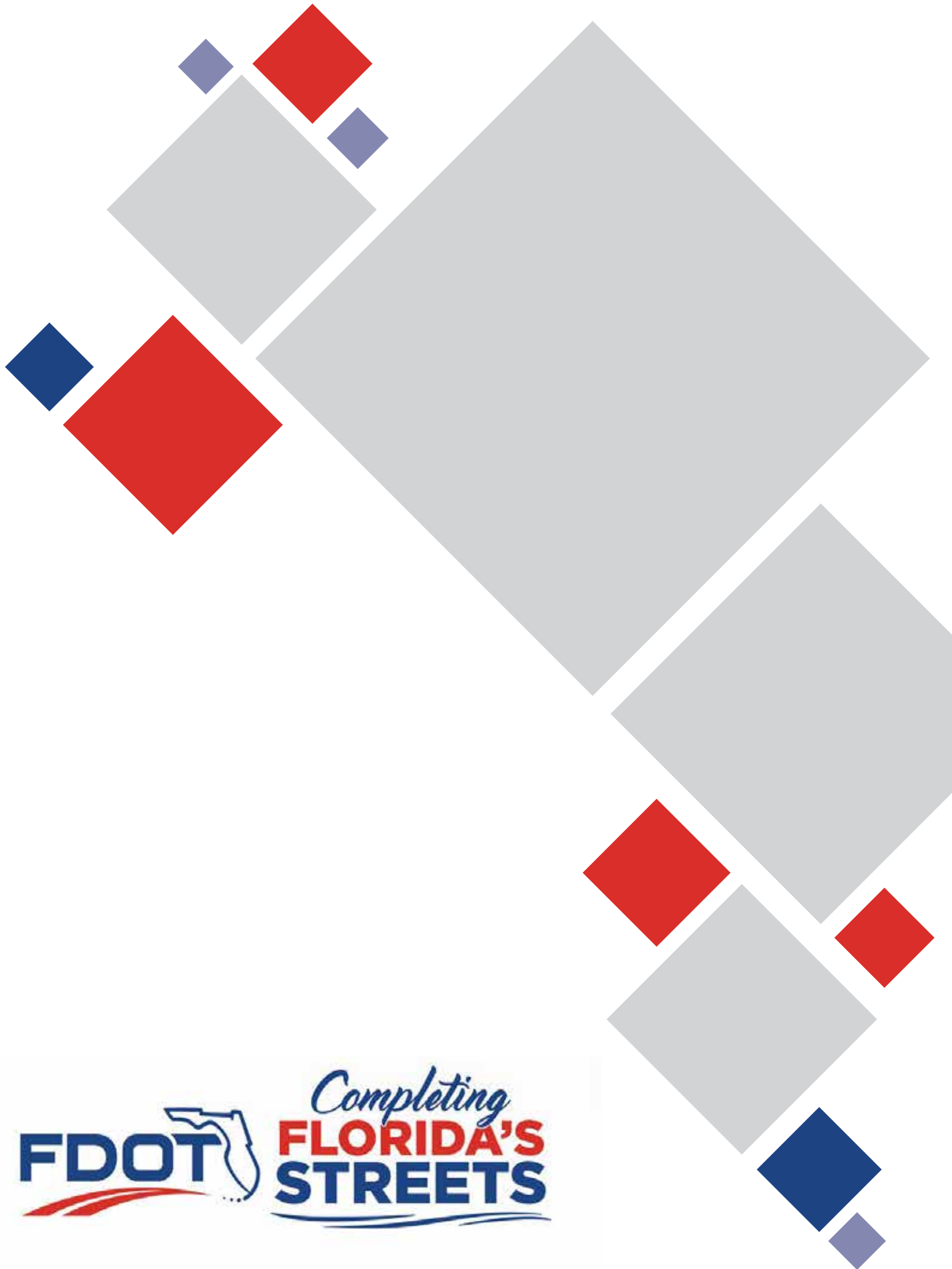


Complete Streets Handbook

The Florida Department of Transportation

4/25/17 EXTERNAL DRAFT





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GLOSSARY

LIST OF ABBREVIATIONS

AADT	Annual Average Daily Traffic	PD&E	Project Development and Environment
AASHTO	American Association of State Highway Transportation Officials	PED	Preliminary Environmental Determination
AASHTO Green Book	AASHTO A Policy on Geometric Design of Highways and Streets	PPM	Plans Preparation Manual
ACE	Alternative Corridor Evaluation	RCI	FDOT Enterprise Application Roadway Characteristics Inventory
BEBR	University of Florida Bureau of Economic and Business Research	RPC	Regional Planning Council
CNU	Congress for the New Urbanism	RRR	Resurfacing, Restoration, and Rehabilitation
D	Directional distribution factor	SD	Special District
ETAT	Environmental Technical Advisory Team	SIS	Strategic Intermodal System
ETDM	Efficient Transportation Decision Making	T	The percentage of the AADT volume generated by trucks or commercial vehicles
FAC	Florida Administrative Code	TAZ	Traffic Analysis Zone
FDM	FDOT Design Manual	TDP	Transit Development Plan
FDOT	Florida Department of Transportation	TPO	Transportation Planning Organization
FHWA	Federal Highway Administration	TSMO	Transportation Systems Management and Operations
FTP	Florida Transportation Plan	VMT	Vehicle Miles Traveled
GIS	Geographic Information System		
ITE	Institute of Transportation Engineers		
LAP	Local Agency Program		
LEHD	U.S. Census Bureaus' Longitudinal Employer-Household Dynamics website		
LOS	Level of Service		
LRTP	Long-Range Transportation Plan		
MPO	Metropolitan Planning Organization		
NACTO	National Association of City Transportation Officials		
NCHRP	National Cooperative Highway Research Program		
NEPA	National Environmental Policy Act of 1969		

DEFINITION OF TERMS

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:

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 > 1,000,000). Many are regional centers and destinations. Buildings have mixed uses, are built up to the roadways, and are within a well-connected roadway network.

Control Vehicle The infrequent vehicle that must be accommodated by allowing encroachment (see Chapter 4).

Design User The anticipated users of a roadway (including drivers, pedestrians, bicyclists, and freight handlers) that form the basis for each roadway's design (see Chapter 4).

Design Vehicle The vehicle that must be accommodated without encroachment into opposing traffic lanes (see Chapter 4).

Form-Based Code Land development regulations that use physical form, rather than separation of uses, as the organizing principle for the code. For more information, visit <http://formbasedcodes.org>.

Induced Demand	Describes the additional demand for travel when the cost of travel decreases, either in time savings or monetary costs.
K-Factor	The ratio of a design-hour traffic volume to AADT
Large Urbanized Areas	Quality/Level of Service Handbook - areas with population over 1,000,000.
Non-qualifying Project	Projects that do not go through ETDM screening.
Qualifying Project	Roadway project types that qualify for ETDM screening, per the PD&E Manual Section 2.3.1, including additional through lanes that add capacity to an existing road, new or reconstructed arterial highway (e.g., realignment), and bridge replacements.
Rural	FHWA Definition — Encompasses all population, housing, and territory not included within an urban area. Quality/Level of Service Handbook Definition — areas that are not urbanized, urban, or transitioning.
Small Urban Areas	FHWA definition — Designated as population between 5,000 and 49,999, and not within any urbanized area with boundaries to be fixed by responsible State and local officials in cooperation with each other, subject to approval by the Secretary. (Identified as Urban Areas in the Quality/Level of Service Handbook).
Transect	The rural-to-urban transect is a tool utilized by the Congress for New Urbanism and others to describe the characteristics of human settlements. The rural-to-urban Transect is divided into six zones (see Chapter 2).
Transitioning Areas	Quality/Level of Service Handbook Definition - areas generally considered as transitioning into urbanized/urban areas or areas over 5,000 population 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.
Urbanized Areas	FHWA and Quality/Level of Service Handbook Definition — Designated as population of 50,000 or more by the U.S. Census Bureau, within boundaries to be fixed by responsible State and local officials in cooperation with each other, subject to approval by the Secretary. Such boundaries shall encompass, at a minimum, the entire urbanized area within a State as designated by the U.S. Census Bureau.

FDOT COMPLETE STREETS POLICY

ADOPTED SEPTEMBER 17, 2014



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

Executive Summary

CONTEXT-BASED PLANNING AND DESIGN

In 1997, the Federal Highway Administration (FHWA) released guidance encouraging context-based transportation planning and design. Since then, many regional and local transportation planning agencies in Florida and throughout the U.S. have adopted context-based planning and design policies and practices. Context-based planning and design offers a flexible approach using existing tools in creative ways to address multimodal needs in different contexts. A specific context-based approach, called Complete Streets, also considers community needs, trade-offs between those needs, and alternatives to achieve multiple objectives.

In September 2014, the **Florida Department of Transportation (FDOT)** adopted the **Statewide Complete Streets Policy (Topic No. 000-625-017-a)**, (see facing page) joining 22 other state departments of transportation that have made a commitment to planning, designing, and operating their transportation systems for all users. Implementation of the Complete Streets Policy is an FDOT department-wide priority to provide FLEXIBILITY in the planning and design of projects on state roads, to put the right street in the right place.

WHAT IS FDOT'S APPROACH TO COMPLETE STREETS?

The FDOT Complete Streets policy captures three core concepts in its approach to Complete Streets:

- Complete Streets serve the transportation needs of transportation system users of all ages and abilities, including pedestrians, bicyclists, transit riders, motorists, and freight handlers.

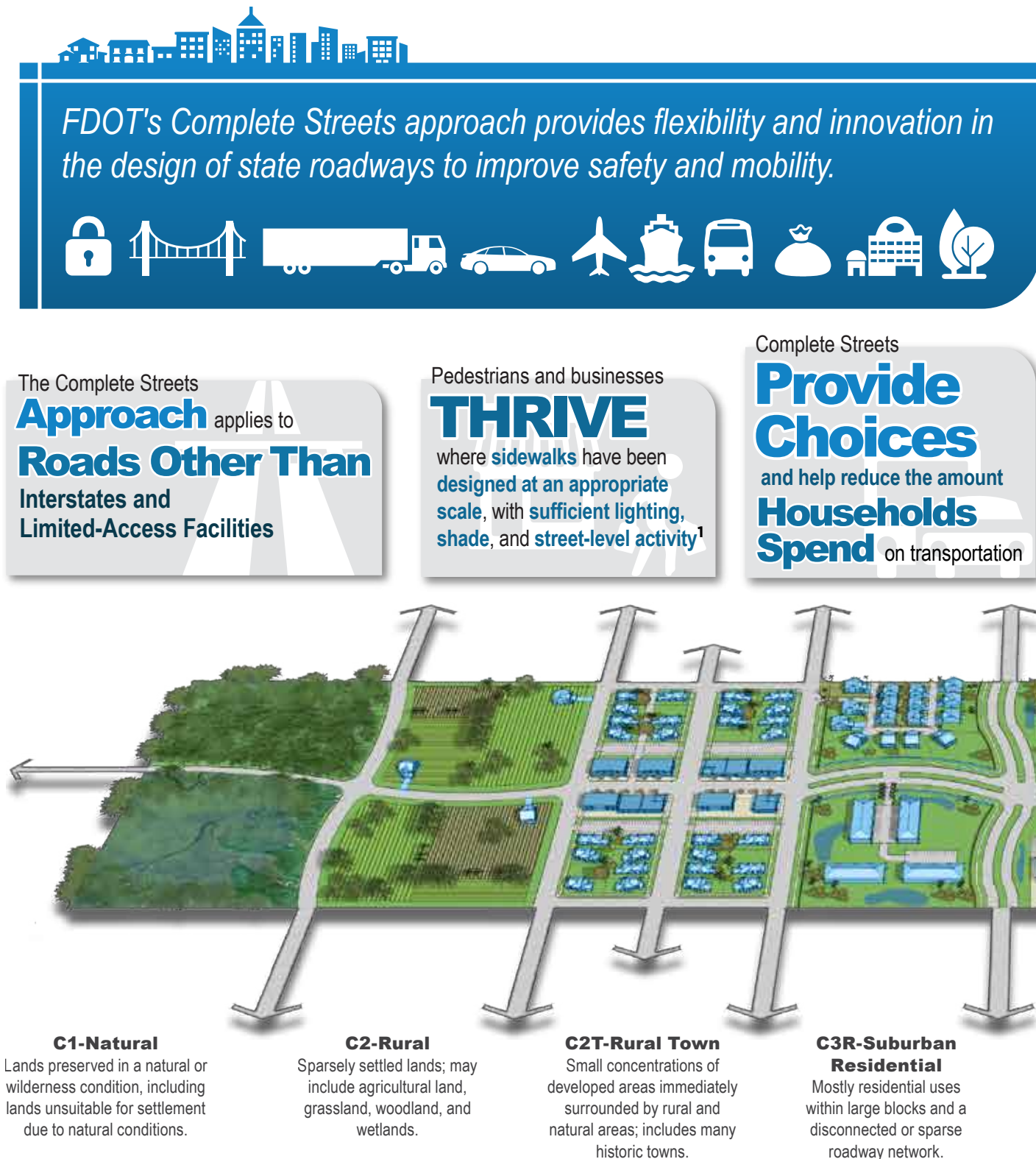
- Complete Streets are context sensitive, and the approach provides transportation system design that considers local land development patterns.
- A transportation system based on Complete Streets principles can help to promote safety, quality of life, and economic development.

The FDOT Complete Streets approach builds on flexibility and innovation to ensure that all state roadways are developed based on their context classification, as determined by FDOT to the maximum extent feasible.

With a Complete Streets approach, every non-limited-access state roadway project, including those on the Strategic Intermodal System (SIS), is uniquely planned and designed to serve the context of that roadway and the safety, comfort, and mobility of all users. In a high-speed rural context, where higher truck traffic is anticipated and walking and bicycling are infrequent, wider travel lanes with paved shoulders or a shared use path may be appropriate. In urban contexts, where high volumes of pedestrians, bicyclists, and transit users are expected or desired, a roadway could include features such as wide sidewalks, bicycle facilities, transit stops, and frequent, safe pedestrian crossing opportunities. Limited-access highways and interstates may incorporate elements of context-based design where they connect to the non-limited-access system, but this handbook is not intended for use on the limited-access system itself.

Most roadway projects are funded by strategically matching federal, state, and local funding sources to specific elements of the project. FDOT's Complete Streets approach to the planning and design of state roadway projects uses existing funding sources, and these funding practices will not change.

FIGURE ES-1 FDOT'S APPROACH TO COMPLETE STREETS



¹ National Association of City Transportation Officials, Urban Street Design Guide (2013).
² Smart Growth America. Complete Streets Promote Good Health (2012).
³ Smart Growth America, Complete Streets Stimulate the Local Economy (2012).
⁴ AASHTO Guide to the Design of Pedestrian Facilities (2004).

Complete Streets

Promote Connectivity

by offering customers access to an **interconnected network** of pedestrian, bicycle, transit, and roadway facilities

Complete Streets spur

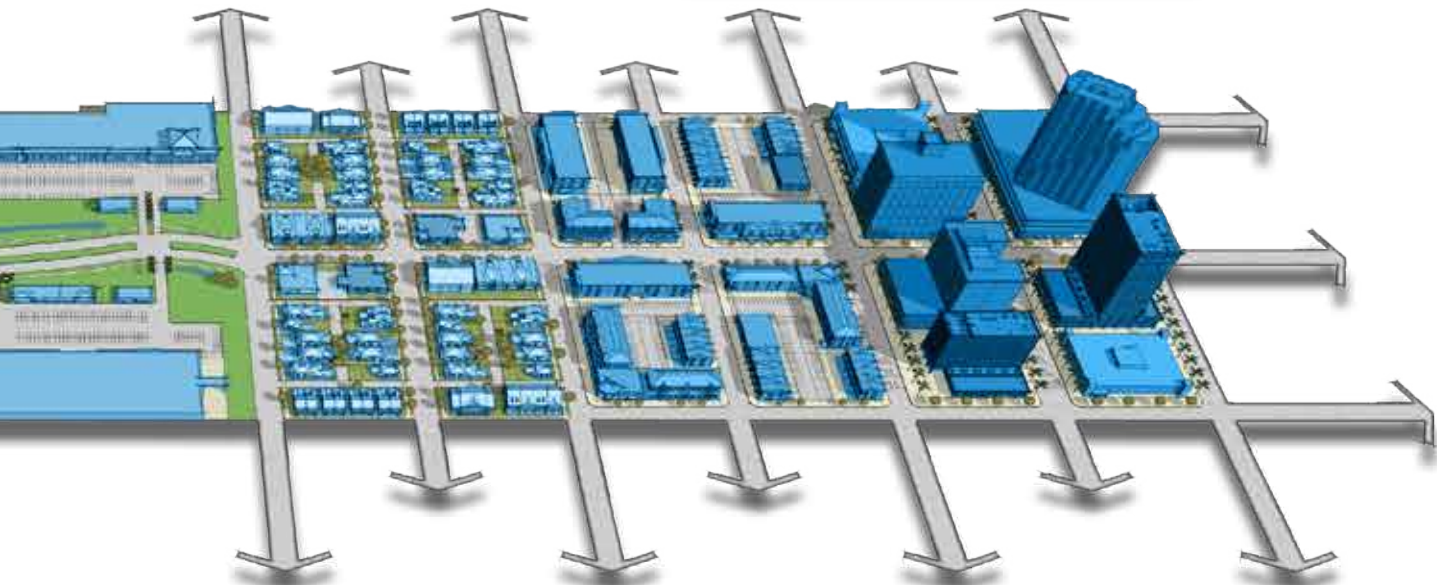
Private Investment & Enhance Economic Prosperity³

Complete Streets provide opportunities for

Increased Physical Activity & Improved Community Health

by incorporating features that promote regular walking, bicycling, and transit use²

Context appropriate vehicle speeds

Reduce the chance of Pedestrian Fatalities⁴**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 >1,000,000). Many are regional centers and destinations. Buildings have mixed uses, are built up to the roadway, and are within a well-connected roadway network.

COMPLETE STREETS PRINCIPLES AND THE FLORIDA TRANSPORTATION PLAN

The *Florida Transportation Plan (FTP)* is the statewide long-range transportation plan guiding Florida's transportation future. FDOT's Complete Streets approach exemplifies the goals of the *FTP* regarding innovation and flexibility in design and collaboration and coordination with partners to create better transportation solutions. The Complete Streets approach uses existing tools in creative ways to address multimodal needs in different contexts, calling for a holistic consideration of community needs, trade-offs between needs, and alternatives to achieve multiple objectives. FDOT's Complete Streets

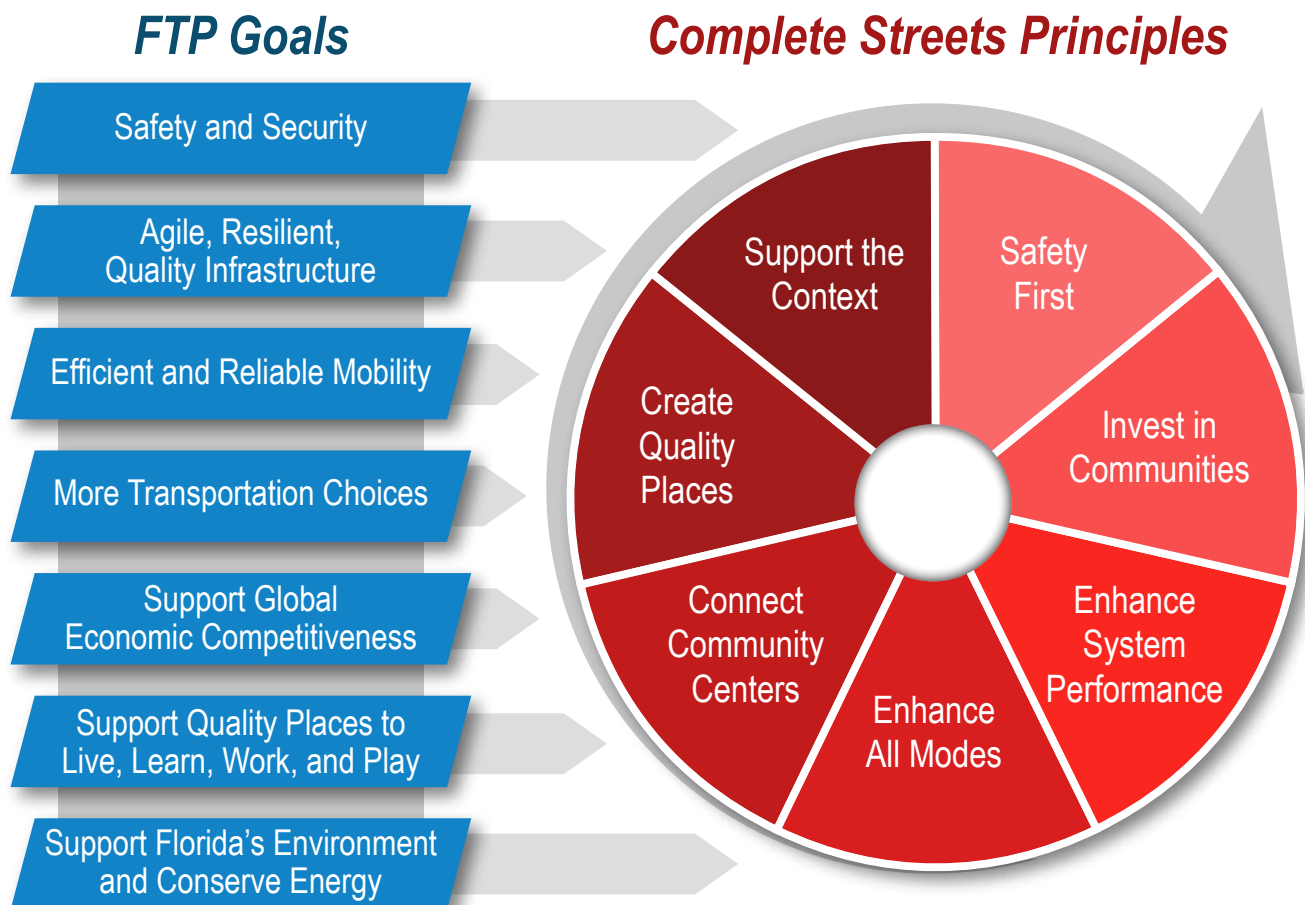
principles align with the FTP's goals as shown in Figure ES-2, and serve to guide the implementation of FDOT's Complete Streets Policy.

COMPLETE STREETS PRINCIPLES

Safety First

Safety for all users is FDOT's top priority and a goal of the *FTP*. Roadways with context-appropriate speeds can result in reduced fatalities and serious injuries in locations with higher levels of pedestrian and bicycle activity. The Complete Streets approach considers the mobility, convenience, accessibility, and safety of all road users, and places an emphasis on the most vulnerable users of a given roadway.

FIGURE ES-2 LINKING THE FLORIDA TRANSPORTATION PLAN AND COMPLETE STREETS PRINCIPLES



Invest in Existing and Emerging Communities

The **FTP** goal of agile, resilient, and quality infrastructure focuses on investing resources wisely. The Complete Streets approach helps to match roadways with the needs of urban areas as well as emerging growth centers, investing in the right road for the right location. The approach calls for design flexibility to develop roadway projects that consider local character and vision, the role and characteristics of the roadway within the transportation system, and the roadway's physical characteristics.

Enhance System Performance

Efficient and reliable mobility is a goal of the **FTP**. The Complete Streets approach matches, based on context, the roles of each roadway with customized solutions that consider local access and regional and interregional mobility for people and freight. A Complete Streets approach relies on a complete network of transportation facilities made up of unique streets, each supporting the role and function it has within the system. A complete network enhances efficiency and reliability for all modes by providing direct and multiple route choices, improving access to all modes, and reducing trip lengths.

Enhance All Modes

Increasing transportation choice is a goal of the **FTP**, reflecting the desire of residents, visitors, and businesses to have mobility options based on travel preferences, need, convenience, cost, or time. A Complete Streets approach provides opportunities to expand mobility options by considering all users and all modes during roadway planning and design. This is important for short-distance and local trips, where walking, bicycling, and transit are most desired.

Connect Community Centers

Transportation solutions that support Florida's economic competitiveness are a goal of the **FTP**. A Complete Streets approach connects communities and supports Florida's existing economic centers, employment centers, and visitor destinations by striving to provide the highest level of multimodal infrastructure in these core areas.

Create Quality Places

Creating quality places to live, learn, work and play is a goal of the **FTP**. A Complete Streets approach helps to align transportation decisions with land use, resulting in quality places offering transportation choices where transportation investments support a community's economic competitiveness and quality of life.

Support the Context

Transportation solutions that support the environment and conserve energy is a goal of the **FTP**. A Complete Streets approach uses design flexibility to develop roadways that consider the local character and vision, which often reflect a desire for a future in which a community manages land more efficiently, preserves environmental resources and natural countryside, and create distinctive places in which to live in both rural and urban settings.

WHAT IS IN THIS HANDBOOK?

This handbook provides:

- An explanation of FDOT's Complete Streets approach and principles for state roads
- Guidelines for FDOT's collaboration with local and regional partners
- Definitions of context classifications used for state roads
- Guidelines for applying a Complete Streets approach to state projects
- Guidelines for roadway design considerations

FDOT will coordinate with partner agencies when implementing this Complete Streets approach.

Chapter 1 describes FDOT's role in determining context classification, identifying associated transportation elements to incorporate in a project based on the context classification, and coordinating with local and regional partners to implement and fund projects. Chapter 1 also highlights the role partners play and how FDOT depends on their involvement and contributions. Local governments are responsible

for community visions, land use decisions, and local and regional transportation network connectivity, all of which influence the choice of multimodal solutions. Local governments, regional planning councils, and Metropolitan or Transportation Planning Organizations (MPOs/TPOs) are responsible for regional and community visions, including transportation goals. Other partners, such as transit agencies and private developers, provide targeted expertise and information about their services and plans.

Chapter 2 describes the context classifications FDOT will use for project planning and design of state projects, including projects on the SIS. Figure ES-1 presents the eight context classifications and provides short descriptions. Chapter 2 also describes the primary and secondary measures used to determine context classification.

Chapter 3 details how the Complete Streets approach is incorporated in existing FDOT processes and when the context classification is determined. FDOT will have the final determination of the context classification for state roadways. FDOT context classifications are assigned at the earliest stage possible, typically during project scoping. Information to determine context classification will be obtained using multiple sources and tools, such as through partner coordination for the desired future context, and field reviews and aerial photography for existing development patterns. Chapter 3 also explains how the Complete Streets approach integrates with existing processes, such as long-range transportation plan projects that use Efficient Transportation Decision Making (ETDM) screening and RRR – Resurfacing, Restoration, and Rehabilitation projects.

Chapter 4 explains design considerations in applying FDOT's Complete Streets approach. The FDOT context classification and transportation characteristics, such as the road's functional class, will be used together when applying Complete Streets planning or design considerations. After looking at the community's current environment and future vision to determine the context classification, FDOT staff will assign a context classification and choose transportation elements that fit within the parameters of that classification. The details are presented in the **FDOT Design Manual (FDM)** updates.

NEXT STEPS

Adopting the Complete Streets policy was only the beginning. FDOT has already taken bold steps towards making the Complete Streets implementation a priority. The **FDOT Complete Streets Implementation Plan** (December 2015) provides the framework for necessary changes to fully align with the Complete Streets philosophy. In particular, the Implementation Plan calls for:

- Integrating a context-based approach into project planning and design
- Revising standards, manuals, and policies
- Updating decision-making processes
- Modifying approaches for measuring performance

FDOT has begun revising its standards, policies, and guidance documents to align with this Complete Streets approach. These include:

- FDOT Design Manual (FDM), replacing the current Plans Preparation Manual (PPM)
- Efficient Transportation Decision Making Manual
- Project Development and Environment Manual
- Project Traffic Forecasting Handbook
- Level of Service Standards, Policies, and Procedures
- Strategic Intermodal System Highway Component Standards and Criteria
- Traffic Engineering Manual
- Quality/LOS Handbook

The **FDM** will be effective January 1, 2018. See Chapter 3 for details.

Partnership and Agency Collaboration

FDOT is committed to supporting the needs of all users as part of incorporating a Complete Streets approach in every phase of project development — planning, design, construction, operations, and maintenance. A system of Complete Streets cannot be built entirely within the state roadway system and solely within FDOT's right of way. Local and regional decisions have a strong influence on the state's decisions, and FDOT will seek to strengthen collaboration and partnerships with local governments, regional agencies, MPOs/TPOs, transportation agencies, and the public to further Complete Streets principles.

The **Florida Transportation Plan (FTP)** recognizes the importance of collaborating across sectors, jurisdictions, modes, and disciplines to create the desired transportation system for Florida. Regions and communities have different needs and expectations, and the flexibility of FDOT's Complete Streets approach is key to supporting each area's unique character and vision. For state roads, achieving the state's goals and the community's goals requires a balancing of priorities, constraints, and opportunities. Working together allows multiple agencies to achieve individual objectives while effectively and efficiently achieving shared and related goals to deliver a safe and quality transportation system to the public.

THE ROLE OF COMMUNITY VISIONS

To support quality places, the FTP calls for transportation systems to reflect regional and community visions. These visions are important to FDOT and other partners in setting the framework for transportation decision making. FDOT relies upon partners to develop and actively communicate their visions and goals to provide clear direction, not only to FDOT but to public and private partners engaged

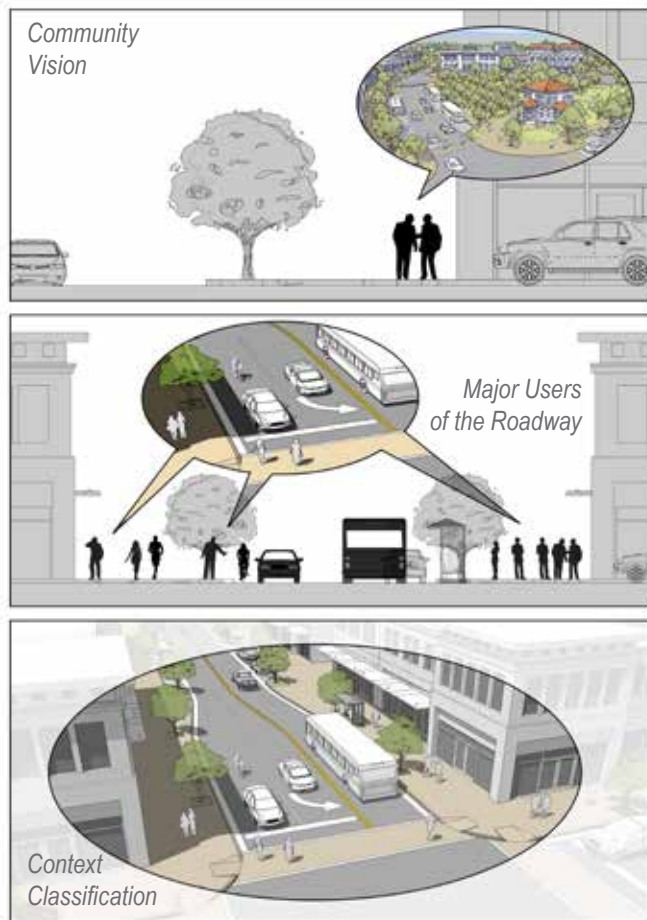
in community development. Visions also provide the basis for the land development regulations and policies used to implement community goals. Local and regional visions can take many forms, such as standalone vision documents, comprehensive plans, neighborhood or sub area plans, including community redevelopment areas, or land development regulations.

FDOT's approach to Complete Streets is context-sensitive, and FDOT will support local partners by building projects that help support local and regional visions to the maximum extent feasible. Where context-based design has not previously been envisioned, FDOT will collaborate with partners and rely upon existing development patterns and plans to determine the context classification. If the future vision of an area for a proposed transportation project is intended to be different from the existing, clear and documented direction from the local or regional government on that vision is imperative. (See Figure 1-1.)

HOW LAND USE SUPPORTS COMPLETE STREETS

The transportation system and development pattern (such as land use, development density and intensity, building design, and site layout) are inextricably linked, and both have an effect on travel choices and mobility. A robust, connected network provides options for the movement of people and goods and also is the foundation for safe and comfortable multimodal travel for pedestrians, bicyclists, and transit riders. Thoughtful application of context-based planning and design considers all modes of transportation and customizes projects appropriately. For example, in a more urban environment, emphasizing multimodal elements in the roadway may be important to match the diverse level of activity. In suburban and rural areas, vehicular travel remains important, and

FIGURE 1-1 HOW COMMUNITY VISIONS CAN INFORM CONTEXT CLASSIFICATION, USERS, AND ROADWAY DESIGN



Community visions can help inform who the major users are and what the context classification of the roadway is.

Source: Adapted from FDOT District 5 Multimodal Corridors Planning Guidebook

balancing needs is more nuanced.

For the transportation components, local and regional governments (counties, municipalities, military, etc.) take the lead in implementing projects on their facilities. FDOT is responsible for projects on the State Highway System and is available to offer technical assistance and expertise to its partners. Land use decisions are made by local governments, and FDOT will collaborate with these partners when applying the Complete Streets approach for projects. For projects serving multiple jurisdictions, this can include coordinating with multiple jurisdictions to determine the context classifications. Appendix A

presents additional information on land use tools to support safe and comfortable multimodal travel.

PROJECT DEVELOPMENT PROCESS

Throughout the project development process, local and regional partners will influence FDOT's Complete Streets approach to planning, design, and implementation of projects on state roads. Many of FDOT's processes will function as they currently do, with an additional emphasis on coordination and engagement with partners to achieve mutual benefits. Most importantly, FDOT planners and designers are able to support the local community context through flexibility in the placement and types of components (such as bike lanes or on-street parking) considered for a project.

The transportation planning process begins with long-range plans such as those created by FDOT for the Strategic Intermodal System (SIS) and by MPOs/TPOs for their planning areas. Local Government Comprehensive Plans, developed pursuant to **Chapter 163, Florida Statutes**, also provide system-level information about the desired long-term transportation network and community development. These plans identify at a high level the needs for certain types of projects or projects in specific locations while at the same time articulating policies that promote the system-wide use of context-based design.

A next step of the project's development is to perform a Project Development and Environment (PD&E) study, if applicable, to evaluate design concepts and alternatives that address the purpose and need for the project. Balancing mobility needs and community needs is an integral part of alternatives consideration, and coordination with environmental resource agencies, local governments, and the public is critical in the process. After selecting a preferred alternative, the project moves to the design phase, where additional coordination with local governments, partners and public continues, as appropriate.

FDOT will apply the Complete Streets approach to maintenance and operational projects; however, opportunities for significant enhancements to these types of projects are constrained because of

the purpose of these projects. Coordination and collaboration becomes more integrated and complex when applying the Complete Streets approach to projects later in the development process, because of more defined project schedules. The best opportunities in these cases are for resurfacing, restoration, and rehabilitation (RRR) projects. FDOT will coordinate early with local partners to identify feasible enhancements within the constraints of the project. More information regarding this process can be found Chapter 3 of this Handbook.

A key factor in the Complete Streets approach is blending and merging of projects and concepts to create the desired long-term solution. FDOT will fund the construction and maintenance of aspects of transportation projects that are necessary to comply with adopted FDOT design criteria contained in the FDM. If local governments or other partners would like to include features that go beyond what is required by FDOT design criteria, funding for the construction and maintenance of those additional components will be the responsibility of the local government or local partner, as defined in a local maintenance agreement. Current elements being maintained by local governments or other partners as part of local maintenance agreements (e.g. traffic signals on state roadways) will continue to be maintained per the agreements in place.

FDOT'S ROLE

The FDOT context classification for state projects will be determined as early as possible in the planning, design, and maintenance cycle. The process for project development is detailed in Chapter 3 of this Handbook, but summarized here as it relates to local government interaction. For state projects, the project manager (or designee, such as 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. This information may eventually be stored in an integrated roadway asset identification system, such as the FDOT Enterprise Application Roadway Characteristics Inventory (RCI), the straightline diagram, and the typical section data sheet. Measures used to determine the context classification are based on

existing development patterns and may include future visions of the community. Collaboration with the local and regional agencies and governments associated with a project is the key for successful projects. In an ideal situation, a future vision for an area or corridor will be documented and approved by the community's governing body, such as in its comprehensive plan and land development codes. Community redevelopment area master plans or sector plans are other possible examples. FDOT will have the final determination of the context classifications to be used for state transportation projects (i.e., for roads on the State Highway System, including the SIS). Interstates and freeways are high-volume transportation facilities that are independent of the surrounding land uses, and are considered "complete," but context classification will be needed at locations where these facilities connect to the non-limited-access system.

To address projects identified as part of the MPO/TPO long-range planning process, districts may identify the context classification of state projects during the Efficient Transportation Decision Making (ETDM) screening and collaborate with affected local governments as part of Long-Range Transportation Plan (LRTP) preparation, or may follow other processes as described in Chapter 3. Each FDOT district has flexibility in its process for documenting context classifications that could vary within the district due to local and regional agency preferences. For example, instead of working on a project-by-project basis, a district could decide to proactively determine the context classification for all state facilities, or all state facilities in a specific area (e.g., an urbanized area). Or, a district could coordinate with a MPO/TPO to recommend context classifications for LRTP state projects.

After determining a project's context classification, or potentially multiple context classifications for a longer corridor, FDOT will choose transportation criteria that fit within the parameters of the classification(s). The FDOT context classification and transportation characteristics, such as the road's functional class and network connectivity, will be used together for planning and design. This task is easiest for new roads with right of way to incorporate all appropriate transportation elements. For existing roads, with limited rights of way, the ability to include transportation elements may require a balancing of

needs and constraints. Based on its processes and procedures, FDOT will coordinate with partners to evaluate options. Each FDOT district will decide how best to incorporate a Complete Streets planning and design approach in its processes. For example, some districts have scoping teams and tools to identify and tag projects for increased community collaboration and flexibility early.

The SIS is composed of facilities of statewide and regional significance with the objective of supporting interregional connectivity, intermodal connectivity, and economic development. To local communities, a SIS facility can serve as a corridor connecting communities or may be a main street for a town. Multiple partners working collaboratively to find solutions is key to the Complete Streets approach, whether for a SIS facility or state or local road. For example, some districts have worked with communities to shift SIS corridors to avoid main street areas and have designated alternate SIS routes or connectors to support interregional travel and local needs simultaneously.

FDOT will continue to use the same funding categories (federal, state, and local funds) with the Complete Streets planning and design approach. Context classification allows FDOT greater flexibility in designs and helps to match roads to their locations. FDOT will plan more carefully for what treatments are wanted, and where, and can help identify appropriate funding. Although no new funding is available for Complete Streets, existing sources will be tapped in more specific ways, by understanding place better than before. This also means FDOT will continue to rely on local partners to provide features that go beyond FDOT design criteria (e.g., decorative lighting or patterned facilities).

FDOT can collaborate with a community to identify a road's context classification at any time and communities are encouraged to reach out to their district to coordinate with FDOT before projects are identified. This is particularly the case if a community is interested in changing the character of a street over time or is considering requesting a lane elimination or "road diet" on a state road, where additional studies and steps are warranted. Each district will address community collaboration based on partner engagement preferences. For some of the more urban districts, a Complete Streets coordinator may

be designated. Other districts may rely on MPO/TPO liaisons or SIS or growth management coordinators.

THE ROLES OF PARTNERS

A Complete Streets approach to planning and design allows for flexibility in projects, which means that collaboration and partnering is required to meet and balance the transportation needs of the community, the region, and the State. It is important to ensure that state roadways maintain vital regional and statewide mobility goals, especially for SIS facilities. When planning and designing state projects, FDOT will rely on partners within the affected jurisdiction(s) who have local and regional expertise.

METROPOLITAN PLANNING ORGANIZATIONS

The transportation planning process requires MPOs/TPOs, with the involvement of state and local governments and stakeholders, to create an LRTP. The LRTP provides guidance on the MPO's/TPO's vision for the planning area's transportation system. For example, MPOs/TPOs have identified transit networks and systems of bicycle, sidewalk, and trail networks. Identifying projects, prioritizing them, allocating funding, and tracking performance measures also influence FDOT's Complete Streets approach for state projects. As part of the LRTP process, MPOs/TPOs are encouraged to work with FDOT districts to identify context classifications for projects, and identify and allocate funding to address FDOT and local Complete Streets needs.

A MPO/TPO is available to work with constituent communities to clarify and define regional and community visions that will be used during context classification determination. Also, communities may desire infrastructure for state roads that go beyond FDOT design criteria, and MPOs/TPOs are in a position to assist local governments in identifying those items and allocating and aligning other funding.

LOCAL GOVERNMENTS

Local governments are responsible for land use and transportation planning to create supportive infrastructure and development patterns that match community goals and visions. Clear policies delineated in a community's comprehensive plan to retain current development patterns, such as in historical or rural towns, or promote changes in development patterns, such as in urbanizing areas, provide direction to private and public partners in land development, infrastructure, and provision of services. FDOT will look to local governments when determining context classification as part of a state project. Comprehensive plans, subarea plans, and land development regulations, such as zoning or form-based codes, are some of the documents that will be reviewed to determine future visions and the land use-related items in determining context classification. The existing development pattern, determined through aerial/asset mapping or site visits, for example, will be used to evaluate current transportation network connectivity for the project and surrounding areas. It also will be used to evaluate current site plan oriented criteria, such as building and parking placement, and development intensity. The private sector is responsible for site development in accordance with local policies and codes and approval from the local government. For example, land use and development decisions to mix uses or locate buildings close to the road support easier pedestrian and bicyclist access. The specifics of how context classification is determined are covered in Chapters 2 and 3 of this Handbook.

After determining the context classification, FDOT identifies the elements that are appropriate for the context and assesses design and implementation options. If infrastructure for state roads that go beyond FDOT design criteria, such as decorative lighting or landscaping, patterned pavements, or street furniture and wayfinding is desired, local communities must coordinate with FDOT to align local resources and projects with the state project. Each district has flexibility in how the coordination of projects is handled. For example, districts have performed construction with the local government assuming maintenance responsibilities, particularly for the enhancements. Other districts have relied on the Local Agency Program (LAP) to allow the local government to implement the combined, broader project.

As part of the decision-making process to identify the elements to include in a state project, FDOT will evaluate the surrounding and connecting transportation network. Finding flexible and innovative solutions can mean looking at other roads/networks to support state and community goals. Local and regional roads are the responsibility of county and municipal governments, and others. Creating a roadway network with appropriate design elements also provides multiple travel options for all modes, assists with pedestrian and bicycling routing, shortens trip distances, and reduces the need to widen intersections and roadways. Regional and local road designs, such as inhibiting through access or limiting lanes, can increase the reliance on state roads for mobility for some road users.

TRANSIT AGENCIES

Transit agencies — at the city, county, and regional levels — play a significant role in providing transportation choices for all users. Transit agencies develop short-term Transit Development Plan (TDPs) and may develop longer-term plans that identify the investments needed in transit within their service areas. As part of project planning, FDOT districts will coordinate with local transit agencies to determine the proper role for transit along a roadway. This determination also requires coordination with local governments given their role in defining and regulating the desired land development. FDOT's **Assessing Transit Guidebook** includes planning and design recommendations for transit-supportive communities.

OTHER PARTNERS

Other agencies and entities may engage with FDOT as part of state project planning and design. Regional Planning Councils may prepare regional or community visions and transportation long-range plans, and support local government comprehensive planning and development regulations. Advocacy and community groups may raise items to be addressed by FDOT or local governments. Other public stakeholders also are involved through existing FDOT and other agencies processes and procedures.

Table 1-1 provides a representative overview of the roles of various partners in FDOT's Completes Streets approach.

TABLE 1-1 STAKEHOLDER ROLES IN FDOT'S COMPLETE STREETS APPROACH

	Project Planning	Context Classification	Identification of Project Elements	Selection of Project Elements	Project Funding
FDOT	- Plans state projects - Coordinates with partners	- Determines context classification - Coordinates with partners, as needed based on type of project	- Uses FDM and other guidance to define potential project elements based on context classification and transportation characteristics - Studies concepts, alternatives, and feasibility	- Considers benefits and costs of project elements - Determines feasible project elements - Coordinates with partners, as needed based on type of project	- Matches funding to project elements, within existing budget parameters - Coordinates with partners for project funding
MPOs/ TPOs	- Initiates project requests to FDOT via LRTP and other studies - Performs and participates in planning and studies	- Establishes transportation vision through long-range plans - Considers project context classifications during LRTP development	- Defines project in LRTP - Coordinates with partners, as needed	Collaborates with FDOT and partners on companion projects	- Establishes project funding during LRTP and Transportation Improvement Program (TIP/STIP) - Considers multimodal elements in project planning - Coordinates with FDOT and other partners
Local Governments	- Initiates project request to FDOT, as needed - Participates in planning processes and studies	- Establishes community vision through comprehensive and other plans - Sets local land use policies and land development regulations	- Identifies companion projects for additional elements, e.g., lighting, landscape, street furniture - Coordinates with partners, as needed	Supplements project elements provided by FDOT with companion projects, as needed	- Provides local funding for elements not funded by FDOT, as needed - Enters into maintenance agreements with FDOT for additional enhancements, as needed - Coordinates with FDOT and other partners
Other Partners (such as private businesses, developers, transportation operators, law enforcement, or advocacy groups)	Participates in planning processes and studies	- Participates in development of community and regional visions - Establish transit plans - Performs land development and economic development projects	Identifies companion projects for additional elements, e.g., transit stops	Supplements project elements provided by FDOT with companion projects, as needed	Coordinates with FDOT and other partners

Context-Based Complete Streets

FDOT will routinely plan, design, construct, and maintain state roadways in harmony with the surrounding land use characteristics and the intended uses of the roadway. To this end, a context classification system comprising eight context classifications has been adopted. The context classification of a roadway, together with its transportation characteristics, will 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 (see Figure 2-1). The context classification and transportation characteristics of a roadway will determine key design criteria for all non-limited-access state roadways.

This chapter describes the measures to be used to determine the context classification of a roadway. See Chapter 3 of this Handbook for a discussion of how context classification is incorporated into the existing FDOT project development process.

FIGURE 2-1 CONTEXT CLASSIFICATION AND TRANSPORTATION CHARACTERISTICS



CONTEXT CLASSIFICATION

The context classification system broadly identifies the various built environments existing in Florida, as illustrated in Figure 2-2. State roadways will extend through a variety of context classifications. Figure 2-2 should not be taken literally to imply all roadways will have every context classification or that context classifications occur in the sequence shown. 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. The context classification

of a roadway will inform FDOT's planning, PD&E, design, construction, and maintenance approaches to ensure that state roadways are supportive of safe and comfortable travel for their anticipated users. Identifying the context classification is a preliminary step in planning and design, as different context classifications will have different design criteria and standards.

The use of context classifications to determine criteria for roadway design elements is consistent with national best practices and direction, including the National Cooperative Highway Research Program

FIGURE 2-2 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.

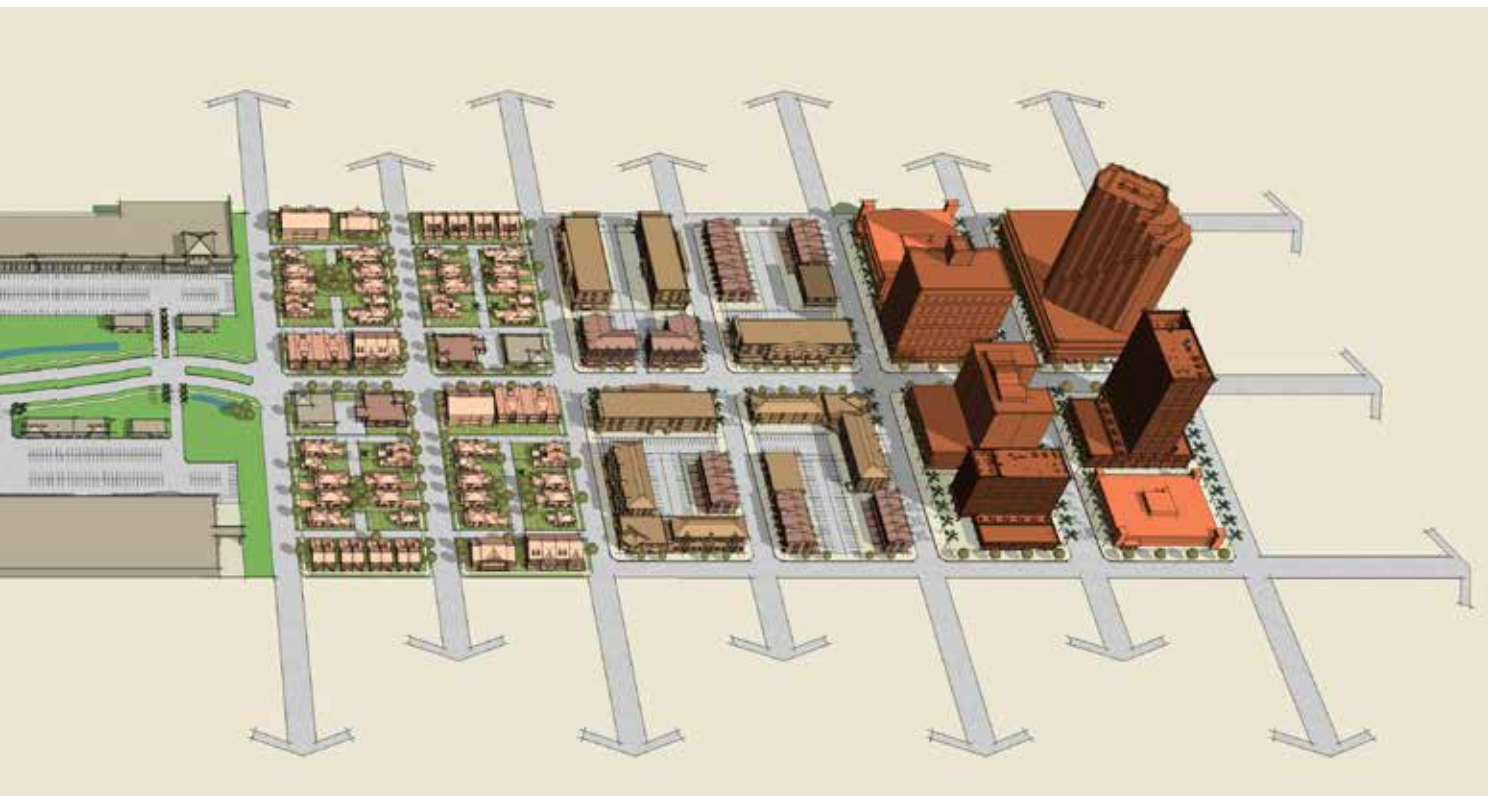
(NCHRP) that informs Federal Highway Administration (FHWA) and American Association of State Highway Transportation Officials (AASHTO) guidance.

Ongoing research under ***NCHRP 15-52: Developing a Context-Sensitive Functional Classification System for more Flexibility in Highway Design***

is proposing 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.

This chapter outlines the steps to determine a roadway's context classification. Measures used to determine the context classification are presented, and a process to define the context classification is outlined for:

- All projects on existing roadways and for projects that propose new roadways and are in the PD&E or design phases
- Projects evaluating new roadways in the planning and ETDM screening phases



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 >1,000,000). Many are regional centers and destinations. Buildings have mixed uses, are built up to the roadway, and are within a well-connected roadway network.

CONTEXT CLASSIFICATION MATRIX

Table 2-1 Context Classification Matrix presents a framework to determine the context classifications along state roadways. This Context Classification Matrix outlines (1) distinguishing characteristics, (2) primary measures, and (3) 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. These measures can be evaluated through a combination of a field visit, internet-based

TABLE 2-1 CONTEXT CLASSIFICATION MATRIX

Context Classification	Distinguishing Characteristics	Primary Measures		
		Land Use	Building Height	Building Placement
		Description	Floor Levels	Description
C1-Natural	Lands preserved in a natural or wilderness condition, including lands unsuitable for settlement due to natural conditions.	Conservation Land, Open Space, or Park	N/A	N/A
C2-Rural	Sparsely settled lands; may include agricultural land, grassland, woodland, and wetlands.	Agricultural or Single-Family Residential	1 to 2	Detached buildings with no consistent pattern of setbacks
C2T-Rural Town	Small concentrations of developed areas immediately surrounded by rural and natural areas; includes many historic towns.	Retail, Office, Single-Family or Multi-Family Residential, Institutional, or Industrial	1 to 2	Both detached and attached buildings with no, shallow (<10'), or medium (10' to 24') front setbacks
C3R-Suburban Residential	Mostly residential uses within large blocks and a disconnected or sparse roadway network.	Single-Family or Multi-Family Residential	1 to 2, with some 3	Detached buildings with medium to large (>10') front setbacks
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.	Retail, Office, Multi-Family Residential, Institutional, or Industrial	1 (retail uses) and 1 to 4 (office uses)	Detached buildings with medium to large (>10') setbacks on all sides
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.	Single-Family or Multi-Family Residential, Institutional, Neighborhood Scale Retail, or Office	1 to 3, with some taller buildings	Both detached and attached buildings with no, shallow (<10'), or medium (10' to 24') front setbacks
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.	Retail, Office, Single-Family or Multi-Family Residential, Institutional, or Light Industrial	1 to 5, with some taller buildings	Both detached and attached buildings with no, shallow (<10'), or medium (10' to 24') front setbacks
C6-Urban Core	Areas with the highest densities and building heights, and within FDOT classified Large Urbanized Areas (population >1,000,000). Many are regional centers and destinations. Buildings have mixed uses, are built up to the roadway, and are within a well-connected roadway network.	Retail, Office, Institutional, or Multi-Family Residential	>4, with some shorter buildings	Mostly attached buildings with no or shallow (<10') front setbacks

The thresholds presented in Table 2-1 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;

aerial and street view imagery, map analysis, review of future land use or existing zoning information, and discussions with local governments. The Context Classification Matrix presents the primary and secondary measures thresholds for the eight context classifications.

Appendix B illustrates the eight FDOT context classifications through case studies. These case studies present examples of real-world values for the primary and secondary measures that determine a roadway's context classification.

					Secondary Measures			
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				
Yes/No	Description	Intersections/ Square Mile	Feet	Feet	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	N/A
No	N/A	N/A	N/A	N/A	<1	N/A	<2	N/A
Yes	Mostly on side or rear; occasionally in front	>100	<3,000	<500	>4	>0.25	N/A	>2
No	Mostly in front; occasionally in rear or side	<100	N/A	N/A	1 to 8	N/A	N/A	N/A
No	Mostly in front; occasionally in rear, or side	<100	>3,000	>660	N/A	<0.75	N/A	N/A
Yes	Mostly on side or rear; occasionally in front	>100	<3,000	<500	>4	N/A	>5	>5
Yes	Mostly on side or rear; occasionally in front, or in shared off-site parking facilities	>100	<2,500	<500	>8	>0.75	>10	>20
Yes	Side or rear; often in shared off-site garage parking	>100	<2,500	<660	>16	>2	>20	>45

2) [2012 Florida TOD Guidebook](#), Florida Department of Transportation;

3) [2009 SmartCode Version 9.2.](#), Duany, Andres, Sandy Sorien, and William Wright; and

4) [2010 Designing Walkable Urban Thoroughfares: A Context Sensitive Approach](#), Institute of Transportation Engineers and Congress for the New Urbanism.

DETERMINING CONTEXT CLASSIFICATION

The distinguishing characteristics and primary and secondary measures provide analytical measurements to evaluate land use characteristics, development patterns, and roadway connectivity and to determine context classification. The data available to quantify existing and future contexts 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 projects proceed from planning, through PD&E and design. In planning and ETDM screening for existing roadways, and PD&E and design for new roadways, it is possible to analyze both the existing and future conditions to determine 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 type of projects, a broader understanding of the context classification will be used to inform the planning process and development of alternatives.

To be able to utilize the context-based criteria in the **FDM**, all projects must be informed by their roadway context classification. The context classification will be developed or confirmed at the beginning of each project phase, including planning, PD&E, and design. Each district can assign staff who will 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 determine context classification (see Chapter 3 for more information). The final determination of context classification will be made by FDOT. For smaller projects, such as traffic operations push-button projects, the context classification may be determined without additional local coordination (see Chapter 3 for more information). Refer to the **Public Involvement Handbook**, **FDM**, **PD&E Manual**, and **Project Management Handbook** for guidance on local government coordination.

Existing Roadways and Proposed New Roadways in PD&E or Design Phases

Steps for determining the context classification for all projects on existing roadways, and for projects that propose new roadways and are in the PD&E or design phases include:

1. Identify Major Changes in Context

Utilize the distinguishing characteristics based on the Context Classification Matrix to determine if multiple context classifications are necessary due to significant changes in the type or intensity of uses located along the roadway. A context classification segment may be as short as two blocks or, where there is no defined block structure, a quarter-mile in length.

2. Evaluate the Primary Measures

A roadway segment must meet a majority of the primary measures defined for a context classification in order to be assigned that context classification. Table 2-2 describes the primary measures, methodology, and data sources associated with each measure. For the primary measures, two measurement areas — the block and the parcel — are used, as explained in Figures 2-3 and 2-4. The measurement areas used for each measure are identified in Table 2-2. Figure 2-5 through Figure 2-9 provide guidance for evaluating some of the primary measures.

For RRR, Safety, and Traffic Operations projects, each segment identified in step 1 can be evaluated using the primary measures based on existing conditions or future context. Qualifying projects in all phases for existing roadways will be evaluated using the future context of the primary measures. The future context should be clearly documented in a well-defined, community-supported and implementation-focused plan or in policies such as the land use element of the local comprehensive plan, zoning overlays, form-based codes, community redevelopment plans, or permitted development plans.

Qualifying Projects:

Roadway project types that qualify for ETDM screening, per the *ETDM Manual* Section 2.3.1 include:

- Additional through lanes which add capacity to an existing road
- A new roadway, freeway or expressway
- A highway which provides new access to an area
- A new or reconstructed arterial highway (e.g., realignment)
- A new circumferential or belt highway that bypasses a community
- Addition of interchanges or major interchange modifications to a completed freeway or expressway (based on coordination with FHWA)
- A new bridge which provides new access to an area, bridge replacements

Non-qualifying Projects:

Projects that do not go through ETDM screening.

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 timeframe 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.

3. Evaluate the Secondary Measures

In most cases, especially for RRR, safety, and traffic operations projects, primary measures are sufficient to understand and determine a roadway's context classification. Secondary measures can be used to



An example of a high volume roadway that balances the needs of freight traffic, transit, and pedestrians and bicyclists of varying abilities.

Location: US 98, Polk County, FL

Source: KAI

further understand the context when there is no clear consensus on the context classification based on the primary measures. Secondary measures are also useful in cases where local municipalities have adopted a future vision for a place that is not consistent with the existing context classification. Table 2-3 describes the secondary measures and the methodology and data sources associated with each measure.

The secondary measures quantify the intensity of development. A roadway segment needs to meet only one of the two criteria, either population density or employment density, to be classified within a context classification. Zoning may show that the local municipality intends for the area to be developed into a more intense development form in the future, and therefore does not meet the existing population and employment densities, but will meet them in the future.

TABLE 2-2 PRIMARY MEASURES TO DEFINE CONTEXT CLASSIFICATION

Measure	Description	Methodology	Measurement Area*	Data Source**
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 or future land use maps
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 2-5).	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 percent of buildings that provide fronting uses or site design and lot layout requirements in land development regulations that require fronting uses (See Figure 2-6).	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 2-7).	Fronting parcels on either side of the roadway	Field review or internet-based aerial and street view imagery, or land development regulations
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 2-8).	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
	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 - permitted development plan is in place (see Figure 2-9).	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
	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 2-9).	Roadway

* 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.

FIGURE 2-3 MEASUREMENT AREA: THE BLOCK ON EITHER SIDE OF THE ROADWAY

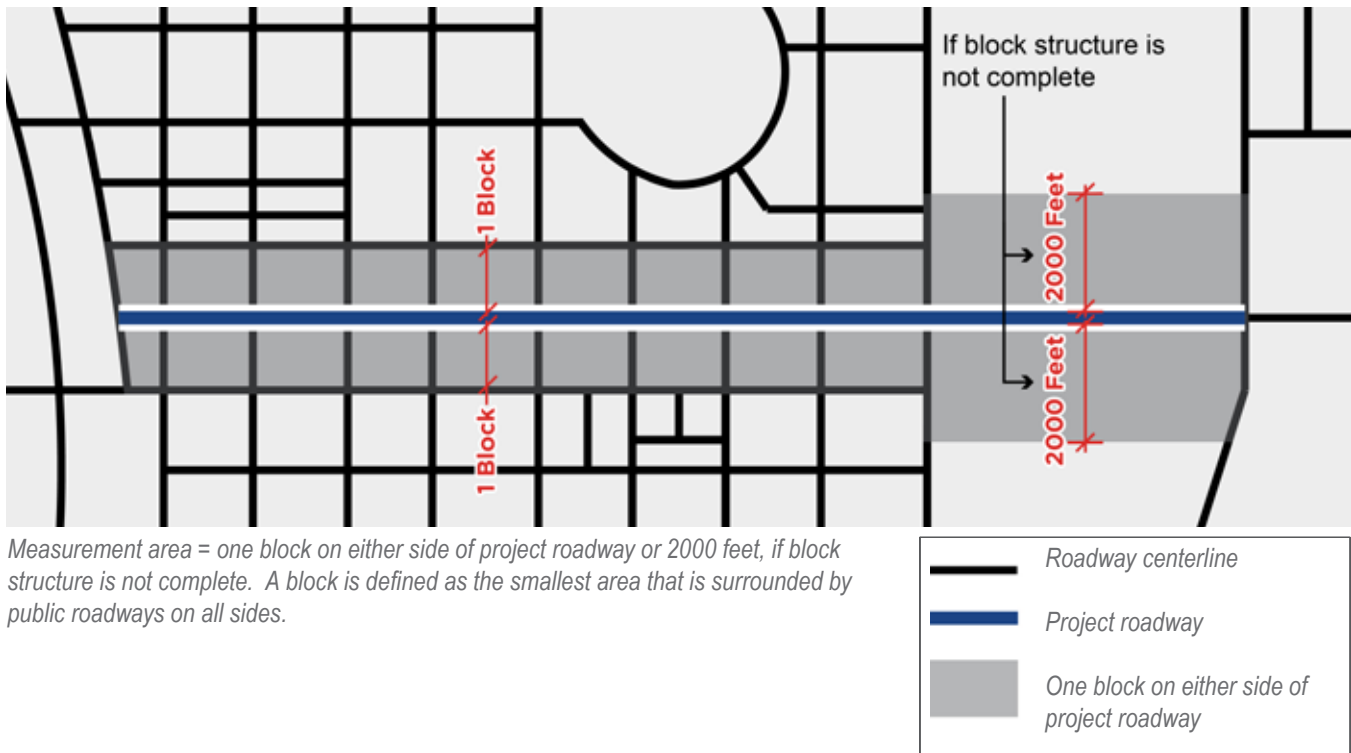


FIGURE 2-4 MEASUREMENT AREA: FRONTING PARCELS ON EITHER SIDE OF THE ROADWAY

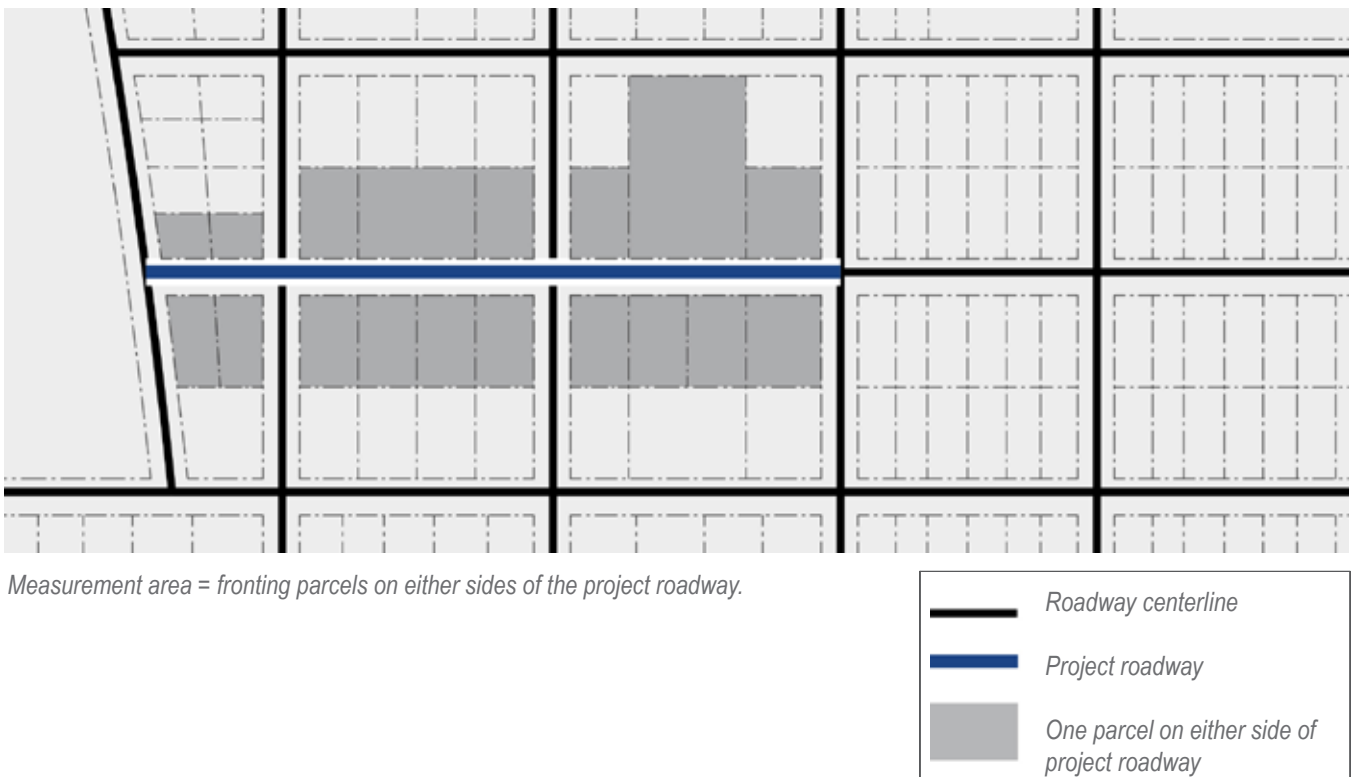


FIGURE 2-5 BUILDING PLACEMENT

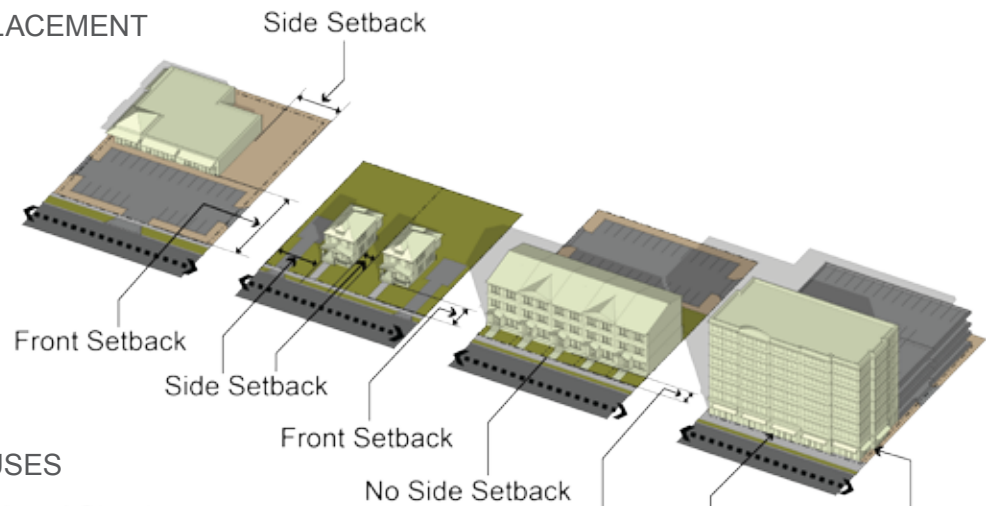


FIGURE 2-6 FRONTING USES

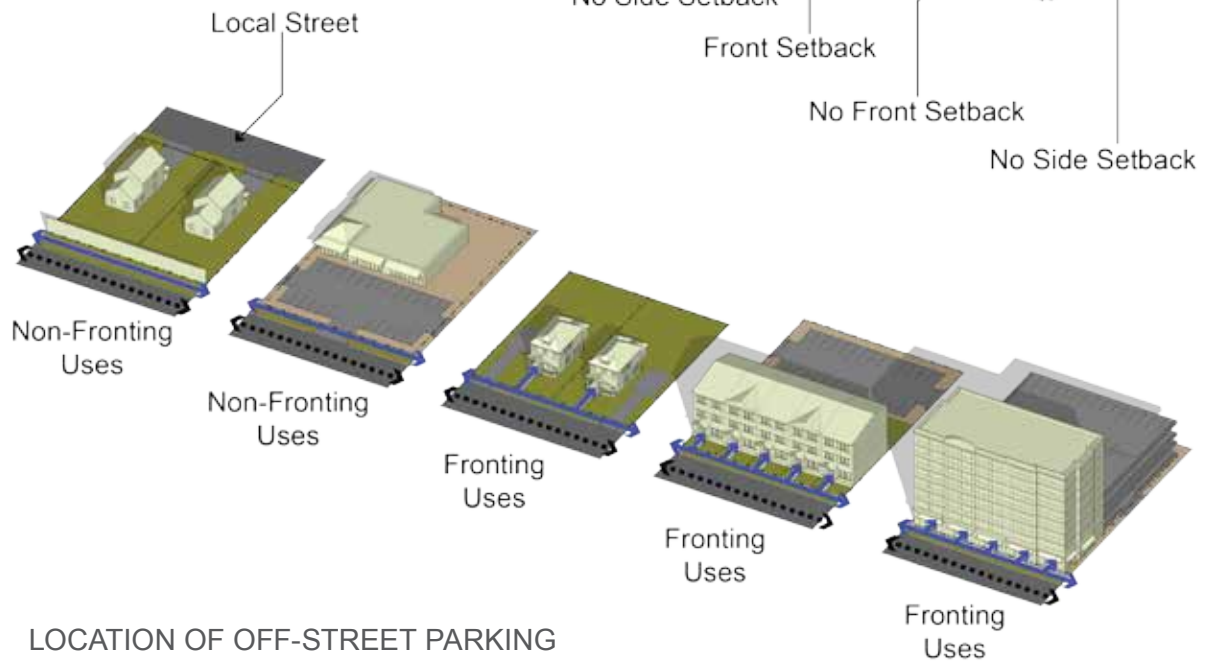


FIGURE 2-7 LOCATION OF OFF-STREET PARKING

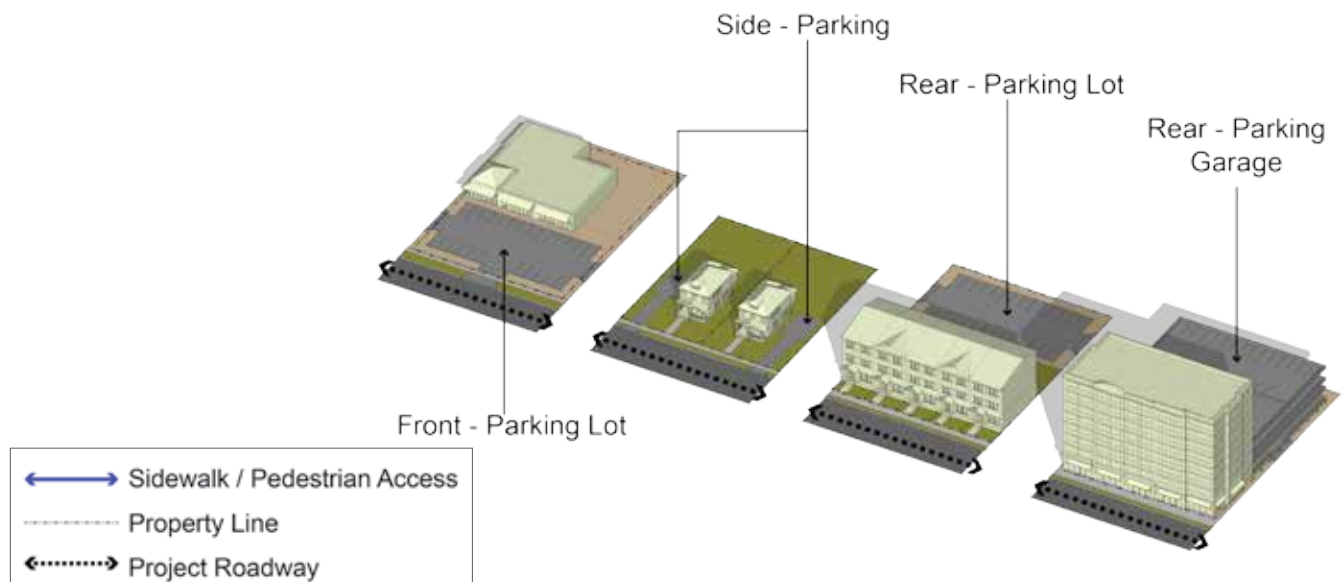


FIGURE 2-8 INTERSECTION DENSITY

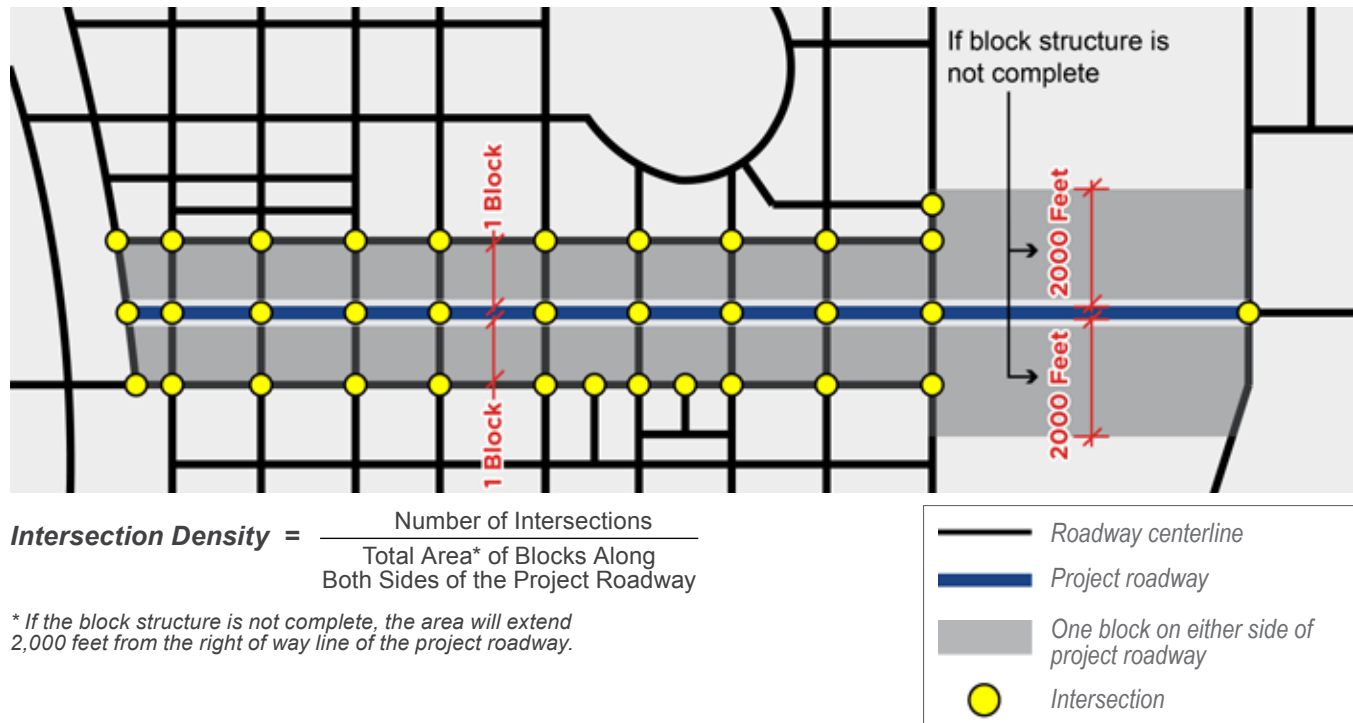


FIGURE 2-9 BLOCK PERIMETER AND BLOCK LENGTH

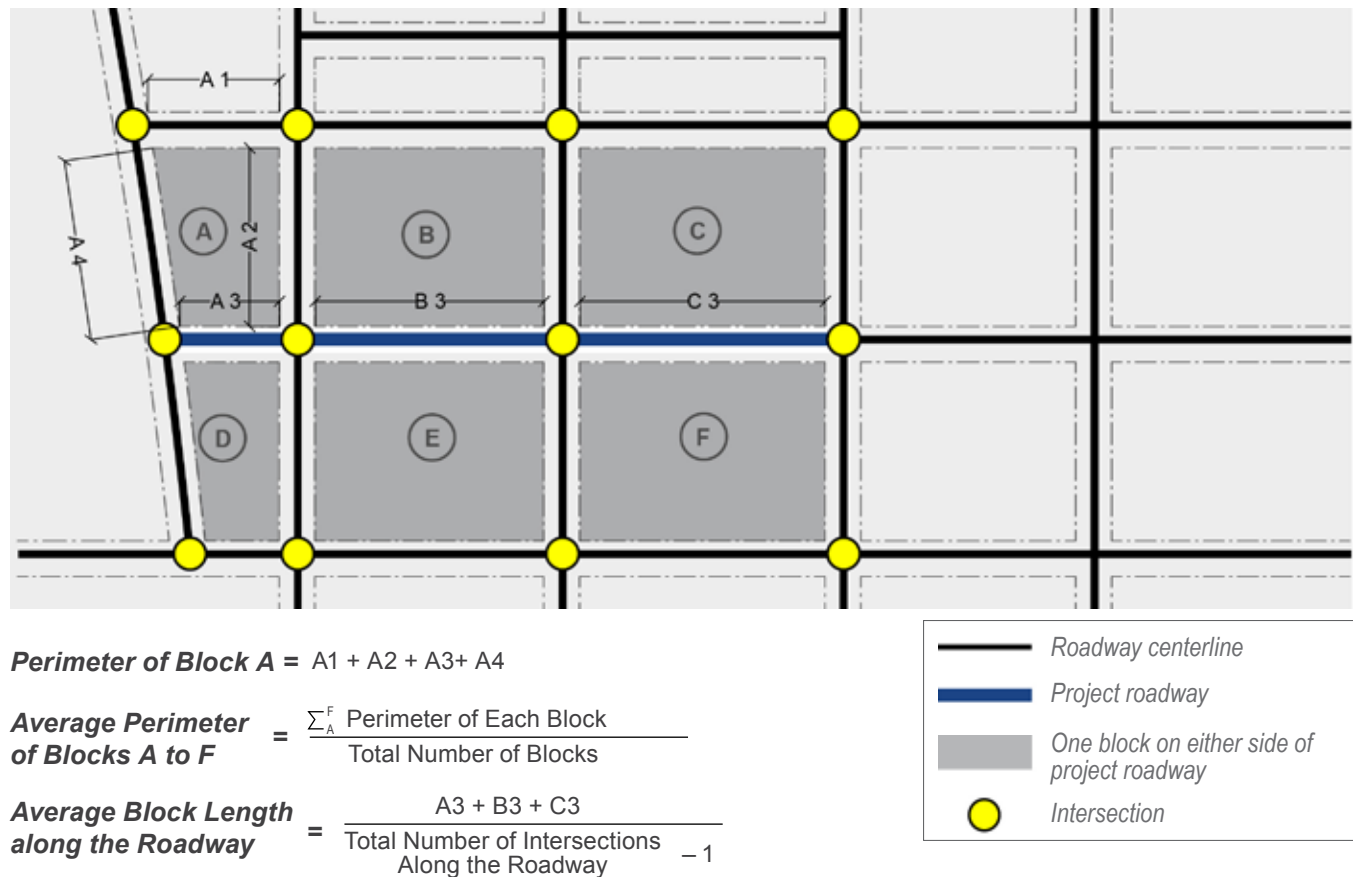


TABLE 2-3 SECONDARY MEASURES TO DEFINE THE CONTEXT CLASSIFICATION

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 allowed in each zoning district. Maximum allowable FAR for an area can be calculated using site design and height standards (see Appendix C 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
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 Research (BEER) 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

Proposed New Roadways in Planning or ETDM Screening

During planning and ETDM screening for new roadway alignments, a broad understanding of the context classification will be used to inform the planning process. For example, area-wide studies such as the Future Corridors studies would use more general criteria to determine the context classification as compared to a corridor study on an existing roadway for the purposes of defining a concept to be advanced into PD&E or design.

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 are necessary based on the Context Classification Matrix 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 or other distinguishing features. Segment lengths can vary, and may be as short as two blocks or, where this is no defined block structure, longer than a mile.

2. Evaluate the Future Land Use

Evaluate the land use along the roadway based on the future land use element of the adopted local comprehensive plan using the land use description provided in Table 2-1.

3. Evaluate the Secondary Measures

Table 2-3 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 BEBR estimates for future population and employment projections. A context classification 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 throughout the State. Use the allowed residential and office/retail densities, the distinguishing characteristics, and the future land use listed in the Context Classification Matrix to determine if a roadway is within the C3C-Suburban Commercial or CR3-Suburban Residential Context Classification.

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.

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.

DOCUMENTING CONTEXT CLASSIFICATION

Context classification will be determined on a project-by-project basis, and will be developed or confirmed at the beginning of each project phase, including planning, PD&E, and design. The districts will be responsible for collecting the context classification information for each project. This information may eventually be stored in an integrated roadway asset identification system, such as the FDOT Enterprise Application RCI, as well as the straightline diagram and the typical section data sheet.

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. 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, and therefore include all land areas and types found within the State of Florida, with less local specificity.

The general relationship between the zones used by the transect system and FDOT's context classification is outlined in Table 2-4.

TABLE 2-4 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	Coded as Conventional Suburban Development (CSD)	The SmartCode™ does not provide for this type of development pattern
C3C – Suburban Commercial		
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, rowhouses, 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 take into consideration regional travel patterns, freight movement, and SIS designation. Together with context classification, they 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.

FUNCTIONAL CLASSIFICATION

Functional classification defines the role 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 2-5).¹

The **AASHTO A Policy on Geometric Design of Highways and Streets, 5th Edition (2011)** 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.

Complete Streets continue to recognize functional classification but also consider the context classification of the street as part of the total picture. 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 business tend to locate along arterial roadways, 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 demands for transit trips and the efficiency of providing higher levels of transit

service along these roadways. At the same time, many state roadways travel through large and small (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 in determining the transportation demand characteristics along a roadway, including typical users, trip length, and vehicular travel speeds.

TABLE 2-5 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.

* This Handbook does not address limited-access facilities.

For non-limited-access roadways, the **FDM** provides design criteria and standards based on both context classification and functional classification.

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

CONTEXT CLASSIFICATION AND STREET USERS

The context classification informs planners and engineers of the types of users and the intensity of use expected along the roadway. For example, in the C6-Urban Core Context Classification, there will be a higher number of pedestrians, bicyclists, and transit users than in a C2-Rural Context Classification. Therefore, reduced speeds, 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; however, bicyclists and pedestrians are accommodated with bike lanes, paved shoulders, or sidepaths. A state roadway in C2-Rural Context Classification is expected to have higher speeds, wider lanes, and lower levels of traffic delay.

When determining the roadway typical section to be used, give appropriate consideration for all users of the roadway. Include required elements associated with the context classification of the roadway. The **FDM** contains criteria to be used for each context classification.

HOW TO IDENTIFY ROADWAY-SPECIFIC TRANSPORTATION TRAVEL DEMANDS

While context classification and functional classification can provide general guidelines for the type and activity level of different users, additional information can assist in obtaining a more thorough understanding of the needs of all the intended users. The anticipated users of a roadway and the travel patterns of those users should be determined well before the design phase of a project, and are best explored during the planning and design scoping phase.

The **Traffic Forecasting Handbook** documents data collection efforts to understand vehicular travel patterns. Table 2-6 provides a menu of data sources that could be useful in identifying different needs for different users. Not all of the data presented in Table 2-6 will be required for all projects. The data collected for a project should be tailored to the scale, purpose, and needs of a project.

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?
- **Vehicular Trip Types:** 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?
- **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 significant diversion of their trip? 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 other large vehicles? Is the roadway part of a designated freight corridor? Where does loading and unloading occur along the roadway?

- **Demographics:** Based on census data, are there areas of high transit, pedestrian, or bicyclist demand? These include areas overrepresented, when compared to the general population, by elderly or low-income residents, or households without access to automobiles.



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

TABLE 2-6 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 and operating speeds • Vehicular traffic volumes • Existing sidewalk characteristics (location, width, pavement condition, obstacles or pinch points) • 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)
 Bicyclist	• Local and regional bicycle network • Posted and operating speeds • Vehicular traffic volumes • Number of vehicular travel lanes • Location of bicycle parking • Bicycle user type (see Chapter 4) • 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
 Car	• Design Traffic (Existing and projected Average Annual Daily Traffic (AADT), K-factor (K), directional distribution (D), and traffic growth projections) • Trip lengths; origin/destination patterns • Turning movement counts • Posted and operating speeds • Signal timing • Location of parking • Crash data • Lighting levels • Pavement condition • Existing and future land use, building form and site layout, development scale and pattern
 Transit	• Existing and future transit routes and stops • Transit service headways • Location and infrastructure at transit stops • Sidewalk 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

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 the State'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.

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; and
- 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.

This balance could mean that other throughput options to the SIS facility (e.g., a bypass or express lanes) are studied and considered if redesigning the currently designated roadway is needed to conform to the context classification. 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 Complete Streets approach within a community.

The **FDM** provides design standards for facilities on the SIS. Appendix D presents proposed design speed ranges for SIS facilities. Roadways located on the SIS require coordination with the District SIS Coordinator during the determination of the facility's context classification.



Accommodations of freight vehicles is an important part of Complete Streets.

Location: Estero Boulevard, Fort Myers Beach, FL

Source: Rick Hall

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 how NEPA is evaluated for Federally funded transportation projects in Florida, including the identification and assessment of environmental characteristics for all projects. Public involvement and agency coordination is part of the PD&E process. Chapter 3 of this Handbook discusses how the ETDM and PD&E processes will incorporate the Complete Streets approach. 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

CONTEXT CLASSIFICATION RELATIONSHIP WITH EXISTING HANDBOOKS AND PROCESSES

The FDOT Complete Streets context-based design approach is compatible with and supported by national guidance documents. The following section describes the relationship between FDOT context classification and contexts defined in existing FDOT and national manuals and handbooks.

AASHTO A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS

AASHTO recognizes that different places have different characteristics with regard to 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 A Policy on Geometric Design of Highways and Streets** provides design standards based on urban and rural areas, as defined by the FHWA. FHWA identifies urban areas as those places, within boundaries set by the responsible state and local officials, having a population of 5,000 or more. Urban areas are comprised of:

- **Urbanized Areas**, designated as population of 50,000 or more by the U.S. Census Bureau.
- **Small Urban Areas**, designated as population between 5,000 and 49,999, and not within any urbanized area.

Rural encompasses all population, housing, and territory not included within an urban area.

For the purpose of funding considerations and other processes and procedures, FDOT will continue to define urban and rural areas following the FHWA criteria. For design criteria and standards for non-limited-access roadways, FDOT utilizes context classification in the *FDM*. There is no direct relationship between context classification and FHWA's definition of urban and rural. In general, C4-Urban General, C5-Urban Center, and C6-Urban Core will be located in the FHWA urban areas. C1-Natural and C2-Rural will be primarily located in the FHWA rural areas. C2T-Rural Town, C3C-Suburban Commercial, and C3R-Suburban Residential may be found in FHWA-urban or rural areas.

QUALITY/LEVEL OF SERVICE HANDBOOK

The *FDOT Quality/Level of Service Handbook (Q/LOS)* and its accompanying software 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 *Q/LOS Handbook* and accompanying software:

- **Urbanized Areas** — Areas that meet FHWA's definition of Urbanized Areas. These consist of a densely settled core of census tracts and census blocks that meet minimum population density requirements, along with adjacent densely settled surrounding census blocks that together encompass a population of at least 50,000 people. The *Q/LOS Handbook* further identifies areas with population over 1,000,000 as **Large Urbanized Areas**.
- **Urban Areas** — Areas with a population between 5,000 and 49,999 (mostly used to distinguish developed areas that are not urbanized).
- **Transitioning Areas** — Areas generally considered as transitioning into urbanized/urban areas or areas over 5,000 population 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 cities or developed areas with less than 5,000 population; and rural undeveloped areas in which there is no or minimal population or development.

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 categories.

Future editions of the *Q/LOS Handbook* will be revised to be consistent with the FDOT context classification.

ROADWAY CHARACTERISTICS INVENTORY

The RCI is a database of information related to the roadway environment maintained by FDOT. The database includes information on a roadway's features and characteristics. Feature 124-Urban Classification, Feature 125-Adjacent Land Classification, Feature 145-LOS Input Data, and Feature 481-Highway Maintenance Classification describe land use contexts in different ways.

These categories are not related to the context classification system detailed in this chapter. FDOT is considering recording context classification information in RCI at the time when state roadways are evaluated through FDOT projects. If this occurs, RCI information may be a starting point for future projects in evaluating a roadway's context classification.

For more information on the RCI, refer to the *RCI Features and Characteristics Handbook*.

ACCESS MANAGEMENT CLASSIFICATION

Access management classification reflects the desired access management standards to be followed for each state roadway. These are standards for restrictive medians, median opening separation, and driveway separation. The ranges are from 00-07 and 99. Class 01 reflects the highest amount of access management control (freeways), and Class 07 the lowest. Class 07 is usually found on suburban built-out roadways. Class 99 refers to 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.

No direct correlation can be made between access management classification and context classification. It can be generally stated that higher intensities of use, including C2T-Rural Town, C4-Urban General, C5-Urban Center, and C6-Urban Core, as well as roadways with established land use patterns, 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. Beyond the context classification, the role of the roadway in the transportation system and safety considerations must also be taken into account to determine access management needs.

The Systems Planning Office is currently studying the relationship between existing access management practices and the implementation of Complete Streets. The Systems Planning Office is reviewing general recommendations to bring the access management classifications documented in **Administrative Rule 14-97** into a closer relationship with the FDOT context classifications. This process will take some time, as it will require an administrative rule change and review of multiple sections by FDOT, the public, and other stakeholders (such as the roadside development industry) before it can be finalized.

Process for Implementing Complete Streets

Complete Streets are not a specific type of project, but rather are an approach to ensuring that projects are pursued based on their contexts. This means that a Complete Streets approach will be implemented consistently for all non-limited-access projects — from capital projects qualifying for ETDM screening to RRR, traffic operations, and safety projects. The successful implementation of Complete Streets requires the identification of a roadway's context classification early in the project development process. Context classification also informs all phases of a project: planning, PD&E, design, construction, and maintenance.

Chapter 2 provides the Context Classification Matrix (see Table 2-1) and outlines the methodology for using it. This chapter details how the context classification will be determined for different types of FDOT projects. Transportation planning related to Complete Streets occurs at the regional level and at the project level. Regional transportation planning is typically conducted by MPOs/TPOs, whereas project level transportation planning can be performed by the FDOT, MPOs/TPOs, or local governments. Local governments are responsible for the land use planning decisions that are intrinsically linked to transportation planning decisions.

REGIONAL TRANSPORTATION PLANNING AND COMPLETE STREETS

Regional transportation planning includes the development of LRTPs by MPOs/TPOs where an outcome is the identification of a series of transportation needs across a region. Traditionally, the LRTP process focuses on the deficiencies of the system in relation to automobile and freight mobility

as defined by a regional travel demand model. In a Complete Streets approach, the needs of all users, including non-motorized users and transit users are incorporated into the identification of potential problems to be addressed. Many MPOs/TPOs and FDOT districts are already beginning to use this latter approach.¹

LRTP needs are often defined in terms of specific solutions such as adding more lanes to an existing roadway or building a new roadway. A successful Complete Streets approach would involve more planning and analysis to determine the actual needs of all users based on a roadway's context classifications, prior to programming a solution for that roadway. This planning analysis is best addressed as part of project-level planning.

LRTP processes are often structured to outline capital projects (e.g. new roadways, new transit service, or widening of roadways), but do not always explore maintenance and smaller scale projects (e.g. resurfacing, maintenance, safety, or intersection improvements). However, many MPOs/TPOs have started to include maintenance and Transportation Systems Management and Operations (TSMO) projects on their Priority Lists. Including these latter set of projects in MPO Priority Lists ensures that the right type of funding is identified early in the project development process to support transportation improvement that addresses the roadway's context and users.

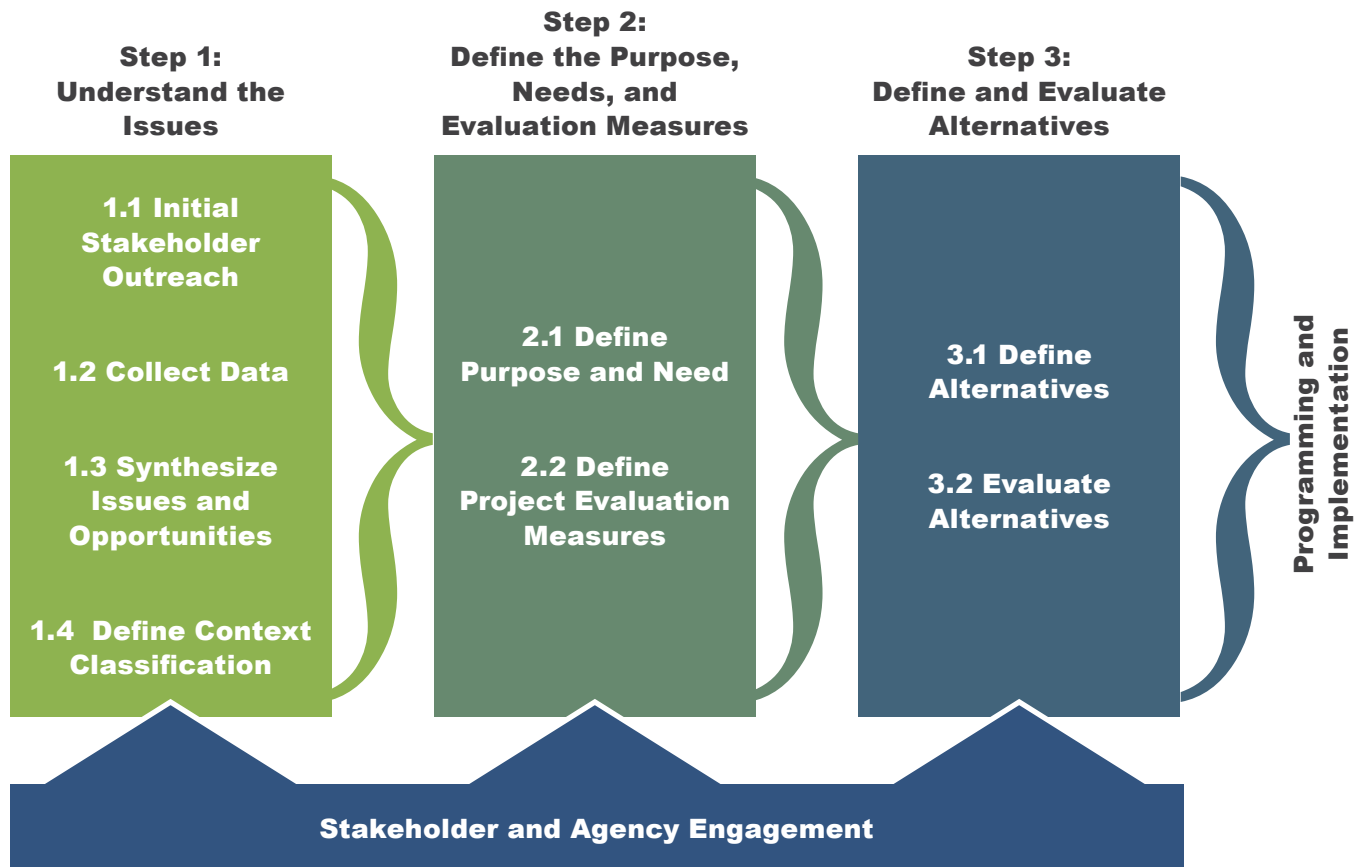
¹ For example, FDOT District 5 is using multimodal transportation and land use screening criteria to identify potential corridor planning studies. These planning studies are meant to better define the transportation opportunities and challenges of all users of a roadway.

PROJECT PLANNING AND COMPLETE STREETS

Project-level transportation planning is conducted to understand the needs of the anticipated users of a roadway and to explore the full range of potential solutions to address those needs. This level of planning typically occurs prior to the PD&E phase and offers an early opportunity to incorporate Complete Streets principles and to establish the framework for a Complete Streets approach for the life of the project. The key steps in project planning are illustrated in Figure 3-1, and include:

1. **Understand the Issues.** This includes collecting and analyzing data, and gathering input from stakeholders to better understand the issues for each user. The context classification will be defined in this step.
2. **Define the Purpose, Needs, and Evaluation Measures.** Informed by the findings in Step 1, this step defines the overall purpose of the transportation investment and the specific needs of the roadway for each of the intended users of the roadway. Project evaluation measures should also be developed that will be used to determine how well different potential alternative solutions meet the needs of all users.
3. **Define and Evaluate Alternatives.** Based on the needs for each user, this step defines a range of alternatives. These alternatives should be analyzed to compare how well each one meets the needs of all intended users.

FIGURE 3-1 COMPLETE STREETS PLANNING APPROACH



Source: Adapted from FDOT District 5 Multimodal Corridor Planning Guidebook

PROJECT EVALUATION MEASURES

Project evaluation measures allow project teams to evaluate alternatives based on the purpose and needs of a project and the roadway's context classification(s). Currently, FDOT utilizes vehicular LOS and safety measures for roadway and area studies. Some projects go beyond these LOS measures and safety, and evaluate accessibility and comfort for all users. Multimodal project evaluation measures can be applied to all projects, including planning studies, new construction, reconstruction, RRR projects, traffic operations, and safety projects.

Project evaluation measures should be tailored to understand each alternative's ability to respond to the project's documented purpose and needs. The extent and type of evaluation may vary depending on the time and resources available — RRR projects, for instance, will have a shorter timeframe than a planning study or new construction project. Judgment should be used in determining the appropriate level of evaluation. Table 3-1 provides a menu of potential project evaluation measures based on Complete Streets best practices. This list is not intended to be exhaustive or prescriptive. The list draws from industry best practices, including the latest guidance and research from FHWA, such as the **FHWA Guidebook for Developing Pedestrian and Bicycle Performance Measures**. Evaluation measures should relate to a project's purpose, needs, and objectives. An example is shown in Table 3-2.

In addition to the evaluation measures listed in Table 3-1, other project measures could be applied over the length of a roadway or at an area-wide level. Some of these include:

- Person throughput (i.e. the total capacity for a roadway based on vehicular, transit, bicycle, and pedestrian throughput)
- Network completeness (i.e. the continuity of sidewalk and bicycle facilities)
- Street connectivity
- Person-miles traveled
- Access to jobs, housing, retail, civic facilities, and recreational facilities
- Mode split

The evaluation measures above and those presented in Table 3-1 focus on transportation-

related elements. Projects may also require detailed evaluation of potential impacts and benefits related to environmental, socio-cultural, economic, and human elements as described in the **PD&E Manual**. Refer to the **PD&E Manual** for details on those evaluation measures.

TABLE 3-1 EXAMPLES OF POTENTIAL PROJECT-LEVEL EVALUATION MEASURES BY MODE

Vehicular

- Vehicular LOS (refer to the **Q/LOS Handbook**)
- Volume-to-capacity ratio
- Estimated potential crash reduction utilizing crash modification factors (CMFs)
- Travel-time reliability
- Peak and off-peak travel time between key origins and destinations
- Project cost and cost effectiveness

Freight

- Travel-time reliability
- Ability to serve freight origins and destinations
- Peak and off-peak travel time
- Project cost and cost effectiveness

Transit

- Transit LOS (refer to the **Q/LOS Handbook**)
- Number of ADA-compliant transit stops
- Travel time
- Travel time reliability
- Percent of population within the study area that are within 1/2 mile network distance from a transit stop
- Project cost and cost effectiveness
- Weekday span of service

Bicycle

- Bicycle LOS (refer to the **Q/LOS Handbook**)
- Bicycle Level of Stress analysis
- Percent of roadway served by an exclusive bicycle facility
- Estimated potential crash reduction utilizing CMFs
- Percent of roadway with bicycle facilities meeting current standards for roadway context
- Bicycle delay at intersections
- Travel time
- Project cost and cost effectiveness

Pedestrian

- Pedestrian LOS (refer to the **Q/LOS Handbook**)
- Pedestrian Level of Stress analysis
- Percent of sidewalk coverage/linear feet of sidewalk
- Average or range of distances between marked pedestrian crossings
- Percent of ADA-compliant pedestrian crossings
- Average or range of pedestrian delay at intersections
- Presence of pedestrian refuge islands
- Sidewalk continuity along the roadway and throughout the surrounding network
- Presence of shade
- Adequate pedestrian-level street lighting
- Estimated potential reduction in crashes utilizing CMFs
- Travel time
- Project cost and cost effectiveness

TABLE 3-2 EXAMPLES OF HOW PROJECT EVALUATION MEASURES CAN BE LINKED TO PROJECT PURPOSE AND NEEDS

Purpose	Needs	Objectives	Evaluation Measures
Serve anticipated future travel demand	An additional 10,000 vehicular trips are projected along the roadway in 20 years	Increase capacity for regional trips	Peak-hour travel times from point A to point B
Provide safe travel options along roadway	Number and percent of rear-end crashes in the last 5 years is higher than statewide averages of similar facilities	Decrease rear-end crashes	Potential reduction in rear-end crashes
	Number of fatal and serious injury crashes in the last 5 years is higher than statewide averages of similar facilities	Decrease the severity of automobile crashes	Potential for reducing the severity of crashes
	Number of fatal and serious injury pedestrian crashes in the last 5 years is higher than statewide averages of similar facilities	Decrease number and severity of pedestrian crashes	Linear feet of roadway with adequate levels of pedestrian lighting
Provide multimodal mobility options that support local economic development goals	10 percent of households in the study area do not have access to an automobile	Increase mobility through walking and bicycling	Percentage of roadway with sidewalks and bicycle facilities meeting current standards for context classification
		Increase ease of transit use	Number of ADA-compliant transit stops Percent of population reached within 0.25 miles of improved transit stops
	A new activity center along a major state roadway will introduce an additional 3,000 new daily vehicular trips	Maintain vehicular mobility	Overall street connectivity
			Intersection LOS Travel-time reliability
Support freight access to businesses	Retail and restaurants along the corridor require daily deliveries	Allow efficient local area delivery	Presence of loading and unloading zones near businesses

Local Vision and Economic Development Goals

Beyond the project evaluation measures identified in Table 3-1, investments should be aligned with local and regional land use and economic development plans and visions to the maximum extent feasible. Developing a roadway design that is consistent with the context classification will help ensure that investments support the local vision. Additionally, the planning process should seek the input of stakeholders, weigh alternatives against a broader community vision, and work to obtain stakeholder buy-in.

Balancing Competing Needs

The context classification informs the types of users and the intensity of uses within each context classification. For almost every project, the needs of users can be addressed in multiple ways. The alternatives developed to respond to those needs should explore a variety of methods and means for meeting them.

Sometimes, due to limited right of way, difficult choices may have to be made for how to serve different users along a roadway. For example, in a higher intensity area such as a C5-Urban Center or C6-Urban Core, local business owners might like to prioritize on-street parking over a dedicated bicycle facility. One way to address such a case would be to look beyond the roadway and consider the larger network in the

development of alternatives. The FDOT Complete Streets policy is founded on the concept of a complete network. Where it is not possible to provide similarly high-quality facilities for all modes along all FDOT roadways, it may be necessary to rely upon parallel networks to provide additional travel options.

The network approach requires close coordination between FDOT and local communities. In the example of prioritizing on-street parking over a dedicated bicycle facility, analysis should be informed by local vision, availability of parallel routes, and the local partner's willingness to invest in and maintain parallel facilities. A decision could also be informed by technical analysis of bicycling trip origins and destinations, the need for bicycling connectivity, safety data, and user input. In many cases, there may not be one clear-cut alternative that equally serves users at the same level of service. Selecting a well-vetted set of evaluation measures that relate to the project purpose and needs will frame a discussion and decision-making process and provide information to help FDOT, the public, and local officials understand the trade-offs among the alternatives. Potential

measures to evaluate the trade-offs in this example might include:

- Understanding the trade-offs between impacts on safety versus convenience of users (e.g., asking motorists to park and walk an extra block to access destinations, versus asking bicyclists to ride in mixed traffic);
- Economic impact (understanding the potential economic development impact of convenient on-street parking spaces versus a bicycle facility adjacent to businesses); and
- How each alternative supports other defined project needs.

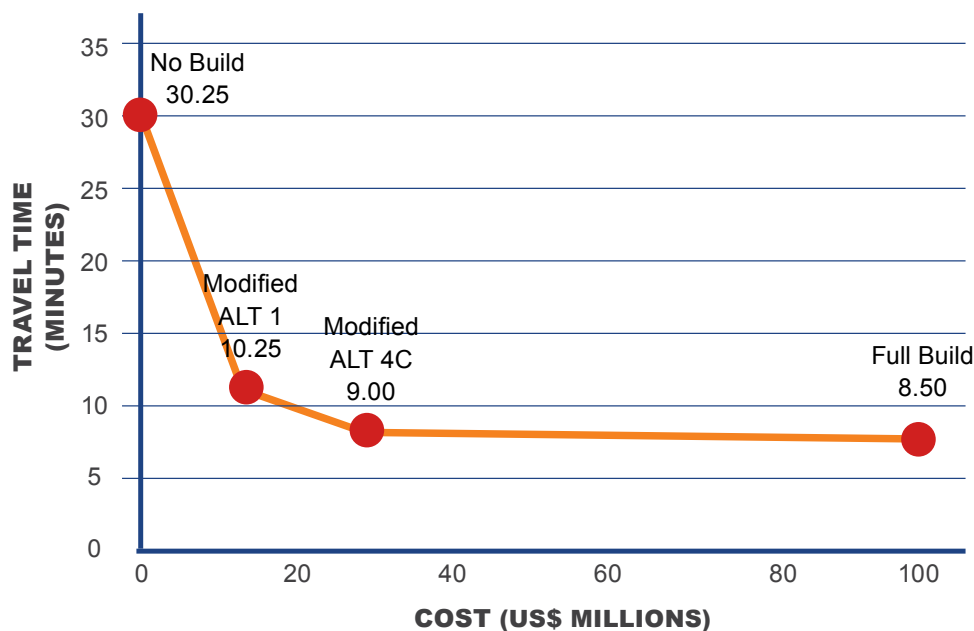
Figures 3-2 and 3-3 illustrate examples of how trade-offs among alternatives can be communicated to decision makers and stakeholders.

Additional guidance for defining the project purpose and needs, and developing and evaluating alternatives that accommodate each user, will be incorporated in the *PD&E Manual*. The guidance will also be

FIGURE 3-2 EXAMPLE OF HOW TO COMMUNICATE RESULTS OF EVALUATING ALTERNATIVES FOR EACH MODE

	Alternative A	Alternative B	Alternative C
 Pedestrian			
 Bicyclist			
 Car			
 Transit			
 Freight			
	 Fully Meets Needs	 Partially Meets Needs	 Does Not Meet Needs

FIGURE 3-3 EXAMPLE OF ILLUSTRATING TRADE-OFFS BETWEEN ALTERNATIVES



Source: Marshalls Creek Study, PennDOT Smart Transportation Case Study

included in the FDOT Alternative Corridor Evaluation (ACE) process which is performed prior to the PD&E phase (see Part 1, Chapter 4, of the PD&E Manual). FDOT uses the ACE process to identify, evaluate, and eliminate alternative corridors on certain types of projects that qualify for ETDM screening prior to the PD&E phase (see Chapter 2 for definition of qualifying and non-qualifying projects).

FDOT District 5 has developed guidance on best practices that can be used during the planning phase of a project. This guidance, the **Multimodal Corridor Planning Guidebook**, provides some best practices and examples of defining the problem, purpose and needs, and developing alternatives that consider the perspectives of all users.

DEFINING CONTEXT CLASSIFICATION IN THE FDOT PROCESS

The context classification of a roadway provides guidance on the anticipated users of the roadway. Understanding the needs of all users at these early phases assures that the project scope of work will define all necessary improvements and that the budget

is adequate for design, right of way, and construction. The context classification and users will 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.

All FDOT projects on non-limited-access roadways require the evaluation and documentation of context classification early in the life of a project. The context classification will be defined or confirmed at the beginning of each project phase, including planning, PD&E, and design. For RRR projects, which have a more compressed timeframe, the steps to identify context classification may need to be taken ahead of time (where possible) or abbreviated. Context classification evaluation is incorporated as follows:

- For Non-Qualifying Projects: During the work program development cycle and prior to the development of the design scope of work; and
- For Qualifying Projects: During the ETDM screening.

NON-QUALIFYING PROJECTS

For projects not going through ETDM screening, Figure 3-4 outlines the potential steps needed to determine the context classification prior to developing the scope of work for the design phase. This process is not intended to be prescriptive, but rather outlines the key actions needed to define the context classification so that such actions can be incorporated into existing scoping processes. It is imperative that the context classification and corresponding users of the roadway are determined prior to defining the scope of work and developing the concept(s) to be designed. Each district can assign staff who will oversee the determination of context classification. Multiple groups within each district should be involved in determining the context classification (such as Design, Program Management, Intermodal Systems Development, Planning, and other relevant technical experts, as needed). On projects where FDOT currently coordinates with local governments, FDOT will coordinate with local governments to determine context classification. The final determination of context classification will be made by FDOT. Refer to the **Public Involvement Handbook**, **FDM**, **PD&E Manual**, and **Project Management Handbook** for guidance on local government coordination.

RRR projects will be designed and implemented consistently with the context classification evaluation defined in this Handbook and the design criteria outlined in the **FDM**. Any design elements required by the **FDM** criteria that are not typically provided through funding sources for resurfacing activities should be supplemented with additional Federal, State, or local funds. FDOT project managers should coordinate with the Work Program staff in their district to assemble a funding package to meet specific project needs. Additional guidance regarding the eligibility of these funds can be found in the **Work Program Instructions**.

The general steps to determine the context classification and the scope of work for non-qualifying projects are shown in Figure 3-4 and described as follows:

STEP 1: Identify the candidate project.

STEP 2: Collect and assess data, including SIS designation if applicable, to understand the existing conditions and inform the context classification. The

data requirements and methods for determining the context classification are described in detail in Chapter 2 of this Handbook.

STEP 3: Identify a preliminary context classification along with a list of the intended user needs of the roadway.

STEP 4: Engage local governments (for projects that currently involve local governments) and other FDOT technical experts and conduct field reviews, discuss the context classification, and develop preliminary concept(s). It may be beneficial to document context classification discussions through a formal agreement. Appendix E presents a draft sample local agreement, to be used and edited at the discretion of the district.

STEP 5: Confirm and document the context classification and share draft concept(s) and preliminary budget estimates with local governments, when appropriate.

STEP 6: Develop the draft scope of work, schedule, and budget estimates for the draft concept(s). If the proposed project involves work beyond what is required by the design criteria in the **FDM**, initiate agreements with local governments.

STEP 7: Hold internal technical review meetings with FDOT district staff to confirm the final scope of work.

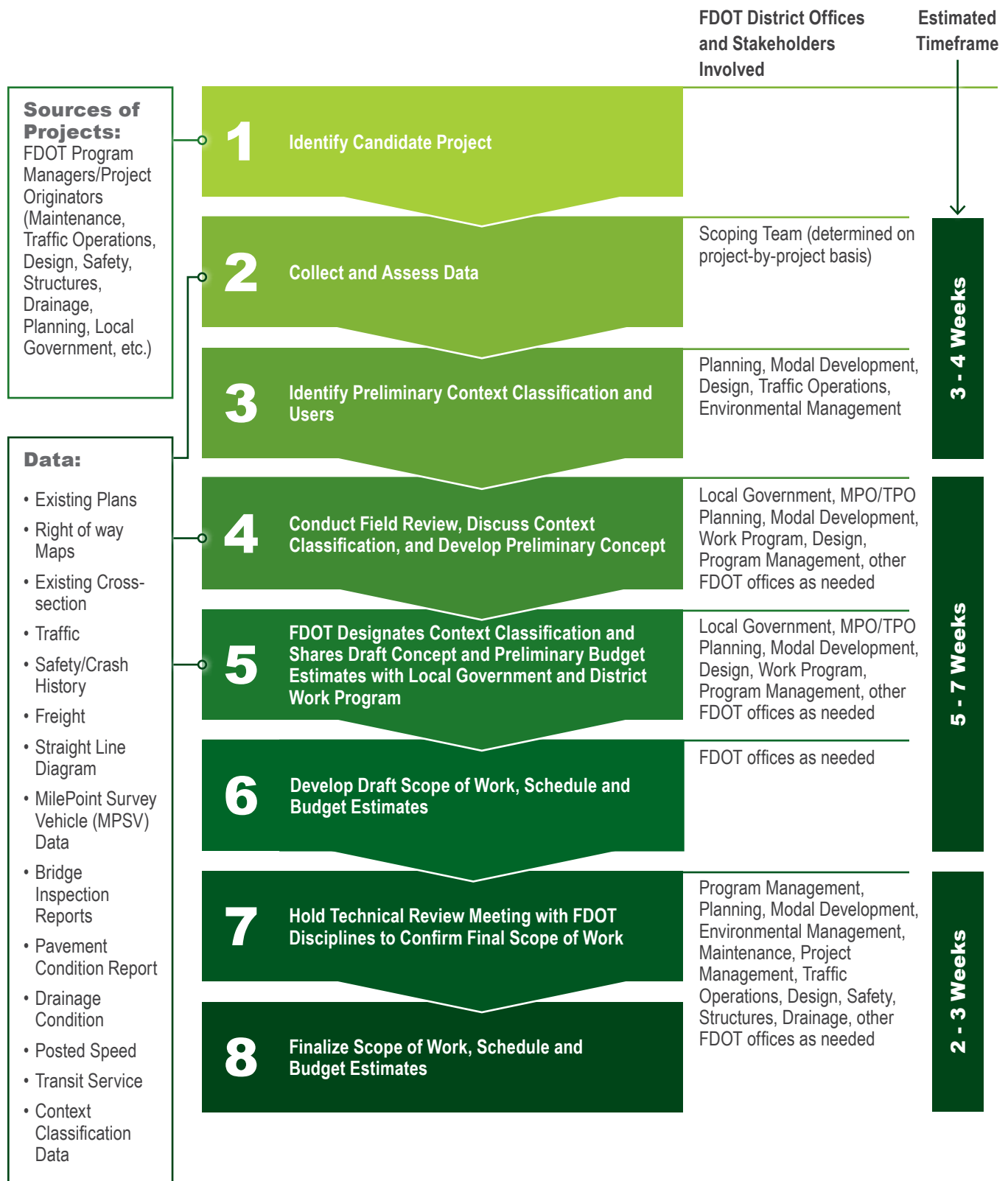
STEP 8: Finalize the scope of work and develop the schedule and budget estimates for the design phase. If local agreements are needed per Step 6, these are then finalized.



Multimodal elements can be incorporated through improvements as part of RRR projects, such as re-striping to narrower vehicle lanes to accommodate buffered bike lanes.

Location: SR A1A, Fort Lauderdale, FL

Source: FDOT

FIGURE 3-4 EXAMPLES OF STEPS TO DEFINE THE CONTEXT CLASSIFICATION AND SCOPE OF WORK FOR NON-QUALIFYING PROJECTS

Multimodal elements of projects should be addressed on all state roadways based on the context classification of the roadway, including RRR, traffic operations, and safety projects. The primary purpose of this process is to facilitate an understanding of the context classification and users before a concept, scope of work, and budget are determined. The general steps shown in Figure 3-4 show a comprehensive evaluation, but smaller projects such as push-button traffic operations may not require an extensive data collection effort or local government engagement.

When multimodal features are required to be built or expanded to meet FDOT criteria, the funding source for those elements must be identified as part of the scoping process. Identifying multimodal elements and potential additional funding needs early in the scoping process will enable funding types and budgets to be assigned appropriately to complement the RRR funding for each project.

FDOT anticipates that some RRR projects will take place on roadways that are either misaligned with the context classification, or where FDOT and local governments do not agree on the context classification. For example, if an RRR project in a C5-Urban Center Context Classification requires that pedestrian or bicycle facilities be provided based on **FDM** criteria and there is no space to accommodate them within the existing curb line or right of way, then discussions within FDOT and with local partners may be needed to determine how each of the roadway users can be accommodated. During the discussion, it will be determined if the RRR project should continue and the timing of the RRR in relationship to potential planning activities (refer to Figure 3-5). The following are two likely scenarios that may occur as a result. Other scenarios are conceivable, but these are anticipated to be the most likely:

- FDOT and the partners may agree that the RRR project will proceed within the existing constraints, and separate planning activities might occur to determine how to incorporate the **FDM**-required elements as a separate project. The level of planning effort will vary on a project-by-project basis. If all elements required in the **FDM** cannot be implemented immediately due to significant right of way limitations or impact to utilities, FDOT district staff will provide documentation through the design variation and exception process.
- FDOT and the partners may agree that the RRR project can incorporate the necessary **FDM** criteria, and that the RRR project will either be implemented within the original work program schedule or implemented later than the original intended work program timeframe. This decision will be coordinated with District Work Program staff.

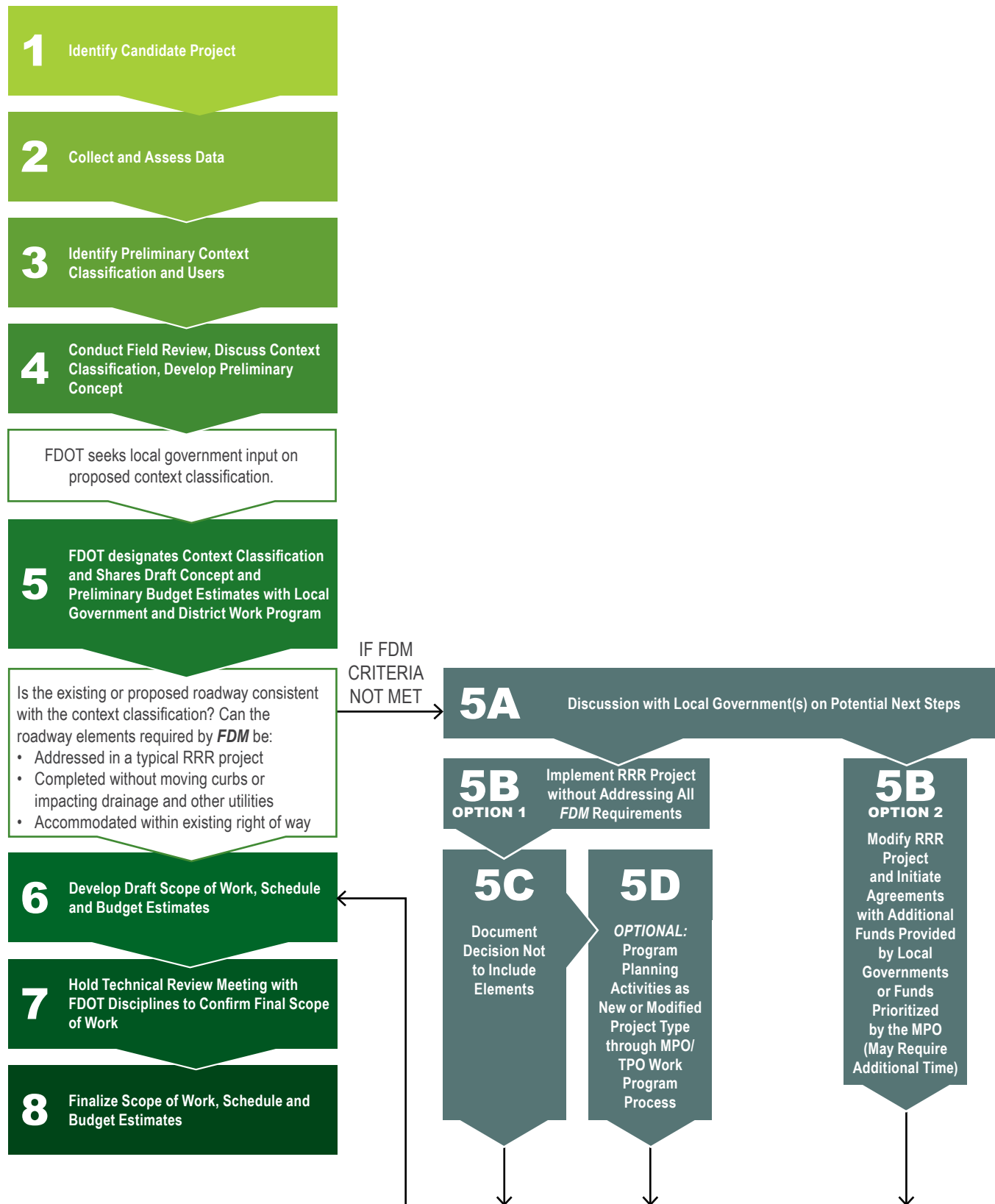
If additional guidance or suggestions are desired, the district may contact the State Complete Streets Program Manager for assistance.



Coordination with local partners can inform context classification and help the project team better understand all the users and needs of a roadway.

Location: Clematis Street, West Palm Beach, FL

Source: FDOT

FIGURE 3-5 POTENTIAL APPROACH FOR RRR PROJECTS WHEN ELEMENTS OTHER THAN RESURFACING ARE REQUIRED FOR THE ROADWAY TO MEET **FDM** DESIGN STANDARDS

QUALIFYING PROJECTS SCREENED THROUGH ETDM SCREENING

Projects identified by MPOs and TPOs for inclusion in LRTPs are usually screened through FDOT's ETDM screening process. Examples of such qualifying projects might include additional through lanes which add capacity to an existing road (see Chapter 2 for definition of qualifying projects). The ETDM screening process provides agencies and other stakeholders with the opportunity for early input and consideration of the environment in transportation planning. The ETDM screening process is composed of the Planning Screen and the Programming Screen. The Planning Screen best occurs when considering projects for inclusion or prioritization within a Cost Feasible LRTP. The Programming Screen supports development of the **FDOT Five-Year Work Program** (see the **ETDM Manual** for details describing the ETDM screening process).

The ETDM Planning Screen and Programming Screen assist in identifying potential environmental constraints and are used to establish and communicate the project context. The ETDM screening contains the Preliminary Environmental Determination (PED) which summarizes the FDOT understanding of environmental issues on the project. The Environmental Technical Advisory Team (ETAT) and other stakeholders participating in the ETDM screening review the PED and provide comments to FDOT.

ETDM Planning Screen and Context Classification

The ETDM Planning Screen occurs prior to and as input into the LRTP/Cost Feasible Plan. The Planning Screen is conducted by either the FDOT District Environmental Management Office or the MPO/TPO, depending on the roadway type and resource constraints of the MPO/TPO.

The preliminary context classification will be identified in the PED and provided for review and comment to the ETAT (State and Federal agencies and tribes) and local governments for review. The results of this screening, including comments received during the screening, are documented in the Planning Screening Summary Report. Figure 3-6 illustrates the steps in the ETDM Planning Screen, including the step at which the context classification could be determined.

ETDM Programming Screen and Context Classification

The ETDM Programming Screen is completed prior to a PD&E Study. The context classification will be identified or updated during this screening. As with the Planning Screen, the context classification will be documented as part of the PED and reviewed by the ETAT, with results incorporated into a report (the Programming Screening Summary Report). Chapter 4 of the **ETDM Manual** provides more details on the Programming Screen. Figure 3-7 illustrates the point at which the context classification will be reviewed and updated as part of the ETDM Programming Screen.

PD&E and Context Classification

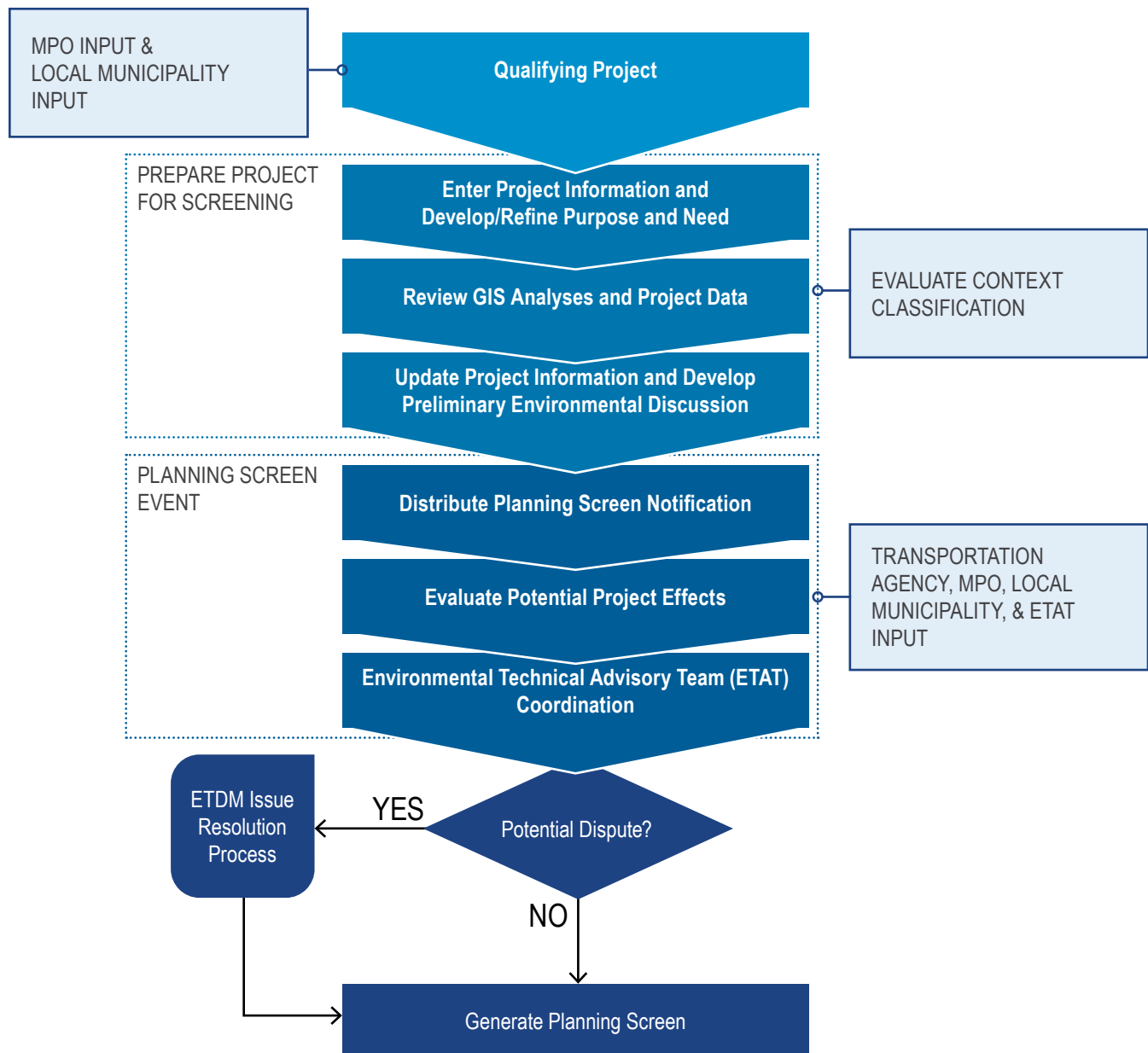
The use of the context classification continues during the PD&E process. The context classification for the project will be stated in the project description. The context classification determined during ETDM screening may be refined following coordination with local governments or if additional land use data becomes available during the PD&E study. Criteria used to determine the context classification will be documented into the existing land use and future land use. The context classification and the intended users will be documented in the Preliminary Engineering Report or other related engineering documentations.



Public engagement in PD&E supports the application of context-based Complete Streets approach.

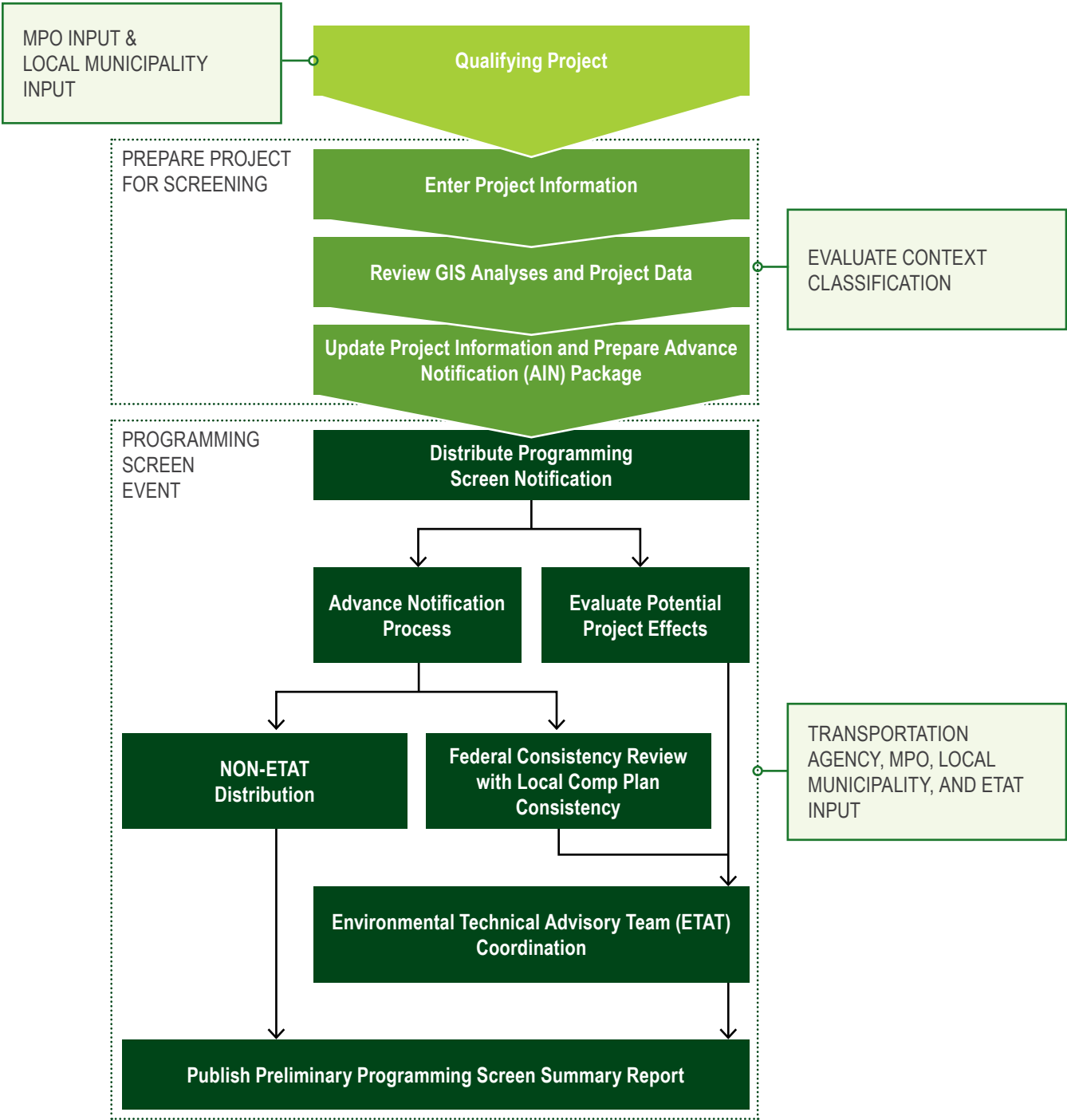
Source: KAI

FIGURE 3-6 ETDM PLANNING SCREEN AND CONTEXT CLASSIFICATION



Source: Adapted from the FDOT PD&E Manual

FIGURE 3-7 ETDM PROGRAMMING SCREEN AND CONTEXT CLASSIFICATION



Source: Adapted from the FDOT PD&E Manual

IMPLEMENTATION

The determination of a roadway's context classification is required in order to utilize the criteria in the **FDM**. The context-based criteria in the **FDM** will be required on projects that have not begun design by January 1, 2018, and may be applied to active design projects at the discretion of the district. For PD&E projects, implementation of context classification and the **FDM** is required for projects that have the Public Hearing scheduled in April 2018 or later. The 2017 **Plans Preparation Manual (PPM)** will apply through the completion of the PD&E studies for projects that have the Public Hearing scheduled prior to April 2018. Criteria contained in the **FDM** may also be applied earlier at the discretion of the district.

FUNDING AND MAINTENANCE

There is no separate FDOT funding category or FDOT funding source specifically for Complete Streets. Projects that require modifications to comply with criteria associated with the context classification will be funded through the funding programs currently available to Federal, State, and local roadways, as appropriate. The existing MPO funding process will remain the same.

FDOT will fund the maintenance of aspects of transportation projects that are necessary to comply with adopted FDOT design criteria contained in the **FDM**. If local governments or other partners would like to include features that go beyond what is required by FDOT design criteria, funding for the construction and maintenance of those additional components will be the responsibility of the local government or local partner, as defined in a local maintenance agreement. Current elements being maintained by local governments or other partners as part of local maintenance agreements (e.g. traffic signals on state roadways) will continue to be maintained per the agreements in place.

Design Considerations for Complete Streets

FDOT's Complete Streets approach calls for selecting design controls to reflect the roadway context and intended outcomes, and then applying appropriate design criteria based on these design controls. This chapter discusses:

- Context-based design controls and how they influence multimodal travel; and
- Effects of the transportation network on roadway design.

This Handbook is not intended to be a design manual; rather, it offers guidelines for a successful design approach. Refer to the **FDM** for the latest context-based design criteria. FDOT also has a number of handbooks and guidance documents that provide information on tools for implementing Complete Streets. A list of guidance documents is included in Appendix F.



*Consider the range of users in roadway design.
Location: Commonway Road, Orlando, FL
Source: KAI*

CONTEXT-BASED DESIGN CONTROLS

For implementation of context-based planning and design, the **FDM** and other FDOT manuals will provide a range of design controls based on FDOT's context classification and functional classification. The key context-based design controls are:

- Design users
- Design vehicle
- Design speed
- Traffic characteristics

These design controls are described in this Handbook and discussed in detail in the **FDM** and other manuals.

DESIGN USERS

Design users are those anticipated users of a roadway (including drivers, pedestrians, bicyclists, and freight handlers) that form the basis for each roadway's design. Roadway users' varying skills and characteristics introduce a variety of human factors that can influence users' driving, walking, and bicycling capabilities. Design users should be taken into consideration when determining design details such as sidewalk widths, type of bicycle facility, design speed, signal timing and spacing, location of pedestrian crossings, number of vehicular travel lanes, intersection width, and lighting.

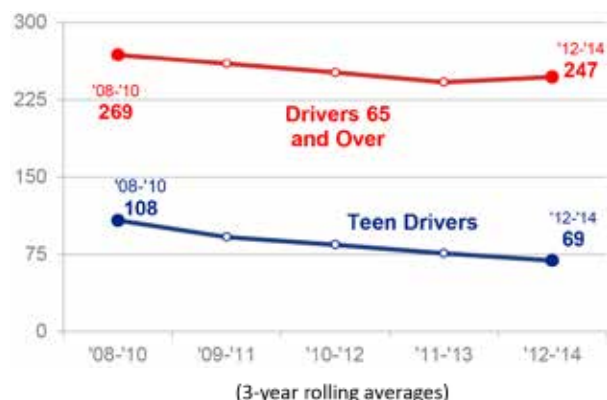


Driver

Driver performance informs roadway design. Designers should pay attention to roadway elements that can influence the safety of at-risk drivers, particularly in areas with higher concentrations of these

at-risk populations. FDOT has identified teen drivers (age 15 to 19) and aging drivers (age 65 and up) as at-risk drivers. The 2010 census reports that these age groups make up almost one-quarter of Florida's population. Fatalities involving teen drivers and aging drivers have historically accounted for approximately one-quarter of all Florida traffic fatalities (see Figure 4-1).¹ As compared to other drivers, older drivers tend to process information more slowly, and have slower reaction time, deteriorated vision and hearing, and limited depth perception.² For additional information, refer to the FHWA publications *Highway Design Handbook for Older Drivers and Pedestrians* and *Guidelines and Recommendations to Accommodate Older Drivers and Pedestrians*.

FIGURE 4-1 FATALITIES IN FLORIDA INVOLVING AT-RISK DRIVERS



Source: FDOT 2015 Performance Report



Pedestrian

Pedestrians are among the most vulnerable roadway users. In 2014, pedestrians made up 24 percent of Florida's transportation fatalities (see Figure 4-2).³ Pedestrian characteristics that serve as design

controls include walking speed, walkway capacity, and the needs of persons with disabilities. The 2010 census reports that 19 percent of the population in the United States had a disability in 2010.⁴ Age plays an important role in how pedestrians use a facility, as older adults are the most vulnerable pedestrians.⁵

The Complete Streets approach 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 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. Several design elements have been found to assist elderly pedestrians, including simple designs, accommodation for slower walking speeds, and adequate median refuge islands at wide intersections. For additional information, refer to the FHWA publications *Highway Design Handbook for Older Drivers and Pedestrians* and *Guidelines and Recommendations to Accommodate Older Drivers and Pedestrians*.



Consider people with a range of abilities.

Location: West Central Avenue, Lake Wales, FL

¹ Florida Department of Transportation, 2015 Performance Report, 2015, p. 1-10, <http://www.dot.state.fl.us/planning/performance/2015/2015PerformanceReport.pdf>.

² American Association of State Highway and Transportation Officials, A Policy on Geometric Design of Highways and Streets, 6th Edition, 2011, pp. 2-43.

³ Florida Department of Transportation, 2015 Performance Report, (2015), p. 1-6.

⁴ United States Census Bureau, "Nearly 1 in 5 People Have a Disability in the U.S., Census Bureau Reports," July 25, 2012, <https://www.census.gov/newsroom/releases/archives/miscellaneous/cb12-134.html>.

⁵ "Aging Road User," accessed September 22, 2016, <http://www.safeandmobileseniors.org/AgingRoadUser.htm#Bicyclists>.

FIGURE 4-2 FLORIDA TRANSPORTATION FATALITIES AND SERIOUS INJURIES BY MODE, 2014**Fatalities**

Vehicle 51%

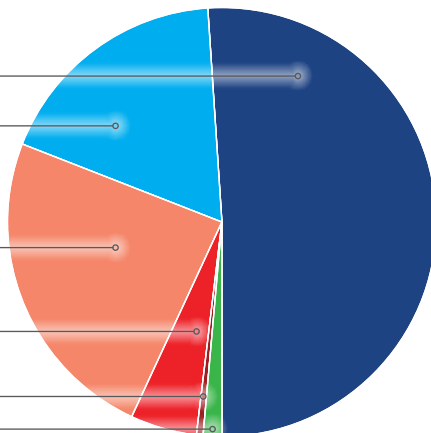
Motorcycle 18%

Pedestrian 24%

Bicycle 5%

Transit 0.5%

Others 1.4%

**Serious Injuries**

Vehicle 70%

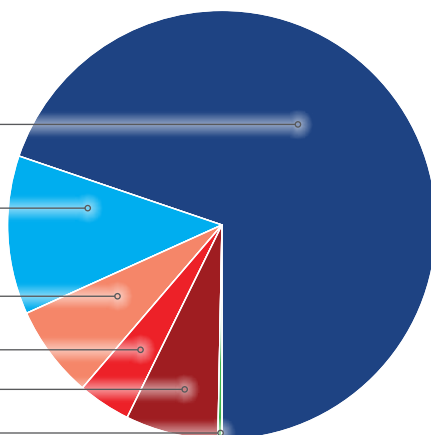
Motorcycle 12%

Pedestrian 7%

Bicycle 4%

Transit 7%

Others 0.3%



Source: FDOT 2015 Performance Report



The needs of bicyclists vary by age, experience, and trip purpose. Location: US 17/92, Orlando, FL (right), SR A1A, Deerfield Beach, FL (top left), and Alton Road, Miami Beach, FL (bottom left)

**Bicyclist**

Bicyclists pose different safety and geometric considerations and must also be considered in roadway design. Bicyclist characteristics vary by skill level, age, experience, preferences 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 or shopping.
- Recreational trips include trips for exercise or social interaction. Experienced riders or those who travel regularly, and casual riders or infrequent users all make recreational trips.

Data on trip purpose and experience level provide some information on bicyclist characteristics and preferences. Long distance and 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 ground⁶

Casual, infrequent, and younger riders tend to:

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

The bicyclist design user should reflect the long distance and experienced rider in all context classifications, and the casual and younger rider where possible. The need to accommodate casual and younger riders might be indicated by:

- Origins and destinations that generate bicycle trips along or in close proximity to a roadway, such as schools, parks, high-density residential housing, shopping centers, and transit stops
- Roadways within well-connected street networks

⁶ American Association of State Highways and Transportation Officials, Guide for the Development of Bicycle Facilities Fourth Edition, 2012, p. 15.

- Roadways that connect to local or regional dedicated bicycle facilities
- Data showing that bicyclists are currently riding on the sidewalk
- Public input

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 A Policy on Geometric Design of Highways and Streets* (*AASHTO Green Book*), presenting factors, criteria, and design controls. See the *FDM* for FDOT criteria related to bicycle and pedestrian facilities.



The roadway design must take the design vehicle into consideration.

DESIGN VEHICLE

FDOT is developing new guidance for freight roadway design that will address selection of the design vehicle based on context and users. Currently, the selection of a design vehicle is controlled by FDOT rules and regulations that reflect the largest vehicle that may be assumed to use the roadway (WB-62FL). The design vehicle must be accommodated on all state roadways. In areas where the context classification suggests a demand for multimodal travel, the turning template of a smaller vehicle may be more appropriate for turning movements at intersections where cross streets will not be expected to have significant levels of truck traffic.

Assuming a WB-62FL design vehicle for all movements at all intersections can result in suboptimal intersection designs for pedestrians (see Figure 4-3). Because WB-62FL turning movements are infrequent in urban contexts and at intersections with

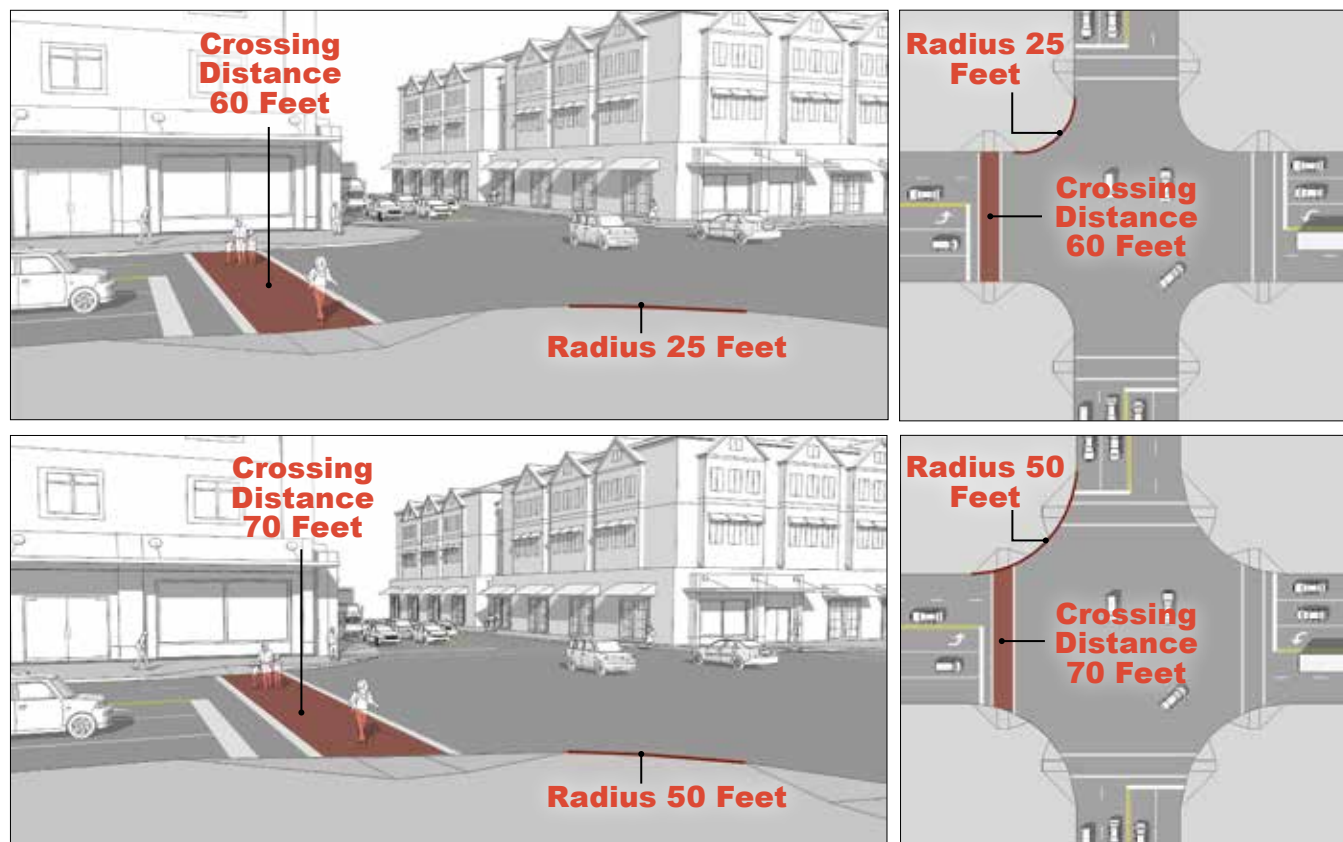
local or collector streets, designs that accommodate a WB-62FL design vehicle without encroachment for all turning movements may result in more pavement and longer pedestrian crossing distances than are necessary for most turning maneuvers. Larger turning radii are difficult to achieve in the constrained conditions that exist in many of the most urban contexts. Such designs also result in higher speeds for turning vehicles of all sizes. Additional pavement increases the capital cost and right of way costs of an improvement, particularly where urban development densities contribute to high property values.

The consideration of a smaller design vehicle for turning movements between designated freight roadways and other roadways can help balance goods movement with access for and comfort of other users. Recommended by the National Association of City Transportation Officials (NACTO), the Institute of Transportation Engineers (ITE), and the CNU, this approach introduces the concept of both a design vehicle and a control vehicle in designing roadways. The control vehicle is the largest vehicle that can be expected to make use of the roadway. In this approach, the current WB-62FL design vehicle is termed a “control vehicle.” A smaller vehicle, such as a transit vehicle expected to make frequent turns, is considered the design vehicle. The design of an intersection should consider the turning movements of both the design vehicle and the control vehicle:

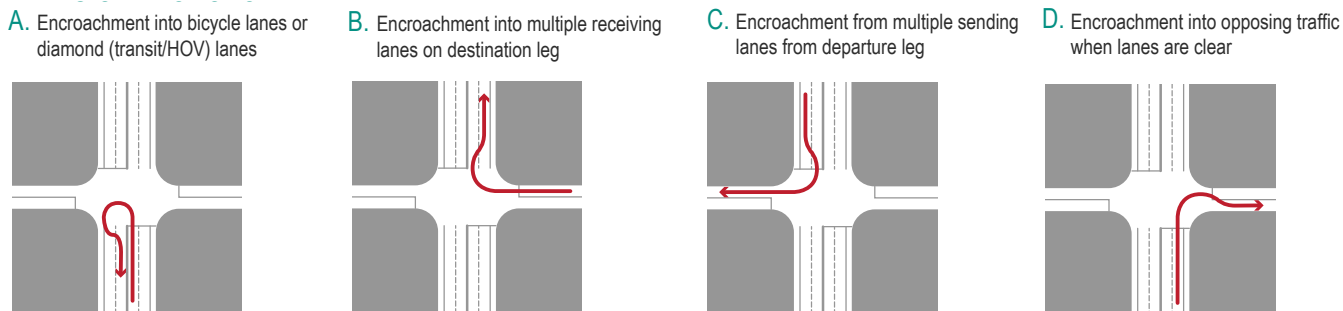
- The design vehicle is the vehicle that must be accommodated without encroachment into opposing traffic lanes.
- The control vehicle is the infrequent vehicle that must be accommodated by allowing:
 - Encroachment into opposing lanes if no raised median is present (see Figure 4-4).
 - Minor encroachment into the street side area if no critical infrastructure (traffic signal, poles, etc.) is present.⁷ This type of encroachment should take into consideration the visibility and safety of non-motorized users.

Further information on the use of the control vehicle will be provided in the upcoming FDOT freight roadway design guidance.

⁷ Florida Department of Transportation District 7, Freight Roadway Design Considerations, 2015.

FIGURE 4-3 RELATIONSHIP BETWEEN CURB RADII AND PEDESTRIAN CROSSING DISTANCE

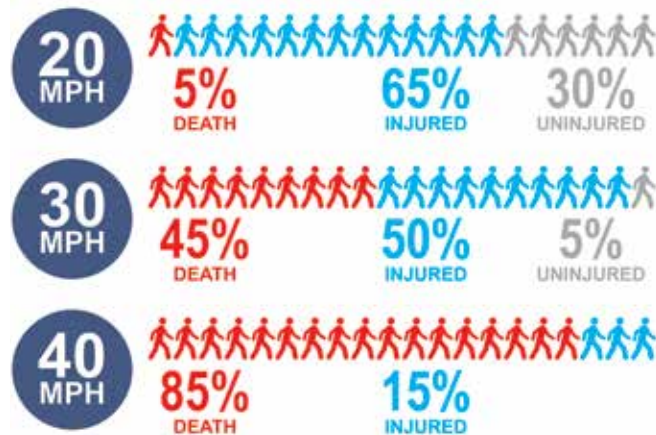
Curb radii has significant influence on the pedestrian crossing distance at intersections. Top and bottom illustrations compare the crossing distances between an intersection with 50 feet and 25 feet curb radius.

FIGURE 4-4 TYPE OF ENCROACHMENT INTO OPPOSING AND ADJACENT LANES THAT CAN OCCUR FOR CONTROL VEHICLE

DESIGN SPEED

Research confirms that lower vehicular speeds are safer, and that lowering speed limits can decrease both crash frequency and severity (see Figure 4-5).⁸ However, speeds cannot be reduced simply by changing posted speed limits. Roadway geometric and cross-sectional elements, in combination with the context, establish a driving environment in which drivers choose speeds that feel reasonable and comfortable.⁹

FIGURE 4-5 VEHICULAR IMPACT SPEEDS AND PEDESTRIAN RISK OF FATALITY AND SERIOUS INJURY



Lower vehicular speeds can decrease both pedestrian crash severity and fatality rates.

Source: "Killing Speed and Saving Lives - The Government's Strategy for Tackling the Problems of Excess Speed on our Roads." London: Department of Transport, November 1992.

Appendix D presents proposed design speed ranges for all arterial and collector state roadways by context classifications. More details on the design speeds and other design controls based on context classification are presented in the **FDM**. Design criteria, as well as application of engineering judgment, will assist in selecting the appropriate design speed for a roadway. Questions that should be asked to determine appropriate design speed include:

- **Average trip length:** How far is the average vehicular trip along the roadway? What percent

of the vehicular trips are coming from and going to destinations along the roadway, and how many trips travel through the roadway? Answers to these questions will help identify the balance of local access versus regional mobility along a roadway.

- **Signal spacing:** What is the average signal spacing along the roadway? How much of the vehicle delay occurs at the signal?
- **Access management:** What is the access management classification?
- **Special user groups:** Is there a special user group along the roadway (e.g. school children, visually impaired, senior population)?
- **Roadway function within the transportation system:** Is the roadway part of the SIS? Is it a designated freight route?
- **Land use/built environment:** Do buildings have shallow setbacks from the roadway and do entrances front the street?

The next release of the **Speed Zone of Highways, Roads, and Streets in Florida (Topic number 750-010-002)** will introduce a new speed concept called target speed. The concept of target speed is to identify a desired operating speed and develop design strategies and elements that help reinforce the operating speeds to be consistent with the posted or proposed speed limits (which may also be the design speed). A target speed should be consistent with the level of multimodal activity generated by adjacent land uses, to provide mobility and safety for all users. Target speed is influenced by elements of roadway design that are governed by design speed, as well as the form and function of the adjacent uses beyond the right of way.

For lower speed roadways, those with design speed 45 mph or less, it is desirable for the posted speed, the operating speed, and the design speed to be identical.

⁸ Federal Highway Administration, "Design Speed," last modified on October 15, 2014, http://safety.fhwa.dot.gov/geometric/pubs/mitigationstrategies/chapter3/3_designspeed.cfm.

⁹ Federal Highway Administration, "Design Speed," last modified on October 15, 2014, http://safety.fhwa.dot.gov/geometric/pubs/mitigationstrategies/chapter3/3_designspeed.cfm.

The following are roadway elements that could be used to influence operating speed.¹⁰ Some of these elements are not currently utilized on FDOT roadways, but can be considered on lower speed roadways depending on the context classification and transportation characteristics of the roadway. See the **FDM** for criteria related to roadway elements:

- Horizontal deflection (strategic use of roundabouts, splitter islands, location of on-street parking)
- Vertical deflections (such as raised intersections)
- Lane width
- Use of physical measures, such as curb extensions and medians, to narrow the traveled way
- Smaller curb-return radii at intersections and elimination or reconfiguration of high-speed channelized right turns
- Enclosure of a roadway formed by the proximity of a wall of buildings or other vertical built elements
- On-street parking to create side friction
- Proper use of speed limit, warning, and advisory signs, along with other appropriate devices to gradually transition speeds when approaching and traveling through a low-speed environment
- Street trees and other landscape treatments
- Striping of edge lines, bicycle lanes, or parking lanes
- Intersection spacing
- Setting signal timing to moderate progressive speeds from intersection to intersection

Additional information on the use of target speed and design elements to reinforce target speed will be provided in the next edition of the **Traffic Engineering Manual**.



On-street parking creates side friction.
Location: Centre Street, Fernandina Beach, FL
Source: FDOT



Roundabouts provide horizontal deflections.
Location: First Coast Highway, Amelia City, FL
Source: FDOT



Narrower travel lanes help manage speed and provide for wider bike lanes.
Location: Capital Circle NE, Tallahassee, FL
Source: FDOT

¹⁰ Kay Fitzpatrick et al., NCHRP Report 504: Design Speed, Operating Speed, and Posted Speed Practices, Transportation Research Board, 2003, http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_504.pdf.

TRAFFIC CHARACTERISTICS

Vehicular traffic volumes and composition of traffic directly influence the selection of geometric design features, including number of lanes, lane widths, alignments, and grades. Design traffic defines the traffic volumes forecasted for the design year of a project, and has historically been the basis for determining the number of vehicular travel lanes (through and turning). Decisions related to design traffic often directly impact the comfort, safety, and convenience of other roadway users and the roadway's ability to successfully support the land uses along it. Consider the following elements to incorporate a context-based Complete Streets approach in roadway design.

Determining the Appropriate Design Year

The design year of a roadway project reflects the projected life of a the planned improvement. The design year is used to estimate future traffic demand and the volume expected along a roadway, and should account for anticipated future land use development. The **FDOT Project Traffic Forecasting Handbook** states that the design year is usually 20 years from the opening year (or the year of the targeted project completion), but may consider a shorter duration for minor safety and operational improvements.

The **AASHTO Green Book** states that estimating traffic volumes for a 20-year design period may not be appropriate for many rehabilitation projects. Due to the uncertainties of predicting traffic, rehabilitation projects may be developed on the basis of a shorter design period (5 to 10 years). The **AASHTO Green Book** further emphasizes that the design year decision is greatly influenced by fiscal realities, where limited resources require a balance between short-term and long-term investments.

Induced Travel of Excess Roadway Capacity¹¹

Induced travel is often characterized as “*If you build it, they will come.*” Induced travel describes the additional demand for travel when the cost of travel decreases, either in time savings or monetary costs. In locations where a variety of transportation options exist, congestion is often self-regulating, such that, when a roadway is congested, users will either choose a different route, travel during a different time of day, choose a different mode, or decide to not make the trip. When the capacity of a roadway is increased, travelers may switch to that roadway to take advantage of the decreased congestion and travel time.

Induced travel has been shown to result in increased Vehicle Miles Traveled (VMT) on the highway system. The overall user benefit per traveler decreases with increased VMT and the resulting increase in congestion. In addition, increased VMT due to new or longer trips can result in increased air and noise pollution. Lastly, building roadways with excess capacity often results in unintended consequences, such as faster vehicle operating speeds and longer pedestrian crossing distances. The impacts of allocating more capacity than is immediately needed for a roadway should be considered in evaluating the overall impacts and benefits of a roadway capacity project.

¹¹ Robert Cervero, “Are Induced Travel Studies Inducing Bad Investments?,” University of California Transportation Center, 2003.

Gilles Duranton and Matthew A. Turner, “The Fundamental Law of Highway Congestion: Evidence from the US,” *American Economic Review*, 2011.

Kent M. Hymel, Kenneth A. Small and Kurt Van Dender, “Induced Demand And Rebound Effects In Road Transport,” *Transportation Research Part B: Methodological* 44, no. 10 (2010): 1220-1241.

Todd Litman, “Generated Traffic and Induced Travel: Implications for Transport Planning,” *ITE Journal* 71, no. 4 (April 2001): 38-47.

LEVEL OF SERVICE

LOS is a quantified stratification used to describe the quality of travel on an A to F scale with LOS A representing the best operation conditions from the traveler's perspective and LOS F the worst. LOS standards have historically been developed and used to describe vehicular LOS, and are used to identify and prioritize transportation needs. Once a LOS threshold is adopted as a policy by a jurisdiction, roadways are designed, operated, and maintained to meet that LOS. Therefore, LOS standards have a varying and significant impact in the type, quantity, and quality of services provided for various modes along a roadway. The following are general principles related to how LOS standards can support Complete Streets.

Vehicular Level of Service

Vehicular LOS standards were intended to be used as a long-term planning tool, applied on a roadway corridor level but not at the intersection or segment level. The **FDM** discusses this understanding of LOS. FDOT's currently adopted vehicular LOS standards for state roadways (**Topic No.: 000-525-006-b**) states that LOS for state roadways during peak travel hours are LOS D in urbanized areas and LOS C outside urbanized areas. Many local agencies in Florida have adopted a similar standard for local roadways. FDOT is considering revisions to the LOS Policy to provide LOS targets instead of LOS standards to provide more flexibility in the application of this planning tool.

Pedestrian, Bicycle, and Transit Level of Service

Measuring the pedestrian experience requires quantifying safety and comfort for the pedestrian, based on pedestrian delay and other roadway attributes. The bicycle experience is generally described by the delay encountered at intersections and the attributes of the bicycle facility itself. Transit LOS is primarily focused on service levels rather than facility characteristics. However, because transit passengers typically must walk or bicycle to and from transit stops on either end of their trip, the quality of the walking experience at the beginning or end of a trip contributes to overall transit LOS.

The FDOT **Q/LOS Handbook** includes methodologies to calculate pedestrian, bicycle and transit LOS. As FDOT continues to update its standards and policies, it is exploring the possibility of working with local governments to establish appropriate LOS targets for multimodal mobility. These targets should be responsive to context, roadway function, network design, and user safety.

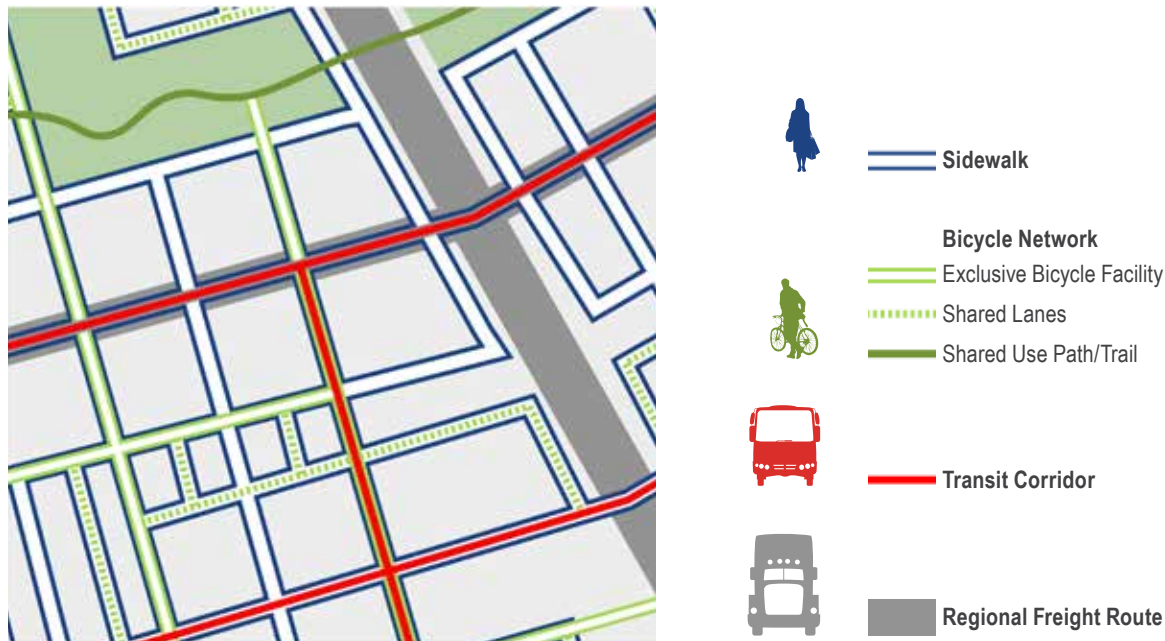
THE ROADWAY AS PART OF A SYSTEM

All roadways function as part of a broader transportation system. The safety, function and efficiency of a roadway are influenced by the other elements in the system. Parallel and connecting multimodal systems will influence the type of users and the travel demand on a roadway. The following section addresses how each roadway's ability to support all users is influenced by the transportation network. It also addresses transition zones needed between context classifications.

BUILDING A COMPLETE STREETS NETWORK

The FDOT policy states that the Department "...will routinely plan, design, construct, reconstruct and operate a context-sensitive **system** of Complete Streets." This Handbook furthers these ideas and emphasizes the need to support all users within a context-sensitive system of complete streets, according to each street's existing and desired future context and transportation characteristics. Figure 4-6 illustrates a conceptual idea of a context-sensitive system of complete streets, where each roadway contributes to the system's ability to serve all users.

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

FIGURE 4-6 CONTEXT-SENSITIVE SYSTEM OF COMPLETE STREETS

With multiple intersections and roadways sharing the traffic demand, there is less need to construct wider roadways or large intersections that could potentially create barriers to walking and bicycling and increase crash rates and severity for all users. 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 C3C and C3R Suburban Context Classifications, with limited roadway connectivity and land uses dispersed along large areas of land. In these suburban contexts, the arterial roadway network typically supports both local access and regional mobility, concentrating most vehicular trips onto the state arterial roadways. Critical transit service, major employers, and retail services are also often located on these roadways. As investments are made along major arterial roadways, roadway design elements that support walking, bicycling, and transit use should be integrated. New local roadway connections and shared use paths should also be considered to complement and provide a network alternative to the arterial roadway system.

Due to right of way and financial constraints, it may not be possible to provide a similar level of accommodation for all travel modes, even though minimal accommodation appropriate to context classification is expected. In some locations, it may be desirable to rely upon parallel roadways to provide additional travel options for some modes. The system approach requires collaboration between FDOT and local communities, as all partners work together to develop a network of Complete Streets comprising of state and local roadways.

TRANSITION ZONES

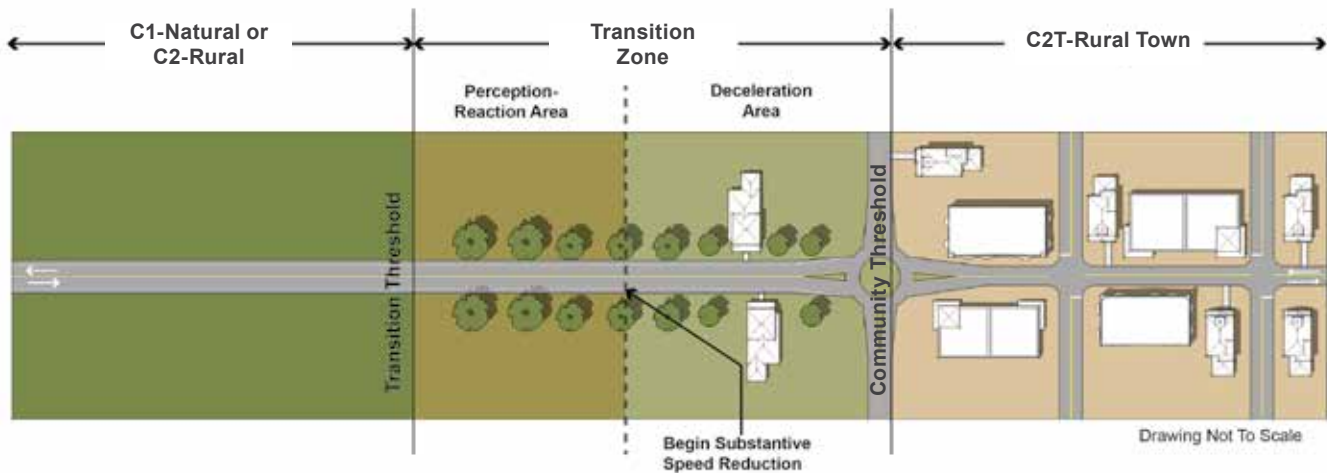
A roadway may traverse a variety of context classifications. As the context changes, the design criteria for the roadway will also change. This occurs across all context classifications, but the transition from C1-Natural or C2-Rural Context Classification to a higher classification such as C2T-Rural Town provides a particularly sharp shift in the recommended design speed and design users. For example, the land use surrounding SR 26 through Newberry, Florida transitions from C2-Rural to C2T-Rural Town over the course of a few blocks (see Figure 4-7). This condition requires a transition zone to alert drivers to the change and allow them to adjust their behavior and expectations accordingly. Changes in speed limit as part of transition zones will continue to comply with the requirement of the ***Speed Zone of Highways, Roads, and Streets in Florida (topic number 750-010-002)***.

NCHRP 737: Design Guidance for High-Speed to Low-Speed Transition Zones for Rural Highways defines two distinct sections in a transition zone: the perception-reaction area and the deceleration area (see Figure 4-8). The perception-reaction area is the portion of the transition zone where drivers are made aware of the need to reduce speed. This section has roadway characteristics similar to the rural context, but will include visual cues to alert the driver of an upcoming deceleration. These cues may include:

- Signage, including warning signs such as “reduce speed ahead” signs, or gateways signs where appropriate.
- Texture or pavement markings; lane narrowing can be highlighted with the use of a wider outside stripe or rumble strips.
- Curb changes, from flush paved shoulders to curbed roadway.
- Architectural elements such as type, location, and spacing of lighting and landscaping.

FIGURE 4-7 EXAMPLE OF A TRANSITION ZONE (SR 26 THROUGH NEWBERRY, FLORIDA)



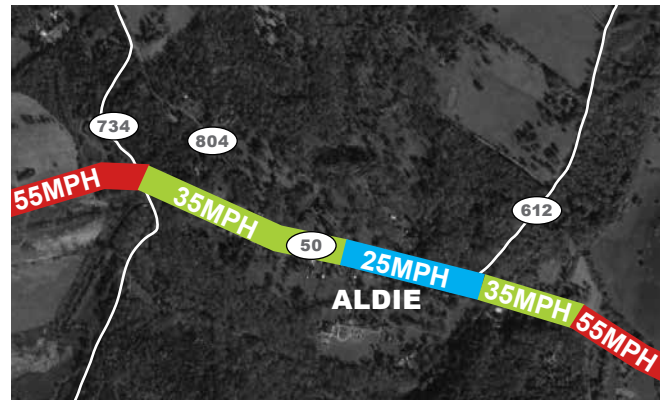
FIGURE 4-8 TRANSITION ZONE FROM C1-NATURAL/C2-RURAL TO C2T-RURAL TOWN CONTEXT CLASSIFICATION

Source: Adapted from NCHRP 737: Design Guidance for High-Speed to Low-Speed Transition Zones for Rural Highways.

The deceleration area is the portion of the transition zone where drivers are expected to decelerate to an operating speed that matches the context of the community being approached. In the deceleration area, there is a noticeable change in roadway characteristics. The length of the deceleration area is a function of design speed, sight distance, and design criteria of the town. Transition from a high-speed to low-speed cross section can be accomplished through a variety of geometrics features, including:

- Horizontal deflection, such as splitter islands, chicanes, or roundabouts
- Lane width narrowing
- Lane elimination
- Transverse pavement markings
- Introduction of curb and gutter
- Street enclosure through vertical landscaping
- Signage or gateway treatments

A combination of elements is more effective for reducing speeds than an individual design element. Figure 4-9 illustrates an example that utilizes horizontal deflection, lane width narrowing, introduction of curb and gutter, and a gateway treatment at the entrance of a rural town.

FIGURE 4-9 EXAMPLE OF A TRANSITION ZONE (SR 50, ENTRANCE TO TOWN OF ALDIE, VIRGINIA)

Transition zones at either side of the Town of Aldie with 35 MPH posted speed limit transitions drivers from 55 MPH posted speed to 25 MPH posted speed. (2016)

Source: Google Earth



Gateway feature, SR 50, Aldie, Virginia (2016)

Source: KAI

UNIQUE DESIGN CONSIDERATIONS

In a large and diverse state such as Florida, there will be locations that do not conform to the context classifications. Or, there may be areas where flexibility beyond the range of criteria contained in the **FDM** and a design variation or design exception is required.

DESIGNING FOR SPECIAL DISTRICTS (SD)

Special Districts are areas that, due to their unique characteristics and function, do not adhere to standard measures identified in the Context Classification Matrix (refer to Chapter 2). Examples include military bases, university campuses, airports, seaports, rail yards, theme parks and tourist districts, sports complexes, hospital campuses, and freight distribution centers. These areas are likely to have a unique set of users and needs when compared to the surrounding context classifications. There is no one set of design controls appropriate for all SDs. Project-specific data collection and engineering judgment should inform the selection of design controls for these areas. To select design controls and criteria in the **FDM**, the project team will select a context classification that best suits the characteristics of the SD. If a district believes that an SD designation is required, the district should coordinate with the State Complete Streets Program Manager.

ADDRESSING DESIGN EXCEPTIONS AND DESIGN VARIATIONS

The **FDM** is context-based and provides design flexibility through lower design speeds and the inclusion of criteria for low speed roadways. It is anticipated this flexibility will decrease the need for Design Exceptions and Design Variations; however, there may be areas where right of way, funding constraints, or other considerations require flexibility beyond the range of criteria contained in the **FDM**. The **FDM** includes a chapter that outlines the exception and variation processes. When referring to AASHTO A Policy on Geometric Design of Highways and Streets for evaluation of design exceptions, FDOT will continue to define urban and rural areas following the FHWA criteria.

STRATEGIC INTERMODAL SYSTEM

The design speeds along SIS facilities should be informed by their context classification, but should still preserve the ability for the SIS facilities to allow “for high-speed and high-volume traffic movements within the State” (**Section 163.380110 F.S.**). To follow the Complete Streets approach without compromising the function of the SIS, an alternate facility for SIS designation, if available, should be considered when the context classification does not align with the function of the SIS facility and the proposed design speeds shown in Appendix D. The **FDM** provides context-specific design controls and criteria for the SIS.

Appendix A

LAND USE TOOLS TO SUPPORT SAFE AND COMFORTABLE MULTIMODAL TRAVEL

HOW LAND USE CAN SUPPORT COMPLETE STREETS

The transportation system and development pattern (including land use, development density and intensity, building design, building height, building setback, and site layout) are inextricably linked. Each plays a significant role in creating a human-scale environment that invites walking, bicycling, and transit and that supports community economic development. Thoughtful application of context-based design provides for all modes of transportation.

Transportation and land use both have an effect on roadway network connectivity. An extensive, connected network provides route options for goods delivery and vehicular access to land uses, as well as the foundation for safe and comfortable multimodal travel. A fine-grained roadway network with the appropriate design elements also provides multiple pedestrian and bicycling routing, shortens trip distances, and reduces the need to widen intersections and roadways, which may impact ease of walking and bicycling.

Similarly, development form and pattern complete the necessary elements of a multimodal environment. A mix of uses, located where people live, work, shop, and spend leisure time, that are thoughtfully integrated within a building, a parcel, or a few blocks, provides multiple destinations within walking and bicycling distance. Buildings located at the back of sidewalks with active store fronts, such as restaurants and retail, provide a comfortable sense of enclosure, visual interest, passive surveillance, and comfortable access to destinations. Direct, logical, and comfortable connections between destinations encourage walking and bicycling. The best multimodal transportation strategy is the right land use strategy.¹



A complete street environment requires both transportation and land use strategies.

Source: (top to bottom) FDOT, Rick Hall, KAI

¹ Charlotte-Mecklenburg Planning Department, "Centers, Corridors, Wedges Growth Framework", (August 10, 2010).

LOCAL GOVERNMENTS

Complete Streets rely on collaborative investments throughout the transportation network, from private site development, to local roadway network, to regional thoroughfares. Local governments are responsible for land use and transportation planning that supports a context-sensitive system of Complete Streets through supportive infrastructure and development patterns. Local government land use and transportation planning should also work to preserve the capacity of important regional roadways through the creation of a well-connected roadway network that accommodates short-distance and local trips, thus removing these trips from the regional roadways.

FDOT will plan and design transportation projects to be consistent with the existing or proposed land use context of the areas served. However, this process is not a one-sided relationship in which State roadways

are constantly expected to respond to land-use-generated travel demands. In a truly integrated land use and transportation planning approach, one that can result in Complete Street systems, potential transportation changes should be anticipated and should help inform decision making related to land uses. Land use decisions should be made to help manage travel needs and support the desired mobility patterns of a community. For example, if a community desires a higher level of transit investment, land use decisions should be made to encourage the intensity and density of transit-supportive development. Figure A-1 illustrates collaborative land use and transportation investments that support Complete Streets.

FIGURE A-1 COLLABORATIVE INVESTMENTS TO SUPPORT A CONTEXT-SENSITIVE SYSTEM OF COMPLETE STREETS



Many state arterials serve as the only alternative for local and regional mobility. The roadway may be over capacity but cannot be widened because of physical, financial, or environmental realities. However, growth is still desired by local governments searching for new tax base. These conditions are requiring FDOT and partner agencies to explore solutions that go beyond widening — solutions that are multimodal and integrate land use planning.



Partnerships with landowners, developers, municipal leaders, and others can help achieve solutions that go beyond the right of way, such as adding and connecting to the local roadway network. The new network can allow new growth but with a different development pattern. This more compact mixture of uses can reduce trip lengths and total number of trips, and would allow for pedestrian, bicycling, and transit to become viable alternatives.

Source: Adapted from PennDOT Smart Transportation Training Materials

Local governments have a number of tools available to support a Complete Streets network. Some of these tools include:

Local Network Connectivity. In new development areas and large-scale redevelopment areas, local governments may recommend a block length of 300 to 800 feet and/or develop internal or external street connectivity ratios or intersection densities that will create a well-connected street network (see Figure A-2).

Investments in Local Multimodal Infrastructure. Local governments can encourage or require property owners and developers to provide infrastructure for all modes, such as sidewalks and crosswalks, bicycle facilities, streetscapes, and bicycle parking, as part of new development and redevelopment. A complete pedestrian network includes direct, convenient, and safe connections from the public sidewalk to the building (see Figure A-3).

FIGURE A-2 EXAMPLE OF LOCAL NETWORK CONNECTIVITY



Local governments can build local network connectivity by using regulatory tools such as requiring maximum block lengths or minimum intersection densities.

Source: LEED Neighborhood Development (ND) Reference Guide

FIGURE A-3 EXAMPLE OF INVESTMENTS IN LOCAL MULTIMODAL INFRASTRUCTURE

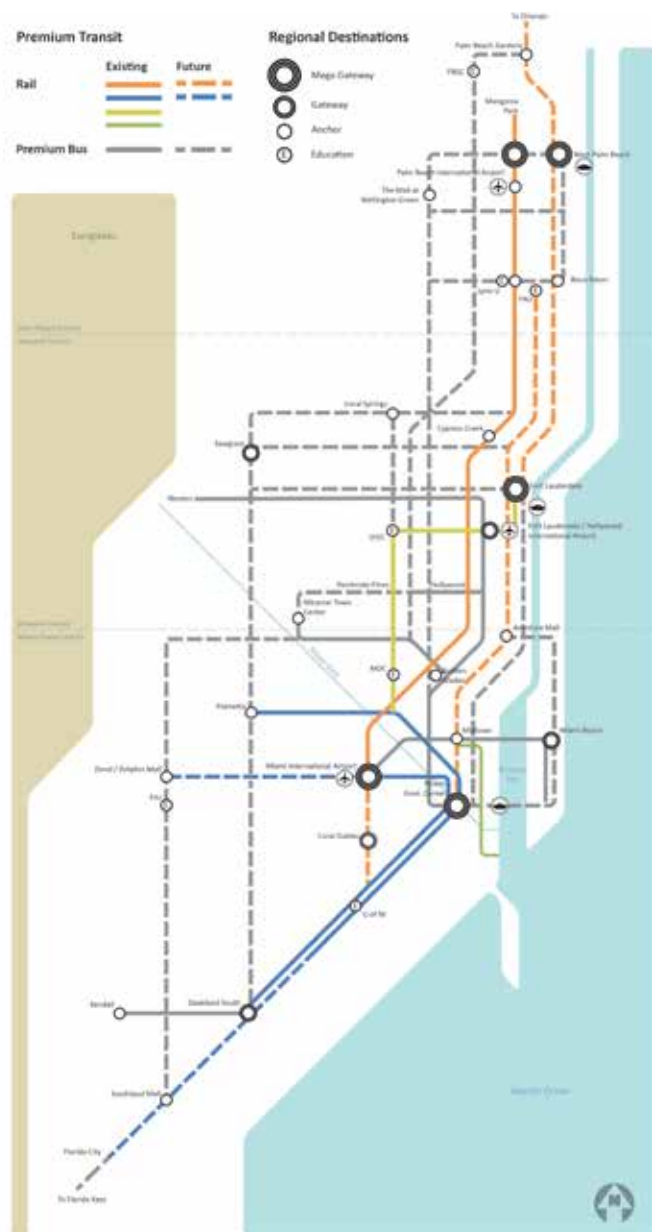


FDOT District 5 is working with local governments to plan for multimodal connectivity around SunRail commuter rail stations. This plan illustrates how multimodal investments can support transit-oriented development and expand SunRail's ridership area.

Source: FDOT

Multimodal Network Plans. Many local and regional governments prepare multimodal network plans that outline a long-term commitment to provide a well-connected multimodal system (see Figure A-4).

FIGURE A-4 EXAMPLE OF MULTIMODAL NETWORK PLAN



Many regions around the State are incorporating transit and multimodal investments as part of regional long range transportation plans. The example above is from Southeast Florida.
Source: 2040 Southeast Florida Regional Transportation Plan

Zoning. Single-use zoning (Euclidean zoning) codes can lead to a separation of land uses that creates long distances between residents and jobs, services, and recreational activities. One alternative tool is form-based code, which uses physical form, rather than separation of land uses, as the organizing principle.¹ Another option is to introduce more mixed-use districts and development of higher intensity and density activity centers, or arrange land uses in closer proximity, to reduce the overall demand for vehicular trips.



Mixed-use zoning districts allow for arrangement of various land uses within close proximity, thus encouraging travel by various modes.

Source: KAI

¹ Form-Based Codes Institute, <http://formbasedcodes.org/>

Site Design and Building Placement.

Large building setbacks surrounded by parking increase walking distances and create isolated and unwelcoming environments for pedestrians and bicyclists. In areas where local municipalities would like to support multimodal travel, cities should consider building scales, placement, and design that support pedestrian activity. Form-based codes can be used to address site design and building placement requirements.

Land development regulations can require building design, site design, and lot layout to support a pedestrian-friendly street environment.

Source: KAI

Access Management Standards. Where development occurs along State roadways, local governments can use land use policies and regulations to address access management. This can be in the form of requiring multiple roadways to access a development or allowing for cross-access easement and shared driveways between different properties. This not only helps to accommodate improved traffic flow along roadways but also helps to reduce the number of curb cuts along a roadway, improving walking and bicycling conditions. A more connected network of roadways also allows for internal site circulation by multiple modes (see Figure A-5).



FIGURE A-5 CROSS-ACCESS EASEMENTS



Parking Standards. Large surface parking lots are a barrier to connectivity, as these can create longer distances between destinations and contribute to an uncomfortable walking environment. Some local governments are beginning to implement parking maximum requirements instead of parking minimum requirements. Establishing a maximum allowable amount of parking can prevent developers from building excessively large lots, or limit the parking supply in an area based on community priorities. Communities looking to increase tax revenue through redevelopment of parking lots, improve pedestrian safety and comfort downtown, or reduce stormwater runoff and heat island impacts of parking can also consider parking maximums as a way to achieve those goals.² Establishing parking maximums, combined with allowing for shared parking across properties and uses, can also support a park-once environment to support multimodal travel.



Parking policies such as allowing for shared use parking can support a park-once environment.

Source: KAI

² Metropolitan Area Planning Council, "Maximum Parking Allowances," last modified March 8, 2010, <http://www.mapc.org/resources/parking-toolkit/strategies-topic/parking-allowances>.

Appendix B

CONTEXT CLASSIFICATIONS 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 > 1,000,000). 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 C2-Rural C2T-Rural Town C3R-Suburban Residential C3C-Suburban Commercial C4-Urban General C5-Urban Center C6-Urban Core

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

Primary Measures

Land Use	Building Height	Building Placement	Fronting Uses	Location of Off-street Parking	Roadway Connectivity		
					Intersection Density	Block Perimeter	Block Length
Description	Floor Levels	Description	Yes / No	Description	Intersections/ Sq Mile	Feet	Feet
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
Not Allowed	Not Allowed	0	0

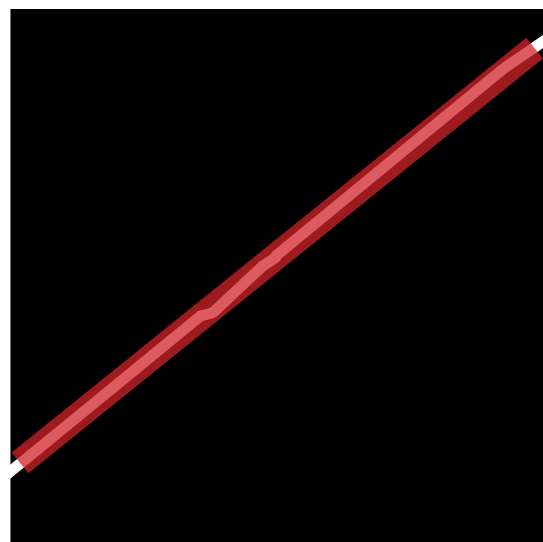


Street View



Bird's Eye View

Open Space 



Streets and Blocks Network



Existing Land Use

C2-RURAL: SR 52, SOUTH OF DADE CITY, PASCO COUNTY

Primary Measures

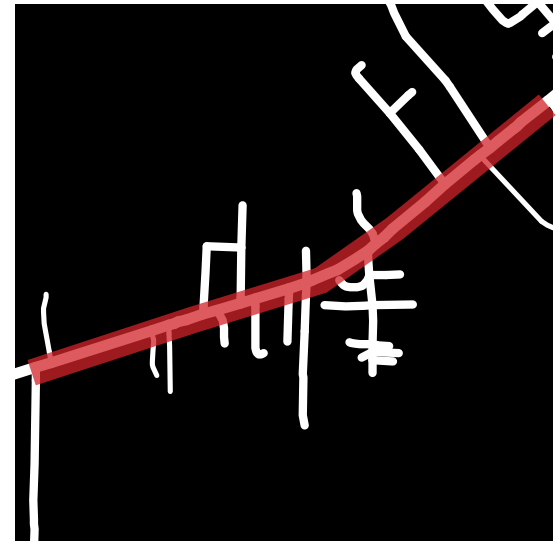
Land Use	Building Height	Building Placement	Fronting Uses	Location of Off-street Parking	Roadway Connectivity		
					Intersection Density	Block Perimeter	Block Length
Description	Floor Levels	Description	Yes / No	Description	Intersections/Sq Mile	Feet	Feet
Agricultural, Single-Family Residential, and Retail	1	Detached buildings with no consistent pattern of setbacks	No	No consistent pattern	58	NA	NA

Secondary Measures

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



Aerial Satellite Image



Streets and Blocks Network

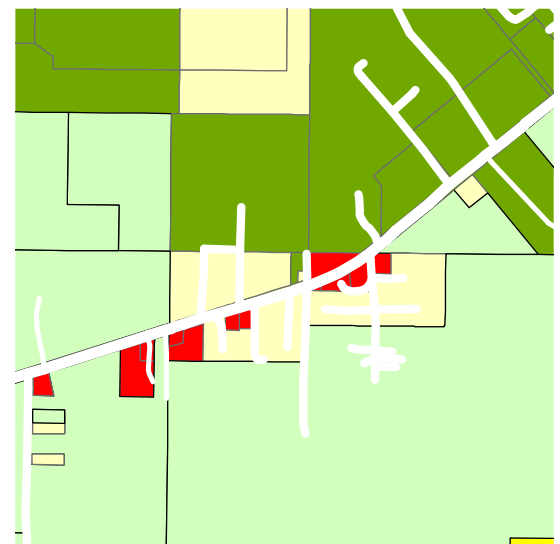
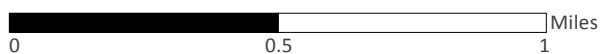


Street View



Bird's Eye View

Single-Family Residential	
Multi-Family Residential	
Commercial	
Agriculture	
Open Space	
Vacant	



Existing Land Use

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

Primary Measures

Land Use	Building Height	Building Placement	Fronting Uses	Location of Off-street Parking	Roadway Connectivity		
					Intersection Density	Block Perimeter	Block Length
Description	Floor Levels	Description	Yes / No	Description	Intersections/Sq Mile	Feet	Feet
Retail and Commercial	1 - 2	Mostly attached buildings with no setbacks	Yes	Mostly in rear, occasionally on side	325	1,520	330

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



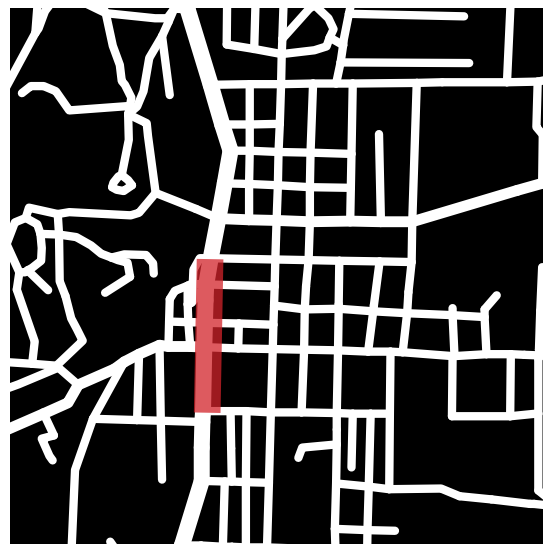
Bird's Eye View

Single-Family Residential	Yellow
Multi-Family Residential	Orange
Commercial	Red
Retail	Dark Red
Agriculture	Light Green
Institutional/Government	Blue
Industrial	Dark Blue
Open Space	Green
Vacant	White

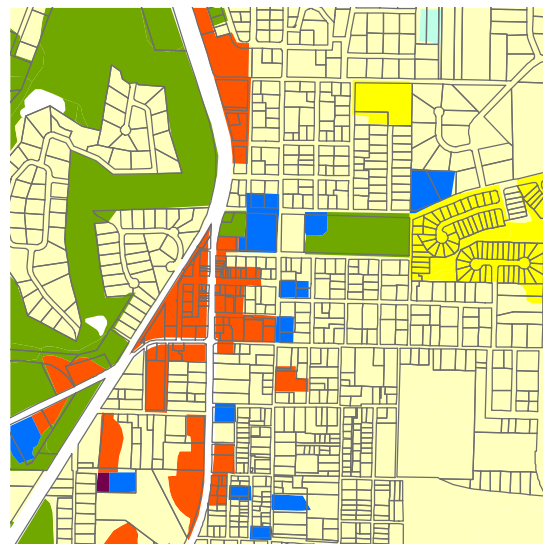
0 0.5 1 Miles



Aerial Satellite Image



Streets and Blocks Network



Future Land Use

C3R-SUBURBAN RESIDENTIAL: SR 70, LAKEWOOD RANCH, MANATEE COUNTY

Primary Measures

Land Use	Building Height	Building Placement	Fronting Uses	Location of Off-street Parking	Roadway Connectivity		
					Intersection Density	Block Perimeter	Block Length
Description	Floor Levels	Description	Yes / No	Description	Intersections/Sq Mile	Feet	Feet
Single-Family Residential and Institutional	1 - 2	Detached buildings with medium (10' to 24') to large (> 24') 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

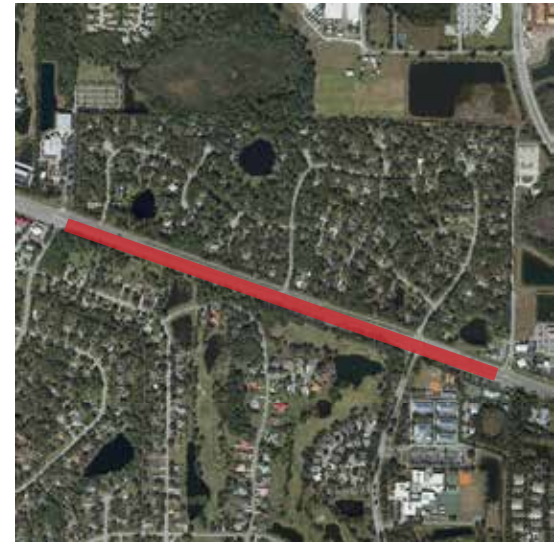
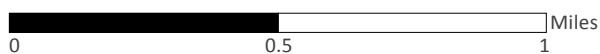


Street View



Bird's Eye View

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



Aerial Satellite Image



Streets and Blocks Network



Existing Land Use

C3C-SUBURBAN COMMERCIAL: US 441, BROWARD COUNTY

Primary Measures

Land Use	Building Height	Building Placement	Fronting Uses	Location of Off-street Parking	Roadway Connectivity		
					Intersection Density	Block Perimeter	Block Length
Description	Floor Levels	Description	Yes / No	Description	Intersections/Sq Mile	Feet	Feet
Retail, Commercial, and Light Industrial	1 - 2	Detached buildings with large (> 24') setbacks on all sides	No	Surrounded by parking on all sides	94	3,320	680

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	0.7	8.5	7



Street View



Bird's Eye View

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

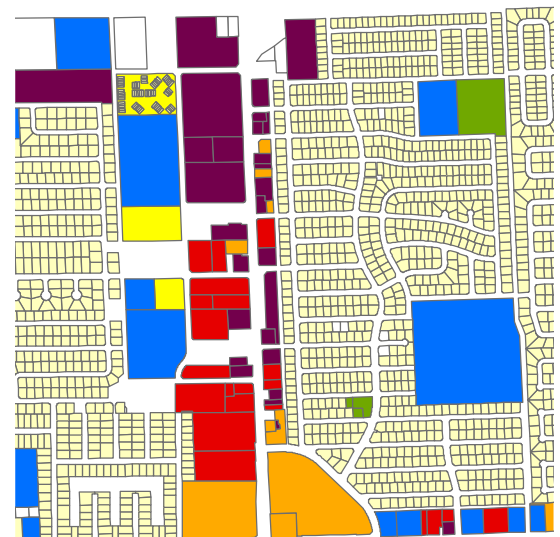
0 0.5 1 Miles



Aerial Satellite Image



Streets and Blocks Network



Existing Land Use

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

Primary Measures

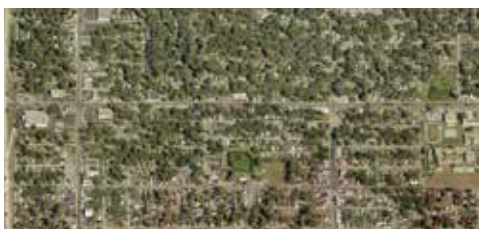
Land Use	Building Height	Building Placement	Fronting Uses	Location of Off-street Parking	Roadway Connectivity		
					Intersection Density	Block Perimeter	Block Length
Description	Floor Levels	Description	Yes / No	Description	Intersections/Sq Mile	Feet	Feet
Single-Family and Multi-Family Residential, Neighborhood Scale Retail, and Office	1 - 2	Detached buildings with small (<10') to medium (10' to 24') 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

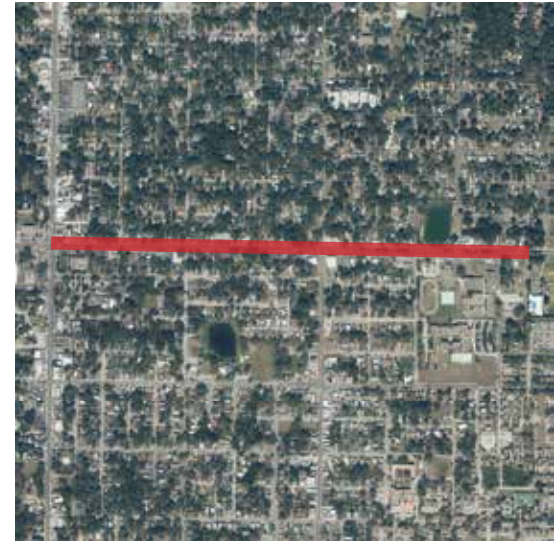
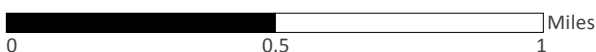


Street View

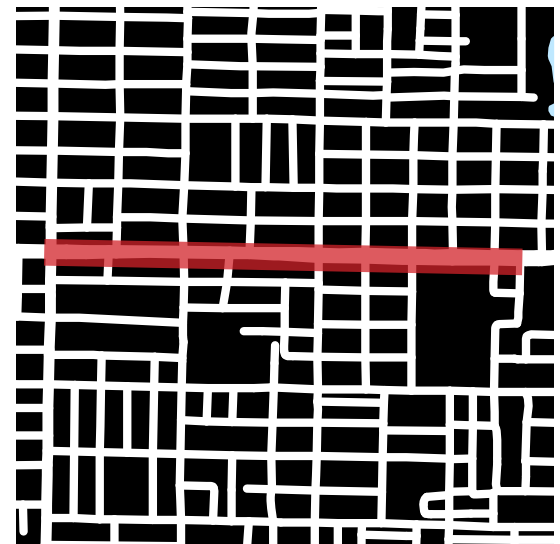


Bird's Eye View

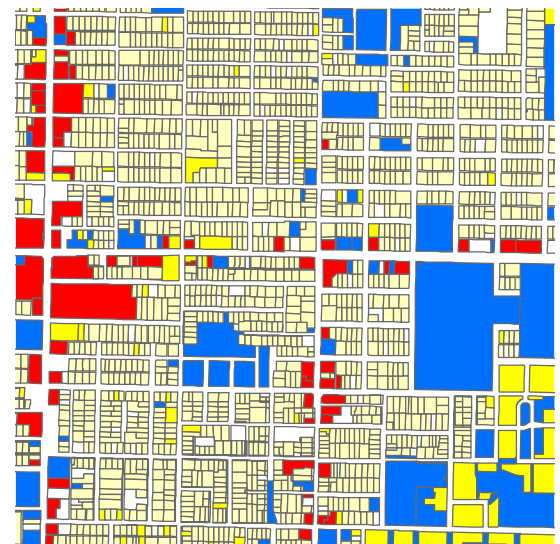
Single-Family Residential	Yellow
Multi-Family Residential	Orange
Commercial	Red
Retail	Dark Red
Institutional/Government	Blue
Open Space	Green
Vacant	White



Aerial Satellite Image



Streets and Blocks Network



Existing Land Use

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

Primary Measures

Land Use	Building Height	Building Placement	Fronting Uses	Location of Off-street Parking	Roadway Connectivity		
					Intersection Density	Block Perimeter	Block Length
Description	Floor Levels	Description	Yes / No	Description	Intersections/Sq Mile	Feet	Feet
Retail, Office, Institutional, Commercial	1 - 5 with some taller buildings	Mostly attached buildings with no setbacks or with few having shallow 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

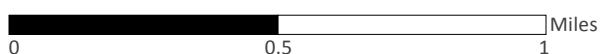


Street View

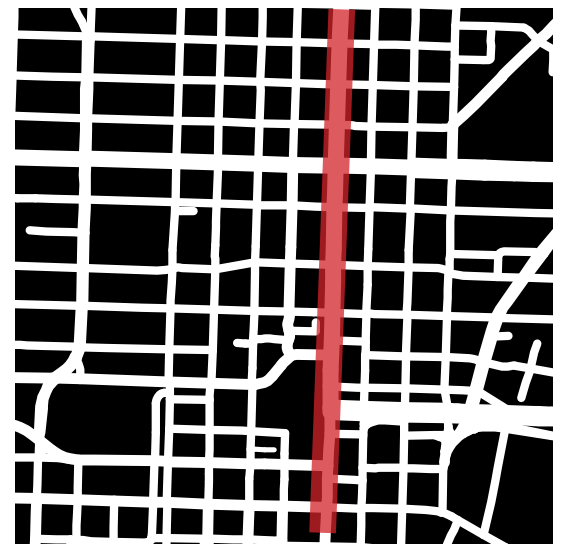


Bird's Eye View

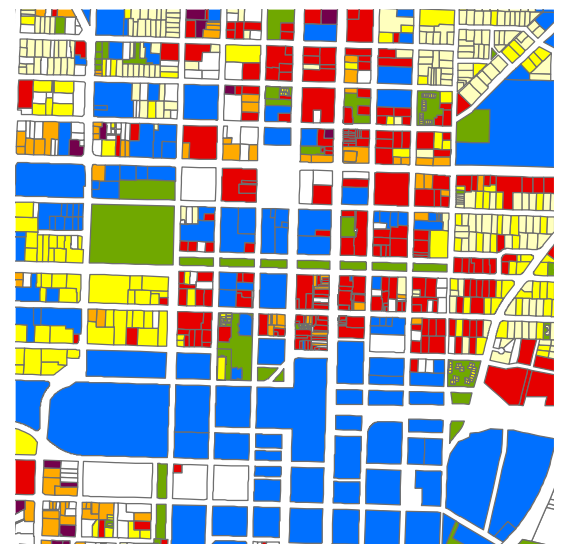
Single-Family Residential	
Multi-Family Residential	
Commercial	
Retail	
Institutional/Government	
Industrial	
Open Space	
Vacant	



Aerial Satellite Image



Streets and Blocks Network



Existing Land Use

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

Primary Measures

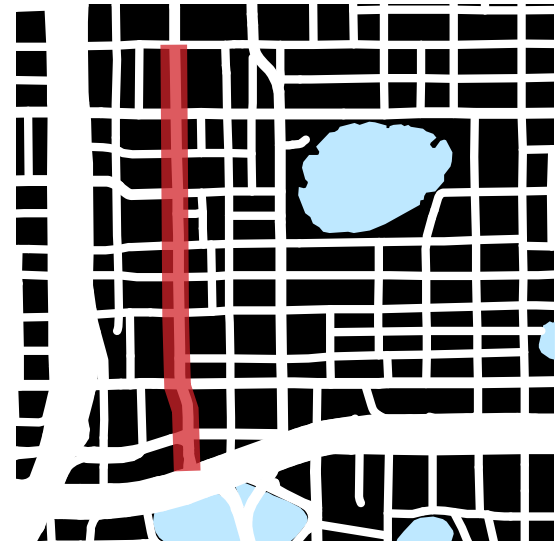
Land Use	Building Height	Building Placement	Fronting Uses	Location of Off-street Parking	Roadway Connectivity		
					Intersection Density	Block Perimeter	Block Length
Description	Floor Levels	Description	Yes / No	Description	Intersections/Sq Mile	Feet	Feet
Retail, Office, Institutional, and Multi-Family Residential	> 4 with some shorter buildings	Mostly attached buildings with no setbacks	Yes	Rear and garage	220	1,910	450

Secondary Measures

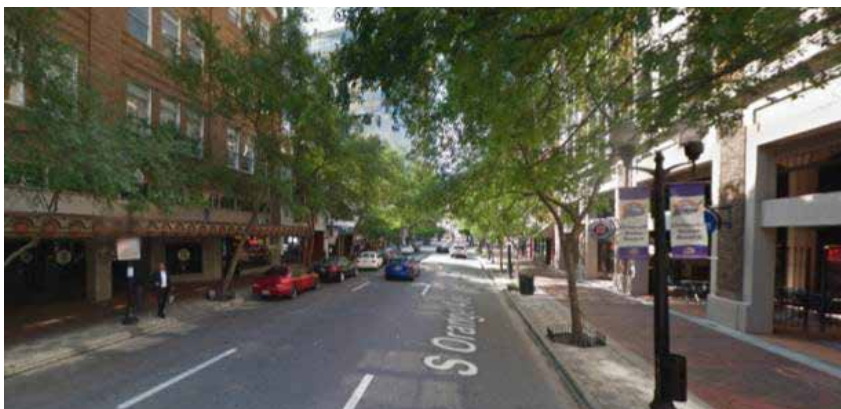
Allowed Residential Density	Allowed Office/Retail Density	Population Density	Employment Density
DU/Acre	Floor-Area Ratio (FAR)	Persons/Acre	Jobs/Acre
200	3	8.5	170



Aerial Satellite Image



Streets and Blocks Network

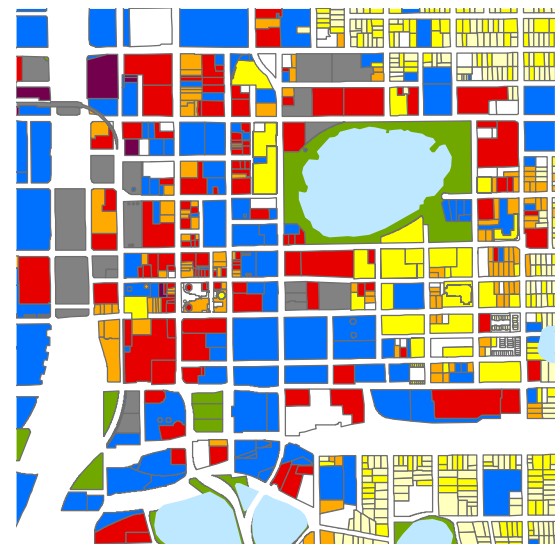


Street View

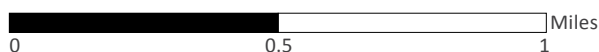


Bird's Eye View

Single-Family Residential	Yellow
Multi-Family Residential	Orange
Commercial	Red
Retail	Dark Red
Institutional/Government	Blue
Industrial	Green
Open Space	Light Green
Vacant	White



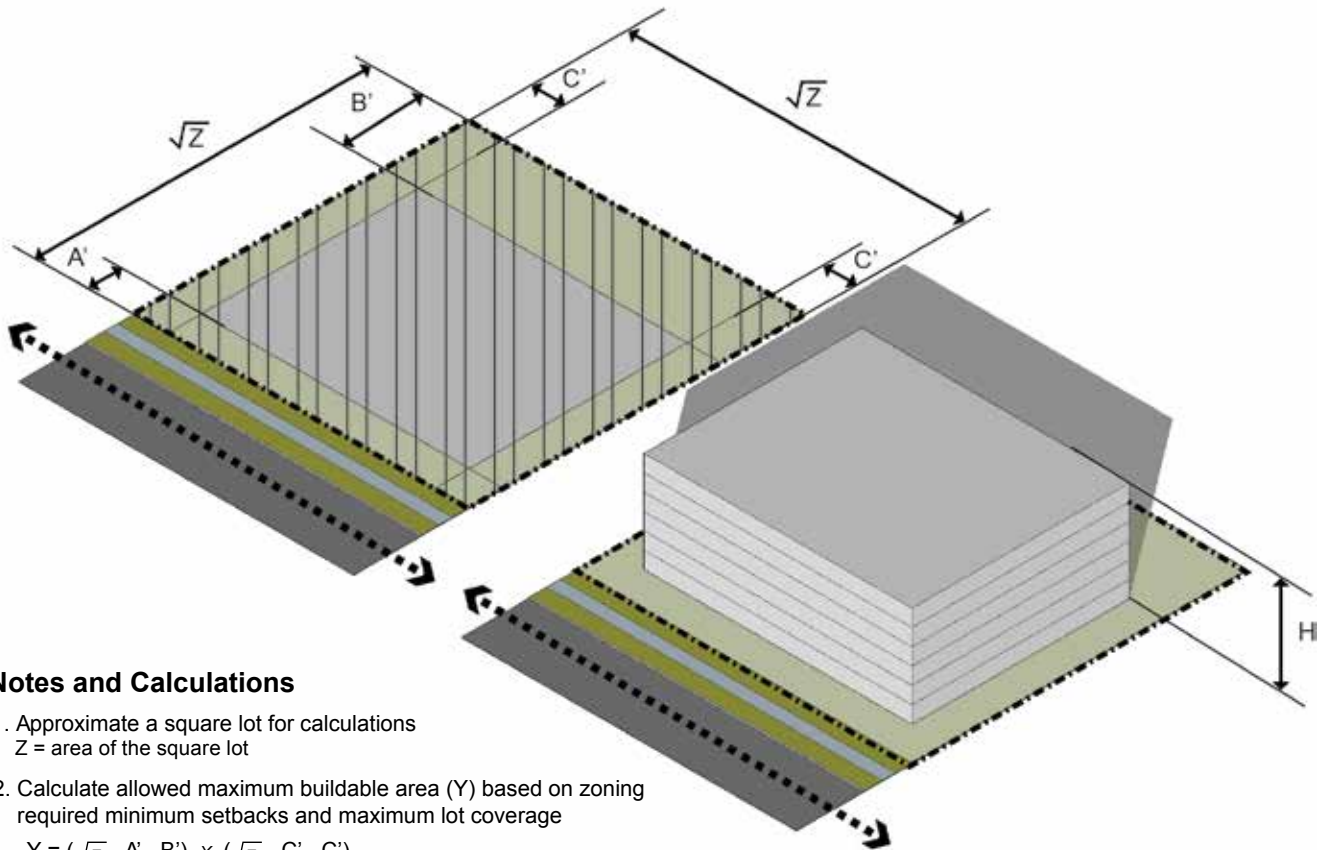
Existing Land Use



Appendix C

HOW TO CALCULATE FLOOR AREA RATIO IF NOT DEFINED IN ZONING CODE

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
 $Y = (\text{Maximum lot coverage area in (\%)} \text{ allowed by zoning code}) \times (Z)$
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)

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

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

..... Property Lot Line

.....> Project Roadway



Appendix D

PROPOSED *FDM* DESIGN SPEED RANGES BY CONTEXT CLASSIFICATIONS FOR NON-LIMITED-ACCESS FACILITIES

Context Classification	Allowable Design Speed Range for Non-SIS (mph)	Minimum Design Speed for SIS (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	30-45	45
C5-Urban Center	25-35	35
C6-Urban Core	25-30	30

Refer to the *FDM* for design criteria and refer to the *SIS Procedure 525-030-260-b* for SIS standards.

Appendix E

DRAFT SAMPLE CONTEXT CLASSIFICATION LETTER OF AGREEMENT WITH LOCAL GOVERNMENTS

The successful implementation of Complete Streets requires the identification of a roadway's context classification early in the project development process. Context classification informs all phases of a project: planning, PD&E, design, construction, and maintenance. Chapter 2 of the Complete Streets Handbook provides the Context Classification Matrix (see Table 2-1 in the Complete Streets Handbook) and outlines the methodology for using it.

On projects where FDOT currently coordinates with local governments, FDOT will coordinate with local governments to determine context classification; however, the final determination of context classification will be made by FDOT. Refer to the **Public Involvement Handbook**, **FDM**, **PD&E Manual**, and **Project Management Handbook** for more guidance on needed local government coordination.

To ensure clarity and consistency throughout the project development process, it may be beneficial to document the agreement reached among FDOT and local partners on the context classification(s) of a roadway. This is most useful early in the project development process (see Figure 3-5 in the Complete Streets Handbook), but can be executed at any point in the life of a project.

The following is a sample Letter of Agreement that can be tailored to the needs of a project.

The following notes apply to the sample Letter of Agreement:

- If there is no FN Number, the associated phrase in the declarations section of the sample Letter of Agreement can be deleted.
- Replace COUNTY and CITY with the full county or city name, wherever they are not previously defined. Note that separate Letter of Agreements with multiple parties may be needed if the project extends through multiple jurisdictions.
- Maps, drawings, and other project information may be appended to the Letter of Agreement as exhibits.

SAMPLE CONTEXT CLASSIFICATION LETTER OF AGREEMENT

Sample Context Classification Letter of Agreement to Come

Appendix F

LIST OF HANDBOOKS AND GUIDANCE DOCUMENTS THAT INCLUDE TOOLS FOR IMPLEMENTING COMPLETE STREETS

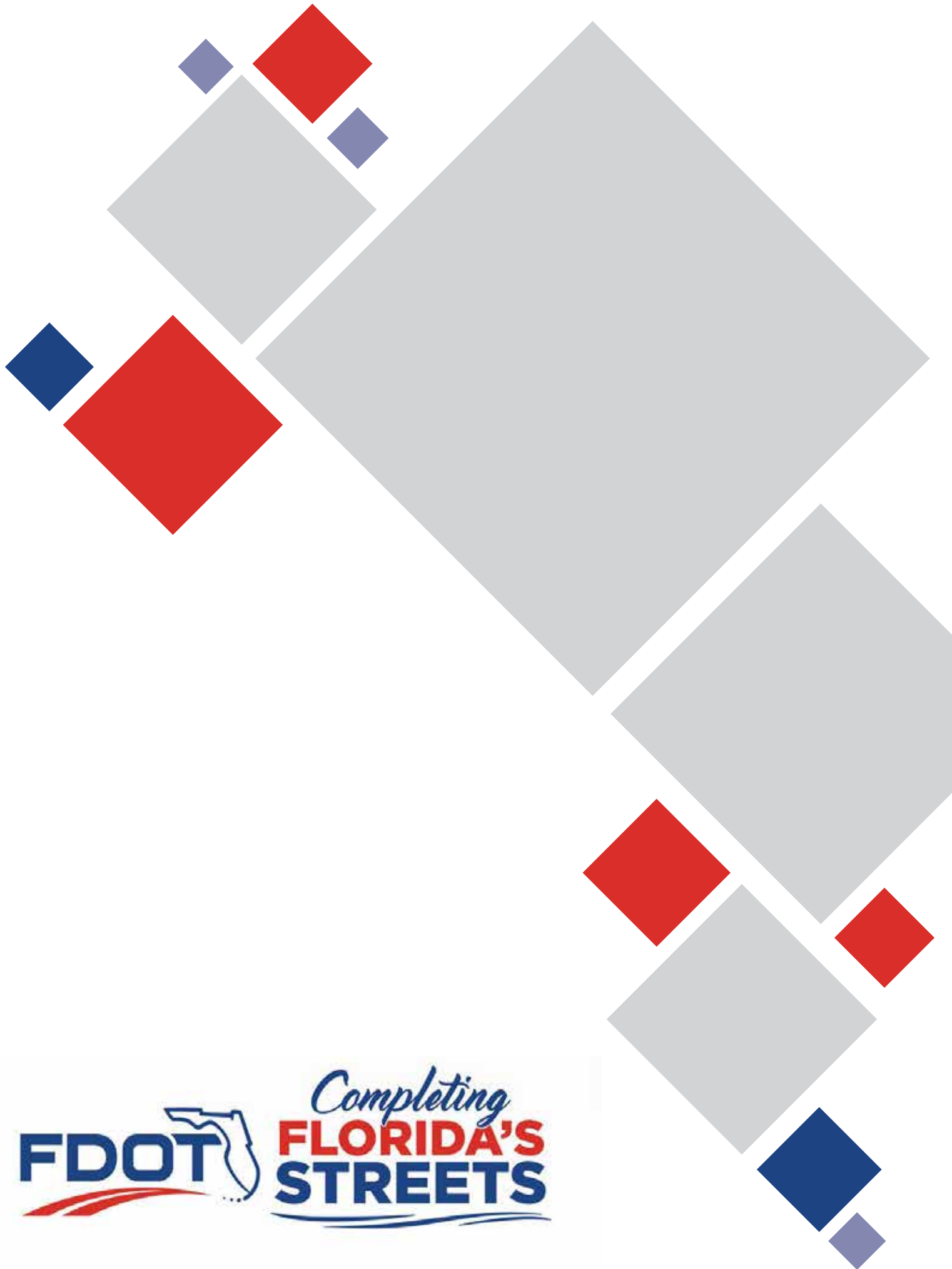
HANDBOOKS AND MANUALS

- 2014 Traffic Analysis Handbook-A Reference for Planning and Operations
- Accessing Transit: Design Handbook for Florida Bus Passenger Facilities (Version III, 2013)
- Cultural Resource Management Handbook
- Efficient Transportation Decision Making (ETDM) Planning and Programming Manual
- Florida Highway Landscape Guide
- Florida Scenic Highway Program Manual
- Guide for Roadside Vegetation Management
- Historic Highway Bridges of Florida
- Local Agency Program (LAP) Program Manual
- Project Development and Environment (PD&E) Manual
- Public Involvement Handbook
- Quality/Level of Service Handbook
- Manual for Speed Zoning of Highways, Roads & Streets
- Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways (commonly referred to as the "Florida Greenbook")
- Traffic Engineering Manual

Latest versions of FDOT Handbook and Manuals listed above can be accessed here: <http://www.fdot.gov/publications/publications.shtm>

GUIDANCE

- Statewide Lane Elimination Guidance Parts 1
- Statewide Lane Elimination Guidance Parts 2
- Sociocultural Effects Guidance
- FDOT Transit-Oriented Development Guidebook
- Typical Sections for Exclusive Transit Running Ways





FDOT *Completing*
FLORIDA'S
STREETS



CONTEXT CLASSIFICATION GUIDE



February 2022

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53 FDOT Design Manual (FDM)

60 FDOT Access Management Guidebook

61 FDOT Traffic Engineering Manual

62 FDOT Quality/Level of Service Handbook

63 FDOT Speed Zoning Manual

63 Florida Greenbook

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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 roads²; 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

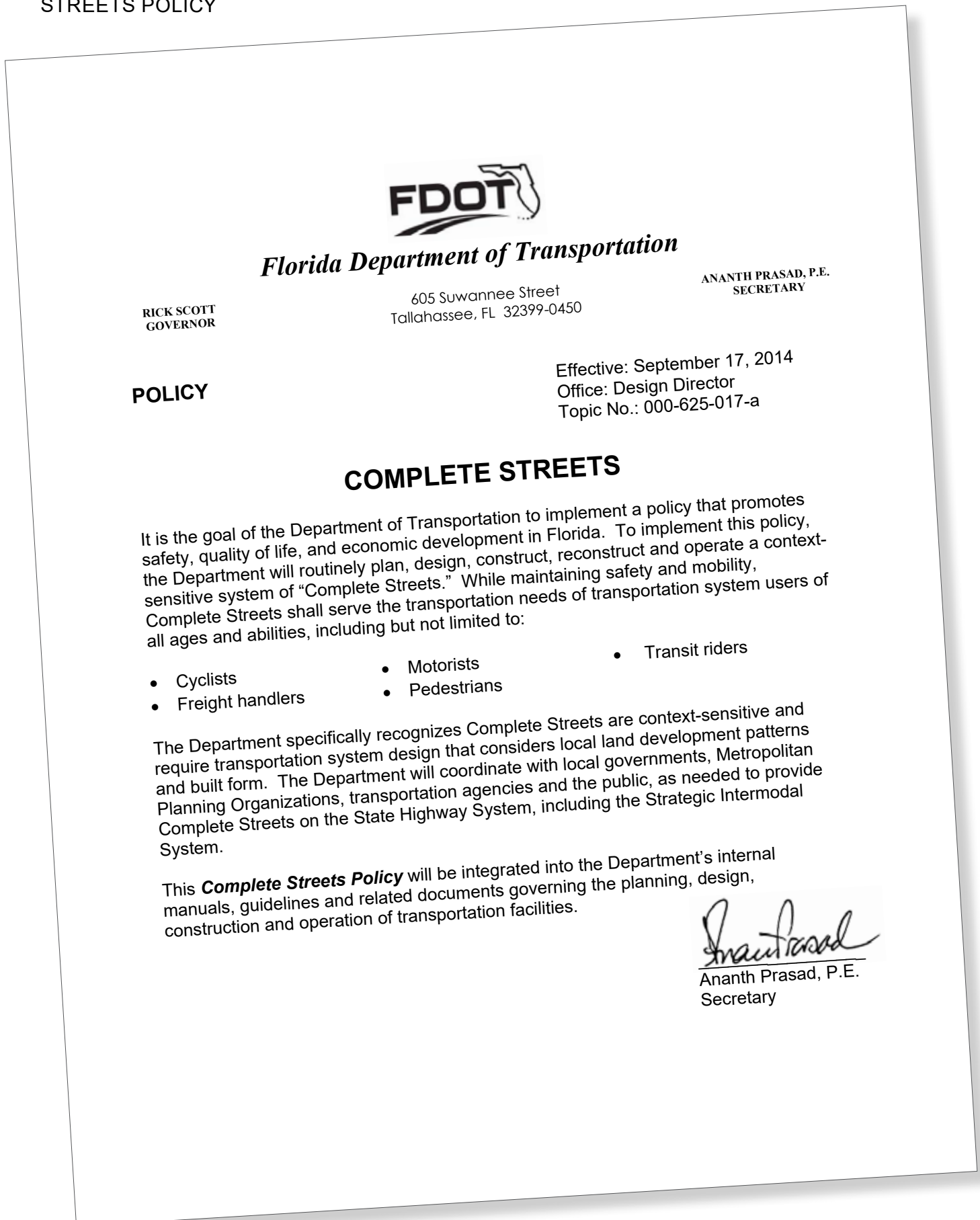
In September 2014, FDOT adopted the Statewide Complete Streets Policy (Topic No. 000-625-017) (see **Figure 1**), making a commitment to planning, designing, and operating their transportation system for all users. The Policy was a formal acknowledgment that each roadway location is unique, requiring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



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

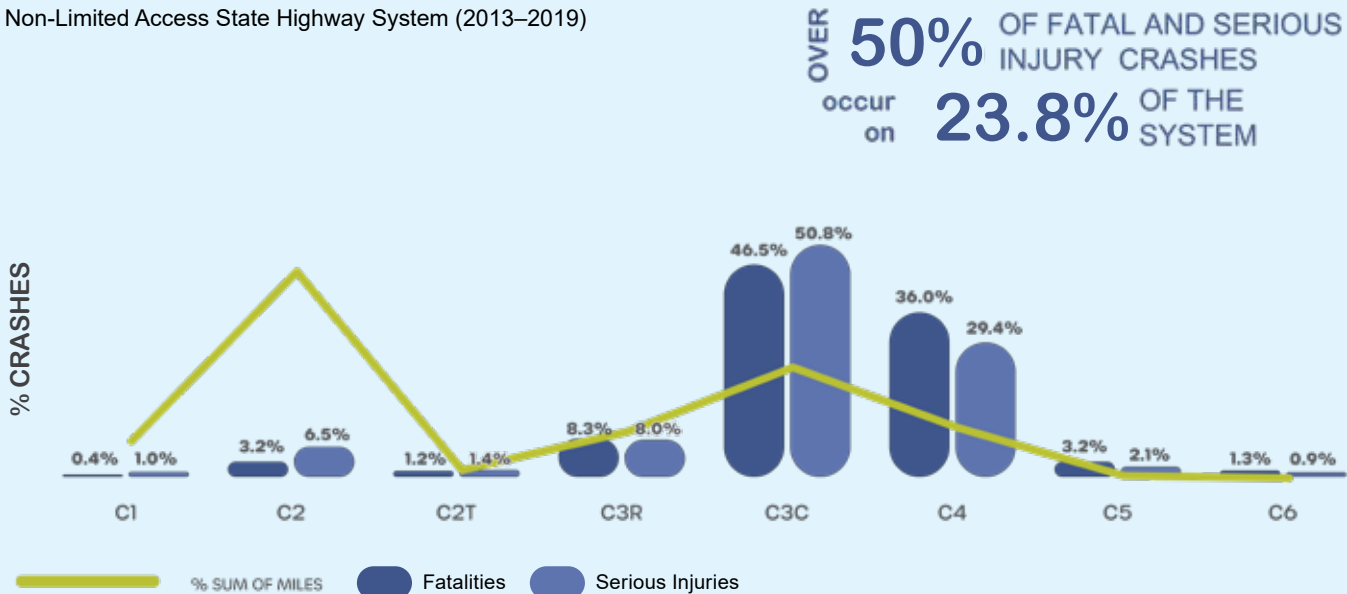
TARGET ZERO

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

Non-Limited Access State Highway System (2013–2019)



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:

- 
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.
- 
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.
- 
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.

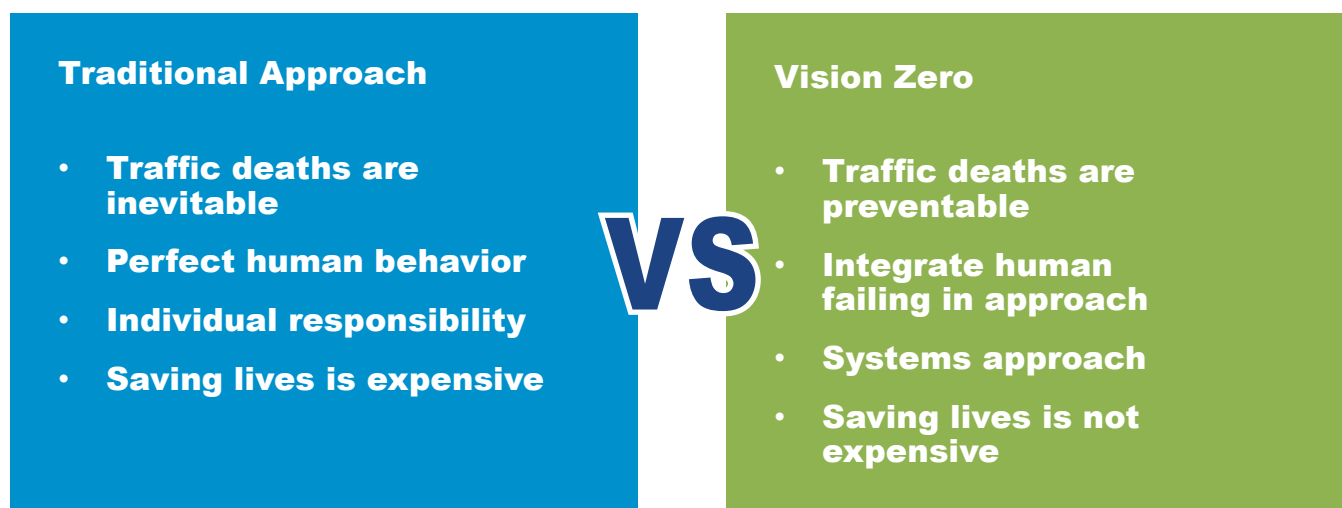
¹ Federal Highway Administration. The Safe Systems Approach. Accessed on September 25, 2021. https://safety.fhwa.dot.gov/zerodeaths/docs/FHWA_SafeSystem_Brochure_V9_508_200717.pdf

- 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.

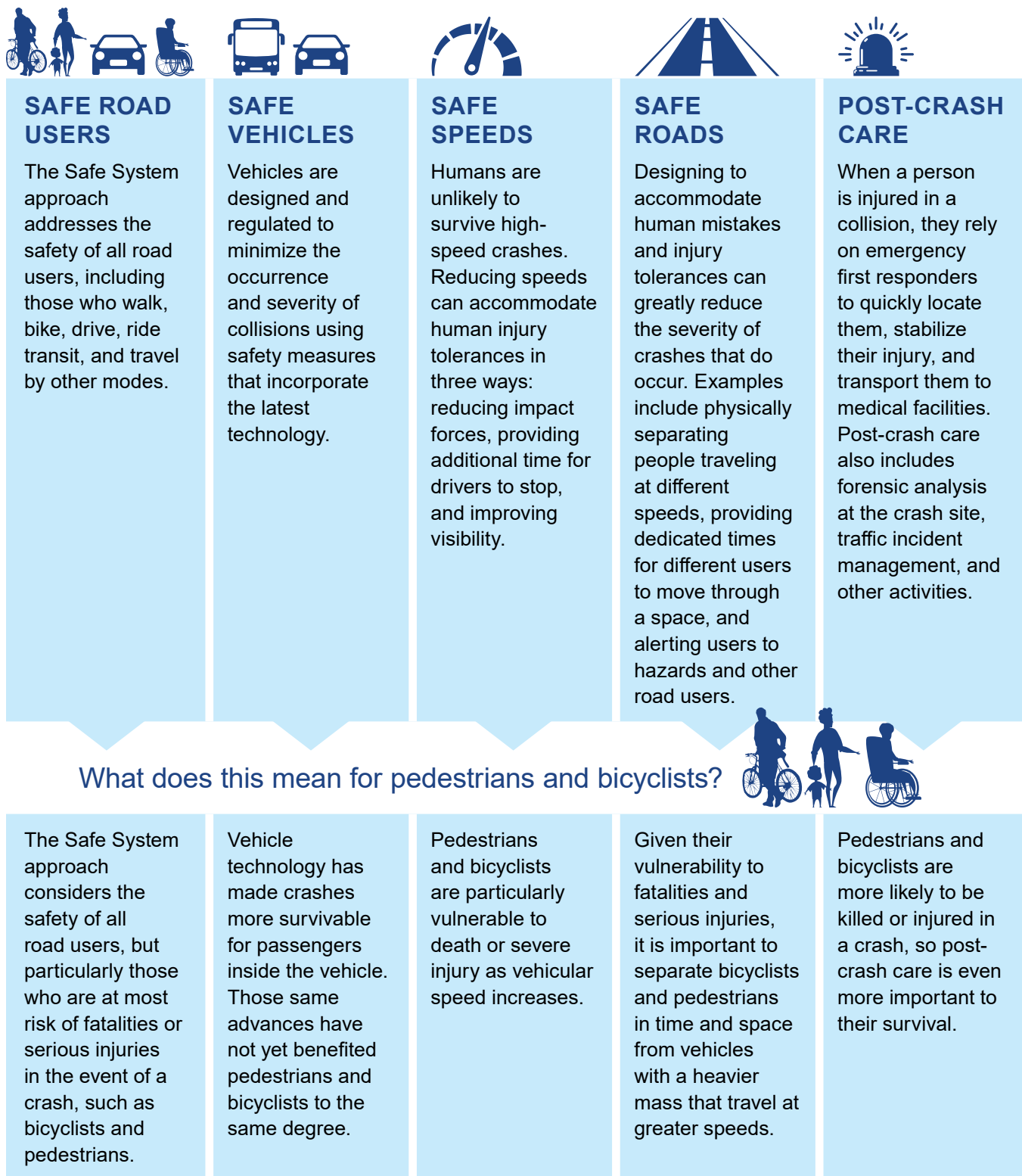
FDOT can leverage the context classification system, as described in this Guide, to implement this proactive approach to safety. Context classification can inform the types of users anticipated, what their travel needs may be, and typical safety challenges. Through this, FDOT can more proactively implement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



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



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

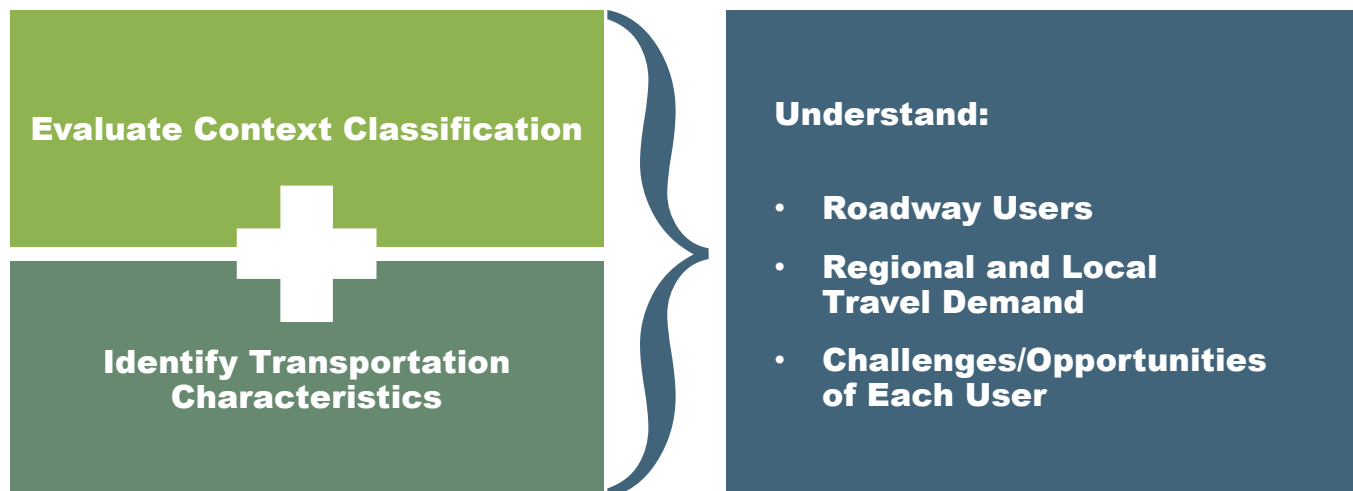
“Complete
Streets means
putting the right
road in the right
place.”

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

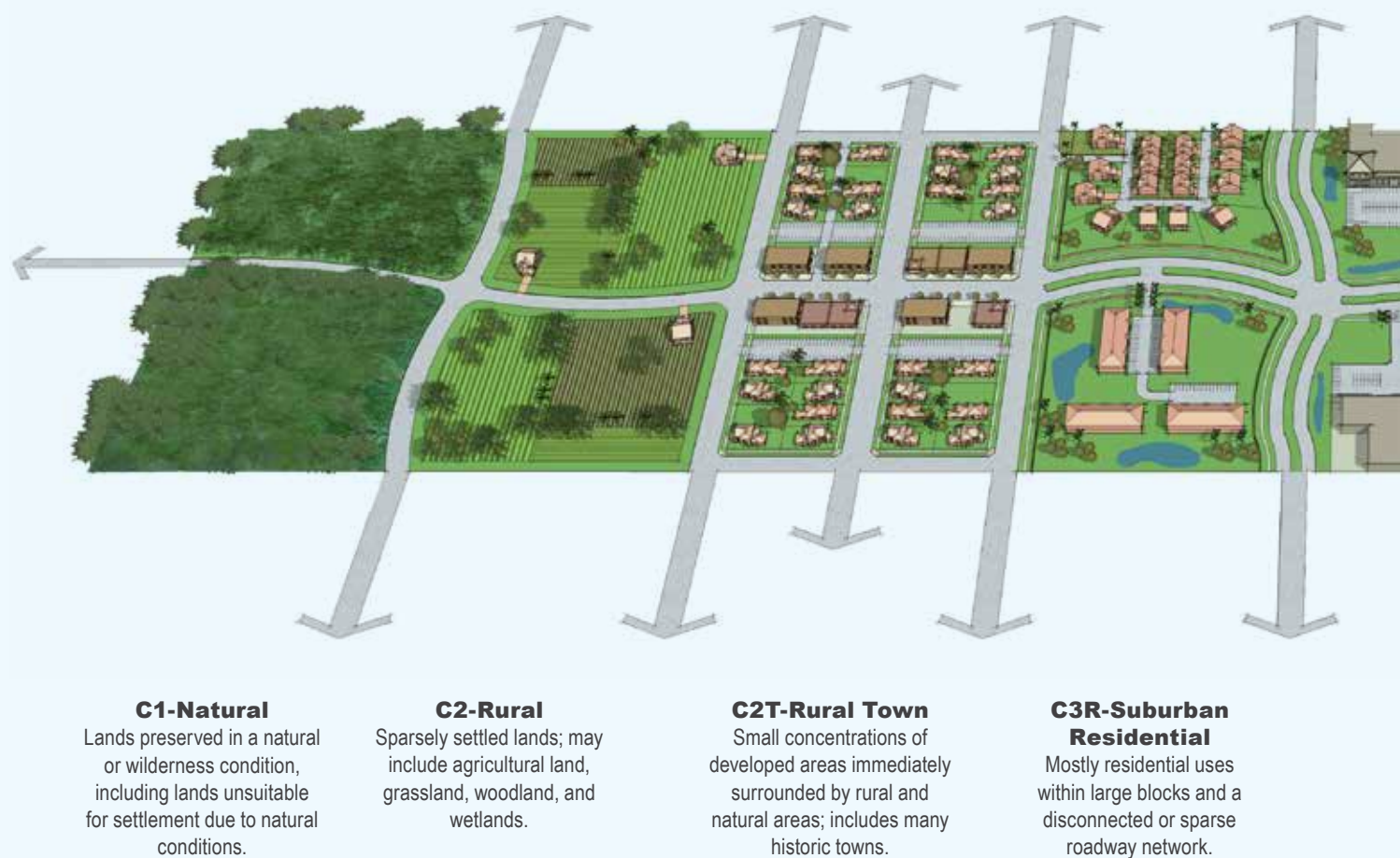


INTRODUCTION TO CONTEXT CLASSIFICATION

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



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.

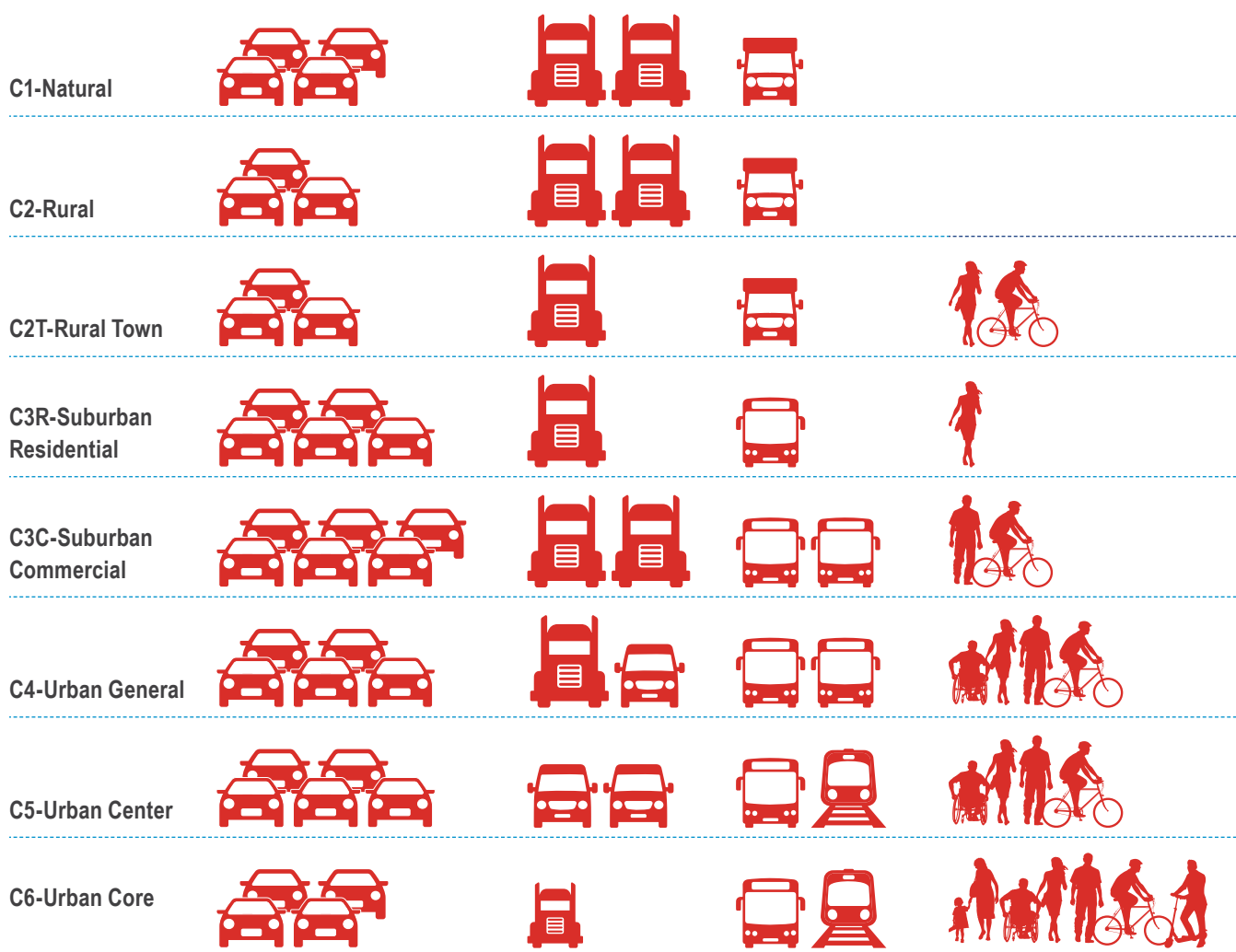
TABLE 1 CONTEXT CLASSIFICATION DESIGNATIONS

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

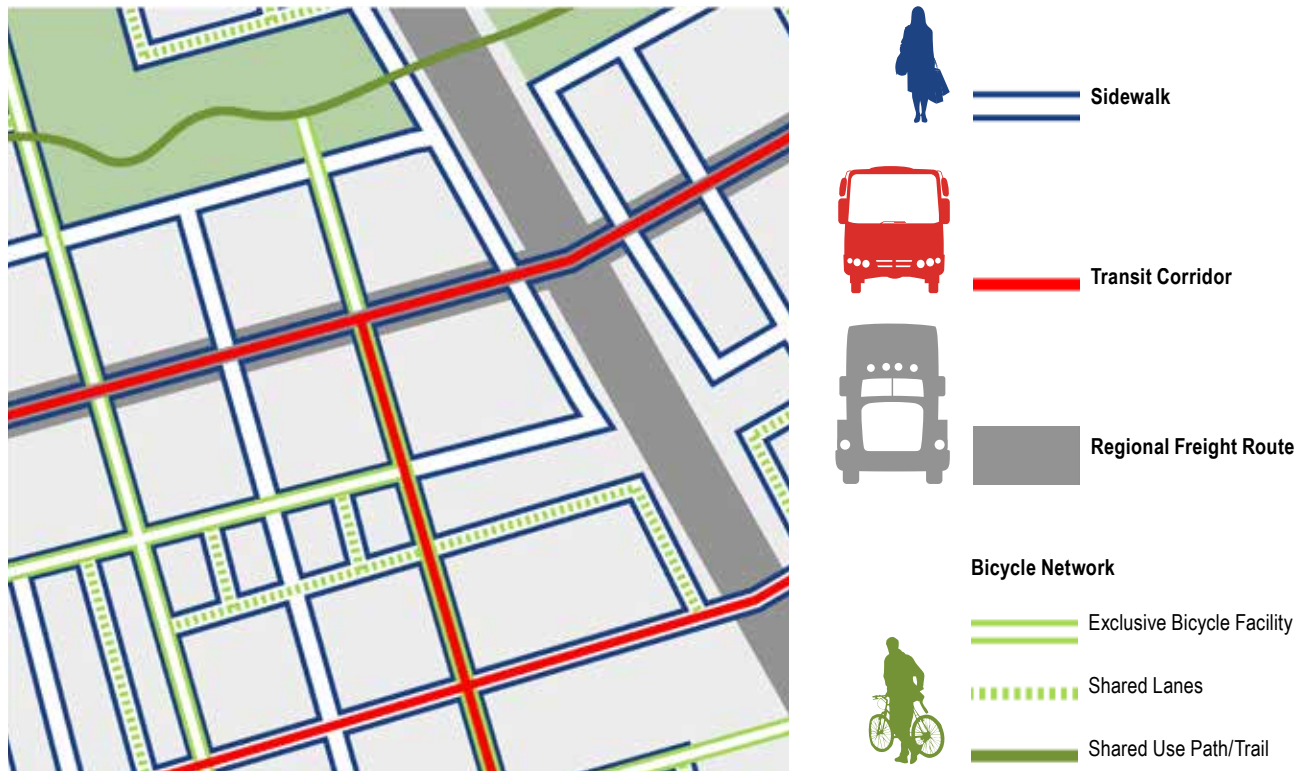


BUILDING A COMPLETE STREETS NETWORK

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			Land Use
		Intersection Density	Block Perimeters	Block Length	
		Intersections/ Square Mile	Feet	Feet	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:

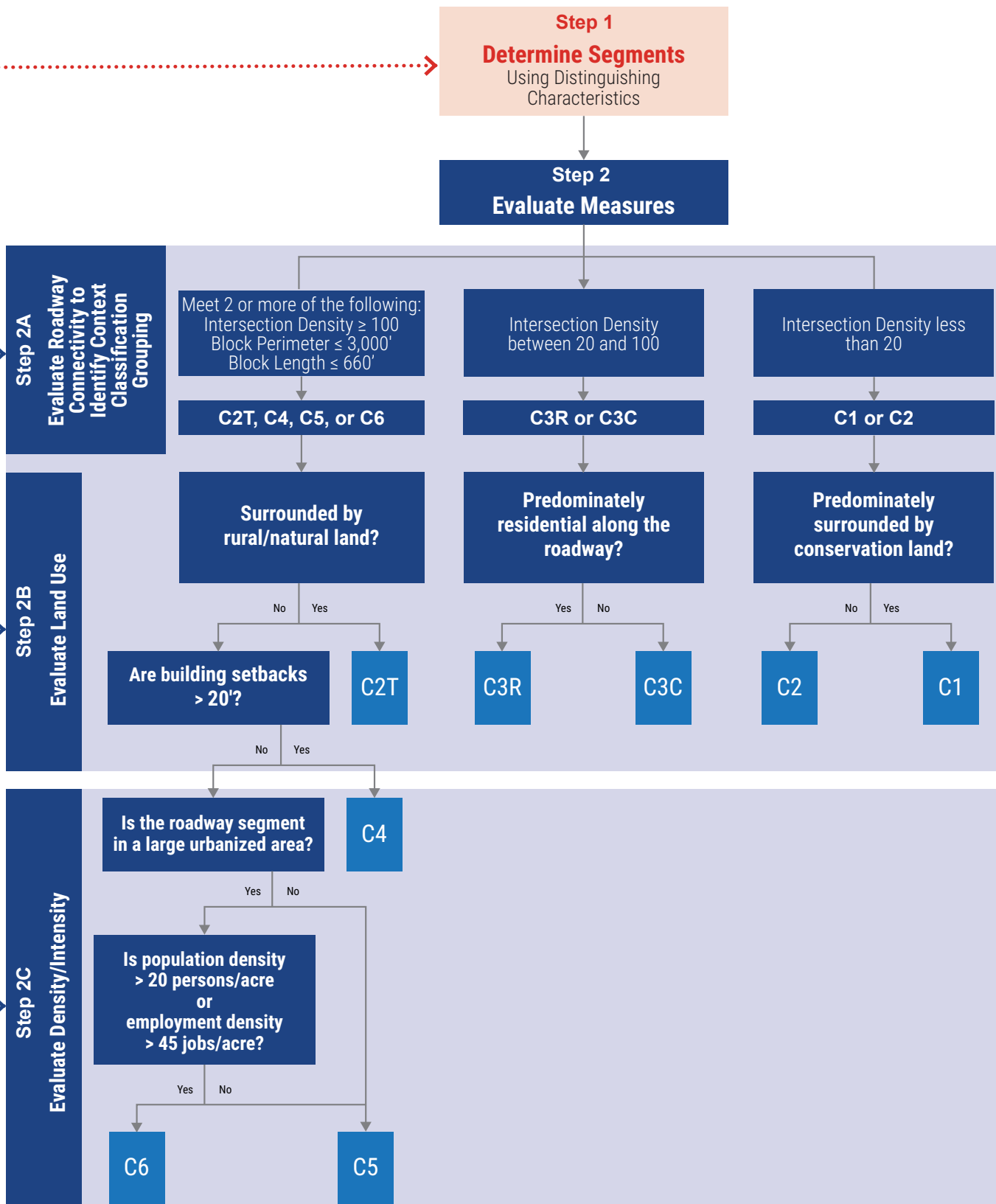
C2T, C4, C5, or C6	C3R or C3C	C1 or C2
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Step 2B Use the land use measures to further refine the evaluation.

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



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



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
	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
	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

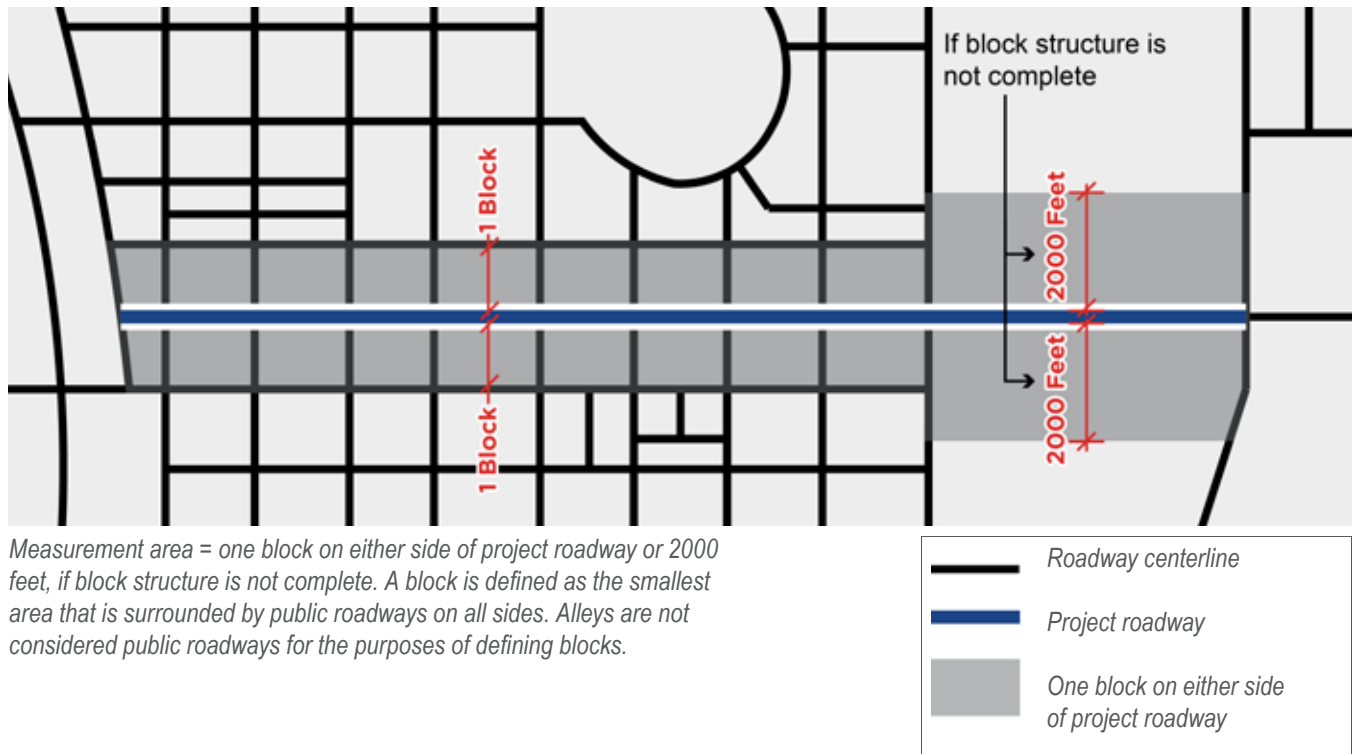
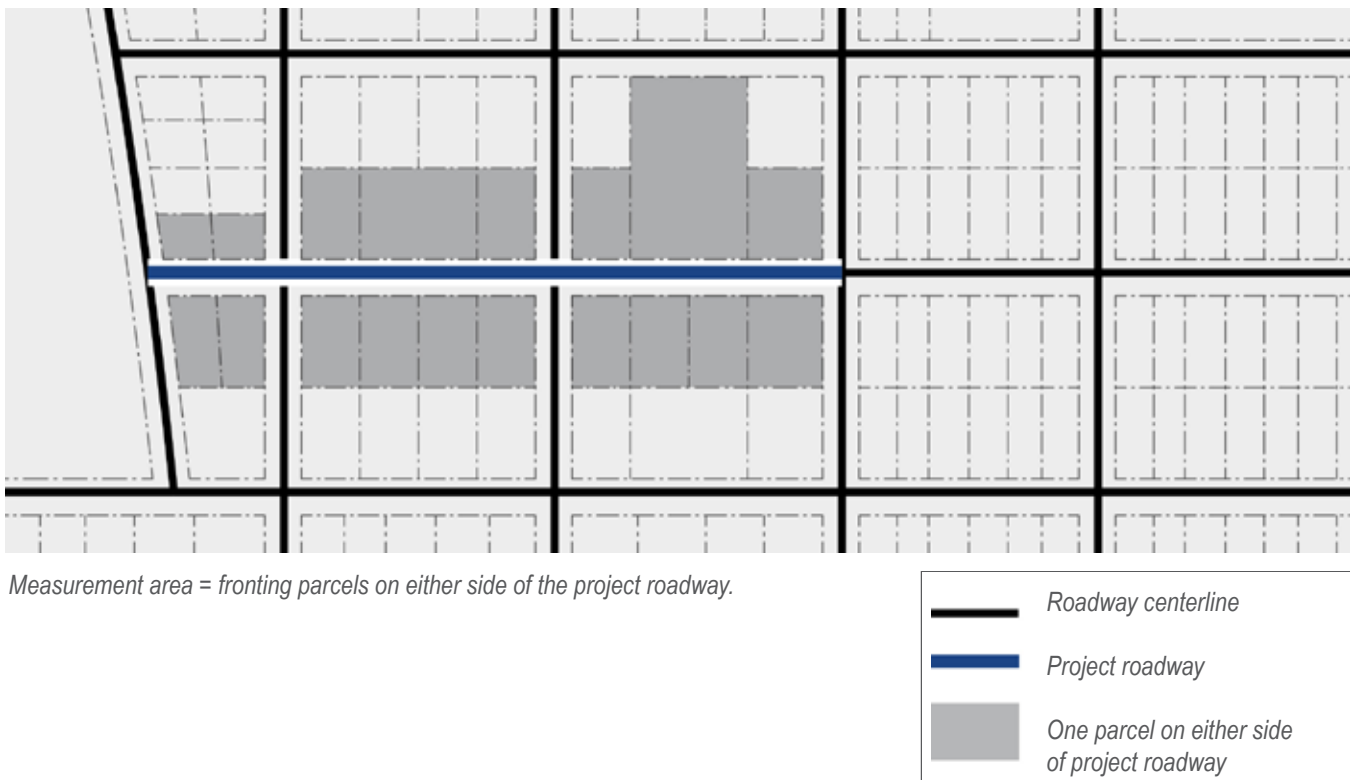
FIGURE 12 MEASUREMENT AREA: THE BLOCK ON EITHER SIDE OF THE ROADWAY**FIGURE 13** MEASUREMENT AREA: FRONTING PARCELS ON EITHER SIDE OF THE ROADWAY

FIGURE 14 INTERSECTION DENSITY

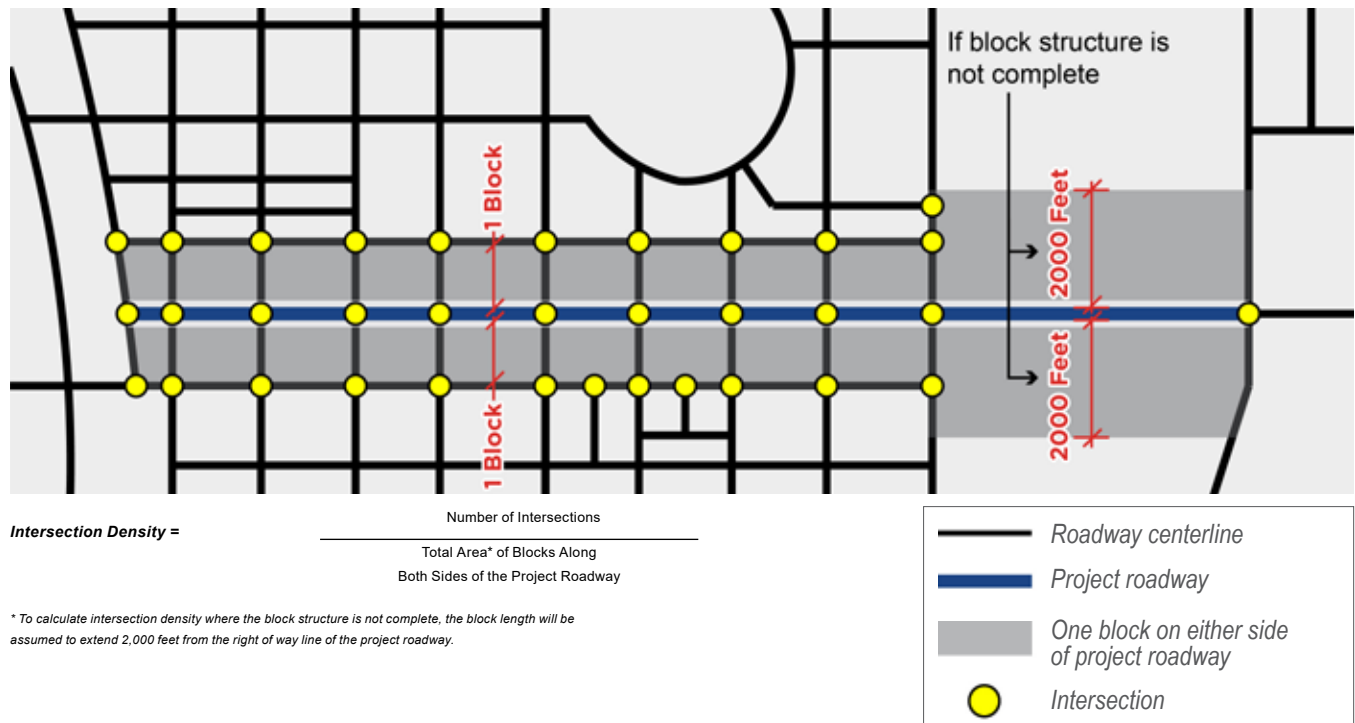


FIGURE 15 BLOCK PERIMETER AND BLOCK LENGTH

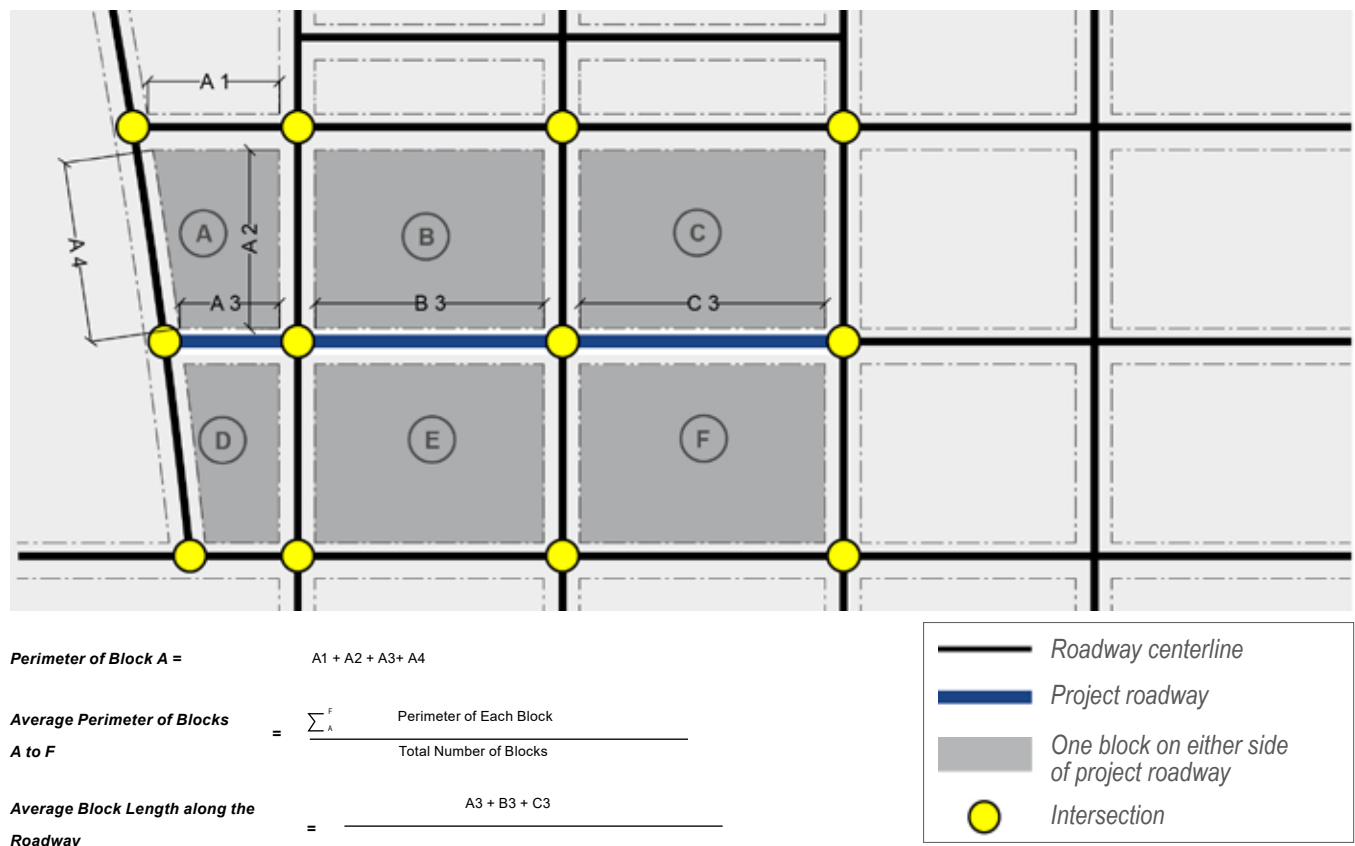
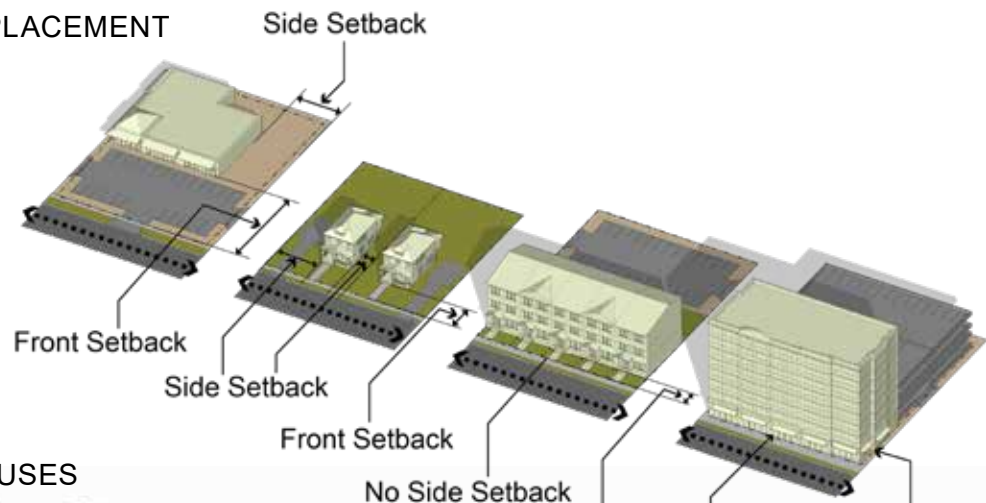
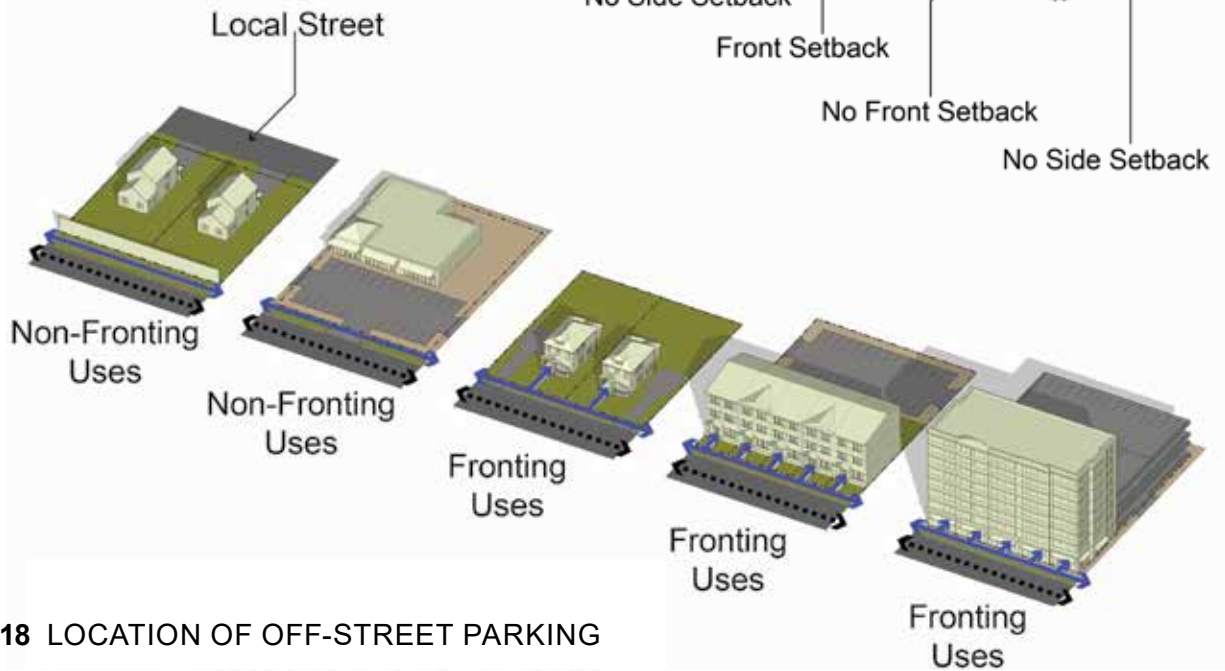
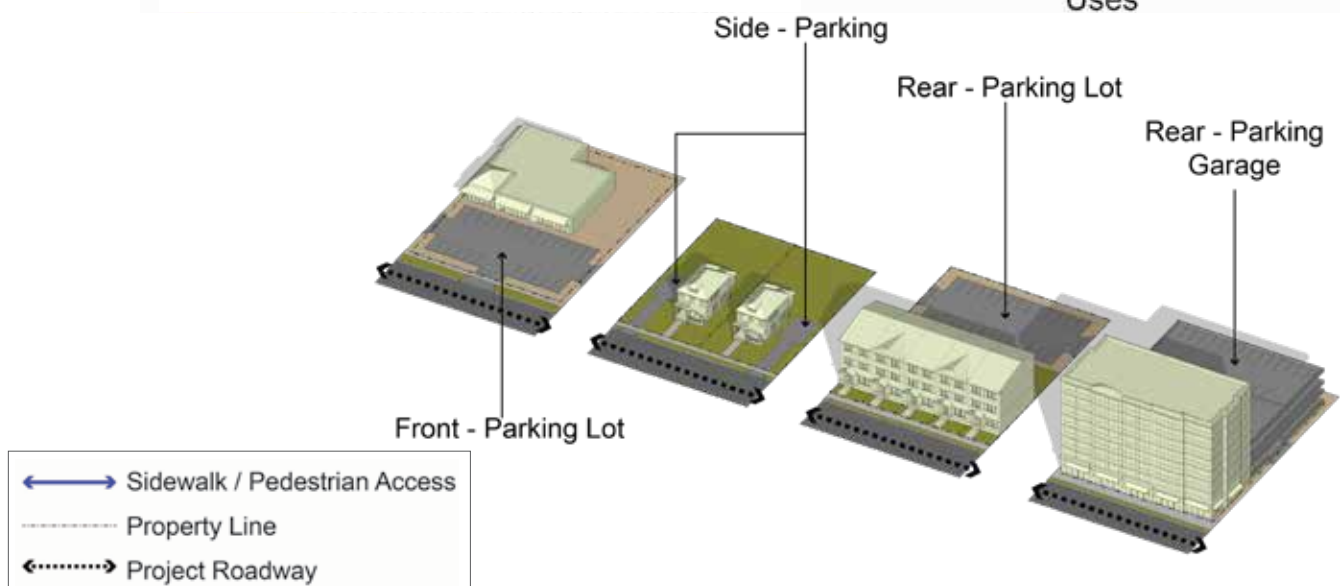


FIGURE 16 BUILDING PLACEMENT**FIGURE 17 FRONTING USES****FIGURE 18 LOCATION OF OFF-STREET PARKING**

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	Coded as Conventional Suburban Development (CSD)	The SmartCode™ does not provide for this type of development pattern
C3C – Suburban Commercial		
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

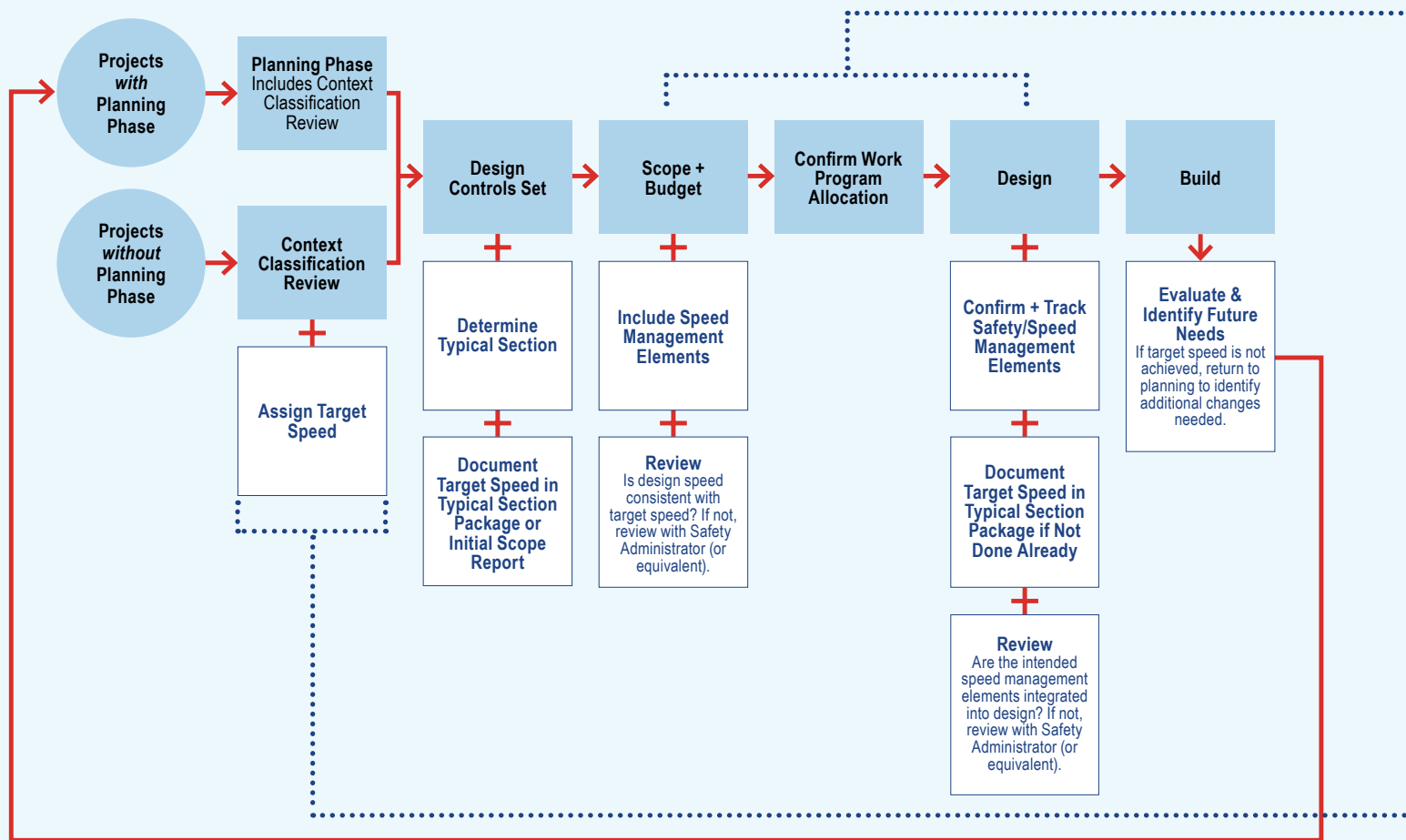
² American Association of State Highway and Transportation Officials, A Policy on Geometric Design of Highways and Streets, 6th Edition, 2011

³ FDOT Design Manual, 2021.

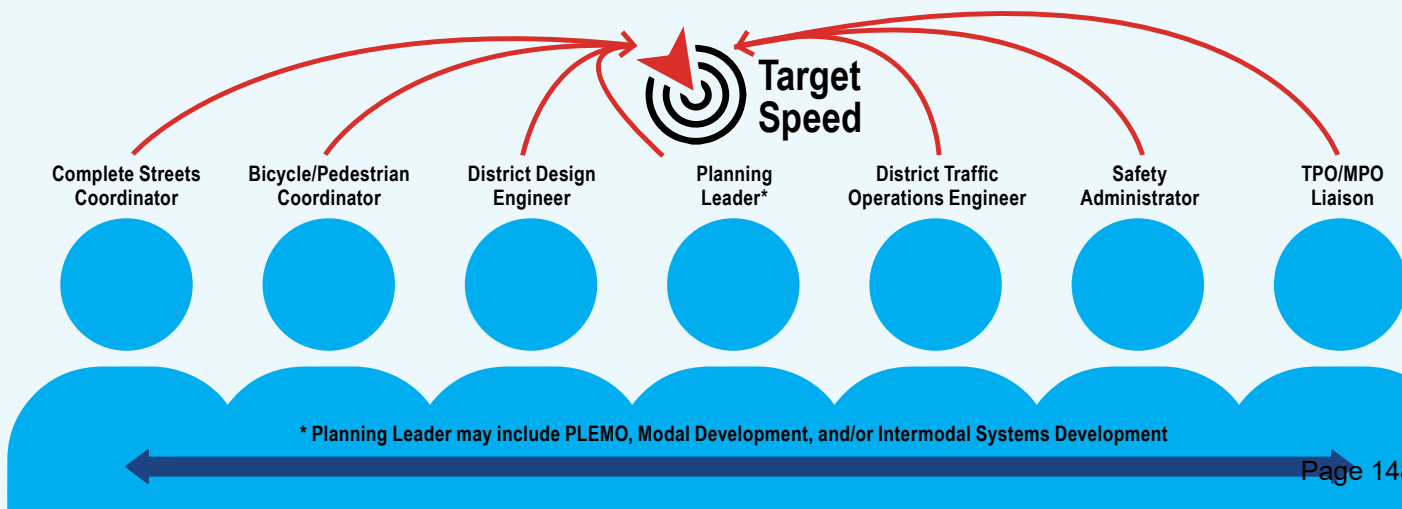
DETERMINING THE TARGET SPEED

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**.

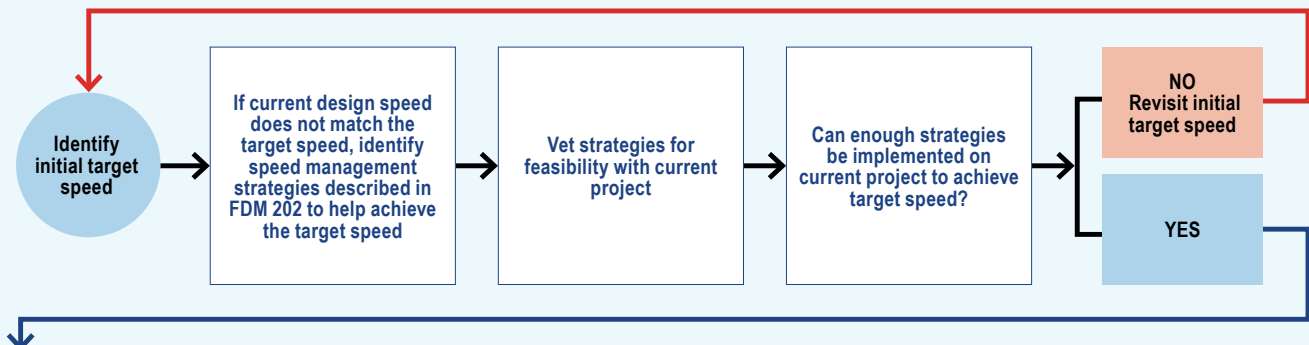


3. **IDENTIFY PROJECT NEEDS:** Refine the target speed using the following questions:

- 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

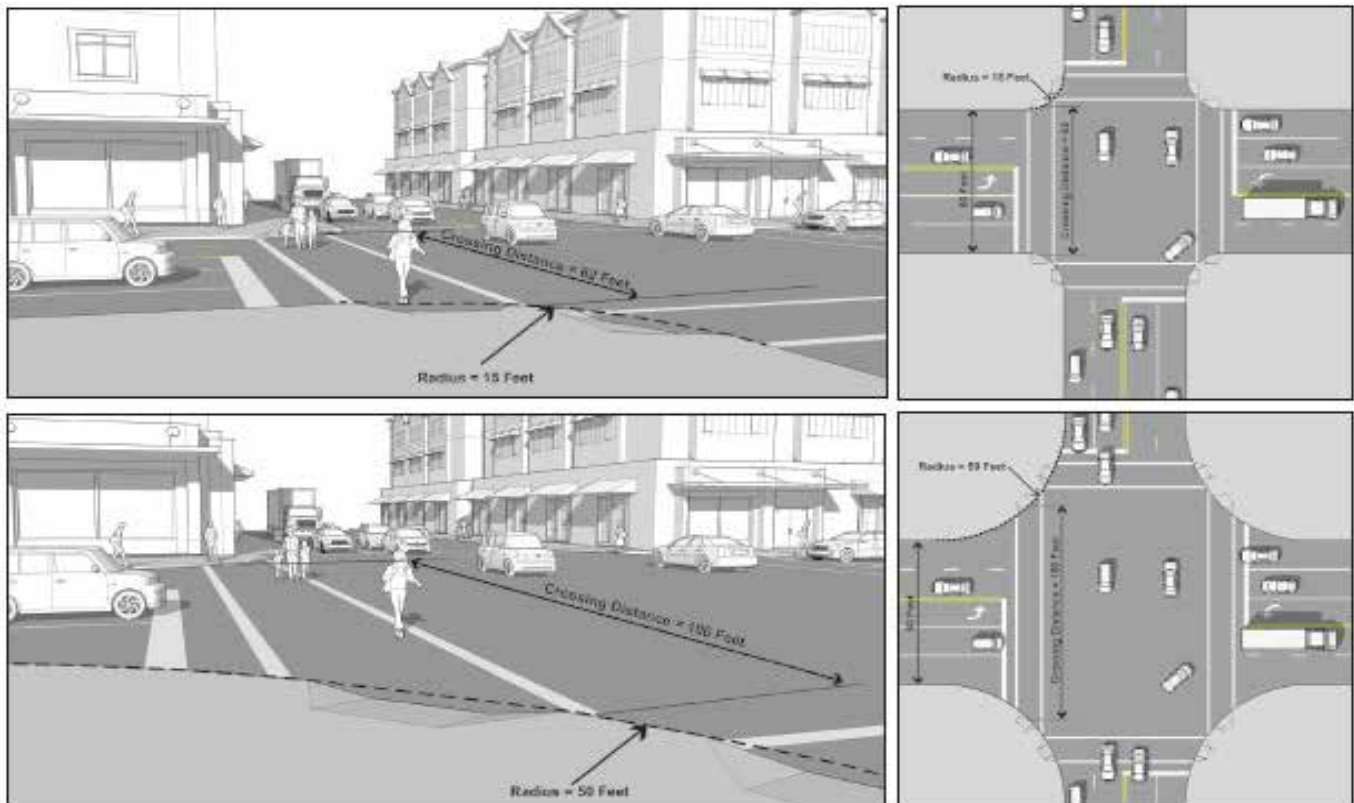
The type of design vehicle is influenced by the functional and context classification of a roadway (Section 201.6, 13). This guide builds on existing guidance from the **FDM** and the [FDOT District 7 Draft Freight Roadway Design Considerations](#) in determining the design vehicle based on context and 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.
- Increased pedestrian crossing distances.
- Higher turning speeds for all vehicles of all sizes.
- 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

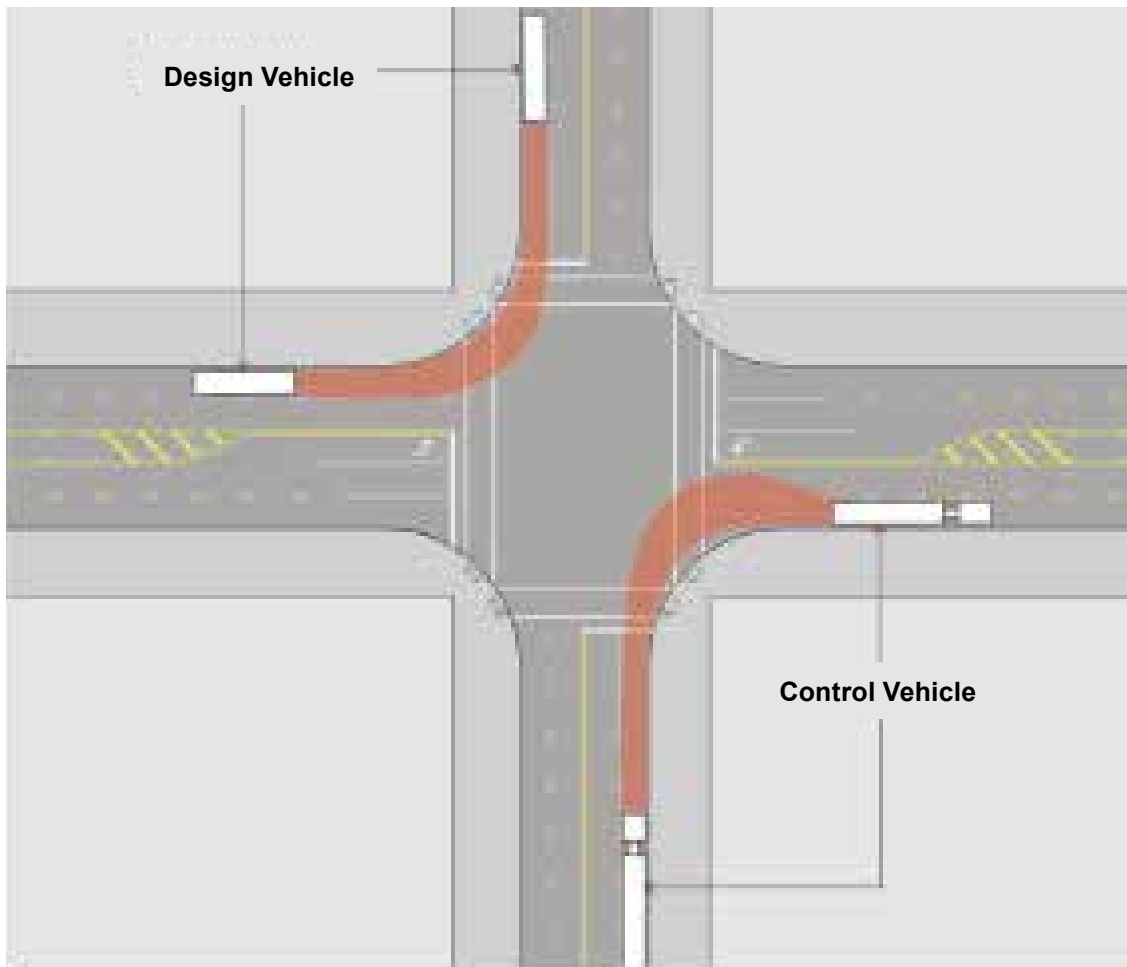
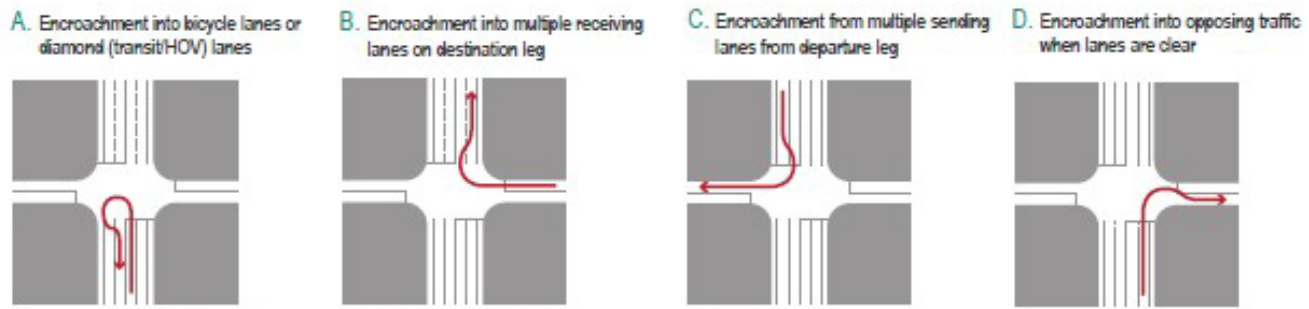


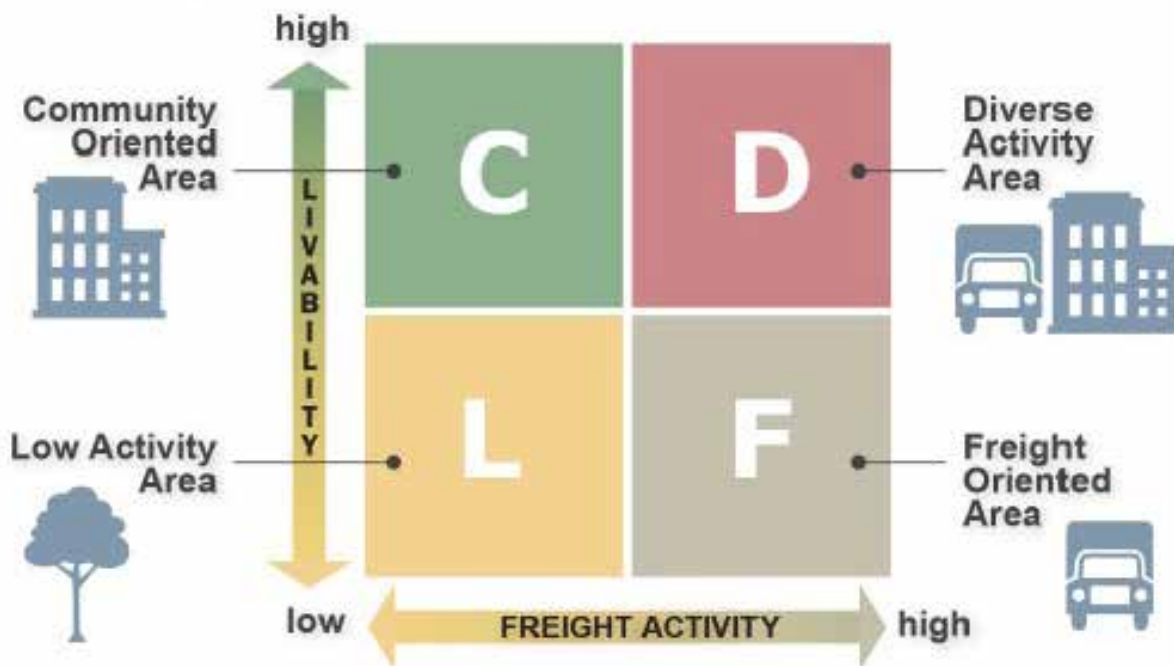
FIGURE 24 AN INFREQUENT CONTROL VEHICLE ENCROACHMENT INTO OPPOSING AND ADJACENT LANES



Source: FDOT District 7 Draft Freight Roadway Design Considerations.

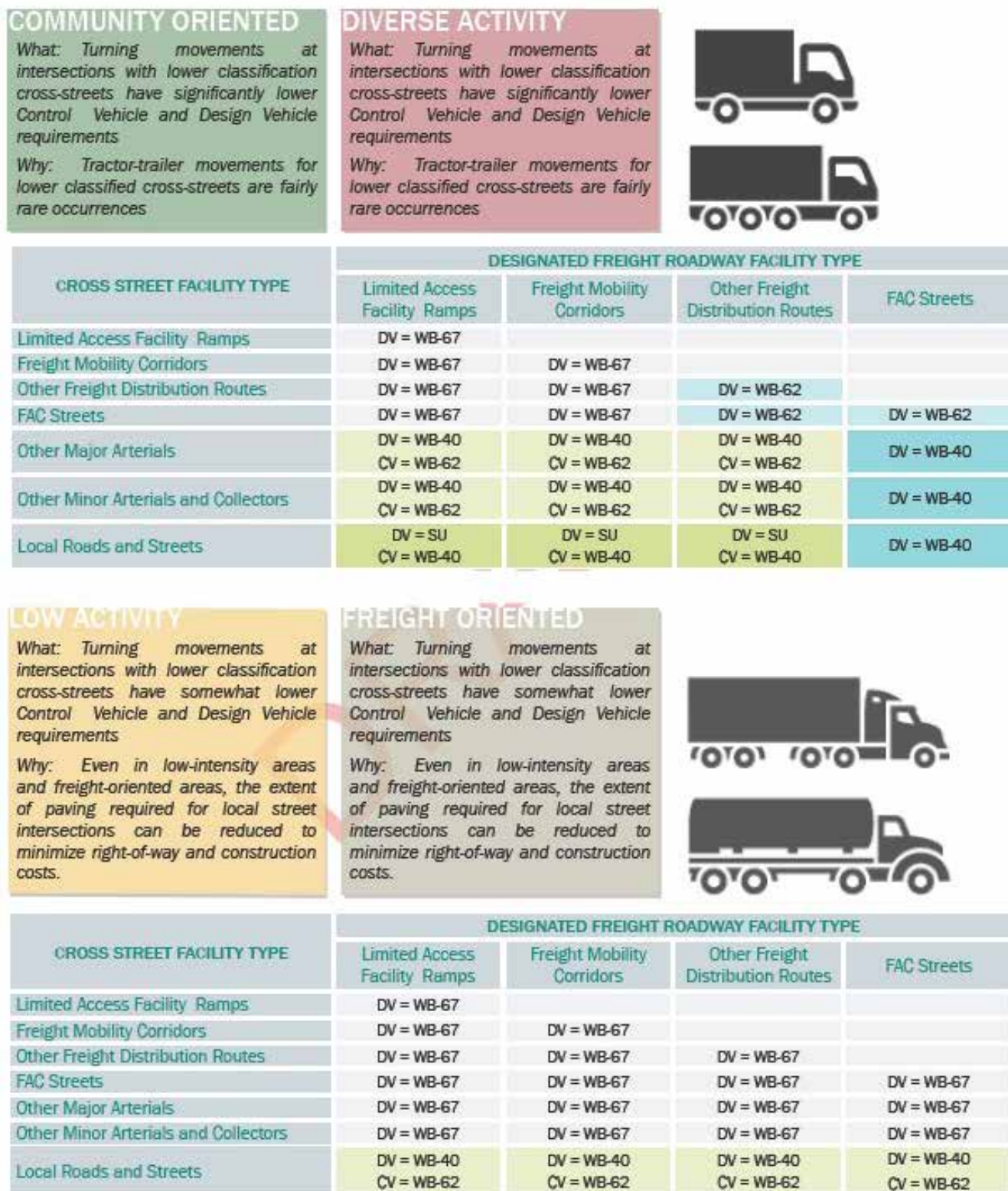
FDOT District 7 Draft Freight Roadway Design Considerations outlines a context-sensitive design approach and strategies for freight accommodations. The report identifies four general area types characterized by the land uses and activities that exist or are anticipated in areas throughout the Tampa Bay 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



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 (*Section 3.4.1, 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 (*Section 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

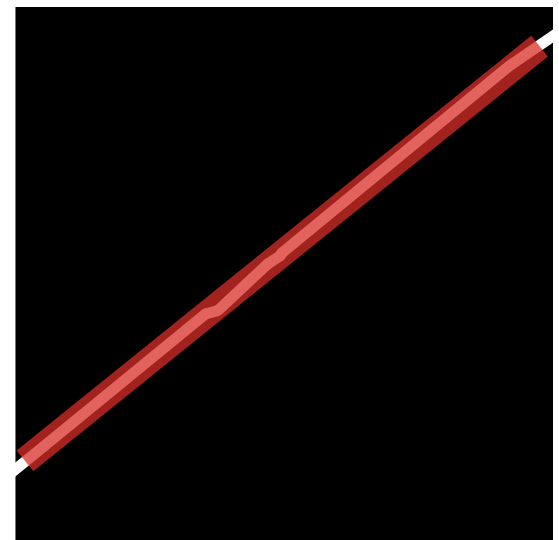
Distinguishing Characteristics	Land Use	Building Height	Building Placement	Fronting Uses	Location of Off-street Parking	Roadway Connectivity		
		Floor Levels	Description	Yes / No	Description	Intersection Density	Block Perimeter	Block Length
Description	Description	Floor Levels	Description	Yes / No	Description	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



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

Primary Measures

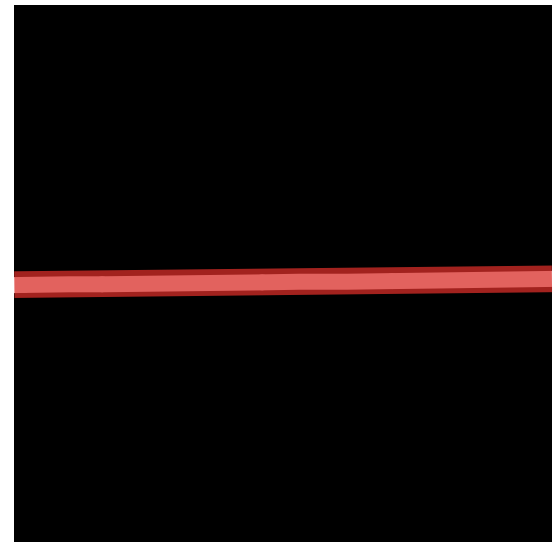
Distinguishing Characteristics	Land Use	Building Height	Building Placement	Fronting Uses	Location of Off-street Parking	Roadway Connectivity		
						Intersection Density	Block Perimeter	Block Length
Description	Description	Floor Levels	Description	Yes / No	Description	Intersections/Sq Mile	Feet	Feet
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

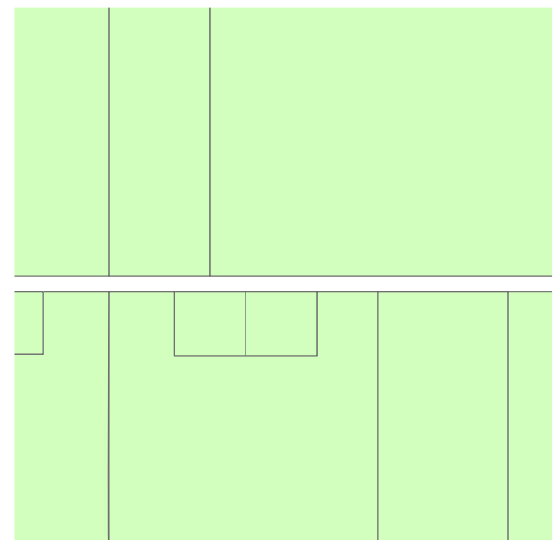


Street View



Bird's Eye View

Agriculture



Existing Land Use

0 0.5 1 Miles



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

Primary Measures

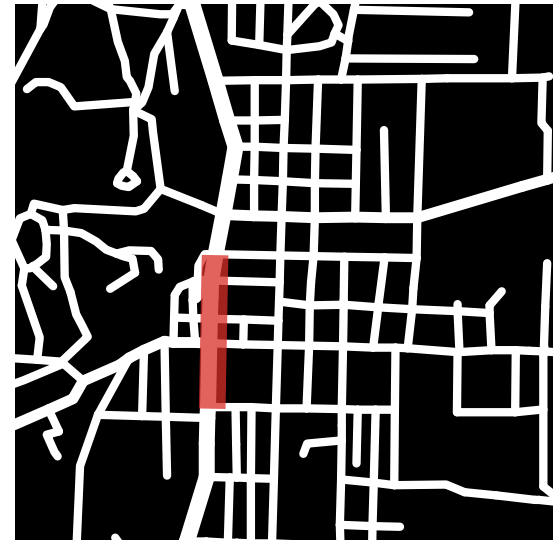
Distinguishing Characteristics	Land Use	Building Height	Building Placement	Fronting Uses	Location of Off-street Parking	Roadway Connectivity		
						Intersection Density	Block Perimeter	Block Length
Description	Description	Floor Levels	Description	Yes / No	Description	Intersections/Sq Mile	Feet	Feet
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

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



Streets and Blocks Network



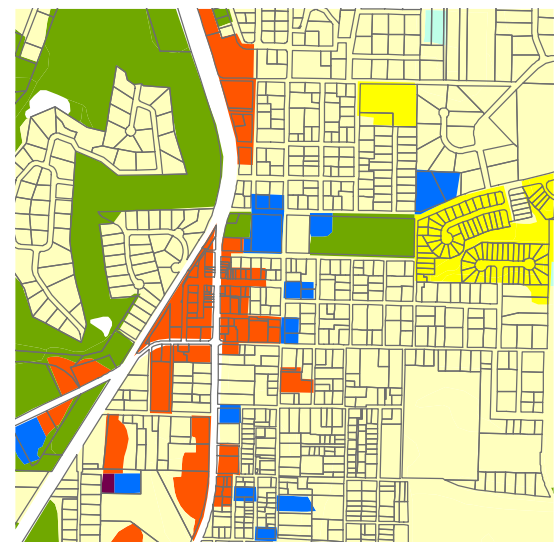
Street View



Bird's Eye View

Single-Family Residential	Light Yellow
Multi-Family Residential	Yellow
Commercial	Red
Retail	Orange
Agriculture	Light Green
Institutional/Government	Blue
Industrial	Dark Purple
Open Space	Green
Vacant	White

0 0.5 1 Miles

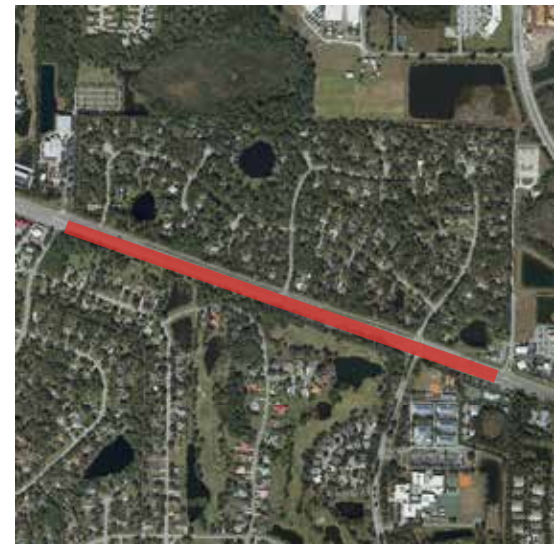


Future Land Use

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		
		Floor Levels	Description	Yes / No	Description	Intersection Density	Block Perimeter	Block Length
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



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
1	0.23	0.4	0



Street View



Streets and Blocks Network

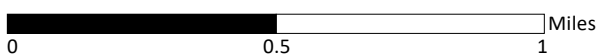


Bird's Eye View

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



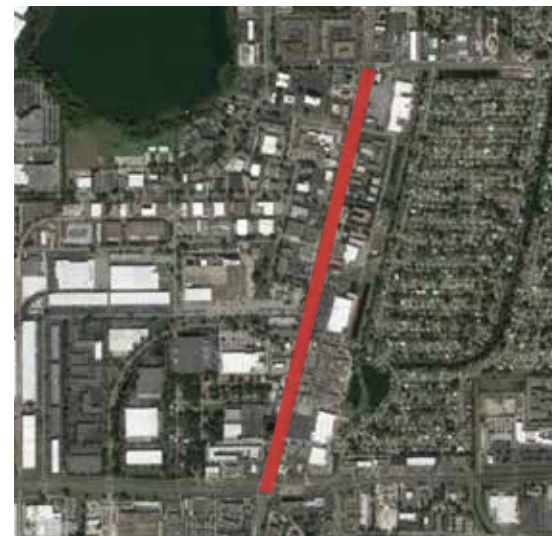
Existing Land Use



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

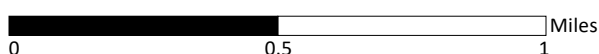


Bird's Eye View

Single-Family Residential	Yellow
Commercial	Red
Institutional/Government	Blue
Industrial	Purple
Open Space	Green
Vacant	White



Existing Land Use



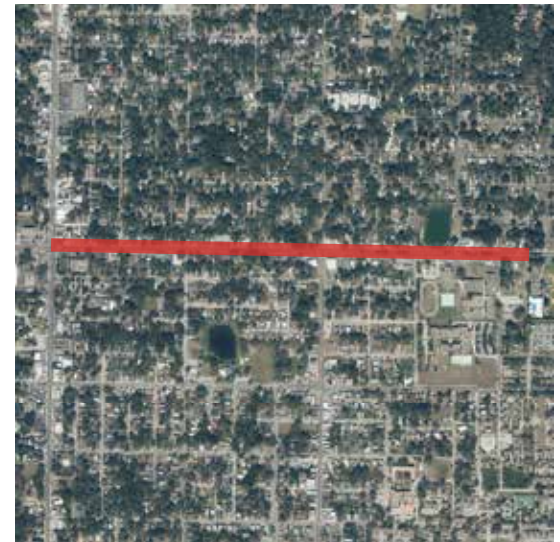
C4-URBAN GENERAL: DR. MLK JR. BLVD, EAST TAMPA, TAMPA, HILLSBOROUGH COUNTY

Primary Measures

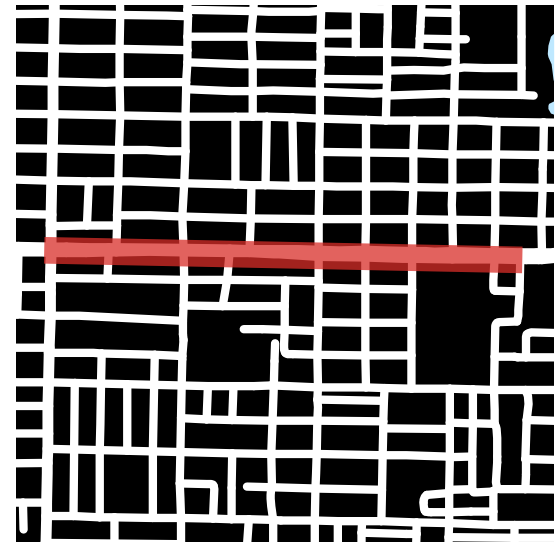
Distinguishing Characteristics	Land Use	Building Height	Building Placement	Fronting Uses	Location of Off-street Parking	Roadway Connectivity		
						Intersection Density	Block Perimeter	Block Length
Description	Description	Floor Levels	Description	Yes / No	Description	Intersections/Sq Mile	Feet	Feet
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

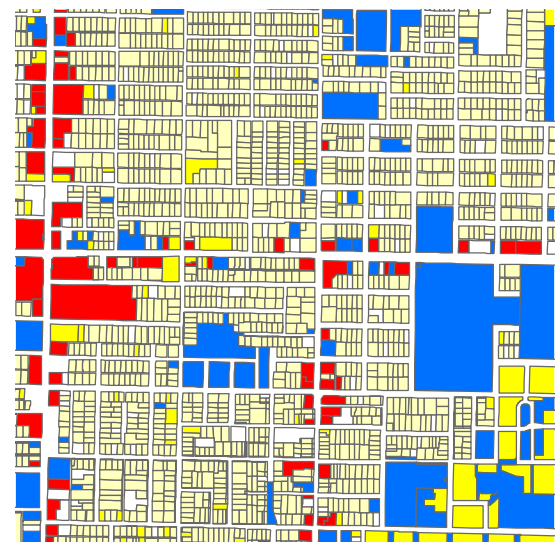


Street View

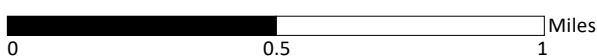


Bird's Eye View

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



Existing Land Use



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

Primary Measures

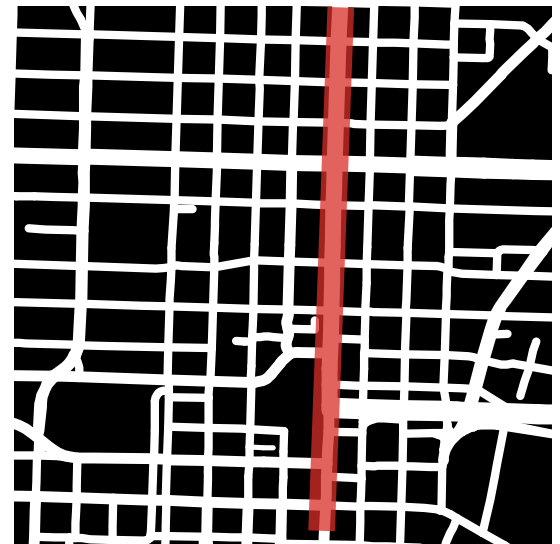
Distinguishing Characteristics	Land Use	Building Height	Building Placement	Fronting Uses	Location of Off-street Parking	Roadway Connectivity		
						Intersection Density	Block Perimeter	Block Length
Description	Description	Floor Levels	Description	Yes / No	Description	Intersections/Sq Mile	Feet	Feet
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



Aerial Satellite Image



Streets and Blocks Network

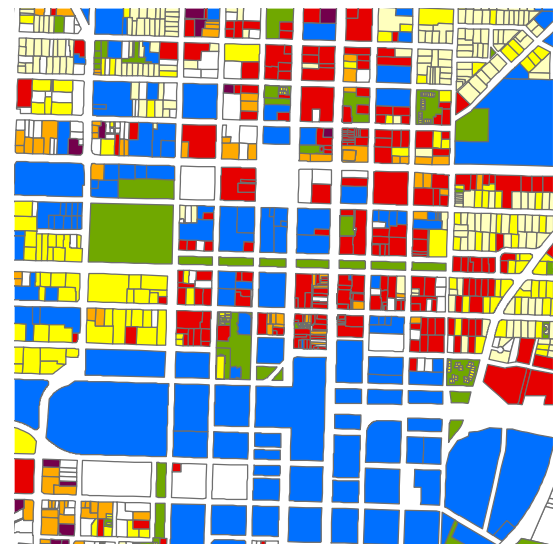


Street View

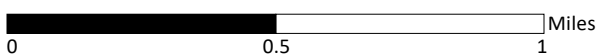


Bird's Eye View

Single-Family Residential	Light Yellow
Multi-Family Residential	Yellow
Commercial	Red
Retail	Orange
Institutional/Government	Blue
Industrial	Purple
Open Space	Green
Vacant	White



Existing Land Use



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

Primary Measures

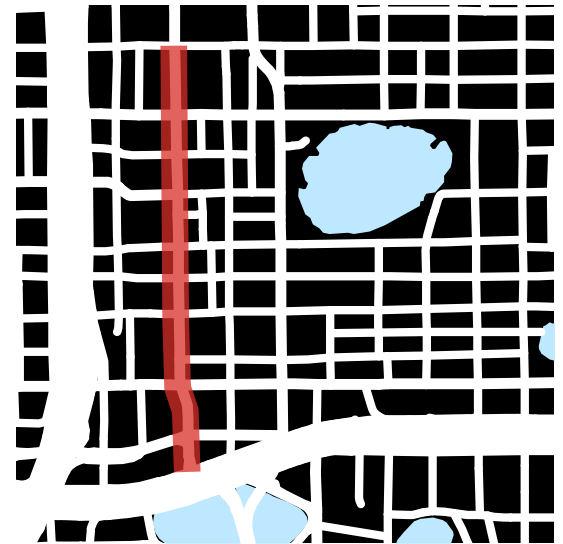
Distinguishing Characteristics	Land Use	Building Height	Building Placement	Fronting Uses	Location of Off-street Parking	Roadway Connectivity		
						Intersection Density	Block Perimeter	Block Length
Description	Description	Floor Levels	Description	Yes / No	Description	Intersections/Sq Mile	Feet	Feet
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

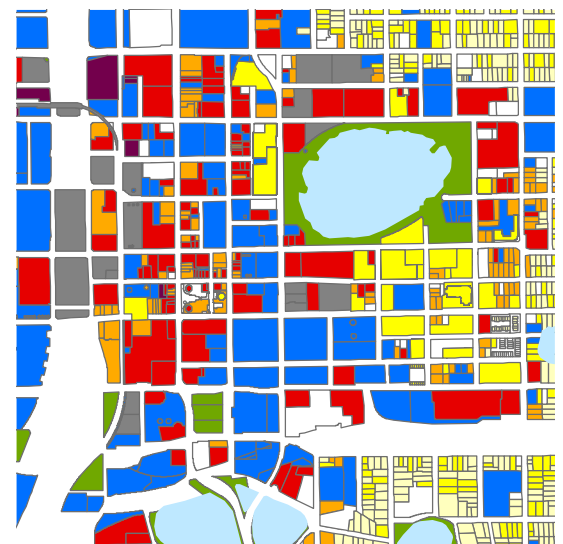


Street View

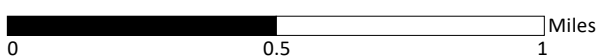


Bird's Eye View

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

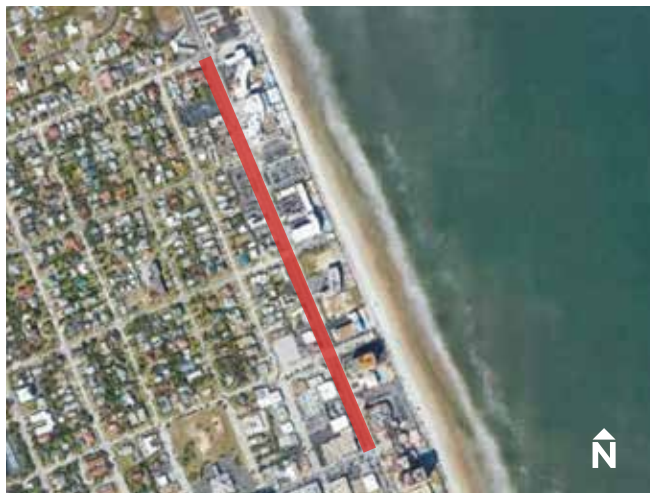


Existing Land Use



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.



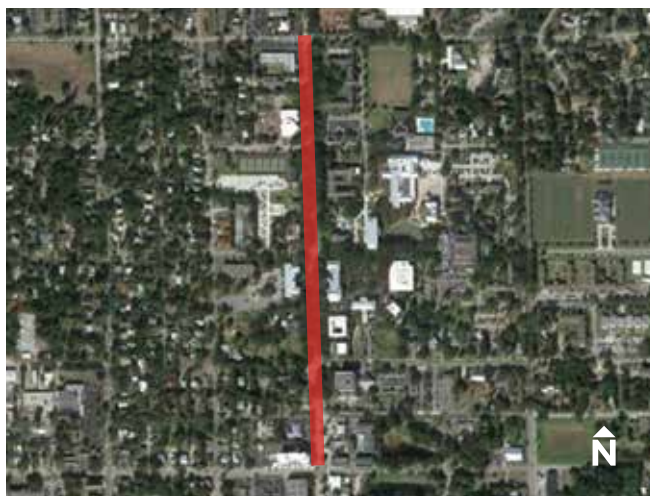
Aerial Satellite Image



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

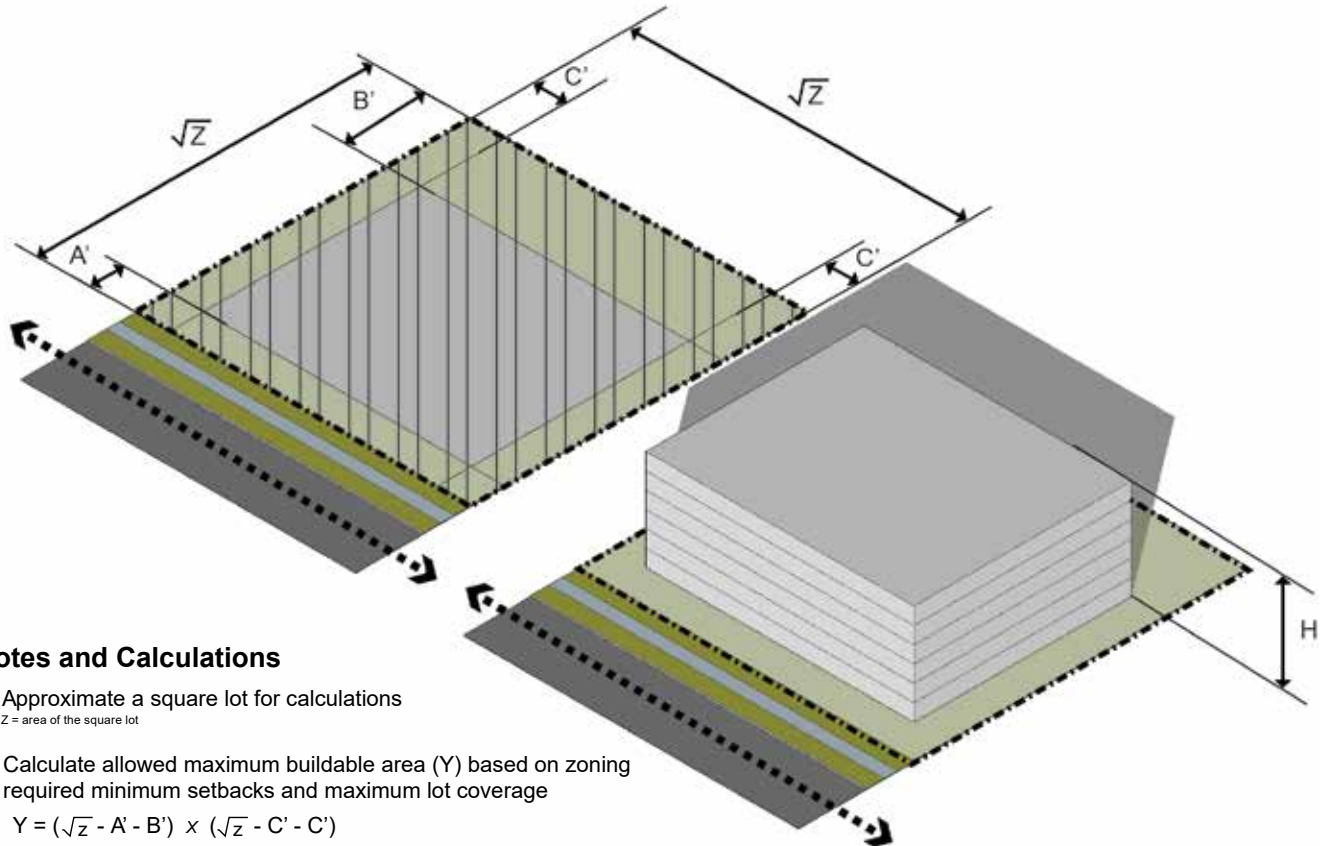
Context Classification	Location	Fronting Uses	Population Density	Vulnerable Users	Cross Section Elements	Access Classification	Transit Service	Pedestrian and Bicycle Generators	Existing Posted Speed	Target Speed
C1-NATURAL	FL 24, CEDAR KEY SCRUB STATE RESERVE, LEVY COUNTY	N/A	Low	Low N/A	Paved shoulder	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 ratio (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

$$Y = (\text{Maximum lot coverage area in (\%) allowed by zoning code}) \times (Z)$$
 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)

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

..... 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		

