FDOT Context Classification

August 2017

FDOT

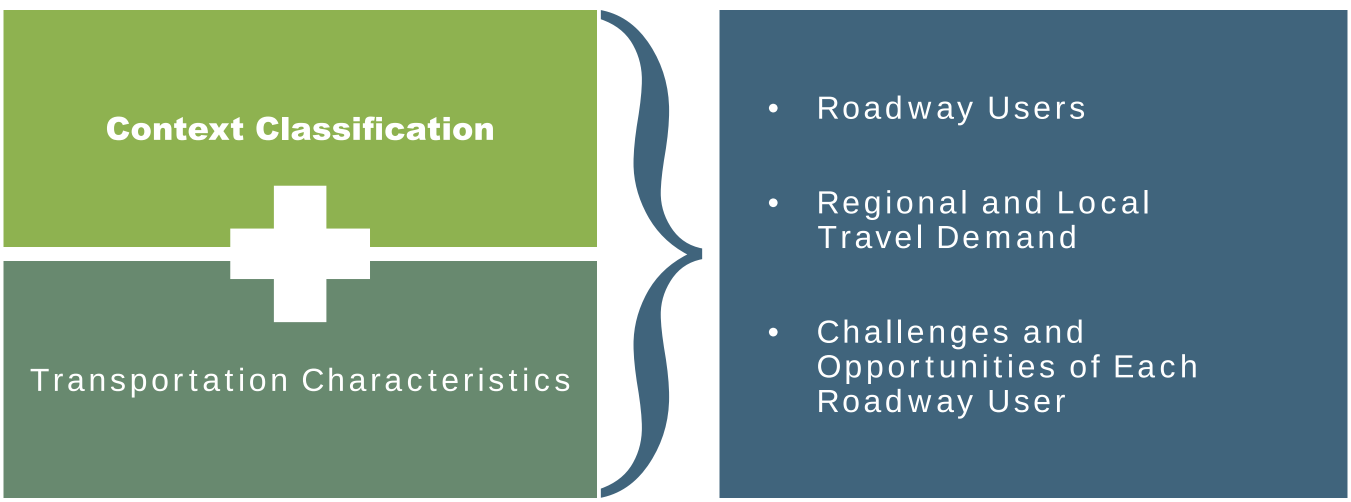
Completing
FLORIDA'S
STREETS

FDOT Context Classification

FDOT will routinely plan, design, construct, reconstruct and operate a context-sensitive system of Complete Streets. 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 1). The context classification and transportation characteristics of a roadway will determine key design criteria for all non-limited-access state roadways.

This document describes the measures to be used to determine the context classification of a roadway.

FIGURE 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. State roadways will extend through a variety of context classifications. Figure 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 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 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.

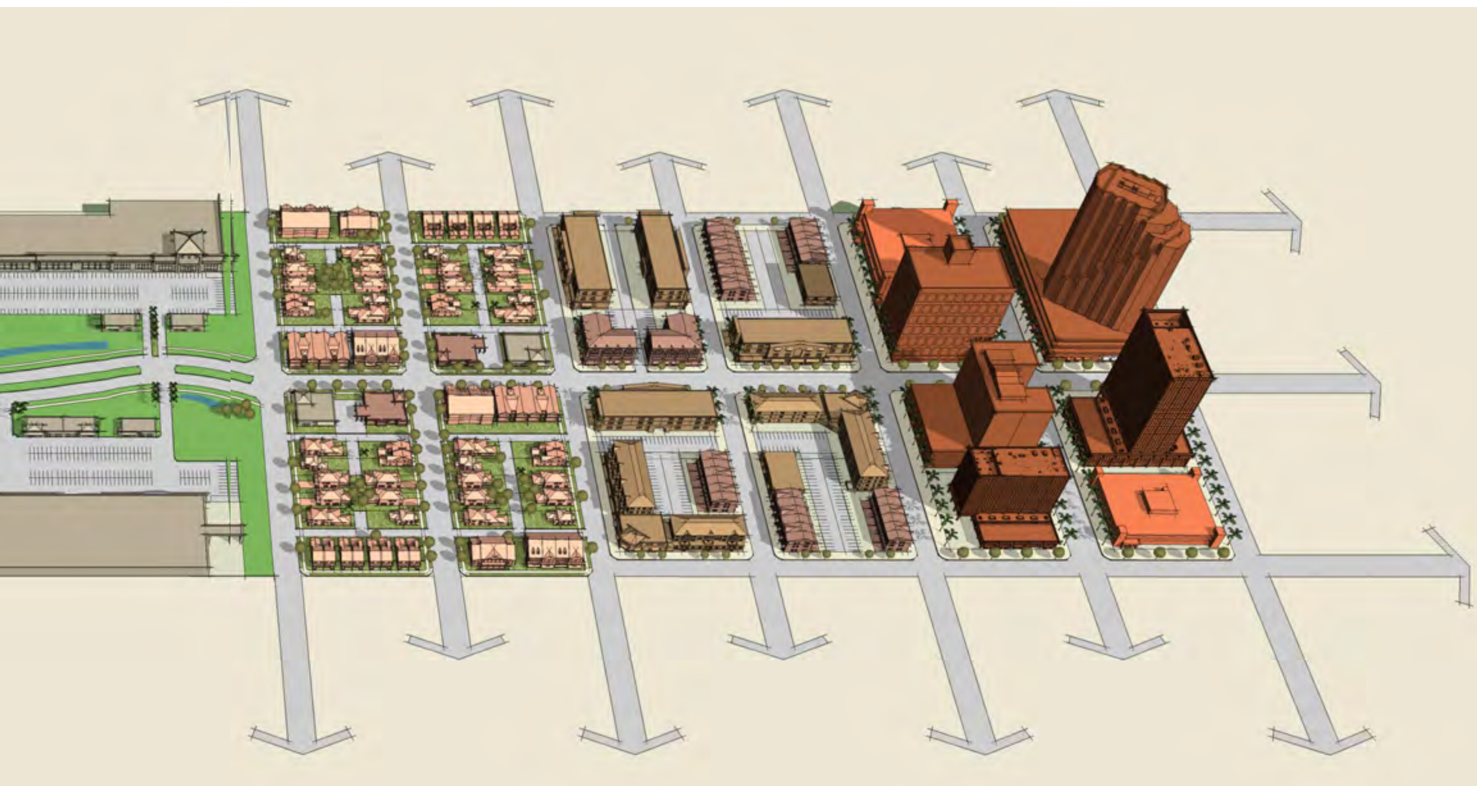
C2T-Rural Town
Small concentrations of developed areas immediately surrounded by rural and natural areas; includes many historic towns.

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. ***NCHRP Report 855: An Expanded Functional Classification System for Highways and Streets*** 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.

This document 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 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 1 CONTEXT CLASSIFICATION MATRIX

Context Classification	(1) Distinguishing Characteristics	(2) Primary Measures: Land Use	(2) Primary Measures: Building Height	(2) Primary Measures: 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 or shallow (<20') 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 (20' to 75') 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 large (>75') 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 setbacks or up to medium (<75') 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 or shallow (<20') 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 minimal (<10') front setbacks

More information on measures with undefined thresholds (N/As) are included in Appendix B. The thresholds presented in Table 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, and review of existing or future land use or existing zoning information. The Context Classification Matrix presents the primary and secondary measures thresholds for the eight context classifications.

Appendix A 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.

					(3) Secondary Measures			
		Roadway Connectivity						
Fronting Uses	Location of Off-street Parking	Intersection Density	Block Perimeters	Block Length	Allowed Residential Density	Allowed **Office/** Retail Density	Population Density	Employment Density
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	<20	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 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.

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 characterize 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 in PD&E and design for new roadways, it is possible to analyze both the existing and future conditions to determine or update 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.

Context Classification Database:

Projects will be assigned a context classification to utilize context-based criteria in the ***FDM***. 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, as discussed later in this document. FDOT districts may choose to prioritize the evaluation of context classifications for roadway segments with planned and programmed projects. Each FDOT district's Planning or Modal Development office, as deemed appropriate by each district, will take the lead on evaluating and determining context classification on state roadways. FDOT's context classification database 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.

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 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 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 (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.

Steps for Determining Context Classification

The steps for determining the context classification include:

1. Identify Major Changes in Context

Use 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. Where a block structure 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.

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 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 3 and 4. The measurement areas used for each measure are identified in Table 2. Figure 5 through Figure 9 provide guidance for evaluating some of the primary measures.

FDOT evaluation of each segment identified in Step 1 can be done using the primary measures based on existing conditions or updated with future context if needed. 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. The District Secretary will make the determination of future context classification in situations where the the future context may be in doubt.

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

3. Evaluate the Secondary Measures

In most cases primary measures are sufficient to understand and determine a roadway's context classification. Secondary measures can be used to 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 3 describes the secondary measures and the methodology and data sources associated with each measure.

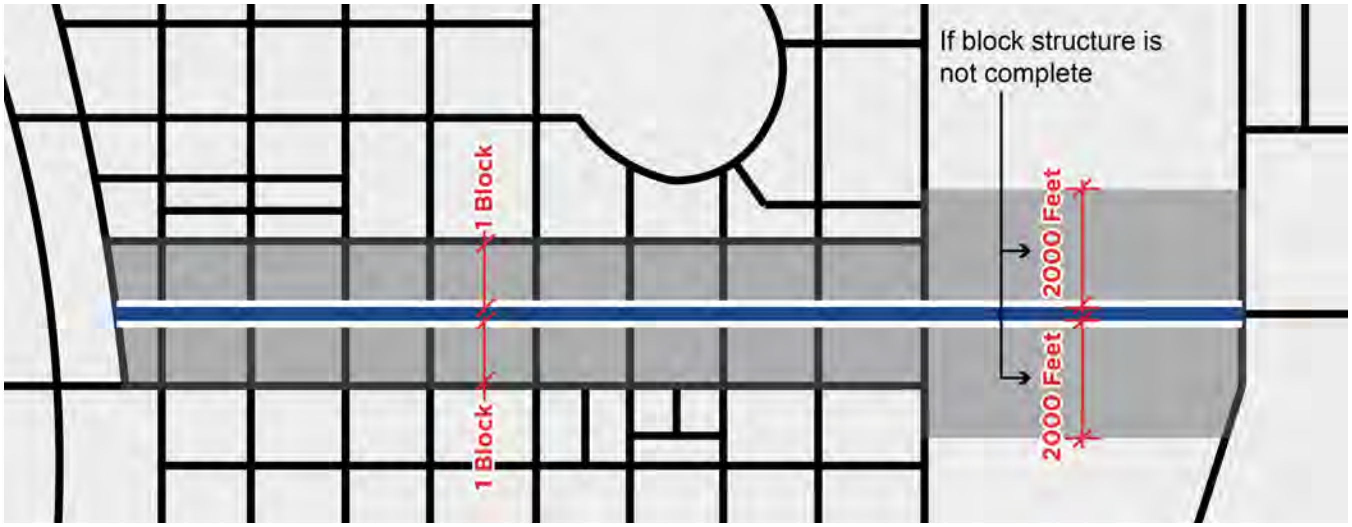
The secondary measures quantify the intensity of development. A roadway segment needs to meet only one of the two criteria, either population density or employment density, to be classified within a context classification. Zoning may show that the local municipality intends for the area to be developed 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 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 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 percentage of buildings that provide fronting uses or site design and lot layout requirements in land development regulations that require fronting uses (see Figure 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 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 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	
Roadway Connectivity: Block Perimeter	Average perimeter of the blocks adjacent to the roadway on either side	Measure the block perimeter for the blocks adjacent to the roadway on either side and take the average; consider future roadway connectivity if an approved - permitted development plan is in place (see Figure 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	Street centerline GIS files or physical map, internet-based maps, plans showing programmed roadway projects, and permitted development plans
Roadway Connectivity: Block Length	Average distance between intersections	Measure the distance along the roadway between intersections with a public roadway, on either side, and take the average; consider future roadway connectivity if an approved or permitted development plan is in place (see Figure 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 3 MEASUREMENT AREA: THE BLOCK ON EITHER SIDE OF THE ROADWAY



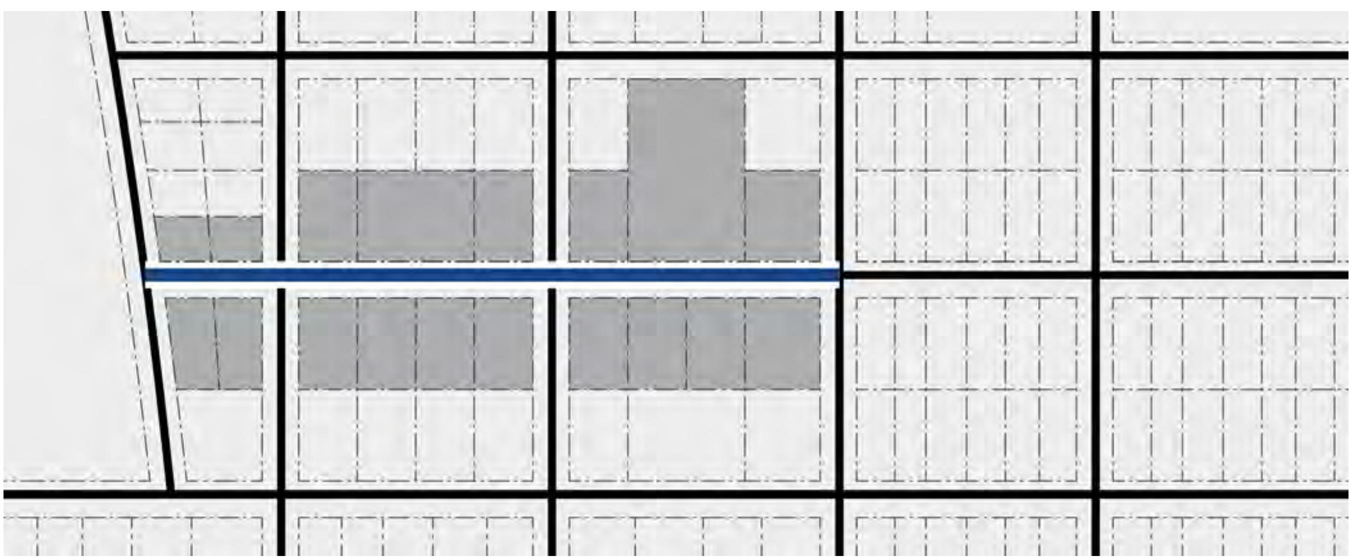
Measurement area = one block on either side of project roadway or 2000 feet, if block structure is not complete. A block is defined as the smallest area that is surrounded by public roadways on all sides.

Roadway centerline

Project roadway

One block on either side of project roadway

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



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

Roadway centerline

Project roadway

One parcel on either side of project roadway

FIGURE 5 BUILDING PLACEMENT

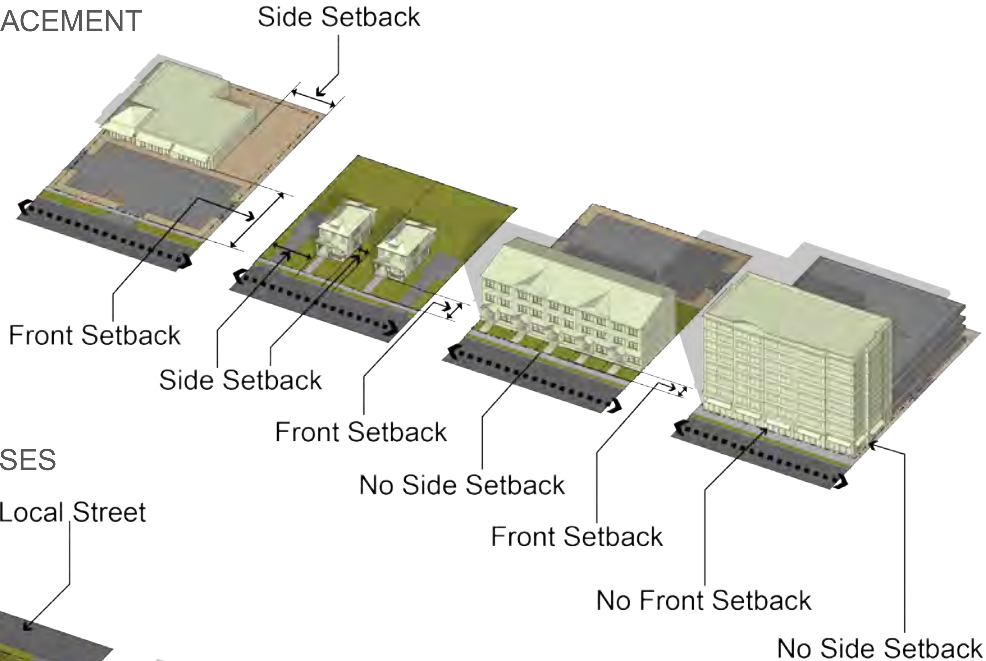


FIGURE 6 FRONTING USES

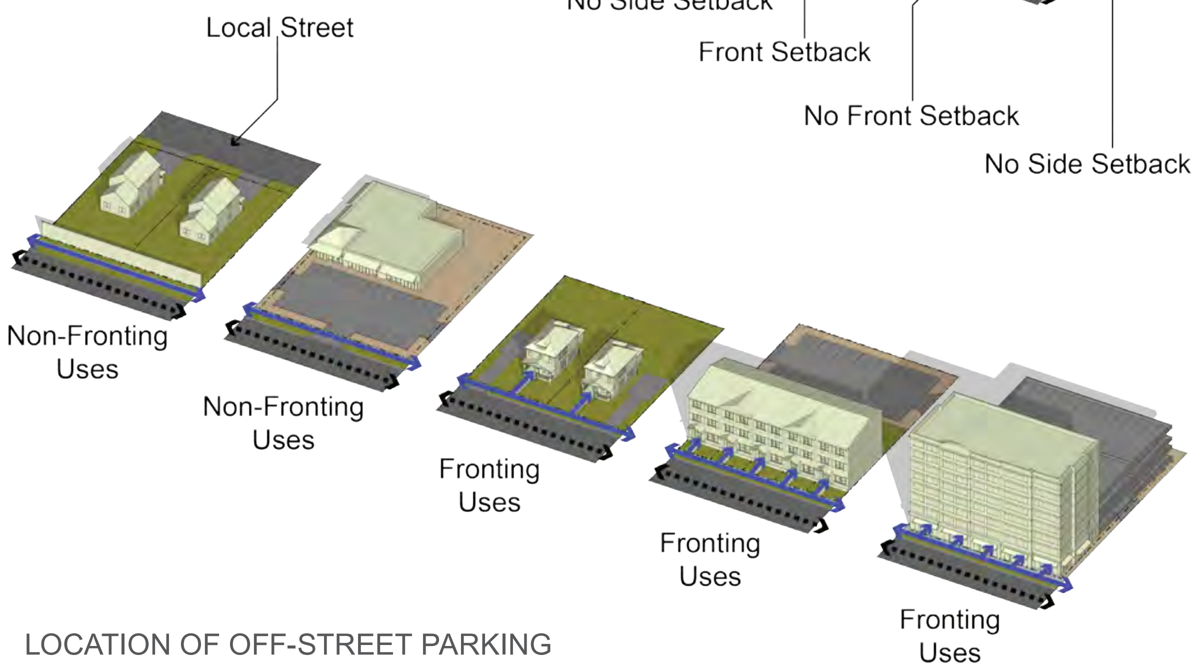


FIGURE 7 LOCATION OF OFF-STREET PARKING

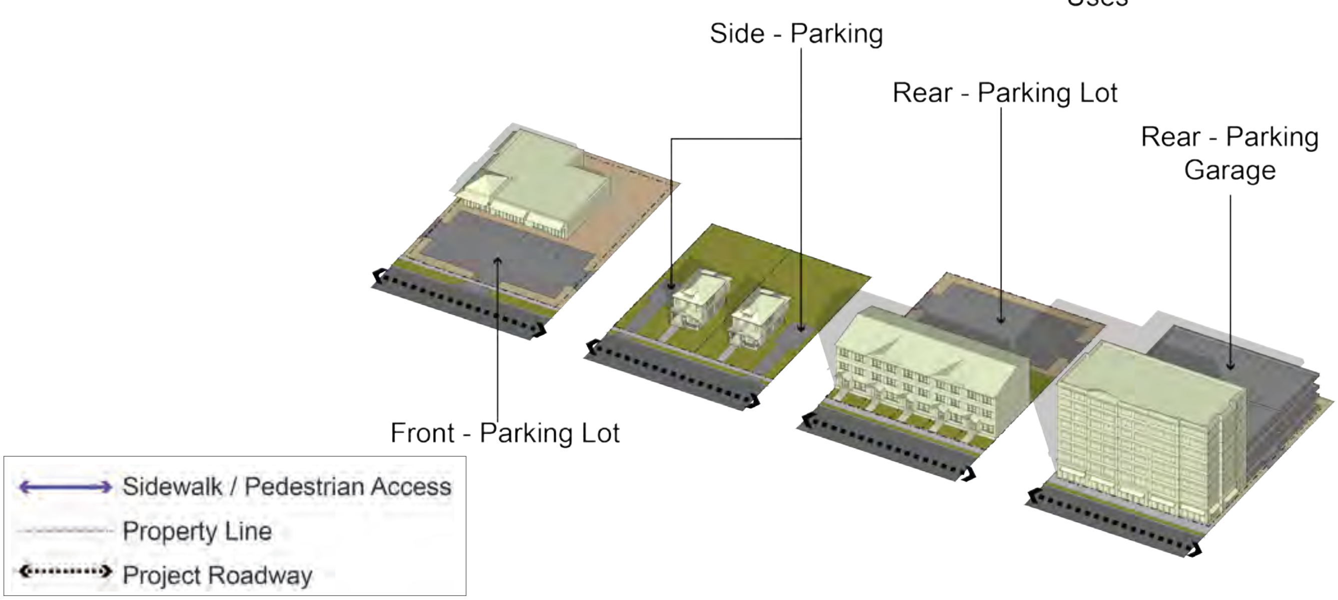
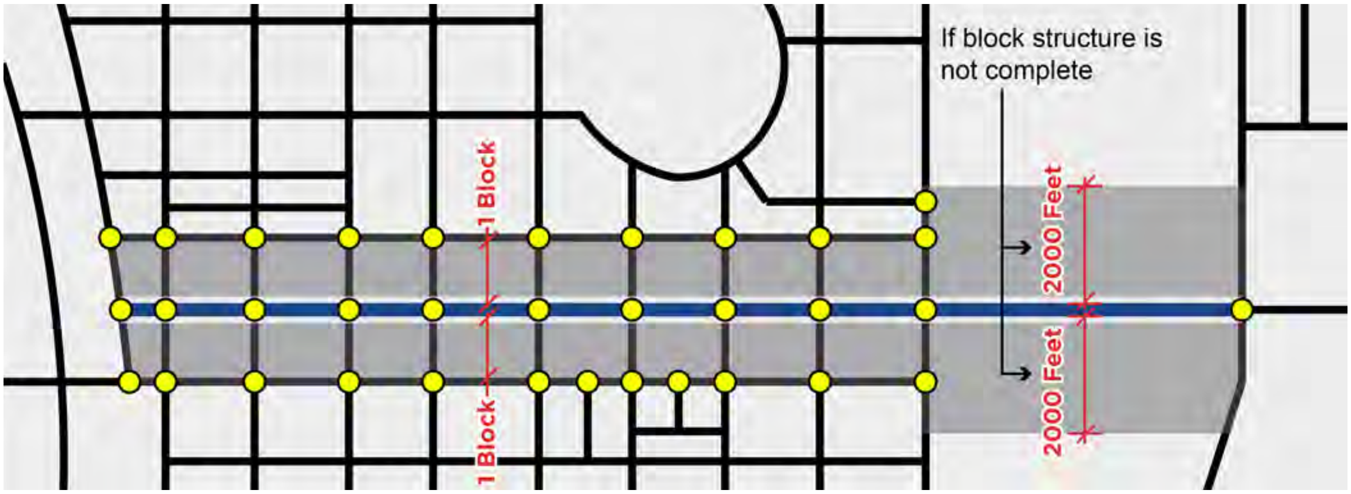


FIGURE 8 INTERSECTION DENSITY

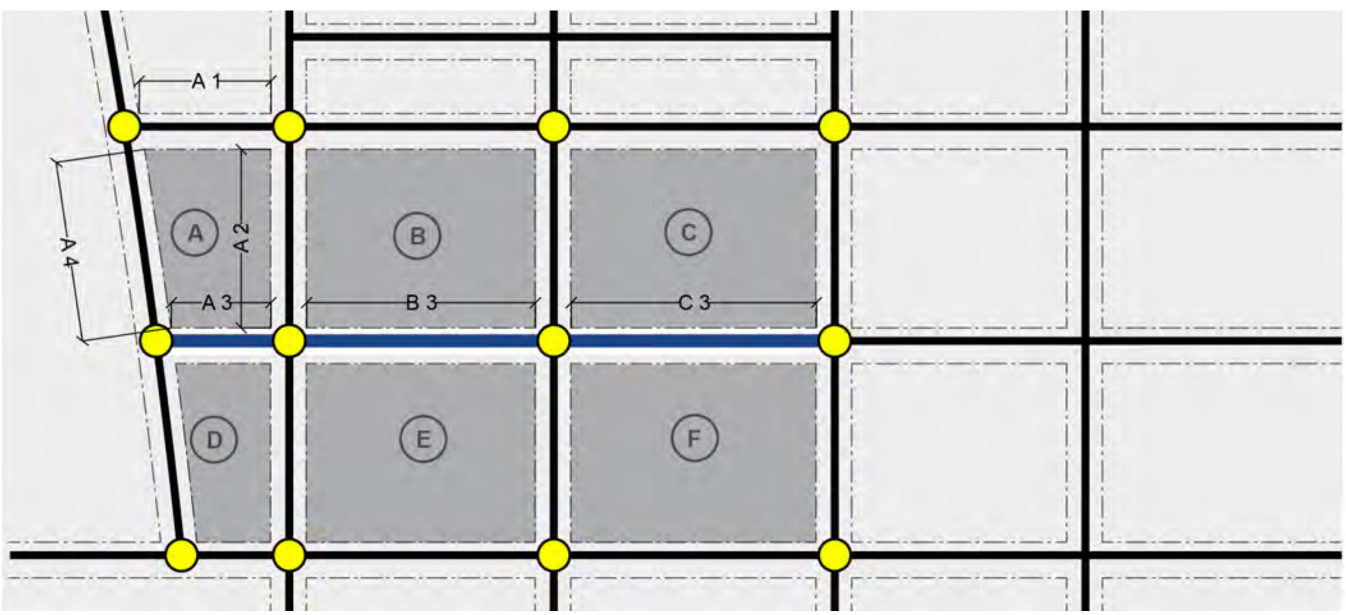


$$\textbf{Intersection Density} = \frac{\text{Number of Intersections}}{\text{Total Area* of Blocks Along Both Sides of the Project Roadway}}$$

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

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

FIGURE 9 BLOCK PERIMETER AND BLOCK LENGTH



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

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

$$\textbf{Average Block Length along the Roadway} = \frac{A3 + B3 + C3}{\text{Total Number of Intersections Along the Roadway} - 1}$$

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

TABLE 3 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 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. 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 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

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 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 the future land use element of the adopted local comprehensive plan using the land use description provided in Table 1.

3. Evaluate the Secondary Measures

Table 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.

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 4.

TABLE 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 C3C – Suburban Commercial	Coded as Conventional Suburban Development (CSD)	The SmartCode™ does not provide for this type of development pattern
FDOT Context Classification does not address this SmartCode™ Transect Zone	T3 - Sub-urban Zone	Lower density, primarily single-family residential with very limited non-residential uses, in a limited dispersion and directly within walking distance of a higher transect. Transect Zone T3 will be considered C4-Urban General
C4 – Urban General	T4 - General Urban Zone	Mixed use but primarily residential urban fabric in a variety of housing types and densities
C5 – Urban Center	T5 - Urban Center Zone	Higher density mixed use buildings that accommodate retail, offices, 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 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 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 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.

** 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.

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 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 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 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 • 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
Automobile	• 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. Roadways located on the SIS require coordination with the District SIS Coordinator during the determination, update, or confirmation of the facility's context classification.

Accommodation 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. 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 document. 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.

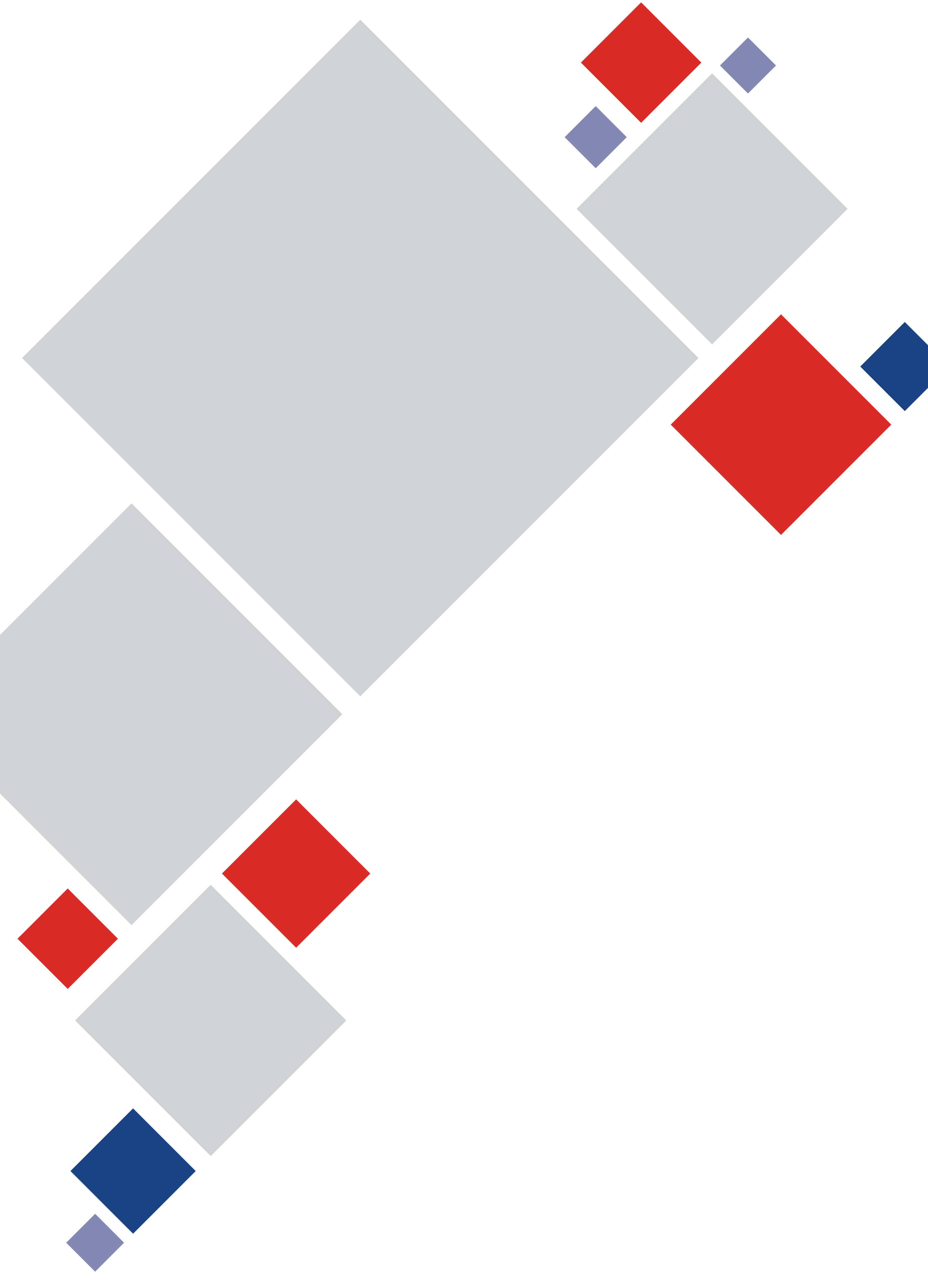
For more information on the RCI, refer to the ***RCI Features and Characteristics Handbook***.

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.



Appendix A

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.

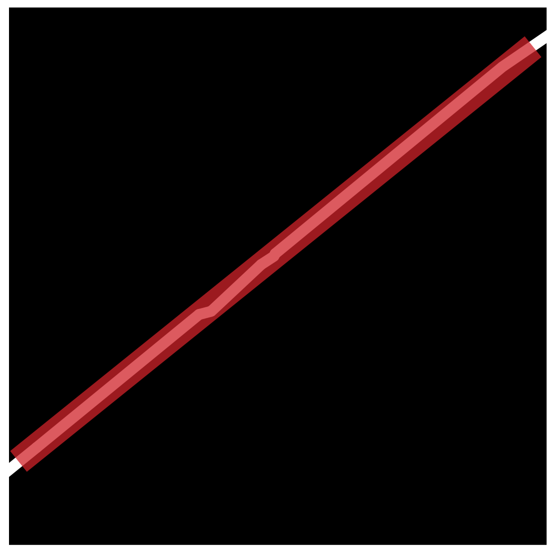
C1-Natural C2-Rural C2T-Rural Town C3R-**Suburban Residential** **C3C-Suburban Commercial** **C4-Urban General** **C5-Urban** Center **C6-Urban** Core

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



Streets and Blocks Network

Secondary Measures

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

Street View

Bird's Eye View

Open Space

Existing Land Use

0 0.5 1 Miles

N

C2-RURAL: SR 52, WEST 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	1	Detached buildings with no consistent pattern of setbacks	No	No consistent pattern	<1	No defined block pattern	

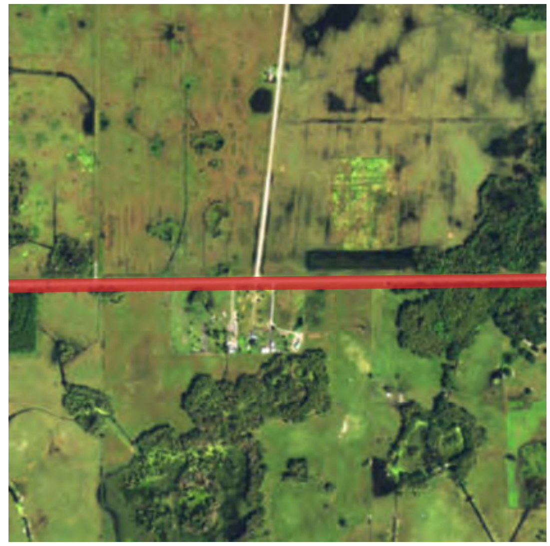
Secondary Measures

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

Street View

Bird's Eye View

0 0.5 1 Miles



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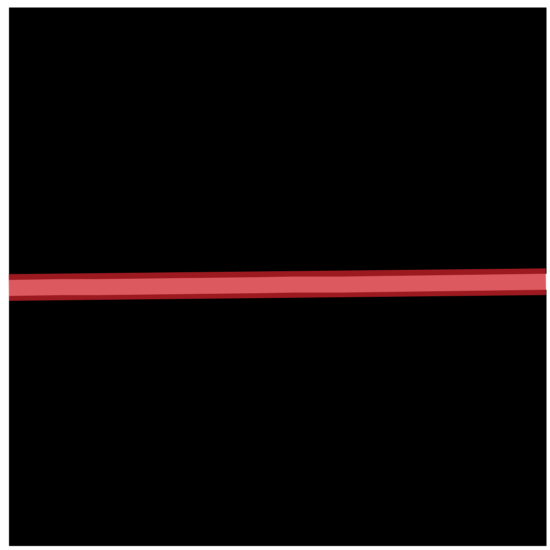
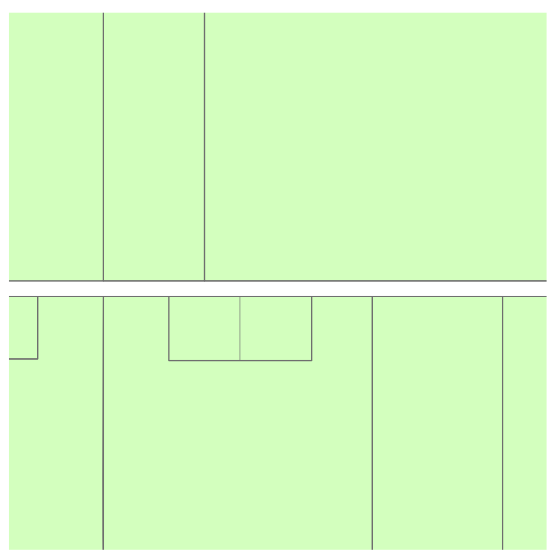


Streets and Blocks Network

Agriculture



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

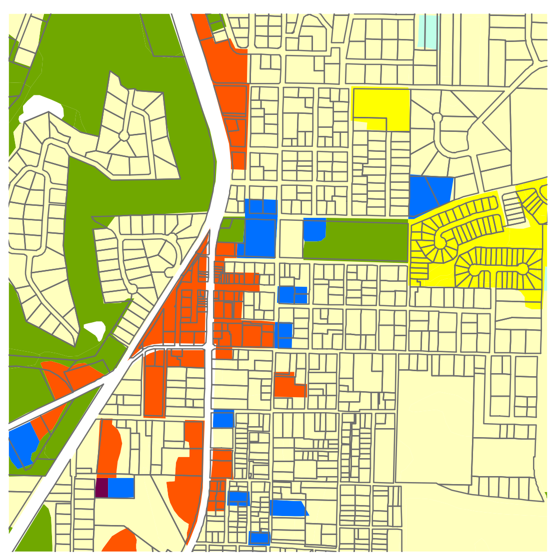
Single-Family Residential
Multi-Family Residential
Commercial
Retail
Agriculture
Institutional/Government
Industrial
Open Space
Vacant

0 0.5 1 Miles

N

Aerial Satellite Image

Streets and Blocks Network



Future Land Use

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

Primary Measures

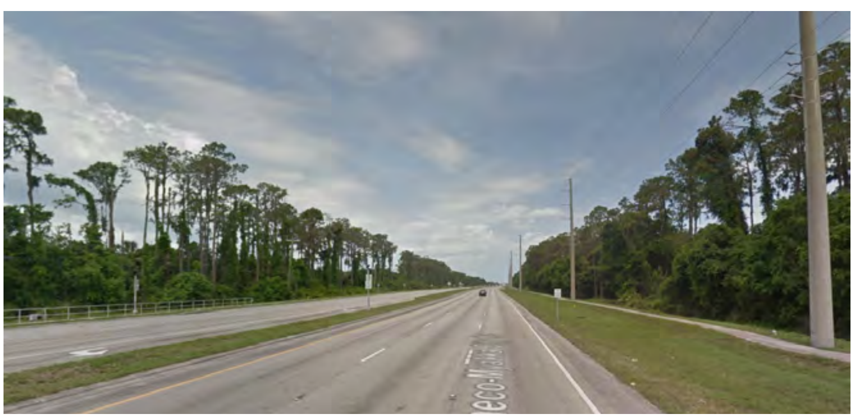
Land Use	Building Height	Building Placement	Fronting Uses	Location of Off-street Parking	Roadway Connectivity: Intersection Density	Roadway Connectivity: Block Perimeter	Roadway Connectivity: Block Length
Description	Floor Levels	Description	Yes / No	Description	Intersections/ Sq Mile	Feet	Feet
Single-family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

Secondary Measures

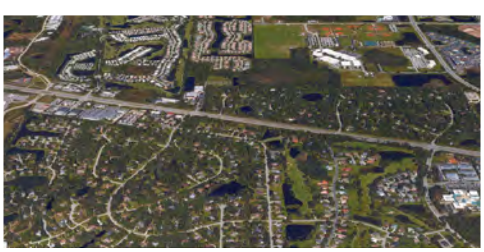
Allowed Residential Density	Allowed Office/Retail Density	Population Density	Employment Density
DU/Acre	Floor-Area Ratio (FAR)	Persons/Acre	Jobs/Acre
1	0.23	0.4	0

Aerial Satellite Image

Streets and Blocks Network

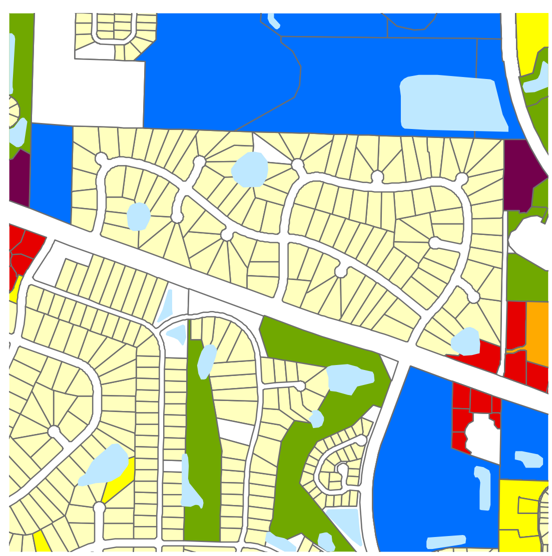


Street View



Bird's Eye View

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



Existing Land Use

0 0.5 1 Miles

N

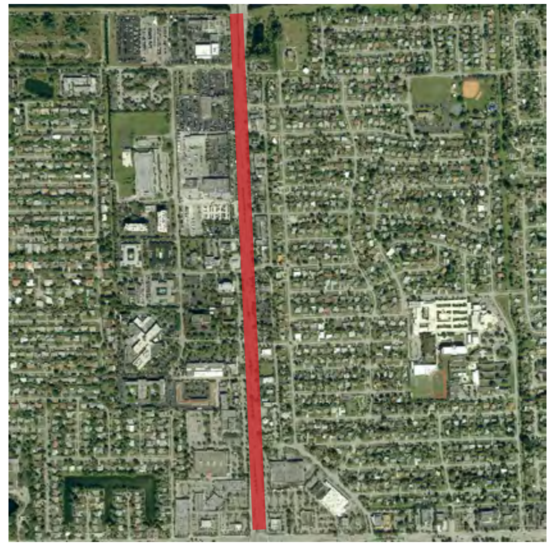
C3C-SUBURBAN COMMERCIAL: US 441, BROWARD COUNTY

Primary Measures

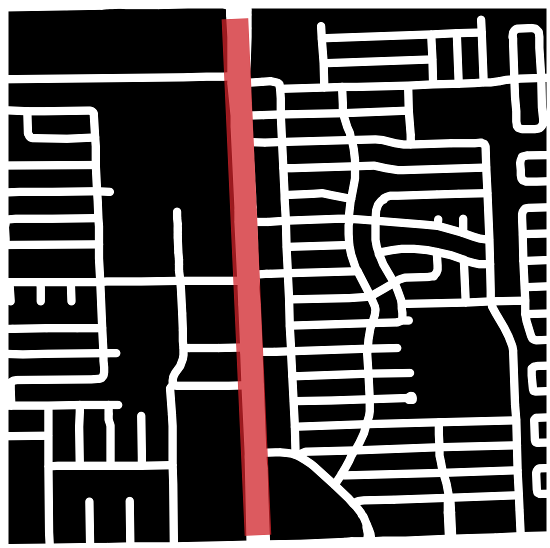
Land Use	Building Height	Building Placement	Fronting Uses	Location of Off-street Parking	Roadway Connectivity		
					Intersection Density	Block Perimeter	Block Length
Description	Floor Levels	Description	Yes / No	Description	Intersections/ Sq Mile	Feet	Feet
Retail, commercial, and light industrial	1 - 2	Detached buildings with large (> 75') 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

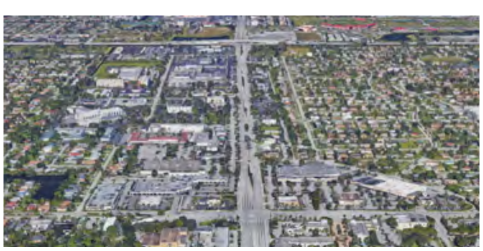


Aerial Satellite Image

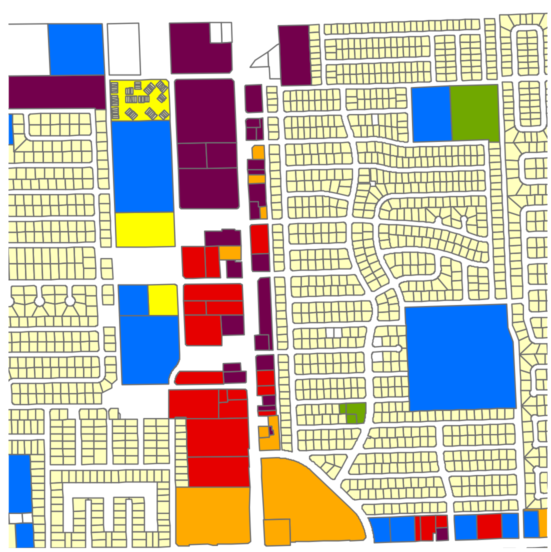


Streets and Blocks Network

Street View



Bird's Eye View



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

Existing Land Use

0 | 0.5 | 1 Miles

N

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

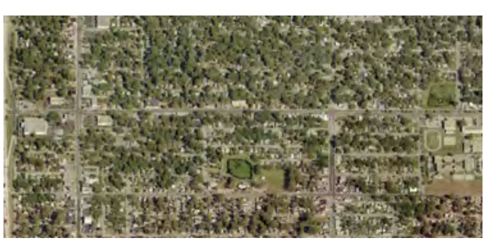
Primary Measures

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 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

Street View



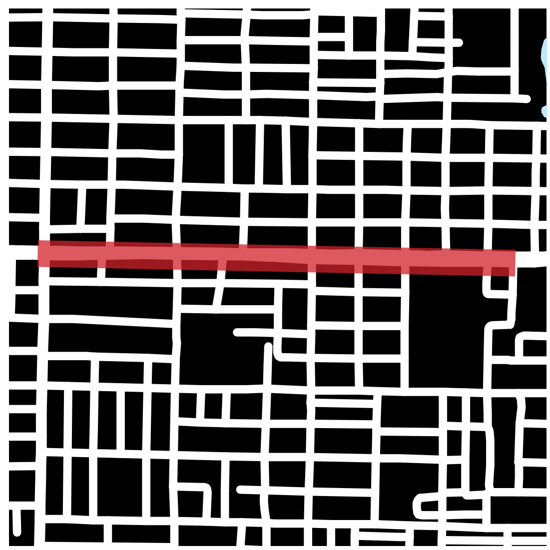
Bird's Eye View

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

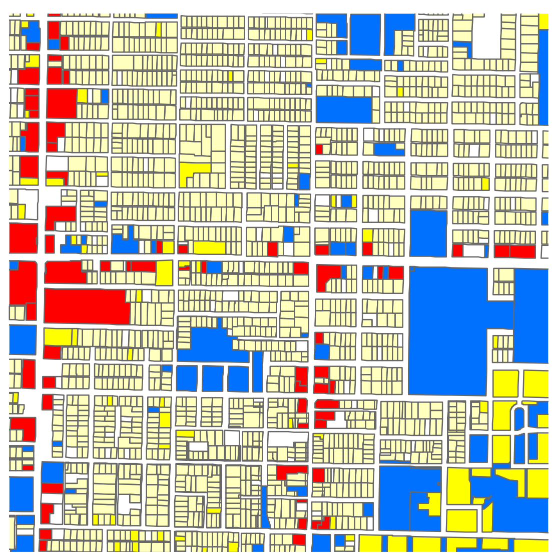
Miles
0 0.5 1

N

Aerial Satellite Image



Streets and Blocks Network



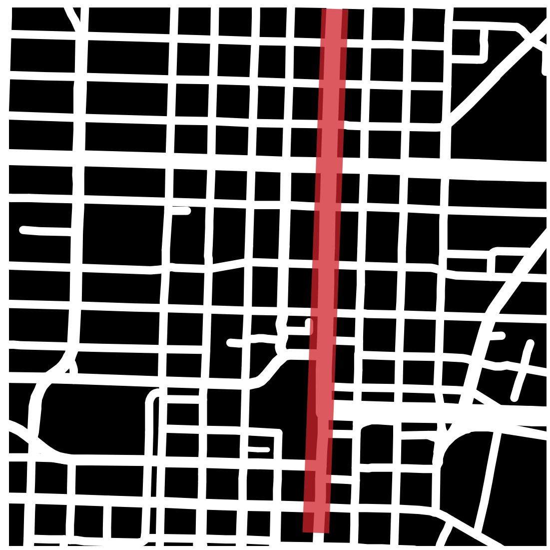
Existing Land Use

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

Aerial Satellite Image

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 and a few buildings with minimal (<10') setbacks	Yes	Rear and garage	180	1,770	380



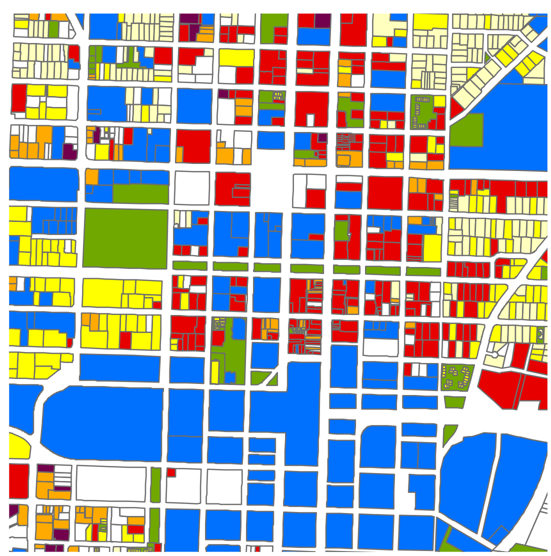
Streets and Blocks Network

Secondary Measures

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

Street View

Bird's Eye View



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

0 0.5 1 Miles

N

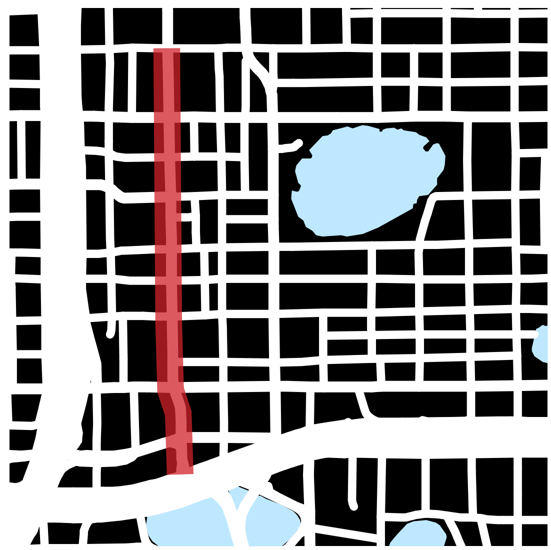
Existing Land Use

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

Aerial Satellite Image

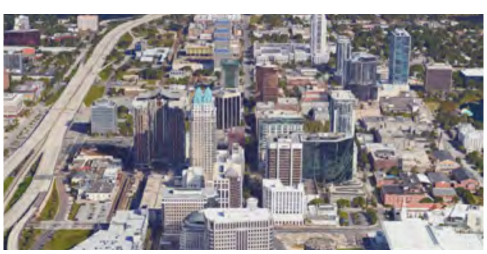


Streets and Blocks Network

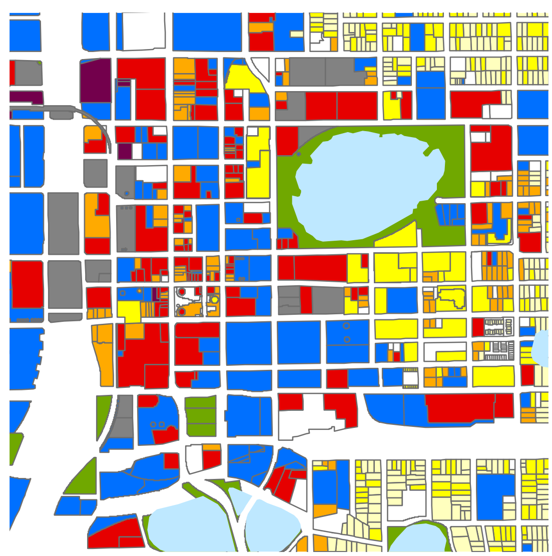
Secondary Measures

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

Street View



Bird's Eye View



Existing Land Use

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

Miles
0 0.5 1

N

Appendix B

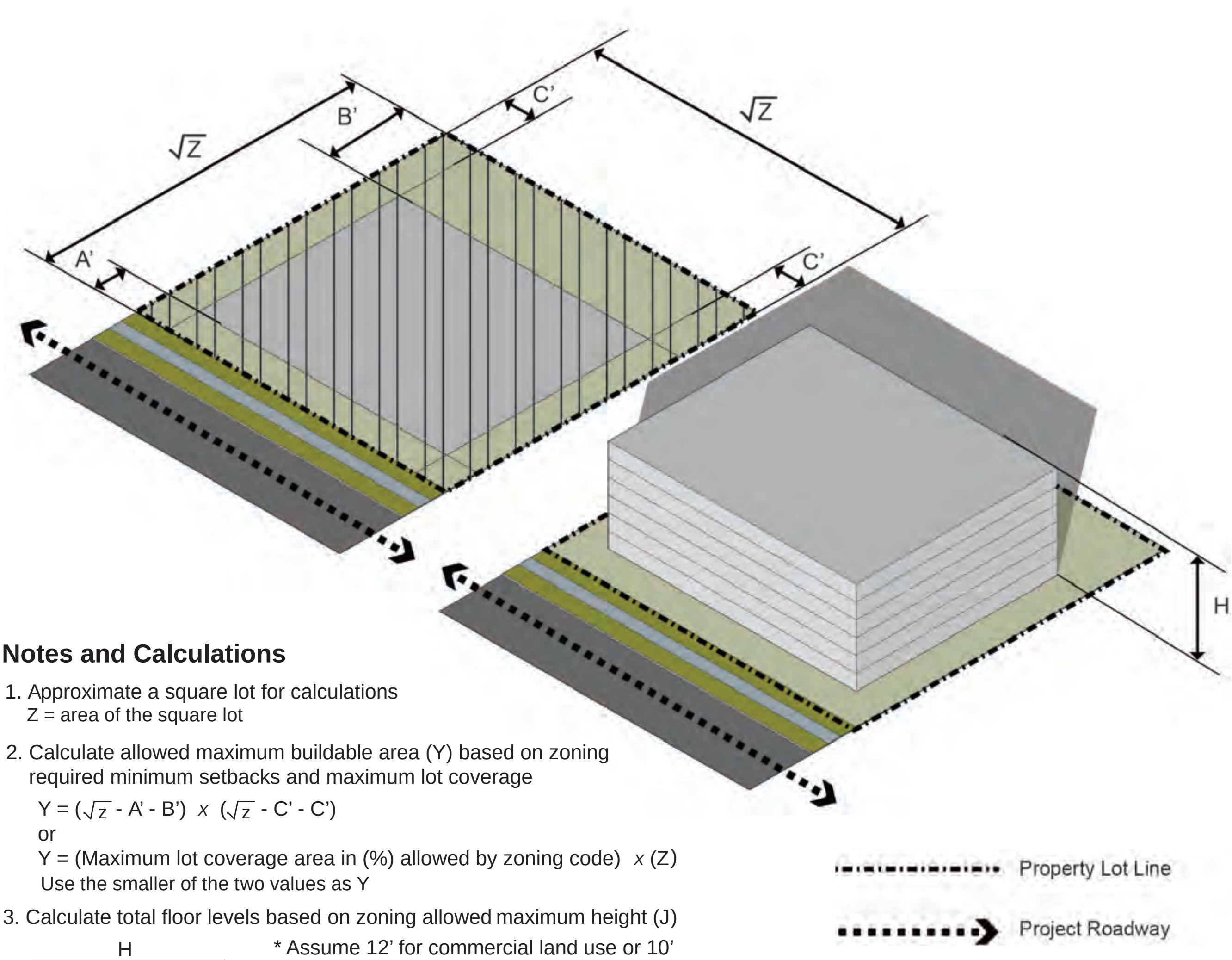
UNDEFINED THRESHOLDS IN CONTEXT CLASSIFICATION MATRIX

			Roadway Connectivity						
Context Classification	**Building Height, Building Placement, Fronting Uses**	**Location of Off-street Parking**	**Intersection Density**	**Block Perimeters**	**Block Length**	**Allowed Residential Density**	**Allowed Office/ Retail Density**	**Population Density**	**Employment Density**
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		

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 = (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)

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

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

FDOT

Completing FLORIDA'S STREETS