

TRANSPORTATION SITE IMPACT HANDBOOK

Estimating the Transportation Impacts of Growth



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Introduction

1.1 Purpose of Handbook

The Florida Department of Transportation (FDOT) has developed these guidelines to assist FDOT staff in their review of developments. While this handbook is primarily for FDOT staff, it is available to local governments and other transportation partners in an effort to communicate the FDOT's guidance for reviewing various documents. This update has been titled "Transportation Site Impact Handbook" to reflect the broader scope of work including local government comprehensive plans, growth management responsibilities, and multimodal transportation – rather than simply traffic analysis. This handbook is designed to reflect legislative and other changes that have taken place over time.

The inclusion of Site Impact in this title is to reflect the first version of this Handbook and to differentiate it from the Traffic Analysis Handbook also published by FDOT. For purposes of this document and in professional practice, the terms Transportation Impact Analysis and Site Impact Analysis both refer to the process of analyzing the multimodal impacts of development on the transportation system.

Since the 2010 update to the handbook, there have been significant changes to state legislation which impacts the guidelines presented in this edition of the handbook. Throughout this handbook, we will be referencing these legislative changes that occurred within 2011, 2012, and 2013. These legislative changes have affected several state agencies and programs that pertain to development and transportation systems. These changes have revised the focus of these agencies and programs including changes to their duties and guidance.

We have tried to make this handbook as current as possible; however growth management may go through even more changes into the future. For this reason, please check with the Florida Department of Economic Opportunity (DEO), in which the state land planning agency is located, for any updates. Information on future updates can be at DEO's website, www.floridajobs.org/community-planning-and-development*.

*Please note, if this link does not work, please check the Transportation Site Impact Handbook website at fdottransportationimpacthandbook.com for an updated link.

WEB**TSIH Website**

1.2 Background

Transportation Impact Analysis –

An analysis that estimates and quantifies the specific transportation-related impacts of a development proposal

A major part of FDOT's role in growth management involves reviewing proposed developments, comprehensive plan amendments, land development code amendments, capital improvement budgets, provision of public facilities, proportionate share agreements, Development of Regional Impact (DRI) agreements, Evaluation and Appraisal Report (EAR) based amendments, and other local government actions that are identified for state review. Since these local government decisions provide the basis for development approvals, they often incorporate land use changes and impacts to the transportation network. As such, transportation impact analyses are conducted to evaluate how the transportation network would function once the proposed land use change or development takes place.

Depending upon the anticipated impacts, several state and regional agencies will have inputs on these approvals. Significant impacts on regional or statewide transportation facilities are reviewed by the FDOT's District Growth Management staff to ensure that the adopted performance standards are achieved and maintained.

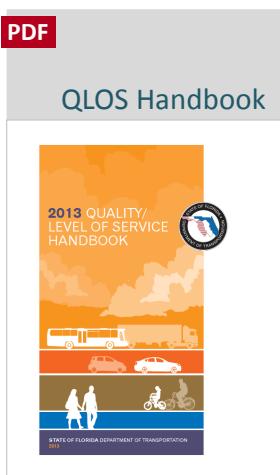
Transportation Concurrency –

The optional growth management concept intended to ensure that the necessary transportation facilities are available concurrent with the impacts of development

In accordance with Sections [163.3184](#), [334.044](#), and [380.06\(6\)](#), Florida Statutes (F.S.), the FDOT is responsible for reviewing and providing comments on local government comprehensive plan amendments and Development Orders as they relate to transportation impacts on state and regional multimodal facilities. The types of reviews and the associated statutory and regulatory basis for these reviews are summarized on Exhibit 1. The two main categories of reviews are:

- **Local government plan reviews**
- **Development of regional impact (DRI) reviews**

As indicated on Exhibit 1, various actions related to planning documents require coordination between the FDOT District Growth Management Coordinators and local governments or developers. Local government comprehensive plan (LGCP) amendment reviews are just one type of review. The DRI review steps shown on Exhibit 1 have been sequentially ordered to serve as a frame of reference. Regardless of the type of review, the FDOT reviewer should work with the local government staff and applicants to identify opportunities to integrate multimodal networks into the planning process and create strategies for making communities ready for transit in the future.



PDF**Transit Guidelines**

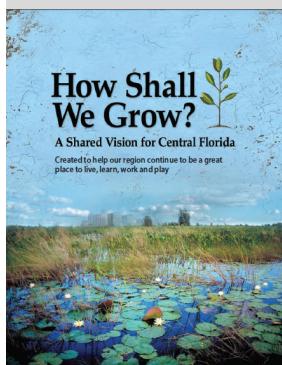
The FDOT's latest [Quality/ Level of Service Handbook](#) and the [Guidelines and Performance Measures to Incorporate Transit and Other Multimodal Considerations into the FDOT DRI Review Process](#) both provide guidance for incorporating transit considerations into the planning process and quantifying multimodal transportation network in the analysis of impacts.

Exhibit 1

Examples of Review Types

Local Government Reviews		DRI Reviews	
Evaluation and Appraisal Reports (EARs)	LGCP DRI Amendments	Binding Letters	DRI ADA Pre-Application & Transportation Methodology Meetings
Corridor Management Plans	Proportionate Share Agreements	Preliminary Development Agreements (PDAs)	Development Orders/ Ordinance Adoption
Sector Plans	Long-Term Transportation Concurrency Management Systems (LTTCMS)	Notices of Proposed Change (NOPCs)/ Deviation Determinations	Annual Reports
Transit Oriented Developments (TODs)	Rural Land Stewardship Areas (RLSA)	Modeling and Monitoring Schedules/ Annual Traffic Monitoring Reports	

Please direct your questions and concerns to your local FDOT office or Gary Sokolow gary.sokolow@dot.state.fl.us

PDF**How We Shall Grow**

The FDOT Office of Policy Planning (OPP) coordinates with the FDOT District Growth Management Coordinators and the State Land Planning Agency (SLPA) within the Department of Economic Opportunity (DEO) in developing policies, procedures, and guidelines to assist the Districts and other review agencies with the assessment of transportation impacts associated with growth and development. Increasing coordination between FDOT, SLPA, and local governments will be necessary as communities identify desirable growth patterns through strategic regional visioning efforts such as "[How Shall We Grow?](#)", appropriate mixtures of development, and complementary multimodal transportation networks. To effectively protect and maintain the transportation network, all professionals will need to work cooperatively to respond to growth management issues, protect quality of life, and maximize the use of limited funding.

When conducting an analysis, professionals will need to be familiar with the following :

- Local and adjacent comprehensive plans
- Metropolitan planning organization long-range transportation plans
- Transit development plans
- Transportation disadvantaged service plans
- Transportation demand management resources
- Commuter assistance programs
- Bicycle and pedestrian plans
- Capital Improvement and Transportation Elements with comprehensive plans
- Proposed comprehensive plan amendments
- Existing transportation concurrency exception areas (TCEAs), transportation concurrency management areas (TCMAs), multimodal transportation districts (MMTDs) as previously defined in the Florida Statutes

Existing or proposed developments of regional impact (DRIs), as well as the potential impacts to the statewide and regional multimodal transportation network.

1.2.1 Why is a Transportation Impact Analysis Needed?

The FDOT's role is to protect the integrity of the transportation system for the general public and to minimize degradation of both the regional and local transportation networks. There are a number of additional reasons for the FDOT to perform a transportation impact review:

- Provide public agencies with a mechanism for managing transportation impacts of land development within the context of metropolitan transportation planning, local government comprehensive planning, and concurrency
- Provide applicants with recommendations for effective site transportation planning
- Provide public agencies with a method for analyzing the effects of development on transportation
- Establish a framework for the negotiation of mitigation measures for the impacts created by development
- Coordinate with local governments when a state facility will be impacted by a proposed development
- Promote multimodal transportation systems where appropriate

1.2.2 The FDOT Reviewer's Role

This handbook is intended to guide the FDOT in reviewing LGCP elements, DRIs and other land use approvals that may impact the State Highway System (SHS), in particular facilities designated under the Strategic Intermodal System. In addition, this handbook is intended to offer guidance to transportation partners at all levels of government to enhance coordination in the existing review processes.

In order to sustain a professional and constructive review process, FDOT reviewer comments should be:

- Professional
- Concise
- Provide suggested action by the applicant to address specific comments
- Reference FDOT procedures, manuals and handbooks in the methodology agreement, where applicable, including any District procedures, Florida Statutes and Administrative Rules

The FDOT reviews of LGCPs are focused on the relationship between transportation, land use, intergovernmental coordination, and capital improvements elements of the LGCP, as identified in Chapter 163, Part II, F.S. The FDOT reviewer should focus on impacts to important state transportation resources and facilities.

1.3 About this Handbook

This handbook was designed as an electronic desktop preference for the FDOT reviewer. Hyperlinks to other resources which address specific issues in greater detail are included throughout the handbook. In addition, a comprehensive [List of Resources](#) is provided to allow for further research. The handbook has been organized in this manner to facilitate practical use. It consists of five Chapters and Appendices as follows:

Chapter 1 – Introduction: This Chapter provides an overview of the Transportation Site Impact Handbook and summarizes the legislative and the changes in state law that has occurred since the last edition of the handbook.

Chapter 2 – The Transportation Impact Process: This Chapter discusses standard components for the completion of transportation impact analyses and reviews. Chapter 2 should be utilized in conjunction with other chapters that describe the various types of FDOT reviews.

Chapter 3 – Local Government Comprehensive Plan Reviews: This Chapter describes how the FDOT assists local governments with development project reviews. It describes the different types of LGCP amendments and land development reviews as well as FDOT's roles and responsibilities during these processes. Four (4) [Resource Guides](#) are included at the end of the chapter.

Chapter 4 – Developments of Regional Impact: This Chapter addresses the transportation impact analyses related to DRIs, as required by Florida Statute. [Checklists](#) are included at the end of the chapter.

Chapter 5 – Mitigation: This Chapter provides information on mitigation processes and options for mitigating transportation impacts to the SHS.

Appendices: The Appendices include:

[Appendix A\)](#) DRI Stages of Review

[Appendix B\)](#) Questions 10 (General Project Description) and 21 (Transportation)

[Appendix C\)](#) Sample Transportation Impact Methodology (District 2)

[Appendix D\)](#) Samples Proposed Transportation Methodology Comments

[Appendix E\)](#) Sample Proposed Transportation Methodology Comments

[Appendix F\)](#) District 4 Example

[Appendix G\)](#) Examples of Multimodal Notice of Proposed Change

[Appendix H\)](#) Glossary

[Appendix I\)](#) Document URLs

WEB

TSIH Website

TSIH

Glossary

The Transportation Site Impact Handbook and many of the linked resources are available online. Given the changing nature of laws and professional practice, keeping the information within this handbook up to date has been an ambitious undertaking. The Transportation Site Impact Handbook will always be a work in progress with updates and clarifications being added as necessary.

1.4 Updates to this Handbook

Legislative Updates

State law pertaining to transportation has changed significantly since the Transportation Impact Handbook was updated in 2010.

Some major transportation-related changes include:

- Statutory regulations governing transportation concurrency was made optional for local governments
- Repeal of the statutory requirement that LOS standards on the SIS be consistent with FDOT standards
- Repeal of Rules 14-94 and 9J-5, Florida Administrative Code (F.A.C.), which previously governed statewide minimum LOS standards for the SHS and growth management laws respectively, in coordination with laws established in the Florida Statutes. Portions of Rule 9J-5, F.A.C., as well as repealed Rule 9J-11.023, F.A.C., were incorporated in Chapter 163, Part II, F.S.
- New requirement that local governments with transportation concurrency regulations must consult with FDOT when a proposed development will affect SIS facilities
- Repeal of statutory provisions for the designation of transportation concurrency exception areas (TCEAs), transportation concurrency management areas (TCMAs), and multimodal transportation districts (MMTDs)
- Revisions to regulations governing the contribution of proportionate share mitigation for transportation projects
- Repeal of statutory provisions for proportionate fair-share mitigation for transportation projects
- Requirements for monitoring transportation and expressway authorities
- Establishment of transportation deficiency authorities and transportation sufficiency plans, a county or municipal system created to plan and finance identified transportation deficiencies
- Creation of the definition for “transportation deficiency”
- New exemptions as well as revisions to thresholds, substantial deviation and essentially built out criteria were made to regulations governing DRIs
- Revisions to regulations governing Dense Urban Land Areas (DULA) for the purposes of DRIs
- Creation of two comprehensive plan amendment review process, Expedited State Review and State Coordinated Review, which replace the primary comprehensive plan amendment review process

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DEO FAQs

WEB

Reorganization
Chapter 163,
Part II, F.S.

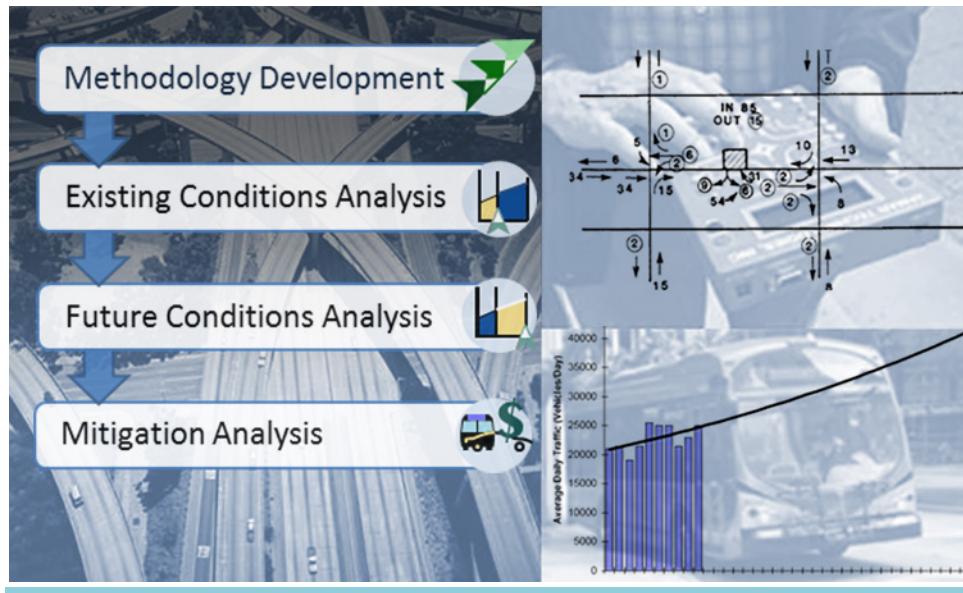
- Redefining the roles of “reviewing agencies” including DEO, serving as the SLPA. Legislation provides that review of local government comprehensive plan amendments and other identified actions must focus on “important state resources and facilities”
- Revisions to provisions governing the Sector Plan and Rural Land Stewardship Area Programs

1.4.1 State Transportation Facilities and Concurrency

Legislative changes to state law including revisions to Chapters 163, Part II, and 380, F.S., significantly transformed the landscape of growth management and transportation planning in Florida. As identified above, these changes have refocused the duties of the FDOT, SLPA, and other reviewing agencies and reduced or expanded several governing provisions which impact decision-making and planning at the local level. Of these governing provisions, the elimination of the state requirement for transportation concurrency at the local level as well as changes to the application of level of service standards by the FDOT and proportionate share mitigation has caused a reassessment of the identification, analysis, and mitigation of transportation impacts by proposed development.

As these and other changes are discussed in more detail throughout the Handbook, it is essential for the FDOT reviewer to understand the new role of the agency. As local governments now have more authority over planning decisions, FDOT and other reviewing agencies will take on a more collaborative role with local governments. In addition to providing technical assistance as requested, FDOT and reviewing agencies will focus on providing aid and guidance during identification and analysis, while focusing on mitigation measures for facilities of statewide significance.

2



The Transportation Impact Process

2.1 Introduction

Throughout this chapter and in national practice, “transportation impact study” may also be referred to as “transportation impact analysis” or “traffic study”

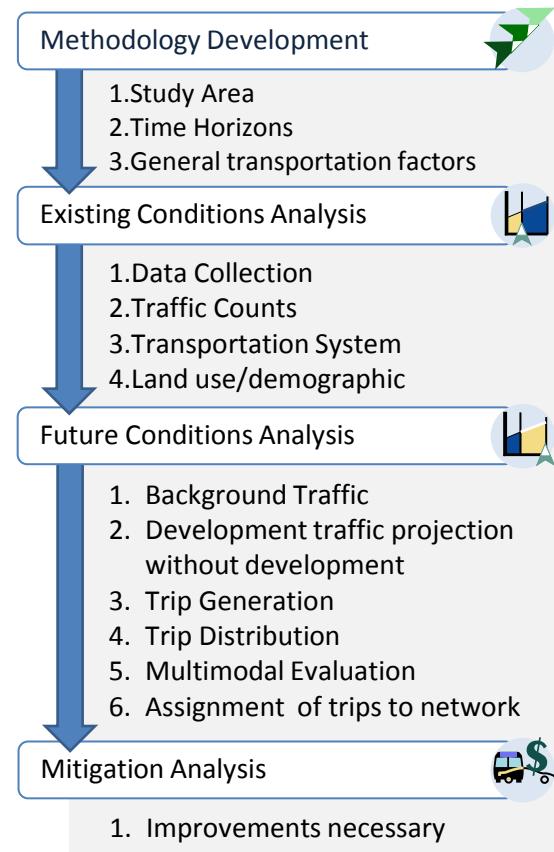
This chapter provides technical guidance for reviewing transportation impact studies. Emphasis is placed on providing guidance to allow for an understanding of regional variations rather than a one size fits all approach for the review of a transportation impact study. The objectives of a transportation impact study that a reviewer should be able to identify during their review should include the following:

- Assessment of the impacts of the proposed development on the transportation system
- Assessment of the need for improvements to achieve a safe and efficient transportation system to meet established acceptable level of service standards
- Provision of a forum for stakeholder discussion
- Assessment of the needs of all reasonable users and modes impacted by the development

Adapted from: *Transportation Impact Analysis for Site Development, ITE 2005*

Exhibit 2 illustrates a typical framework for transportation impact analysis and its review. In general, transportation impact analyses and their reviews should follow this general set of basic procedures.

Exhibit 2
**Basic Framework
of a Transportation
Impact Analysis**



Typical traffic studies reviewed by FDOT are associated with:

- Developments of Regional Impact (DRIs)
- Corridor planning studies where developments will impact the roadway design and/or operations (medians, signals, turn lane analysis)
- Local Government Comprehensive Plan Amendments
- Local Concurrency reviews if applicable
- Access permit studies
- Courtesy reviews at the request of local governments for impacts to state facilities

As FDOT reviewers evaluate studies including those identified above, presentation of the summary of findings including any associated recommendations for mitigation, should be presented in a clear and concise manner. The following example from "Mike on Traffic" provides an outline for organizing a transportation study review memo or report; indicating the three major components as well as additional tips for conducting the review itself.

Some wisdom on reviewing a traffic study from "Mike on Traffic" **Views From a Licensed Engineer**



This blog provides tips from a seasoned professional engineer. The text below has been adapted from the blog. The outline below provides a clear memo format for city staff who hired an independent consultant to perform the traffic study.

Section 1 – Introduction/ Purpose

Give a brief description of the traffic study and the purpose of the memo. State who prepared the traffic study and their qualifications.

Section 2 - Conclusions/ Recommendations

State whether the traffic study is sufficient or if further study is needed. If further study is needed, list what needs to be covered and purpose of covering those items. If the traffic analysis was done properly but you disagree with the conclusions/recommendations, clearly state why you disagree and what you recommend.

Section 3 - Technical Review

- **Visit the development site to make sure all of your comments will be credible.**
- Go through each component of the traffic study and state whether or not you agree with the study. If the city/county/state has written policies or standards related to traffic studies, they should be cited and inconsistencies should be identified.
- When flagging an issue or disagreement, clearly identify whether it is a minor issue that wouldn't affect the conclusions/recommendations of the traffic study or if they are a major issue that warrants further analysis.

2.1.1 Considerations for the Components of a Transportation Impact Study

The size, location, and type of development, as well as jurisdictional requirements, will influence the type and level of detail required for each component of the transportation impact study.

Methodology Development

Methodology Development is an essential component in any transportation impact analysis. During this phase, the local government policies for traffic analysis play a very important role. This process should define the data, techniques, practices, and assumptions that will be used while preparing a transportation impact analysis. The parties should reach agreement regarding the data to be considered and the basic factors to be used in the study. Analyses of existing and future conditions should be based on the standards adopted by the local government. This component can be helpful to set the stage for integrating the consideration of transit and multimodal services into the analysis. Once a methodology has been defined and accepted, the technical analyses can begin.

Existing Conditions

An Existing Conditions analysis is developed to assess current conditions and establish a basis for comparison to future conditions. In addition to the roadway network the study should analyze the following: the transit network (not just the routes but frequency and other measures of transit quality), bicycle, and pedestrian facilities.

Future Conditions

Future Year Conditions for a future horizon year (that does not include the proposed development) are forecast to develop future background conditions. The background conditions assessment then serves as the basis for a comparison to future conditions with the proposed site development.

The future conditions analysis is where the future impacts of a proposed development or amendment are assessed. Once the trips (auto or other) are assigned to the network, measures of effectiveness, such as a Quality/Level of Service analysis are calculated. The anticipated multimodal services identified should be taken into consideration and reflected in the future condition analysis.

Mitigation

When a transportation impact analysis indicates that the transportation system will operate at an undesirable level of service as compared to the local adopted level of service (LOS) standards, mitigation measures to reduce transportation impacts should be undertaken. Mitigation can be in the form of enhancing operational efficiency, reducing demand or increasing system capacity. Mitigation can also reduce level of development or phase development impacts with capital improvements. Mitigation should be relative to the size of the transportation impact expected. When adverse transportation impacts are expected on Strategic Intermodal System (SIS) facilities, FDOT should work with local governments and other transportation agencies to identify and agree upon mitigation measures. This is important even when FDOT comments are only advisory.

Importance of Multimodal Considerations

There are opportunities for including multimodal considerations at each stage of the transportation impact analysis. Some of the best references that both applicants and reviewers should be knowledgeable of regarding multimodal considerations include:

- [Transit Capacity and Quality of Service Manual, 3rd Edition \(TCQSM\)](#)
- [NCHRP Report 616 Multimodal Level of Service Analysis for Urban Streets](#)
- [2010 Highway Capacity Manual](#)

The remainder of this chapter provides a more detailed discussion of each of the previously mentioned components in the transportation impact analysis process; describing key study elements both applicants and reviewers should consider when preparing and reviewing a transportation impact analysis.

Checklists

Summary checklists for the overall site impact analysis process are provided in this handbook. These checklists can serve as a tool to help ensure that the site impact process is properly executed by both the applicant and the reviewer.

2.2 Methodology Development



Establish responsibilities and analyses that will be performed

Regional Planning Council (RPC)

The Methodology Development process usually begins when the applicant (developer or other party) contacts the local government, Regional Planning Council (RPC), FDOT or other agency to discuss a proposed development. A formal methodology development process is required for some types of developments, such as a Development of Regional Impact (DRI). Many local governments have adopted official methods they require for development related traffic studies. Even if no formal process is required, it is good practice for participating agencies to agree to a methodology before requesting the applicant to perform a transportation impact analysis.

Part of methodology development is for the applicable authorities to agree on the level of transportation analysis required and acceptable tools to use for this analysis. The use of various tools and their appropriate application is described throughout this chapter. In some cases the reader is referred to other FDOT publications which explain these tools in more detail.

Pursuant to revisions to Section 163.3184, F.S., Regional Planning Council (RPC) review and comments shall be limited to adverse impacts on regional resources or facilities identified in the strategic regional policy plan and extra jurisdictional impacts that would be inconsistent with the comprehensive plan of any affected local government within the region. A RPC may not review and comment on a proposed comprehensive plan amendment prepared by such council unless the plan amendment has been changed by the local government subsequent to the preparation of the plan amendment by the RPC.

Developments of Regional Impact (DRI)

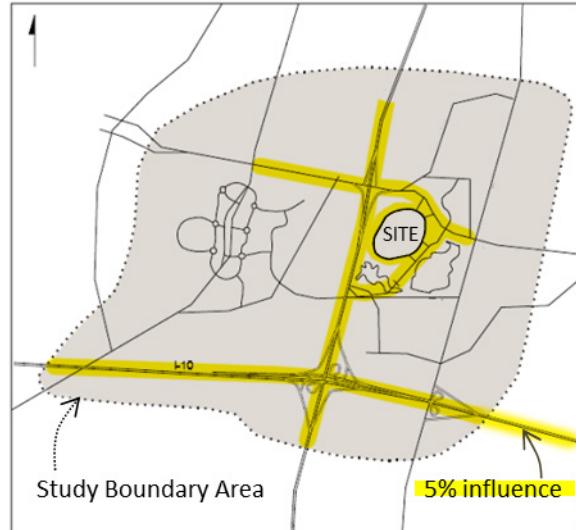
New thresholds in Section 380.06, F.S., automatically apply for projects and supersede any comprehensive plan requirements or agreements that would apply a stricter DRI threshold or require a DRI if now exempt.

2.2.1 Study Area Requirements

Adjustments to the study area boundaries may be needed to account for site specific circumstances

The applicant and FDOT's reviewer should consult with the appropriate agencies to identify applicable policies and criteria in defining the study area because these policies vary (see Exhibit 3). The study area is sometimes referred to as the "traffic impact area" or simply the "impact area." Local criteria for defining the study area typically involve a comparison of project traffic to thresholds of the percentage of the maximum service flow rate at an established LOS standard. Typically in the case of DRIs, the study area includes all roadways where traffic generated by the proposed development is equivalent to 5 percent of the maximum service volume at the adopted LOS standard for the facility.

Exhibit 3
Example Study Area



Many local governments have adopted procedures that prescribe the methodology used in defining the study area for traffic studies used to support comprehensive plan amendments or development concurrency reviews if applicable. The FDOT reviewer should be familiar with the local ordinances and how they apply to the review process. Pursuant to Section 163.3184, F.S., comments from reviewing agencies, including FDOT, on plan amendments are limited to adverse impacts on important state resources and facilities, which is currently undefined. In general, FDOT is limited to issues within the FDOT's jurisdiction as it relates to transportation facilities and resources for a particular site. The FDOT reviewer may include technical guidance in their review.

Distance from Site

Another method of establishing a study area for mitigation analysis is by defining as a given distance based on the number of trips generated by a development. For example, the study area will encompass a radius of 0.5 miles for developments generating 50 peak hour external trips. Some local governments have adopted a tiered approach to determining a study area.

For example, a small scale analysis might be required for developments generating between 50-100 trips with a study area radius of .5 miles, and a large scale study might be required for developments of greater than 100 trips with a 3 mile study radius. Due to the potential for varying methodologies among local governments, FDOT reviewers should pay particular attention to trips that cross jurisdictional boundaries. Adjustments to the study area boundaries may be needed to account for site specific circumstances. The [Transportation Concurrency Best Practices Guidebook \(DCA 2007\)](#) has detailed descriptions of these methods of determining impact areas.

Exhibit 4 shows an example of the traffic impact area using a radius from the development based on trip generation.

Exhibit 4
Example of Traffic Impact Area or Study Area

Source: [Transportation Concurrency Best Practices Guide, DCA 2007](#)



2.2.2 Time Horizons – Analysis Years

In general, the analysis years should include:

- The existing year
- The opening date of the proposed development
- Completion of major phases in a multi-year development

In some cases, it may be needed to take into account:

- Long-range transportation plans or Local Government Comprehensive Plan (LGCP) horizons,
- Metropolitan Planning Organization (MPO) prepared Transportation Improvement Program horizons or other significant transportation network changes
- Corresponding local government's Transportation and Capital Improvement Elements (CIE)

Analysis years should be clearly defined in the report (i.e., “2010 Existing Conditions” instead of just “Existing Conditions”) and agreed to during the methodology process.

A change in the proposed development phasing (notice of proposed change in the DRI process – see [Chapter 4](#)) may require a new analysis year be considered suggests study horizons as a function of the type of site impact review.

Exhibit 5

Suggested Study Horizons

Local Government Comprehensive Plans	Existing, short-term (5-year), and long-term (10-year minimum or greater) analyses are required for comprehensive plan elements.
Developments of Regional Impact (DRI)	The year that the first phase of development begins, the anticipated opening year of each major phase of the development (assuming build out and full occupancy of each phase) and the final build-out year (or year of complete development assuming full occupancy) should be considered for all DRI type analyses.
Concurrency Reviews	Typically these developments occur in a single phase. Therefore, the anticipated opening year of the development assuming build out and full occupancy is the only horizon year required. Local government requirements should be reviewed.
Access Permits	Depends on the size and scope of the development. Many will be studied only for the opening year, and larger developments may have longer time horizons. For information on driveway connection permits, please refer to Rule 14-96, Florida Administrative Code .

DOC

14-96
Access Permits



Under Section 163.3177, F.S., a comprehensive plan must be based on a planning period of at least 10 years with a Five-Year Schedule of Capital Improvements located within the CIE. Additional planning periods for specific plan components, elements, land use amendments, or projects are allowed. The Five-Year Schedule of Capital Improvements must identify facilities and any associated funding necessary to meet adopted LOS during a 5-year period; however there is no requirement that the CIE prove the schedule is financially feasible. Listed facility improvements must be identified as “either funded or unfunded and given a level of priority for funding.”

Legislative changes in 2011 eliminated mandatory transportation concurrency requirement for local governments. Local governments may choose to repeal concurrency and establish other approaches such as mobility-fee based systems. Pursuant to Section 163.3180(5)(h)1., F.S., local governments should consult with FDOT whenever a SIS facility is expected to be impacted by a comprehensive plan amendment. There are stipulations if a local government chooses to continue using transportation concurrency.

2.2.3 Travel Adjustment Factors

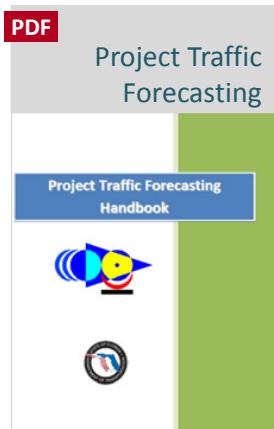
Analysis Periods – “K” Factor



Transportation impact analyses are usually based on a peak-hour analysis. The analysis period should be related to the expected peaking patterns on the roadway and anticipated development traffic.

Selecting a proper time period to analyze is crucial for planning and designing transportation facilities. For example, the “K” factor, which is described in more detail under [Chapter 2.2.4](#), is the ratio of the peak hour traffic volume being analyzed to the Annual Average Daily Traffic for a specific facility which is an important component in selecting a proper time period. Detailed discussion of the K factors and analysis period are found in the FDOT Quality/Level of Service (QLOS) Handbook and website.

The analysis period selected should be the period that has the highest combination of development and background traffic. This is referred to as the “**critical hour**.” To illustrate this concept, typical critical hours for selected land uses are illustrated in .



The analysis period to be used should be clearly stated in the methodology. The FDOT reviewer should check that appropriate factors have been applied to field collected data so that the appropriate analysis period is being used. Detailed information about the application of adjustment factors to collected traffic counts is found in the FDOT *Project Traffic Forecasting Handbook*.

Exhibit 6

Typical Critical Hour Analysis Period for Various Types of Developments

Development	Weekday Street Peak Hour		
	AM	PM	Other
Residential	X	X	
Office	X	X	
Shopping Center		X	(including freestanding Discount Superstores)
Intersection capacity		X	
Access Design		X	Saturday 11:00-15:00
Restaurants	Fast Food	X	11:00-13:00
		X	
Industrial	X	X	Industrial Plant shifts may precede typical commuter adjacent street peak hour
Hotel/Motel		X	
Schools	Grade	X	14:30-15:30
		X	14:30-15:30
		X	
Medical	Hospitals	X	6:30-8:00 14:30-15:30
		X	9:00-10:00 16:00-18:00
Convenience Markets/Gas	X	X	
Sports/Recreational			Peak entry/exit of particular events

Adapted From: ANALYSIS OF TRAFFIC IMPACT FOR NEW DEVELOPMENTS

PAUL C. BOX, Skokie, Illinois Public Works Magazine: February 1981

Trip Generation and Adjustments

Trip generation is the process by which the number and type of trips associated with a given land use is estimated. Trip generation may be the most critical element of the transportation impact analysis because it estimates the amount of vehicular travel associated with a specific land use or development. An estimate of trip generation from the development using FDOT approved trip generation methods, such as Institute of Transportation Engineer (ITE)'s *Trip Generation Manual 9th Edition*, is required in all analyses.

Due to the amount of guidance on the subject on trip generation, we have put most of the trip generation guidance under [Chapter 2.4](#).



TRANSPORTATION CONCURRENCY
Best Practices Guide

FLORIDA DEPARTMENT OF TRANSPORTATION

If there is no land use code in the Trip Generation Handbook for a specific development, a local government may require the applicant to either use the equations or rates of a similar land use or conduct trip generation studies at sites with characteristics similar to those of the proposed development.

Source: [Transportation Concurrency Best Practices, DCA, 2007](#)

When dealing with adjustments to trip generation that are made to lower the gross trip generation (for example internal capture percentages for mixed-use projects, transit oriented development, pass-by capture rates for retail land uses, etc.) they should be accompanied by sufficient logical justification and/or empirical data early in the process. This should be a major item of discussion during the Methodology Development phase.

Use of “Manual Methods” and Travel Demand Forecasting Models for Future Conditions

Future conditions for impact assessments can be estimated using “manual methods,” travel demand forecasting models, or a combination of the two. For the purposes of this handbook, “Manual Methods” are those methods of trip generation NOT done with large scale travel demand models, such as Florida Standard Urban Transportation Model Structure. The most common examples of “Manual Methods” are trip generation estimation done through the use of trip generation rates or equations, and background traffic growth calculation done using growth factors or adding known trips from other developments to the surrounding road system.

In addition to trip generation, trip distribution is needed to determine the travel patterns (origins and destinations) of the trips generated which is described in more detail under [Chapter 2.6](#). The method to be used to project trip distribution will often depend on the size and scope of the project, as well as the availability of a travel demand model for the study area. The method to be used should be determined as early as possible in the process through coordination with FDOT and local agencies.

In many cases, a hybrid approach can be used that uses elements of both manual and model methods. For example, background conditions and trip generation might be estimated using manual methods while trip distribution and assignment might be based on large scale model methods. In another example, if the FDOT reviewer questions the distribution and assignment of trips generated by a development analyzed using a manual method, the component potentially could be compared with the results of an assignment made with a travel demand model.

Other Major Committed Developments and Redevelopment

Other major committed developments should be considered in any site impact analysis

Major committed developments are developments that have an approved Development Order (DO) or an approved concurrency management certificate. These should be considered in the transportation impact analysis. These trips are known as "Vested Trips." Vested Trips are taken into account when analyzing transportation deficiencies. Pursuant to Section 163.3180, F.S., "the term "transportation deficiency" means a facility or facilities on which the adopted level-of-service standard is exceeded by the existing, committed, and vested trips, plus additional projected background trips from any source other than the development project under review, and trips that are forecast by established traffic standards, including traffic modeling, consistent with the University of Florida's Bureau of Economic and Business Research medium population projections. Additional projected background trips are to be coincident with the particular stage or phase of development under review." For additional guidance, please see Sections 163.3177(1)(f), 163.3180, and 163.3184, F.S.

The traffic from these developments is part of the background traffic and is addressed in greater detail in [Chapter 2.5](#). The manner in which committed development will be accounted for in the analysis should be determined as early as possible in the process through coordination with FDOT and local agencies.

Redevelopment Sites

How to account for previous traffic from site that is being redeveloped

If a new development is being proposed on a site that previously generated a significant amount of traffic, the reviewer should determine, in advance, the treatment of the traffic that was generated on that site.

In order to encourage in-fill development, some local governments and other agencies "discount" the older site developed traffic and treat it as part of the Background Traffic. This will depend on local government practices, and other considerations such as, the time the property was vacant and existing traffic conditions around the site.

2.2.4 Standard “K” Factors

The ratio of peak hour to Annual Average Daily Traffic (AADT) factor (K) is used in the Department's planning through design phases. It is one of the most critical factors in transportation analysis.

In an effort to simplify the confusion around the “K” factor, FDOT transitioned into using a standard peak factor for most planning level analysis in 2012. It's called the “Standard K”. Originally the term “K” was developed for the practice of converting daily volumes to the 30th highest hourly volume of the year. This became K_{30} , commonly referred to as the "design hour". Over time the practice of using K_{30} , K_{100} , peak to daily ratios or other approaches has created confusion throughout the state on the most appropriate K factor to use. During peak travel hours many Florida roadways are oversaturated or constrained: travel demand exceeds the capacity of the roadways to handle it. Using measured K factors for oversaturated roads distort how roadways should be planned and designed. Measured volumes simply cannot exceed a roadway's capacity even during peak hours. Especially problematic is the determination of appropriate K values in large urbanized areas. Exhibit 7 displays the following standard K factors below.

Exhibit 7
Standard K Factors

Area (Population) [Examples]	Facility Type	Standard K Factors (%AADT)
Large Urbanized Areas with Core Freeways (1,000,000+) [Jacksonville, Miami]	Freeways	8.0-9.0
	Arterials	9.0
Other Urbanized Areas (50,000+) [Tallahassee, Ft. Myers]	Freeways	9.0
	Arterials	9.0
Transitioning to Urbanized Areas (Uncertain) [Fringe Development Area]	Freeways	9.0
	Arterials	9.0
Urban (5,000-50,000) [Lake City, Key West]	Freeways	10.5
	Arterials	9.0
Rural (5,000) [Chipley, Everglades]	Freeways	10.5
	Highways	9.5
	Arterials	9.5

WEB

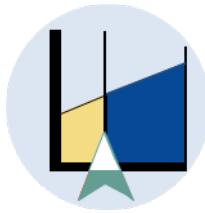
FDOT
Standard K Factor

Please go to the FDOT Website on this issue at:

www.dot.state.fl.us/planning/systems/programs/sm/transition/information/default.shtm

bit.ly/1gq5dpP

2.3 Existing Conditions Analysis and Data Collection

**PDF**

QLOS Handbook

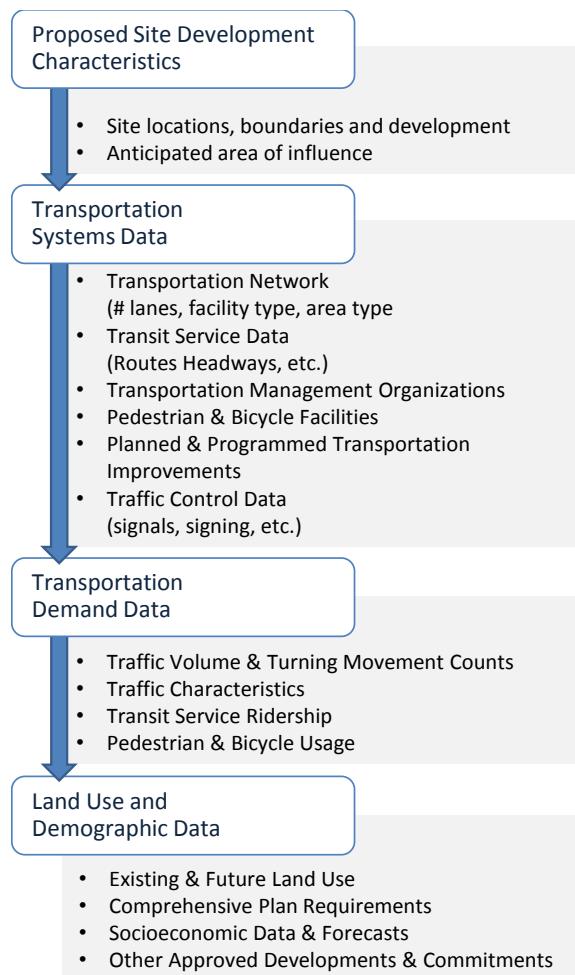
The existing traffic information (year, adjustment factors regarding peak season, daily and peak hour traffic) should be discussed during the **Transportation Methodology** component and accepted by the reviewing agencies before conducting traffic counts.

This analysis establishes a basis for comparison of the proposed development. The basic analysis should consist of identifying the operational and physical characteristics of the transportation system using professionally accepted practices. FDOT's guidelines for data collection found in the most current [FDOT Quality/Level of Service Handbook](#). This Handbook also addresses measuring the quality of service for transit, and non-motorized travel.

2.3.1 Data Collection

Types of data generally required for the study area are discussed below. summarizes the data collection and existing conditions requirements.

Exhibit 8
Common Data Needs
for Site Impact
Analysis



We have tried to have the most up to date information. However, due to changes in legislation and acceptable practices, we recommend you check with the links in this handbook.

2.3.2 Proposed Site Development Characteristics

The proposed land uses should be identified by intensity and classification consistent with ITE's Trip Generation Manual

The proposed site development characteristics will identify the location of the proposed development, site boundaries and other site related characteristics. This information should be presented based on the following guidance:

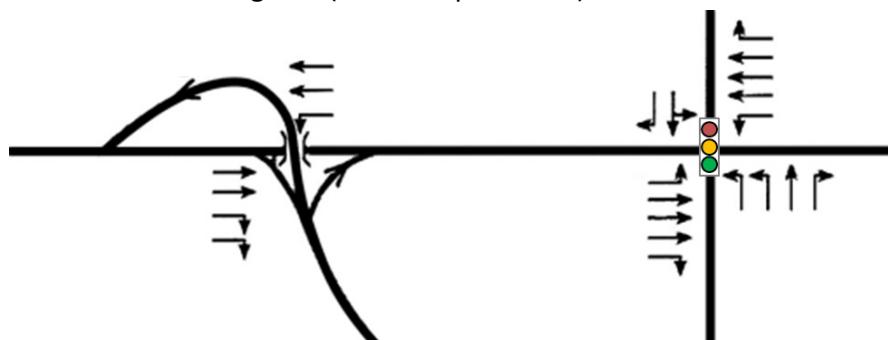
- A site plan or master plan should be provided that clearly indicates the location of proposed land uses and intensities, and internal roadways
- The proposed land uses should be identified by intensity and classification consistent with ITE's *Trip Generation Manual* as much as possible
- The proposed traffic signals, median openings, major driveway and access locations serving the site should be identified
- The required study area or anticipated area of influence for the proposed development should be identified with site development characteristics

2.3.3 Existing Transportation System Data

The existing transportation system data will include the physical and functional characteristics of the transportation system. Required data to be provided include:

- Geometric data such as the number of lanes, locations of intersections and signals (see example below)

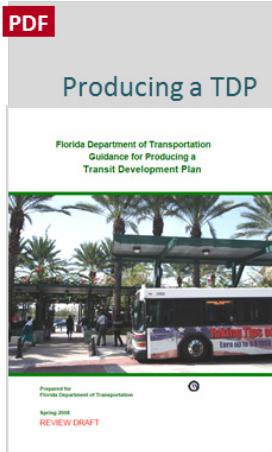
Required data



- The access management classification and jurisdiction responsible for the facility (state, county or local) for all facilities within the area of influence
- The area type (rural, transitioning, urban or urbanized area)
- Identification of transit, bicycle, and pedestrian routes
- Crash information for all modes, including pedestrian crashes. This may point out problem areas for future remediation

- Identification of programmed improvements on state highways and significant regional, local (city or county) roads
- Transit facilities and services within the next three years or through each major phase of the proposed development
- Identification of planned improvements that are reported in the MPO long-range transportation plan
- Identification and review of multimodal information, data, and considerations with appropriate agencies

Data Considerations for Future Transit Service



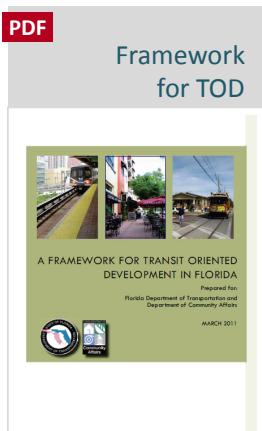
When considering potential transit services, the density, diversity, and distance factors associated with a proposed development should all be considered. Specifically, transit needs should be assessed in the context of the types of housing, mixture of land uses, density and intensity of development, as well as walking distance to transit stops.

As the need for transit services is reviewed, the focus of the analysis should extend outward from development projects and activity nodes to consider the potential for modifying existing transit service.

The study area should not be restricted in terms of walking distance; rather the reviewer should consider, in consultation with the transit provider, whether it is desirable to extend service a modest distance to serve new development.

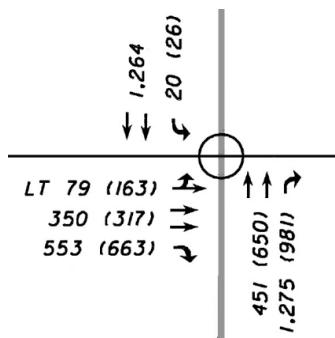
The transit development plan (TDP) may be reviewed and the transit agency serving the area should be contacted to determine the current and committed service in the area.

Additional transit-related tools and resources are available to assist reviewers, including *Guidance for Producing a Transit Development Plan*, and *A Framework for Transit Oriented Development in Florida*.



2.3.4 Traffic Counts and other Transportation Data

Existing transportation demand data will include current and historical traffic volumes, turning movement counts, traffic characteristics such as peak and directional factors, ridership data, bicycle and pedestrian activity. All traffic analysis summaries and reports should clearly identify the specific year of analysis.



**Exhibit 9
Example of Existing
Intersection Counts**

Numbers in parenthesis are PM Peak
and without are AM Peak

Where FDOT data is not available, the applicant is responsible for collecting data in accordance with review agency guidance and procedures. Data from years when significant transportation network changes occurred or major phases of related developments were opened to traffic should be noted and possibly excluded if they could skew the trend analysis.

For a planning analysis of existing conditions, FDOT recommends calculating roadway traffic volumes and specific traffic factors based on 3-day counts. This would be 72-hours of consecutive counts taken within the time frame of Monday afternoon through Friday morning in urbanized, transitioning and urban areas. For rural areas, 7-day counts are usually recommended. Weekend counts may be necessary for some developments (sport/recreational land use activities such as theme parks and stadiums).

For DRIs and other larger developments, the last five years of historical data should be collected (if available). FDOT's existing Annual Average Daily Traffic (AADT) counts, classification counts, and Automated Telemetry Recorder (ATR) sites (sometimes called Permanent Count Stations) could be a prime source for historical traffic data.

This data is stored in the traffic characteristics inventory (TCI) and roadway characteristics inventory (RCI) databases maintained by FDOT. The Transportation Statistics Office provides a graphical interface, *Florida Transportation Information* (FTI) application available in DVD format which provides access to traffic data collected at over 15,000 traffic count locations.





FDOT Traffic Counts also available on-line at:
www2.dot.state.fl.us/FloridaTrafficOnline/viewer.html



The two major sources for guidance on data collection and use are:

- [FDOT Quality/Level of Service Handbook](#)
- [FDOT Project Traffic Forecasting Handbook](#)



Collected data is critical but it should be backed up by a good knowledge of the area only gained through field visits. Moving once again to good advice from the "[Mike on Traffic](#)" blog. This entry is pertinent to both applicants and reviewers to ensure the accuracy of the assessment for the existing transportation system that would be impacted by a project.

Top 9 Things to Review with a Field Visit

The aerials are not always right

Why do you need to go out in the field when everything is right there on the aerial? First, because the aerials aren't always right.

The aerials may not be up to date. You may need to adjust your data collection to account for reality. If a traffic study is based on an obsolete road network it would have zero credibility.

Field Review of Physical Features

There are a lot of important details you can't always see on an aerial.

The second reason to go out to the site is that there are a lot of important details you can't always see on an aerial. In addition to verifying the information on your hand sketches is correct, add the following details to them while you are in the field:

- Transit Stops
- Traffic Signal Operations (Protected Left Turn Phasing, Protected/Permitted Left Turn Phasing, etc.).
- No Turn on Red Restrictions
- Parking Restrictions
- Speed Limits
- Road construction in the area that would impact normal traffic counts
- Construction or signs for new developments near the site
- Excessive grades or slopes that make widening a road/intersection difficult
- Any objects on corners of intersections that block a clear view of oncoming traffic or pedestrians

Take plenty of pictures

While you are at the site, take photographs. Get one photo of each approach to each study intersection. A smartphone can be a useful field tool with its maps, camera, stopwatch, etc). Keep a log of the photos to identify them later. These pictures may save you from future field visits.

Field Review of Traffic Operations

In addition to documenting the existing conditions of the environment, you should observe how traffic operates in your study area during peak hours. Things to look for include:

- Do shoulders get used by cars as separate right turn lanes?
- Do the traffic signals along a corridor seem to be coordinated so through traffic moves down the corridor smoothly?
- Using a stop watch to perform a few spot checks of each traffic signal cycle.
- Are there any queues that back up out of turn lanes into the through lane or do queues extend back from one intersection blocking the upstream intersection?
- Is it difficult to turn onto a major street from a cross street which is controlled by a stop sign?
- Consider the routes traffic will take to get to or leave your site.

WEB Top 9 Things to Review



These firsthand observations can add credibility with the public. If you have been out there during peak hour, you can respond to comments with personal experience and how these observations were incorporated into your recommendations.

A field visit is a good part of the quality control process to ensure the details in your traffic study are correct.

Source: Mike on Traffic - Mike Spack - www.mikeontraffic.com/top-9-things-to-review-with-a-field-visit/

WEB

Top 11 Items from Aerials



Here's a link to another link to a useful article from Mike Spack at "Mike on Traffic" – **11 Items to Get From Aerials When Preparing for a Field Visit**

www.mikeontraffic.com/11-items-to-get-from-aerials-when-preparing-for-a-field-visit/

2.3.5 Land Use and Demographic Data for Large Scale Models

See Exhibit 15
for guidance on
converting employment
data into business square
footage.

Land use and demographic data will include future land use classification, intensity, population, employment, comprehensive plan information. If a large scale transportation model will be used in the analysis, the transportation analysis zones (TAZ) representing the location of the proposed development should be identified. The socioeconomic data contained in the ZDATA files of the model should be verified for accuracy and reasonableness within the study area.

Pursuant to Section 163.3177(1)(f)3., F.S., demographic data for comprehensive plans must be based upon permanent and seasonal population estimates and projections, which shall either be those provided by the University of Florida's Bureau of Economic and Business Research (BEBR) or generated by the local government based upon a professionally acceptable methodology. For land use, local governments must provide a minimum amount needed for land uses based upon BEBR midrange for a 10 year planning period. However, need must be more than just population projections and must provide adequate supply for real estate market. For areas designated as Areas of Critical State Concern, as defined under Section 380.05, F.S., associated administrative rules shall apply.

Other committed developments should also be identified, within the area of influence. Also document adopted amendments to the comprehensive plan or other development agreements. The extent of data required for other committed development should be agreed upon during the methodology meeting.

Model Data Considerations

When considering the use of large scale transportation model data, it is important to understand the model application and the base data. Traffic projections from fringe areas of a travel demand model are often considered less reliable and should be carefully evaluated.

Level of Service Analysis

FDOT has adopted a level of service policy and procedure in 2012. The Policy statement is the following:

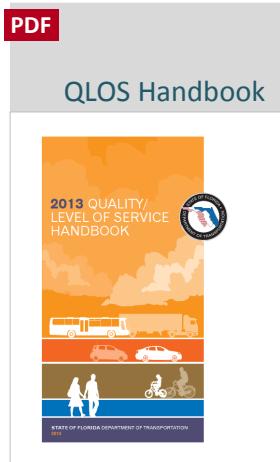
It is the Department's intent to plan, design and operate the State Highway System at an acceptable level of service for the traveling public. The automobile mode level of service standards for the State Highway System during peak travel hours are (D) in urbanized areas and (C) outside urbanized areas. See Procedure No. 525-000-006, Level of Service Standards and Highway Capacity Analysis for the State Highway System for more information. No specific level of service standards are established for other highway modes (e.g., bus, pedestrian, bicycle). Quality/level of service for these modes is determined on a case by case basis.

PDF

LOS Procedure
525-000-006-a

The complete procedure can be found at:

<http://www.dot.state.fl.us/planning/systems/programs/sm/los/pdfs/LOS%20Procedure.pdf>



LOS determinations should be based on methodologies consistent with the latest *Highway Capacity Manual*, the latest *FDOT Quality/Level of Service Handbook* or a methodology determined by FDOT as being comparable.

For existing conditions, Level of Service analysis should be performed along each segment of the roadway system identified in the methodology component within the area of influence. These facilities will include the major roadways and intersections within the study area.

Critical intersections for analysis may be identified based on the importance of the roadways or the volume of development traffic using the intersection. Although arterial facility LOS is stressed in highway LOS standards, detailed analyses at selected intersections may be necessary to evaluate specific movements. Both facility LOS and intersection analysis are appropriate to determine impacts from proposed developments.

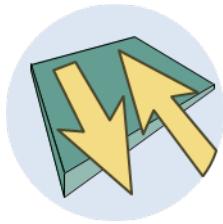
The procedures in the latest version of the *FDOT Quality/Level of Service Handbook* may be sufficient to perform existing condition analyses at the facility level.

If a freeway interchange is affected by the proposed development, additional freeway segment, ramp and weave analysis procedures from the latest approved software may be required. A more detailed description of the FDOT Level of Service analysis tools are near the end of this chapter under [Chapter 2.10.1](#).

For more information on interchange analysis you may refer to the Interchange Access Request Users Guide and the Traffic Analysis Handbook. These are expected to be completed in 2014. To check on their availability at: www.dot.state.fl.us/planning/systems/programs/sm/intjus/default.shtm.



2.4 Trip Generation of the New Development



Trip generation is the process by which the number and type of trips associated with a given land use is estimated. Trip generation may be the most critical element of the transportation impact analysis reviewed by FDOT because it estimates the amount of vehicular travel associated with a specific land use or development. An estimate of trip generation from the development using FDOT and professionally accepted methods should be required in impact studies even when the model method is used.

A/V

Trip Generation Basics and Pitfalls

Trip Generation Basics and Pitfalls

Adjustments to trip generation that are made to lower the gross trip generation (such as internal capture percentages for mixed-use projects, pass-by capture rates, etc.) should be accompanied by sufficient logical justification or empirical data early in the process. FDOT suggests this be a major item of discussion during Methodology Development and during the ongoing analysis.

(Note this presentation was made when the 7th Edition of Trip Generation was the most current. However it still covers the important concepts)

2.4.1 Trip Generation Data

A trip end either begins or ends in the development

One of the most recognized and comprehensive compilations of trip databases available

To understand trip generation, it is first necessary to define a trip end. For the purposes of this handbook, a trip end is a single or one-direction vehicle movement with either the origin or the destination (entering or exiting movement) inside the study site and one origin or destination external to the land use.

To avoid confusion, all “trips” in this section of the handbook (regarding Manual Methods of Trip Generation) will be vehicle movements. The term “person-trips” will be used when the number of people traveling is referred to. Person trips are usually a term used in the model calculations of trip generation. For example, a family of four traveling from home to school would represent one vehicle trip and four person-trips.

Trip generation databases have been developed over time and can be used to estimate the number of trips likely to be associated with a given land use. One of the most recognized and comprehensive report of trip generation data available is the ITE's *Trip Generation Manual*. It is comprised of data collected nationally. A wide variety of land uses are represented in *The Trip Generation Manual*, though users should exercise judgment in selecting and applying trip rates for their situation. <http://www.ite.org/tripgeneration/trippubs.asp>

Source: ITE *Trip Generation, 8th Edition*, Ite.org

Data Applicability

Evaluate whether the trip generation data is applicable to the specific project

The Trip Generation Manual contains a tremendous amount of data; however, that data is not necessarily appropriate in all situations. *The Trip Generation Manual* users should carefully review the data available and consider its applicability in the context of each project's circumstances.

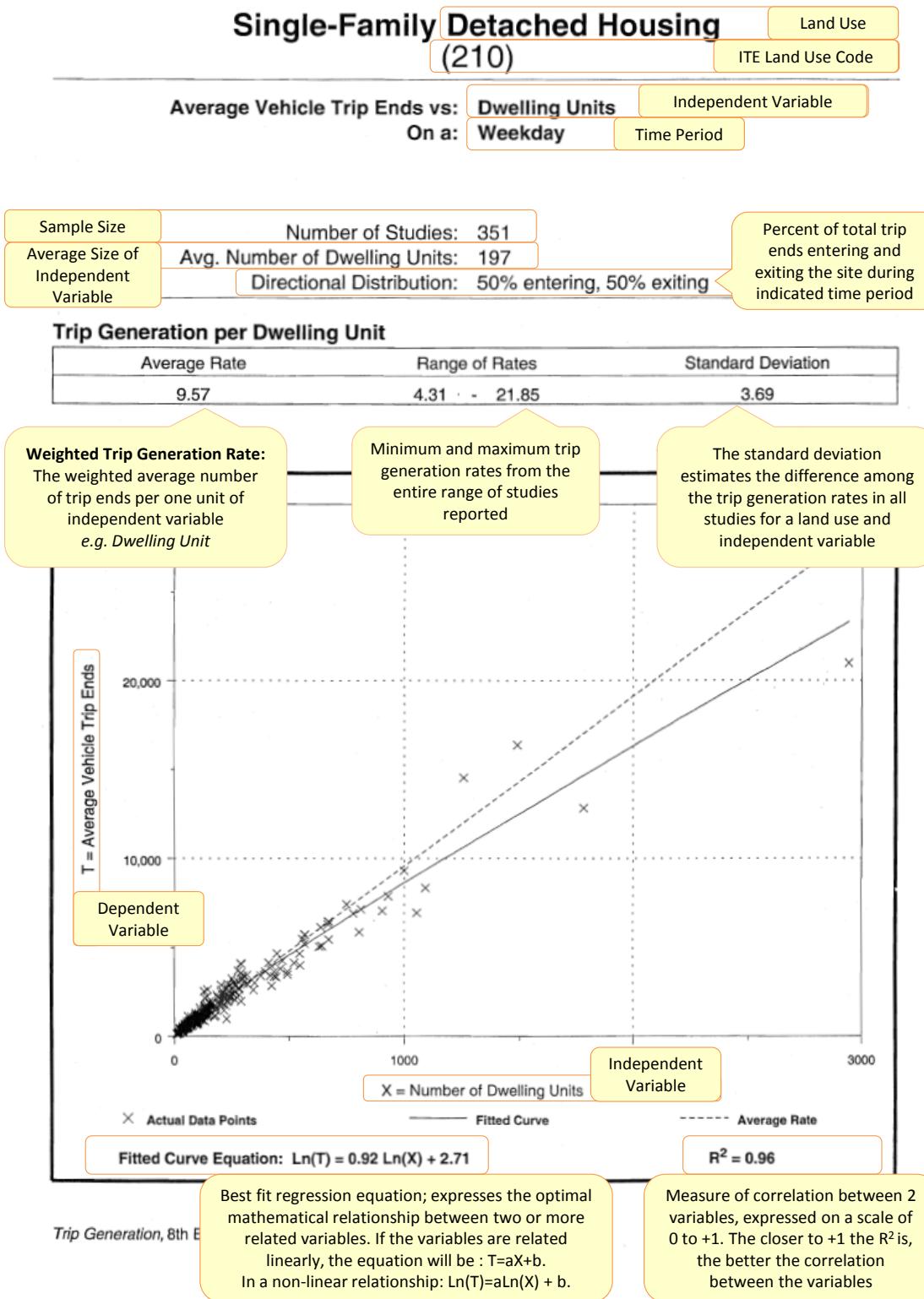
Some key items to consider in assessing the usefulness of *The Trip Generation Manual* data for a particular application include:

- Selection of the land use closest to that being assessed is critical (Read the land use description about where and when sites were studied). Many land uses in ITE may sound similar but have very different trip generation rates.
- The number of data points available: some of the ITE data is very limited in terms of sample size and/or number of analysis periods
- Trip patterns change from suburban to urban areas (most of the data in *The Trip Generation Manual* reflects suburban development settings with free parking and limited transit service)
- Trip patterns may evolve over time (for example, drive-in bank trip generation rates have steadily decreased over the last decade due to the evolution of the banking industry and the introduction of direct deposit, web-based banking, automatic teller machines , etc.)
- ITE encourages users, when practical, to collect local data to supplement the ITE data; particularly in situations where data samples are small or other conditions warrant

It will sometimes be necessary to collect additional empirical data or document other supplemental studies in the absence of sufficient comprehensive data from *The Trip Generation Manual* or other resources.

Collect additional empirical data when needed.

Exhibit 10
ITE Trip Generation Manual Page Example



We have tried to have the most up to date information. However, due to changes in legislation and acceptable practices, we recommend you check with the links in this handbook.

2.4.2 Use of Trip Generation Rates or Equations

ITE's Trip Generation Manual
(section 3.4) provides guiding principles for selecting equations or average rates

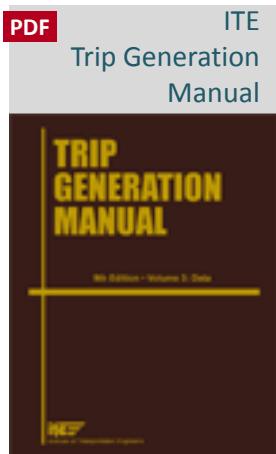
The average rates provided in ITE's *The Trip Generation Manual* are given, but you should look at the range of data selected and the number of sites sampled.

Trip generation equations are also provided in ITE's *The Trip Generation Manual* that can provide better estimates of trip generation under certain conditions. In general, the fitted equations tend to reflect a decreasing trip rate as building size increases. This is particularly true with large shopping centers and office developments.

Many of the land use categories in *The Trip Generation Manual* provide both an average trip rate and an equation to estimate the number of trips for that use. FDOT often applies the guidance in ITE's *Trip Generation Manual* for selecting regression equations or average rates. The *ITE Trip Generation Manual* only provides equations where their national committee felt there was sufficient data. This does not always mean that the equation is always the best choice.

Section 3.4 of the *Trip Generation Handbook, Second Edition* contains a detailed method for determining the choice of average rate or equation. However, sometimes a plainly numerical approach as suggested in the *Trip Generation Handbook* is inadequate. The professional will look at the size and type of development they are proposing and see where it "fits" in the graph provided. The professional should look at the number of similar size developments before recommending the trip generation method.

2.4.3 Trip Types

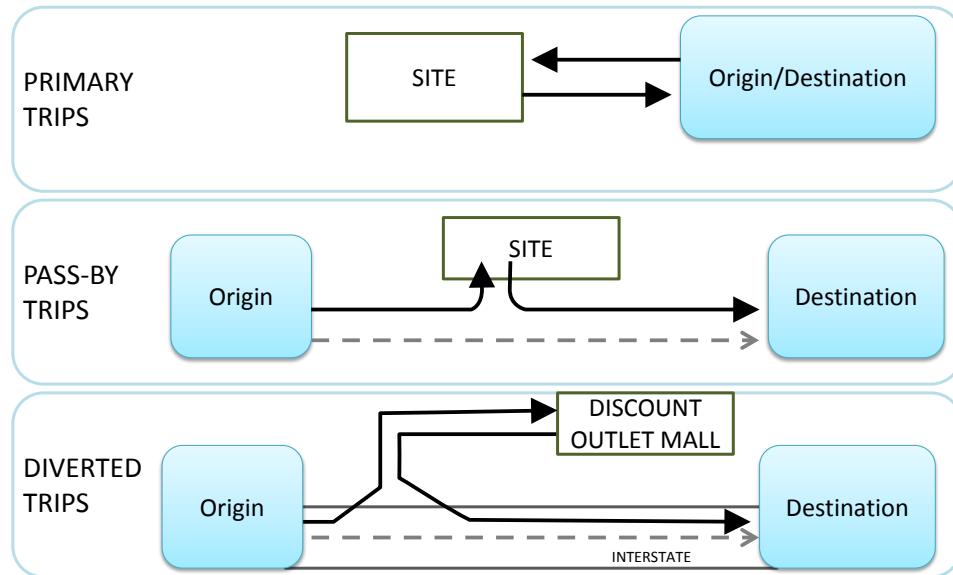


After the number of trips has been estimated, the type of trips should also be addressed. The *Trip Generation Manual* 9th Edition defines three basic types of trips generated by a development: primary, pass-by and diverted. Exhibit 11 illustrates the types of trips from the *ITE Trip Generation Manual, 9th Edition* illustrates the trip types.

Exhibit 11

Types of Trips

Source: ITE



Primary Trips

Primary trips are trips made for the specific purpose of visiting the generator. The stop at the generator is the primary reason for the trip [ITE Trip Generation Manual, 9th Edition](#). Primary trips are new trips on the network.

Pass-by trips

With pass-by trips, the total driveway volumes are not reduced.

Pass-by trips are trips that are currently on the roadway system and pass directly by a generator on the way to the primary destination. These trips are involved in a “trip chain” of destinations with neither the origin or the final destination of the primary trip being in the development. Pass-by trips can be convenience-oriented; for example stopping to refuel a vehicle during a commute from work. Pass-by trips are applied only to retail-oriented land uses and would have traveled on the roadway adjacent to the retail land use even if the retail was not present.

Diverted trips

With diverted trips, the total driveway volumes are not reduced.

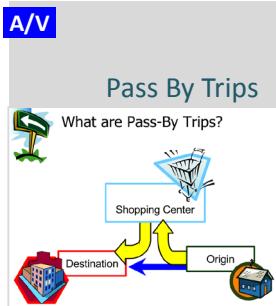
Diverted trips are counted as new trips where they travel on segments required to reach the site where they previously did not travel

Diverted trips, like pass-by trips, are not new to the system. However, diverted trips are now using a segment of the roadway system that they previously were not. Facilities that receive diverted trips may require analysis of the impacts of the development trips.

In most situations, no reduction is made for diverted trips because they tend to be difficult to account for. Reviewers may allow consideration of diverted trip impacts on a case-specific basis when there is a clear reason for doing so and the diversion can be reasonably estimated. For example, a reasonable case might be made for considering diverted trips in the analysis of a large commercial development proposed to be located adjacent to an Interstate interchange. If use of diverted trips were to be justified and supported by FDOT in a situation such as the example above, then the diverted trips would be treated similar to pass-by trips. However, their impact to the development access points and signals is important.

In all cases, pass-by and diverted trip rates should be justified by the applicant, and clearly documented in the analysis.

Estimating the Number of Pass-by & Diverted Trips



The *Trip Generation Manual 9th Edition* provides pass-by and diverted trip data for several different retail land uses as well as guidance on the process for estimating pass-by trips.

The A/V presentation provides examples of pass-by trips, works the example of 10% of Adjacent Street traffic on page 44 and additional examples.

Pass-by Trip Impacts

Properly estimating the number of pass-by trips is important because even though they do not add extra trips to the surrounding roadway system, they do impact the traffic at the driveways and all the turning movements expected at these driveways.

- The percentage of trips that can be classified as pass-by for a site will vary by the type of land use, time of day, type and volume of traffic carried on the adjacent street, and the size of development;
- Credit for pass-by trips is usually only allowed for retail and some commercial land uses such as fast-food restaurants with drive-through windows, service stations, and drive-in banks; and
- The number of pass-by trips is calculated after accounting for internal trips ($\text{Total Site Trip Generation} - \text{Internal Trips} = \text{External Trips}$; apply pass-by reduction to External Trips).

The number of pass-by trips is calculated after accounting for internal trips

Pass-by rates should be approved by the lead reviewing agency

In all cases, pass-by rates should be justified by the applicant and approved by the reviewing agency. The pass-by trips estimated in the trip generation component are preliminary.

2.4.4 Explanation of the 10 Percent of the Adjacent Street Traffic

Final pass-by trips are estimated following trip assignment when the number of pass-by trips considered can be compared with the total traffic on the facility. Proper application of pass-by trips requires that the following check for a reasonableness or “common sense” check, involving a comparison of the number of pass-by trips and assuring that they do not exceed 10 percent of the adjacent street traffic volume during the peak hour. Explanation is provided in the next section.

The FDOT-approved methodology for determining the 10 percent reasonableness check divides the total pass-by trip reduction by the adjacent-street traffic volume. This process ensures the resulting pass-by volume is less than 10 percent of the adjacent street traffic. The calculation would become more complex when the development is served by more than one arterial roadway. Another consideration is the availability of median openings directly serving the property. This 10 percent value is a rule-of-thumb and not a statistically studied factor and should only be used as a measure of reasonableness.

Historically, some applicants and reviewers determined the maximum allowable pass-by trips by taking 10 percent of the adjacent-street traffic and allowing this number of trips to enter and then exit the retail development. FDOT does not accept this method because it results in up to 20 percent of adjacent street traffic to be subtracted from the base trip generation as pass-by trips.

Example

Proposed: 500,000 gross square feet of shopping

1,811 peak-hour generation (*7th Edition Trip Generation*)

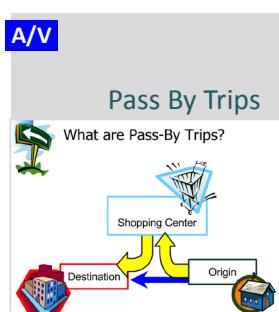
869 entering, 942 exiting (48%/52% split from *Trip Generation*)

24% pass-by reduction (*Trip Generation Handbook*)

= 435 pass-by trip ends (209 entering, 226 exiting)

Adjacent street traffic volume (peak-hour two-way): 3,000

10% of adjacent street traffic = 300



Because the calculated number of pass-by trips (435) exceeds 10 percent of the adjacent street traffic (300), the number of pass-by trips should be reduced to 300 and the directional split re-applied. Exhibit 12 illustrates the correct methodology. This same method can be used for more than one roadway and also take into account medians which redistribute left turns into properties, only the calculations will be more complex.

Exhibit 12
Application of
10 Percent Pass-
by Trips

10% Pass-by Trip Example

for a 500K ft² Shopping Center

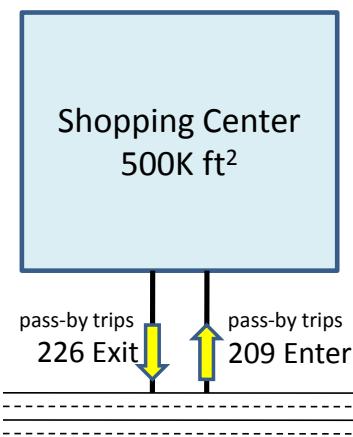
Peak hour two-way traffic = 3000 v/hr

ITE Trip Generation peak hour trips
 Pass-by rate = 24% pass-by trips
 New trips generated

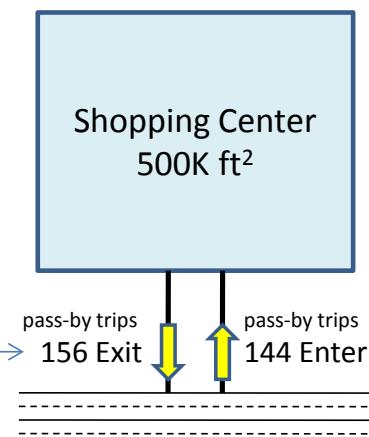
Initial	Correct
1811	1811
- 435	- 300
1379	1511

10% of 3000 =
 300 maximum
 pass-by trips

WRONG



CORRECT



Adjust pass-by trips to equal 300

Pass-by Trip Assignment

Pass-by trips are assigned to the development's driveways based on local knowledge of expected trip patterns and traffic volumes. When considering pass-by trips, the distribution of driveway volumes may change and be related to the street traffic. The analysis of pass-by trips should occur in two steps:

First, determine the number of new trips and pass-by trips for the site, then assign the pass-by trips in proportion to the street traffic and the driveways, and then assign the new trips in accordance with standard trip distribution procedures. Once the number of pass-by trips is determined, their assignment should be prepared in a way that reflects local travel patterns.

The following section requires some knowledge of large scale regional transportation planning models. In Florida, the most popular modeling framework is the Florida Standard Urban Transportation Model Structure (FSUTMS). This section will be using technical terms. For more information on FSUTMS, see [Chapter 2.5.4](#) and the [FSUTMS website](#).

2.4.5 Pass-by Trips and Model Volumes

Special generators modeling using FSUTMS should be based on total external trip generation before any pass-by trip reduction

Travel demand models such as FSUTMS are sometimes used to develop traffic estimates. Because site trips will tend to displace non-site trips when comparing a “with and without” site trip modeling process, special generator modeling using FSUTMS should be based on total external trip generation before any pass-by trip reduction. Trip assignments are run with and without site development (identifying total and development related trips on all links). Pass-by trips can then be deducted from the site development volumes on the highway network links (though the pass-by trips should remain at the site driveways). In all cases, pass-by and diverted trip rates should be justified by the applicant and approved by the lead review agency.

Model Method of Analysis for Trip Generation

Model trip generation estimations of the site being studied should be adjusted to match estimations from ITE's Trip Generation Manual or other approved method

The model method of site impact analysis typically uses an adopted regional travel demand model for development generated trips. Model trip generation estimations of the site being studied should be adjusted to match estimations from ITE's *Trip Generation Manual* or other approved method. Trip generation should be calculated off line using ITE's *Trip Generation Manual* or other approved method. Model trip generation estimations should be adjusted to match estimations from ITE's *Trip Generation Manual* or field data. The following summarizes the steps required to estimate trip distribution and internal capture using regional travel demand models:

- 1. Develop a new transportation analysis zone (TAZ) for the development and provide connectors from this zone's “centroid” to the transportation network. The connectors should be coded consistently with other centroid connectors in the model (facility type, area type and number of lanes). The connections should be made to a facility that is appropriate to the intensity and type of land uses associated with the development and is consistent with the preliminary site access plan. Residential and nonresidential land uses should be modeled in separate TAZs unless they will be located in a single mixed-used site. Socioeconomic data consistent with the development program should be coded within ZDATA 1 and ZDATA 2 files.**
- 2. Conduct initial model run to:**
 - Obtain initial person trip generation outputs to extract the trip purpose percentages.
 - Extract total vehicle trips from the development zones using the O-D matrix output.
- 3. Estimate site trip generation by using ITE's *Trip Generation Manual*.** Although preliminary estimates of pass-by and diverted traffic may be estimated using information contained in ITE's *Trip Generation Manual*,

pass-by and diverted trips cannot be calculated when using the model method and may therefore be ignored.

4. **Compare vehicle trip generation obtained manually to the large scale transportation planning model.** If the difference is greater than 5 percent for any given land use, the total external site trip generation obtained using the planning model should be adjusted until convergence occurs with manually estimated trip generation using the following methodology. Identify any difference in vehicle trips between manual and model calculations.

- Convert vehicle trip difference to person trips by using vehicle occupancy factors coded within the model.
- Insert person trip difference values in the ZDATA3 file. Trip purpose percentages obtained from Step 2 should be assigned to person trips entered into the ZFDATA3 file.
- Rerun the model and repeat Steps 2 through 4 until convergence is obtained between the manual and model vehicle trip values.

Note: Later iterations may be required to reach a level of convergence that satisfies the lead reviewing agency. A rule of thumb of a maximum difference of 5 percent between the manually generated and model generated vehicle trips for the project is commonly used. A table comparing the trip generation based on ITE's *Trip Generation Manual* and the model-generated trips should be provided for each development TAZ.

Note: If the model being used contains transit and highway networks, the total of automobile trip making (single-occupant, and HOV) should be compared to the ITE-based trip generation reduced for the estimated transit usage approved by FDOT.

5. Estimate internal capture using the guidelines contained in ITE's *Trip Generation Manual* or other mutually agreed to method.
6. Calculate internal capture using the planning model. Internal capture is estimated by planning models as trips originating and arriving within project TAZs. The inclusion of intrazonal trips (trips that never leave a project TAZ) in internal capture estimations are subject to approval by FDOT. Model internal capture could be conducted based on the calculation methodology presented with FDOT approval.
7. If trips are anticipated to have an origin or destination external to the model's study area, ZDATA4 files should be adjusted. For instructions on distributing See [Chapter 2.5.4](#).

Redevelopment/ Existing Trips

Consider the number of trips associated with the existing use

If a redevelopment project is being analyzed, the analysis should consider the traffic associated with the existing (or previously existing) development for comparison purposes. If trip generation, distribution or assignment of trips associated with the new development is anticipated to be significantly different from the existing development, then existing site traffic data should be carried through the entire analysis in parallel to the new development to determine the resulting traffic impacts created by redevelopment. All documentation of development review trip generation estimates should clearly identify both existing and FSUTMS projected future trip generation associated with a particular property. Local land development regulations should also be consulted for specific requirements.

2.4.6 Limitations of Trip Generation Data

While offering the most comprehensive national trip database available, the *Trip Generation Manual* does not offer data for all situations. Some of the key limitations of *The Trip Generation Manual* include:

- Not all land uses are represented in the *Trip Generation Manual* database
- Most data collected for ITE's *The Trip Generation Manual* were collected in suburban locations with free parking and little or no transit service
- Much of the data was collected long ago and may not reflect the current trip generation of development

Due to data availability and the need to understand site specific conditions, professional judgment is required.

Neo-traditional developments seek to reduce the need for driving by providing a mix of land uses to serve residential needs and by providing a community design that supports walking and alternative modes of travel. Developments where neo-traditional concepts are proposed should be carefully reviewed to understand the trip making characteristics of the area. Discussions should take place to agree on the best method to quantify trip reduction, if any.

Neo-Traditional Developments

Transit-Oriented Developments

WEB

www.fltod.com



As defined in Section 163.3164(46), F.S., Transit-Oriented Developments (TODs) are compact, moderate to high intensity and density, mixed use areas that are interconnected with other land uses which support multimodal transportation options. These areas are usually within one half mile of a transit stop or station that is designed to maximize walking trips and access to transit. They also are characterized by streetscapes and an urban form oriented to pedestrians to promote walking trip to stations and varied other uses within station areas. One quarter-mile and one-half mile distances represent a 5 to 10 minute walk time, which is the amount of time most people are willing to walk to a destination.

PDF**Accessing Transit****ACCESSING TRANSIT**Design Handbook for Florida
Bus Passenger Facilities

Version II, 2008

Florida Planning and Development Lab
Florida State University**WEB**FDOT Public
Transit websiteFlorida Department of
TRANSPORTATION

Home About FDOT Contact Us Maps & Data

Public Transit Office

**Special or Unusual
Generators**

The reasoning and data used should be documented and approved by FDOT prior to use

The most intense and dense development is typically located within the one quarter mile radius (transit core). Developments' intensities and densities gradually decrease out to the one-half mile radius (transit neighborhood) and the one mile radius (transit supportive area).

FDOT is interested in the development of TOD strategies and guidance to promote land use policies and designs to leverage statewide investments in multimodal transportation systems.

Additional information about FDOT transit initiatives and resources can be found at the [FDOT Public Transit Office website](#).

When a proposed development cannot be adequately described by *The ITE Trip Generation Manual*, new trip generation data may be required based on the type, intensity and timing of trips to be generated. Judgment may be used to recommend trip generation characteristics that are appropriate for the development. However, the reasoning and data used to support these estimates should be documented and approved prior to use. Examples of special or unusual generators include unique places like outdoor bazaars, a motorcycle sales shop, and other uses not well represented by data contained in *ITE's Trip Generation Manual* are theme parks, and venues with special events.

Below are examples of recent FDOT research to address the trip generation characteristics of selected land uses. These research efforts aim to analyze unique, under-studied land uses such as those listed above, as well as those believed to have different rates than those found in ITE guidance.

In 2011, FDOT studied the following land uses:

- Discount Superstores, such as Super Wal-Mart and Super Target
- Home Improvement Superstores, such as the largest Lowe's and Home Depots
- Major Single Owner Distribution Centers – these can be over one million square feet and serve one retailer, such as Wal-Mart or Winn Dixie
- Small Box Stores, such as Family Dollar and Dollar General

After 2011, FDOT has studied other land uses such as:

- Large Convenience/Gas Station stores, many of these have over 12 fueling positions and over 2,000 square feet of retail space. Some feature specialty food and beverage centers
- Student Suite Apartments, where each bedroom has a bathroom and the bedrooms join a common living, eating, and cooking area.

Alternatives to ITE Trip Generation Data

*Local trip data should be collected in accordance with ITE's **Trip Generation Manual**, Chapter 4 requirements and at least three different sites are required*

Given these limitations, it is sometimes necessary to adjust trip rates to reflect documented local conditions and/or develop additional trip generation procedures. First, a review should be conducted to determine if other applicable data is available. Trade publications such as ITE Journal, university studies, government studies, and studies by other recognized parties are made available from time to time and often serve as an interim guidance until incorporated into a future edition of *The Trip Generation Manual*.

Lacking any published data, a common alternative to using data from ITE's *Trip Generation Manual* is to collect data from other developments of similar use and size. Local trip data should be collected in accordance with ITE's Trip Generation Manual (Chapter 4), requirements, and three or more sites may be required.

2.4.7 Internal Capture Rates for Multi Use Developments

Estimating an internal capture rate for a mixed use development is often one of the most debated and challenging steps in the overall site transportation impact assessment process. Internal capture rates vary by the mix of land uses, size, and location context. Location context consists of factors such as remoteness, presence of competing retail, and job destinations.

Because there are so many factors, FDOT cannot recommend just one method or one set of internalization factors to be used for all mixed use developments. Research done in the past provides guidance on the best way to estimate internal capture. Whatever is the chosen method will need to be discussed and agreed to by the people and agencies involved in the analysis.

The Importance of the latest FDOT Research on Internal Capture

The most recent research done by FDOT shows that the internalization rates will vary greatly depending on the type of mixed use development is being studied. FDOT studied multi-use developments in suburban areas, and those in dense transit oriented areas. The research shows that the factors you would use, let's say between on-site residential and on-site retail would be very different in a true transit oriented, tightly integrated development, than a mixed use development which is auto oriented, single family residential oriented, and has a standard shopping center at its entrance.

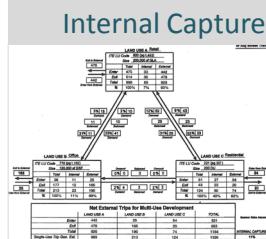
The FDOT study, *Trip Internalization in Multi Use Developments* BDK84 977-10, is expected to be complete by April 2014. You can check for updates or the final report at:

www.dot.state.fl.us/research-center/documents.shtm

The ITE Trip Generation Handbook contains a method where three major land uses are used to balance trips between the three uses (residential, retail, and office). Examples of this method can be found below from the Trip Generation Handbook. For more readable versions, use the links found under each exhibit.

Exhibit 13 Internal Capture Example 3 land uses

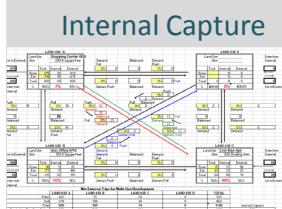
PDF



[View a full page version](#) of internal capture for 3 land uses in Exhibit 13.

Exhibit 14 Internal Capture Example 4 land uses

XLS



This spreadsheet shows internal capture for 4 different land uses. [Open the spreadsheet](#) for Exhibit 14.

In evaluating a proposed internal capture rate, the following general guidance should be considered:

- Separate land uses within “Shopping Centers” (ITE code 820) are generally not considered a mixed-use development because of the way shopping center data has been collected. Historically shopping center trip generation data was collected for the entire site, such as restaurants and movie theaters. Even trips from gas stations and

restaurants (on-site, but not physically connected to the shopping center) have been counted. Therefore, internal trips have already been taken into account in those studies.

- Sites having a mix of residential and nonresidential components have the highest potential for internal capture trips. Mixes of nonresidential land uses are less likely to have a significant internal capture rate unless a hotel or motel is contained within the site.
- Internal capture rates should only be used for communities that have income compatible residences and employment centers. The design of the internal roadway system/site circulation system of the development may impact internal capture. A well-designed development with good internal connectivity and pedestrian/bicycle facilities will make it more convenient for trips to stay on site.
- If there are ample nearby substitutes for internal capture trips, the internal capture rate may need to be adjusted. For example, if a mixed-use development is located near other large retail development, the internal capture rate may be adjusted downward to reflect these nearby competing destinations.
- Internal capture rates should be calculated for each phase of a multiuse development. If development plans change during the review process, all internal capture calculations should be updated and the site impact assessment should be submitted for additional review. Other methods and techniques have been studied and proposed for internal trip capture estimates.

A/V

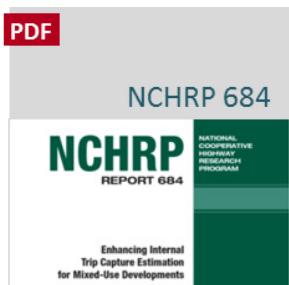
What is Internal Capture?

Internal Capture Presentation (Audio/Visual Presentation)

This presentation on Internal capture is shown using the ITE *Trip Generation Handbook* 2001 version. However, important concepts can be gained by viewing.

National Cooperative Highway Research Program (NCHRP) Report 684 Enhancing Internal Trip Capture Estimation for Mixed-Use Developments

In 2011, the National Cooperative Highway Research Program (NCHRP) completed a study on enhancing trip internalization estimates especially for modern emerging land uses served by transit and well integrated land uses. The report and technique now recognizes three more land uses than the ITE method of three land uses. In addition to the original residential, retail, and office, they added restaurant, cinema, and hotel.



Using the Latest NCHRP Report 684 Internal Capture Estimation Techniques

The FDOT has not fully evaluated the use of the new NCHRP technique. Therefore the agency has no hard-and-fast guidance on the use at this time. It is different than the technique found in the 2001 ITE *Trip Generation Handbook*. It has included new land uses such as movie theaters, Restaurants, and Hotels and allows adjustments based on walking distances between land uses.

WEB

FDOT Research Documents

Florida Department of TRANSPORTATION

Research Center

Research Center / Documents & Publications

Documents & Publications

FDOT is currently studying more developments in Florida to add to the professional knowledge of the issue, especially for use in Florida. The study, *Trip Internalization in Multi Use Developments* "BDK84 977-10", is expected to be complete in 2014. You can check for updates or the final report at:

<http://www.dot.state.fl.us/research-center/documents.shtm>

Any proposed methodology used to estimate internal capture should be clearly documented by the applicant and agreed to by the applicable reviewing agencies prior to the initiation of the study. It is recommended that the applicant go beyond simply stating how internal capture will be calculated and provide actual preliminary adjustment factors and sample calculations. This way, agencies can provide general comments early in the process.

In evaluating a proposed internal capture rate, the following general guidance should be considered:

- The ITE land use "Shopping Centers" (ITE code 820) is generally not considered a mixed-use development because of the way shopping center data has been collected. Therefore, internal capture rates should not be used to forecast trips when data from ITE code 820 is used. Sites having a mix of residential and nonresidential components have the highest potential for internal capture trips. Mixes of nonresidential land uses are less likely to have a significant internal capture rate unless a hotel or motel is contained within the site.
- Internal capture rates should only be used for communities that have income compatible residences and employment centers. The design of the internal roadway system/site circulation system of the development may impact internal capture. A well-designed development with good internal connectivity and pedestrian/bicycle facilities will make it more convenient for trips to stay on site.
- If there are nearby developments, the internal capture rate may need to be adjusted. For example, if a mixed-use development is located near other large retail development, the internal capture rate may be adjusted downward to reflect these nearby competing destinations.

- When using the ITE procedure, sites with multiple residential components (single-family houses, apartments, condos, etc.) should compute the trip generation for each residential type separately but record the trip generation value as only a single land use on the ITE worksheet. These residential trips would be documented as separate for all other purposes, other than internal capture.
- Internal capture rates should be calculated for each phase of a multiuse development. If development plans change during the review process, all internal capture calculations should be updated and the site impact assessment should be submitted for additional review.

Site specific data is needed to estimate a reasonable internal capture rate. Internal capture rates can have a major impact on the outcome of the analysis. The use of rules of thumb regarding minimum or maximum values is discouraged. What is needed is significant supporting analysis from the applicant.

Cautions on Using the Latest NCHRP Report 684 Internal Capture Estimation Techniques

WEB

NCHRP 684

Since the FDOT has not full evaluated the use of the new NCHRP technique, caution should be exercised. The three new locations used by the NCHRP team were all in town and well served by transit. They were considered neo-traditional developments. None were “new towns” as encountered throughout the state.

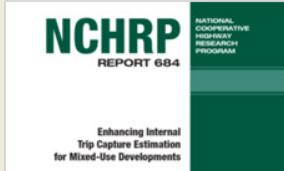
NCHRP Report 684 “Enhancing Internal Trip Capture Estimation for Mixed-Use Developments links

Summary

<http://www.trb.org/Main/Blurbs/165014.aspx>

PDF

NCHRP 684



The report

http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_684.pdf

XLS

NCHRP 684

The spreadsheet model

The resulting methodology of the research is incorporated into a spreadsheet model, which is available online for download.

http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_684.xlsx

2.4.8 Community Capture

A Definition of Community Capture

Community Capture is the reduction in the number of external vehicle trips generated by a large, mixed-use development reducing the overall impact of the proposed community on the transportation system outside of the development. Community Capture occurs due to the combined land-use, location, design, and multimodal characteristics of the development. Internal Capture, as accepted by the professional transportation community, recognizes that a portion of the total trips for a multi-use development may be satisfied within the development. The concept of Community Capture extends the application of internal capture to include potential trip interactions and reductions within the boundaries of large scale “New town” style, multi-use developments. In these large-scale cases, internal capture trips would be a wholly contained subset of community capture trips. While “Community Capture” and “Internal Capture” are different, some of the research and applications associated with Internal Capture may apply to Community Capture.

Where May Community Capture Be Applied?

Community Capture can be applied to a large, self-standing development, such as a new community or town, with a balanced mix of uses that may fulfill a significant portion of the community’s needs within the development. Section 163.3164 (32), F.S., defines “New town” as an “urban activity center and community designated on the future land use map of sufficient size, population, and land use composition to support a variety of economic and social activities consistent with an urban area designation. New towns shall include basic economic activities; all major land use categories, with the possible exception of agricultural and industrial; and a centrally provided full range of public facilities and services that demonstrate internal trip capture”. These communities may be separated by travel-time, design, or distance from other major land use concentrations. They provide a wide range of internal services, which may satisfy a significant portion of their needs within the community.

The community would make many off-site trips unnecessary by being of sufficient size to provide a balance of land uses, including a range of housing types and values, neighborhood and community retail centers, entertainment facilities, offices, and employment. The community would also provide a range of support services such as schools, civic institutions, houses of worship, public parks, and government facilities. Larger communities may have several town centers or villages, which embrace connectivity within, and between, each center and village with a transportation system of all modes, including pedestrian paths, bicycle facilities, and shuttles. Although the potential for Community Capture rates may be high before build-out, there may be an extreme imbalance of income compatible jobs such as high number of professionals but limited professional activity center uses within the community to employ them.

Numerical Factors for Community Capture

Because each free standing community will have unique characteristics, FDOT will not recommend minimum nor maximum values for Community Capture. Reasonable analysis of proposed developments will be used and will be verified by substantial and ongoing monitoring programs. Ideally, over time, agreement should occur on some ranges and measurement criteria. However, because this is an emerging topic, many of the early estimates will be negotiated, based on best professional judgment and verified with monitoring agreements.

Justification of Community Capture Values

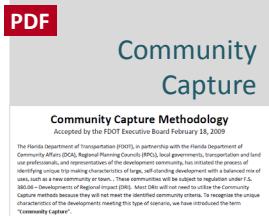
The justification will need to include summaries showing the numbers and percentages of trips served within the proposed development. For example, depending on the development, it could read like this,

"X % of the entering shopping trips expected in the PM peak hour makes up Y% of the total exiting shopping trips from homes within the community."

As a Development of Regional Impact (DRI), the proposed community will include the standard "Map H," development program summary, and build-out schedule as laid out in [Chapter 4](#). Additionally, there must be information provided in sufficient detail to clearly support and explain the process used to determine a proposed Community Capture value.

This analysis should be done for each phase, with an agreed upon monitoring program.

Using the Right Tools for Community Capture



No single tool for determining Community Capture currently exists. While refinements to existing tools, such as the modeling methodology described below, are currently under development, no one procedure has been demonstrated to provide a final Community Capture value. Until there is more experience and knowledge regarding Community Capture, reasonable analysis and negotiations, supported by substantial and detailed monitoring requirements will be used.

Commitment to Traffic Monitoring

Expanded traffic monitoring beyond the current basic requirements of the DRI annual/biennial report might be a required provision in accepting Community Capture rates. While the detailed needs of the traffic monitoring program will be determined through the traffic study process, elements such as origin and destination studies, trip generation studies, and an evaluation of land use mixes in the community and surrounding the community will usually be included in the monitoring program. Monitoring will probably be necessary before the development enters a new phase. If appropriate, trip characteristic assumptions and impact mitigation requirements will be revised, based on the monitoring.

The Factors Impacting Community Capture

Community Capture will go beyond Internal Capture, accounting for the unique trip making aspects of a large, self-standing development with a balanced mix of uses such as a new community or town. The concept focuses on:

Land Use Characteristics: A balance of land uses where form and function result in trips being satisfied within the development must exist for significant Community Capture to occur. Some of these factors are:

"Income Compatible" Uses: Residence and employment centers should be "income compatible" so residents have ample employment opportunities in the community. Employment centers should attract a reasonable amount of the workforce from within the community.

Type of Community: Is this a community planned for all age groups with job opportunities, or is it a retirement community? Is the new community primarily recreational? These issues can have an important impact on Community Capture.

Community Design: The design features of the community can affect both the number of external vehicle trips, as well as the internal trips using major roadways. For example, a well-designed development with good internal connectivity will make it more convenient for trips to stay on site. By providing alternative connections internal to the site, the number of vehicle trips needing to use a major roadway to traverse the site can be reduced. Internal capture is facilitated by a high level of connectivity and short travel distances between complimentary land uses.

Development Maturity: The project's fullest Community Capture may not occur until the complementary land uses mature. This may occur late in the development program. This will depend on the quantity and balance between complementary land uses. However, each phase or increment must mitigate the cumulative impacts to the regional network resulting from the current phase or increment and previously approved phases or increments.

Location Context: The location context of large, mixed-use developments may impact Community Capture in the following ways:

Remote Locations: For a remote location with a balance of complementary land uses, high trip capture may occur. For the trips not captured on site, longer external trip lengths will result because there would be few opportunities for trips to end near the site.

Competing External Opportunities: If there were ample nearby destinations (shopping, jobs, or entertainment) outside of the community, the Community Capture rate would likely be lower. For example, if a mixed-use development is located near other large developments, the Community Capture rate may be reduced.

Trip Generation of Isolated Communities: Discussion is ongoing regarding the trip generation characteristics of isolated communities. One assumption proposed is if a community is isolated, and a trip cannot be satisfied on site, some discretionary trips are less likely to occur. While not making a trip can be an option for some trips, such as shopping, it is not an option for work-based trips, which have the highest impact during the peak hours.

Multimodal Elements (Encouragement of transit, walking and cycling): The provisions of on-site transit circulators and integrated systems of bicycle, golf cart, and pedestrian paths may have an impact on vehicle trip generation and vehicle trip capture. Such amenities make it easier for trips to remain on site and may reduce the need for vehicle trips to occur.

Using large scale transportation models to estimate community capture

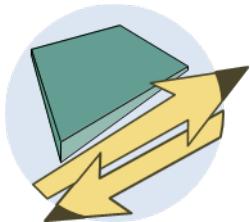
Currently, large-scale transportation models, such as FSUTMS, are not specifically designed for Community Capture purposes. It may be insensitive to some of the factors expected to affect Community Capture. To address some of the limitations associated with using travel demand models to estimate capture, a methodology has been proposed based on the following modifications:

- Consider land use categories in place of or in addition to traditional trip purposes. Within the model, use an increased selection of housing types (single-family, multifamily, rental apartments) and categories (high cost employed, retired, seasonal, medium cost employed, and low cost employed) and a trip purpose table for the expanded housing categories which can be used to create a residential trip generation and trip purpose profile to better match the development plan;
- Consider land use categories at trip attraction ends, such as retail/restaurant price levels to better match with residential income/price category. Also, consider for income/price category. Summarize the potential attractions within the community, based on the marketing plan, to better account for income differences;
- Create transportation analysis zones (TAZs) for each land use along with more detailed coded networks; and
- Carefully use travel-time friction factors within the model to make reasonable adjustments to the trip distribution patterns within the community and to the trip lengths external to the community.

While this methodology addresses some of the limitations of traditional travel demand models in determining community capture rates, a methodology like this needs to be tested to gain a better understanding of the sensitivity of the model to the proposed variables.

2.5 Projecting Future Conditions

2.5.1 Projecting Future Background Traffic



Future Background Traffic serves as the base condition in determining the impacts of development on the transportation system in future years. Background traffic is comprised of two elements:

- The expected increase from overall growth in through traffic (traffic movements through the study area that do not have an origin or destination in the study area)
- Traffic from other developments in the study area (other than the project being analyzed). For example, major committed developments defined as developments that have an approved development order (DRLs) or concurrency management certificate should be included in background traffic

Future Background (non-site) Traffic is typically estimated using one of three methods based on local area needs and conditions:

- 1) **Growth rate/trend methods** relying on historic trends. The growth rate (trends) and build-up methods are often referred to as “manual”, even if done with a computer. This method is typically appropriate in applications for:
 - Small projects that will be built within one or two years
 - Areas with at least five years of data showing stable growth and expected to remain stable
- 2) **Build-up methods** that use specific development information. This method is typically appropriate in applications for:
 - Areas experiencing moderate growth
 - Areas where multiple projects will be developed during the same period
 - Project horizon years of 5 years or less
 - Locations where there is thorough documentation of development approvals
- 3) **Model methods** involve the use of a large scale travel demand model, such as FSUTMS. Model methods are typically appropriate in applications for:
 - High growth areas
 - Large regional projects that may have multiple build-out phases
 - Locations where there is sufficient information available to calibrate the model to current and future conditions

Special Note on Using Large Scale Transportation Models

Modeling is a complex practice involving knowledge, experience, and particular understanding of the geographic area. The following discussion is meant to provide broad guidance. The practices in your area may vary. All modeling decisions should be made with regular contact with the transportation modeling staff of the appropriate FDOT District.

Considerations for selecting the appropriate method for a given situation include; the type of development project, the development within the study area, available data, horizon year, and agency requirements. It is possible that the applicant may be requested to document growth assumptions using more than one method. For example, rates based on using the growth rate (trends) method and the model method may be requested so that comparisons can be made.

2.5.2 The Growth Rate/Trend Method for Projecting Background Traffic

These methods are typically performed using trend or growth rate analysis of historic traffic data. The process of adding vested development traffic into background traffic is known as the “Build-up Method” and is described in further detail below.

Growth Rate/Trends Method

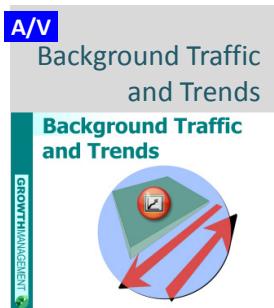
Growth rates based on trends are the most basic approach to developing future growth projections

The Growth Rate/Trends Method is the most basic approach for developing future growth projections (Reference: ITE [Transportation Impact Analyses for Site Development](#)), because the growth rate method reflects historical trends. The estimates using this approach will be dependent upon how the historical trend reflects the horizon year traffic. Traffic volumes should be used in developing growth trends and should be based on at least five years of data. However, care should be exercised in using data beyond five years as the results may over-emphasize past trends. For example, an area that has remained rural for many years may have recently changed to a “booming” growth area. In this case, the use of many past year counts will significantly under-predict future traffic. Note also that peak hour growth patterns do not necessarily follow daily traffic growth patterns.

The ITE’s Transportation Impact Analysis for Site Development has this caution:

The growth rate method is often insensitive to localized changes. It should not be used in cases where other extensive nearby development will occur during the study period, or where growth rates are unstable. Sizable errors could develop. Furthermore, growth in average daily traffic does not always parallel growth in peak-hour traffic, and most historical data are for average daily traffic. This method should also not be used where substantial transportation system changes (infrastructure changes) will alter traffic patterns within the study area, unless an accurate redistribution step is included.

Growth Rate/Trend Analysis Techniques



When using either traffic growth/change or a related demographic characteristic for forecasting background traffic, the following steps should be followed:

- Identify the data that is required based on the study area and the sources of relevant data
- Obtain the historic traffic-count data for the existing location(s) or demographic data
- Perform a growth trend analysis using one of three growth forms identified below and plot the patterns of traffic growth rates for the existing location(s)

Growth rate trend analysis is the method of fitting a mathematical curve that will adequately describe a trend in data for projection purposes. Three growth forms are used for site impact analysis:

1. linear
2. exponential
3. decaying exponential

Further details and an example application of each of these methods are presented in the following sections.

FDOT Trends Spreadsheet Program

FDOT developed and maintains a software analysis tool that can be used to prepare trend analysis. *Traffic Trends Analysis Tool* is an Excel-based tool that allows an analyst to use the Florida Traffic Information count database, select a traffic count station data set (from a database of count locations organized by County), and then prepare future trend analysis. The software allows for a comparison of results using all three growth techniques. The automated analysis process provides the analyst with opportunities to select the range of historic data to be included and consider multiple future projection years.

Example Application of Trend Analysis and the Trends Spreadsheet

The following example is provided to illustrate the use of the three equation based models for forecasting traffic volumes on a roadway (US 17/92) in Seminole County. Information regarding the applicability of the three growth trend techniques is also presented. Exhibit 15 summarizes the historical AADT on the roadway facility.

We have tried to have the most up to date information. However, due to changes in legislation and acceptable practices, we recommend you check with the links in this handbook.

Exhibit 15

Historical Volumes (Seminole County site 0040)

Year	Volume (AADT)
1998	21,000
1999	21,500
2000	19,000
2001	21,500
2002	25,500
2003	25,000
2004	25,000
2005	21,500
2006	23,000
2007	25,000

Linear Growth

Linear growth assumes a constant amount of growth in each year and does not consider a capacity restraint

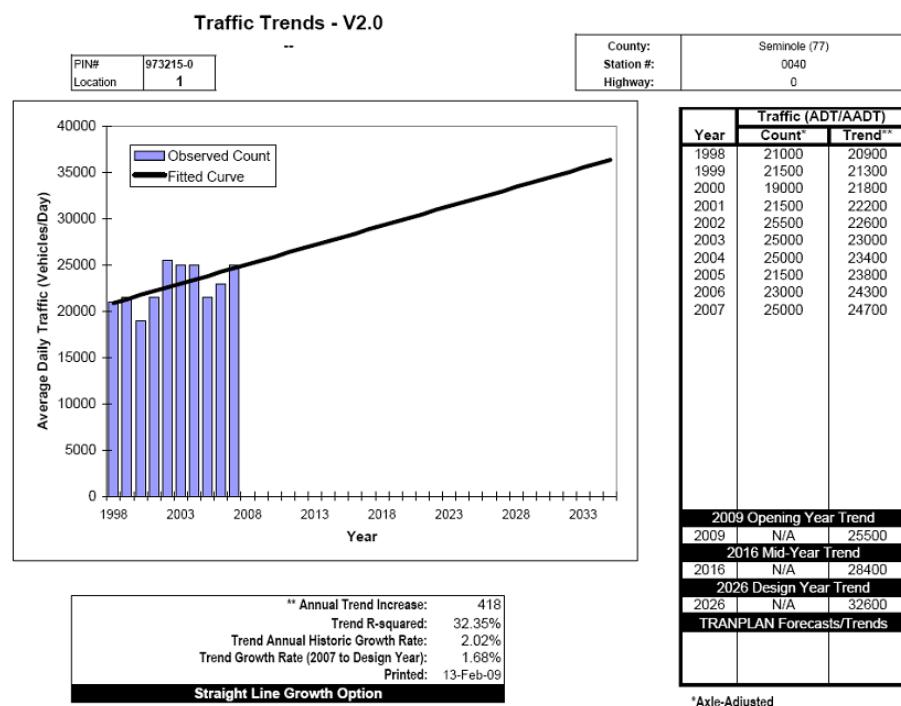
Linear growth predicts the future traffic based on a straight line developed from historic traffic growth. This model assumes a constant amount of growth in each year and does not consider a capacity restraint. The mathematical model for linear growth is as follows:

Future Volume = (Linear Growth Rate * Number of Years) + Base Year Volume

$$\text{Volume}_{\text{FY}} = G_{\text{Linear}} * N + \text{Volume}_{\text{BY}}$$

Where:
 G_{Linear} = Linear growth rate
 N = Years beyond the base year
 $\text{Volume}_{\text{FY}}$ = Future year
 $\text{Volume}_{\text{BY}}$ = Base year

Exhibit 16
Linear Growth Projects Using Traffic Trends



Using the Seminole County example data, the results of the linear growth rate estimated an average growth of 418 vehicles per year as shown in Exhibit 16. The software allows users to select three analysis horizon years per evaluation run. In this example, an opening year of 2009 was evaluated along with a mid-year of 2016, and a long-term horizon of 2026.

Exponential Growth

Exponential growth is most applicable where there is rapid growth and capacity available

Exponential growth predicts the future traffic based on a percentage of growth from the previous year. This model is most applicable where there is rapid growth and capacity available. The mathematical form of exponential growth is as follows:

$$\text{Future Volume} = \text{Base Year Volume} (1 + \text{Growth Rate})^{\text{Number of Years}}$$

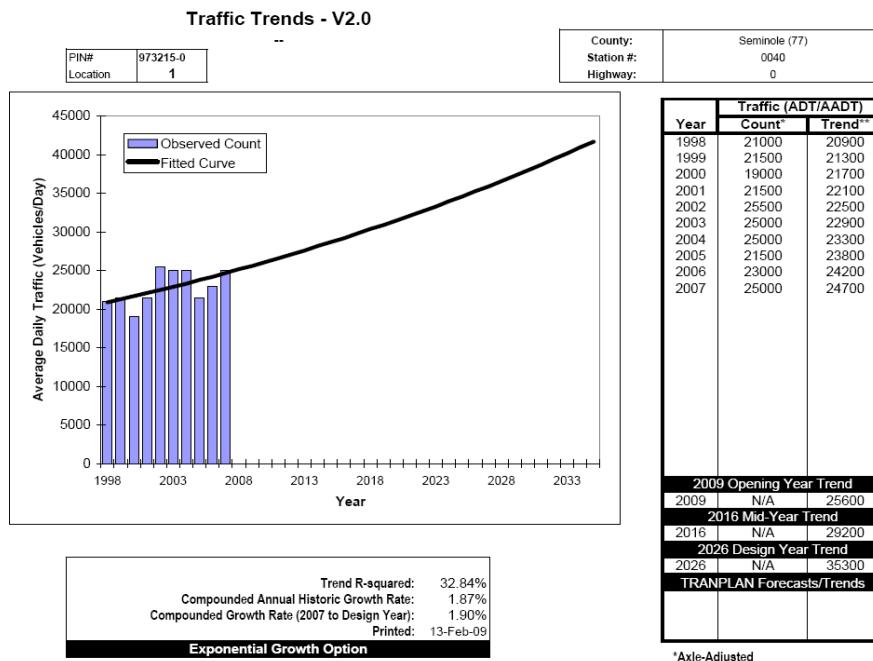
$$\text{Volume}_{\text{FY}} = \text{Volume}_{\text{BY}} * (1 + \text{Gr})^{(\text{FY}-\text{BY})}$$

Where: $\text{G}_{\text{Geometric}} = \text{Geometric growth rate}$

$\text{Volume}_{\text{FY}} = \text{Future year}$

$\text{Volume}_{\text{BY}} = \text{Base year}$

Exhibit 17 Exponential Growth Projects Using Traffic Trends



Decaying Exponential Growth

Decaying Exponential Growth is used to project future traffic in areas with a declining rate of growth over the analysis period

Decaying Exponential Growth is used to project future traffic in areas with a declining rate of growth over the analysis period. This model form is recommended for site impact analysis in more built out areas.

$$\text{Volume}_{\text{FY}} = \text{Volume}_{\text{BY}} * \sum_{\text{BY}}^{\text{FY}} \frac{X}{\text{FY} - \text{BY}} \sum_{\text{BY}}^{\text{FY}} \frac{X}{\text{FY} - \text{BY}}$$

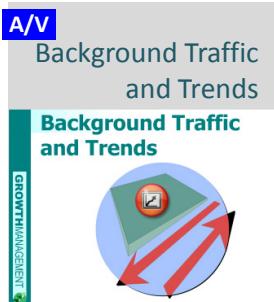
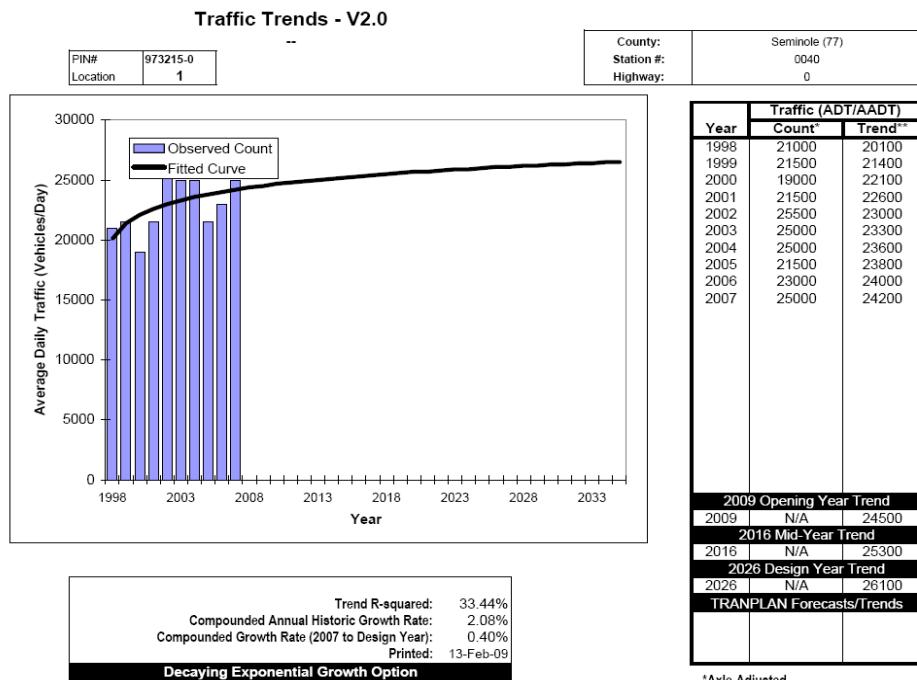
Where: X = Normal straight line growth from trend data

Volume_{FY} = Future year

Volume_{BY} = Base year

Exhibit 18

Decaying Exponential Growth Projects Using Traffic Trends



What if the Background Traffic Has Declined?

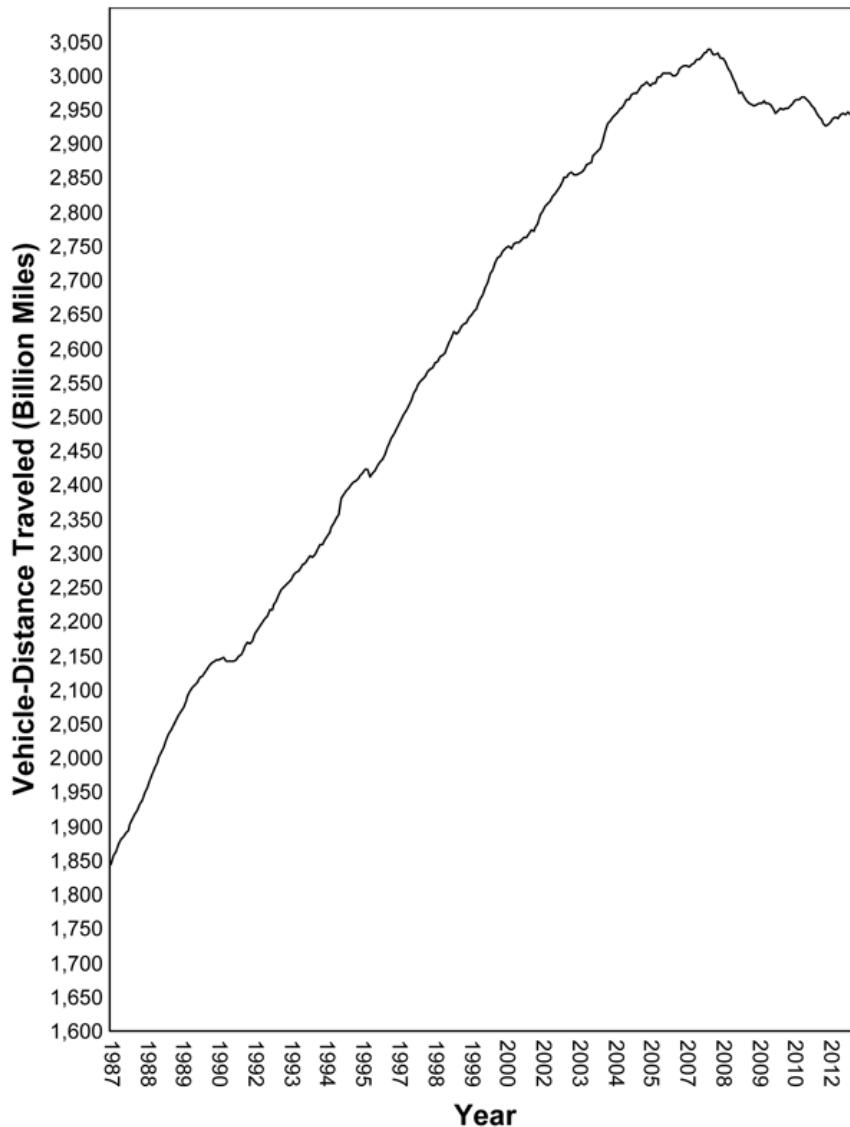
Exhibit 18 illustrates application of a decaying exponential growth project to the Seminole County data.

The Presentation link contains a step-by-step illustration of the use of the software on these three examples shown in Exhibits 16 through 18.

In the event that an area has a decline in traffic, the probable cause must be determined. Analysis should be done to decide if the decline is a long term trend. Some local governments and other agencies use a minimum growth rate guide. In these cases the FDOT reviewer must join the discussion with all parties to arrive at an acceptable agreement.

Since 2006 the United States has seen some decreases in traffic on some facilities. This leads us to the situation when some professionals argue a zero growth rate to be used for future background traffic. Traffic can fall for a few reasons such as; the addition of a reliever roadway; or declining economic activity as seen from 2006 through 2012.

Note the figure from the Federal Highway Administration (FHWA) shows the drop and plateau in between the years of 2008-2012.



When a smaller than usually used growth rate is suggested, there should be some discussion of the underlying low, or zero, growth rate. There should also be multiple indications to support this low, zero, or negative growth.

Figure from http://www.fhwa.dot.gov/policyinformation/travel_monitoring/tvt.cfm

2.5.3 Build-Up Method

*The build-up method =
vested developments
+ background
through traffic*

The build-up method of traffic involves the identification of the trips associated with approved developments in the study area, assigning those trips to the study area transportation system, and then adding the background through traffic. The build-up method of projecting background traffic is appropriate when other area developments are proposed that will affect local area traffic patterns during the same horizon period.

Considerations for using the build-up method are outlined below.

Assess impacts of committed system improvements

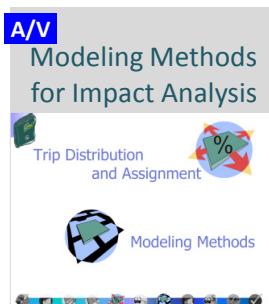
- Work with local and state agency staff to identify a subarea
- Identify committed transportation projects and probable travel pattern changes within the subarea.

Identify and add approved development traffic

- Confirm committed projects and phasing within the subarea with local and state agency staff
- Obtain trip assignment associated with approved projects (desirably including documentation of trip generation, trip distribution, and trip assignment)

Double counting of development generated trips may occur when estimating the other background traffic. Checks for reasonableness should be made. If the build-up method is used, a lower traffic growth rate than a direct trend analysis may be used.

2.5.4 Model Methods Using FSUTMS to Distribute Trips for Developments



The FDOT and some regional agencies typically maintain travel demand models that incorporate large planning areas. These models are typically calibrated to a base year and include a long-term future horizon year for the corresponding transportation system. Travel demand models can be used to assist in the identification of traffic patterns and needs associated with site development.

The model method of transportation impact analysis typically uses an MPO-adopted regional travel demand model to forecast. There are two general methods for using a FSUTMS model for distributing and assigning ITE-generated trips during a traffic impact analysis: the special generator method and the link volume factor method.

Note: in the examples below, care can be taken to avoid over estimating internal trips, as the model's trip tables already provide some intra-zonal trips.

Special Generator Method:



Develop a new transportation analysis zone (TAZ) or set of zones for the development and code in connectors from the new zone centroids to the transportation network.

- Connection points should be consistent with the preliminary site access plan
- Code socioeconomic data consistent with the development program into the model's ZONEDATA file
- Identify appropriate ITE vehicle trip rate(s) and estimate site trip generation manually using ITE's *Trip Generation Manual*
- Identify appropriate trip purposes for commercial properties based on prevailing land use type (e.g., shopping center would be predominantly home-based shopping trips)
- Identify reasonable auto occupancy rates for each trip purposes. Look for consistency with the Cube Catalog keys. Apply auto occupancy rates to ITE trips by purpose to calculate person trips and sum for residential and non-residential uses in each development TAZ
 - 1) Enter person trips by zone and trip purpose into SPECGEN file
 - 2) Set up model to execute using script files that isolate development trips from other background trips
 - 3) Conduct initial model run with a select link analysis on all centroids for zones comprising the project to
 - 4) Obtain initial vehicle trip distribution patterns of site-generated trips
 - 5) Compare vehicle trip generation obtained manually and with the planning model
 - 6) If the model-derived number of vehicle trips is less than the manual calculation for any given land use, the total external site trip generation obtained using the planning model should be adjusted until the modeled number of trips is greater than or equal to the manually estimated trip(most likely for non-residential uses)
 - Identify any difference in vehicle trips between manual and model calculations
 - Adjust number of trips in SPECGEN file by a similar ratio
 - Rerun the model
 - Identify any remaining difference in vehicle trips between manual and model calculations
 - Continue steps 3 and 4 until model calculations are **greater than or equal to** manual calculations
 - 7) Convert site-generated trips to PM peak period or other, as directed by local concurrency ordinances
 - 8) Estimate internal capture using the previously approved methods
 - 9) Adjust trips to commercial properties on site to account for agreed upon pass-by trip percentages

Link Volume Factor Method

Develop a new transportation analysis zone (TAZ) or set of zones for the development and code in connectors from the new zone centroids to the transportation network. Connection points should be consistent with the preliminary site access plan.

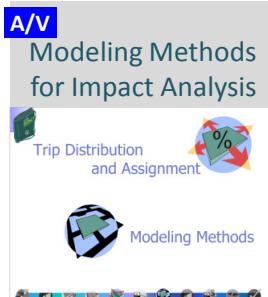
- 1) Code socioeconomic data consistent with the development program within the ZONEDATA file (e.g., single-family homes in development = single-family dwelling units in FSUTMS). For land use types not found in the ZONEDATA file, use rates for land use types that are comparable to FSUTMS land uses and acceptable to review agencies (Example land use conversion rates are shown in Exhibit 20)
- 2) Take supplemental demographic data (persons per dwelling units, percent automobile ownership, percent of dwelling units vacant, etc.) from zones in the ZONEDATA file that contain land use and population characteristics that are expected to be similar to the character of the project site (Example land use conversion rates are shown in Exhibit 20)
- 3) Set up model to execute using script files that isolate development trips from other background trips (Selected Link Analysis on centroids)
- 4) Identify cordon line around the proposed development
- 5) Estimate internal capture using the previously approved methods
- 6) Calculate the total number of external trips (i.e., those crossing the proposed development cordon line)
- 7) Calculate the percent distribution of external project trips (link distribution percentages) by dividing the number of project trips on each link of the network by the total number of external project trips
- 8) Identify appropriate ITE vehicle trip rate(s) and estimate site trip generation manually using ITE's Trip Generation
- 9) Factor the total number of ITE external project trips by the link distribution percentages calculated earlier for each link in the loaded network
- 10) Resulting ITE trips times link distribution percentages can be plotted link by link
- 11) Adjust trips to commercial properties on site to account for agreed upon pass-by trip percentages
- 12) Factor the total number of ITE external trips (with Internal Capture and Pass by subtracted) by the link distribution percentages)

Exhibit 20
Land Use
Conversion Rates
for Traffic Impact
Assessments

Land Use	Conversion Rate*
Single-Family Dwelling Unit	3 persons per DU
Multi-Family Dwelling Unit	2 persons per DU
Office	4 service employees per 1,000 sq ft
Hospital	3 service employees per 1,000 sq ft
Retail <200k sq ft	2 - 3 commercial employees per 1,000 sq ft
Large Retail	1.5 - 2 commercial employees per 1,000 sq ft
Industrial	2 industrial employees per 1,000 sq ft
Warehousing	1 industrial employee per 1,000 sq ft
Hotel	.5 - 1 service employee per room

*This data is a compilation of “Rules of Thumb” and calculations using the ITE *Trip Generation Manual*. These conversion rates should only be considered when local data, FDOT District guidance or more specific knowledge is not available.

Justification and documentation of all adjustments to the model generated distribution should be included in the traffic analysis



Understand the model's strengths and limitations

ZDATA Interpolation

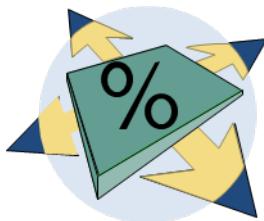
Model methods are commonly used with manual assignment processes when determining distribution percentages of vehicles. However, for large networks, model assignments may be a more desirable method for determining the minimum time path between transportation analysis zones. A blended methodology (using manual adjustments to model trip assignments) should be approved by FDOT or another reviewing agency prior to use.

Manual trip distribution results and model outputs can be compared to provide reasonableness checks. Model methods may be used to determine an initial trip distribution and then manual adjustments may be made based on engineering judgment and familiarity with the transportation network. Justification and documentation of all adjustments to the model generated distribution should be included in the traffic analysis.

It is essential that the model user has a thorough understanding of a given model's analysis strengths and limitations so that model output can be properly interpreted and used.

In addition to forecasting AADT volumes directly, the applicant may be required to develop FSUTMS model inputs (ZONEDATA) for years that are not major horizon years in the model used in the site impact analysis. When the duration between model horizon years is less than five years, it may be appropriate to interpolate the ZONEDATA using a linear regression equation, for example between 2015 and 2020. For years where significant transportation network changes are anticipated to occur or major phases of related developments are proposed to open interpolation of ZONEDATA files should be discouraged.

2.6 Trip Distribution



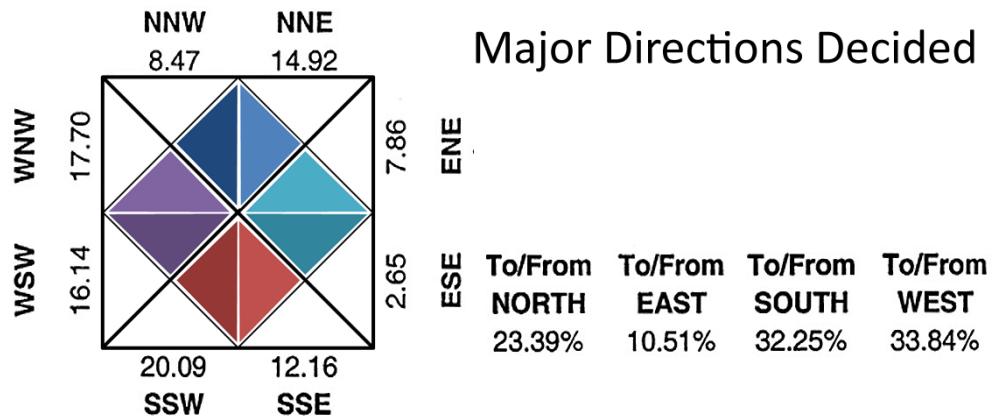
Another component in the site impact analysis is trip distribution. The purpose of trip distribution is to determine the final destination and origin transportation analysis zones of the traffic studied in the impact analysis.

Trip distribution can be estimated using a number of different methodologies reflecting either large scale model or manual methods. FDOT and any participating local review agencies should approve of the trip distribution methodology selected.

Whether a manual or large scale modeling method is used, trip distribution should be performed in each analysis year and documented and summarized in a figure that illustrates the percentage of total site trip generation. The figure should clearly show that the distribution of external trips from the site adds up to 100%.

Exhibit 21
Major Directions of Trip Distribution from site

Trip distribution should be summarized in a figure that clearly shows the distribution of external trips from the site.

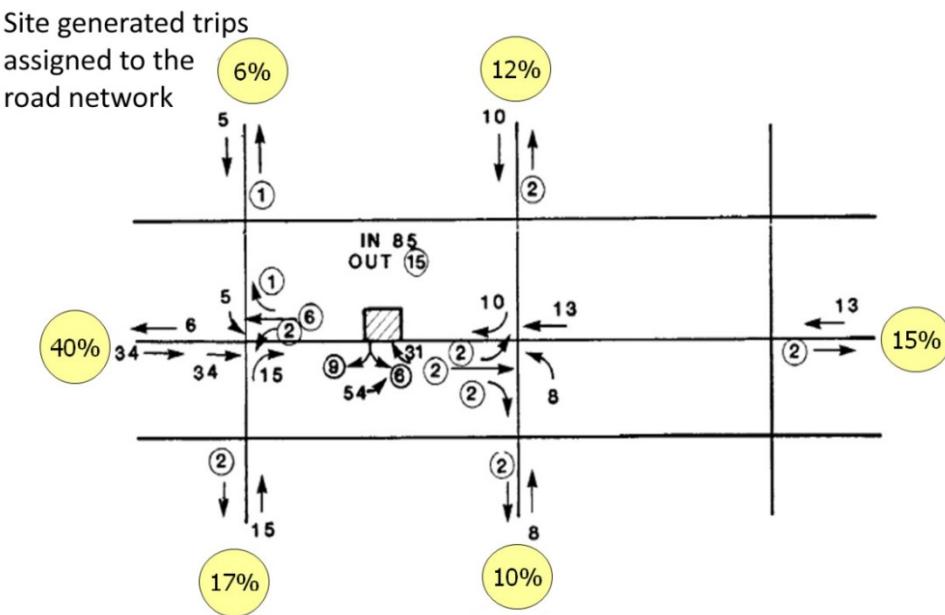


Source: KHA from a traffic study of a Miami Wal-Mart Circa 2005

2.6.1 Different Types of Manual Methods for Trip Distribution

Manual methods of trip distribution provide the analyst with a basic understanding of the travel patterns and market areas associated with the development. When performing manual methods of traffic distribution, good judgment is essential to conduct a proper evaluation. Key assumptions should be clearly documented for the reviewers. Exhibit 22 provides a visual example of the manual distribution method.

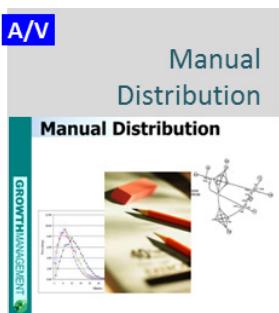
Exhibit 22
**Manual
 Distribution
 Example**



The manual distribution and assignment of trips

Source: Site Impact Evaluation Handbook – FHWA 1985

**Analogy
 Method/Origin-
 Destination Studies**



The analogy method derives the trip distribution of a proposed development based on existing data collected at sites that are similar to the subject development. Typically, traffic count and turning movement data are used in the analogy method. Other data sources include conducting a license plate origin-destination survey or a driver response survey, summarizing traveler home zip codes (for employment centers), or using other methods defining distribution of travelers to and from the site. Applications of the analogy method include (*ITE: Transportation and Land Development*, p. 54):

- Fast-food restaurants where a competing establishment is near the site
- Service stations where traffic volumes on the adjacent streets are similar to those forecasted at the site
- Motel sites near an existing motel
- Residential developments on the fringe of an urban area
- Sites to be developed in residential use where the tract is one of the few vacant parcels in a developed area
- Occupied buildings located in an office complex being developed by phases adapted from the ITE Transportation and Land Development.

2.7 Mode Split/Alternative Travel Forecasts



Mode split is the process of estimating the number of travelers between zones that are anticipated to use modes other than automobiles in transportation impact analysis. This process estimates how many people travel to and from a site by auto, transit, and other modes such as by bicycle or walking. **In some cases, the mode split portion of the typical four-step modeling process will not be sufficient for corridor or site specific transit forecasting.**

For example, a Transit Oriented Development (TOD) is an area that requires special modal study based on more detailed considerations.

The level of analysis will be made in coordination with FDOT and local agencies, including transit providers

Transit Mode Split Assessment Methods

The applicant should provide justification on any transit, bicycle, or pedestrian adjustment reducing vehicle trips. The justification will usually consist of a special study prepared to better understand the impact of existing or proposed transit service, levels of walking and bicycling and necessary commitments to needed infrastructure, or funding to support the existing or planned transit service in the area.

The Transit Boardings Estimation Tool (TBEST)



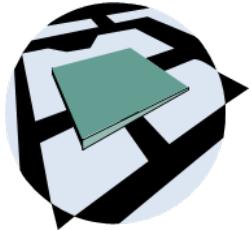
More detailed information about TBEST and its use can be reviewed on-line at TBEST.ORG.

The FDOT's Transit Office has developed the transit analysis tool TBEST (The Transit Boardings Estimation and Simulation Tool) that may be used in transit assessments.

This tool is a comprehensive transit analysis and ridership forecasting model that is capable of simulating transit travel demand while accounting for factors such as sidewalk coverage, network connectivity, bus headways, transfers, time-of-day variations, and route competition. The tool simulates transit ridership in a way that allows it to provide detailed information regarding ridership estimates at individual stops. The tool can also be used to obtain route level, segment level, location-based, or system level measures through the stop-level outputs. By simulating ridership at the level of the individual stop, the model can provide a strong framework for modeling transit ridership.

The use of TBEST for impact assessments should be discussed by the applicant and review agencies (including transit agencies) and a clear methodology should be defined. It is recognized that TBEST may not be applicable in all cases. The tool provides users with a specialized transit planning model to supplement or to replace the use of the more standard travel tools.

2.8 Trip Assignment



Trip distribution and assignment are two related but distinct activities

PDF

Project Traffic Forecasting

Trip assignment involves determining the amount of traffic that will use each route on the roadway network. Trip assignment determines the number of site-generated turning and through movements at each intersection, as well as the roadway segment of the study area network.

Trip distribution and assignment are two related but distinct activities. Trip distribution determines where trips wish to go. Assignment is when the trips are placed on the network to reach their desired destination.

The products of the assignment component are traffic volumes appropriate for use in the analysis of operating conditions. It is important to note that traffic factors will usually need to be applied to both field collected data and model derived volumes. For example, Model Output Conversion Factors (MOCF) by the FDOT are used to convert Peak Season Weekday Average Daily Traffic (PSWADT) volumes assigned by travel demand forecasting models to estimated AADT volumes. Even when using FDOT approved adjustments, care must be taken to see if the output is reasonable. A full description of the MOCF as well as other adjustments can be found in the Project Traffic Forecasting Handbook.

2.8.1 General Considerations

Several important general considerations are involved in preparing trip assignment. These considerations are highlighted below, followed by detailed discussion of specific modeling techniques and analysis procedures.

Trip assignment should begin by identifying multiple paths between origins and destinations. The potential for using these paths can then be evaluated on a comparative basis using the following considerations:

- Driver tendencies and local patterns in developing logical travel routes.
 - For example, drivers often will use the first convenient driveway they reach to access a site with multiple driveways.
 - Driver characteristics reflecting the proposed land use (will drivers tend to use back roads/local connections or are they new to the area and will tend towards major travel routes that are well signed).

- The design of the internal circulation systems and the location of residential land uses;
 - The outbound trips tend to be more evenly distributed among multiple exits than the inbound trips;
- Available roadway capacities
 - Identify known capacity constraints and assess how constraints may impact alternative evaluation/routing.
 - Turn movement capacity and restrictions; particularly for left-turns.
- Relative travel times.
 - The proposed land use may impact driver needs and tendencies – for example, the differences between a daily commute trip and a recreational tourist exploration trip.
 - Horizon years and corresponding conditions at the time.
 - Planned improvements or network changes could result in changes to trip assignment compared to current conditions or when evaluating multiple horizon years.
 - Travel paths may vary by time of day.
- Assignment percentages typically apply to two-way trips (arriving and departing).
 - While generally oriented the same way, individual routes may defer to reflect multiple access and egress options and turn movements will likely be different or reversed between an entering and exiting trip.
 - One-way streets may influence assignment patterns.
- The presence of on/off ramps at interchanges.
 - Pass-by trips enter from adjacent streets and typically exit to the same street to continue on their original path.

Adapted from: [Transportation Impact Analyses for Site Development](#), ITE 2005

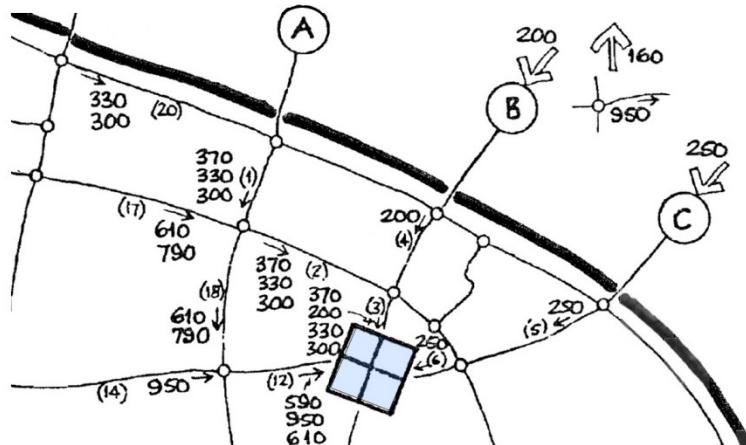
2.8.2 Manual Methods of Trip Assignment

If the access plan is modified, the assignment process may have to be repeated until a logical assignment is achieved for the network

Manual trip assignment often assigns site traffic based on existing or anticipated future turning and through movement percentages. The assignment may reduce site volumes along roadway segments using attenuation factors (see [Chapter 2.2.3](#)) to account for “intervening opportunities” for the trip to end. In simple terms, this means trips may be added and subtracted to the roadway network between major intersections and corridors to reflect local area origins and destinations. Manual assignments for each analysis period should be made for each analysis year. Multiple paths should be assigned between origins and destinations based on experience and judgment to achieve realistic estimates.

The assignment process may be performed numerous times during a typical analysis based on the number of site access and internal circulation alternatives and traffic impact mitigation alternatives considered. If the access plan is modified during subsequent reviews or permitting, the assignment process may have to be repeated and alternative site access and circulation plans considered until a logical assignment is achieved for the network.

Exhibit 23
Manual Assignment Example



Source: NCHRP 187 – Quick Response Urban Travel Estimation Techniques and Transferable Patterns. TRB 1978

Recommended Procedure for Manual Trip Assignment When Pass-by Trips are Present

Pass-by trips in the network should be analyzed carefully. The following procedure is based, in part, on the recommendations of ITE's [Transportation Impact Analyses for Site Development](#) when pass-by trips are involved in the assignment.

1. Apply the trip reduction factors for internal capture and pass-by traffic, and then assign volumes to each roadway segment. Illustrate in a map the assignment of development trips and provide a corresponding table.

2. In addition to estimating a normal distribution, estimate a trip distribution for pass-by and diverted trips.

Perform separate trip assignments using the individual distribution patterns for primary, pass-by and diverted trips. Pass-by trips and diverted trips should be evaluated carefully considering the location of the driveway and the total traffic on the adjacent roadway links. The assignment should consider the unique turn movement patterns of pass-by and diverted trips and should account for the subtraction of existing turn movements related to the pass-by trips that are no longer made.

- For example, a pass-by trip assignment might require that an eastbound through trip be removed and replaced with an eastbound right-turn and companion northbound right-turn at a site driveway.
- Diverted trips are not subtracted from the roadways and access points they are added to. They are new trips on the roads they divert to.

Applicants should assign trips to the network such that the primary, pass-by and diverted trips are distinguishable and can be easily reviewed.

3. Consider the effects of traffic diversion by existing traffic to other facilities as result of the site-generated traffic, if appropriate.
4. Check the assignment for reasonableness. Generally, pass-by traffic should not exceed 10 percent of traffic on adjacent streets. For an explanation of the 10 percent of adjacent street traffic for pass-by traffic, see [Chapter 2.4.4](#).

2.8.3 Traffic Attenuation with Manual Traffic Assignment

No more than 10 percent of trips should attenuate per segment

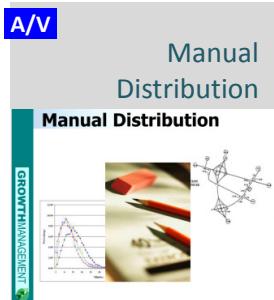
As the distance that traffic from a specific site travels, the number of those site generated trips drop. The trips drop (or attenuate) because as longer distance is traveled, more and more people reach their final destinations. In order to reflect this reality in a manual traffic assignment, it is necessary to use something called traffic attenuation. It determines what percentages of trips are satisfied at various distances from the originating site. In evaluating trip assignment alternatives, a commonly used guideline by FDOT is that no more than 10 percent of trips should dissipate (or attenuate) per study segment of roadway unless there is a cross street or some major land use that could attract a large number of trips from the usual flow.

Another method for establishing traffic attenuation is the use of the trip length frequency curves of the urban area or a similar area. These may be available as part of an area's large scale transportation model.

Exhibit 24

Traffic Attenuation Example

View presentation describing this method (begin slide 9)



Trip Attenuation Method

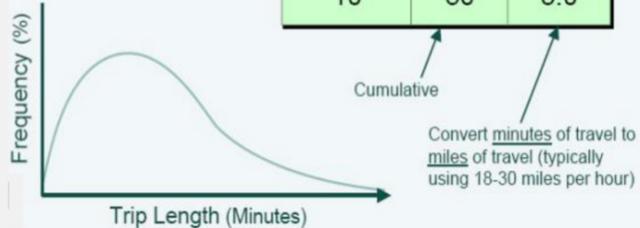
Assumed:

18 mph = Avg. speed w/delay

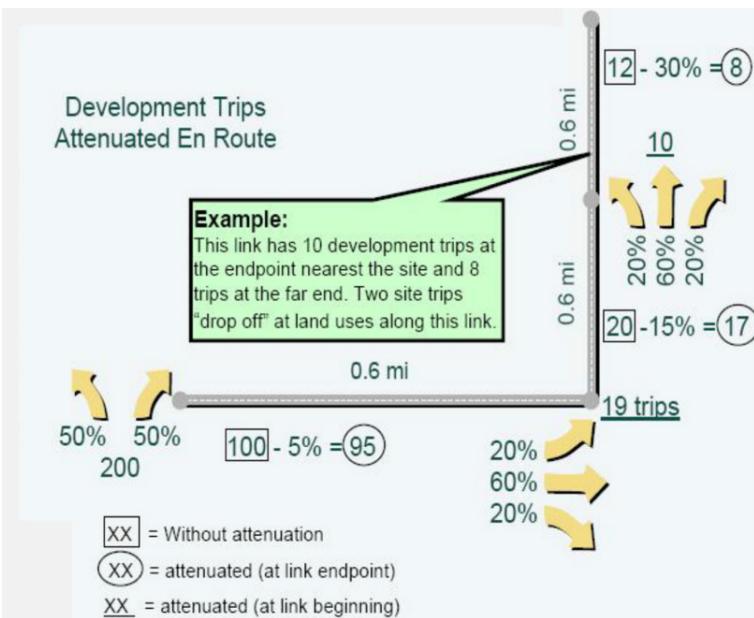
18 mph x 1/60 = 0.3 mi./min.

Note: The lower the assumed speed is, the shorter the trips will be!

Minutes	%	Miles
2	5	0.6
4	15	1.2
6	30	1.8
10	50	3.0



Traffic Attenuation



2.8.4 Model Methods of Trip Assignment

Large scale travel demand models such as FSUTMS use a capacity restrained routine, known as user equilibrium, to perform the final highway assignment. The model decreases speeds on congested roadways and shifts traffic between routes after each iteration of the assignment until equilibrium is achieved. At that point, all trips in the model area have found the least congested, shortest-time path to their destination such that no other adjustment can be made to traffic without increasing travel times.

Selected Zone Analysis

The preferred technique is the Selected Zone Analysis tool

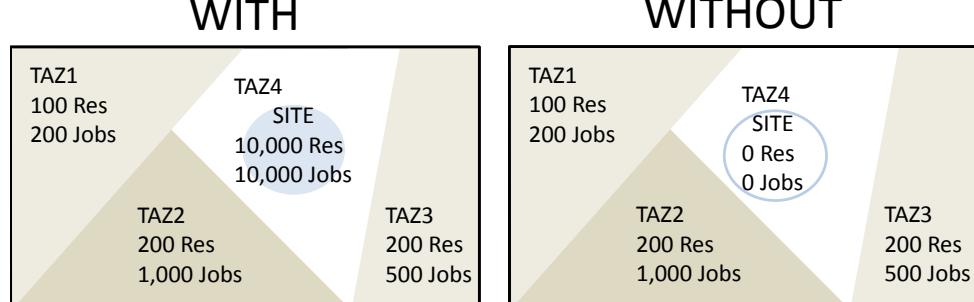
The preferred technique for transportation impact analysis trip assignment is called selected zone analysis. Selected zone analysis allows for review of network-wide trip assignment associated with a single or multiple Transportation Analysis Zone(s) (TAZ). Analysts are encouraged to confer with existing model development documents and user's guides for models they are currently working with to determine the appropriate way for conducting a selected zone analysis.

Should a model not currently be set up to perform selected zone analyses, the analyst may need to modify the model's highway assignment script. The preferred method is to have the model create a path file with data restricted to just the nodes and links being analyzed. The proper syntax for this process may be found in the Cube Voyager Reference Guide. The Cube software is the current "engine" inside FSUTMS. This information is also available in the Cube interactive help. The analyst should coordinate with staff at the agency responsible for maintaining the model, typically someone at either the FDOT District office or the Metropolitan Planning Organization, to ensure that any modifications made to the model in order to perform selected zone analyses are acceptable.

Analysts should *NOT* attempt to evaluate traffic by running two separate model scenarios in which one scenario has the data corresponding to the development included and the other scenario has had the data corresponding to the development removed. The resulting estimate derived from subtracting the volumes of the scenario with the development data from the scenario without the development data, a technique commonly known as the "Net Impact" or the "With and Without" method, *DOES NOT* directly represent the site-generated trip assignment impact. This is because the equilibrium highway assignment process that drives the model diverts trips, often resulting in virtually no change in traffic volumes. This is a subtle but critical point. Judicial precedent in Florida has established that the DRI process must account for *ALL* trips caused by development, *NOT* the net impact resulting from displacing existing trips to other roadways (*Reference: Westinghouse Gateway Communities, et al. v. Lee County Board of County Commissioners Case*).

Do Not run a strict "with and without" analysis

**Exhibit 25
With or Without Modeling Method**

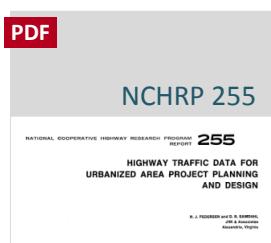


The appropriate use of the selected zone analysis is to identify the pattern of site trip assignment by roadway link and, in turn, use that pattern to prepare the actual assignment of site-generated traffic using other model or manual methods. The model assignment should *NOT* be used to calculate internal capture, background traffic, or turning movements. There are two appropriate methods for using travel demand models for traffic impact analysis:

- Special Generator Method
- Link Volume Factor Method

These methods are discussed in [Chapter 2.5.4](#).

FSUTMS Modeling of Assignment



NCHRP 255 should be used by the applicant unless another procedure has been approved by FDOT.

At a conceptual level, five key steps are taken to perform a trip assignment.

1. Input proposed development's land use into zonal data and/or adjust the model's special generators
2. Run FSUTMS
3. Display traffic that enters/exits development zone(s) on the loaded network using the traffic assignment path file
4. Save development traffic as a new link attribute for further analysis (a new attribute may need to be created in the network for this purpose if one does not already exist)
5. Check for reasonableness

In some circumstances, such as at the fringe of a model, manual adjustments may be necessary. If post assignment adjustments are made, the process should be clearly justified and documented. *National Cooperative Highway Research Program (NCHRP) Report No. 255, Highway Traffic Data For Urbanized Area Project Planning And Design*, identifies some procedures for adjusting link volumes and arriving at design traffic and turn movements. Even though published in the 1980's, the principles inside are still relevant.



*Webinar with an entire segment on the use of NCHRP 255
– September 2008*

The model output volumes from FSUTMS typically represent the Peak Season Weekday Average Daily Traffic (PSWADT) condition. These volumes must be converted to AADT and then to peak hour volumes using conversion factors. This process is described in the FDOT [Project Traffic Forecasting Handbook](#). All adjustments and conversion factors should be documented, reviewed and approved by FDOT. Some models may represent AADT by default or may automatically convert model PSWADT to AADT during the model process. The analyst is encouraged to reference all available model documentation and coordinate with the appropriate professional staff if there is a question concerning the units of the model output volumes.

2.8.5 Trip Assignment at Intersections

The operational analysis of individual intersections is often required as part of a transportation impact assessment. The trip assignment at intersections should be compared to the assignment shown at the facility level so that both analyses are using consistent values. It is also noted that the background volumes used in a detailed intersection assessment should be compared to the background volumes used in the facility analysis. For example, the sum of a specific approach (left turn movements plus through movements plus right turn movements) at an intersection should reasonably match the approach volume used in the facility analysis.

XLS

Turns 5

FDOT has also developed an Excel spreadsheet tool called "TURNS5" which may be useful. Instructions for the use of this spreadsheet are found in Chapter 7 of the FDOT *Project Traffic Forecasting Handbook*.

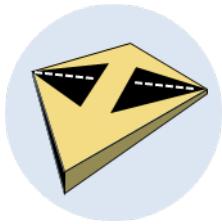
PDFProject Traffic
Forecasting

Proper documentation will allow for careful and thoughtful review of the assignment

2.8.6 Documentation of Trip Assignment

Trip assignment, by nature, will reflect driver tendencies behavior, and in part becomes a case study of personal preferences. Because the process can reflect a complex decision process, it is important to document the basis for making an assumed trip assignment. Proper documentation of the assumptions and decisions made in developing the trip assignment will allow for review of the assignment. Applicants are encouraged to work with FDOT and other local agencies to ensure trip assignment assumptions are reasonable and reflective of local conditions.

2.9 Access Management, Site Access, and Internal Circulation



The proper application of access management and basic site planning principles is essential to all transportation impact analysis. This process involves the review of proposed site plans and expected improvements. During this stage, the reviewer assesses the impact of the project on traffic movements and evaluating safety and operations at, and near the access points (driveways or roadways). The level of detail of the site plans associated with the impact assessment will vary based on the purpose of the study and what level of approval is being sought. For example, DRI applicants should provide approximate locations of major driveways and new roads, and address overall internal and external network connectivity.

The design of site circulation, parking, and access should also easily accommodate bus and pedestrian movements for existing or future bus services. Having a safe and well-marked pedestrian path to the entrance of the development is one important aspect of good design. In addition, bicycle access and parking should be included.

The FDOT Transit Office has produced several publications that discuss pedestrian and transit-friendly design in greater detail and can be found at the [FDOT Transit Office](#) website.

Site impact design issues include identifying an appropriate design vehicle (the largest vehicle that will typically use the roadway), speeds, and multimodal accommodations. Most site plans should include the following information, at a minimum:

- Median opening locations and spacing
- Sufficiently detailed drawing of access, circulation and parking
- Landscaping details for analysis of sight distances
- Location of proposed multimodal accommodations

FDOT has developed numerous standards, guidelines, policies and recommended practices in the areas of corridor access management and site access planning. These standards are provided in Rule 14-96, Florida Administrative Code (F.A.C.), (driveway permitting) and Rule 14-97, F.A.C. (access management standards).

Access Management Standards

DOC
Rule 14-96 F.A.C.
Driveway Permit

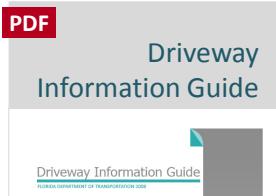
Rule 14-96, F.A.C.: bit.ly/1nNTDhH

DOC
Rule 14-97 F.A.C.
AM Standards

Rule 14-97, F.A.C.: bit.ly/1jfQ8ia

All driveways associated with a new or expanded development will need to be permitted through the process described in the Rule Chapter 14-96, State Highway System Connection Permits. Directions for traffic studies for access permits are located under Rules 14-96.005(3) and (4), F.A.C.

The application of these principles to roadway and corridor design features are discussed in greater detail in a number of FDOT publications such as:



- Driveway Information Guide
dot.state.fl.us/planning/systems/programs/sm/accman/pdfs/driveway2008.pdf

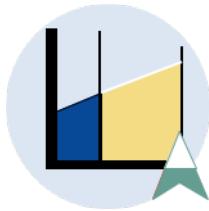


- Median Handbook – The Median Handbook is undergoing a re-write and a newer version should be available in 2014. Check the FDOT Access Management Page for updates.
dot.state.fl.us/planning/systems/programs/sm/accman/default.shtml



- The FDOT also maintains an extensive on-line collection of technical resources on access management on the [FDOT Systems Planning Access Management](#) webpage.

2.10 Mitigation and Future Transportation Needs



Future conditions analysis determines what mitigation may be required

The future conditions analysis determines if the transportation system will operate acceptably with the additional site-generated trips. If not, one must determine what mitigation may be required. The reviewer should have a clear understanding of the evaluation method used.

This section assumes that an evaluation methodology is based on the most recent generally accepted professional practice. In some instances, local governments may use a different methodology or performance measure. The applicant should clearly document and justify the methodology used and confirm all methodology assumptions and analysis requirements with FDOT.

FDOT provides guidance on using LOS analysis to assess the operating conditions on the State Highway System (SHS). This section from the Procedure explains how FDOT can use LOS standards in the planning and permitting processes and how a transportation impact analysis can determine adverse impacts to the SHS.

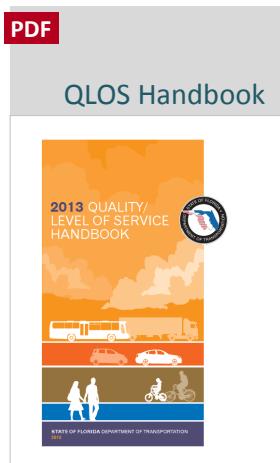
"Use of Department's LOS standards and guidance on acceptable highway capacity and LOS methods (including software) apply to all appropriate Department reviews and assessments of proposed developments directly impacting the SHS. In the review of plans and designs of other entities directly impacting the SHS, the Department recommends the adoption and use of the Department's LOS standards. Regardless of adoption or use by non-Department entities, the Department will use the LOS standards for the review of actions directly affecting the SHS for all its planning and permitting processes. The Department can modify a connection permit based on adverse impacts to operational, LOS or safety issues as part of a transportation impact assessment." - [FDOT's LOS Procedure, Topic No. 525-000-006-a](#)

Intersections

Both facility LOS and intersection v/c are appropriate to determine impacts

Although arterial facility LOS is stressed in highway level of service standards, detailed volume-to-capacity analyses at selected intersections may be necessary to evaluate specific projects. Both facility LOS and intersection volume-to-capacity ratio criteria are to determine impacts from proposed developments. Additional information about intersection assessments is provided in the *FDOT Quality/LOS Handbook*.

2.10.1 LOS Analysis Tools



There are several tools that are available for LOS analysis for a particular location. The Q/LOS Handbook provides several tools for determining LOS for all modes of transportation including automobile, transit, bicycle, and pedestrian. LOS can be determined by using either by the latest *Highway Capacity Manual (HCM)* and/or software (*HCS*), *FDOT Quality/Level of Service (Quality/LOS) Handbook*, or a methodology determined by FDOT as having comparable reliability. The Q/LOS Handbook offers sets of tools, generalized service volume tables and FDOT's LOSPLAN software. FDOT's LOSPLAN software includes ARTPLAN, FREEPLAN, and, HIGHPLAN which are further described under Section 12 of the Q/LOS Handbook. For transit, pedestrian, and bicycle capacity and LOS analyses, the Q/LOS Handbook indicates the following tools listed below for planning applications:

- *Transit Capacity and Quality of Service Manual*, supplemented by FDOT's Transit LOS software;
- *Pedestrian LOS Model*; and
- *Bicycle LOS Model*.

2.10.2 Bicycle & Pedestrian LOS Analysis



Bicycle and Pedestrian LOS assesses bicycling and walking conditions from the bicyclist's and/or pedestrian's point-of-view. As with automobiles, levels of service are used to quantify bicycle and pedestrian quality of service.

FDOT has adopted the *2010 HCM* as the basis for its multimodal planning methodology. Because it is an operational model, FDOT, in cooperation with the model developers have made some simplifying assumptions for incorporating it into the *FDOT Quality/LOS Handbook* and accompanying software.

The bicycle level of service component is based primarily on five variables listed by relative importance:

- Average effective width of the outside thru lane
- Motorized vehicle volumes
- Motorized vehicle speeds
- Heavy vehicle (truck) volumes
- Pavement condition

The pedestrian level of service component is based on four variables listed by relative importance:

- Existence of a sidewalk
- Lateral separation of pedestrians from motorized vehicles

- Motorized vehicle volumes
- Motorized vehicle speeds

These models may be used in multimodal analysis requirements of FDOT and other local agencies. Guidelines for use of the models should be confirmed with FDOT on a project-specific basis. Specific details about the models are available in the *FDOT Quality/LOS Handbook*, *NCHRP Report 616* and the *2010 Highway Capacity Manual*.

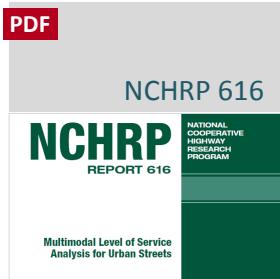
2.10.3 Detailed Transit and Multimodal Quality of Service Tools



Transit quality of service assesses transit performance from the passenger point-of-view. As with other travel modes, levels of service are used to quantify transit quality of service. Techniques for evaluating transit quality of service continue to be developed and refined. The three national resource documents most frequently used to assess transit LOS are the *Transit Capacity and Quality of Service Manual, 3rd Edition (TCQSM)*, the *National Cooperative Highway Research Program (NCHRP) Report 616: Multimodal Level of Service Analysis for Urban Streets* and the *2010 Highway Capacity Manual*.

At a state level, the latest [FDOT Quality/LOS Handbook](#) summarizes the planning level methodologies developed by FDOT to assess transit (currently limited to scheduled fixed route bus service), provides guidance on the application and limitations of existing FDOT transit assessment methodologies, and includes generalized planning applications to assess transit LOS (included as part of the generalized tables that are typically used for roadway assessments).

The Transit Capacity and Quality of Service Manual (TCQSM)



NCHRP 616 offers a method for assessing how well an urban street serves the needs of multiple users

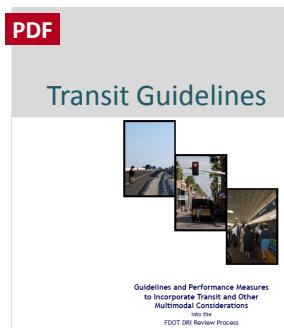
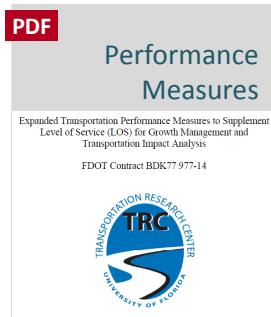
The Transit Capacity and Quality of Service Manual, 3rd Edition (TCQSM)

The TCQSM is the transit counterpart to the HCM. Published by the Transportation Research Board (TRB) as the [Transit Capacity and Quality of Service Manual, 3rd Edition](#), the TCQSM is a nationally recognized document that provides standard procedures for measuring transit capacity and quality of service along with the *2010 Highway Capacity Manual*.

NCHRP Report 616 Multimodal Level of Service Analysis for Urban Streets

The TRB [National Cooperative Highway Research Program \(NCHRP\) Report 616: Multimodal Level of Service Analysis for Urban Streets](#) and the *2010 Highway Capacity Manual* offer a method for assessing how well an urban street serves the needs of multiple modal users. This method provides four models for estimating auto, bus, bicycle, and pedestrian LOS, respectively, on an urban street. The models use a combination of readily available data and data normally gathered by an agency to assess auto and transit LOS.

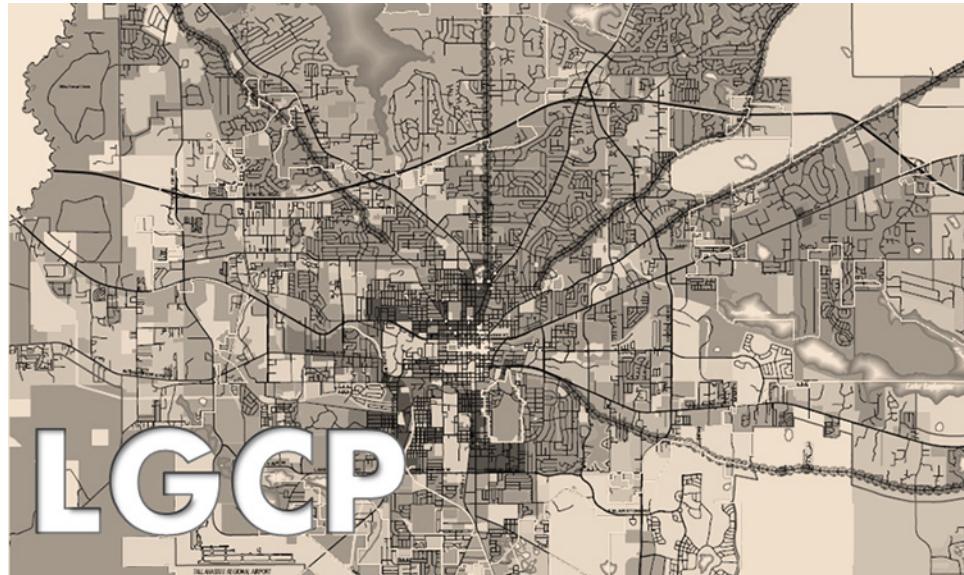
2.11 Multimodal References



There are opportunities for including multimodal considerations at each stage of the transportation impact analysis. Some of the best references on these multimodal considerations are listed below. Even though some of the linked documents in this chapter list statutory and agency requirements that are no longer needed, the technical guidance is still valuable.

- “[Expanded Transportation Performance Measures to Supplement Level of Service \(LOS\) for Growth Management and Transportation Impact Analysis](#)” FDOT Contract BDK77-977-14, October 2013
- [*Guidelines and Performance Measures to Incorporate Transit and Other Multimodal Considerations into the FDOT DRI Review Process*](#). Though much has changed in with DRI requirements in 2011-2013, this document still has much useful information on how to incorporate multimodal improvements into the mix. *State of Florida Department of Transportation Public Transportation Office, 2008*
- [*Multimodal Trade-Off Analysis in Traffic Impact Studies*](#), *State of Florida Department of Transportation, Office of Systems Planning, 2003*

3



Local Government Comprehensive Plan Reviews

3.1 Comprehensive Plans and Plan Amendments

3.1.1 Introduction to Growth Management and Comprehensive Plans

During the 2011 Regular Session, the Florida Legislature enacted significant changes to the Local Government Comprehensive Planning and Land Development Regulation Act - also known as Florida's Growth Management Act ([Chapter 163, Part II, Florida Statutes](#)). House Bill 7207 (Ch. 2011-139) redesignated this act as the "Community Planning Act" and implemented a number of revisions to Florida's long-standing growth management program. This legislation focuses the state's role in the growth management process to protecting important state resources and facilities while providing local governments with greater control over planning decisions that affect the growth of their communities. In addition to House Bill 7207, other legislative changes were implemented in 2012 and 2013.

The act requires all local governments to adopt Local Government Comprehensive Plans (LGCP) that guide future growth and development. Comprehensive plans contain chapters or "elements" that address future land use, housing, transportation, infrastructure, conservation, recreation and open space, intergovernmental coordination, coastal management (coastal areas) and capital improvements. Comprehensive plans may also include optional elements that are consistent with statutory requirements.

Comprehensive Plans

Pursuant to Section 163.3184, (F.S.), FDOT's review is limited to adverse impacts on important state transportation resources.

Comprehensive plans and plan amendments are key components of the framework for growth management in Florida. FDOT provides comments to local governments and the Department of Economic Opportunity (DEO) in reviewing changes that affect important state transportation resources and facilities. DEO is responsible for the overall review process and is the agency with statutory authority to challenge whether plan amendments are consistent or not consistent with state law. Reviews of plan amendments by FDOT are submitted to the local government and DEO for their consideration. Pursuant to Section 163.3184, Florida Statutes (F.S.), FDOT's review is limited to adverse impacts on important state transportation resources.

PDF

Procedure
525-010-101-d

FDOT procedure 525-010-101-d states that FDOT District plan amendment reviews will focus on the transportation, land use, intergovernmental coordination, and capital improvements elements of the comprehensive plan. These elements, together with the Future Land Use Map and Future Transportation Map, coordinate land use patterns, transportation systems, and capital improvements projects needed to support development of a community. Changes to an adopted comprehensive plan may impact the transportation network, including the multimodal components of the network.

*Future Land Use and
Transportation
Elements must be
consistent*

The elements of a LGCP must be coordinated and consistent with Sections 163.3177, 163.3178 (coastal areas), 163.3180, 163.3191, 163.3245, and 163.3248, F.S. For example, the Future Land Use Element includes goals, objectives and policies and a Future Land Use Map (FLUM) that implement the jurisdiction's desired land use pattern. Likewise, goals, objectives and policies creating the jurisdiction's transportation system are delineated in the Transportation Element, and the Future Transportation Map identifies those transportation facilities necessary to accommodate and serve existing development and the future growth depicted on the FLUM. The Capital Improvements Element and associated Five-Year Schedule of Capital Improvements (which specify projects as either funded or unfunded and include a level of priority for funding unfunded transportation projects and other public projects required to meet established Levels of Service) must also be consistent with the Future Land Use and Transportation elements. The Intergovernmental Coordination Element identifies the agencies and organizations with which the local government will coordinate its planning activities and outlines the coordination mechanisms that will be used. Pursuant to Section 163.3168, F.S., local governments are encouraged to apply innovative planning tools, including, but not limited to, visioning, sector planning, and rural land stewardship area designations to address future new development areas, urban service area designations, urban growth boundaries, and mixed-use, high density development in urban areas.

DEO is directed to help communities find creative solutions which foster vibrant, healthy communities, while protecting the functions of important state resources and facilities. Similarly, state and regional agencies such as FDOT may use various means to provide direct and indirect technical assistance within available resources. If plan amendments may adversely impact important state resources or facilities, upon request by the local government, DEO is required to coordinate multi-agency assistance, if needed, in developing an amendment to minimize impacts on such resources or facilities.

3.2 The Comprehensive Plan Amendment Process

A citizen, property owner, or the local government itself may initiate an amendment to the local comprehensive plan. Amendments often involve changing the future land use designation of property to another designation that allows a different (usually greater) amount of residential development. Future Land Use Map (FLUM) changes may alter the intensity of allowed non-residential development or the types of land uses allowed on the property. In addition to such FLUM amendments, changes to the comprehensive plan's goals, objectives and policies (text) may be requested.

The amendment application is first considered by the local planning agency. Pursuant to Section 163.3174, F.S., the local planning agency (usually the planning board or the local governing body) is responsible for preparing the comprehensive plan and plan amendments, as well as oversee the evaluation and appraisal review (see below). After a public hearing, the local planning agency makes a recommendation to the governing body regarding the requested plan amendment.

There are three separate processes that govern the review of comprehensive plan amendments. An expedited state review process, based on the previous Section 163.32465(2), F.S., pilot program, is added. All plan amendments must follow this expedited process, except in the following cases: in an area of critical state concern; amendments that propose a rural land stewardship area or a sector plan; amendments that update the comprehensive plan based on a Section 163.3191, F.S., evaluation and appraisal; or that are for a new plan for a newly incorporated municipality. The exceptions must follow the "state coordinated review process" established in Section 163.3184(4), F.S. Finally, the small scale amendment plan review authorized under Section 163.3187, F.S., is reserved for relatively small amendments that may be adopted without state review.

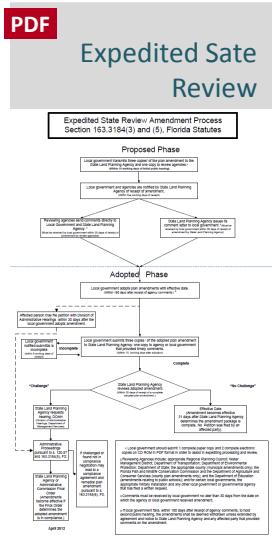
The long standing restriction limiting the number of comprehensive plan amendments to no more than two per year was repealed in 2011.

3.2.1 Expedited State Review Process

Statutory Authority: [Section 163.3184\(3\), F.S.](#)

Flowchart: [Expedited State Review](#)

After receiving a recommendation from the local planning agency, the local governing body may transmit the requested plan amendment, with or without changes, to DEO and review agencies. A flow chart illustrating the comprehensive plan amendment process can be accessed by clicking on the PDF link.



The reviewers must transmit their comments so they are received by the local government no later than 30 days from the date the reviewer received the proposed plan amendment and must also send a copy of their comments to DEO. Reviewing state agencies may only comment on important state resources and facilities that would be adversely impacted by the amendment and must specifically state how the plan amendment will adversely impact an important state resource or facility, identifying measures the local government may take to eliminate, reduce, or mitigate the adverse impacts. Such state agency comments, if not resolved, may result in a challenge by DEO to the plan amendment. FDOT must limit its comments to issues within the agency's jurisdiction related to transportation resources and facilities of state importance.

An adopted plan amendment, along with the supporting data and analysis, must be transmitted within 10 working days after the second public hearing to the DEO and any reviewers who commented in a timely manner at the proposed stage. The transmitted amendment package must be "complete." To be complete, an amendment must contain:

- In the case of a text amendment, a full copy of the amended language in legislative format with new words inserted in the text underlined, and words deleted stricken with hyphens;
- In the case of a future land use map amendment, a copy of the future land use map clearly depicting the parcel, its existing future land use designation, and its adopted designation; and
- A copy of any data and analyses the local government deems appropriate.

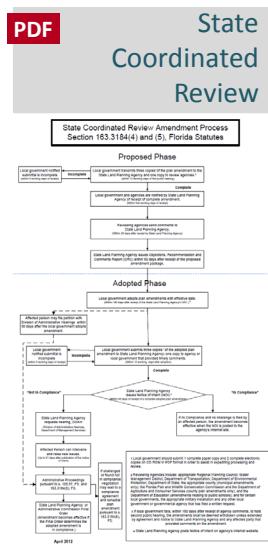
DEO must notify the local government of any deficiencies within five working days after the receipt of the amendment package. An amendment adopted under this process that is not challenged, in a timely manner, becomes effective 31 days after DEO notifies the local government that the plan amendment package is complete.

3.2.2 State Coordinated Review Process

Statutory Authority: [Section 163.3184\(4\), F.S.](#)

Flowchart: [State Coordinated Review](#)

All comprehensive plans or plan amendments that are not reviewed under the expedited or small-scale review process are reviewed through this process. DEO is responsible for plan review, coordination, and the preparation and transmission of comments to the local government for this type of review.



Within 10 working days following the first public hearing on a proposed comprehensive plan or plan amendment under this process, the local government must transmit the plan amendment, clearly identified as being under this type of review, to the reviewing agencies and any other unit of local government or government agency in the state that has so requested by written request.

The reviewing agencies comments and any other commenter (except the DEO) are to be made in the same manner and with the same restrictions as for the expedited state review process except any comments must be sent by the agencies to the DEO within 30 days after DEO received the complete proposed plan or plan amendment from the local government.

If the DEO elects to review a plan or plan amendment submitted through this process, the agency must issue a report giving its objections, recommendations, and comments ("ORC report") within 60 days after the receipt of the complete plan or plan amendment. DEO, in conducting its review of local plans or plan amendments, may make objections, recommendations, and comments regarding whether the plan amendment is in compliance with the provisions of Chapter 163, Part II, F.S. and whether the amendment will adversely impact an important state resource or facility. Any objection finding that the plan or plan amendment will adversely impact an important state resource or facility must specify how the important state resource or facility will be impacted and identify measures the local government may take to eliminate, reduce, or mitigate the adverse impacts.

Upon receipt of the report from the DEO, the local government must hold the second public hearing, to adopt or not adopt the plan or plan amendment, pursuant to the provisions of Section 163.3184(11), F.S. Except plan amendments processed pursuant to the DRI process, if the hearing is not held within 180 days after receipt of the state land planning agency's report, the amendments will be deemed withdrawn, unless extended by agreement.

All comprehensive plan amendments adopted by the governing body, along with the supporting data and analysis, must be transmitted within 10 working days after the second public hearing to the DEO and any other agency or local government that provided timely comments at the proposed stage. DEO must notify the local government of any completeness deficiencies within 5 working days after receipt of a plan or plan amendment package. After DEO determines the amendment package complete, the agency has 45 days to determine if the plan or plan amendment is in compliance with the Community Planning Act.

3.2.3 Small Scale Amendment Process

Statutory Authority: [Section 163.3187, F.S.](#)

A small-scale amendment is a future land use map amendment for a site-specific small scale development activity of 10 acres or less, where the annual cumulative acres of small scale amendments by that local government is not in excess of 120 acres and the amendment property is not located within an area of critical state concern (with limited exceptions). A text change that relates directly to the small scale land use map amendment may be adopted simultaneously following the small-scale amendment process.

Small-scale amendments require only one public hearing. The 10 acre limit is doubled in a rural area of critical state concern as defined in Section 288.0656(2)(d), F.S., as long as the amendment can be certified to further the economic objectives under Section 288.0656(7), F.S., and meets all concurrency requirements and applicable federal, state, and local environmental permit requirements. Any affected person may file a petition to challenge the compliance of a small scale amendment within 30 days following adoption of the amendment. The local government's compliance determination is subject to the fairly debatable standard and the DEO may not intervene in a small scale amendment challenge.

3.2.4 Future Land Use Map (FLUM)

System must have sufficient capacity for proposed development

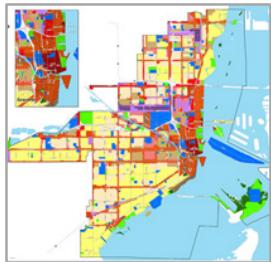
While FDOT reviewers should be familiar with all aspects of the comprehensive plan amendment process, amendments to the FLUM warrant close attention. FLUM amendments and text changes to the Future Land Use Element and the Traffic Circulation or Transportation Elements should be supported or justified by a transportation impact analysis included in the amendment package. The analysis should provide information that will allow a determination of whether the transportation system has sufficient capacity to accommodate the impacts of the proposed level of development and whether mitigation is needed. Many local governments have established thresholds for when an amendment must include a transportation impact analysis, so that amendments which are below the threshold do not need such a supporting analysis.

The comprehensive plan amendment process is time sensitive with specific limitations on review periods. The FDOT reviewer should thoroughly understand state statute and rule requirements regarding comprehensive plan amendments. The applicable statutory authority, existing guidance and suggested review procedures are provided in the resources at the end of this section.

3.2.5 Agency Roles

Comments from agencies on plan amendments are limited to adverse impacts on important state resources and facilities (for state agencies) and regional resources and facilities (for Regional Planning Councils, or RPCs). However, the DEO has expanded comment authority under State Coordinated Review Process only. For Expedited Review, the DEO's review is limited to important state resources and facilities outside the jurisdiction of other agencies and is directed to balance objectives of amendments against potential adverse impacts to important state resources and facilities. For the State Coordinated Process, the DEO deals with issues in ORC reports and makes a compliance finding similar to the former process. FDOT is limited to issues within the agency's jurisdiction. The Department of Environmental Protection is limited to air and water pollution, solid waste, sewage, drinking water, state parks, greenways and trails, state-owned lands and conservation easements, wetlands and other surface water bodies as well as Everglades Restoration. The Florida Fish and Wildlife Conservation Commission is limited to fish and wildlife habitat, listed species and their habitat, while the applicable Water Management District is limited to wellfields, regional water supply plan, wetlands and other surface water bodies, flood protection and floodplain management. The applicable RPC is limited to adverse effects on regional resources or facilities in the Strategic Regional Policy Plan and extra jurisdictional impacts inconsistent with comprehensive plan of any affected local governments in the region.

3.3 Review of Future Land Use Map (FLUM) Amendments



The Future Land Use Element and the accompanying FLUM implement a jurisdiction's vision for its future. Each future land use category must be defined in terms of uses allowed, and must include standards to be followed in the control and distribution of population densities and building and structure intensities. The proposed distribution, location, and extent of the various categories of land use are depicted on the FLUM and supplemented by goals, measurable objectives, and policies.

The element must designate for future land uses at least the minimum amount of land required to accommodate the medium projections of the University of Florida's Bureau of Economic and Business Research for at least a 10-year planning period unless otherwise limited under Section 380.05, F.S., including related rules of the Administration Commission.

The proposed distribution, extent, and location of the following uses must be shown on the future land use map: residential, commercial, industrial, agricultural, recreational, conservation, educational, and public. The following areas must also be shown on the future land use map:

- Historic district boundaries and designated historically significant properties meriting protection, generally identified and depicted.
- Transportation concurrency management area boundaries or transportation concurrency exception area boundaries.
- Multimodal transportation district boundaries.
- Mixed use categories.
- Natural resources or conditions as defined under Section 163.3177(6)(a)10., F.S.

FLUM amendments must be based upon the following analyses:

- An analysis of the availability of facilities and services
- An analysis of the suitability of the plan amendment for its proposed use considering the character of the undeveloped land, soils, topography, natural resources, and historic resources on site.
- An analysis of the minimum amount of land needed as determined by the local government.

3.3.1 Legal Authorities

FDOT reviews amendments to the adopted Future Land Use Map (FLUM) under the following authorities:

Florida Statutes (F.S.): [Section 163.3177\(6\), F.S.](#)

Resource Guide. [DEO Online Resources](#)

Resource Guide. [LGCP FLUM Amendment Review Checklist](#)

3.3.2 Review Procedure

The transmitted plan amendment package received from the local government should contain all or a portion of, the following data:

- Proposed changes to the goals, objectives and policies, if any.
- A description of the proposed FLUM change, including the maximum allowed densities and intensities of the existing and proposed land use(s).
- A map depicting the location of the proposed land use change and the surrounding area as well as the existing FLUM.
- A transportation analysis of the availability of transportation facilities.
- A map of the study area roadways.
- If a travel demand model is used, the model files used for the short term and long term analyses.
- Copies of the analysis spreadsheets showing trip generation, internal trip capture, pass-by trips, transit trips, trip distribution and assignment, background traffic, total traffic, short-term (5-year) analysis, and a long-term analysis that is consistent with the long-term planning timeframe of the comprehensive plan.

Key Review Points

FLUM amendments change an adopted land use classification as depicted on the map. These changes have a great potential to affect the transportation system. The amendment should identify the impacts that the proposed change will have on the transportation system and any improvements needed to mitigate these impacts. These improvements should then be incorporated into the Transportation Element and in the Five-Year Schedule of Capital Improvements (located in the Capital Improvements Element).

Pursuant to Section 163.3184, F.S., FDOT's review of amendments is limited to adverse impacts on important state transportation resources and facilities. Review of FLUM amendments should focus on the following:

- 1) Whether the FLUM and the Future Transportation Map are coordinated and consistent;
- 2) Whether the established LOS standard or other mobility performance measures will be achieved and maintained over a 5-year period even with the additional development potential associated with the amendment;
- 3) Whether the infrastructure needs associated with the amendment are reflected in the Capital Improvements Element and on the Future Transportation Map; and
- 4) Whether the amendment is supported by relevant and appropriate data and analysis applied in a professionally acceptable manner.

Based on the level of sophistication, reviewers should expect more detailed degrees of documentation such as analysis spreadsheets and model files. The appropriate level of documentation should enable the reviewer to understand the assumptions and inputs underpinning the proposed amendment.

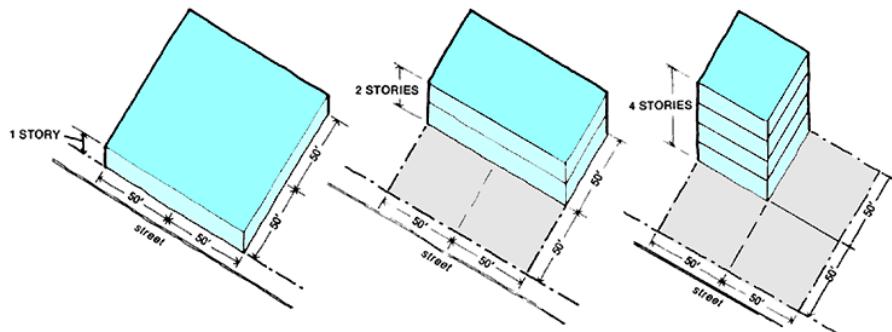
Interagency coordination between FDOT and the DEO is critical in implementing effective transportation and land use planning ([FDOT Procedure 525-010-101-d](#)). Throughout the review process, the District should communicate with the DEO plan reviewer assigned to the community that submitted the amendment to assist in determining whether a transportation issue should be included in the District reviewer's comments. DEO, the District, and the local government may participate in conference calls to discuss transportation-related issues.

The [LGCP FLUM Amendment Review Checklist](#) in the Resource Guide can provide a guide to criteria to consider when conducting a FLUM amendment impact evaluation.

Floor Area Ratio (FAR) Typically, FLUM amendments propose changes to the density or intensity of the land use for a particular property. An accompanying transportation impact analysis may convert the broad land use descriptions into quantifiable units. This is usually done for commercial and office land uses where square footages are calculated from gross acreages using Floor Area Ratios (FARs).

The FAR is the ratio of the gross square footage of a structure to the area of the site. The higher the ratio, the greater the intensity of the individual site development. Thus, a FLUM change to a category with a larger FAR will imply greater area (as square feet) of particular uses which in turn may affect trip generation and distribution, site access and levels of service.

Exhibit 26 Different Buildings with the same floor area (FAR 1.0)



Impervious Surface Ratio (ISR)

A companion measure, Impervious Surface Ratio (ISR) describes the relationship between the total impervious surface area on a site and the gross land area. Though this may not affect trip generation specifically, a higher ISR indicates that storm water may need to be accommodated off site.

The Future Land Use Element should specify the allowable intensities for every land use category that allows non-residential land uses. The maximum intensities should form the basis of all analyses. The FDOT reviewer should be familiar with the jurisdiction's land use categories, how the intensity standard is determined, and its influence on land use and transportation.

A FLUM amendment may create an inconsistency between the Future Land Use and Transportation Elements if the land use change causes a transportation facility to fall below its established LOS standard or other mobility performance measures. This inconsistency may be evident from the supporting transportation analysis. In this case, the FDOT reviewer should identify the inconsistency and suggest methods to remedy it.

Any FLUM amendment should include an analysis demonstrating internal consistency and the continued coordination of the Future Land Use and Transportation Elements. The transportation analysis should determine whether the existing, committed or planned transportation facilities are sufficient to accommodate any new growth impacts.

This test consists of whether the FLUM and the Future Transportation Map are coordinated and consistent, and whether the established LOS standard or other adopted mobility performance measures will be achieved and maintained over a 5-year period even with the additional development potential associated with the amendment.

The LOS standard determines whether a roadway has sufficient capacity to accommodate the impacts associated with the proposed land use change. It is also expressed as the maximum service volume established by policy in the comprehensive plan for a specific roadway.

In jurisdictions where the local government implements transportation concurrency, the local government must consult with FDOT regarding the establishment of LOS standards on SIS facilities adopted in the plan or when a plan amendment negatively affects the LOS on SIS facilities pursuant to Section 163.3180(5)(h)1., F.S. However, the local government makes the final decision regarding the LOS it adopts for SIS facilities and all other roadways in its jurisdiction.

On other roadways, local governments may establish adequate LOS standards or mobility performance measures that need not be consistent with any FDOT LOS standard.

Resource Guide. [DEO Online Resources](#)

Resource Guide. [FDOT Online Resources](#)

Resource Guide. [Legal Authority for Department Review](#)

Resource Guide. [LGCP FLUM Amendment Review Checklist](#)

3.4 Review of Text Amendments

Text amendments are changes to the goals, objectives and policies of the adopted comprehensive plan. Text amendments require an assessment of how proposed changes in policy affect the transportation system. For example, an amendment of the policy that establishes maximum development densities for a particular FLUM category does not alter the map itself, but may result in additional trips on facilities that serve areas designated by the FLUM category. Text amendments may modify levels of service standards for specific local facilities, or establish which modes are to serve specific land uses or districts within the jurisdiction. The local government may make changes to its Five-Year Schedule of Capital Improvements for facility prioritization or funding by local ordinance which would not be subject to state review.

Legal Authorities

Florida Statutes (F.S.): [Section 163.3177, F.S.](#)

Resource Guide. [DEO Online Resources](#)

Resource Guide. [LGCP FLUM Amendment Review Checklist](#)

3.4.1 Review Procedures

Text amendments in any element should be reviewed for potential impacts to the transportation system in a similar manner to the reviews of Future Land Use Map amendments.

Required Information

- Proposed text amendment package
- Any data and analysis used to support the amendment
- Current Capital Improvements Element and Five-Year Schedule of Capital Improvements, if required.

Key Review Points

Future land use, transportation, and projects in the Five-Year Schedule of Capital Improvements all affect the efficiency of the transportation system. Text amendments should be analyzed for internal consistency and impacts on land use patterns and transportation systems. The FDOT reviewer should coordinate with DEO when reviewing text changes to plan elements.

3.5 Future Land Use Element

This element contains goals, objectives and policies that implement the land development pattern for the jurisdiction which must be consistent with specific minimum criteria. Several of these affect the form and efficiency of the transportation system. These criteria include:

- Encourage the redevelopment and renewal of blighted areas;
- Encourage the elimination or reduction of uses inconsistent with the community's character and future land uses; and
- Discourage the proliferation of urban sprawl.

3.5.1 Review Procedure

The FDOT reviewer should be familiar with the requirements of Section 163.3177(6)(a), F.S., which specifies the criteria for the element. The element must establish the long-term end toward which land use programs and activities are ultimately directed. Similarly, the amount of land designated for future planned uses must provide a balance of uses that foster vibrant, viable communities and economic development opportunities and address outdated development patterns, such as antiquated subdivisions.

The amount of land designated for future land uses should allow the operation of real estate markets to provide adequate choices for permanent and seasonal residents and business and may not be limited solely by the projected population. The element must accommodate at least the minimum amount of land required to accommodate the medium projections of the University of Florida's Bureau of Economic and Business Research for at least a 10-year planning period unless otherwise limited under Section 380.05, F.S., including related rules of the Administration Commission.

Key Review Points

Section 163.3177(6)(a), F.S., provides a method of determining ... urban sprawl.

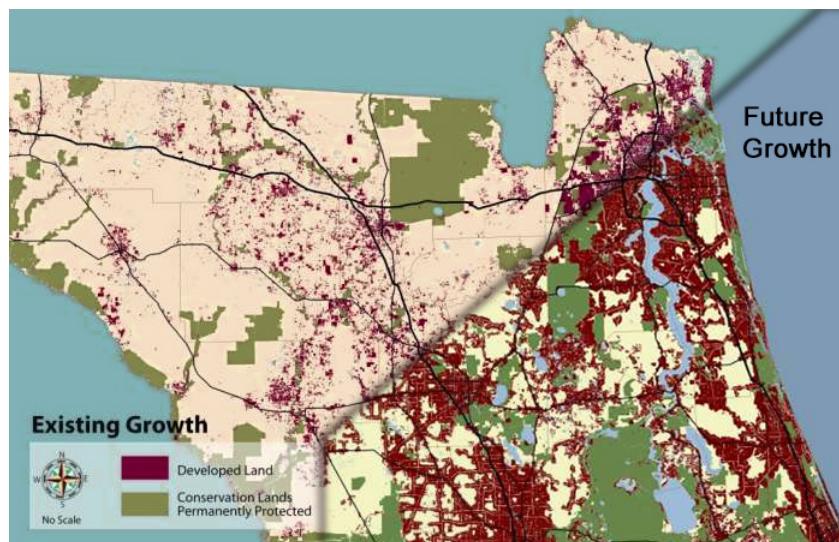
In regards to future land use, urban sprawl is defined under Section 163.3164, F.S., as low density, automobile dependent development patterns which promote inefficient extensions of public facilities and services. As illustrated in Exhibit 27, there are areas of development which have "leapt" over undeveloped/vacant areas to create areas of growth which are barely connected to other developed lands or not connected at all causing this undesirable pattern. Discouraging urban sprawl is critical in implementing transportation and land use planning and accomplishes many related planning objectives. Section 163.3177(6)(a), F.S., provides a method of determining whether or not a plan or plan amendment discourages the proliferation of urban sprawl.

The reviewer should be familiar with this section of the Florida Statutes to assure that transportation and land use goals, objectives and policies adequately discourage the proliferation of urban sprawl. The element or plan amendment

must be determined to discourage the proliferation of urban sprawl if it incorporates a development pattern or urban form that achieves four or more of the following:

- Directs or locates economic growth and associated land development to geographic areas of the community in a manner that does not have an adverse impact on and protects natural resources and ecosystems.
- Promotes the efficient and cost-effective provision or extension of public infrastructure and services.
- Promotes walkable and connected communities and provides for compact development and a mix of uses at densities and intensities that will support a range of housing choices and a multimodal transportation system, including pedestrian, bicycle, and transit, if available.
- Promotes conservation of water and energy.
- Preserves agricultural areas and activities, including silviculture, and dormant, unique, and prime farmlands and soils.
- Preserves open space and natural lands and provides for public open space and recreation needs.
- Creates a balance of land uses based upon demands of residential population for the nonresidential needs of an area.
- Provides uses, densities, and intensities of use and urban form that would remediate an existing or planned development pattern in the vicinity that constitutes sprawl or if it provides for an innovative development pattern such as transit-oriented developments or new towns as defined in Section 163.3164, F.S.

Exhibit 27
Effects of Potential Sprawl



We have tried to have the most up to date information. However, due to changes in legislation and acceptable practices, we recommend you check with the links in this handbook.

3.6 Transportation Element

The Transportation Element must address existing and projected level of service (LOS), system needs and deficiencies, how deficiencies are to be corrected, and how identified needs are to be met. Legislative changes have introduced a stronger multimodal emphasis in the updated element.

Pursuant to Section 163.3177(6)(b), F.S., the purpose of the transportation element is to plan for a multimodal transportation system that places emphasis on public transportation systems, where feasible. The element must provide for a safe, convenient multimodal transportation system, coordinated with the future land use map and designed to support all elements of the comprehensive plan. The element must be coordinated with the plans and programs of any applicable metropolitan planning organization, transportation authority, Florida Transportation Plan, and FDOT's adopted work program.

The element must reflect the data, analysis, and associated principles and strategies relating to the following:

- The existing transportation system conditions.
- The growth trends and travel patterns and interactions between land use and transportation.
- Existing and projected intermodal deficiencies and needs.
- The projected transportation system levels of service and system needs based upon the future land use map and the projected integrated transportation system.
- How the local government will correct existing facility deficiencies, meet the identified needs of the projected transportation system, and advance this and other elements of the comprehensive plan.

3.6.1 Review Procedures

The transportation-related comprehensive plan requirements are not identical for all communities. Local governments located within the metropolitan planning area of an MPO must include a Transportation Element in their comprehensive plan addressing traffic circulation, all alternative modes of transportation, aviation, rail, seaport facilities, and access, and intermodal terminals, evacuation of the coastal population, as well as airports, aviation development, and airport land use compatibility. These requirements are listed in subsection 163.3177(6)(b) 1 and 2, F.S.

Local governments located outside the metropolitan planning area of an MPO (having a population of less than 50,000 for municipalities and less than 75,000 for counties) have fewer requirements in their Transportation Element (Section 163.3177(6)(b), F.S.) They must only address traffic circulation.

Furthermore, municipalities having a population greater than 50,000 and counties having a population greater than 75,000 that are located outside the metropolitan planning area of an MPO must include a Transportation Element that addresses mass transit, ports, aviation, and related facilities, as well as a new piece called recreational traffic (note that at this time this requirement applies to only two counties, Citrus and Monroe).

All local governments have the option of including an airport master plan and amendments into the comprehensive plan as well. Once incorporated into the comprehensive plan, any development or expansion consistent with the airport master plan is exempt from a development of regional impact (DRI) review.

Key Review Points

The Transportation Element provides goals, objectives, and policies for the future transportation modes and needs (Section 163.3177(6)(b), F.S.), and requires the community to plan for a multimodal transportation system where feasible. In the new element, it is also specifically stated that the Transportation Element and Future Land Use Element should demonstrate internal consistency and continued coordination with each other. Coordination and consistency between these two elements will help jurisdictions to create a cohesive development pattern and transportation system. Any text amendment should be reviewed for internal consistency with other portions of the comprehensive plan and for effects on the existing and future transportation network.

A text change to the Transportation Element may result from a FLUM amendment, an EAR-based amendment, or a need to update or revise the element. Any change to the Transportation Element may influence land use strategies and capital projects. The FDOT reviewer should be aware of the following potential changes:

- 1)** A change in level of service standards for any mode;
- 2)** Land use strategies to promote bicycle and walking or transit; and
- 3)** Measures to preserve, acquire or protect transportation rights-of-way.

The text amendment should be reviewed for required multimodal components and consistency with the Future Land Use Element. The new Transportation Element must address traffic circulation and up to five additional required components, depending on the MPO boundary and population size. The FDOT reviewer and local government staff should be communicating frequently while the element is being developed or amended.

3.7 Capital Improvements Element

The Capital Improvements Element (CIE) is adopted and updated to reflect the timing and funding of capital projects to meet established LOS standards for applicable public facilities. The CIE must include the following:

- A component outlining principles for construction, extension, or increase in capacity of public facilities, and a component that outlines principles for correcting existing public facility deficiencies necessary to implement the comprehensive plan for at least a 5-year period.
- Estimated public facility costs, including a delineation of when facilities will be needed, the general location of the facilities, and projected revenue sources to fund the facilities.
- Standards to ensure the availability of public facilities and the adequacy of those facilities to meet established acceptable levels of service.
- Identification of facilities necessary to meet adopted levels of service during a 5-year period.



The schedule of capital improvements includes any publicly funded projects of federal, state, or local government, and may include privately funded projects for which the local government has no fiscal responsibility. Projects necessary to ensure that any adopted level-of-service standards are achieved and maintained for the 5-year period must be identified as either funded or unfunded, and if unfunded given a level of priority for funding.

The schedule must include transportation improvements included in the applicable metropolitan planning organization's transportation improvement program adopted pursuant to Section 339.175(8), F.S., to the extent that such improvements are relied upon to ensure concurrency and financial feasibility. Additionally, the schedule must be coordinated with the applicable MPO's long-range transportation plan adopted pursuant to Section 339.175(7), F.S.

3.8 Transportation Concurrency-Related Amendments

This section of the handbook will address transportation concurrency as revised in HB 7207 in 2011 and HB 319 in 2013.

Transportation concurrency is no longer mandatory. Transportation facilities, along with Parks and Recreation and Schools may, however, be included in a local government's concurrency system at a local government's option.

As these elements were required in LGCPs prior to June of 2011, they are still considered to be in place until a local government adopts a comprehensive plan amendment in order to rescind transportation concurrency. This amendment is not subject to the state coordinated review process except for amendments located within an area of critical state concern pursuant to Section 163.3184(2)(c), F.S.

If local governments apply concurrency to these other facilities and services, including transportation, the amended statute, Section 163.3180, F.S., provides requirements that must be met.

3.8.1 Requirements Governing Optional Transportation Concurrency Program

Key requirements in Section 163.3180(5), F.S., for those local governments that utilize transportation concurrency include:

- The LGCP must provide principles, guidelines, standards, and strategies, including adopted levels of service to guide the application of transportation concurrency.
- Local government must use professionally accepted methods for measuring level of service when evaluating potential impacts of a proposed development and must consider the number of facilities that will be necessary to meet adopted level-of-service demands.
- Local governments must allow applicants for a DRI, a rezoning, or a development permit to satisfy concurrency requirements in the plan by entering into an agreement to pay for or construct its proportionate share of transportation improvements.
- The local government is encouraged to develop policy guidelines and techniques to address potential negative impacts on future development such as in urban service areas, infill and redevelopment.
- The local government is encouraged to develop tools and techniques to complement the application of transportation concurrency.
- If a local government applies transportation concurrency in its jurisdiction, it is encouraged to develop policy guidelines and techniques to address potential negative impacts on future development.

- The transportation concurrency program must exempt public transit facilities such as transit transfer facilities and terminals from concurrency.
- When considering plan amendments that affect facilities on the strategic intermodal system, the Department of Transportation must be consulted.

Transportation concurrency is implemented through a local government's permitting process designed to ensure transportation facilities and services are available to address the impacts of development. Transportation concurrency is premised upon adoption of LOS standards or other mobility performance measures, and capital facilities planning to address existing service deficiencies, and provide infrastructure or planning strategies to accommodate new growth.

FDOT staff should understand the requirements and methodologies of local government concurrency systems as they may receive requests for technical assistance from local governments and may become involved when a local concurrency study identifies impacts to the State Highway System (SHS).

Local governments use existing roadway capacity, estimated trips from a proposed development and the adopted LOS standard or other mobility performance measures to determine whether the service needs of a proposed development exceed the existing and scheduled roadway capacity improvements. If capacity is unavailable and no improvements are scheduled, the developer has the option to provide the improvements or a proportionate share contribution, unless the government agrees to provide the necessary improvements.

The FDOT's primary role in transportation concurrency management is to provide technical support to local governments.

Key Review Points

The FDOT reviewer should focus on the goals, objectives, and policies in the local comprehensive plan that defines the framework for the concurrency management system. The FDOT reviewer should review the document and demonstrate that the amendment to the local comprehensive plan achieves and maintains the adopted LOS standards or other mobility performance measures. Having the needed data for the corridor impacted by the proposed amendment will assist the FDOT reviewer.

For example, if a SHS or SIS facility is operating near or below the adopted LOS or performance standard, the FDOT reviewer should coordinate with the DEO during the review of a proposed comprehensive plan amendment to request additional data and analysis documenting the effect of the amendment on the facility.

The FDOT reviewer may provide recommendations for:

- Methodologies for evaluating concurrency;
- Identifying facilities;
- Tracking development projects;
- Considering programmed improvements;
- De minimus impacts on hurricane evacuation routes;
- Proportionate share tracking;
- Concurrency management system update schedule;
- Preferred monitoring data for the Department;
- Size of the study area; and
- Use of common methodologies between local governments for measuring level of service impacts.

The method for monitoring concurrency is an important element of a local government's concurrency management system. Local governments use various forms of tracking systems, such as spreadsheets, that can be used for segments of a transportation system to determine concurrency. Intranet tracking systems can be used for internal review and approval, and to provide automatic updates.

XLS**Concurrency Management Systems**

The FDOT reviewer should be familiar with the various methodologies used by the jurisdictions in their District. A sample spreadsheet used for determining this information for concurrency management systems can be accessed online at: http://www.cutr.usf.edu/research/access_m/pdf/CMS.xls

3.8.2 Concurrency Alternatives

Local governments may have existing alternatives to transportation concurrency in their comprehensive plans that reflect previous state requirements. These alternatives include:

- Transportation Concurrency Exception Areas (TCEAs);
- Multimodal Transportation Districts (MMTDs);
- Long-Term Concurrency Management Systems (LTCMS); and
- Transportation Concurrency Management Areas (TCMAs).

Another existing concurrency alternative that may be implemented by a local government is the designation of a Transportation Development Authority. Although this concurrency alternative is reflected in current state law, the provisions governing this alternative did change in 2011. There may be local governments still implementing these authorities pursuant to previous provisions.

3.9 Other Local Government Comprehensive Plan Reviews

Local governments may process other amendments to the LGCP in addition to those discussed in previous sections. When reviewing such amendments, the FDOT reviewer should evaluate the impacts on the SHS and SIS, and the use of professionally accepted techniques for measuring LOS and other mobility performance measures.

Resource Guide. [DEO Online Resources](#)



Resource Guide. [Transportation and Land Use Strategies that Support Mobility](#)

Legal Authorities

Florida Statutes (F.S.): [Section 163.3184\(4\), F.S.](#)
[Section 163.3191, F.S.](#)

Resource Guide. [DEO Online Resources](#)

If the local government determines that amendments are necessary, they will have 1 year to submit the amendments for review. These amendments will undergo the state coordinated review process, not the expedited state review process. See Section 3.2 The Comprehensive Plan Amendment Process for an overview of the two types of reviews.

Key Review Points

The evaluation and appraisal based amendments to the comprehensive may include updates that reflect changes in local circumstances and community goals. However the only requirement is to update the plan to reflect changes in state law.

3.9.2 Development of Regional Impact-based Amendments

DRI Amendment

A Development of Regional Impact (DRI) is authorized through the issuance of a local development order. Since all local development orders must be consistent with the comprehensive plan, pursuant to Section 163.3194(1), F.S., the DRI must be consistent with the comprehensive plan. Thus, a DRI-related comprehensive plan amendment may need to be prepared to ensure consistency of the plan with a proposed DRI, or substantial deviation to an existing DRI. Such amendments follow the LGCP amendment review process.

Legal Authorities

Florida Statutes: [Section 163.3184\(3\), F.S.](#)
[Section 163.3184\(4\), F.S.](#)
[Section 380.06\(6\), F.S.](#)

Florida Administrative Code: [Rule 73C-40, F.A.C.](#)

Resource Guide. [DEO Online Resources](#)

FDOT Review Procedure

Required information:

- Amendment application
- Transportation impact study for the amendment

Key review points

The FDOT reviewer should analyze the amendment for consistency with the relevant elements in the comprehensive plan and with [Chapter 380, F.S.](#). The transportation impact study for the amendment should focus on the anticipated trips, growth trends on the adjacent roadway facilities and proposed mitigation.

3.9.3 Sector Plans

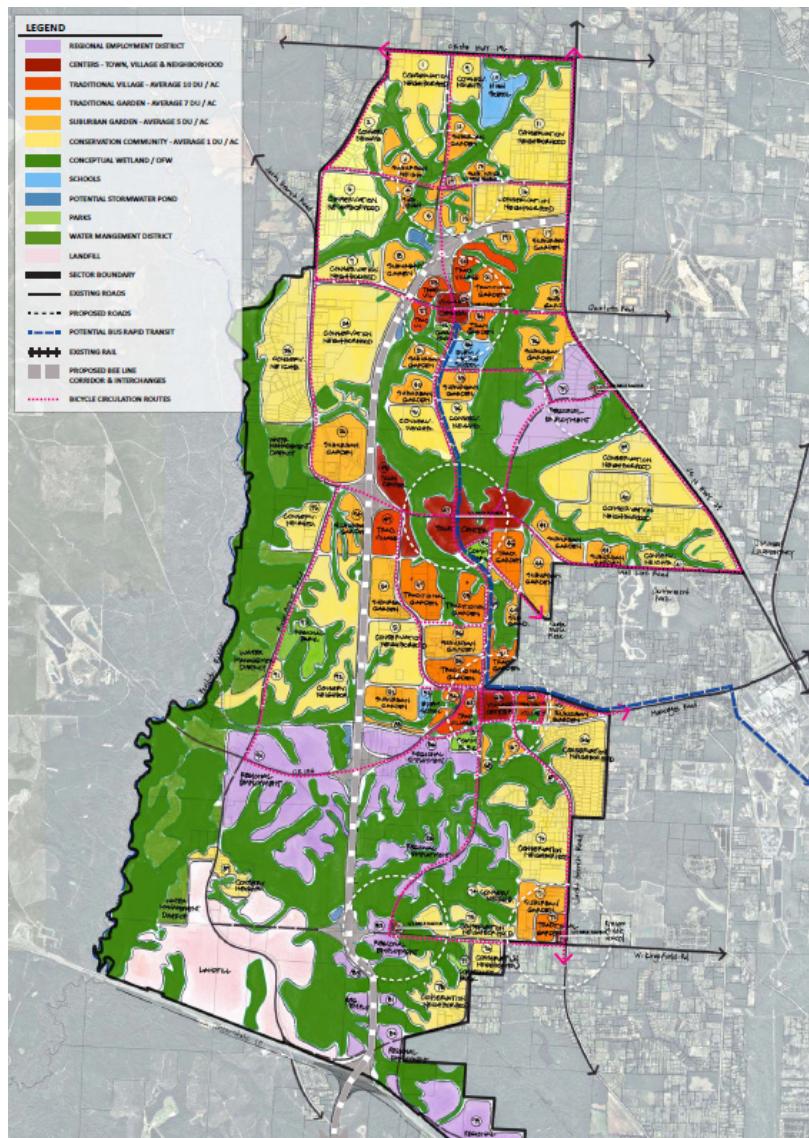
Sector planning, pursuant to Section 163.3245, F.S., is a planning tool for landscape scale planning not subject to DRI review and that is intended for large geographic areas of at least 15,000 acres in size. Sector plans emphasize urban form and the protection of regionally significant resources. Sector Plans are initiated by a local government through a high level of public involvement as comprehensive plan amendments. Sector Planning is a planning process, not a regulatory one. Sector Plans are prepared at two levels; the first level is the adoption of a long term master plan, formerly known as the conceptual long-term master plan, and the second is adoption by a local development order of two or more detailed specific areas plans (DSAP). This two level planning process provides a method for dealing with a planning period longer than the planning period of the local government comprehensive plan, yet still maintaining consistency.

Adoption of Long-Term Master Plan

The adoption of a long-term master plan requires the identification of public facilities and natural resources. It includes the conceptual framework map, principles and guidelines that address urban form and procedures for intergovernmental coordination. The Master Plan is adopted through the plan amendment process (state coordinated review). The DSAP is adopted by local ordinance, which must be rendered to DEO, and can be appealed. The key components of a master plan are a framework map, the identification of needed transportation facilities and the adoption of procedures to coordinate on extra-jurisdictional impacts. Exhibit 28 is an example of a Map in Escambia County from May of 2011:

Exhibit 28

Sector Plan Master Plan Map for Mid-West Sector Plan (Escambia County)

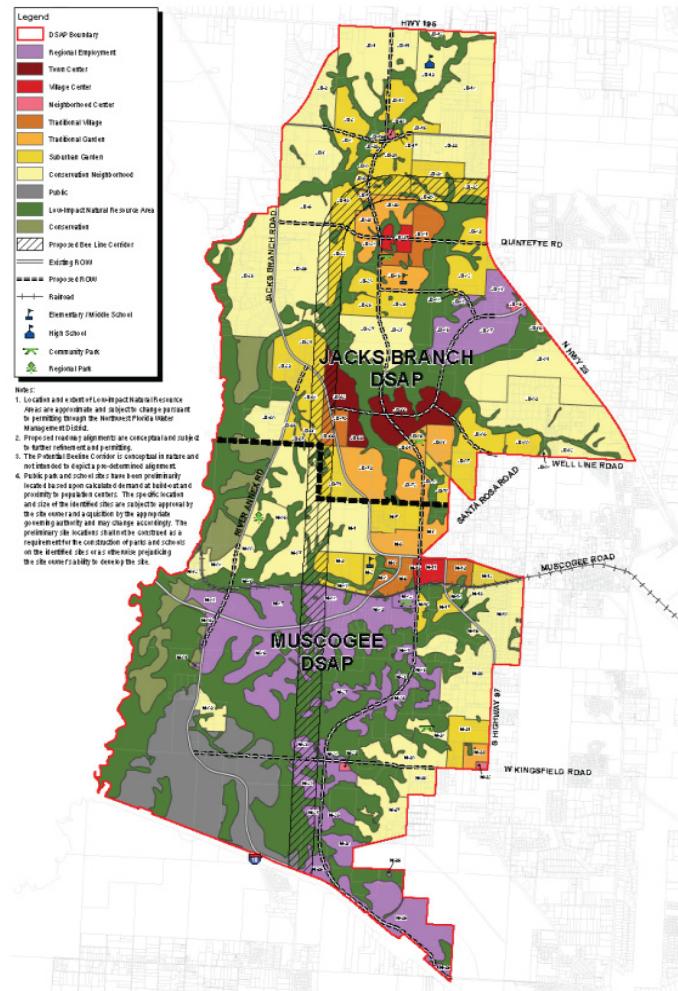


Detailed Specific Area Plans (DSAPs)

Detailed specific area plans (DSAP) must have future uses, public facilities and natural resources in the region. Identification of the distribution, extent and location of future uses is required. Public facilities include those outside the host jurisdiction and those necessary for the short term. Similar to the long-term master plan, the detailed specific area plans require inclusion of guidelines and principles that address urban form and procedures for intergovernmental coordination.

Pursuant to Section 163.3245, F.S., this level encompasses adoption by a development order of two or more detailed specific area plans that implement the long-term master plan and within which development of regional impact requirements are waived. Exhibit 29 is an example of a DSAP Boundary in Escambia County from September of 2011:

Exhibit 29
Sector Plan DSAP Map
for Mid-West Sector
Plan (Escambia
County)



Source: Escambia County Optional Sector Plan Website
<http://myescambia.com/business/ds/optional-sector-plan>

Application of Sector Plans

Pursuant to Section 163.3245(28), F.S., the sector plan process is an alternative to the development of regional impact process. As of June 2011, the pilot program status, demonstration of need, and limitations on the number of sector plans as well as planning time frame has been removed. Furthermore, Section 163.3245 F.S., establishes the minimum size for a sector plan to be 15,000 acres.

Review of Long Term Master Plans

Sector planning requires the adoption of a long-term master plan into the Comprehensive Plan. When reviewing the long-term master plan, the DEO is required to consult with FDOT and any applicable MPO or urban transit agency regarding the location, capacity, design, and phasing of major transportation facilities in the planning area. The long-term master plan requires a general identification of transportation facilities to serve the future land uses in the plan and will include guidelines to be used to establish each modal component intended to optimize mobility. The transportation facilities identified in the long-term master plan should be consistent with the adopted MPO long range transportation plan to the maximum extent feasible. Furthermore, the long-term master plan should be consistent with state and regional plans. . General information is required for the long-term master plan submittal, with the detailed information deferred to the DSAP. DSAPs are still used to implement long-term master plans, but they only require adoption by local ordinance, not plan amendment.

A property owner, developer, or the DEO may appeal any local government order approving a DSAP as being inconsistent with the long-term master plan or comprehensive plan by filing a petition with the Florida Land and Water Adjudicatory Commission (Governor and Cabinet) for an administrative proceeding conducted according to Section 380.07(6), F.S. Sector Plans continue to be prohibited in designated areas of critical state concern.

3.9.4 Rural Land Stewardship Areas

Initiated in 2001, the Rural Land Stewardship Area program under Section 163.3248, F.S., was revised in 2011 to include legislative changes to the initiation process, designation, plan amendment process, and state agency coordination and review. The program established that counties may designate rural land stewardship areas (RLSAs) where planning and economic incentives encourage implementing innovative and flexible planning and development strategies as well as creative land use planning techniques for areas classified as predominantly rural. An area to be designated under the RLSA program must be at least 10,000 acres, located outside of municipalities and/or established urban service areas, and designated by a comprehensive plan amendment by the local government which would have jurisdiction. It is important to note that an RSLA can include more than one county and landowners must consent to being in a RSLA.

Agency Technical Assistance with RLSAs

Pursuant to Section 163.3248(4), F.S., a local government or one or more property owners may request technical assistance and participation from state agencies, regional planning councils, water management districts, private land owners, and other stakeholders in the development of a plan for a RLSA. State agencies can include the FDOT, DEO, Department of Environmental Protection, Department of Agriculture and Consumer Services, and Fish and Wildlife Conservation Commission.

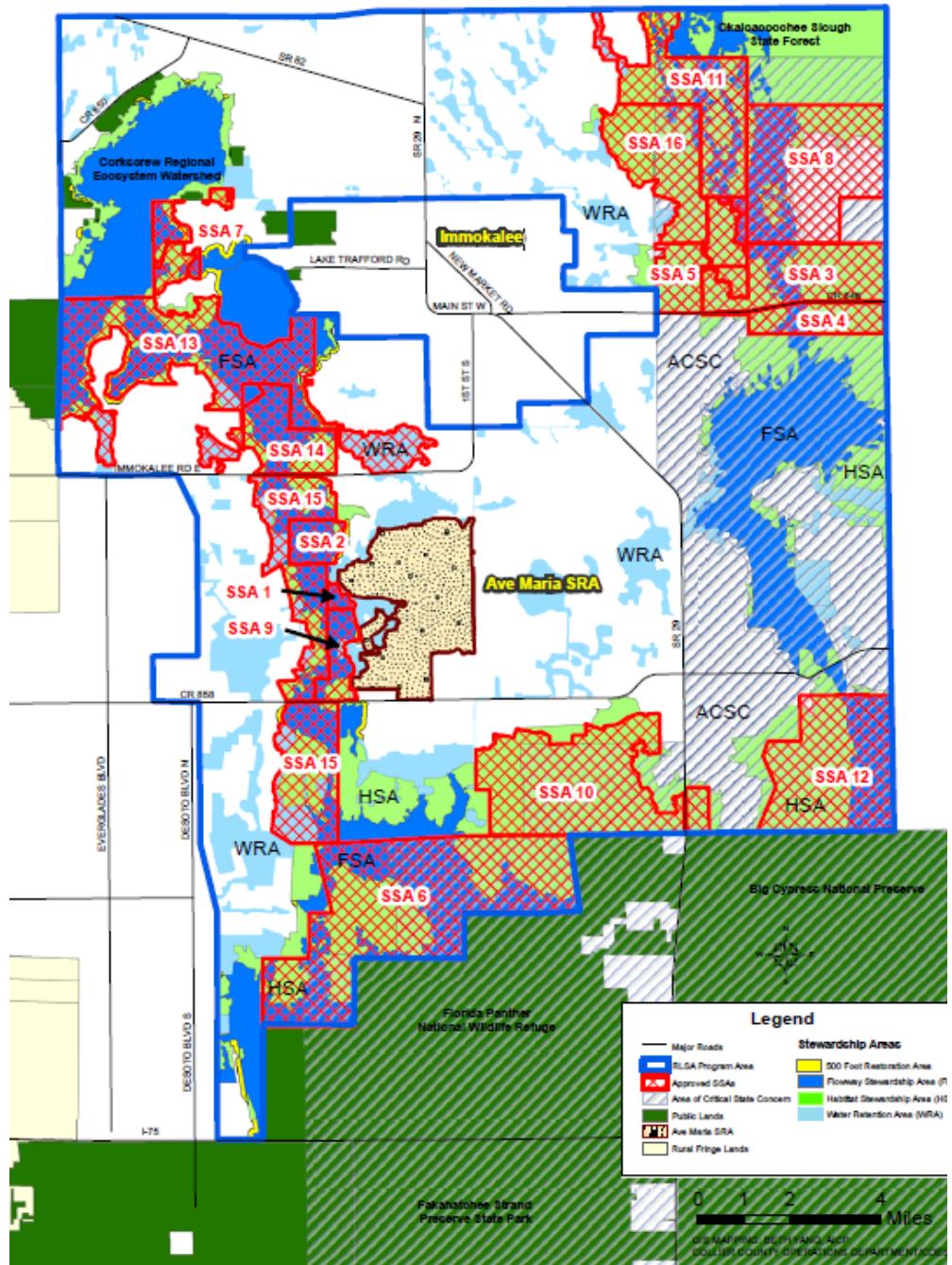
RLSA Comprehensive Plan Amendments

The RLSA process is initiated by the requests the applicable land owners. Comprehensive plan amendments proposing a rural land stewardship area are subject to the state-coordinated review process in Section 163.3184(4), F.S., and each local government with jurisdiction over a RLSA must designate the area through a comprehensive plan amendment. RLSAs no longer require a preliminary agreement with DEO prior to initiating a comprehensive plan amendment designating an RLSA overlay. The comprehensive plan amendment for a RLSA must include:

- Criteria for designating Stewardship Receiving Areas, or SRAs;
- Innovative planning and development strategies and associated implementation processes that include provisions for a functional mixture of land uses and other strategies described under Section 163.3248(5), F.S.; and
- Mixture of densities and intensities which would not result in urban sprawl-like development and protect natural habitats.

Upon the adoption of a plan amendment creating a RLSA, the local government must pass an ordinance establishing a rural land stewardship overlay zoning district, which provides the methodology for the creation, conveyance, and use of stewardship credits. Furthermore, a demonstration of need based on population or other factors is no longer a requirement for a RLSA Overlay designation. Exhibit 30 is the RLSA Overlay Map from Collier County in March of 2010:

Exhibit 30
RLSA Overlay Map
from Collier County

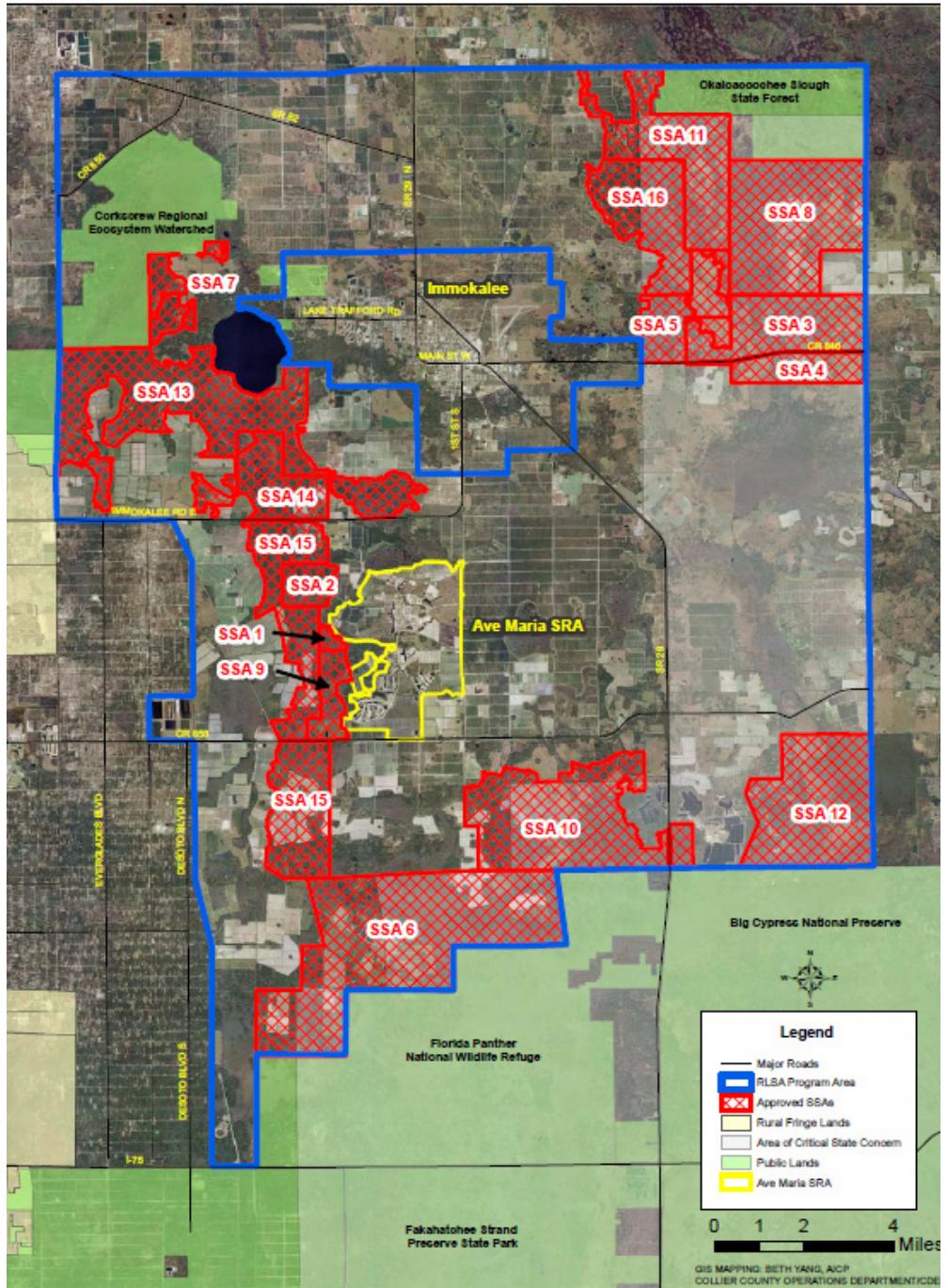


Source: Collier County Rural Land Stewardship Area Overlay Program
<http://www.coliergov.net/Modules>ShowDocument.aspx?documentid=30764>

According to the Rural Land Stewardship Area Program, the Stewardship Sending Area (SSA) is used to generate area stewardship credits to property owners which may be used to entitle SRA, which can be in the form of self-contained planned urban developments in the RLSA. The SSA Program within the RLSA establishes a method for protecting and conserving the most valuable

environmental land, including large connected wetland systems and significant areas of habitat for listed species. Exhibit 31 is an RLSA Status Map of existing SSAs in the Collier County RLSA updated in June 2010:

Exhibit 31
RLSA Status Map of
existing SSAs in the
Collier County
RLSA



Source: Collier County Rural Land Stewardship Area Overlay Program
<http://www.coliergov.net/Modules>ShowDocument.aspx?documentid=30763>

Pursuant to Section 163.3248, F.S., stewardship credits, formerly known as transferable rural land use credits, created in RLSAs no longer require a minimum of a 25 year timeframe for receiving areas. Receiving areas are to be based on available data and the development potential represented by stewardship credits created in RLSAs and correlate to that amount. Conservation easements must be placed on the sending area land prior to the transfer of stewardship credits.

3.9.5 Planning Innovations

Planning Innovations and Urban Service Areas

In 2011, Section 163.3168, F.S., was created to encourage local governments to apply innovative planning tools of visioning, sector planning and urban service areas to address future new development areas, urban service area designations, urban growth boundaries, and mixed-use, high-density development in urban areas as defined in Section 163.3164, F.S.

Technical Assistance

Section 163.3168, F.S., requires the DEO provide direct and indirect technical assistance to help local governments find creative solutions to foster vibrant, healthy communities, while protecting the functions of important state resources and facilities. If a plan amendment may adversely impact an important state resource or facility, upon request by the local government, the state land planning agency must coordinate multi-agency assistance, if needed, to develop an amendment to minimize any adverse impacts. FDOT's review is limited to issues within the agency's jurisdiction as it relates to the requirements of this part and may include technical guidance.

Resource Guide. [FDOT Online Resources](#)

3.10 Resource Guide. Legal Authority for Department Review

WEB[Florida Statutes](#)**WEB**[Florida Administrative Code](#)

Florida Statutes, Online Sunshine:

<http://www.leg.state.fl.us/Welcome/index.cfm?CFID=229891382&CFTOKEN=88136963>

Florida Administrative Code: <https://www.flrules.org/>

The following Florida Statutes and Rule 73C-40, Florida Administrative Code, provide the authority that guides the review of local government comprehensive plans and Developments of Regional Impact documents:

3.10.1 Florida Statutes (F.S.)

Future Land Use and Transportation Elements:

Sections 163.3177(6)(a) and (b), F.S., set forth the requirements for the local government comprehensive plan Future Land Use and Transportation Elements.

Concurrency:

Section 163.3180, F.S., addresses concurrency and states that transportation concurrency is optional. If the local government chooses to apply concurrency to transportation facilities, the local government comprehensive plan must provide the principles, guidelines, standards, and strategies to guide its application pursuant to Section 163.3180(5), F.S. The local government may choose to rescind optional transportation concurrency pursuant to Section 163.3180(1)(a), F.S.

Expedited State Review Process

Section 163.3184(3), F.S., explains the processing requirements of the Expedited State Review Process for local government comprehensive plan amendments. Local governments are required to submit the proposed and adopted amendments to the Department, as it is one of the reviewing agencies. The Department is limited to commenting on issues within the agency's jurisdiction as it relates to transportation resources and facilities of state importance.

State Coordinated Review Process

Section 163.3184(4), F.S., explains the processing requirements of the State Coordinated Review Process for local government comprehensive plan amendments. Local governments are required to submit the proposed and adopted amendments to the Department, as it is one of the reviewing agencies. The Department is limited to commenting on issues within the agency's jurisdiction as it relates to transportation resources and facilities of state importance.

Evaluation and Appraisal Review Amendments

Section 163.3191(2), F.S. If the local government determines amendments to its comprehensive plan are necessary to reflect changes in state requirements, as reflected in its letter to the Department of Economic Opportunity, the local government shall prepare and transmit within 1 year the plan amendments for review under the State Coordinated Review Process in Section 163.3184(4), F.S.

Sector Plans

Section 163.3245, F.S., pertains to the requirements for establishing a Sector Plan.

Rural Land Stewardship Areas

Section 163.3248, F.S., states the requirements for a Rural Land Stewardship Area.

Safe, viable and balanced state transportation system

Section 334.044, F.S., establishes that FDOT has the responsibility for coordinating the planning of a safe, viable and balanced state transportation system serving all regions of the state, and to assure the compatibility of all components, including multimodal facilities.

Development of Regional Impact

Section 380.06, F.S., pertains to the statutory requirements for Developments of Regional Impact (DRI).

3.10.2 Florida Administrative Code (F.A.C.):

DOC

Rule Chapter
73C-40 F.A.C.

Rule Chapter 73C-40, F.A.C., describes the Rules of Procedure and Practice pertaining to Developments of Regional Impact

PDF

Procedure
525-010-101-d

3.10.3 FDOT Policies/Procedures

The Department utilizes both policies and procedures to guide reviewers in their duties. The department reviewer should be familiar with and as needed refer to the following policies and procedures:

Topic No: 525-010-101-D, Review of Local Government Comprehensive Plans

3.10.4 Publications: Online Guidance



[Transportation Concurrency Best Practices Guide](#)

A document produced by the Department of Community Affairs with a primary focus on local government concurrency. Also includes guidance on comprehensive plan amendment reviews and cumulative analysis. Please note that the statutory requirements within this document are out of date.

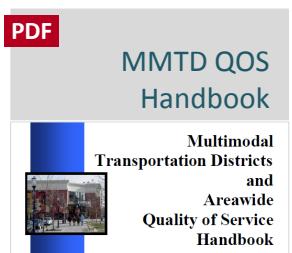


[Sample Concurrency Management Spreadsheet](#)

A downloadable CMS in excel spreadsheet.

[User Guide](#)

Instructions for concurrency management system spreadsheet.

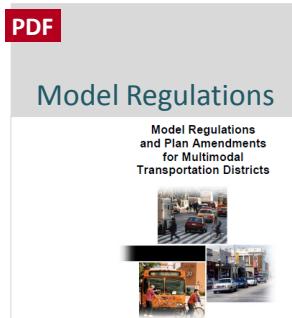


[A GIS-Based Concurrency Management System for Local Governments](#)

DCA sponsored project of Treasure Coast Regional Planning Council to use GIS as basis for concurrency management system. Please note that the statutory requirements within this document are out of date.

[Multimodal Transportation Districts and Areawide Quality of Service Handbook](#)

FDOT handbook designed to assist local governments create and adopt MMTDs.



[Model Regulations and Plan Amendments for Multimodal Transportation Districts Report](#) – FDOT guidebook designed to assist local governments in adopting comprehensive plan policies and local ordinances in support of MMTDs.



[FDOT Draft Guidance for Producing a Transit Development Plan](#)

Guidance to assist Florida transit properties in the preparation of Transit Development Plans as required by Chapter 14-73 in accordance with Sections 339.135 and 339.155 of Florida Statutes.



www.floridajobs.org/community-planning-and-development/programs/technical-assistance/planning-initiatives/urban-planning/transit-oriented-development

A Framework for Transit Oriented Development in Florida.

3.11 Resource Guide. FDOT Online Resources



Transportation and Community Planning –

FDOT Office of Policy Planning webpage providing transportation and growth management guidance and resources.

FDOT Systems Planning Office – Highway Capacity/Level of Service-

FDOT systems planning webpage providing information and resources on measuring quality/level of service. Also hosts the 2013 Q/LOS Handbook

www.fltod.com/research_and_case_studies.htm

Transit Oriented Development in Florida Website by the Treasure Coast Regional Planning Council and the Florida Department of Transportation-

www.ite.org

<http://www.ite.org/tripgeneration/trippubs.asp>

Institute of Transportation Engineers (ITE) Trip Generation documents

www.dot.state.fl.us/planning/systems/programs/mspi/brochures/default.shtm

SIS and Emerging SIS facilities

reconnectingamerica.org/

Reconnecting America is a national nonprofit that advises civic and community leaders on overcoming the challenges associated with community development while facilitating transportation choices. As the managing partner of the Center for Transit-Oriented Development, Reconnecting America promotes best practices in transit-oriented development.

fltod.com/renaissance/docs/Products/FrameworkTOD_0715.pdf

The Framework for Transit Oriented Development is the result of a collaborative effort among State of Florida agencies to assist local governments and state and regional agencies in their use of transit oriented development to transform the state's existing auto-oriented, largely suburban development pattern into more compact, livable patterns supporting walking, biking, transit, and shorter auto trips.

pps.org/pdf/bookstore/How_to_Engage_Your_Transportation_Agency_AARP.pdf

A Citizen's Guide to Better Streets, produced by the Project for Public Spaces, Inc. is intended to be an easy-to-use guide to effective interaction with transportation planning and engineering professionals to facilitate transportation choices as a way of supporting positive community development and creating walkable communities.

PDF ITE
Trip Generation
Manual

PDF Framework TOD

A FRAMEWORK FOR TRANSIT ORIENTED DEVELOPMENT IN FLORIDA
Prepared for:
Florida Department of Transportation and
Department of Community Affairs
MARCH 2011

PDF Citizen's Guide to
Better Streets

A Citizen's Guide to Better Streets
HOW TO ENGAGE YOUR TRANSPORTATION AGENCY

3.12 Resource Guide. DEO Online Resources



Comprehensive Plan Amendment Submittal and Processing Guidelines:

www.floridajobs.org/community-planning-and-development/programs/comprehensive-planning/amendment-submittal-and-processing-guidelines

DEO's web page on how to prepare and submit a comprehensive plan amendment for Expedited State Review and State Coordinated Review.

Evaluation and Appraisal of Comprehensive Plans:

www.floridajobs.org/community-planning-and-development/programs/comprehensive-planning/evaluation-and-appraisal-of-comprehensive-plans

DEO's webpage pertaining to evaluation and appraisal reviews of comprehensive plans. At least every seven years, (see the [Evaluation and Appraisal Notification Schedule 2012 - 2018](#)) local governments must determine whether the need exists to amend the comprehensive plan to reflect changes in state requirements since the last time the comprehensive plan was updated.

Capital Improvements Element:

www.floridajobs.org/community-planning-and-development/programs/technical-assistance/planning-initiatives/infrastructure-planning/capital-improvements-element

DEO's webpage pertaining to the Local Government's Capital Improvements Element, the 2011 changes, and the preparation of a Five-Year Schedule of Capital Improvements.

Developments of Regional Impact (DRI) and Florida Quality Developments:

www.floridajobs.org/community-planning-and-development/programs/developments-of-regional-impact-and-florida-quality-developments

DEO webpage pertaining to the DRI program, including thresholds, procedures, rules and forms.

Sector Planning Program:

www.floridajobs.org/community-planning-and-development/programs/technical-assistance/planning-initiatives/rural-planning/sector-planning-program

DEO's webpage on sector planning containing several examples of current sector plans around the State.

Transportation Planning:

<http://www.floridajobs.org/community-planning-and-development/programs/technical-assistance/planning-initiatives/infrastructure-planning/transportation-planning>

DEO's web page on transportation planning includes important information on the comprehensive plan's transportation element, transportation concurrency and transportation proportionate share contributions.

Transit Oriented Development:

<http://www.floridajobs.org/community-planning-and-development/programs/technical-assistance/planning-initiatives/urban-planning/transit-oriented-development>

DEO's web page pertaining to Transit Oriented Development containing the Chapter 163, Part II, F.S., references and numerous links.

Mobility Fees:

<http://www.floridajobs.org/community-planning-and-development/programs/technical-assistance/planning-initiatives/urban-planning/mobility-fees>

DEO's web page pertaining to the 2009 Mobility Fees Study and numerous links regarding mobility fee implementation.

Rural Land Stewardship Area Program:

<http://www.floridajobs.org/community-planning-and-development/programs/technical-assistance/planning-initiatives/rural-planning/rural-land-stewardship-area-program>

DEO's web page pertaining to Rural Land Stewardship

DEO Community Planning:

<http://www.floridajobs.org/community-planning-and-development>

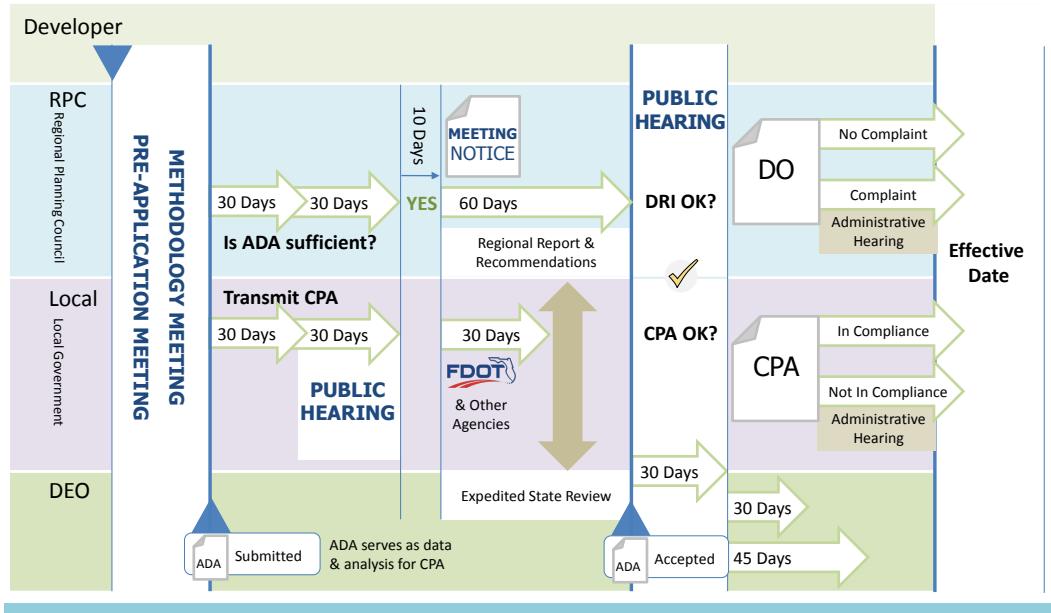
DEO's web page containing all things related to community planning and the State Land Planning Agency

3.13 Resource Guide. LGCP FLUM Amendment Review Checklist

This Checklist can provide a guide to criteria to consider when conducting a LGCP FLUM Amendment Review

Project	Reviewer	Date of Review:
		Comments Due:
LGCP Amendment Review Checklist Evaluation Criteria		Y N N/A
A. Study area boundaries established to include all significantly impacted SHS segments under proposed FLUM amendment land use scenario, including those located outside the jurisdiction of entity pursuing amendments?		<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
1. All SIS segments identified?		<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
B. Transportation impacts for existing FLUM adequately defined for comparison use in review?		<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
1. Land use scenario defined for existing FLUM category which has mix, densities and intensities of primary and secondary permitted land uses?		<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
a. Assumptions fully documented?		<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
b. Trip-generating characteristics of the existing FLUM Land Use Scenario shown?		<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
2. Professionally acceptable method employed to determine distribution of trips for existing FLUM Land Use Scenarios?		<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
a. All internal capture and internal/external split assumptions properly documented?		<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
3. Existing SHS segments' LOS shown?		<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
b. Department and LGCP LOS standards used to determine LOS grade?		<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
4. LOS determined for SHS Segments for existing FLUMs Land Use Scenario?		<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
C. Maximum potential land uses permitted under the proposed FLUM Amendment allowable?		<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
D. Future land use scenario defined with reasonable mix, densities and intensities of permitted land uses		<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
a. Assumptions used in defining FLUM Amendment Land Use Scenario fully documented?		<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
E. Professionally accepted methods used for trip generation, distribution and assignment based on FLUM amendment Land Use Scenario?		<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
a. Adequate documentation provided to permit review of the analyses?		<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
F. LOS been determined for SHS segments under FLUM Amendment Land Use Scenario?		<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
1. Additional improvements to SHS segments required, beyond those identified in adopted long-range plans?		<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
2. Commitments to providing additional improvements made as a condition of FLUM Amendment approval?		<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
G. FLUM Amendment and transportation impacts consistent with the Florida Transportation Plan and other Department-adopted approval plans, policies, standards and guidelines, rules and procedures?		<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
H. FLUM Amendment provides for sufficient additional local transportation infrastructure to preserve mobility of impacted SHS segments,		<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
I. Proposed FLUM Amendment impact existing or proposed public transit service, as set forth in local agency's Transit Development Plan?		<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>

4



Developments of Regional Impact

4.1 Introduction to Development of Regional Impact Review

4.1.1 DRI Review Process

This section will help the FDOT reviewer understand the Development of Regional Impact (DRI) review process. In addition to providing a general understanding of the process, the section will discuss the milestones at which the FDOT reviewer should become involved, when the reviews should be conducted, and the timeframe allowed for review and with whom coordination is required.

What is a DRI?

A DRI is defined by [Section 380.06\(1\), Florida Statutes \(F.S.\)](#), as any development which, because of its character, magnitude or location, would have a substantial effect on the health, safety or welfare of citizens in more than one county. Thresholds which determine when a development should undergo the DRI review process can be found in [Section 380.0651, F.S.](#), and [Chapter 28-24, Florida Administrative Code \(F.A.C.\)](#). The process used to determine if a project is a DRI is presented in [Chapter 4.2.1](#). The majority of DRI activity is with Notices of Proposed Change (NOPCs) for established DRIs taking advantage of these changes. Changes in state law include new

exemptions which preclude certain development from the DRI review process, in addition to existing exemptions for Dense Urban Land Areas, if the development is located within: (1) an urban service boundary as previously established under Section 163.3177(14), F.S., (2) a rural land stewardship area established under Section 163.3248, F.S., and (3) a detailed specific area plan adopted under Section 163.3245, F.S. There are also exemptions for development identified in airport and campus master plans.

In addition to these new exemptions, applicants for rural areas of the state have more options outside of the DRI process for development. There has been a rise in utilizing sector plans since the sector plan program has left “pilot” status and is now allowed statewide. Another option for rural area development is the rural land stewardship program. For additional information for the sector plan program, see [Chapter 3.9.3](#), and for the rural land stewardship program, see [Chapter 3.9.4](#). There are a number of existing DRI exemptions still allowed within the provisions of [Sections 380.06\(24\) and \(29\), F.S.](#) Development types which are exempt from the DRI process include:

- Hotel/Motel
- Solid Mineral Mining Operations
- Industrial Uses
- Attraction/Recreation Facilities – including multi-screen theatres and additions to existing sport facility complexes
- Hospitals
- Electrical Power Plants
- Seaports
- Marinas

WEB

List of Dense Urban Land Areas

DEO FLORIDA DEPARTMENT OF ECONOMIC OPPORTUNITY [ESPAÑOL | KREYOL](#) [Home](#)

Counties

- ▶ Broward County
- ▶ Duval County
- ▶ Hillsborough County
- ▶ Miami-Dade County
- ▶ Orange County
- ▶ Palm Beach County
- ▶ Pinellas County
- ▶ Seminole County

Municipalities

▶ Altamonte Springs*	▶ Longboat Key
▶ Apopka*	▶ Longwood*
▶ Arcadia	▶ Loxahatchee Groves*
▶ Atlantic Beach*	▶ Lynn Haven
▶ Atlantis*	▶ Macclenny
▶ Auburndale	▶ Madera Beach
▶ Aventura*	▶ Maitland*
▶ Avon Park	▶ Manatee
▶ Bay Harbour*	▶ Mangonia Park*
▶ Baldwin*	▶ Marathon (2010)
▶ Bay Harbor Islands*	▶ Marco Island
▶ Bay Lake*	

Developments within Dense Urban Land Areas (DULA) also qualify for exemption from DRI review. These qualifying areas must meet the population and density criteria outlined in [Section 380.06\(29\), F.S.](#)

Exemptions include a DULA municipality, the Urban Service Area of a DULA County pursuant to other requirements under Section 380.06(29)3., F.S., and within a DULA County that has no Urban Service Area. Developments that would otherwise meet thresholds for DRI review in qualifying DULAs are now exempt from DRI review. Broward and Miami-Dade Counties are included under the DRI exemption. In addition, certain areas of non-DULA cities and counties may also qualify for exemption from the DRI review process.

DRI exemptions for non-DULA cities/counties:

In non-DULA municipalities, areas designated for:

- Urban infill as defined under Section 163.3164, F.S.
- Community redevelopment as defined under Section 163.340, F.S.
- Downtown revitalization as defined under Section 163.3164, F.S.
- Urban infill & redevelopment as defined under Section 163.2517, F.S.
- Urban service area/boundary as defined under Sections 163.3164 and 163.3177(14), F.S.

In non-DULA counties, areas designated for:

- Urban infill as defined under Section 163.3164, F.S.
- Urban infill & redevelopment as defined under Section 163.2517, F.S.
- Urban service area as defined under Section 163.3164, F.S.

4.1.2 Resources in This Document

FDOT Reviewers should be familiar with

TSIH					
Appendix A DRI Stages					
Headline	Product	Agency	Review Date	Statutory Guidelines	Rule, Procedure, Directive, Memo, Guideline
Pre-application Metropolitan Planning Commission Understanding (MPCU)	Comments	MPC	As per the MPC	Section 360.06(1), F.S.	Rule 163-40-010, F.A.C. Rule 163-40-011, F.A.C. Rule 163-40-012, F.A.C. Tutor # 429-630-123
PDA	Comments	RPC	> 50 days	Section 360.06(1), F.S.	Rule 163-40-010, F.A.C. Rule 163-40-011, F.A.C. Rule 163-40-012, F.A.C. Tutor # 429-630-123
DRI DO	Written Comments	DEO	< 45 days	Section 360.06(1), F.S.	Rule 163-40-010, F.A.C. Rule 163-40-011, F.A.C. Rule 163-40-012, F.A.C. Tutor # 429-630-123
DR Annual Report	None	DEO	As per DR	Section 360.06(1), F.S.	Rule 163-40-010, F.A.C. Rule 163-40-011, F.A.C. Rule 163-40-012, F.A.C. Tutor # 429-630-123
Assessor Traffic Monitoring Tools and the Assessment Monitoring Schedule	Written Comments	DEO, DEI	As per DR 50+ days < 45 days	40ACR0100A, F.A.C. 40ACR0100B, F.A.C. 40ACR0100C, F.A.C. Tutor # 429-630-123	Rule 163-40-010, F.A.C. Rule 163-40-011, F.A.C. Rule 163-40-012, F.A.C. Tutor # 429-630-123
	Written Comments	RPC, DEO	< 45 days	Section 360.06(1), F.S.	Rule 163-40-010, F.A.C. Rule 163-40-011, F.A.C. Rule 163-40-012, F.A.C. Tutor # 429-630-123

TSIH					
Appendix B Question 10 & 21					

A summary table is provided in [Appendix A](#) which lists the different DRI-stages which the FDOT reviewer has an opportunity to participate in. The requirements listed in Question 10 (General Project Description) and Question 21 (Transportation) for a proposed DRI Application for Development Approval (ADA) is included in [Appendix B](#).

FDOT reviews have historically focused on Question 21 dealing with the transportation impacts of DRIs. However the FDOT reviewer will also need to be familiar with Question 10 dealing with Land Use activities and impacts as well as any other related requirements. This question requires a general overview of the site and includes information about the size of the site, the proposed development plan, the general market for the site, consistency with the applicable local comprehensive plan and Regional Planning Council (RPC) Strategic Regional Policy Plan, and demographic and employment information. The demographic and employment information is of particular interest as it can be used as a reasonableness check for proposed internal capture rates (i.e. a comparison can be made between the anticipated price of homes and the expected on-site employment income).

DRI-level development may not only significantly impact regional and state roadway systems, but also established land uses and activities and could create incompatible uses which may not be allowable under local jurisdictional laws and adversely impact neighboring populations, natural resources, and other public facilities outside of transportation.

Each jurisdiction within the state has a local comprehensive plan which dictates overall land uses and their placement within a Future Land Use Element according to Section 163.3177(6)(a), F.S. These land use designations assign allowable uses, density and intensity ranges, buffer requirements and other provisions for a designated area. These land uses can be found on the Existing and Future Land Use Maps. For example, the City of Tallahassee has several land use designations including a Low Density Residential designation. For areas designated Low Density Residential, density of residential units cannot exceed 8 units per acre and non-residential development cannot exceed 10,000 square feet per acre. Areas with this designation must have public street access and be located in areas such as the Bradfordville Mixed Use Area. A local comprehensive plan also dictates natural resource protection requirements as well as level of service standards and scheduled improvements for public facilities such as roadways, potable water, and sewer. In addition to the local comprehensive plan, local governments may adopt land development regulations as part of their municipal code. These regulations are guided by the comprehensive plan and provide more specific criteria and provisions.

In addition to Questions 10 and 21, FDOT reviewers should also be familiar with Question 9 which requires the submission of the following:

- General Location Map (Map A)
- Aerial Photo of the Site (Map B)
- Existing Land Use and Significant Resources Map (Map D)
- DRI Master Plan Map (Map H)

These maps can provide valuable visual information that assists in orienting the reviewer with the site.

4.1.3 Incorporating Transit and Other Multimodal Considerations

PDF**Transit Guidelines**

Guidelines and Performance Measures
to Incorporate Transit and Other
Multimodal Considerations
into the
FDOT DRI Review Process

The National Center for Transit Research (NCTR) has developed specific guidance for the FDOT reviewer to incorporate multimodal and transit performance measures into the DRI review process. The guidance includes specific multimodal information to be included in the Application for Development Approval (ADA), multimodal information to be submitted for the transportation methodology meeting, mode split analysis, sufficiency checklist, evaluation criteria, mitigation strategies, local government development order, and monitoring. Regardless of the stage of the DRI review, the FDOT reviewer should work with local government, other reviewing agency staff and applicants to identify opportunities to integrate transit and multimodal services and create strategies for making communities ready for transit in the future. The [Guidelines and Performance Measures to Incorporate Transit and Other Multimodal Considerations into the FDOT DRI Review Process](#) also provides sample FDOT review comments and discusses methods for quantifying multimodal transportation impacts. Key sections of the NCTR document have been incorporated into this handbook, resources and appendices.

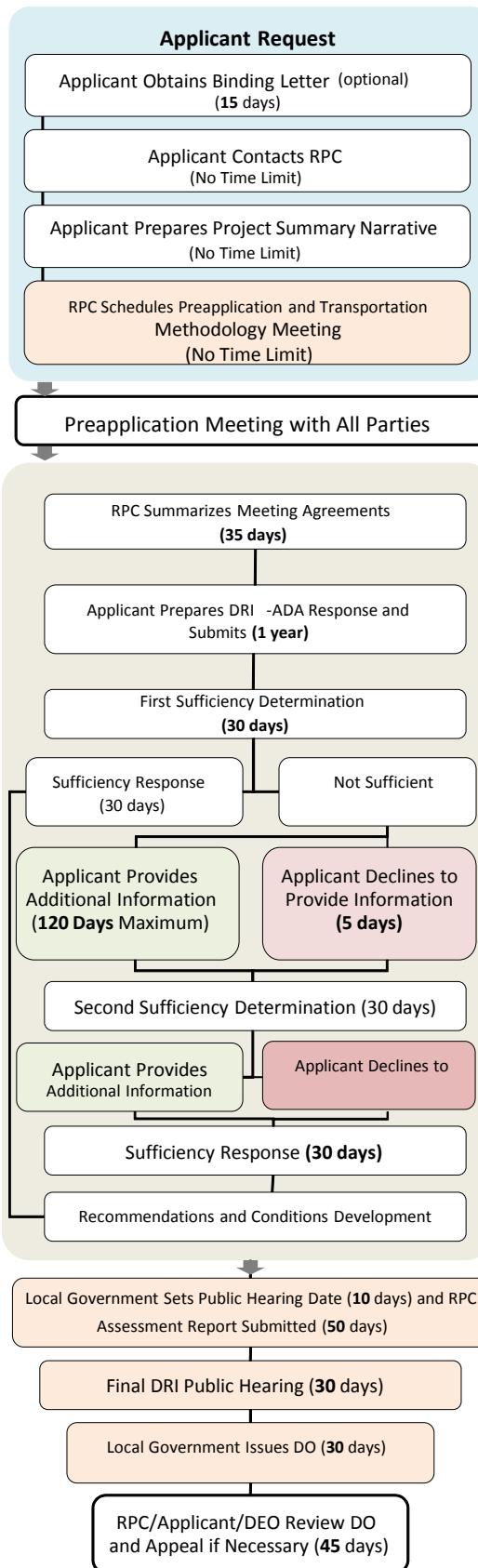
4.1.4 RPC and Local Government Participation in the DRI Review Process

The RPC plays a key role in the DRI process, coordinating application and review activities at the regional level ([Section 380.06\(7\)\(a\), F.S.](#)). Local government participation is also important since the local planning agency plays a lead role in the identification of local issues or concerns relative to the project. The local government is also responsible for conducting a public hearing on the project and serves as the primary agency in the execution and approval of DRI development orders (DO) and any required comprehensive plan amendments authorizing necessary land uses for the DRI.

4.1.5 DRI Process

Exhibit 32 DRI Process

Know the review times for each step of the DRI process



The procedural requirements considered when applying for approval of a DRI are found in [Rule 73C-40.022, F.A.C.](#), of the Department of Economic Opportunity (DEO). The FDOT reviewer should know the review times appropriate for each step of the DRI process. It is noted that the actual review times for the FDOT reviewer will likely be even shorter than the statutory limits since the times reflect those for the lead coordinating agencies. These review times, along with lead agency identification and statutory and code reference guidelines, are depicted in Exhibit 31.

Note: typical processing time thru DEO and local jurisdiction(s) takes no less than 270 days from initial submittal to formal adoption

Modifications of Approved DRIs

For modifications of approved DRIs, NOPCs, the review of annual/biennial reports, or the review of traffic monitoring reports, the FDOT reviewer should clarify the review time and comment process with the lead agency (often the local government). While such reviews are often not as lengthy or complicated as the review of a newly proposed DRI, FDOT participation is critical in assuring that impacts to the Strategic Intermodal System (SIS) and State Highway System are identified and properly mitigated.

4.1.6 DRI Review Procedures

The instructions and review requirements outlined in this Chapter are applicable to all types of Developments of Regional Impact. Additional considerations unique to a particular step in the DRI process or to a unique type of DRI are addressed in the review checklists referenced in this Chapter. This Chapter primarily focuses on ADA reviews which normally represent the most common and complex FDOT reviews associated with DRI applications.

The following list highlights the activities in which the FDOT reviewer has opportunities to respond with comments, through the coordinating RPC or other agency, to the applicant for various types of DRI reviews.

DRI Activities which the FDOT Reviewer may respond to

DRI Reviews

- DRI Determination (Binding Letter of Interpretation)
- Pre-application or Methodology Development Meeting
 - Pre-application Conference Format Meeting
 - Pre-application Conference Project Summary Narrative Review
 - Transportation Methodology Meeting Information Submittal Review
 - Review of RPC Regional Issues List and Agency Comments (which may include Transportation Methodology Letter of Understanding)
- ADA Review
- State Agency Sufficiency Review
- RPC Assessment Report
- Comprehensive Plan Amendment Review (if required)
- Local Government Development Order Review

Approved DRIs

- Proposed Changes to Approved DRIs
- Annual/Biennial Report Review
- Traffic Monitoring Study

4.1.7 Other review types

The following types of other reviews associated with DRIs are also addressed in this section:

- **Notice of Proposed Change (NOPC):** A report that is required to be submitted by the applicant to the local government, the RPC and DEO when a change is proposed to a previously approved DRI.
- **Annual/biennial reports:** A required report that summarizes information describing any changes that have been made to the development plan during the reporting period, information about the master plan, lands purchased, permitting, and local government, and a summary of each development order condition and when each commitment has been complied with.
- **Transportation or Traffic monitoring studies:** These studies are usually required by a condition in the development order and are described in greater detail below.

TSIH						
Appendix A DRI Stages						
Heading	Product	Written	Agency	Review Dates	Statutory Subchapter	Administrative Directives, Policies, and
Bidding Letter	Written	DEO	As soon as possible	Section 380.06(1), F.S.	Rule 17C-10.015(2)(a), F.A.C.	
ADA Methodology	Written	One or more	RPC	As soon as possible	Section 380.06(7)(a), F.S.	
Methodology and Understanding (ADA)	Comments	RPC			Rule 17C-10.015(2)(a), F.A.C.	
ADA Methodology	Written	Comments	DEO	< 30 days	Section 380.06(2), F.S.	Rule 17C-10.015(2)(a), F.A.C.
PDA	Written	Comments	DEO	< 30 days	Section 380.06(2), F.S.	Rule 17C-10.015(2)(a), F.A.C.
DRI DO	Written	Comments	DEO	< 45 days	Section 380.06(2), F.S.	Rule 17C-10.015(2)(a), F.A.C.
DRI Annual Report	None	LR	None	Section 380.06(1), F.S.	Rule 17C-10.015(2)(a), F.A.C.	
Annual Traffic and Development Order Monitoring Schedule	Written	DEO, LR	As soon as possible	40-3050-17049.3, F.A.C.	Rule 17C-10.015(2)(a), F.A.C.	
DOA	Written	Comments	RPC, DEO	< 45 days	Section 380.06(2), F.S.	Rule 17C-10.015(2)(a), F.A.C.

Transportation or Traffic monitoring studies are frequently included in Development Order conditions

See [Appendix A](#) which details the DRI stages, review timeframes and responsible agencies for the FDOT reviewer to provide input to.

As DRI analysis is a complex process, the requirement for transportation or traffic monitoring studies is becoming more common in Development Order agreements. These studies, which differ from the statutory requirement of annual/biennial reports, usually require the collection and analysis of transportation data to verify assumptions associated with internal capture (or community capture if applicable), background growth rates, and other assumptions made during the ADA. Monitoring studies also serve to show how close a development's traffic is getting to the improvement thresholds. A similar process to that of an ADA (i.e. methodology development, study review, and sufficiency determinations) is often used in the review of monitoring studies. FDOT participation throughout the process is essential. FDOT staff should recommend appropriate monitoring for single occupancy vehicle use such as applicable multimodal criteria from [DRI Checklist 5](#). Additional information about this step is presented in [Chapter 4.4.2](#). In addition, understanding access management needs and issues for a DRI development, as described in [DRI Checklist 6](#), would be important for purposes of transportation monitoring.

The DRI process often requires the review of large amounts of information

Solving problems on a local system can reduce problems on the state system

The DRI process requires reviewing large amounts of information over a period of time determined by statute. The following are general recommendations that may be helpful for the FDOT reviewer throughout the DRI process.

- **Resolve minor problems by phone.** If there is an apparently minor question and assuming this is accepted protocol among parties involved (if in doubt, ask at the Methodology Meeting), call the consultant directly in an attempt to resolve the question.
- **Support local agencies in their attempts to achieve/maintain local and collector road continuity.** When the FDOT helps solve the problems on a local system it often reduces problems on the state system. Local rights-of-way systems frequently have discontinuous patterns. Consequently, the state system is used for many local trips. Many reasons have caused discontinuity in local street rights-of-way. These factors range from lack of planning to intentionally planned enclaves. Developers continue to pressure for very large enclaves without through streets. The FDOT needs to work with and stand behind local planners' attempts to create continuous local street systems. These systems double as an attractive alternative for pedestrians and bicyclist. Their trips can reduce motor vehicle trips on state system.
- **Work with other reviewing agencies to introduce the concept of multimodal considerations early in the process and provide available resources.** The discussion of multimodal measures should occur as early as possible so that site designs and concepts can incorporate multimodal features and continue all the way through the discussion of mitigation alternatives.

4.2 Review Requirements for Proposed DRIs/Substantial Deviations

Binding Letter of Determination/DRI Determination



Prior to initiating any DRI application, the applicant or the local government may request a determination from DEO as to whether the project meets the definition of a DRI. A Binding Letter of Determination summarizes the decision by DEO as to whether a proposed development must undergo a DRI review. Many DRIs choose to forgo this step if it is clear the development will cross the thresholds and they already intend to go through the DRI process.



[Chapter 28-24, F.A.C.](#), and [Section 380.0651, F.S.](#), spell out the criteria used by DEO to make this determination. These thresholds are provided in Exhibit 31 and serve as the primary basis for DRI determination. The [DEO DRI web page](#) contains additional information. DEO must make a finding of sufficiency, or request additional information within 15 days of receipt of a request for a binding letter of interpretation or a supplement. This leaves the FDOT reviewer with even less time to provide assistance if requested.

FDOT Reviewer Role

While DEO may request that the FDOT reviewer participate in the determination of possible transportation impacts, this step in the DRI process does not mandate review by the FDOT.

Exhibit 33
DRI Thresholds

TYPE/MEASURE		DRI THRESHOLD	
		100%	
ATTRACTION/ RECREATION FACILITIES	SINGLE PERFORMANCE	SEATS PARKING	10,000 2,500
	SERIAL PERFORMANCE	SEATS PARKING	4,000 1,000
	TWO OR MORE USES (%)		145
	THREE OR MORE USES ³		160
OFFICE	GROSS SQUARE FEET		300,000
RECREATIONAL VEHICLE	SPACES		500
RESIDENTIAL	<i>SEE: DEO Residential Thresholds by Population Listing</i>		
RETAIL/COMMERCIAL	GROSS SQUARE FEET		400,000
	PARKING SPACES		2,500
SCHOOLS (post-secondary)	NEW/NUMBER OF STUDENTS		5,000
	EXISTING/EXPANSION OF POPULATION (%)		20

Chart adapted from Tampa Bay Regional Planning Council

See exclusions, exceptions, and other information from [Section 380.0651, F.S.](#)

ATTRACTION/REC. FACS.	[SOURCE: Section 380.0651(3)(b), F.S., & Rule 28-24.016, F.A.C.]
MULTIPLE LAND USES	[SOURCE: Section 380.0651(3)(f), F.S., & Rule 28-24.032, F.A.C.]
OFFICE	[SOURCE: Section 380.0651(3)(c), F.S., & Rule 28-24.020, F.A.C.]
RECREATIONAL VEHICLE	[SOURCE: Section 380.0651(3)(e), F.S., & Rule 28-24.027, F.A.C.]
RESIDENTIAL	[SOURCE: Section 380.0651(3)(g), F.S., & Rule 28-24.023, F.A.C.] See: DEO Thresholds
RETAIL/COMMERCIAL	[SOURCE: Section 380.0651(3)(d), F.S., & Rule 28-24.031, F.A.C.]
SCHOOLS	[SOURCE: Section 380.0651(3)(i), F.S.]

4.2.1 Transportation Methodology Development

Pre-application Conference

Before filing an ADA, the applicant should contact the RPC to arrange a Pre-Application Conference to discuss all issues associated with the project ([Rule 73C-40.021\(1\)\(a\), F.A.C.](#)). This conference is typically organized by the RPC in cooperation with the applicant. All appropriate review agencies, including the FDOT, are also invited.

Pre-application Conference:

Serves as a general discussion of all issues associated with the proposed DRI

This conference is conducted to identify issues, coordinate appropriate state and local agency requirements, promote a proper and efficient review of the proposed development, and ensure that RPC staff are aware of all the issues to which reviewing agencies will require the applicant to respond (such as wildlife impacts, economic considerations, and environmental challenges). The applicant should prepare a Project Summary Narrative that summarizes the overall project and the key assumptions to be used in preparing the ADA.

Transportation Methodology Meeting:

Held as part of the Pre-application conference to discuss applicant's response to Question 21

Additionally, the Pre-Application Conference will serve to specify information requirements, including the required number of copies of the ADA, the method of their distribution to reviewing agencies, the deletion of questions from the ADA, and to clarify concerns of the reviewing agencies. A Transportation Methodology Meeting typically occurs during the Pre-application Conference.

FDOT Reviewer Role

While desirable, FDOT attendance at the entire Pre-Application Conference (i.e. field visit, environmental discussion, etc.) should be decided on a case by case basis. During the portion of the Pre-Application Conference where all disciplines and agencies are present, FDOT comments should be general and focus more on big picture issues and process such as stating whether the FDOT has any committed projects in the area and confirming that the FDOT will be a reviewer on all future biennial report and monitoring studies. Specific technical details are usually better discussed during the Transportation Methodology Meeting. If a specific Transportation Methodology Meeting is not held, all the issues listed below under the Transportation Methodology should be discussed during the Pre-application Conference.

Transportation Methodology Meeting

Usually a specific Transportation Methodology Meeting is held as part of the Pre-Application Conference. This should be confirmed by the FDOT reviewer upon being notified of the Pre-Application Conference ([Section 380.06\(7\)\(a\), F.S.](#) and [Rule 73C-40.021, F.A.C.](#)). In cases where local government comprehensive plans and land development regulations include policies to support a multimodal transportation system, appropriate stakeholders representing these modes should also be present. This could include staff from: the District Public Transportation Office, regional transit authority, local transit agency, regional ridesharing agency as well as Transportation Demand Management (TDM) professionals and MPO and local bicycle/pedestrian coordinators. These stakeholders would augment the staff representing the FDOT, DEO, DEP, MPO, RPC, affected local governments, the applicant and their consultants.

TSIH

DRI Pre-App
 Checklist

See multimodal features in Pre-Application Checklist

To make each applicant fully aware of the type of multimodal features that reviewers will be seeking in the application, it is recommended that the reviewer to make potential applicants aware of [Pre-Application Checklist](#). This Checklist specifies information to be provided by the applicant to address modes in addition to single-occupant vehicles.

Detailed parameters may be found within the materials listed in [Pre-Application Checklist](#). Much of this information is subject to local conditions and not conducive to statewide parameters.

During the Transportation Methodology Meeting, technical discussions take place regarding the details of the applicant's methodology to answer Question 21 of the ADA. Before the Transportation Methodology meeting, the applicant prepares a detailed transportation methodology to be submitted to the reviewing agencies (this may be part of the overall Project Summary Narrative, but often it is a stand-alone document). Some Districts provide the applicant with a format for the transportation methodology to adhere. A sample used by District 2 is listed in [Appendix C](#).

The methodology document should be received by the reviewer 10 working days prior to the transportation methodology meeting; if for some reason this does not occur, the FDOT should request it from the RPC and applicant.

The reviewing agencies should come to the meeting having already reviewed the methodology and prepared to discuss key issues. The methodology meeting should focus on discussing key issues associated with the study such as phase dates, roadway service volumes and LOS designations, network assumptions, trip generation (internal capture, pass-by, mode reductions), and background growth assumptions. In many cases, key issues will include multimodal and land use considerations. The preliminary response by the applicant to the criteria in

should be contained in the applicant's transportation methodology submittal. The applicant should be made aware that the transportation methodology should be received by the RPC 20 days prior to the Transportation Methodology Meeting for distribution to reviewing agencies.

FDOT Reviewer Role

Clearly document and present the issues to the applicant and to the RPC

TSIH

DRI Pre-App
 Checklist

The Transportation Methodology Meeting is critical in the DRI process. It is the first opportunity for the FDOT to express its concerns about the project's potential impact on the SIS/SHS and to provide significant input in the questions needing answers. The Transportation Methodology Meeting also provides an opportunity to collaborate with other reviewing agencies and identify information which may be useful in performing a thorough and accurate assessment of project impacts. Checklists have been provided for each of these purposes. The checklists cover issues raised in a typical DRI review. The lists should be modified, as appropriate, to address specific project characteristics. [DRI Checklist 1](#), should be used by the FDOT reviewer during this stage of the DRI review process. As previously noted, the information provided in [DRI Pre-Application Checklist](#) should be brought to the attention of the applicant.

It is important for the FDOT reviewer to clearly articulate *all* major issues and concerns at this meeting to minimize possible discrepancies or omissions during the review of the ADA. The FDOT reviewer needs to provide comments not only on the information that is submitted and discussed, but also request any information that has not been discussed or included that is necessary for the completion of the study. Potential topics of discussion include:

Internal Capture/Community Capture: The methodology for determining internal capture should be clearly documented and supported with sample calculations. If the DRI is eligible to use Community Capture, the applicant should state their intent to use the methodology to determine Community Capture and provide the supporting documentation needed. It is noted that the proposal of high capture rates will need to include detailed documentation and discussion for support

Interchange Impacts: Whenever traffic from a DRI impacts a freeway or interchange, the applicant should be made aware of the potential need to coordinate with the District Interchange Review Committee. The applicant will need to be provided and consider information from any ongoing interchange modification study efforts (IMR, IJR, IOAR, or SIMR). It is also noted that if a new interchange is being sought, the applicant should coordinate with the District Interchange Review Committee and that specific analysis procedures will be necessary. It is noted that this will be in addition to the standard requirements of the ADA. Additional information regarding interchange justification can be found at the Department's Interchange Justification webpage.

Multimodal Considerations: The FDOT reviewer should make certain that existing multimodal guidance is made available to the applicant. The discussion of multimodal measures should occur as early as possible so that site designs and concepts can incorporate multimodal features and services. Mitigation measures should also consider multimodal alternatives in addition to traditional roadway capacity enhancements. In many cases, the applicant is required to submit the proposed transportation methodology in advance. This gives the reviewers the opportunity to provide early comment on the details of the proposed methodology. One example of such comments is provided in [Appendix E](#). The example is from District 4 in which the applicant requests trip reductions based on multimodal use. The comments offer a conditional acceptance of the reductions based on additional information to be provided by the applicant.

In regards to transportation assessment, the reviewer must also analyze impacts as they relate to established level of service standards. Please refer to Chapter 2 of this handbook for more information.

Land use conversion table (Trip equivalency matrix): An applicant may propose a “land use conversion table” or “trip equivalency matrix” as part of a DRI traffic analysis. While the use of land use conversion tables and their application varies around the state, there are some basic considerations that a reviewer should be aware of. The base development program of a DRI provides for critical assumptions on mix of uses, internal capture, and trip distribution. Each of these factors also impact the transportation assessment and proportionate share obligations. The purpose of these land use conversion tables is to allow for flexibility in the development plan. The idea being that the land use conversion tables determine the amounts of specified land uses that may be exchanged with others in the development plan without changing the overall transportation impacts of the DRI. Thus, the equivalency matrix will identify no changes will be required for the mitigation plan. The implementation of conversion tables must be evaluated cautiously. Specified conversions are often accepted in terms of one identified land use at a specific development intensity being converted to another clearly identified land use at specific development intensity. However, it is very difficult for a land use conversion chart to adequately show the wide range of possible conversions.

When the use of a matrix is proposed the reviewer should ensure that:

1. The basic character of the project is not altered.
2. The proposed development intensity fluctuation does not contradict the threshold set by [Section 380.06\(19\), F.S.](#), for Substantial Deviation.
3. The proposed matrix is based on Peak Hour directional trips as the peak hour directional rate is used as the basis for DRI analysis.
4. Land uses are not exchanged across phases of a multi-phase DRI. For example, in a mixed use program if phase 2 had residential and employment and the developer built the residential but not the employment, they shouldn't use the matrix to pull residential forward from phase 3 unless there is a clear understanding of the impacts to transportation.

In addition, some reviewing agencies have established guidelines when reviewing equivalency matrices. These are included as examples only, and specific study conditions will determine actual limits.

- Limiting the minimum/maximum development intensity threshold by a maximum of 10% change in project trip directionality. Anything more than that will be deemed significant as changes in such magnitude will impact the directionality of the assigned project trips, thus creating unreviewed traffic impact on the roadway network.
- Limiting the use of the matrix by +/- 15% based on the substantial deviation thresholds.
- Limiting the minimum/maximum exchanges to 25-30% from the requested land uses stated in the DRI

In summary, the key for the reviewer is to ensure that the resulting impacts of the exchange are as close to the original approved study impacts and mitigation as possible.

Review submittals prepared by the RPC

The FDOT reviewer should request opportunities for review of submittals prepared by the RPC prior to their transmittal to the applicant and should also state its desire to be a reviewing agency for the biennial monitoring report, should the DRI achieve approval. As transportation or traffic monitoring studies become more utilized over the life of a DRI, the FDOT reviewer should introduce the concept of monitoring and initiate the discussions about the potential need for future monitoring studies.

Provide the applicant with a written summary

The FDOT reviewer should provide the applicant with a written summary of the FDOT comments shortly after the methodology meeting has been completed. The FDOT reviewer should clearly explain to the applicant that interchange approvals and permits for driveways, median openings, and traffic signals require separate approvals outside of the DRI process. The FDOT reviewer should document cases where assumptions clearly do not meet FDOT standards (such as closely spaced signals and median openings).

Formal DRI-ADA requirements for review by the FDOT will include, at a minimum, Questions 21 (found within Rule [73C-40.045, F.A.C.](#), and [Appendix A](#)) dealing with transportation impacts of the proposed development.

The FDOT reviewer can take two actions to increase the likelihood of receiving complete and adequate information in all submittals. The first is to assure that the applicant is aware of resources available through the FDOT which will assist the preparation of plans and documentation which meet FDOT criteria. A list of these materials is provided in [DRI Pre-Application Checklist](#). The second action is to make copies of the FDOT's review checklists (1-7) available to potential applicants and other reviewing agencies. This will clarify, for all parties involved, the general issues which the FDOT will bring to the table when performing a review.

The applicant is required to revise the transportation methodology per discussions during the Transportation Methodology Meeting and comments received shortly after the meeting. The FDOT reviewer should clearly document any issues that have not been resolved during the methodology development process and present the issues to the applicant and to the RPC. The FDOT reviewer should also contact the RPC to understand the process used by the RPC to officially close the methodology period. The RPC, DEO or applicant may request that another Pre-Application Meeting be conducted if the DRI-ADA is not submitted within one year of the initial Pre-application Meeting.

TSIH

DRI Pre-App
 Checklist

4.2.2 Pre-application Conference/Transportation Methodology

Meeting Documentation

TSIH Methodology Meeting
 Checklist 1

The RPC will document the findings and agreements from the Pre-Application Conference and Transportation Methodology Meeting within 35 days following the Pre-Application Conference. The RPC Regional Issues List and Agency Comments may include the Transportation Methodology Meeting Letter of Understanding (MLOU). The MLOU summarizes the study area and data, data collection, analysis approaches and mechanisms, data presentation and mappings, and documentation requirements agreed to by the applicant and all agencies reviewing the transportation question. This documented understanding helps ensure that the review occurs in a timely fashion. The basis for the review of the MLOU should be a combination of two sets of documentation: the FDOT reviewer's analysis of the Transportation Methodology Meeting Information submittal and the FDOT reviewer's notes from the meeting itself. [DRI Checklist 1](#), should be used again by the FDOT reviewer during this stage of the DRI review process.

FDOT Reviewer Role

The FDOT reviewer should recognize that the analysis conditions, restrictions and special conditions identified in these transmittals are binding. If FDOT has comments that state that it does not agree with or has concerns with the MLOU, these must be submitted in writing to the RPC. This puts them on record. If these comments are not agreed to by all parties, and FDOT objects later in the process, this can give standing later with DEO. For this reason, FDOT should carefully review the documents.

The Pre-Application Conference attendees and state and regional agencies involved in the DRI review process have a review time period specified by the RPC (at least 14 days) to comment, agree or disagree in writing with the summary of the methodology [Rule 73C-40.021\(1\)\(f\), F.A.C.](#)

Reviewing agencies may NOT object after agreement has been reached

After agreement has been reached regarding assumptions and methodologies, the reviewing agencies, including the FDOT, may NOT subsequently object, unless changes to the project or information occur which make said assumptions and methodologies inappropriate ([Rules 73C-40.021\(1\)\(f\) and 73C-40.045\(3\)\(e\), F.A.C.](#)).

4.2.3 Application for Development Approval Process

The RPC may request additional information no more than twice

The ADA process is where the applicant provides review agencies with the information needed to make a sufficiency determination. After reviewing the submittal, the agency can either determine that the submittal is sufficient (no additional information is needed) or request additional information [Rule 73C-40.022, F.A.C.](#).

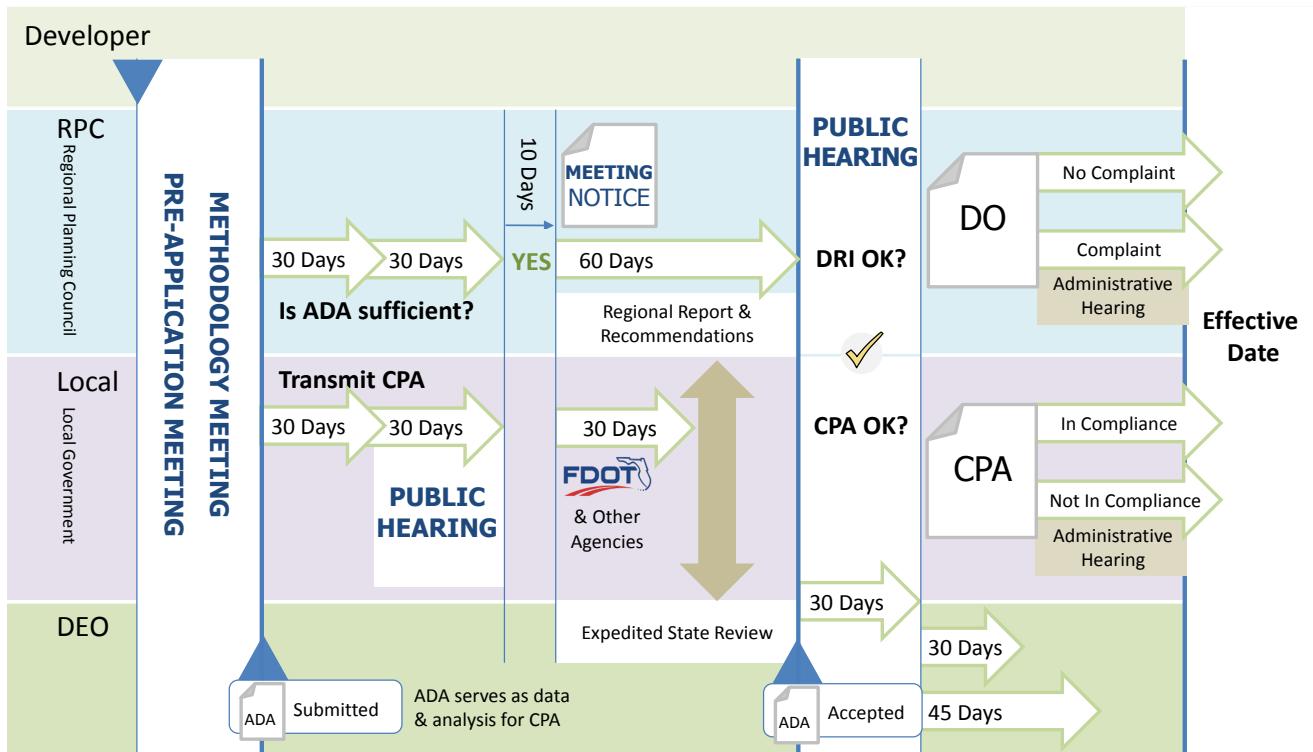
The RPC may request additional information on behalf of reviewing agencies no more than twice, unless an applicant waives this limitation ([Section 380.06\(10\), F.S.](#)). Agency requests are in the form of comments on the ADA submittal (1st Request for Additional Information) and comments on the applicant's first response to agency comments (2nd Request for Additional Information). While later coordination between the applicant and agencies is often needed and often occurs, every effort should be made to resolve issues during the required review process.

County must receive LGCP Amendment prior to or concurrent with developer filing ADA

However, new information submitted by the applicant in the form of an amended or revised ADA is normally reviewed and commented upon by the reviewing agencies after the first DRI-ADA submittal.

If required, DRI Local Government Comprehensive Plan (LGCP) amendments are normally initiated at this point to ensure consistency with the proposed DRI ([Section 380.06\(6\), F.S.](#)). The ADA for the DRI can be used as data and analysis for the LGCP amendments. Detailed information about the review requirements for LGCP amendments is found in [Chapter 3](#). Exhibit 34 displays a chart showing the concurrent review and processing of the DRI and LGCP. Note that [Section 380.06\(6\)\(b\)6, F.S.](#), requires the county to conduct a public hearing for both processes at the same time.

Exhibit 34
DRI Process



The RPCs have the responsibility to coordinate with all affected agencies with regard to both the notification and coordination of review. This coordination requires FDOT comments/interests to be weighed against concerns of other agencies that may conflict with the interests of the FDOT. If this occurs the FDOT reviewer should work with the staff of partner agencies to reach a decision that is best for all parties involved. Even still, in such instances the RPC may carry forward a position which does not support the FDOT's conclusions.

4.2.4 ADA Review/1st Sufficiency Determination/

1st Request for Additional Information

Applicant Requirements

The applicant completes the ADA in accordance with the requirements agreed to during the Pre-application Conference. The ADA is then submitted to the RPC for distribution and review by the reviewing agencies including the FDOT.

Sufficiency Determination

Sufficiency can either be declared by an applicant or by the reviewing agencies

Sufficiency is the determination that the applicant has supplied all of the necessary information in order to assess the development's regional impacts. Sufficiency can either be declared by an applicant (after responding to two requests for additional information by the RPC) or by the reviewing agencies. Local government staff members are notified by RPC to set a public hearing date once sufficiency has been declared.

When sufficiency is determined by the applicant, the FDOT reviewer needs to coordinate with other agencies to make sure that all transportation issues have been resolved. If outstanding issues still exist, the FDOT reviewer, often through the RPC, should contact the applicant about whether additional information will be provided by the applicant so that issues can be resolved prior to the RPC hearing.

FDOT Reviewer Role

The FDOT reviewer's responsibility upon receipt of a ADA is to determine whether the applicant has:

1. Provided a complete submittal. Due to the time constraints associated with reviews, it is very important to check that the ADA submittal contains all pages (including technical appendices) and all requested supplemental information (such as analysis and model files) for a review to be completed.
2. Adhered to the conditions agreed upon during the methodology process and set forth in the MLOU.
3. Provided sufficient detail and support documentation to enable the FDOT reviewer to adequately assess project impacts on the SIS/SHS..
4. Proposed impact mitigation measures which adequately protect mobility on SIS/SHS facilities.

In addition, the FDOT reviewer should include specific recommendations to resolve any outstanding issues. The FDOT reviewer may indicate any regionally significant impacts identified by the applicable RPC(s).

The ADA review is the first opportunity to communicate FDOT's concerns regarding the transportation impacts caused by development

The ADA review is the first opportunity for the FDOT reviewer to conduct a thorough review of the applicant's estimate of transportation impacts anticipated by the proposed DRI. It also constitutes the most comprehensive opportunity for the FDOT reviewer to let other review agencies know about transportation concerns. The product of the review will be a determination that the applicant is sufficient (i.e. no additional information is needed) or a written set of comments requesting the applicant to provide additional information. This is often referred to as either the *ADA Review, 1st Sufficiency Determination*, or *1st Request for Additional Information*. A determination of sufficiency based on the initial ADA submittal does not occur very often. Also, the FDOT reviewer should identify the need for traffic monitoring studies (if necessary) to the applicant if the issue has not been agreed upon during the methodology development process.

The FDOT reviewer should be familiar with the deadlines for review and comment of the RPC. Pursuant to [Rule 73C-40.022\(3\)\(c\), F.A.C.](#), the ADA review period is 30 calendar days. A comment by the FDOT after the legal deadline of 30 calendar days, which starts from the RPC's receipt of the ADA, can technically be ignored by the applicant. Although there is usually some flexibility in this area, it is limited and should not be assumed. The FDOT reviewer should not assume more than 30 days for review. Close coordination with the RPC is encouraged to ascertain whether or not flexibility in the schedule exists.

RPCs have differing policies and procedures for summarizing and transmitting comments to the applicant. For that reason and to ensure comments are distributed to all parties, it is suggested that the reviewer find out and follow the procedure established by the applicable RPC or the identified state agency reviewer. [DRI Checklist 2](#), prepared to correspond to the format of Question 21, summarizes both formal and informal areas of review for the ADA. The FDOT reviewer can use this list as a general guide in the DRI review process.

TSIH ADA
Sufficiency Review
 Checklist 2

Guidelines for FDOT Reviewers

The FDOT reviewer is encouraged to first browse the ADA document to gain an overall understanding of the project and how transportation relates to other proposed development considerations. In general, the FDOT reviewer should not try to review any area beyond his/her technical capability. Based on the initial reading, if additional expertise is needed to complete a thorough submittal review, it should be sought immediately. It is not unusual to request comments from FDOT staff in the areas of traffic operations, permitting, right-of-way, design, public transit, and bicycle/pedestrian. The assigned FDOT reviewer should also be aware of other resources within and outside of FDOT which should be used depending upon applicability to the review. FDOT resources may include the Five-Year Work Program, SIS Cost Feasible Plan, SIS Unfunded Needs Plan, SIS Ten-Year Project Plans, and others. Resources available outside of FDOT

may include MPO Plans such as the Long Range Transportation Plan and Five-Year Transportation Improvement Program. Local governments may also have plans such as transportation sufficiency plans in regards to identified transportation deficiencies as well as a Five-Year Capital Improvements Schedule.

FDOT District staff should provide thorough comments regarding whether or not the information provided in the ADA is sufficient to analyze project impacts on the transportation system. This includes multimodal concerns such as existing conditions, trip generation, land use and site design, and modal facilities among others. Sample comments taken verbatim from sufficiency review letters may serve as guidance for multimodal concerns. Examples of these comments are found in [Appendix D](#). In addition, District 4 uses a compilation of ADA review comments taken from several DRI developments and grouped by category as guidance for developing comments (See [Appendix F](#).)

In order to sustain a professional and constructive review process, FDOT reviewer comments should be professional and concise. The FDOT reviewer should also provide suggested action by the applicant to address specific comments, and reference FDOT procedures, manuals and handbooks in the methodology agreement, where applicable, including any District procedures, Florida Statutes and Administrative Rules.

4.2.5 2nd Sufficiency Determination/ 2nd Request for Additional Information

Applicant Requirements

Make sure the information needed to make decisions has been provided by the applicant

The applicant will provide written responses to agency comments (the agency's 1st Request for Additional Information) and provide the responses for agency review. Agencies will then have no more than 30 days to provide comments on the responses (2nd Sufficiency Determination/2nd Request for Additional Information). Similar to the ADA Review/1st Request for Additional Information, the RPCs have the responsibility to coordinate with all affected agencies with regard to both the notification and coordination of the review.

FDOT Reviewer Role

The FDOT reviewer's responsibility upon receipt of the applicant's responses is to determine whether the applicant has:

1. Provided a complete submittal. Due to the time constraints associated with reviews, it is very important to check that the submittal contains all pages (including technical appendices) and all requested supplemental information (such as analysis and model files) for a review to be completed.
2. Addressed the comments made in the 1st Request for Additional Information.

3. Made any changes that were not requested as part of the agency comments. If changes were made, the FDOT reviewer needs to review the changes for accuracy and impacts the changes may have to conclusions.
4. Provided sufficient detail and support documentation to enable the FDOT reviewer to adequately assess project regional impacts on the SIS or SHS.
5. Proposed impact mitigation measures which adequately protect mobility on SIS/SHS facilities and also Consistent with Section 163.3180, F.S. Recommendations for mitigation may include reducing the amount of land use/development change and revisions to development phasing.

TSIH

ADA Review

 Checklist 3

[DRI Checklist 3](#) provides guidance for the review. It is modeled on DRI Question 21(F) as presented in [Appendix B](#). The checklist questions assume the FDOT reviewer has performed thorough and timely reviews of all earlier submittals and therefore, focuses on the substance of the applicant's responses.

TSIH

Appendix B
Question 10 & 21

In DRI Question 21 (F), applicants are asked to identify improvements to the highway network needed to accommodate impacts of the proposed DRI that cause facility LOS to fall below adopted standards. Significant degradation of facility LOS is with an increase of 5 percent above the maximum level of service established for a facility. As an alternative to only focusing on roadway capacity, the applicant may consider proposing multimodal solutions as mitigation for DRI impacts.

Elements of the checklist pertaining to sufficient densities and intensities to support transit refer the reviewer to applicable local or regional regulatory mechanisms for specific parameters. If these parameters are not available, the applicant should be asked to justify proposed densities and intensities if transit is a proposed mode of accommodating person trips generated by the DRI.

At this point in the review many of the technical issues should be resolved and focus should be on the critical issues that may affect project approval. The reviewer should make sure that the information needed to make decisions regarding the need and type of mitigation has been provided by the applicant. If the FDOT reviewer anticipates issues associated with making a sufficiency determination (i.e. methodology issues such as trip generation and background growth are still unresolved), they should contact the RPC and request a meeting with the applicant before submitting written comments. The product of the review will be a written set of comments requesting the applicant to provide additional information. This is often referred to as either the *2nd Sufficiency Determination* or *2nd Request for Additional Information*.

4.2.6 Review of Applicant Response to 2nd Request for Additional Information

Applicant Requirements

The applicant will provide written responses to agency comments (the agency's 2nd Request for Additional Information) and provide the responses for agency review. After responding to the second request for additional information from the RPC, the applicant has satisfied the statutory requirements for an ADA submittal ([Section 380.06\(10\)\(b\), F.S.](#)) and has the ability to declare themselves sufficient (most frequent occurrence). Other options for the applicant may include indicating that they will participate in an additional round of sufficiency review and seeking additional feedback from the review agencies outside of the formal sufficiency process.

FDOT Reviewer Role

If the applicant has allowed an additional round of sufficiency review, the FDOT reviewer should follow the guidance under [Chapter 4.2.5](#). Focus should remain on the critical issues that impact study conclusions and close coordination should be maintained with the applicant, the RPC, and the local government. The product of the review will be a written set of comments requesting the applicant to provide additional information.

If applicant declares sufficiency but the FDOT disagrees, prepare written comments clearly outlining the unresolved issues

In cases where the applicant declares sufficiency but the FDOT disagrees, it is recommended that the FDOT prepare written comments clearly outlining the unresolved issues. The FDOT should quickly notify the RPC and local government and communicate that the FDOT does not find the study sufficient and inform the agencies of the FDOT's planned next steps. Next steps should include:

- Coordinating with other reviewing agencies, particularly DEO and the RPC and continuing to keep them apprised of the situation.
- Contacting the applicant to see whether the applicant is willing to provide additional information to resolve the outstanding issues. If the applicant is willing to provide additional information, the FDOT reviewer should follow the guidance under [Chapter 4.2.5](#).

- In instances where the applicant will not provide additional information, the FDOT reviewer may need to conduct specific analysis procedures to determine the impacts to the study conclusions if the requested changes were made.
 - It is recommended that the FDOT reviewer meet with FDOT management to clearly outline the issues and the anticipated effort needed in conducting the specific analysis before initiating the work.
 - If it is found that the study conclusions would change, the FDOT reviewer should summarize the results of the additional analysis and present the different conclusions to the RPC and local government for inclusion in the RPC Assessment Report and the Local Government Development Order.

The FDOT reviewer should also be prepared to present the results of the analysis at the RPC Hearing and at the Local Government Public Hearings.

FDOT Reviewer Role

Transportation Sufficiency Comments

The analysis conducted by the FDOT Review should include the following:

- Identification of the study area
- Identification of facilities of state and regional significance
- Analysis of whether the LOS of the identified facilities are adversely affected by 5% or greater
- Identification of the agreed upon assumptions, data and other language
- Identification of the transportation projects available during the timeframe of the development

4.2.7 Recommendations and Conditions Development

Upon completion of the DRI ADA review, the FDOT reviewer should develop recommendations to ensure the developer mitigates the impact of the DRI on the transportation system. [Chapter 5](#) of this document is devoted entirely to mitigation.

The development of recommendations and conditions is intended to document the agreements discussed during the ADA review process. For example, if transportation or traffic monitoring studies were agreed to during the study process, the requirement that the applicant conduct those studies needs to be documented and included in the RPC Assessment Report and as conditions in the local government's draft Development Order (DO). This document may also be used to present FDOT concerns that remain after the sufficiency iterations which may change the conclusion of project impacts.

TSIH

Appendix D
Sample Comments

FDOT Reviewer Role

The FDOT reviewer should work closely with the RPC, DEO, and local government to ensure that FDOT concerns are incorporated into the RPC Assessment Report and as conditions in the local government's DO. The FDOT reviewer should also work toward having an agreed upon mitigation package in the RPC Assessment Report.

If the FDOT reviewer believes that the agreements made during the ADA Review process fail to adequately ensure the integrity of the SIS/SHS, the District Secretary or Designee should be notified immediately.

The FDOT reviewer is encouraged to contact the RPC and local government to determine the format, delivery, and time frame of FDOT comments. At a minimum, a letter to the RPC containing a list of key issues, a summary of the commitments agreed to by the Applicant, and a listing of general DO conditions should be issued. Depending on the RPC and local government, detailed recommendations in language ready to be included in the DO may be requested.

4.2.8 RPC Assessment Report

(Also referred to as Regional Report and Recommendations 73C-40.024)

The RPC has 50 days after receipt of the notice of public hearing ([Rule 73C-40.024, F.A.C.](#), and [Section 380.06\(12\), F.S.](#)), to prepare and submit a formal RPC Assessment Report detailing recommendations to the local government, the Developer, and DEO on the regional impact of the proposed development. The RPC may submit a draft assessment report for review. Ideally, though not required, the RPC makes the necessary review modifications and submits the adopted report to the local government and applicant at least 10 days in advance of the public hearing.

FDOT Reviewer Role

Make sure FDOT recommendations and conditions are properly documented

The FDOT reviewer should review this report to make sure FDOT recommendations and conditions are properly documented. This is important since this report will often be used to develop and subsequently adopt the binding DO between the applicant and the local government. The FDOT's review will be solicited by the RPC for incorporation into the RPC Assessment Report typically allowing less than 30 days for response.

4.2.9 DRI Draft Development Order Review

FDOT Reviewer Role

Ensure that mobility on SIS/SHS segments has been adequately addressed

The DRI DO Review is the FDOT's final opportunity to ensure that mobility on SIS/SHS segments located in the project impact area has been adequately addressed. The DRI DO is issued a maximum of 30 calendar days from the day of the public hearing. The reviewer should work to obtain a draft DO from the local government no later than 15 days before the hearing date. The purpose is to resolve any outstanding issues before the DO is rendered, minimizing the chance of an appeal to the DO once it is issued.

TSIH

DO Review
 Checklist 4

The LGDO Review checklist ([DRI Checklist 4](#)) has been designed to address these points:

- preservation of mobility on FDOT's SIS/SHS
- the transportation implications of land use densities
- the continued involvement of the FDOT in the annual/biennial reporting
- the review of project implementation

The FDOT reviewer should also assure that the agency remains informed about the status of the project as it is implemented. Using the biennial report, the FDOT has a continuing opportunity to require periodic monitoring of the project's impacts on the SIS/SHS.

4.2.10 Rendered Development Order Review

Once the development order is rendered by the local government, it is the FDOT's responsibility to ensure that all commitments are contained within the LGDO

FDOT should ensure that all commitments are contained in the final DO. If the FDOT reviewer believes the LGDO fails to adequately ensure the integrity of the SIS/SHS, the District Secretary or Designee should be notified immediately. While objections to conditions of the LGDO must recommended to be appealed in writing to DEO 45 days of the issuance of the LGDO. This is because DEO must issue an appeal if needed within 45 days as defined under Section 380.07, F.S., reducing the amount of time the FDOT reviewer actually has for review. Upon identifying an issue that may require an appeal, the FDOT reviewer should immediately contact DEO, the RPC, and the local government to initiate communication about the issue. The FDOT reviewer should have all the support information gathered and clear direction about the need for an appeal no later than 30 days after the issuance of the LGDO so that DEO has adequate time to process the information and move forward with the appeal if necessary.

4.3 Modification of Approved DRIs

Notice of Proposed Change (NOPC)

DOC

NOPC

Substantial Deviation Determination

A change request requires formal determinations from the DEO, RPC and local government

A Notice of Proposed Change (NOPC) is required to be submitted by the applicant to the local government, the RPC and DEO when a change is proposed to a previously approved DRI. The NOPC should be submitted following [Section 380.06\(19\), F.S.](#), and use the standard form provided by DEO (see PDF). A NOPC may be filed for many reasons such as to extend the project build out date or modify the land use program.

A change request to a previously approved DRI requires formal determinations from DEO, the RPC and the local government as to what level of further review will be required. Often, a traffic study is submitted with a NOPC to request that the deviation not be classified as substantial (i.e. rebut the presumption of a substantial deviation). Guidance on what types of changes are considered substantial may be found in [Section 380.06\(19\)\(a-e\), F.S.](#). Exhibit 33 contains a summary table of the thresholds that trigger a NOPC. It is recommended that a methodology meeting be established by all parties prior to the submittal of documentation supporting the proposed changes. The review process for traffic studies associated with rebutting the presumption of a substantial deviation varies depending on the magnitude and scope of the deviation requested. For example, in some cases a trip generation comparison may be sufficient while in other cases a detailed assessment similar to an ADA may be necessary.

The local government conducts a public hearing to determine if the proposed change constitutes a substantial deviation. Thresholds for substantial deviation determination can be found in [Section 380.06\(19\), F.S.](#). Once the local government makes a determination, it is subject to the appeal provisions of [Section 380.07, F.S.](#).

If it is determined that the changes submitted by the applicant constitute a substantial deviation, [Chapter 4.2](#) of this handbook applies.

Exhibit 35
Substantial
Deviation
Criteria
Summary

Type of Change	Substantial Deviation Criteria	Florida Statute
Attraction and Recreation Facilities	<ul style="list-style-type: none"> • Increase in the number of parking spaces by 15 percent or 500 spaces, whichever is greater • Increase in the number of spectators by 15 percent or 1,500, whichever is greater 	380.06(19)(b)1
Airport	<ul style="list-style-type: none"> • A new runway or new terminal facility • A 25 percent lengthening of an existing runway • A 25 percent increase in the number of gates of an existing terminal, but only if the increase adds at least 3 additional gates 	380.06(19)(b)2
Office Development	<ul style="list-style-type: none"> • Increase in land area by 15 percent • Increase of gross floor area by 15 percent or 100,000 gross square feet, whichever is greater 	380.06(19)(b)3
Residential	<ul style="list-style-type: none"> • Increase in the number of dwelling units by 10 percent or 55 dwelling units, whichever is greater 	380.06(19)(b)4
Residential with workforce housing	<ul style="list-style-type: none"> • Increase in the number of dwelling units by 50 percent or 200 units, whichever is greater, provided that 15 percent of the proposed addition is dedicated to affordable workforce housing 	380.06(19)(b)5
Commercial	<ul style="list-style-type: none"> • Increase by 60,000 square feet of gross floor area • Increase in the number of parking spaces by 10 percent or 425 cars, whichever is greater 	380.06(19)(b)6
Recreational Vehicle Development	<ul style="list-style-type: none"> • Increase in the number of vehicle spaces by 10 percent or 110 spaces, whichever is less 	380.06(19)(b)7
Open Space	<ul style="list-style-type: none"> • Decrease of 5 percent or 20 acres, whichever is less 	380.06(19)(b)8
Multi-Use Development	<ul style="list-style-type: none"> • The sum of increase of each land use is equal to or exceeds 110 percent and any percentage decrease in open space shall be treated as an increase 	380.06(19)(b)9
Transportation	<ul style="list-style-type: none"> • A 15 percent increase in the number of external vehicle trips generated by the development 	380.06(19)(b)10
Preservation or special protection areas	<ul style="list-style-type: none"> • Any change that would result in development of any area which is set aside in the ADA or DO for the preservation or special protection of endangered, threatened, or species of special concern and their habitat, any species protected by 16 U.S.C. ss. 668a-668d, primary dunes, or archaeological and historical sites 	380.06(19)(b)11
Time Extensions	<ul style="list-style-type: none"> • An extension of the build out date by more than 7 years (presumed only) 	380.06(19)(c)

Legend: ADA – Application for Development Approval

DO – Development Order

NOTES:

1. The substantial deviation numerical standards in subparagraphs 3, 6, and 10, excluding residential uses, are increased by 100 percent for a project certified under s. 403.973 which creates jobs and meets criteria established by the Office of Tourism, Trade, and Economic Development as to its impact on an area's economy, employment, and prevailing wage and skill levels. The substantial deviation numerical standards in subparagraphs 3, 4, 5, 6, 9 and 10 are increased by 50 percent for a project located wholly within an urban infill and redevelopment area designated on the applicable adopted local comprehensive plan future land use map and not located within the coastal high hazard area.

FDOT Reviewer Role

FDOT should review NOPC applications to assess potential transportation-related impacts. Written FDOT comments on the NOPC are typically required within 30 days.

The FDOT may also be asked to review traffic studies associated with a rebuttal of the thresholds established for Substantial Deviations (the thresholds are listed in [Section 380.06\(19\), F.S.](#)) supporting a request by the applicant that the deviation not be classified as substantial. The reviewer should ensure that any mitigation proposed in the NOPC is consistent with the original LGDO.

TSIH**NOPC** **Checklist 7**

The FDOT has a role in review of all NOPC and Substantial Deviation Determinations for approved DRI LGDO processes by RPCs. Several factors should be considered in determining the FDOT's response to these notifications. [DRI Checklist 7](#) identifies these critical issues.

TSIH**Appendix G**
NOPC

As greater emphasis is being placed on multimodal mitigation strategies, the reviewer should be versed in these approaches. To provide guidance, samples of multimodal responses in NOPC reviews can be found in [Appendix G Examples of Multimodal Notice of Proposed Change \(NOPC\)](#) and Substantial Deviation Determinations.

If a substantial deviation is determined (or not adequately rebutted), the FDOT should provide comments to the RPC which in turn will summarize the comments and provide to the applicant. Once the local government issues an amended and restated DO, it is subject to the appeal provisions of [Section 380.07, F.S.](#)

In summary, the FDOT should be in agreement with the methodology, assessment of proposed changes, and conclusions supporting the amended and restated DO.

4.4 DRI Reporting

4.4.1 Annual or Biennial Reports



Annual or biennial reports are a requirement of [Section 380.06\(18\), F.S.](#) and [Rule 73C-40.025\(7\), F.A.C.](#) Annual or biennial reports include information describing any changes that have been made to the development plan during the reporting period, information about the master plan, lands purchased, permitting, and local government, and a summary of each DO condition and when each commitment has been complied with. The formal requirements for annual and biennial reports are included in DEO's biennial report form (see PDF link). As an impacted reviewing agency, the FDOT will often receive copies of these reports.

FDOT Reviewer Role

The FDOT reviewer should ensure that mobility on SIS/SHS is addressed throughout project implementation. If concerns arise, the FDOT reviewer is instructed to contact the RPC, local government, and the applicant to discuss. This discussion process should be guided by the relationships between the FDOT and the other local parties. It is the responsibility of the local government to cease issuing building permits for this project until appropriate written approvals are obtained and any needed mitigation requirements are complied with.

The FDOT reviewer should also ensure that conditions included as part of the DRI DO are being met. For example, if a condition stipulating the addition of a traffic signal once it is warranted is included as a condition in the DRI DO and the FDOT reviewer determines that the signal is now warranted, then it should be brought to the attention of all parties.

4.4.2 Transportation Monitoring Studies

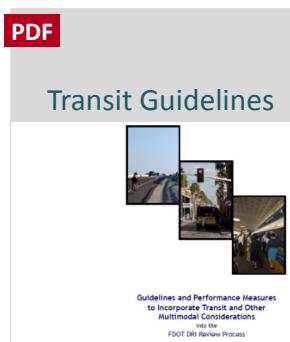
Transportation monitoring studies are being included more frequently in DO agreements

Transportation monitoring studies (see [Rules 73C-40.045\(4\) and \(5\), F.A.C.](#)) differ from the statutory requirement of annual/biennial reports. They usually require the applicant to collect and analyze transportation data to verify assumptions associated with internal capture (or community capture if applicable), background growth rates, and other assumptions made during the ADA. A similar process to that of an ADA (i.e. methodology development, study review, and sufficiency determinations) is often used in the review of transportation monitoring studies. FDOT participation throughout the process is essential. The RPCs have the responsibility to coordinate with all affected agencies with regard to both the notification and coordination of the review.

FDOT Reviewer Role

The FDOT is a reviewing agency for the Traffic Monitoring study

The FDOT should have it stipulated as a condition of the LGDO that it is a reviewing agency for the Transportation Monitoring study. FDOT reviewers are strongly encouraged to review annual monitoring studies and provide written comments when necessary. The review of the study provides an opportunity to ensure that LGDO-mandated transportation improvements are realized in a timely manner. Depending on the specifics of the study, the FDOT review role will likely be very similar to the review of an ADA. In addition FDOT staff should recommend appropriate monitoring for single occupancy vehicle use such as applicable measures in [DRI Checklist 5](#).



In Guidelines and Performance Measures to Incorporate Transit and Other Multimodal Considerations into the FDOT DRI Review Process: "Research revealed concerns that although many DRI applications indicate that the use of internal shuttles and ridesharing will be encouraged, no such actions are undertaken by the developer. If such situations were uncovered by FDOT staff or consultants reviewing the report, a letter could be sent to the local government alerting them of the omission. Such a letter may also include an offer of technical assistance if appropriate. In most cases, this review can be accomplished by reviewing information submitted by the developer; however, field observation may occasionally be warranted. Active FDOT participation in supporting development order conditions through DRI monitoring may make it easier for local governments to ensure compliance."

4.4.3 Transportation Monitoring and Modeling Studies (M & M)

In Guidelines and Questions for Transportation Monitoring and Modeling Studies (September 2000), the East Central Florida Regional Planning Council advocates the monitoring and modeling (M & M) schedule as a method of ensuring the traffic impacts to any regional roadway affected by a DRI do not fall below its adopted level of service (or other performance standard). Although not required for the DRI review process, M & M may be included in a DO to satisfy a minimum condition to show that adequate provisions are made for public transportation facilities and maintenance of transportation mobility at the end of each project phase or phase subset ([Rule 73C-40.045\(7\)\(a\), F.A.C.](#)).

An M&M Schedule identifies required actions for each phase of a development.

An M & M schedule must identify the actions or measures necessary to mitigate significant and adverse impacts to the transportation system in order to proceed to the next phase of a project's development. It must also identify the amount of development that will adversely impact the roadway, as well as when the impacts are scheduled to be mitigated subsequent to each phase or phase subset of a project. If roadway improvements together with timing of such improvements are not identified in the M & M schedule, building permits will be withheld for that project phase or subset until written approval is obtained and compliance with any needed roadway improvements can be demonstrated.

A study period consisting of the next stage of development, and traffic study for the existing peak hour LOS and projection of the next phase's LOS for all impacted roadways listed on the M & M schedule help exhibit compliance with the DO. The study must include estimated traffic for all background developments and the project during the next study period, as well as the end-of-study period LOS for the impacted roadways. The project traffic is to include all existing project developments, permitted project development building permits during the next study period

FDOT Reviewer Role

The FDOT is a reviewing agency for the M & M study

The FDOT is a reviewing agency for the M & M study. The reviewer should ensure that all transportation studies are performed accurately. If the reviewer finds that the development transportation impacts are not in compliance with the M & M schedule, the reviewer should contact the local government to discuss. If a solution is not found, then the reviewer should contact the RPC to initiate formal action.

4.4.4 Community Capture Monitoring

Commitment to Transportation or Traffic Monitoring

Expanded traffic monitoring beyond the current basic requirements of the DRI annual/biennial report will be a required provision in accepting Community Capture rates. While the detailed needs of the traffic monitoring program will be determined through the traffic study process, elements such as origin and destination studies, trip generation studies, and an evaluation of land use mixes in the community and surrounding the community will usually be included in the monitoring program. At a minimum, monitoring will be necessary before the development enters a new phase. If appropriate, trip characteristic assumptions and impact mitigation requirements will be revised, based on the monitoring. Traffic monitoring at a frequency greater than by phase may be required for more aggressive development programs or if significant changes are made to the planned development program.

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We have tried to have the most up to date information. However, due to changes in growth management legislation in 2011 and 2012 we recommend you check with the links we have provided in this handbook.

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DRI Pre-Application Checklist

1 of 3

Information to be Provided to Applicant		
Area Specific		
A. Recommended transportation site impact methodologies used and/or required by the Department including:	1. Software programs 2. Traffic modeling techniques 3. Trip generation methodologies 4. Other software may be used if agreed to be all parties	
Information on:	1. Relevant existing or proposed rights-of-way, 2. Proposed or current Major Investment Studies (in urbanized areas) 3. SIS action or master plans 4. Any corridors designated in the Florida Transportation Plan within the study area	
Work Program	1. How information regarding facilities programmed for improvement in the first three years of the Department's Five-Year Adopted Work Program may be obtained.	
LGCP	1. Local Government Comprehensive Plans (LGCP) (<i>as applicable</i>)	
L RTP	1. MPO Long Range Transportation Plan (L RTP) (<i>as applicable</i>)	
Transit Development Plan	(<i>as applicable</i>)	
Transportation Disadvantaged Service Plan	1. or other locally developed, coordinated public transit-human services transportation plan as required by the Jobs Access and Reverse Commute (JARC) and New Freedom Programs (<i>as applicable</i>)	
Resources for Applicant		
General Guidance		
Additional resources	FDOT Transportation Site Impact Handbook .com website	WEB
FDOT's Quality/Level of Service Handbook	2013 Handbook Q\LOS software	PDF WEB
Interchange Handbook	Procedures and requirements for new or modified access to interchanges on limited-access facilities	WEB
MMTDs & Areawide QOS Handbook	Multimodal Transportation Districts and Areawide Quality of Service Handbook [November 2003]	PDF
Transportation Demand Management (TDM) Resources	http://www.nctr.usf.edu/clearinghouse/	WEB
TDM	Incorporating TDM into the Land Development Process	PDF
LEED Certification	Leadership in Energy and Environmental Design (LEED) Certification	WEB
Commuter Assistance Programs	(<i>as applicable</i>)	
Multimodal Transportation Districts (MMTDs)	Model Regulations and Plan Amendments for MMTDs	PDF

DRI Pre-Application Checklist**2 of 3**

Transit Information		
Transit Design (statewide)	Accessing Transit Design Handbook for Florida Bus Passenger Facilities	PDF
LYNX Mobility Design Manual	LYNX Central Florida Mobility Design Manual	PDF
LYNX Customer Amenities Manual	LYNX Central Florida Customer Amenities Manual	PDF
Transit Facility Handbook	FDOT District 1 and 7 Transit Facility Handbook	PDF
Transit Facilities Guidelines	FDOT District 4 Transit Facilities Guidelines	PDF
Palm Tran Transit Design Manual	Palm Tran Transit Design Manual	PDF
Mobility Access Handbook	Jacksonville Transportation Authority Mobility Access Program Handbook	PDF
Developer Participation	Developer Participation in Providing for Bus Transit Facilities/Operations	PDF
Multimodal Access Information to be Included in the ADA		
DRI Study Area		
A. High-occupancy vehicle lanes	1. Availability 2. Location 3. Usage	<input type="radio"/> Y <input type="radio"/> N
B. Transit service (rail and/or bus)	1. Availability 1. Location 2. Level of service 3. Duration 4. Frequency 5. Connectivity 6. Ridership 7. Are services limited to certain populations such as the elderly or disabled	<input type="radio"/> Y <input type="radio"/> N
C. Bus rapid transit	1. Availability 2. Location 3. Level of service 4. Ridership	<input type="radio"/> Y <input type="radio"/> N
D. Multi-use trails, local and regional (off-road)	1. Availability 2. Location 3. Standard of facility design 4. LOS, connectivity 5. Parking locations 6. Usage	<input type="radio"/> Y <input type="radio"/> N
E. Bicycle lanes (on-road)	1. Availability 2. Location 3. Standard of facility design 4. Los 5. Connectivity 6. Usage 7. Bicycle facility sweeping and maintenance	<input type="radio"/> Y <input type="radio"/> N

DRI Pre-Application Checklist

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DRI Study Area continued		Y	N
F. Sidewalks/pedestrian facilities	1. Availability	<input type="radio"/>	<input checked="" type="radio"/>
	2. Location	<input type="radio"/>	<input checked="" type="radio"/>
	3. Standard of facility design	<input type="radio"/>	<input checked="" type="radio"/>
	4. LOS	<input type="radio"/>	<input checked="" type="radio"/>
	5. Connectivity	<input type="radio"/>	<input checked="" type="radio"/>
	6. Usage	<input type="radio"/>	<input checked="" type="radio"/>
G. Parking management	1. Parking management	<input type="radio"/>	<input checked="" type="radio"/>
H. TDM Transportation demand management	1. Commuter assistance services (i.e., vanpools,* guaranteed ride home)	<input type="radio"/>	<input checked="" type="radio"/>
	2. Availability	<input type="radio"/>	<input checked="" type="radio"/>
	3. Usage	<input type="radio"/>	<input checked="" type="radio"/>
I. Modal Split	1. Baseline modal split of alternative modes	<input type="radio"/>	<input checked="" type="radio"/>
J. Multimodal facility improvements	1. Planned, programmed or committed improvements to existing or new multimodal facilities	<input type="radio"/>	<input checked="" type="radio"/>
	2. Documentation of designated corridor space for transit or multimodal options	<input type="radio"/>	<input checked="" type="radio"/>
K. Existing LOS	1. The existing level of service for transit or multimodal alternatives, if the local government or transit agency has adopted such LOS standards	<input type="radio"/>	<input checked="" type="radio"/>
* Many developments restrict parking for vehicles with logos or do not have a public parking space to handle a 15-22 person van. Allowance for overnight parking for vanpool vans is critical to implementing this TDM strategy.			
Land Use/Site Design			
Discuss how development is consistent with local government comprehensive plans, land development regulations, special area plans, or other applicable mechanisms. For multimodal purposes, the information should include the following:	1. Variety of land uses, including both employment and residential	<input type="radio"/>	<input checked="" type="radio"/>
	2. Land uses that promote pedestrian, bicycle, and transit use	<input type="radio"/>	<input checked="" type="radio"/>
	3. Sufficient densities to support transit ridership	<input type="radio"/>	<input checked="" type="radio"/>
	4. Sufficient intensity along major transit corridors	<input type="radio"/>	<input checked="" type="radio"/>
	5. Sufficient intensities in and around core areas	<input type="radio"/>	<input checked="" type="radio"/>
	6. Connectivity to adjacent properties, surrounding communities, and the surrounding street network; include multimodal connectivity analysis	<input type="radio"/>	<input checked="" type="radio"/>
	7. Appropriate numbers of connections within the street network	<input type="radio"/>	<input checked="" type="radio"/>
	8. Support of pedestrian environment including shorter block lengths, traffic calming measures, traffic enforcement programs, etc.	<input type="radio"/>	<input checked="" type="radio"/>
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We have tried to have the most up to date information. However, due to changes in growth management legislation in 2011 and 2012 we recommend you check with the links we have provided in this handbook.

DRI Checklist 1 | Methodology Meeting

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Project	Reviewer	Date of Review:
		Comments Due:
Project Information		Y N N/A
A. Site relative to the surrounding roadway network shown?		
	1. In map format?	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
B. Project phasing shown?		
	1. Single phase project?	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
	2. Multiple phases?	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
C. Proposed buildout year(s) of project phase(s) identified?		
D. Development defined in acceptable manner for each phase of implementation?		
	1. Number dwelling units (DUs) for residential land uses?	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
	2. Square feet (SF or GLSF) for commercial, office, retail, industrial land uses?	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
E. Acceptable study area limits identified?		
	1. Critical roadway segments identified?	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
	2. Critical intersections identified?	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
Data Collection and Existing Conditions		
A. Stated how data on existing conditions will be collected?		
	2. Acceptable locations and durations for traffic data collection identified?	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
	a. 3 consecutive days for 24-hr counts in urban areas?	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
	b. Five consecutive days in rural areas?	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
	3. Measures identified for collecting transit, bicycle and pedestrian volumes and facilities info?	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
	4. TMOs, TDMs and other special considerations appropriate are identified?	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
B. Measures included to account for previously adopted development agreements including other DRIs?		
C. WP or TIP projects used in existing conditions analysis?		
	1. Project(s) listed in first three years of the WP/TIP?	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
	2. Funding source(s) identified?	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
D. Traffic characteristics to be used in the analysis identified?		
	1. Each characteristic within range accepted by Department for facility and area type?	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
Project Approach		
A. Site Impact analysis to use primarily manual calculation mechanisms?		
	1. Manual approach appropriate for project scale and location?	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
	2. Acceptable methodology described for determining future year roadway network volumes?	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
	a. Growth rates reasonable based on historical/current development activity?	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
B. Site impact analysis to use computer-based calculation mechanism?		
	1. Latest FSUTMS model for the area to be used?	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
	2. Project site extracted as separate TAZ?	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
	3. Zdata files for project TAZ appropriate?	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
	4. Buildout year(s) of project coincidental with future years of the approved FSUTMS model?	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
	a. If not, acceptable methodology proposed for determining interim year conditions?	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
	5. Described measures for project level validation of the model?	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
	a. Will local roadways need to be added to analyze traffic behavior at project level?	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>

DRI Checklist 1 | Methodology Meeting

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Project Approach continued		Y	N	N/A
C. Any transportation network improvements not included in first three years of the WP or TIP proposed in future year network conditions?	1. Listed improvements included in MPO's adopted long-range plan? 2. Listed improvements consistent with LGCP Capital Improvements and Transportation Elements for year(s) shown? 3. Listed improvements consistent with other recent Department -approved plans (i.e., action plans, master plans, MISs, AISs)?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
D. Provided source for seasonal and, if appropriate, model output conversion factors from the Department to derive AADT volume?		<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Trip Generation				
A. Trip generation rates based on ITE: <i>Trip Generation</i> (latest edition data)?	1. If land use is under reported in ITE: <i>Trip Generation Manual</i> , is an acceptable alternative means of determining project trip generation characteristics identified?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
B. Proposes to analyze the "critical hour" (highest hour of project + adjacent) roadway traffic?		<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
C. Internal trip capture characteristics proposed?	1. Internal capture rates reasonable, based on proposed land uses and location?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
D. Pass-by trip characteristics assumed?	1. Pass-by rates reasonable, based on proposed land uses and location?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
E. Means of determining truck/heavy vehicle volumes described?		<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
F. If using a model-based trip generation method, prepared to show TAZ maps and project Zdata files?		<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Trip Distribution				
A. If using a manual methodology, proposed a method for trip distribution?	1. Method acceptable, based on proposed and other area land uses? 2. Site traffic trip length curve and average trip length data provided?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
B. If using a computer model methodology, compare model to manual estimates?	1. Expressed understanding of documentation requirements for average trip length, friction factors or trip length frequency? 2. External/internal trip assumptions documented?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Mode Split				
A. Split of vehicle trips to alternate travel modes proposed?		<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
B. Documentation supporting mode split provided?		<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Trip Assignment				
A. Will show both daily and peak-hour assignments for each project phase?		<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
B. If using FSUTMS, are trip assignments shown, by purpose, for each phase of the project?		<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
C. If using FSUTMS, is single assignment method proposed for calculating background traffic volumes?		<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Analysis Procedures				
A. Identified acceptable minimum LOS standard for study area roadway links?		<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
B. Identified tools for performing LOS determinations?	1. Tools appropriate to the types of facilities analyzed? 2. Department-approved tools identified? a. Location(s) of possible queue analyses identified?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
C. LOS for each critical roadway segment and intersection by phase?		<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

DRI Checklist 1 | Methodology Meeting

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Other Considerations	Y	N	N/A
A. Recognized need to adhere to Department standards for SHS access controls?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
B. Applicant aware of any local maximum number of lanes policy?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
C. Applicant aware that any project phase depending upon an approved IJR/IMR shall not be approved until request approved?		1. IJR/IMR such approval request cannot be initiated until at least 45 days following the issuance of a Development Order?	<input type="radio"/>
D. Applicant indicated the need to adhere to Department's access management standards?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
E. Applicant defined method to determine left-turn queues into the site?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
F. Is applicant aware of requirement to address multimodal site access and connectivity?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
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DRI Checklist 2 | ADA Sufficiency Review

Project	Reviewer	Date of Review: Comments Due:
		Y N N/A
A. Adequate explanation of existing conditions, data collection, and analysis procedures for all transportation modes? (Section A)		<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
B. Adequate discussion of trip generation data, modal split, assumptions, and methods from a multimodal perspective provided? (Section B)		<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
C. Adequate discussions and analysis results for each project phase? (Section C)		<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
D. Adequate documentation for each project phase? (Section D)	1. Forecasting of daily background traffic, by phase, graphically depicted? 2. Analysis of peak-hour traffic distribution and assignment for Section D review	<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
E. Adequate documentation for each project phase regarding distribution and analysis of daily and peak-hour traffic volumes? (Section E)	1. Project trips graphically depicted for each project phase? 2. Percentage of project traffic in traffic stream at buildup documented? 3. Project study area boundary maintain adherence to study "significantly impacted" SHS facilities requirement?	<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
F. Recommended impact mitigation improvements, including TSM and alternate mode improvements, discussed and analyzed in sufficient detail? (Section F)		<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
G. Adequate discussion of project's contribution to planned transportation corridors, regardless of mode, as shown in local plans through protection and/or development? (Section G)		<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
H. Adequate discussion of project's contribution to designated transportation corridor improvements? (Section H)		<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
I. Sufficient discussion of provisions for the movement of people other than the private automobile? (Section I)	1. Internal design 2. Site planning 3. Parking provisions (or limits) 4. Location 5. Other	<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
J. Map H, master development plan indicates: (Section J)	1. Proposed land uses and locations 2. Development phasing 3. Major public facilities 4. Utilities 5. Preservation areas 6. Easements 7. Right-of-way 8. Roads 9. Transit stops 10. Bicycle/pedestrian ways	<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
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DRI Checklist 3 | ADA Review

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Project	Reviewer	Date of Review:
		Comments Due:
Section A: Existing Conditions		Y N N/A
<p>A. (Reference Section E response)</p> <p>Study area boundaries adjusted, if necessary, to include all SIS/SHS segments and intersections where project traffic is five percent or more of adopted minimum LOS volumes?</p>		
B. Existing conditions adequately shown using Map J or in a table?	1. AADT shown? 2. Peak-hour directional trips shown? 3. Existing segment and intersection volumes and LOS and maximum LOS Volumes shown? a. LOS standards exceeded?	<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
C. Traffic characteristic assumptions stated?	1. K, D Factors 2. Facility type necessary for analysis 3. Lanes 4. Traffic composition 5. Within accepted ranges per MLOU?	<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
D. Planned and programmed transportation network improvements identified?	1. Agency documentation provided which substantiates project(s)' status?	<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
E. Data collection and analysis performed per MLOU?		<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
F. Reviewer performed a site visit of roadway to verify that intersection volumes and LOS analysis assumptions are reasonable?		<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
Multimodal Supplement		
<p>A. Within an existing transportation concurrency exception area (TCEA), transportation concurrency management area (TCMA), or multimodal transportation district (MMTD) and complies with local government requirements</p>		
B. High-occupancy vehicle lanes	1. Availability, location, and usage	<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
C. Pricing strategies	1. Transit subsidies, parking fees, parking discounts for ride sharers, parking cash out, travel allowances, tax benefits	<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
D. Transit service	1. Location, level of service, span of service, frequency, coverage, connectivity, loading reliability, ridership, and transit auto travel time ratio	<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
E. Bus rapid transit	1. Location, level of service, span of service, frequency, coverage, connectivity, loading, reliability, ridership, and transit/auto travel time ratio	<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
F. Multi-use trails	1. Local and regional (off-road) – availability, location, standard of facility design, LOS, connectivity, parking, and usage	<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
G. Bicycle facilities (paved shoulders, sharrows/shared lanes, etc.)	1. Availability, location, standard of facility design, LOS, connectivity, usage, and connectivity to transit	<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
H. Sidewalks/pedestrian facilities	1. Availability, location, standard of facility design, LOS, connectivity, usage, and connectivity to transit	<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
I. Parking management		<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
J. Transportation Demand Management		<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>

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Multimodal Supplement continued		Y N N/A	
K.	Baseline modal split of alternative modes	<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>	
L.	Multimodal Improvements	1. Planned, programmed or committed improvements to existing or new multimodal facilities including documentation of designated corridor space for transit or multimodal options	<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
M.	Existing Transit LOS	1. Existing level of service for transit or multimodal alternatives, if the local government or transit agency has adopted such LOS standards	<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
N.	Land Use	1. Land use mix, including both employment and residential, within the context of the DRI and the surrounding community 2. Land uses within the DRI that promote pedestrian, bicycle, and transit use	<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
O.	Sufficient Density/Intensity	1. Sufficient densities to support transit ridership* 2. Sufficient intensity along major transit corridors* 3. Sufficient intensities in and around core areas*	<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
P.	Connectivity	1. Connectivity to adjacent properties 2. Connectivity to transit 3. Appropriate numbers of connections within the street network 4. Shorter block lengths to support pedestrian environment.*	<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
Q.	Data	1. Assessment of the reliability of selected trip generation rates to predict the number of trips from the new development 2. Identification of alternative sources of data, if applicable	<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
Section B: Trip Generation			
A.	Trip generation projections by land use and phase provided?	<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>	
B.	Trip generation calculations performed per MLOU?	<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>	
C.	Reviewer performed spot verification of trip generation rates, by land use, to confirm phase and project totals?	<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>	
Section C: Internal/External Split by Phase			
A.	Internal/external project trips calculated using internal capture and pass-by characteristics per MLOU?	1. Master Plan map depicting internal circulation to support internal capture shown?	<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
B.	Reviewer performed spot checks of project-based external trips applying approved and documented internal capture and pass-by trip rates to project trips shown in Section B?		<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
* Criteria are found in applicable local or regional plans and regulatory mechanisms			

DRI Checklist 3 | ADA Review

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Section D: Projections	Y	N	N/A	
A. Forecasts of total peak-hour trips, with and without project, identified by phase?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	
B. Distribution methodology described and assumptions fully documented?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	
C. For computer-based distribution method, has FSUTMS model validation or modification at project level documented?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	
D. Trip distribution method shown per MLOU?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	
E. Reviewer performed random spot checks of forecasts per analysis method used?	1. For manual calculation analysis, approved growth rates per year applied to existing traffic volumes?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
	2. For model-based analysis, future year ZDATA files reviewed for reasonableness and inclusion of other development?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
F. Proper documentation provided for any new transportation system improvements reflected in the future year(s) network?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	
G. Maps or tables provided showing total traffic with and without the project, by development phase?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	
Section E: Development's Trip Assignments	Y	N	O	
A. Assignment of AADT project trips	1. Assignment of AADT project trips, by phase, to surrounding transportation network performed?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
	2. Assignment also performed at directional peak-hour level?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
B. Comparison of average trip length for project and no-project scenarios performed?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	
C. Reviewer verified that project trip assignments account for 100 percent of external project trips, as documented into Sections B and C responses?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	
D. If splits to alternative modes assumed, supporting documentation from service agencies and modal plans been included?	1. Service feasibility verified?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
	2. Auto occupancy adjustment factors by trip purpose verified?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
E. For model-based assignment methods, full documentation of manual model adjustments provided?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	
F. LOS for regionally significant roadways' segments, SIS/SHS facilities and critical intersections calculated, with and without project?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	
G. Trip assignments and LOS analyses performed per MLOU?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	
H. Maps or tables provided which summarize LOS by phase, with and without project?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	
I. Merge, diverge, weaving and ramp queuing analyses performed for study area freeway segments?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	
J. Reviewer performed spot checks of LOS analyses to verify appropriateness of analysis technique and accuracy of reported results?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	

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Section F: Recommended Road and Intersections' Improvements		Y N N/A
A. Transportation system improvements which will result in acceptable LOS on SIS and SHS facility segments identified?	1. Improvements been identified for each project phase? 2. Improvements include measures other than addition of roadway lanes or new roadway facilities? a. Documentation from appropriate agency(ies) included to verify improvement feasibility?	<input checked="" type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
B. Measures required to mitigate for increased percentage of trucks from project?	1. Intersection design at critical intersections and accesses required? 2. Intersection left-turn and right-turn channelization modifications required?	<input checked="" type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
C. Mitigate for Noise Impacts?	1. Measures for dealing with noise impacts adequately addressed? 2. Proposed improvements to SIS and SHS facilities avoid noise impacts to study area segments or need to study potential noise impacts and associated mitigation for noise-sensitive sites adjacent to these segments?	<input checked="" type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
D. Proposed improvements do not have a negative impact on the air quality conformity status of the overall network?	1. Alternative improvement scenarios proposed if air quality conformity cannot be maintained? 2. Detailed air quality modeling required on study area segments during project implementation?	<input checked="" type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
E. Identified where additional rights-of way including intersection flareouts, may be required for proposed improvements?		<input checked="" type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
Section G: Access Management and Median Openings		
A. Number and general location of proposed points of access identified?	1. Access points conform to Department access and driveway spacing standards?	<input checked="" type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
B. Joint access and connectivity improvements with neighboring non-project parcels evaluated?	1. Potential for shared access among commercial developments, including alternate access roads sometimes referred to as "fringe roads" or "backage roads"	<input checked="" type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
C. Reasonable connections between internal project parcels proposed to provide complete project traffic circulation system and minimum demands for external driveways or access points?		<input checked="" type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
D. Can some proposed access points be relocated to side (non-SHS) streets?		<input checked="" type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
E. Maps provided which show existing median openings and major driveways?		<input checked="" type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
F. Proposed location(s) of access points relative to existing (or proposed) median openings that may require signals?	1. Potential signal locations conform to Department signal spacing standards for the SHS facility type and area type?	<input checked="" type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
G. Access Management Standards	1. Review independently verified Access Management Standards applied in the study area are appropriate?	<input checked="" type="radio"/> <input checked="" type="radio"/> <input type="radio"/>

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Section H: Corridor Management Strategies		Y N N/A
A. Commitment to assisting Department or local government in establishment of improved corridor management strategies?	1. Measures to be taken in promoting corridor development form described? 2. Measures taken to minimize ROW impacts of future improvements to the corridors?	<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
Section I: Public Transit		
A. If mode split assumed per Section E response, measures to be incorporated in development's design and implementation supporting these mode choices identified? See sections A, J and K		<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
Section J: Multimodal Access to Surrounding Community		
A. Connectivity	1. Inventory and document the degree of connectivity to activity centers (areas with destinations such as schools, shopping, recreational facilities, and other points of attraction). 2. Include crossing features 3. Other features (lighting, visibility, medians, pavement markings) related to pedestrian/bicycle safety at each intersection	<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
B. Pedestrian and Bicycle Facilities	1. Identify all pedestrian and bicycle facilities, including sidewalks shared roadways, signed-shared roadways, bike lanes, or shared-use paths that lie within the site access area, as designated in the [City/County pedestrian/bicycle plan]. Identify gaps in the system	<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
C. Identify specific transportation network improvements needed to provide safe and efficient pedestrian and bicycle access from the project to activity centers		<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
D. Transit Service Inventory and document the availability of public and private transit service along routes to activity centers within the study area or a minimum of 5 miles from the DRI, whichever is further, including:	1. Location of bus routes 2. Frequency of service 3. Hours of operation 4. Existing peak hour load factors 5. Bus stops 6. Amenities (concrete pad, bench, bus shelter and connectivity to the sidewalk network) at existing and programmed bus stops. 7. The inventory must also include lighting features (overhead streetlights) at transit stops, crosswalks and nearby parking areas, as well as availability 8. Posting of schedules or real-time transit information	<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
E. Transit Facility Improvements	1. List specific transit facility improvements contained in the adopted [long range transportation plan, transit development plan or public transit-human services coordinated transportation plan] that address safe and efficient transit access from the proposed development to activity centers	<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
F. Identify specific transit-related facilities needed to provide access to existing or planned transit service		<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
G. Minimizes vehicular, transit, bicycle, or pedestrian conflicts		<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
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DRI Checklist 4 | DO Review

Project	Reviewer	Date of Review: Comments Due:
Local Government Development Order Review		
Concerns Related to Approved Land Uses		
A. Approved land use categories intensities and densities comparable to Question 21 of the DRI-ADA analysis?		<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
B. Approved land use intensities and densities support internal capture, pass-by mode splits and project internal/external characteristics of DRI-ADA Question 21 analyses?	1. Is change(s) in project traffic assignments reasonable given land use changes?	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
C. LOS standards achieved on segments, at each development phase, with improvements proposed under adopted land use scenario(s)?		<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
D. Public transit, TDM, TCM or TSM measures proposed, remain feasible under approved land use scenario(s)?		<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
E. Internal traffic circulation plan and access points and transportation system connectivity revised to reflect approved land scenario(s)?		<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
Concerns Related to SHS Access and LOS Standards		
A. LGDO provides for phased implementation of full site access contingent upon project-generated background traffic volumes?		<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
B. Where appropriate, LGDO provides procedures for suspending project implementation should LOS on roadway segments fall below minimum standards as a direct result of project traffic?		<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
Involvement in Project Monitoring		
A. LGDO mandates submittal of a periodic Project Monitoring Report?	1. LGDO identifies Department as a reviewing agency for the Project Monitoring Report? 2. Project Monitoring Report call for annual LOS, noise and air quality determinations for significant impact areas SHS facilities?	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
If the Department Reviewer believes the LGDO fails to adequately ensure the integrity of the SIS or SHS, the District's Director for Planning and Programming should be notified immediately. Objections to conditions of the LGDO must be appealed in writing to DEO within 45 days of the issuance of the LGDO. Objections expressed by the Department after this 45-day appeal period has no legal standing with DEO, RPC or the applicant.		
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DRI Checklist 5 | Project Monitoring & Report Review

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Project	Reviewer	Date of Review: Comments Due:
Transportation Impact		Y N N/A
A. Trip generation rates determining project-to-date and total project impacts consistent with rates and trip generation procedures identified in DRI-ADA and LGDO?		<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
B. Internal capture and pass-by trip characteristics used in reporting of project-to-date conditions appropriate for land use mix and locations currently in development?		<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
C. Is the distribution of project traffic on the transportation network consistent with the methodology approved for use in the DRI-ADA analysis?		<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
D. Background traffic volume annual growth rates consistent with forecasts used in DRI-ADA analyses?		<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
E. LOS for project area SHS segments determined?	1. Field counts collected to record current project and without-project volumes? 2. LOS analysis procedures consistent with techniques used in DRI-ADA response? 3. Facility type, area type and laneage of SHS segments analyzed reflect current year conditions?	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
F. Status of projects within the project impact area identified as programmed or under construction in the DRI-ADA updated?		<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
G. Other transportation network improvements affecting use of project impacts area SHS facilities identified?		<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
H. Status of LGDO-mandated improvements to be undertaken by the developer provided?	1. Status consistent with the amount of project development that has occurred per the LGDO?	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
I. Noise and air quality data collected and consistency with Department criteria, as set forth in the LGDO, ascertained?		<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
J. All Department review comments detailed and transmitted to RPC Coordinator for transmittal to the developer?	1. Duplicate set of Department comments transmitted directly to the developer (or its authorized representative)?	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>

DRI Checklist 5 | Project Monitoring & Report Review

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Multimodal Criteria		Y	N	N/A
A. Bus Stop Locations and Facilities	1. Bus stops - Increase in bus stops with emphasis on true ¼ mile accessibility to the population (factoring in good sidewalk connectivity rather than simple distance)	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
	a. With shelters	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
	b. With bicycle parking	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
B. Transit Revenue Miles and System Access	1. The number of miles the transit vehicle is actually in service.	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
	2. Intersecting transit routes	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
	3. Park and ride locations	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
	4. Traffic signals with transit priority	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
C. Bicycle & Pedestrian Facilities	1. Multiuse path miles	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
	2. Bike lane miles	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
	3. Sidewalk miles	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
	4. Well designed pedestrian crosswalks	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
	5. Enhanced pedestrian crossings at bus stops	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
D. Increases	1. Increase in transit peak hour capacity	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
	2. Increase in transit rides per capita	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
	3. Increase in ridesharing	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
	4. Increase in telecommuting	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
	5. Increase in use of alternative work hours	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
	6. Increase in walking	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
	7. Increase in bicycling	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
E. Decreases	1. Decrease in growth rate of VMT per person	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
	2. Decrease in growth rate of single occupant vehicle (SOV) mode share	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
2 of 2				

DRI Checklist 6 | Conceptual Site Access Review

Project	Reviewer	Date of Review: Comments Due:
Access Management Standards		
A. Appropriate access management standards for median openings and major driveway connection spacing?		<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
B. If exceptions to standards proposed, supporting documentation provided?		<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
C. Reviewer evaluated effect of number and location of proposed driveways and median openings on adjacent SHS roadway segment(s) operations?	1. Sufficient information on number of lanes, geometric conditions and internal site circulation provided for evaluation of impacts to the public roadway system?	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
Site Specific Issues		
A. Can surrounding roadway system serve high left turn movements?		<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
B. Potential sight distance problems?		<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
C. Potential Pedestrian conflicts?		<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
D. Relationship of internal circulation facilities to public streets.		<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
E. Sufficiency of driveway length at major entrances?		<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
F. On-site circulation as it impacts the public roadway system or access to public transportation and bicycle/pedestrian network?		<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
G. Access treatments for out parcels?		<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
H. Potential for shared access among commercial developments, including alternate access roads sometimes referred to as "fringe roads" or "backage roads"?		<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>

Approval of the Conceptual Agency Access Review Submittal does not constitute permit approval.

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DRI Checklist 7 | Notice of Proposed Changes/Substantial Deviation Determination

Project	Reviewer	Date of Review: Comments Due:
Evaluation Criteria		Y N N/A
A. Proposed changes result in transportation impact reductions from original approved DRI?		<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
B. External peak hour traffic increased beyond original analysis projections for phase(s) or buildup years?	1. Increase sufficient for classification of application as Substantial Deviation? 2. Increases raise LOS issues on these links? a. Willing to consider mitigation on LOS-deficient links to avoid Substantial Deviation classification?	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
C. Time extensions for application cumulatively exceed seven years extension for project?		<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
D. Reductions in land use densities proposed?	1. Reductions in densities result in less internal capture and lower pass-by capture rates, offsetting reductions in transportation impacts?	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
E. Same methodologies and assumptions used in analyzing transportation, noise, and air quality impacts as used in initial ADA submittal?		<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
F. Proposed changes constitute new development?	1. New development? 2. Proposed changes constitute minor changes only?	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
G. Previous ADA authorization data shown?	1. Original ADA authorized after January 20, 1987 and prior to March 23, 1994? 2. Authorized after March 23, 1994 or one with significant amounts of new development? a. Mitigation consistent with local concurrency management system regulations and mitigation provisions in Section 163.3180,F.S.?	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
H. Qualifies as a Substantial Deviation and involves new or modified interchange?	1. Re-evaluation of IJR/IMR per Interchange Handbook acknowledged? 2. Need to adhere to IJR/IMR methodology and review process as detailed in Interchange Handbook acknowledged?	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
I. Reviewer consultation with RPC and/or DEO to reach consensus on specific methodologies to be applied during the review of the NOPC performed?		<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
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5



Mitigation

5.1 Introduction

This chapter provides guidance on strategies and funding mechanisms for mitigation.

This chapter will provide general guidance on mitigation of the impacts of development. It will provide some best practice examples and also discuss the FDOT's changing role in mitigation agreements as a result of 2011, 2012, and 2013 changes to Growth Management legislation.

Decisions about how to meet community plans and visions for development and transportation options are a key responsibility of local government planning, and should be coordinated with neighboring jurisdictional, Metropolitan Planning Organization (MPO), and other agency plans to ensure that local and regional mobility goals are met in a proactive, comprehensive way. When development is expected to impact important state resources and facilities such as Strategic Intermodal System (SIS) facilities, local entities should also consult with FDOT on mitigation plans. Local government comprehensive plans should align with regional and statewide mobility goals through a number of planning documents. Mitigation efforts should be consistent with local government comprehensive plans and future land use maps, as well as the applicable transportation agency plans including the FDOT Work Program, SIS Cost Feasible Plan, MPO's Transportation Development Plan (TDP), Transportation Improvement Plan (TIP), the Unified Planning Work Program, and the Long-Range Transportation Plan (LRTP).

As a result of the elimination of several sections of the Growth Management statutes, much of the process regarding mitigation for the SIS is removed from law. What remains is as follows:

- Per Section 163.3177(6)(b), Florida Statutes (F.S.), the transportation element should be coordinated with plans and programs from any applicable MPO and transportation authority, as well as the State Transportation Plan and applicable FDOT Work Program ; and
- Per Section 163.3180(5)(h)(1), F.S., local governments implementing concurrency must consult with FDOT when proposed amendments affect SIS facilities.

Under the expedited state review process and state coordinated review process, FDOT's role is essentially the same for identifying impacts and measures for eliminating, reducing or mitigating impacts, as noted below:

- Per Sections 163.3184 (2), (3)(b), and (4)(c), F.S., under the new expedited state review process, comments on proposed plan amendments must specifically state how the plan amendment will adversely impact important state resources and facilities and identify measures local governments can take to eliminate, reduce, or mitigate for these impacts.
 - These comments are sent to DEO and local government within 30 days after receipt of the amendment by FDOT. FDOT comments are limited to issues within the agency's jurisdiction as it relates to transportation resources and facilities of state importance.
- Per Section 163.3184(4), F.S., under the state coordinated review process, FDOT is limited to making comments similar to the expedited state review process in regards to important state resources and facilities.
 - Comments are then submitted to DEO within 30 days of DEO's receipt of the proposed plan amendment for their transmission of the ORC Report.

Extent of Mitigation Required

Mitigation should be relative to the scale of the expected transportation impacts. For example, while two developments might initially seem similar, a mall would expect to generate more traffic and have a greater impact to the existing transportation network than a warehouse even when both developments consists of an equal amount of commercial or retail square footage.

Considerations for local governments employing transportation concurrency

Transportation impact analysis and mitigation can range in complexity, from simple “pay-and-go” systems relying upon LOS impacts to more sophisticated impacts analysis employing concurrency options within the local jurisdiction.

Transportation impact analysis has traditionally focused on a few basic factors to identify expected automobile level of service impacts on the transportation system and the associated transportation facility and improvements and costs of addressing these impacts. While this traditional analysis still holds true for many traditional suburban developments and undeveloped areas, optional community concurrency planning provisions and associated strategies like Transportation Concurrency Exception Areas (TCEAs), Transportation Concurrency Management Areas (TCMAs), Multimodal Transportation Districts (MMTDs), and/or sector plans may involve additional factors that are not effectively measured in automobile level of service calculations alone. The location of these provisions and strategies are required to be indicated on a local government’s adopted future land use map pursuant to Section 163.3177(6)(a), F.S. In these cases, consideration of transit needs, bicycle and pedestrian needs, and mitigation efforts to reduce automobile dependence may also be necessary. In addition to the traditional level of service considerations, some questions to consider in analyzing impacts include:

- Does the design of the proposed development work to reduce impacts on adjacent arterials?
- Are there factors in the proposed development that are expected to reduce automobile trip generation?
- Will the proposed development support higher rates of internal capture?
- Will the proposed development produce more trips by alternative transportation modes?
- Does the proposed development support more trip chaining that may affect the activity patterns on the transportation system?

See [Resource Guides](#) for Chapter 3 regarding information on how multimodal quality of service can be utilized to assess how well these questions are addressed.

For local governments using transportation concurrency, it is important that FDOT reviewers be aware of the principles, guidelines, standards, and strategies included in the local comprehensive plan that will help to guide mitigation and the relevant strategies to be employed. Direction from the local government comprehensive plan will also help to determine the level of mitigation required. Examples of techniques and tools include area-wide LOS (e.g. TCMA), exemptions or discounting impacts in specific areas where development has been determined to be desirable (such as MMTDs), and other techniques described in Section 163.3180(5)(f), F.S., may be employed in implementing transportation concurrency, including:

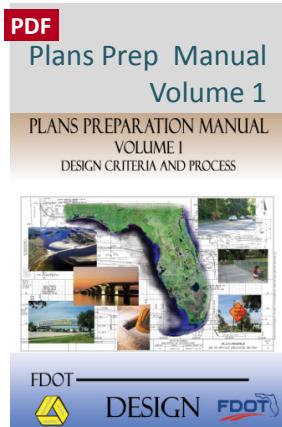
- Adoption of long-term strategies to facilitate development patterns that support multimodal solutions, including urban design, and appropriate land use mixes, including intensity and density.
- Adoption of an areawide level of service not dependent on any single road segment function.
- Exempting or discounting impacts of locally desired development, such as development in urban areas, redevelopment, job creation, and mixed use on the transportation system.
- Assigning secondary priority to vehicle mobility and primary priority to ensuring a safe, comfortable, and attractive pedestrian environment, with convenient interconnection to transit.
- Establishing multimodal level of service standards that rely primarily on nonvehicular modes of transportation where existing or planned community design will provide adequate level of mobility.
- Reducing impact fees or local access fees to promote development within urban areas, multimodal transportation districts, and a balance of mixed use development in certain areas or districts, or for affordable or workforce housing.
- Adoption of long-term strategies can include land use planning tools that can reduce vehicle miles of travel for a development or specific area. Strategies can consist of land use policies that allow for higher densities and intensities in areas designated to promote multimodal options such as transit, bicycling, and walking and discourage development in areas with low amounts of supporting infrastructure.

Transportation impacts may also vary by development type

In addition, different transportation impacts may be expected depending upon development type. Developments that are designed to include an interconnected street network, support high density mixed-use development, or otherwise embrace transit-oriented design practices, serve to reduce reliance on adjacent arterials through design features that promote bicycle and pedestrian accessibility and the ability to move along local streets for daily trips. The transportation impacts for these developments are therefore less than conventional low density suburban developments that separate land uses and promote automobile use due to insufficient bicycle and pedestrian facilities accessibility, and vast distances to traverse.

FDOT reviewers should also recognize and look for opportunities to reduce impacts to the State Highway System. For instance, some local governments and MPOs have developed roadway constraint ordinances or policies to guide transportation investment priorities, promote community mobility goals, and offer less expensive options for enhancing regional transportation networks. These policies should be consulted along with other local and regional planning documents, and will have a significant impact on mitigation opportunities. For instance, the [Lake Sumter MPO Roadway Constraint Policy](#) defines the maximum number of lanes for several federal, state, and county roads within their jurisdiction in an effort to maintain and enhance the overall transportation network in a cost-effective way that considers long-term community mobility goals.

FDOT provides guidance in Topic No. 625-000-007 *Plans Preparation Manual (PPM), Volume 1, Chapter 21, Transportation Design for Livable Communities*. This optional guidance can be applied to provide a balance between mobility and livability when such features are desired, appropriate and feasible. For example, the Number of Lanes section is copied below:



21.5.2 Number of Lanes

In developed urban areas, reducing the number of lanes may provide space for pedestrians, bicycles, parking, landscaping etc. This technique may be appropriate depending on volume and character of traffic, availability of right of way, function of the street, existing or planned level of pedestrian, bicycling and transit activity, intensity of adjacent land use, and availability of alternate routes. The decision to reduce the number of lanes on a project shall be supported by an appropriate traffic capacity study. If transit vehicles and school buses are currently operating in the area of the project, appropriate local agencies should be consulted.

Another method for reducing impacts on the State Highway System (SHS), particularly SIS facilities, is the use of parallel reliever roads, nearby parallel roads that serve common destinations and run in the same direction as a major arterial. In the City of Destin, for example, parallel reliever roadways operate to preserve existing capacity on US 98 (the main east-west arterial running through the city) while contributing to the overall multimodal transportation goals and policies of the community. In conjunction with the City's adoption of a MMTD, various transportation options have been developed to improve roadway connectivity and reduce single occupant vehicle trip making in an overall effort to create a multimodal environment. When using this strategy, particular attention should be paid to safety considerations in the improvement of parallel relievers to address operational issues and unfamiliar movements that can lead to increased crash rates.

As more options become available to meet the mobility needs of the transportation network, the analysis of mitigation options becomes more complex. In general, reviewers should utilize both quantitative and qualitative methods of analyzing the transportation impacts of new development.

FDOT reviewers should recognize the limitations of travel demand modeling in multimodal analyses so that transportation impacts are assessed effectively. For example, the use of transportation analysis zones (TAZs) as a unit of analysis does not consider trips within those zones, like the ones that constitute the majority of walking trips, a significant portion of bike trips, and most trips to access transit. In addition, existing land use models do not consider differences in land use configurations that may occur as a result of changes in the transportation network. FDOT reviewers may wish to consult FDOT's [Multimodal Tradeoff Analysis in Traffic Impact Studies](#) for more detailed information on multimodal considerations.

PDF

Multimodal
Tradeoff Analysis

5.1.1 Context-Sensitive Solutions (CSS)

FDOT's [Topic No. 000-650-002-a](#) defines Context Sensitive Solutions (CSS) as, "a proactive, collaborative, interdisciplinary approach to transportation decision making, project development, and implementation, taking into account, the views of stakeholders, and the local area where a project will exist, be operated, and be maintained." The PPM Chapter 21, Transportation Design for Livable Communities provides implementation guidance for design originating from a CSS process. CSS strategies support a broad view of the modal transportation network to enhance local planning goals and conserve important environmental resources, while also addressing safety and mobility issues. Conventional approaches to capacity enhancement focus on widening lanes and creating more continuous roadways. This leads to the unintended result of hindering specific community and environmental objectives as well as aesthetics, accessibility and safety. A CSS strategy requires the implementation of solutions tailored to the specific community and takes multimodal and intermodal connections into account when addressing capacity needs.

Local and regional plans provide the opportunity for creating and maintaining a coordinated multimodal transportation systems through CSS. Early and continuous coordination between FDOT, local governments, and the public is imperative in order to define community and environmental goals to establish long-term mobility on the transportation network. Examples of new capacity improvements using CSS include: streetscape improvements, traffic calming design elements, as well as road space reallocation to increase right of way for alternative modes such as transit or bicycle/pedestrian improvements. CSS may be combined with Transportation Demand Management (TDM) solutions that seek to increase efficiency on the existing system by considering design elements that influence travel behaviors.

5.1.2 Development or Land Use Changes

It is important to work in coordination with the applicable local government(s) when changes are necessary for a proposed comprehensive plan amendment which can impact the development plan initially proposed by an applicant. Changes may be required if there are no other feasible alternatives to mitigate for the traffic impacts such as reducing the magnitude of impacts by modifying the assignment of traffic by the development.

Examples of changes to a proposed comprehensive plan amendment could include:

- Change proposed land uses
- Modify development phasing
- Include mixed-use land uses
- Revise internal circulation
- Urban and roadway design
- Limiting the amount of traffic a site can generate through a site-specific comprehensive plan policy
- Reduce maximum densities and/or intensities within development land uses

Recommendations for changes to a proposed comprehensive plan amendment should be coordinated through the local government and should be consistent with the local government comprehensive plan and land development regulations. It should be noted that FDOT reviewer objections to a plan amendment under review are limited to important state resources and facilities pursuant to Section 163.3184, F.S. Recommendations for all identified objections should be focused on strategies to minimize adverse impacts from additional traffic which can include roadway facility improvements or land use changes. FDOT reviewers may also provide technical assistance comments regarding additional methods for mitigation outside of objections but applicable to the site plan under review to provide further support pursuant to Section 163.3168, F.S.

The successful implementation of mitigation strategies will require increased and continuous intergovernmental coordination, and as such, the final section of this chapter provides guidance on developing mitigation agreements to help facilitate coordination with local governments and other transportation agencies.

Mitigation Agreements

According to Section 163.3180(5)(h)1.a., F.S., local governments must consult with FDOT when a proposed comprehensive plan amendment impacts designated SIS facilities. To ensure consistency and avoid confusion for all parties involved, a mitigation agreement can be used as an option to formalize agreed upon methodology, assumptions, and necessary mitigation. The mitigation agreement is entered into by the applicant the local government who issues the development order and the applicable reviewing agencies such as FDOT, RPC, or other local government which may be impacted by the proposed development.

Mitigation agreements are legally binding documents and should be thoughtfully and carefully prepared. At a minimum, the agreements need to address the following key issues:

- What are the project impacts?
 - A clear summary of project impacts should be included.
- What is the cost to mitigate the project impacts and what is the applicant's proportionate share responsibility of the needed mitigation?
 - This is usually shown in tabular form.
- What type of mitigation is the applicant proposing?
 - Options include paying a sum to the maintaining agency (i.e. write a check), participating in a needed study, donation of right of way, constructing a project, or a combination of strategies.
- When should mitigation be secured?
 - Usually prior to starting project or entering phase.
 - May have a 'trigger' in the Development Order (DO), such as the number of trips.
- Who is party to the agreement?
- What should local governments commit to and when should commitments be made?
- How does the agreement satisfy concurrency guidelines and strategies of the local government's comprehensive plan, if being implemented through the local government?

FDOT reviewers can assist local governments with mitigation agreements. Section 163.3168, F.S., provides a mechanism for planning innovation and technical assistance:

If plan amendments may negatively impact important state resources and facilities, upon request by the local government, the state land planning agency may coordinate multi-agency assistance, if needed, in developing an amendment that minimizes impacts on these resources/facilities.

5.2 Strategies

This section provides guidance on mitigation strategies and alternatives that should be considered in maintaining long-term mobility on the transportation system.

Keys to Successful Mitigation

Involvement of Partners

When a development negatively impacts important state resources and facilities, a number of mitigation alternatives may be considered in the review process to lessen these transportation impacts. It is important to note, however, that FDOT reviewers should verify that mitigation strategies recommended are codified by the local government comprehensive plan, land development codes, transportation sufficiency plans as defined in Section 163.3182(1)(e), F.S., and outlined in Section 163.3182(4), F.S., consistent with the mitigation practices outlined below, and other applicable transportation plans.

Close involvement with transportation and land use partners can help assure that mitigation strategies proposed will effectively address the impacts of development.

Two general needs have emerged as Districts and local governments attempt to mitigate transportation impacts in a systematic way:

1. Regional Perspective
2. Land Use and Transportation Coordination

Regional Perspective

It has become clear that transportation impacts to the State Highway System often cross traditional jurisdictional boundaries, and in order to meet the long term needs of the transportation system, a regional perspective is needed. In addition, the consideration of other transportation modes such as, bicycle, pedestrian, and transit will help accomplish long term mobility needs on the transportation system, and present new opportunities for partnering and funding. As part of the partnering process, FDOT planners and decision makers are encouraged to coordinate with DEO, regional planning councils (RPCs), metropolitan planning organizations (MPOs), and local governments, to maximize long term approaches of achieving mobility goals.

Land Use and Transportation

Strategies that embrace the connection between land use and good transportation service should be included in local government comprehensive plans and land development codes to meet community goals. These strategies may be found throughout the various elements of a comprehensive plan, and specifically in the transportation element. New provisions for mandatory and optional elements in Section 163.3177, F.S., dictate that the transportation element must contain, "growth trends and travel patterns and interactions between land use and transportation". It will be key for FDOT staff to coordinate with transportation partners in developing recommendations to accommodate future traffic on the impacted corridors based on solutions other than adding

lanes to existing roads. This is particularly important particularly if no roadway improvement projects are programmed on deficient facilities. Examples of these and other strategies are discussed in the following sections, and include context sensitive solutions, corridor access management solutions, transportation demand strategies, and transit oriented development.

Early and Continuous Involvement

Perhaps most importantly, initial efforts of FDOT staff will require establishing early and continuous involvement between FDOT and transportation partners. Transportation partners may include local governments, MPOs, RPCs, as well as the DEO staff. Typically, an interlocal agreement or memorandum of agreement is first established to identify the roles and responsibilities of all affected parties, and to ensure proper coordination and documentation of mitigation. Documentation should include a detailed description of the proposed improvement(s), identify funding responsibilities, and demonstrate that improvements are in compliance with local, regional, and state requirements.

PDF

Prop Share Agreement

With the revisions to Chapter 163, Part II, F.S., in 2011 and subsequent changes thereafter, transportation concurrency is no longer state-mandated. This impacts how FDOT interacts with local governments, in particular those who have made the decision to rescind transportation concurrency within their jurisdiction and how these changes will impact agreements such as proportionate share agreements into the future. For proportionate share agreements, the changes to state law were not retroactive for existing agreements. However, there are no restrictions in state law that may preclude a developer from modifying their existing agreement to take advantage of these changes.

It's important to understand that FDOT may only grant or deny modifications to proportionate share agreements if FDOT is a party to the agreement. In addition, modification of an agreement can differ if the development in question is at a DRI or sub-DRI level. For information regarding the process at the DRI level, please refer to [Chapter 5.4.4](#). For information regarding the process at the Sub-DRI level, please refer to [Chapter 5.4.5](#). Additional information regarding proportionate share may be found on [the DEO website](#).

Long term strategies which are also regional in nature are presented first within each subsection, and these mitigation strategies typically apply to DRIs, regional activity centers or other large development. Following these long term, large scale strategies, short term more project specific strategies are presented. Though the scales of these strategies differ, they are not necessarily mutually exclusive.

5.3 Three Basic Categories of Mitigation Strategies

As funding needs for new capacity improvements greatly exceed available funding resources, the focus of transportation impact mitigation has shifted to a more systematic approach to consider enhancing operational efficiency and increasing options for alternative modes of travel in addition to increasing roadway capacity. A variety of the following strategies may be chosen relative to the transportation impacts of the proposed development, transportation system long-term goals/plans, and applicable state and local requirements. Both short-term and long-term mitigation options should be considered to coordinate achieving long-term mobility goals. Mitigation strategies will be discussed in the following section within the framework of three general categories to provide reviewers with a range of options, specific to local and regional needs and goals:

1. Enhancing Operational Efficiency on Existing Transportation System
2. Increasing Other Modal Options
3. Increasing System Capacity

5.3.1 Enhancing Operational Efficiency on Existing Transportation System



Mitigation strategies designed to enhance operational efficiency on the existing system and reduce greenhouse gas emissions may include:

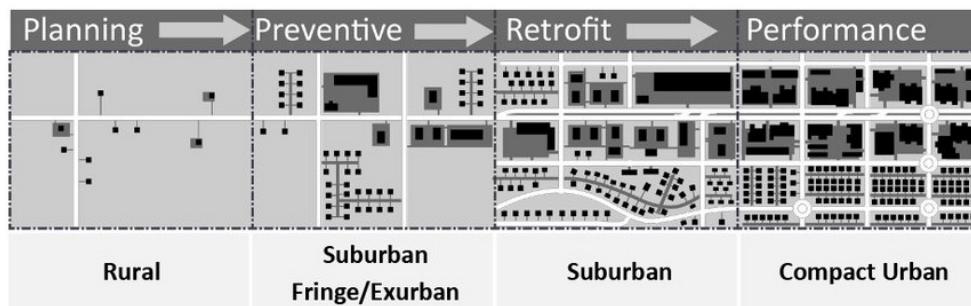
- Congestion Management Processes
- Corridor Access Management Plans
- Street Network Connectivity
- Transportation Demand Management (TDM)
- Transportation System Management (TSM)
- Enhancements for use of high occupancy vehicle lanes or transit
- Public Transit Operational Improvements

Congestion Management Process (CMP)

Federal Regulation, Titles 23 U.S.C. 134(k)(3) and 49 U.S.C. 5303(k)(3) require that all MPOs maintain a Congestion Management Process using travel demand reduction and operational management strategies to identify and address congestion issues on the transportation network. Partnering with MPOs through this CMP can help identify and prioritize mitigation options that address long-term mobility on the State Highway System. Employing this strategy can both aid in identifying low-cost operational and management improvements and present an opportunity for partnering in costly, large-scale needed improvements.

Corridor Access Management Strategies

Comprehensive corridor access management planning provides an excellent way to increase efficiency and safety on the impacted roadway systems. Good corridor access management practices can assist with orderly development patterns, increased safety, and efficiency on roadways. The management of driveways also ensures a safer environment for pedestrians and cyclists. FDOT has many resources to help with the important strategy.



Comprehensive corridor access management incorporates coordination of land use decisions within the corridor. Comprehensive corridor access management planning may be considered in coordination with the local comprehensive plan elements and any transportation sufficiency plans. It should define improvement projects, and should evaluate corridors beyond the roadway right of way to address land use, street networks, and right of way. Examples of proposed improvements resulting from the strategy may include:

- Median improvements
- Signal location and spacing
- Auxiliary lanes
- Right of way needs and requirements
- New standards for site access, connectivity and circulation design
- Effective location of commercial and transportation activity centers
- Improvements to the supporting roadway network
- Improvements involving access for other transportation modes (e.g. bus pullouts, transitions for special use transit lanes or bus rapid transit, pedestrian crossing treatments)
- Better design and integration of bicycle lanes and sidewalk facilities.

In order to implement Corridor Access Management Plans, each implementing agency (e.g. FDOT, MPOs, and local governments) should adopt the plan. State and local governments should approve these plans. Implementation is typically achieved by combining regulations, interagency or public/private agreements, design standards, and road improvement projects. Detailed guidance and resources on evaluation techniques and best practices are available in

1. [Chapter 2 of the 2013 Transportation Site Impact Handbook](#)
2. [Corridor Preservation Best Practices](#)
(Hillsborough County Corridor Study) CUTR 2003
3. [Effective Strategies for Comprehensive Corridor Management](#)
4. [Managing Corridor Development](#)
CUTR 1996

Street Network Connectivity Strategies

In a number of areas around Florida, SHS facilities are being used as the primary means for transportation between developments, while local and collector street networks remain underdeveloped and/or fragmented. In addition to the strain this puts on the ability of these facilities to maintain adequate mobility and emergency access, the use of major highways results in negative impacts to the community. The higher speeds and turning movements associated with traffic on major highways create unsafe conditions for bicyclists and pedestrians. In addition, these safety issues, combined with trip length and lack of connectivity produce a greater dependence upon the automobile as the sole means for transportation.

Mitigation to address transportation impacts to these facilities involves promoting activity centers, providing alternative routes for local trips, focusing on connecting existing roads, as well as considering street network connectivity as new development emerges. Transportation sufficiency plans which could include long term corridor access management plans can use the existing local street system to identify where preferred alternative routes are located, and mitigation efforts can be focused on promoting connectivity over time. Continuous coordination with local governments is needed to implement this strategy successfully, and reviewers should consult applicable land development codes for street spacing or connectivity requirements for developments impacting SIS facilities. TRB Paper, [Accomplishing Alternative Access on Major Transportation Corridors](#) by Williams and Seggerman, provides further examples of street network connectivity strategies and sample regulatory language.

PDF

Alternative Access

Transportation Demand Management Techniques (TDM)



TDM consists of strategies that foster increased efficiency of the transportation system by influencing travel demand by mode, time of day, frequency, trip length, regulation, route or cost. TDM discourages peak hour drive alone travel through better management of existing transportation infrastructure, services and resources. TDM strategies include, for example, public transit services, carpooling and vanpooling, compressed work weeks, telecommuting, limited parking, and provision of bicycle parking, shower, and locker facilities by employers. Detailed information about TDM strategies and existing programs can be found at the [National TDM and Telework Clearinghouse](#).

FDOT staff unfamiliar with local government land development processes will find guidance on measures that can be used to influence the incorporation of TDM into the land development process in [Incorporating TDM into the Land Development Process](#). National Center for Transit Research at CUTR, August 2005. The report documents efforts to secure TDM strategies as part of development approvals, summarizes the long range planning groundwork that frames the land development process, includes several case study examples from Florida and other states, and identifies institutional barriers to the use of TDM as part of the land development process. Note that some of the statutory references are out of date, but the basic principles are sound.



Transportation partners interested in using TDM in land development should start their involvement early. This requires participation in review and updates of the MPO long range transportation plan and transportation improvement program as well as local government comprehensive plans. The reviewer should ensure that the TDM measures are consistent with the MPO's CMP and traffic analysis methodology. These activities will begin the integration of TDM principles and strategies into the land use and transportation planning process resulting in physical infrastructure and regulatory tools to support TDM as land development proceeds.

TDM methodologies can also utilize state of the art transportation system management and operations strategies (TSM) such as displaying real time duration of congestion information vs. travel times on rail or bus rapid transit.

Transportation System Management Strategies (TSM)

TDM strategies can also be site specific if they are part of a larger regional effort.

TSM strategies are improvements intended to utilize the existing transportation system's capacity to the greatest extent possible. These improvements consist of geometric improvements or traffic control strategies rather than increasing the number of general use lanes.

Examples of TSM improvements include:

- Add intersection turning lanes
- Improve intersection channelization
- Modify traffic signals phasing or timing
- Improve signal progression
- Implement ramp metering
- Add an auxiliary lane along a freeway
- Modify an existing interchange to handle more traffic safely
(If an interchange with a freeway is proposed, these improvements require compliance with the analysis process, criteria, policies and standards set forth in FDOT's [Interchange Access Request User's Guide](#))
- Implement incident management programs
- Implement traveler information systems
- Implement intelligent transportation systems (ITS)



TSM methodologies such as developing an advanced traffic management system can be considered a regional large scale mitigation strategy, which individual developments participate in funding.

Enhancements for Use of HOV or Transit

Enhancements for the use of transit or managed lanes can alleviate traffic impacts by resulting in an increase in transit use and reducing the number of single occupant vehicle trips (SOV) thereby reducing the number of primary vehicle trips on the roadway system. These improvements should be evaluated carefully by FDOT and changes in mode split should be supported by the developer based on data collected on projects of similar intensity and use. In addition FDOT should work with local governments and MPOs to encourage inclusion of these strategies into local and regional plans for potential impacts on important state resources and facilities. Managed lanes and transit operations improvements can be considered as either localized or regional mitigation strategies depending on the scale of the projects.

Some of the strategies that may be appropriate for mitigation include:

- Construction of park and ride lots
- Construction of bus shelters, turn-outs, etc.
- Construction of access ramps for managed lanes
- Implementation of managed lanes at ramp metering and intersections
- Operational funding for transit
- Incorporating site design principles to facilitate transit
- Add passing lanes so that transit vehicles can bypass congestion hotspots

Public Transit Operational Improvements

Public transit operational improvement strategies are also strategies that are intended to reduce the amount of primary-trip vehicles on the transportation network by changing the mode split. These strategies are encouraged; however, they should be carefully evaluated to ensure that the proposed changes in mode split are realistic. Additionally, it should be ensured that local transit agencies support the change in transit service and are committed to the proposed changes associated with the proposal. Examples of public transit operational improvements that may be appropriate for mitigation include new or more frequent service and employer subsidized transit service. Please note that public transit facilities as defined under Section 163.3180(5)(h)1, F.S., are exempt from transportation concurrency.

5.3.2 Increasing Other Modal Options



Another strategy for ensuring the long-term viability of the transportation network is mitigation that increases mode choice. All mitigation options utilizing non-automobile modes must be firmly rooted in local government comprehensive plans. Options for increasing mode choice are discussed below, and include:

- Transit Oriented Development (TOD)
- Providing Better Transit Options
- Bicycle/Pedestrian Connectivity

Transit Oriented Development (TODs)

PDF

TOD Design Guidance

PDF

Accessing Transit

ACCESSING TRANSIT

Design Handbook for Florida Bus Passenger Facilities

Version 8, 2008

Florida Planning and Development Lab

Florida State University

Another method for addressing congestion on the SHS is through the promotion of land uses that are supportive of transit. Transit oriented development is defined in Section 163.3164 (46), F.S. to relate to areas defined in the local comprehensive plan that is or will be served by existing or planned transit service. These areas are characterized by compact, moderate to high density mixed-use developments with integrated land uses that support multimodal options such as bicycle/pedestrian access and transit amenities.

To implement these strategies, local governments should refine comprehensive plans and land development codes to include transit supportive design criteria, such as density and intensity ranges, as part of the development standards. FDOT planners and decision makers can then support these efforts in partnership with local governments. FDOT's [Transit Oriented Development Design Guidance](#) and [Accessing Transit Design Handbook for Florida Bus Passenger Facilities](#) contain guidance on design features, safety issues, and land use strategies that promote TODs.

Provide Transit Options

PDF

Providing for Transit Operations

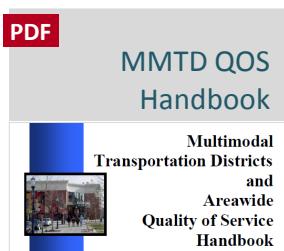
Transit options are an important consideration in developing any mitigation strategy in urbanized areas. All transit options should be included in transit agency TDPs and LGCPs. Implementing this strategy requires early and continuous coordination with transit agency representatives, such as MPOs in addition to local governments, in the development of mobility strategies. Consideration of funding mechanisms to maintain operational costs of the system is needed to create cost feasible solutions.

The report, [Land Developer Participation in Providing for Bus Transit Facilities/Operations](#) documents various strategies that Florida's local governments and transit agencies can use to generate public transportation funding through the involvement of private developers. Local and national case studies highlight application of these strategies. Suggestions are designed for use within the framework of local government comprehensive plans, land

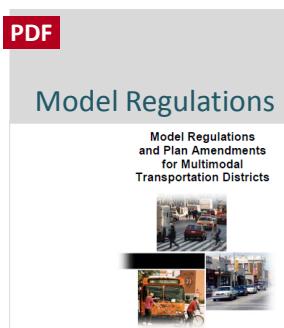
development codes, and transit development plans, and call for increased coordination and cooperation between local governments and transit. FDOT planners and decision makers may also become involved in this process as development impacts SIS facilities, and should work on establishing coordination efforts to plan for transit options for mitigation.

Bicycle/Pedestrian Connectivity

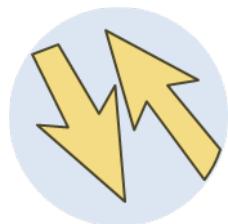
To foster the use of alternative transportation modes, connectivity for bicycle and pedestrian movement should be an integral part of any multimodal transportation network. Although often considered the realm of local government alone, FDOT planners and decision makers should be prepared to share technical expertise in this area. Ample bicycle and pedestrian connections within and between residential areas and activity centers, such as shopping areas, employment centers, transit stops, neighborhood parks, and schools may reduce the number of short automobile trips.



A bicycle and pedestrian network comprised of a system of interconnected and direct routes can be measured by a connectivity index. One method to perform this analysis is found in FDOT's [Multimodal Transportation Districts and Area-wide Quality of Service Handbook](#). Even though Multi-Modal Transportation Districts are no longer FDOT administered areas, this document is still useful for the concepts and strategies in the report. Missing links or gaps in the bicycle and pedestrian network should be identified and eliminated where appropriate through the development process. Missing links may include locations between cul-de-sacs, through walls or fences, mid-block where block length exceeds 660 feet, or where bicycle/pedestrian routes would otherwise be "excessively" circuitous. Highest priority for improvements should be given to locations with high concentrations of pedestrian activity and where connections are needed to ensure easy access between transportation modes, with particular attention to bicycle and pedestrian access to schools, transit stops and regional greenway or trail systems. Model comprehensive plan amendment and land development regulation language can be found in [Model Regulations and Plan Amendments for Multimodal Transportation Districts](#).



5.3.3 Increasing System Capacity



Options for increasing roadway capacity may include:

- Construction of new transportation facilities, such as new roads or transit
- Addition of new through lanes
- Improving the support system for main roadways – Improvements that support the main highways, such as connectivity, parallel facilities, or increased transit service

Construction of New Facilities

The construction of new facilities is one strategy to address transportation impact needs resulting from new development, and is encouraged when new facilities help meet long-range transportation goals and policies, such as regional connectivity. Applicable considerations when proposing new facilities include impacts to regional community and environmental objectives, congestion management system goals and policies, and air-quality planning requirements. As such, features in roadways that aid future transportation system management (TSM) strategies (e.g., Intelligent Transportation Systems), enhance the use of transit (e.g., geometric and operational improvements to accommodate bus travel) and future travel demand management strategies (e.g., access to park and ride lots) can be part of this strategy.

In addition, new roadway facilities on the SHS should be consistent with all FDOT standards and policies. Transportation facilities on the SIS are required to meet standards and limitations set forth in FDOT's SIS [Procedure on Strategic Intermodal System](#) Highway Component Standards and Criteria, Topic 525-30-260. Construction of new facilities to the SIS and Emerging SIS are governed by [Section 339.63, F.S.](#), and construction plans should be developed in coordination with local governments, regional planning councils, transportation providers, and affected public agencies. Requirements for new facilities to SIS or Emerging SIS facilities are based upon FDOT's [Adopted Criteria and Thresholds](#) of January 2010. Construction of new facilities should reflect the principles of functional hierarchy and systems connectivity addressed in [A Policy on the Geometric Design of Streets and Highways, 6th Edition \(AASHTO, 2011\)](#).

PDF

Adopted Criteria

Add Lanes

The addition of new through lanes on existing facilities is another way of addressing the impacts resulting from new developments. However, the lane additions should be consistent with regional goals and policies for SOV travel, FDOT Topic 525-30-260 [SIS Procedure on Strategic Intermodal System](#) Highway Component Standards and Criteria, and [Adopted Criteria and Thresholds](#) for the SIS. The selection of corridors for new general use lanes should be coordinated with FDOT. Features that facilitate future transportation system management strategies, enhancements for the use of transit and future travel demand management strategies are part of this strategy.

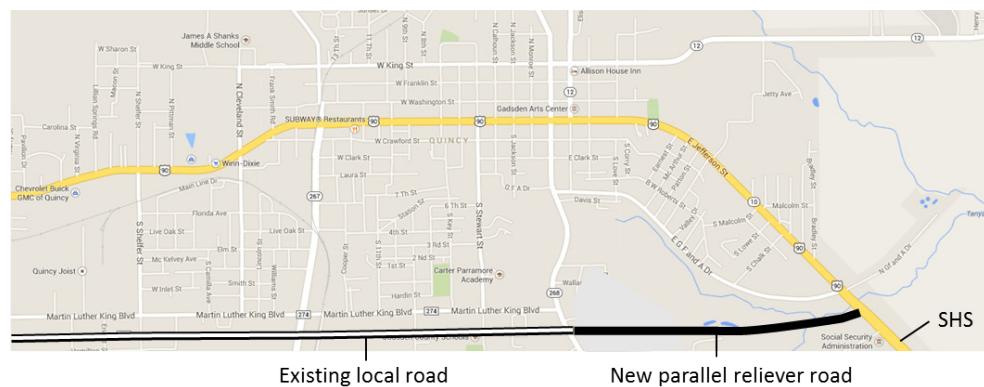
Alternatives to SIS Roads

Improvements made to arterial or collector roads running parallel to a SIS facility and serving common destinations may be considered as an option for mitigation of transportation impacts to SIS facilities at or near capacity. This strategy creates an opportunity to partner with appropriate transportation agencies and/or MPOs to meet mutually beneficial, cost effective transportation improvements. FDOT staff play a key role in approving relievers as SIS mitigation.



Developing these reliever roads may take the form of new road development as well as expansions to existing roads. Because of the expense and complexity associated with obtaining right of way for new roads, the designation of existing roads as a parallel reliever may be desirable where travel demand evaluations warrant such designation. Where service roads are designated as parallel relievers, opportunities exist to integrate corridor development with local street networks and enhance the ability of smaller areas to establish service roads on the state highway system. Examples of mitigation options for parallel relievers include improving access from the main facility to these reliever roads, connecting a number of existing reliever roads into one interconnected road, adding lanes to the parallel road to increase capacity, as well as improvements to signal timing, turn lanes, and medians.

Exhibit 36 Reliever Road Example



The opportunities for partnering between FDOT, local governments, and other transportation agencies to establish parallel reliever roads offer viable options for meeting FDOT objectives of maintaining levels of service and mobility on the SIS and SHS and local visions for mobility; however, reviewers should be aware of known design issues to ensure safety and mobility in the creation of these facilities. Continuous frontage roads, for example, are known to lead to crashes and operational problems due to unfamiliar movements and where connecting too close to a major roadway intersection. In addition, one of the lessons learned from Destin's parallel reliever has been the need to create bicycle and pedestrian facilities in conjunction with these parallel relievers to develop a connected, multimodal environment. Close coordination between FDOT and local governments can help in ensuring that community and safety needs are met on a project by project basis.

5.4 Other Mitigation Strategies: Land Use and Transportation Strategies to Enhance Mobility

In addition to the approaches referenced above, the following additional mitigation options may be considered in reducing transportation impacts. These options are long-term planning strategies that require adoption into local government comprehensive plans.

5.4.1 Transportation Concurrency and Alternatives (TCEAs, TCMA, and MMTDs)

Recent legislation in 2011 has removed the state mandate for transportation concurrency in local government comprehensive plans. However, transportation concurrency remains a part of the adopted local government comprehensive plan as an optional provision until an amendment removes this provision, pursuant to Section 163.3180, F.S. This subject is discussed in more detail in [Chapter 3.8](#).

For local governments that retain transportation concurrency, there may be some cases where the strict application of transportation concurrency requirements may conflict with important area planning objectives such as urban infill, redevelopment, or the promotion of public transportation. In these cases, local governments are able to designate geographic areas into their comprehensive plans as Transportation Concurrency Exception Areas (TCEAs), Transportation Concurrency Management Areas (TCMAs), and Multimodal Transportation Districts (MMTDs) in order to provide flexibility from the strict application of concurrency. TCEAs, TCMAs, and MMTDs are used to implement transit system improvements and supporting pedestrian/bicycle infrastructure as a viable mitigation strategy, and proportionate share contributions may be used to fund these mitigation efforts. For example, the City of Tallahassee has implemented a multimodal transportation district for the urbanized area surrounding the downtown area and Florida State University. Land uses within this area are eligible for density and intensity bonuses to encourage infill and redevelopment. Multimodal transportation district policies also include urban design requirements for the width of sidewalks, location of parking lots and other infrastructure to promote multimodal options.

5.4.2 Transportation Sufficiency Plans

Under Section 163.3182, F.S., a local government has the ability to create a transportation development authority for its jurisdiction if there is an identified transportation deficiency. The area for which the transportation development authority is created for is defined as the transportation deficiency area which includes the geographic location of the identified transportation deficiency. It is the responsibility of the transportation development authority to develop a transportation sufficiency plan for the designated transportation deficiency area in order to correct or mitigate the area's deficient transportation facilities.

Transportation sufficiency plans identify transportation facilities that do not achieve and maintain the level of service standards established in a local government's comprehensive plan, and therefore, these facilities are considered deficient. These plans include a priority listing of deficient facilities of which transportation projects and associated project funding are meant to resolve deficiencies. Projects that are identified within the plan shall be organized into a schedule with the intent to eliminate transportation deficiencies within 10 years after the adoption of the plan. Such projects shall also be included in a local government's Five-Year Schedule of Capital Improvements found within the comprehensive plan.

The adoption of the transportation sufficiency plan shall satisfy all applicable transportation concurrency requirements as established by the local government for the designated transportation deficiency area. Proportionate share mitigation shall be limited to ensure that development within the transportation deficiency area is not charged with additional costs in order to resolve any deficiencies. The transportation sufficiency plan for this area may only be removed from the comprehensive plan once all of the projects and costs associated with the transportation sufficiency plan have been taken care of pursuant to Section 163.3182(8), F.S.

FDOT reviewers should be aware of any transportation deficiency areas and sufficiency plans for local governments implementing transportation concurrency. Reviewers should make recommendations when applicable to additional mitigation actions which can be included in local transportation sufficiency plans.

5.4.3 Funding of Mitigation Improvements

Transportation mitigation needs vary by project and have the potential to impact the viability of a proposed development. As a result, the funding of mitigation options can be challenging and typically requires negotiation.

The methodology for determining the developer's share of funding for mitigation improvements should be identified in the methodology phase of the development. The share is determined in relationship to the number of trips generated by the development and the capacities on an affected roadway segment or some other calculation based on impact, mobility fees or other options a local government may adopt, including multimodal improvements.

The final mitigation fee is typically negotiated among the applicant, appropriate local governments, RPC and the FDOT (if improvements to significant state facilities such as the SIS are involved) following the mitigation analysis that demonstrates the proposed improvements will be acceptable to the local government or agency for alleviating any deficiencies caused by the proposed development. This negotiation should occur before or concurrent with the drafting of the development order.

Optional Concurrency Mitigation (Proportionate Share)

A 2011 provision of Section 163.3180, F.S., requires that if transportation concurrency is utilized, the local government must provide an option for mitigation, also known as proportionate share. In 2013, House Bill 319 (HB 319) updated this option. There has been much discussion across the state on the interpretation of this type of mitigation and this handbook will only provide general principles and statutory references. Some of the key statutory guidance is provided below:

Any local government with an optional transportation concurrency system under Section 163.3180, F.S., must provide a system for development. This allows an applicant for a development-of-regional-impact, development order, a rezoning, or other land use development permit to satisfy the transportation concurrency requirements of the local comprehensive plan, the local government's concurrency management system, and Section 380.06, F.S, when applicable, if:

- a. The applicant "in good faith offers to enter" into an agreement to pay for or construct its proportionate share of required improvements.*

b. The proportionate-share contribution or construction is sufficient to accomplish one or more mobility improvements that will benefit a regionally significant transportation facility.

In addition, any local government that continues to use an optional transportation concurrency system must provide a means by which the landowner will be assessed a proportionate share of the cost of providing the transportation facilities necessary to serve the proposed development. An applicant shall not be held responsible for the additional cost of reducing or eliminating deficiencies. Under this system, when an applicant contributes or constructs its proportionate share pursuant to this subparagraph, a local government may not require payment or construction of transportation facilities whose costs would be greater than a development's proportionate share of the improvements necessary to mitigate the development's impacts.

Deficiencies, pursuant to Section 163.3180(5)(h)4., F.S., pertain to any facility on which the adopted level-of-service standard is exceeded by the existing, committed, and vested trips, plus additional projected background trips from any source other than the development project under review, and trips that are forecast by established traffic standards. Under the proportionate share system, only facilities considered deficient with the additional traffic projected for a development project under review are considered in the proportionate share calculation for that development. The additional trips projected to impact a facility should be coincident with the particular stage of the development project. For those facilities that are identified as deficient before the establishment of the development project and will be impacted by the project, the improvements necessary to alleviate the deficiency are considered to be in place at the time of the proportionate share calculation.

The current legislation also specifies that the applicant shall receive a credit on a dollar-for-dollar basis for impact fees, mobility fees, and other transportation concurrency mitigation requirements paid or payable in the future for the project. It also states that the credit shall be reduced up to 20 percent by the percentage share that the project's traffic represents of the added capacity of the selected improvement, or by the amount specified by local ordinance, whichever yields the greater credit. Local governments that have repealed their transportation concurrency system and associated impact fees and have instituted a mobility-fee based system include counties such as Alachua and Pasco, and municipalities such as Kissimmee and St. Petersburg.

Other changes from HB 319 affecting proportionate share include:

- Allows local government to pool contributions from multiple applicants to apply toward one planned mobility improvement that will benefit a regionally significant transportation facility
- Requires local governments to provide the basis upon which landowners will be assessed a proportionate share of cost addressing the transportation impacts from a proposed development
- Clarifies when local governments are not required to approve new development

Transportation Cost Resources

Determining accurate mitigation costs is an essential component to developing an equitable mitigation package. The FDOT maintains several cost estimating and documentation resources to assist with the determination of:

- Highway construction costs
- Right of way costs
- Bridge costs
- Transit costs
- Bicycle and Pedestrian facility costs
- Inflation factors (for converting present day costs to future years)
- Construction cost indicators

FDOT's [Transportation Costs online site](#) contains a full list of cost estimates and documentation resources. The on-line resource page includes several key staff contacts for cost information. In reviewing the on-line resources, it should be noted that much of the information is general. Many, if not all, of the cost factors are situation specific and will vary from District to District within the FDOT based on local circumstances. In many situations, costs will vary even within a given District. This is particularly true with right of way costs due to the price of right of way acquisition in dense urban areas.



Because of the wide cost variation, all costs and adjustment factors relating to specific transportation projects should be addressed with the District office where the project will be located and all assumptions and cost estimating methodologies should be reviewed and approved by the FDOT. It is noted that the generalized costs available from the FDOT may not be accepted for use in mitigation calculations. Where available, cost estimates based on design, Project Development and Environment, or feasibility/corridor studies should be used. Tools such as the FDOT's long-range estimating (LRE) software may also be used to determine a more location specific cost as compared to generalized costs. Because of the significant differences that can exist between a cost estimate based on generalized costs and a cost estimate based on more site specific information, the use of site specific costs in mitigation agreements is preferred by the FDOT.

Cautionary Considerations

The funding of transportation improvement projects is often key to satisfying local government comprehensive plan and local ordinance requirements and FDOT operating standards, allowing development to move forward. Proportionate share mitigation, may be considered as a tool through which development applicants can contribute their share of the cost of improving the impacted transportation facility and thereby mitigate their impact. When properly developed and administered, this funding mechanism can effectively generate funding for future transportation improvements in an equitable manner while allowing development to continue. To be effective, it is essential that cost-sharing mitigation plans:

- Be developed based on correct application of site related traffic
- Be developed based on accurate and reliable cost estimates
- Have an applicant's or agency's commitment to deliver a funded transportation improvement adopted into the local capital improvements element

Development and administration of cost-sharing mitigation plans can be complicated by:

- Cost uncertainties such as:
 - Lack of detailed design or cost estimates for future improvements
 - Right of way acquisition costs
 - Potential for large fluctuations in construction costs due to unanticipated changes in material availability (particularly shortages), fuel costs, and other inflationary considerations
- Developments that are obligated to contribute but do not because the development is unable to move forward (no development = no contribution)
- Potential lack of consistency between a project identified for proportionate share and other adopted planning documents (that may not include the project needed)
- Funding shortfalls if insufficient funds are collected to fully pay for a given proportional share mitigation project

It should be noted that cost-sharing contributions may be in the form of funds, right of way, or the construction of improvements. The FDOT should be consulted with projects that involve the SIS in order to ensure impacts on these facilities are addressed.

5.4.4 Proportionate Share (DRI) Mitigation

The next two sections provide an overview of proportionate share mitigation for DRI and Sub-DRI development.

Proportionate share is a commonly exercised option to address regional impacts associated with DRIs to meet provisions within Sections 380.06 and 163.3180, F.S. [Section 163.3180\(5\)\(h\), F.S.](#), identifies the parameters under which a proportionate share assessment can be offered as mitigation for the transportation impacts of a DRI. Much of this is summarized above. In addition, changes to DRI provisions including development exemptions are documented in [Chapter 4, Developments of Regional Impact](#).

For a DRI requesting a modification to an existing proportionate share agreement, the developer must request the changes through a Notice of Proposed Change (NOPC). The procedures and allowable changes for an agreement are detailed under Section 380.06(19)(e)6., F.S. If the change from the recalculation of the proportionate share meets the requirements of Section 163.3180(5)(h), F.S., then it is presumed the change will not create a substantial deviation and will not be considered an additional regional transportation impact. However, it must be noted that the recalculation of the proportionate share is not guaranteed under state law to be accepted by the applicable local government. Local governments have the option to accept or deny/postpone approval of development rights with the changes to the proportionate share calculation for an approved DRI. This is the same for FDOT if FDOT is a party to the proportionate share agreement.

The role of FDOT, whether or not it is a party to the proportionate share agreement is to coordinate with the local government regarding its position on the changes for proportionate share. FDOT should also assist the local government in evaluating the impact of rescinding the previous calculation of commitment and assist in the recalculation of the proportionate share mitigation. In particular, how would these changes impact projects identified on the FDOT Work Program on the State Highway System. Monies collected for development impacting facilities on the State Highway System should be used for regionally significant projects that benefit the State Highway System.

Although not a DRI, sector planning is similar to the DRI process as it involves planning and development of a substantial amount of area, at least 15,000 acres. Sector plans also have the ability to potentially impact regional resources in relation to their magnitude and development potential. Mitigation for sector plans is usually done during the detailed specific area plan, or DSAP, stage. For more information, please review [Chapter 3.9.3](#).

5.4.5 Proportionate Share (Sub-DRI) Mitigation

Proportionate share mitigation is also defined by [Section 163.3180\(5\)\(h\), F.S.](#), and applies to smaller, sub-DRI level developments. As in proportionate share for DRIs, proportionate share provides options to mitigate development impacts through cooperative efforts between the public and private sector. This option provides a way for developers to satisfy transportation concurrency requirements by funding a *specific* road segment or segments falling below LOS standards set by the local government. Examples of proportionate share mitigation may include the contribution of private funds, contributions of land, and/or construction and contribution of facilities.

For a Sub-DRI level development, a developer may request a change in the calculation used for an existing funding agreement according to Section 163.3180(5)(h), F.S. The change in recalculation must be accepted by the local government. FDOT's roles in regards to changes to the proportionate share agreement are the same as those for DRI level development as discussed above.

Impact Fees

Impact fees, one-time charges imposed on new development as a condition of approval, is another funding strategy that may be used by county and municipal governments to ensure that new development pays its proportionate share of the costs to expand transportation system capacity. The "Florida Impact Fee Act," [Section 163.31801, F.S.](#), permits local governments to adopt impact fee ordinances as long as these charges are consistent with the local government's land development code and comprehensive plan, and meet the minimum requirements stated in the statute.

In addition, [Section 163.2517\(3\)\(j\), F.S.](#), requires urban infill and redevelopment plans to contain a package of financial incentives, which may include strategies to lower impact fees for developments that promote the use of alternative transportation modes. These types of incentives recognize the differences in travel demand generated by different land use types, and should be considered in the impact review process. Section 163.3180(5)(f), F.S., also includes alternative techniques that may employ impact reductions for certain types of development.

Mobility Fees

PDF

Mobility Fee Methodology

EVALUATION OF THE
MOBILITY FEE CONCEPT
FINAL REPORT
November 2009

In 2009, as directed by House Bill 360, DEO and FDOT produced a report evaluating the implementation of mobility fees for local governments in the state. Following this report, later revisions to Section 163.3180, F.S., encourage the use of mobility fees as an option for local governments who decide to repeal their transportation concurrency provisions. Several local governments, such as Alachua and Pasco Counties, have implemented mobility fee ordinances and associated provisions.

The mobility fee is a charge on new development as a form of mitigation for its impact on a local government's transportation system. The revenue from the fee is used to alleviate deficiencies to the portion of the system impacted by a development project and can include internal roadway facilities, exclusive turn lanes, and other forms of improvements. Mobility fees can be used to help establish multimodal friendly land use patterns. For example, the Pasco County mobility-fee system assesses improvement costs for roadway, transit, and bicycle/pedestrian infrastructure. The system is tiered in order to focus infill and redevelopment in urbanized areas of the county.

Under Section 163.3180(5)(i), F.S., mobility fee systems may not be used to deny, time, or phase an application for development provided that the applicant has agreed to pay for the impacts of the development project through the mobility fee system. The mobility fee system implemented by a local government must also comply with the dual rational nexus test applicable to the development and associated fees. If a local government decides to repeal its transportation concurrency system and uses a system that is not mobility-fee based, the new alternative system may not be used to charge an applicant for improvements to existing deficient roadway facilities as defined under Section 163.3180(5)(h), F.S.

Appendix A

FDOT Review Participation Reference Chart by DRI Stage

Sources: Primarily Chapter 380, Florida Statutes (F.S.), and Rule 73C-40, Florida Administrative Code (F.A.C.)

Review	Product	Agency	Review Time	Statutory Guidelines	Rules, Procedures, Directives, Policies, and Topics
Binding Letter	Written Comments	DEO	< 15 days	Section 380.06(4), F.S.	Rule 73C-40.016, F.A.C. Rule 73C-40.045, F.A.C.
Pre-application Methodology	One or more Meetings	RPC	As set by RPC	Section 380.06(7)(b), F.S.	Rule 73C-40.021, F.A.C.
Methodology Letter of Understanding (MLOU)	Written Comments	RPC	< 30 days	Section 380.06(10), F.S.	Rule 73C-40.045, F.A.C. Topic # 525-030-115
ADA Sufficiency	Written Comments	RPC	< 45 days	Section 380.06(8), F.S.	Rule 73C-40.0185, F.A.C. Topic # 525-030-115
PDA	Written Comments	DEO	< 45 days	Section 380.06(15), F.S.	Rule 73C-40.025, F.A.C. Rule 73C-40.045, F.A.C. Topic # 525-030-115
DRI DO	Written Comments	DEO	None	Section 380.06(18), F.S.	Rule 73C-40.025(3)(b)14, F.A.C.
DRI Annual Report	None	LG	As set in DO	DO review < 45 days	Rule 73C-40.045(7)(a)4.b, F.A.C. Topic # 525-030-115
NOPC	Written Comments	RPC, DEO	< 30 days	Section 380.06(19), F.S.	Rule 73C-40.045, F.A.C. Topic # 525-030-115

Appendix B

Questions 10 & 21

Question 10 deals with Land Use activities and impacts as well as any other related requirements. This question provides a general overview of the site. Question 21 focuses on the transportation impacts of the DRI. See [Chapter 4. DRI Checklist 3](#) is modeled on Question 21.

Question 10 – General Project Description

Part 1 Specific Project Description

- A. Describe and discuss in general terms all major elements of the proposed development in its completed form. Include in this discussion the proposed phases (or stages) of development (not to exceed five years), magnitude in the appropriate units from Chapter 28-24, F.A.C., where applicable, and expected beginning and completion dates for construction.
- B. Provide a breakdown of the existing and proposed land uses on the site for each phase of development through completion of the project. The developed land uses should be those identified in Section 380.0651, F.S. and Chapter 28-24, F.A.C. Use Level III of [The Florida Land Use and Cover Classification System: A Technical Report](#) (September 1985), available from each regional planning council. Refer to Maps D (Existing Land Use) and H (Master Plan). Use the format below and treat each land use category as mutually exclusive unless otherwise agreed to at the preapplication conference.
- C. Briefly describe previous and existing activities on site. Identify any constraints or special planning considerations that these previous activities have with respect to the proposed development.
- D. If the development is proposed to contain a shopping center, describe the primary and secondary trade areas which the proposed shopping center will serve.
- E. Describe, in general terms, how the demand for this project was determined.

Existing and Proposed Land Uses

(Expand as necessary to accommodate additional land uses)

PHASE	NON-RESIDENTIAL (Specify by CH 28-24 F.A.C. Land Use Type)		RESIDENTIAL			OTHER (Separate column for ROW, Open Space, Drainage, etc.)	TOTAL	
	ACRES	GSF/UNITS	ACRES	D.U.	NET (1) DENSITY		ACRES	ACRES
Existing								
Phase 1								
.								
.								
.								
n								
TOTAL								

(1) Definitions of net and gross densities to be provided at the preapplication conference

We have tried to have the most up to date information. However, due to changes in growth management legislation in 2011 and 2012 we recommend you check with the links we have provided in this handbook.

Part 2 Consistency with Comprehensive Plans

- A. Demonstrate how the proposed project is consistent with the local comprehensive plan and land development regulations. Indicate whether the proposed project will require an amendment to the adopted local comprehensive plan, including the capital improvements element. If so, please describe the necessary changes.
- B. Describe how the proposed development will meet goals and policies contained in the appropriate Regional Comprehensive Policy Plan.
- C. Describe how the proposed development will meet goals and policies contained in the State Comprehensive Plan (Chapter 187, F.S.), including, but not limited to, the goals addressing the following issues: housing, water resources, natural systems and recreational lands, land use, public facilities, transportation, and agriculture.

Part 3 Demographic and Employment Information

- A. Complete the following Demographic and Employment Information tables.

Part 4 Impact Summary

- A. Summarize the impacts this project will have on natural resources.
- B. Summarize public facility capital costs associated with project impacts using the following table:

Demographic Information Related to the Project's Population

PHASE	TOTAL DWELLING UNITS		PERSONS PER HOUSEHOLD	TOTAL POPULATION	CHILDREN PER HOUSEHOLD	TOTAL SCHOOL AGE CHILDREN	ELDERLY PER HOUSEHOLD	TOTAL ELDERLY
	MF	SF						
Existing								
Phase 1								
.								
n								
TOTAL								

We have tried to have the most up to date information. However, due to changes in growth management legislation in 2011 and 2012 we recommend you check with the links we have provided in this handbook.

Estimated Employment Generated by Project by Income Range⁽¹⁾

PHASE	UNDER \$10,000		\$10,000-\$14,999		\$15,000-\$19,999		\$20,000-\$24,999		\$25,000-\$29,999		\$30,000-\$34,999		\$35,000-\$39,999		Over \$40,000	
	CONSTR	NON-CONSTR	CONSTR	NON-CONSTR	CONSTR	NON-CONSTR	CONSTR	NON-CONSTR	CONSTR	NON-CONSTR	CONSTR	NON-CONSTR	CONSTR	NON-CONSTR	CONSTR	NON-CONSTR
Phase 1																
.																
.																
n																
TOTAL																

(1) Construction employment in terms of Full-time equivalents (FTE) / Non-construction employment in terms of permanent employees

We have tried to have the most up to date information. However, due to changes in growth management legislation in 2011 and 2012 we recommend you check with the links we have provided in this handbook.

Public Facility Impacts⁽¹⁾

Facility	Phase	Total Capital Cost	Responsible Entity
	Phase 1		
	.		
	.		
	n		
	TOTAL		

(1) At a minimum, this table should include transportation, wastewater, potable water, recreation and open space, and education.

Question 21 - Transportation

See State Comprehensive Plan (Chapter 187, F.S.)

Goal (11); Policy (2) / Goal (12); Policies (3),(4)/ Goal (16); Policies (1) / Goal (18); Policies (1),(3)(4),(6) / Goal (20); Policies (2),(3),(8),(9),(10),(12),(13),(15) / Goal (25); Policy (5)

ROAD LINK/INTERSECTION:

EXISTING LEVEL OF SERVICE:

ADOPTED LEVEL OF SERVICE STANDARD:

LEVEL OF SERVICE AFTER PROJECT BUILDOUT:

- A. Using Map J or a table as a base, indicate existing conditions on the highway network within the study area (as previously defined on Map J), including AADT, peak-hour trips directional, traffic split, levels of service and maximum service volumes for the adopted level of service (LOS). Identify the assumptions used in this analysis, including "K" factor, directional "D" factor, facility type, number of lanes and existing signal locations. (If levels of service are based on some methodology other than the most recent procedures of the Transportation Research Board and FDOT, this should be agreed upon at the preapplication conference stage.) Identify the adopted LOS standards of the FDOT, appropriate regional planning council, and local government for roadways within the identified study area. Identify what improvements or new facilities within this study area are planned, programmed, or committed for improvement. Attach appropriate excerpts from published capital improvements plans, budgets and programs showing schedules and types of work and letters from the appropriate agencies stating the current status of the planned, programmed and committed improvements.
- B. Provide a projection of vehicle trips expected to be generated by this development. State all standards and assumptions used, including trip end generation rates by land use types, sources of data, modal split, persons per vehicle, etc., as appropriate. The acceptable methodology to be used for projecting trip generation (including the Florida Standard Urban Model Structure or the Institute of Transportation Engineers trip generation rates) shall be determined at the preapplication conference stage.
- C. Estimate the internal/external split for the generated trips at the end of each phase of development as identified in (B) above. Use the format below and include a discussion of what aspects of the development (i.e., provision of

on-site shopping and recreation facilities, on-site employment opportunities, etc.) will account for this internal/external split. Provide supporting documentation showing how splits were estimated, such as the results of the Florida Standard Urban Transportation Model Structure (FSUTMS) model application. Describe the extent to which the proposed design and land use mix will foster a more cohesive, internally supported project.

Internal/External Split - Vehicle Trips

PHASING	VEHICLE TRIPS (ADT)		PEAK HOUR VEHICLE TRIPS	
	INTERNAL	EXTERNAL	INTERNAL	EXTERNAL
Existing				
Phase 1				
.				
.				
.				
n				

- D. Provide a projection of total peak hour directional traffic, with the DRI, on the highway network within the study area at the end of each phase of development. If these projections are based on a validated FSUTMS, state the source, date and network of the model and of the TAZ projections. If no standard model is available or some other model or procedure is used, describe it in detail and include documentation showing its validity. Describe the procedure used to estimate and distribute traffic with full DRI development in subzones at buildout and at interim phase-end years. These assignments may reflect the effects of any new road or improvements which are programmed in adopted capital improvements programs and/or comprehensive plans to be constructed during DRI construction; however, the inclusion of such roads should be clearly identified. Show these link projections on maps or tables of the study area network, one map or table for each phase-end year. Describe how these conclusions were reached.

- E. Assign the trips generated by this development as shown in (B) and (C) above and show, on separate maps or tables for each phase-end year, the DRI traffic on each link of the existing network within the study area. Include peak-hour

directional trips. If local data is available, compare average trip lengths by purpose for the project and local jurisdiction. For the year of buildout and at the end of each phase estimate the percent impact, in terms of peak hour directional DRI trips/ total peak hour directional trips and in terms of peak hour directional DRI trips/ existing peak hour service volume for desired LOS, on each regionally significant roadway in the study area. Identify facility type, number of lanes and projected signal locations for the regionally significant roads.

- F. Based on the assignment of trips as shown in (D) and (E) above, what modifications in the highway network (including intersections) will be necessary at the end of each phase of development, to attain and maintain local and regional level of service standards? Identify which of the above improvements are required by traffic not associated with the DRI at the end of each phase. For those improvements which will be needed earlier as a result of the DRI, indicate how much earlier. Where applicable, identify Transportation System Management (TSM) alternatives (e.g., signalization, one-way pairs, ridesharing, etc.) that will be used and any other measures necessary to mitigate other impacts such as increased maintenance due to a large number of truck movements.
- G. Identify the anticipated number and general location of access points for driveways, median openings and roadways necessary to accommodate the proposed development. Describe how the applicant's access plan will minimize the impacts of the proposed development and preserve or enhance traffic flow on the existing and proposed transportation system. This information will assist the applicant and governmental agencies in reaching conceptual agreement regarding the anticipated access points. While the ADA may constitute a conceptual review for access points, it is not a permit application and, therefore, the applicant is not required to include specific design requirements (geometry) until the time of permit application.
- H. If applicable, describe how the project will complement the protection of existing, or development of proposed, transportation corridors designated by local governments in their comprehensive plans. In addition, identify what commitments will be made to protect the designated corridors such as interlocal agreements, right-of-way dedication, building set-backs, etc.
- I. What provisions, including but not limited to sidewalks, bicycle paths, internal shuttles, ridesharing and public transit, will be made for the movement of people by means other than private automobile? Refer to internal design, site planning, parking provisions, location, etc.

Appendix C

FDOT District 2 – Generic Transportation Impact Analysis Methodology

Question 21 – Transportation

All of the information in Question 21 will be provided unless the applicant has been specifically instructed in writing that the information does not need to be submitted.

FDOT District Two does not support the use of a Land Use Trip Matrix.

I. Project Trip Generation

Trip Generation

The applicant will use the latest edition of the Institute of Transportation Engineers (ITE) Trip Generation Handbook and will provide all necessary input data for agency review and verification purposes. The applicant will provide both daily and PM peak hour trip generation estimates by ITE land use and by development phase. The applicant shall also provide PM peak hour trip generation by ITE land use and by development phase. If a school is to be proposed, the applicant shall also provide AM peak hour trip generation by ITE land use and by development phase.

Internal Capture Estimation

The determination of internal capture rates will be guided by ITE Trip Generation Handbook, latest edition. These rates shall not exceed the guidelines specified in the FDOT Site Impact Handbook and not exceed a 25 percent maximum of total trip generation. For purposes of the internal capture analysis, the Applicant will combine all like uses into retail, office and residential.

Internal capture trips will be balanced using the latest ITE Trip Generation Handbook and supporting calculation tables will be provided for review. Also, capture rates will be determined by phase and consistent with the trip generation table. Other internal capture considerations include the following:

- a. Residential and employment centers should be compatible (with respect to income levels) to allow internal capture.
- b. Job estimations in other parts of the application shall match up to the employment land use proposed in Question 21.
- c. On-site employment may not attract work trips from on-site homes for several years (if applicable).
- d. Mixed use development should be constructed to optimize internal capture at each phase of build-out.
- e. Internal circulation roadways must be in place to accommodate internal capture trips.
- f. Trips that cross or use public roads are not internal capture trips.

It should also be noted, depending on model project setup, that FSUTMS will internally capture project trips. Because ITE procedures will be used by the Applicant to determine capture rates, before modeling the project, internal capture calculated with a model is not acceptable. Concern with this modeling issue is the double counting of internal project trips, once when determining external trip production and again via the model assignment.

Model reported distribution rates for project related traffic shall be adjusted to account for those trips internally captured by a Traffic Analysis Zone (TAZ) or between project TAZs. The total model project trip generation produced by the model shall be determined by performing a screen line analysis around the project TAZs. The total project traffic that leaves a project TAZ, and does not traverse from one project TAZ to another, is the project traffic number used to calculate project share on the roadway links.

Pass-by Trips

Pass-by trips for all phases will be calculated consistent with ITE methodology. However, pass-by trips shall not exceed 10 percent of the main adjacent street traffic during the peak hour. Consistent with ITE and FDOT methodology, internal trips will be subtracted before calculating the number of pass-by trips.

II. Existing Conditions

Existing Level of Service (LOS)

For all roadways on FDOT's Strategic Intermodal System (SIS), the applicant must adhere to the FDOT's adopted level of service standards and corresponding maximum service volumes (MSVs) consistent with information provided in FDOT District Two Level of Service Report, latest edition. Other state roads shall use the locally adopted LOS, however the corresponding MSV for that adopted LOS shall be determined using the FDOT Generalized Tables, latest edition.

Traffic Count Procedures

The Applicant will use <Last Full Year> or newer traffic counts. FDOT District Two provides the latest counts in the FDOT District Two Level of Service Report. The applicant should contact FDOT to ensure that newer traffic counts are not available. If the applicant performs traffic counts on state roads in support of this application, the counts must conform to the FDOTs Quality Level of Service Handbook, latest edition including posted addendums and corrections. Special note is made that volume counts shall be a minimum of three days on Tuesday through Thursday, turning movements shall be eight hours with four hours during the AM peak and four hours in the PM peak. All documentation, including the raw counts and factors used shall be included in the applicant's technical appendix.

Peak Hour Factors

The determination of K and D factors will follow FDOT's guidelines established in the Quality Level of Service Handbook, latest edition including posted addendums and corrections. A "measured K" is not acceptable unless it is within FDOT's recommended minimum K factors. All sources of existing traffic counts will be provided in the analysis tables and actual counts, as well as calculations, will be provided in the applicant's technical appendix.

Peak hour counts shall be calculated by multiplying the AADT by the K_{100} factor pursuant to the FDOT Quality Level of Service Handbook, latest edition including posted addendums and corrections. Turning movement counts shall be used for purposes of determining the percentage of turning vehicles at an intersection. Turning movements shall not be used to calculate existing or future traffic, the practice of growing turning movements to arrive at future traffic is an unacceptable methodology and often underestimates actual demand. All sources of existing turning movement counts will be provided in the analysis tables and actual counts, as well as calculations, will be provided in the applicant's technical appendix.

Study Area

The study area shall be determined using the Transportation Planning Organization's (TPO) adopted model. The study area limits will be adjusted based upon the extent of the substantially impacted segments defined as the roadway segments where the project traffic share is 5 percent or more of the maximum service volume. Maximum service volumes used to determine the study area shall be based on the FDOT's Generalized Tables, latest edition. Facility and area type shall be determined using the FDOT District Two Level of Service Report, latest edition.

All supporting tables and maps shall identify significant roadway segments and at least one segment beyond the 5 percent significance threshold.

Roadway Segmentation

All state roadway segmentation shall conform to the segmentation as provided in the FDOT District Two Level of Service Report, latest edition. The applicant shall provide maps and tables that document the existing level of service based on this segmentation.

Existing Intersection Analysis

The applicant shall provide existing LOS for all intersections on any roadway determined to be significant (A general list of intersections shall be agreed to at the pre-application meeting). The applicant shall perform the analysis using the Highway Capacity Manual procedures using existing signal timings at signalized intersections. The applicant shall provide maps and tables that document the intersection existing level of service.

All interchange ramps, ramp terminals and adjacent intersections shall be modeled in Synchro software, latest edition, using existing signal timings for signalized intersections. The applicant shall provide the HCM long form printouts and Synchro output with V/C ratio and queuing analysis in the technical appendix. The applicant shall also provide the electronic files for the HCM and Synchro analysis.

III. Future Years Analysis**Roadway Network Modifications**

Transportation system modifications, scheduled for construction and funded, located within the project study area and specified in the latest adopted FDOT Five-Year Work Program shall be identified and mapped. Only those projects identified for construction within the first three years of the FDOT Five-Year Work Program shall be considered for the future roadway network as applicable. Also, any roadway modifications committed by other approved developments (if applicable), and incorporated in the future networks of the applicant's project, may create a condition that would require these improvements to be in place before this applicant's project can move forward. The applicant can make network additions to the phase models with the understanding that they must be in the first three years of the FDOT Five-Year Work Program, or the applicant will be required to provide full cost for the improvements proposed.

Adopted Model

The applicant shall obtain the latest adopted model from the FDOT District Modeling Coordinator. No modifications by the applicant to the factors used for validating the adopted model are acceptable. The applicant shall use the model as validated.

Developing Background Traffic

The applicant shall develop background traffic as follows:

1. Applicant shall run the <base year> model and the model for the first phase of their development.
2. For any given link as defined by the maintaining agency, the applicant shall select the model link with the highest number of background trips for analysis.
3. The difference between the <base year> model and the applicant's first phase model on any given link (minus the applicant's traffic), adjusted to the number of years between the existing count year and the applicants first phase, shall be added to the existing count for that link.
4. The number from step 2 shall be checked against a minimum growth rate of 2 percent per year for the number of years between the existing counts year and the applicant's first phase year.
5. The applicant shall select the higher of the two (model difference number added to existing count or 2 percent per year growth rate) as the background traffic number.
6. The applicant shall calculate background traffic for any phase after Phase I by taking the difference on any given link between the phase models and adding it to the previous phase calculated. All background traffic for phases after Phase I shall be checked against a 2 percent minimum growth rate and the higher of the two (model difference number added to existing count or 2 percent per year growth rate) shall be reported as the background traffic number.

Developing Project Traffic

The applicant shall determine the project trip assignment as follows:

1. The applicant shall determine the socio-economic (SE) data for each phase of the proposed project.
2. The applicant shall input the SE data in the model for each phase and shall provide documentation for the SE changes in the technical appendix.
3. The applicant shall ensure that the number of trips external to the project TAZ(s) (excluding those trips that are internal to the model or travel from a project TAZ to another project TAZ) are within 10 percent of the ITE total external project trips the applicant has calculated for the project trip generation.
4. For any phase model, the applicant shall determine by screen line the actual number of trips to leave the project Transportation Analysis Zones (TAZ).
5. For any given link the applicant shall select the model link with the highest number of project trips for analysis.
6. The number calculated from step 4 shall be used to determine the percentage of project traffic on any given link by dividing the project traffic by the number from step 4.
7. The percentage from step 6 is applied the applicants PM peak hour ITE external trip generation to determine the trip number used for calculating proportionate share.

Model Results

The applicant shall provide maps and tables that detail the background and project trips for each phase. The applicant shall also provide all modeling files. The applicant shall provide a DVD of the complete model folder structure with completed model runs.

Future Level of Service Analysis

Roadway segments that carry peak hour project trip volumes greater than five percent of the adopted LOS standard maximum volume will be identified. Segments that meet this criterion, and whose peak hour traffic exceeds the adopted LOS standard maximum volumes, will be considered adverse (deficient). These segments will be analyzed to determine what modifications are needed to correct those deficiencies. To determine the adverse links within the study area, the Applicant will use the maximum service volumes (MSVs) contained in FDOT's Generalized Tables for the adopted level of service standard.

The analysis shall be provided for the following scenarios:

1. Existing (Base) year;
2. Future year (Base + Growth + Project) without modifications (for each phase); and
3. Future year with modifications (as needed, for each phase).

Intersection Analysis

Where roadway segments have been determined to be significant, the signalized intersections along significant segments are deemed to be significant. The Applicant will be responsible for analyzing all critical intersections identified and will provide graphics indicating project, background, and total volumes by movement.

Intersections shall be analyzed using HCM or Synchro software. The applicant shall perform the analysis using the Highway Capacity Manual procedures using existing signal timings at signalized intersections. The applicant shall provide maps and tables that document the intersection existing level of service.

All future year analyses shall maintain the adopted level of service and the volume to capacity ratio (v/c) shall not exceed 0.99 on all approach movements. The intersection level of service shall be based on the most restrictive level of service standard for the intersecting roadways.

All interchange ramps, ramp terminals and adjacent intersections shall be modeled in Synchro software, latest edition. The applicant shall provide the HCM long form printouts and Synchro output with v/c ration and queuing analysis in the technical appendix. The applicant shall also provide the electronic files for the HCM and Synchro analysis.

For State roadways, the percent trucks shall be 50 percent of the T-factor included in the most recent FDOT Florida Traffic Information (FTI) DVD.

The analysis shall be provided for the following scenarios:

1. Existing (Base) year;
2. Future year (Base + Growth + Project) without modifications (for each phase); and
3. Future year with modifications (as needed, for each phase).

To determine turning movement volumes for future background traffic, the existing peak hour link volumes and the future year link volumes without the project shall be multiplied by the percent turns obtained from the present day turning movement counts. Peak hour link volumes shall be obtained consistent with the procedures previously identified in this methodology.

Project traffic will be added to all intersection movements once the future year intersection volumes have been determined. The analysis shall be performed for the PM peak hour. Intersection turning movement illustrations shall be provided for existing and future year scenarios. For the future year, the illustrations shall clearly indicate the breakdown of existing traffic, background growth, project traffic and total traffic.

Adequate turn lane storage must be provided where needed to accommodate the average back of queue. Supporting documentation shall be provided that shows that adequate turn lane storage has been provided. Intersection modifications will include the provision of receiving lanes where needed.

The Applicant shall provide concept sketches that illustrate any proposed intersection geometric modifications.

IV. Proportionate Share Analysis

Proportionate Share Calculations

All proportionate share calculations shall conform to Transportation Uniform Standard Rule 73C-40.045 (h), F.A.C. All cost estimations shall be calculated using the latest FDOT Transportation Costs per mile models, inflation factors, rights-of-way, and engineering costs from the FDOT website. The applicant shall detail all proportionate share cumulatively by phase. The applicant shall contact the District for any costs not included in the FDOT Transportation Cost models.

Appendix D

Sample Proposed Transportation Methodology Comments

Orchard Park DRI¹

1. The coordination of land uses with adjacent uses is not apparent since the surrounding uses are not included on Map H or other maps in the ADA. Coordination of land uses as well as internal street connectivity are important provisions in order to make progress towards providing traveler choices other than by single occupant vehicles.
2. In order to foster desirable characteristics that result in sustainable development, including access to various modes of travel to and from adjacent land uses, the DRI applicant should be required to develop design guidelines that demonstrate how urban design, land use, and roadway characteristics will result in optimal mobility for the project and beyond.
3. The DRI claims to be encouraging non-vehicular forms of travel. However, no maps are provided which demonstrate the accessibility of land uses to bicycles, pedestrians, and future transit facilities. The applicant should consider providing a transportation map for the DRI that overlays the vehicular, bicycle, pedestrian, and transit facilities and services that are expected to serve the DRI. Key parking areas and parking strategies should also be identified to aid in assessing how this infrastructure affects the encouragement of alternative modes of travel. The ADA indicates bicycle facilities will be provided to connect to other greenways. It is important that bicycle and pedestrian facilities be created throughout the area to foster forms of mobility other than the single-occupant vehicle. The project will not be marketed as retiree or second homes, and nearby and on-site research and development employment opportunities will abound. As such, the project will draw families with children to the community and therefore bicycle and pedestrian access between residential areas, commercial areas, and community facilities, such as parks and schools, should be included with the development.
4. Many of the previous comments also relate to making the community “Transit Ready.” The application proposes clustered development with residential densities of nine to fifteen units per acre. These densities are sufficient to support fixed route transit service and should be located on Map

¹ “Orchard Park (formerly West St. Lucie Farms) ADA-OMD Comments,” Florida Department of Transportation, District 4 Office of Modal Development, Ft. Lauderdale, October 2005, unpublished data.

H of the ADA as well as the transportation map requested above. Although transit does not service the area at this time, the application should not only make a commitment to accommodate future service but also to maximize it through supportive land uses, urban design, and connectivity. The demand between the research and development uses to the north and the commercial/mixed use areas along SR-70 will also support transit service. The applicant should coordinate with the St. Lucie Council on Aging to discuss the potential for future extension of existing transit service on Okeechobee Road from east of the Turnpike to the development. Such discussion should also be documented and reported as part of the ADA.

5. Local governments must adopt the LOS standards set by the Department for Strategic Intermodal System (SIS) facilities. As such, the applicant and County will need to ensure the level of service set for State Road 70/Okeechobee Road is not exceeded. Consideration should be given to increasing the grid pattern of local and regional roads to provide alternate routes. To address potential congestion, the applicant also could commit to the development and implementation of transportation demand management strategies to reduce project related peak hour automobile trips. The applicant might consider integrating a park and ride lot with the commercial development along SR-70. This will enable commuters to accommodate various trip purposes from one location and will thus reduce vehicles miles traveled and impacts to area roadways, including the SIS.
6. Much of the above information is necessary to enable the Department to conduct a thorough review of the DRI for Question 21(l) of the ADA. The information will also aid in the review of anticipated comprehensive plan amendments for consistency with the following County policies:
 - establish bicycle and pedestrian facilities;
 - ensure sidewalk connectivity and completion of missing sidewalk segments;
 - review all future development plans for compatibility with transit

Appendix E

Sample Proposed Transportation Methodology Comments



Florida Department of Transportation

CHARLIE CRIST
GOVERNOR

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STEPHANIE C. KOPELOUSOS
SECRETARY

July 3, 2007

JUL 16 2007

Ms. Jo Sesodia, AICP
DRI Coordinator
South Florida Regional Planning Council
3440 Hollywood Boulevard, Suite 140
Hollywood, FL 33021

Dear Ms. Sesodia:

**SUBJECT: Lauderhill City Center Development of Regional Impact (DRI)
City of Lauderhill, Broward County
Proposed Transportation Methodology Comments**

As requested, the Department has reviewed the proposed transportation methodology for Lauderhill City Center DRI ADA, dated June 12, 2007.

The proposed mix-use development is currently occupied by the Lauderhill Mall located on the west side of SR-7/US-441, between 12th Street and 16th Street, north of Sunrise Boulevard. The development is to include approximately 2,500 multi-family residential units, 650,000 square feet of retail, and 425,000 square feet of office. The DRI is proposed to be built through three phases, by 2018, 2023, and 2033.

We have the following concerns regarding the methodology and its supporting documentations:

- Typically, only “transit” reduction is considered, not “multimodal” reduction. Of the claimed multimodal reduction of 15.5% and 11.4% for the AM and PM peak hours, respectively, only approximately 4% is associated with transit trips. Also, the surveys included in the *Multi-Modal, Trip-Reduction, Justification Methodology* memo can be difficult to verify.
- The discussed 30% internal capture is unusually high for the proposed development.
- The approximate claimed 58% AM and 53% PM total development trip reductions include multimodal, internalization, and pass-by reductions. These exceed the maximum trip reduction attainable using methodologies outlined in the Site Impact Handbook.

However, we offer conditional acceptance of the proposed trip reductions based on the following:

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1. In the Application of Development Approval (ADA) document, the applicant shall commit to identify transit shelters, and other enhanced transit amenities based on the guidance contained in the District Four's Transit Facility Guidelines and guidance as provided through documented coordination with FDOT, Broward County MPO, and Broward County Transit.
 - a. The first two objectives in the Broward 2030 Long Range Transportation Plan Update (March 2005) include 1. Provide efficient, frequent, convenient, competitive transit service; and 2. Enhance bicycle and pedestrian mobility. Additionally, one of the major issues identified in the Broward County Comprehensive Plan Evaluation & Appraisal Report relates to "Implementing Transit Oriented Land Use Patterns" and it is clearly evident based on the County's Transit Oriented Concurrency System and Comprehensive Plan that the County's future transportation system will rely heavily on alternative modes of transportation. As such, the ADA document should establish a modal split objective as a benchmark to evaluate transit, bicycle, and pedestrian features proposed as part of the DRI.
 - b. The applicant should include maps that identify the proposed master development plan land uses, street configuration, bus stop locations, and bicycle and pedestrian networks. This information is essential in assessing the degree to which land uses and transportation work together to maximize the use of transit, bicycle, and pedestrian facilities.
 - c. The applicant should include guidelines for placement and composition of shuttle/transit stops within the proposed development.
 - d. The applicant should address guidelines for locating kiosks that enable the posting of TDM program information in locations within the development that are readily visible to both employees and commuters.
 - The posting of TDM information can vary based on the use of the property. This may include hanging wall kiosks, standing kiosks, table displays, etc.
 - The purpose of posting the information is to provide commuters with information on the various transportation programs and services available at the development.
 - Kiosks should be placed in readily visible locations such as public open spaces, lobby's, break rooms, cafeterias, elevator bays, building entrances, etc.
 - e. The applicant should elaborate on the use of a Designated individual to act as the employee development TDM coordinator known as the Employee Transportation Coordinator (ETC). The role of the ETC is to develop, implement, and administer a TDM program at the development. The ETC works closely with the various transportation providers in the region to accomplish goals set for the development
 - f. The applicant should commit to coordination with South Florida Commuter Services (SFCS) to discuss the various elements of available TDM programs and services. SFCS will provide the development with recommendations regarding TDM program elements that are appropriate for the site and steps to assist in implementing these initiatives.

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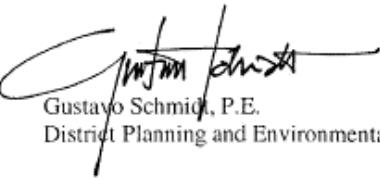
- g. The applicant should commit to a protocol to introduce new owners or property management to the SFCS upon sale or lease of the development or properties within the development. This will allow SFCS an opportunity to inform them on TDM strategies, programs, and services.
- h. The applicant should identify monthly subsidies and/or incentives (e.g., discounted transit passes, gas card for car pools, gift certificates, etc.) that will be considered for individuals participating in the use of alternative transportation modes.
 - Providing subsidies and/or incentives equates to added benefits to commuters utilizing alternative transportation. These subsidies and/or incentives often reduce transportation costs and may encourage a commuter to begin utilizing an alternative mode of transportation or continue to motivate their use.
 - Providing subsidies and/or incentives also benefits the employers in terms of employee recruitment and retention.
- i. The applicant should specify the ability of the Master Plan to include ancillary uses for commuters such as day care, banking, dry cleaning and other on-site services that would eliminate external trips.
- j. Demonstrate how bicycle could be accommodated onsite. It is generally recommended that bicycle storage for both the long term (e.g., bicycle lockers) and short term (e.g., bicycle rack) be provided. The substantial deviation document should include guidelines for determining the placement of bicycle facilities and appropriate facility type based on adjacent land uses. Provides storage options for employees who may be working at the development to have a secured/covered location to store their bicycles in addition to providing a location for visitors to store their bicycle for a limited time.
- k. Provide shower and locker facilities for buildings which employ more than 50 employees. Provides a location for bicyclists to store equipment necessary for biking, to shower, and to dress for work.
- l. The applicant should account for modifications to the external roadway network that will improve the safety and attractiveness of pedestrian crossings at intersections along SR7/US441. This will help to maximize access to transit at stops on the opposite side of thoroughfares by creating a better environment for pedestrians.
- m. It should be noted that the DRI documentation did not satisfactorily address parking provisions in line with the Transit Oriented Development. Large amounts of parking can have undesirable impacts on the pedestrian environment and increase the convenience of single occupant vehicles at the expense of using other modes of transportation. To be effective to reach the desired automobile trip reduction as projected on Page 1 of this letter, parking provision should be proportionally lowered below the city's minimum requirement. The applicant should consider orienting parking behind rather than in front of buildings and also consider more parking structures with pedestrian-oriented facades and first floor retail uses.

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2. The applicant shall include, as a condition in the Development Order, the provision of annual/biannual performance measures to ensure stated trip reductions occur. If trip reduction goals are not achieved, a traffic reassessment shall be required.

Please don't hesitate to give us a call if you have any questions or concerns.

Sincerely,



Gustavo Schmid, P.E.
District Planning and Environmental Engineer

GS:kai/lh/cw

cc: D. Ray Eubanks, Community Program Administrator, FDCA
Bob Romig, Director, Office of Policy Planning, FDOT
Gerry O'Reilly, Director of Transportation Development, FDOT
Steve Braun, Assistant Planning and Environmental Engineer, FDOT
Shi-Chiang Li, Systems Planning Manager, FDOT
Chon Wong, Senior Transportation Specialist, FDOT

schmid@systems-planning.org | <http://www.fdot.org/Divisions/Planning/Methods/Comments.aspx>

Appendix F

FDOT District 4 Example: Office of Modal Development (OMD) Multimodal Sufficiency Comments

The following sample sufficiency comments have been used in District 4 as general guidance on writing sufficiency comments.

Alternative Transportation Modes

The projected mode split of 3% is consistent with the projected total number of PM Peak Hour trips (96) and Daily trips (977). This number of trips would support a "Hub" stop, which should be at locations with over 50 average daily boardings and serve multiple transit routes. (Gulfstream)

The applicant should more clearly define the bicycle, pedestrian, and transit facilities and services that are expected to serve the DRI so that the planning and provision of these facilities and services can be addressed in a comprehensive manner, rather than wait for future piecemeal site plan review as indicated on page ... Key parking areas and parking strategies should also be identified to aid in assessing how this infrastructure affects the encouragement of alternative modes of travel. (Provences)

- The applicant should coordinate with the St. Lucie Council on Aging, to discuss the potential for future extension of existing transit service to the development and the future establishment of a transit transfer and ridesharing facility, if this is determined to be needed. Such discussion should be documented and reported as part of the ADA. (Provences)

Transportation Demand Management Strategies (TDM)

A commitment to use Transportation Demand Management (TDM) strategies and related details regarding those strategies should be included in Question 21(i) of the application. Some strategies include, but are not limited to the following: (Gulfstream)

- An Employee Transportation Coordinator employed on-site who will actively coordinate with South Florida Commuter Services and offer them the opportunity to review and comment on TDM activities.
- Identification and designation of specific areas with close access to particular jobsites for employees who carpool/vanpool to work.
- Location and installation of kiosks within the facility to provide transportation related information and options on carpooling, vanpooling, bus/transit schedules, and maps.
- Management of a "Guaranteed Ride Home Program" for car/vanpoolers.

Attainable/Affordable Housing Located in Close Proximity to Accessible Travel Choice Options

Expand efforts to increase the supply of affordable housing in close proximity to employment and planned transit service. The opportunities this creates for travel choice options can yield savings in travel expenses that can be applied to housing costs. Additionally, this location strategy can enable potential residents to take advantage of “location efficient mortgages” that help them to access additional borrowing power due to the lower transportation costs of using non-auto modes of transportation. This financial tool allow more family income to be applied to housing costs rather than transportation, making these types of loans potentially more secure.

Parking Provisions

It should also be noted that there appears to be a large amount of surface parking shown in ... This can have undesirable impacts on the pedestrian environment, discourage a "park once" approach to reducing auto trips, and increase the convenience of single occupant vehicles at the expense of using other modes of transportation. The applicant should consider orienting parking behind rather than in front of buildings and also consider more parking structures with pedestrian oriented facades and first floor retail uses. (Provences)

Site Planning/Balanced Land Uses

Seminole Pratt Whitney Road runs through the middle of a land use focal point (town center), which functions as a major attractor of trips and will discourage potential internalization of trips within the site. This project in large part relies on Seminole Pratt Whitney road as the major north/south artery for movement of trips. This road is projected to fail. Alternate land use scenarios should be considered to internalize trips to a greater extent. (Gallery-Judge Grove)

The spatial relationship between the proposed multiple family residential and other proposed uses such as the school and the Traditional Neighborhood Development (TND) should be depicted on Map H as part of the Master Development Plan to justify claims in Question 21i that this scenario complies with the characteristics of a TND. (Indrio Groves)

The realignment of Koblegard Road, by protruding to such an extent within the DRI in lieu of bordering the property, may preclude the ability of future development on adjacent vacant land to the east from having access to distribute traffic in an efficient manner. Maximizing roadway connectivity aids in the distribution of traffic. (Indrio Groves)

The applicant should consider a redistribution of commercial land use to be located at the intersection of the spine road and Spanish Lakes Boulevard. Due to the substantial number of residents in the Spanish Lakes Fairways development, providing commercial land uses at this location to serve the home-based shopping trip purposes of this community and Indrio Groves will help to reduce trips on Indrio Road by shorten trip lengths due to its closer proximity. (Indrio Groves)

Internal Design

In order to foster desirable characteristics that result in sustainable development, including access to various modes of travel from adjacent land uses, the DRI applicant should be required to develop design guidelines that demonstrate how urban design, land use, and roadway characteristics will result in optimal mobility for the project and beyond. Such design guidelines should function to illustrate how development will aid in the provision of pedestrian, bicycle, and transit infrastructure as well as convenient connectivity for a quality experience sufficient to capture choice participants. Some components of design guidelines include, but are not limited to: (Indrio Groves)

- building design
- building scale
- density/intensity
- street patterns
- street widths
- landscaping
- activity centers that are attractive, pedestrian-friendly, and serve surrounding neighborhood-level residential areas
- parking
- activity nodes with higher density/intensity
- healthy mix of uses within easy walking distance of each other
- sidewalks
- pedestrian-friendly block sizes (e.g., block face no more than 500 ft, average block perimeter 1,350 ft)
- traffic calming measures
- transit, pedestrian, and bicycle infrastructure & access to those facilities

Appendix G

Examples of Multimodal NOPC

Notice of Proposed Change (NOPC) and Substantial Deviation Determinations

The following verbatim examples illustrate issue areas from development order recommendations related to an NOPC and may serve as guidance:

LP Integrated Development Order

In response to a Notice of Proposed Change (NOPC), the City Commission of the City of Tallahassee drafted an integrated development order (DO) with a variety of specific conditions to be met by the developer, St. Joe Towns & Resorts, LP. Within the set of conditions, six transportation demand management (TDM) strategies were issued for the developer, making provisions for:

- Capital development transit including bus stops and shelters, and a satellite transfer facility
- Pedestrian and bicycle facilities, with criteria for constructing shower and locker facilities within the buildings of the DRI
- A transportation coordinator, as appointed by the developer
- Preferential parking for high-occupancy vehicles, visitors, and the handicapped
- Pedestrian-friendly community design for areas within designated Pedestrian Primary Areas
- Resumption of a shuttle bus service to operate between this and an adjacent DRI, with connections to the local Tallahassee transit service

"LP Integrated Development Order," City Commission of the City of Tallahassee, St. Joe Towns & Resorts, 1999-2004, Florida, pages 29-31.

Quillen DRI

In a response to the Treasure Coast Regional Planning Council regarding the Quillen DRI, FDOT District Four addressed the modal and design issues the applicant needed to take into consideration for approval. The following comments are excerpted from the memorandum:

- 1) Residential clusters shown in the Master Plan ... appear to reflect a traditional suburban environment. Coordination of land uses as well as internal street connectivity are important provisions in order to make progress towards providing travel choices other than by single occupant vehicles. Consideration should be given to increasing the grid pattern of local and regional roads to provide a variety of alternate routes.
- 2) The ADA indicates bicycle and pedestrian facilities will be provided; however, no maps are provided that demonstrate the accessibility of land uses to a bicycle/pedestrian system. It is important that bicycle and pedestrian facilities be created throughout the area to foster forms of mobility other than the single-occupant vehicle. In particular, bicycle and

- pedestrian access between residential areas, commercial areas, and community facilities, such as parks and schools, should be included.
- 3) To address potential congestion, the applicant should also consider committing to the development and implementation of transportation demand management/commute trip reduction strategies to reduce project related peak hour automobile trips. The neighborhood center, in particular, provides an opportunity to support these types of programs. A park and ride lot for ridesharing/car pooling could be provided for to support future transit access. The objective is to relieve the regional roadway from local automobile trips that would otherwise be there.
 - 4) Many of the previous comments also relate to making the community "Transit Ready." Transit service is available in Indiantown and expansion to the project should be considered. Many of the design principles described in the Indiantown Community Redevelopment Plan and Indiantown Design Regulations assist in promoting alternate modes of travel and establishing transit-ready and transit/pedestrian/bicycle-friendly communities. These principles include providing parking in the rear, locating buildings closer to the street, creating front porches to promote safety, providing pedestrian linkages, and establishing neighborhood greens or meeting areas.

"Quillen DRI, Martin County; Application for Development Approval (ADA)," (interagency memorandum), Florida Department of Transportation, Planning and Environmental Management – District Four, Ft. Lauderdale, May 11, 2006, pages 3-4.

Appendix H

Glossary

Note: *Italicized words and phrases* in the Handbook are defined in this glossary.

- Access Management** – The control and regulation of the spacing and design of driveways, medians, median openings, traffic signals and intersections on arterial roads to improve safe and efficient traffic flow on the road system.
- Accessibility** – The dimension of *mobility* that addresses the ease in which travelers can engage in desired activities.
- ADA Review** – A thorough review of the applicant's estimate of transportation impacts anticipated by the proposed DRI. The most comprehensive opportunity for the FDOT reviewer to let other review agencies know about transportation concerns.
- Adverse Impact** – When a roadway is significantly impacted and the LOS on the roadway with the development trips is below the adopted LOS standard.
- Analysis Period** – The analysis period should be related to expected peaking patterns of demand on the roadway and anticipated development traffic (usually a peak-hour analysis).
- Analysis Years** – The years agreed to analyze transportation impacts. They should be clearly defined in the report and agreed to during the methodology process.
- Annual average daily traffic (AADT)** – The volume passing a point or segment of a roadway in both directions for 1 year divided by the number of days in the year.
- Application for Development Approval (ADA)** – The applicant provides review agencies with the information needed to make a sufficiency determination. After reviewing the submittal, the agency can either determine that the submittal is sufficient (no additional information is needed) or request additional information *Rule 73C-40.022, Florida Administrative Code (F.A.C.)*.
- Area type** – In this Handbook a general categorization of an extent of surface based primarily on the degree of urbanization.
- Arterial** –
 - 1) A signalized roadway that primarily serves thru traffic with average signalized intersection spacing of 2.0 miles or less.
 - 2) A state facility that is not on *freeway*.
 - 3) A type of roadway based on FDOT functional classification.
- ARTPLAN** – FDOT's arterial planning software for calculating *level of service* and *service volume tables* for interrupted flow roadways.
- Assignment** – The various trips are placed on the transportation network, including the number of trips, their origins and destinations, and travel mode.
- Auto** – Same as *automobile*.
- Automobile** –
 - 1) A motorized vehicle with 4 or less wheels touching the pavement during normal operation.
 - 2) In this Handbook, all motorized vehicle traffic using a roadway, except for *buses*.
- Auxiliary lane** – An additional lane on a *freeway* connecting an on ramp of one interchange to the off ramp of the downstream interchange.
- Average daily traffic** – The total traffic volume during a given time period (more than a day and less than a year) divided by the number of days in that time period.
- Background Traffic** – The traffic that includes the expected increase from overall growth in through traffic as well as traffic from other developments in the study area.
- Base year** – The model is calibrated to accurately represent the current conditions.

- Bicycle** – A mode of travel with two wheels in tandem, propelled by human power.
- Bicycle lane** – A portion of roadway or path for bicycles.
- Bicycle LOS Model** – The *operational methodology* from which this Handbook's bicycle quality/level of service analyses are based.
- Blended Methods** – The use of model methods to determine distribution percentages of vehicles is common in combination with manual assignment processes.
- Boundaries** – In this Handbook the geographical limits associated with FDOT's *Level of Service Standards for the State Highway System* or its MPO Administrative Manual.
- Build-Up Method** – Identifies all trips associated with vested developments in the study area, assigns those trips to the study area transportation system, and then adds the background through traffic.
- Bus** – A self-propelled, rubber-tired roadway vehicle designed to carry a substantial number of passengers and traveling on a scheduled fixed route.
- Bus stop** – An area where *bus* passengers wait for, board, alight, and transfer.
- Capacity** – The maximum number of vehicles that can pass a point in a one hour time period under prevailing roadway, traffic and control conditions.
- Capital Improvements Element (CIE)** – Adopted and updated to reflect the timing and funding of capital projects to meet and maintain adopted LOS standards for all infrastructure.
- Class** – Same as *roadway class*.
- Collector** – A roadway providing land access and traffic circulation with residential, commercial and industrial areas.
- Community** – In this Handbook outside of an urban or urbanized area, an incorporated place or a developed but unincorporated area with a population of 500 or more identified in the appropriate *local government comprehensive plan*.
- Community Capture** – Extends the application of internal capture to include potential trip interactions and reductions within the boundaries of large scale, multi-use developments.
- Community Capture Monitoring** – Detailed needs of elements such as origin and destination studies, trip generation studies, and an evaluation of land use mixes in the community and surrounding the community.
- Conceptual planning** – Same as *preliminary engineering*.
- Concurrency** – A systematic process utilized by local governments to ensure that new development does not occur unless adequate infrastructure is in place to support growth.
- Concurrency Management Areas (CMA)** – Designated in a local government comprehensive plan and must be a compact geographic area with an existing network of roads where multiple, viable alternative travel paths or modes are available for common trips.
- Concurrency** – Official government plan to manage and pay for growth.
- Management Systems (CMS)**
- Congestion** – Condition in which traffic demand approaches or exceeds the available capacity of the transportation facility(ies).
- Context-Sensitive Solutions (CSS)** – Proactive, collaborative, interdisciplinary approach to transportation decision making, project development, and implementation, taking into account, the views of stakeholders, and the local area where a project will exist, be operated, and be maintained.
- Corridor** – A set of essentially parallel transportation facilities for moving people and goods between two points.
- Critical hour** – The period that has the highest combination of development and background traffic.

CUBE Voyager FSUTMS – The Cube Voyager Modeling software used by Florida to forecast travel demand.

D factor – Same as directional distribution factor.

Daily tables – In this Handbook, *Service Volume Tables* presented in terms of *annual average daily traffic*.

Data Collection – The collection, assembly, analysis and presentation of all data. Includes proposed site development characteristics, existing transportation systems data, existing traffic counts and land use and demographic data.

Deficiency – In general, defined under Section 163.3182, F.S., transportation deficiency “means an identified need where the existing and projected extent of traffic volume exceeds the level of service standard adopted in a local government comprehensive plan for a transportation facility”.

For local governments which have chosen to continue implementation of transportation concurrency, “the term “transportation deficiency” means a facility or facilities on which the adopted level-of-service standard is exceeded by the existing, committed, and vested trips, plus additional projected background trips from any source other than the development project under review, and trips that are forecast by established traffic standards, including traffic modeling, consistent with the University of Florida’s Bureau of Economic and Business Research medium population projections. Additional projected background trips are to be coincident with the particular stage or phase of development under review” pursuant to Section 163.3180(5)(h)4., F.S.

Demand – The number of persons or vehicles desiring service on a roadway.

Demographic Data – Intensity, population, employment, comprehensive plan data and zoning requirements.

Dense Urban Land Area – Any jurisdiction, established under Section 380.06(29), Florida Statutes (F.S.), that meets the following criteria:

- a) A municipality that has an average of at least 1,000 people per square mile of land area and a minimum total population of at least 5,000;
- b) A county, including the municipalities located therein, which has an average of at least 1,000 people per square mile of land area; or
- c) A county, including the municipalities located therein, which has a population of at least 1 million. Miami-Dade and Broward Counties are the exceptions.

Development of regional impact (DRI) – A development which, because of its character, magnitude, or location, would substantially affect the health, safety, or welfare of citizens of more than one county in Florida, as defined in Section 380.06(1), F.S., and implemented by Rule 73C-40, F.A.C.

Directional distribution factor (D) – The proportion of an hour’s total *volume* occurring in the higher volume direction.

Diverted trips – Similar to pass-by trips, however, vehicles use a segment of the roadway system that they previously were not using.

Divided – As used in the *Generalized Tables*, a roadway with a *median*.

DRI Amendments – An amendment to a development which, because of its character, magnitude, or location, would substantially affect the health, safety, or welfare of citizens of more than one county in Florida, as defined in Section 380.06(1), F.S., implemented by Rule 73C-40, F.A.C., and coordinated by the regional planning agency.

DRI Reports – Required reports that summarize information describing any changes that have been made to the development plan during the reporting period, information about the master plan, lands purchased, permitting, and local government, and a summary of each development order condition and when each commitment has been complied with.

Evaluation and Appraisal Report (EAR)	– An audit of a local government’s successes and failures in implementing its comprehensive plan. The EAR is prepared every seven years to evaluate and update a LGCP (s.163.3191, FS). It is the first step in updating the comprehensive plan.
Existing Conditions	– The analysis developed to assess current conditions and establish a basis for comparison to future conditions.
Factor	– A value by which a given quantity is multiplied, divided, added or subtracted in order to indicate a difference in measurement.
FDOT	– Florida Department of Transportation.
FHWA	– Federal Highway Administration.
Future Land Use Map (FLUM)	– Community’s visual guide to future planning.
Freeway	– A multilane, divided highway with at least 2 lanes for exclusive use of traffic in each direction and full control of ingress and egress.
FSUTMS	– Florida Standard Urban Transportation Modeling System. Florida’s software that forecasts travel demand.
Functional classification	– The assignment of roads into systems according to the character of service they provide in relation to the total road network.
Future Conditions Analysis	– Determines if the transportation system will operate acceptably with the additional site-generated trips and, if not, what mitigation may be required.
Future Land Use Element	– Includes goals, objectives and policies and a Future Land Use Map that implement the jurisdiction’s desired land use pattern.
Future Year Conditions	– The Future Background Conditions for a future horizon year that does not include the proposed development.
General Transportation Factors	– Include: Analysis periods, Trip Generation, Current traffic conditions, Future traffic conditions, current and future development, and comprehensive plans.
Generalized planning	– A broad type of planning application such as statewide analyses, initial problem identification, and future year analyses; typically performed by use of the <i>Generalized Tables</i> .
Generalized Service Volume Tables	– <i>Maximum service volumes</i> based on areawide roadway, traffic and control variables and presented in tabular form.
Generalized Tables	– Same as <i>Generalized Service Volume Tables</i> .
Growth management concepts	– The ideas necessary for use in planning for urban growth so as to responsibly balance the growth of the infrastructure required to support a community’s residential and commercial growth with the protection of its natural systems (land, air, water).
Growth Rate/ Trend Method	– Uses historic trends to predict future growth.
Guideline	– Based on FDOT’s Standard Operating System (Topic No: 025-020-002-j), a recommended process intended to provide efficiency and uniformity to the implementation of policies, procedures, and standards; a guideline is intended to provide general program direction with maximum flexibility.
HCM	– Same as <i>Highway Capacity Manual</i> .
Heavy vehicle	– A FHWA vehicle classification of 4 or higher, essentially vehicles with more than 4 wheels touching the pavement during normal operation.
High-occupancy vehicle (HOV) lane	– A <i>freeway</i> lane reserved for the use of vehicles with a preset minimum number of occupants; such vehicles often include buses, taxis, and carpools.

- Highway** – 1) A generic term meaning the same as *roadway*.
 2) A *roadway* with all the transportation elements within the right-of-way.
- Highway Capacity** – The Transportation Research Board document on highway capacity and quality of service. *Manual (HCM)*
- Highway Capacity Software (HCS)** – A software package faithfully replicating the *Highway Capacity Manual*.
- Internal Capture** – The number of trips that occur inside the development and don't impact existing roads outside the development.
- Internal Circulation** – Good internal circulation of a land development is designed with respect to highway access point(s) rather than the building(s).
- Land Use** – Future land use classification.
- Large Scale Plan Amendment** – Any change in text to the Comprehensive Plan or any change in the future land use map.
- Large Scale** – In Florida, the FSUTMS Model is used.
- Transportation Model**
- Large urbanized area** – An *MPO urbanized area* greater than 1,000,000 population; in Florida these 7 areas consist of the following central cities: Ft. Lauderdale, Jacksonville, Miami, Orlando, St. Petersburg, Tampa, and West Palm Beach.
- Level of service (LOS)** – A quantitative stratification of the *quality of service* to a typical traveler of a service or facility into six letter grade levels, with "A" describing the highest quality and "F" describing the lowest quality; a discrete stratification of a *quality of service* continuum.
- Level of service (LOS) analysis** – A quantitative examination of traveler *quality of service* provided by a transportation facility or service.
- Level of Service Standards** – Same as *Level of Service Standards for the State Highway System*.
- Level of Service Standards for the State Highway System** – FDOT's Policy Topic No. 000-525-006-a to be used in the planning and operation of the State Highway System.
- Local Government Comprehensive Plan (LGCP)** – Any county or municipal plan that meets the requirements of Sections 163.3177, 163.3178, 163.3180, 163.3191, 163.3245, and 163.3248, F.S., as well as with the principles for guiding development in areas designated as areas of critical state concern and Chapter 369, Part III, F.S.
- Local Government Draft Development Order Review** – FDOT's final opportunity to ensure that mobility on SIS/SHS segments located in the project impact area has been adequately addressed. The purpose is to resolve any outstanding issues before the DO is rendered.
- LOS** – Same as *level of service*.
- LOSPPLAN** – FDOT's LOSPLAN software which includes ARTPLAN, FREEPLAN, and HIGHPLAN preliminary engineering computer programs.
- LOS standards** – Same as *Level of Service Standards for the State Highway System*.
- Maintain** – Continuing operating conditions at a level that prevents significant degradation. In terms of transportation concurrency, this applies to local governments which have chosen to continue implementation.
- Manual Methods** – Manual methods of trip distribution that provide the analyst with a basic understanding of the travel patterns associated with the development.

- Maximum service volume** – The highest number of vehicles for a given *level of service*.
- Median** – Areas typically at least 10 feet wide that are restrictive or non-restrictive that separate opposing-direction mid-block traffic lanes and that, on arterials, contain turn lanes that allow left turning vehicles to exit from the thru traffic lanes.
- Methodology Development** – An essential component in any traffic impact analysis. It defines the data, techniques, practices, and assumptions that will be used while preparing a transportation impact analysis.
- Mitigation** – Specific design commitments made during the environmental evaluation and study process that serve to moderate or lessen impacts deriving from the proposed action. These measures may include planning and development commitments, environmental measures, right-of-way improvements, and agreements with resource or other agencies to effect construction or post construction action.
- Mixed-Use Developments** – Same as multi-use developments. Contain a mix of land uses.
- MMTDs** – Multimodal Transportation District: An area in which secondary priority is given to vehicle mobility and primary priority is given to assuring a safe, comfortable, and attractive pedestrian environment, with convenient interconnection to transit. Applies to local governments that have designated and implemented these areas prior to legislative changes in 2011.
- Mobility** – The movement of people and goods.
- Mode** – Particular form of transportation, such as automobile, transit, carpool, ship, and bicycle.
- Mode Split** – The travel mode percentages (automobile, transit, walking, etc.) used by site-generated trips.
- Mode Split/ Alternative Travel Forecasts** – Separating the predicted trips from each origin zone to match each destination zone into distinct travel modes (walking, biking, driving, train, bus).
- Model Method** – Involves the use of a computerized large scale travel demand model, such as FSUTMS.
- Model Volumes** – The number of vehicles, and occasionally persons, passing a point on a roadway during a specified time period, often 1 hour; a volume may be measured or estimated, either of which could be a constrained value or a hypothetical demand volume.
- MPO** – Metropolitan Planning Organization.
- Multimodal** – In this Handbook more than one highway *mode*.
- Multimodal Mobility Options** – Same as *multimodal transportation*. Alternatives to the single-occupant vehicle. Some alternatives include walking, cycling, carpooling, boating, paratransit, taxi, light rail and transit.
- Multimodal Transportation District** – An area in which secondary priority is given to *vehicle* mobility and primary priority is given to assuring a safe, comfortable, and attractive pedestrian environment, with convenient interconnection to transit. Applies to local governments that have designated and implemented these areas prior to legislative changes in 2011.
- Multi-Use Developments** – Same as mixed-use developments. Contain a mix of land uses.
- Neo-Traditional Developments** – Provides a mix of land uses to serve residential needs and by providing a community design that supports walking and alternative modes of travel.
- Non-state roadway** – A roadway not on the *State Highway System*.

- NOPC** – Notice of Proposed Change: A report that is required to be submitted by the applicant to the local government, the RPC and DEO when a change is proposed to a previously approved DRI.
- Off peak** – The course of the lower flow of traffic.
- OMD** – FDOT District 4 Office of Modal Development.
- Operational analysis** – A detailed analysis of a roadway's present or future level of service, as opposed to a generalized planning analysis or preliminary engineering analysis.
- Operational Efficiency** – Occurs when the right combination of people, process, and technology come together to enhance the productivity and value of any business operation, while driving down the cost of routine operations to a desired level.
- Pass-by Trips** – Currently on the roadway system and pass directly by a generator on the way to the primary destination.
- Peak direction** – The course of the higher flow of traffic.
- Peak hour** – In this Handbook a 1 hour time period with high volume.
- Peak season** – The 13 consecutive weeks with the highest daily volumes for an area.
- PSWADT** – Peak Season Weekday Average Daily Traffic:
The *average daily traffic* for Monday through Friday during the peak season.
- Pedestrian** – An individual traveling on foot.
- Pedestrian LOS Model** – The operational methodology from which the Q/LOS Handbook's pedestrian quality/level of service analyses are based.
- Performance measure** – A *qualitative or quantitative* factor used to evaluate a particular aspect of travel quality.
- Planning application** – In this Handbook the use of default values and simplifying assumptions to an *operational model* to address a roadway's present or future level of service.
- Pre-application Conference** – Conducted to identify issues, coordinate appropriate State and local agency requirements, promote a proper and efficient review of the proposed development, and ensure that RPC staff are aware of all the issues to which reviewing agencies will require the applicant to respond.
- Primary trips** – Trips made for the specific purpose of visiting the generator.
- Proportionate Share** – Provides a way for developers to mitigate the impacts of proposed development on significantly impacted state and regional roadways and allows a contribution from developers to the governmental agency that has maintenance for the transportation facility in order to satisfy transportation concurrency requirements according to Section 163.3180, F.S. Examples of proportionate fair-share mitigation may include the contribution of private funds, contributions of land, and/or construction and contribution of facilities.
- QOS** – Same as *quality of service*.
- Quality of service (QOS)** – A user based perception of how well a service or facility is operating.
- Quality/level of service (Q/LOS)** – A combination of the broad quality of service and more detailed level of service concepts.
- Recommendations and Conditions** – Upon completion of the DRI ADA review, the FDOT reviewer should develop recommendations to ensure the developer mitigates the impact of the DRI on the transportation system. The development of recommendations and conditions is intended to document the agreements discussed during the ADA review process.
- Rendered Development Order Review** – Once the development order is rendered by the local government, it is the FDOT's responsibility to ensure that all commitments are contained within the LGDO.
- Roadway** – A general categorization of an open way for persons and vehicles to traverse; in this Handbook it encompasses streets, arterials, freeways, highways and other facilities.

- Roadway class** – Categories of arterials and two-lane highways; arterials are primarily grouped by signal density or speed; two-lane highways are primarily grouped by area type.
- Route** – As used in the *Transit Capacity and Quality of Service Manual*, a designated, specified path to which a bus is assigned.
- RPC Assessment Report** – Formal Assessment Report detailing recommendations to the local government, the Developer, and DCA on the regional impact of the proposed development.
 (Also referred to as Regional Report and Recommendations 9J-2.024)
- Scheduled fixed route** – In this Handbook bus service provided on a repetitive, fixed-schedule basis along a specific route with buses stopping to pick up and deliver passengers to specific locations.
- Service measure** – A specific performance measure used to assign a level of service to a set of operating conditions for a transportation facility or service.
- Service volume** – Same as *maximum service volume*.
- Service Volume Table** – *Maximum service volumes* based on roadway, traffic and control variables and presented in tabular form.
- Sidewalk** – A paved walkway for pedestrians at the side of a roadway.
- Signal** – A *traffic control device* regulating the flow of traffic with green, yellow and red indications.
- Significance Testing** – Determined by considering the percentage of traffic on a roadway segment that is generated by the development during the peak hour in relationship to the maximum service volume at the LOS standard for the facility during the same period.
- Site Access** – Accommodation of automobiles, buses, pedestrians, bicycles and other modes of transportation to a given site.
- Site Development Characteristics** – The location of the proposed development, site boundaries and other site related characteristics.
- Special Generator Method** – Uses a combination of ITE Trip Generation and FSUTMS.
 The trips in the model are adjusted to match the ITE trip generation rate.
- Special or Unusual Generator** – One that cannot be adequately described by ITE Trip Generation Report.
- Standard** – A Florida Department of Transportation formally established criterion for a specific or special activity to achieve a desired level of quality.
- Standards** – Same as Statewide Minimum Level of Service Standards for the State Highway System.
- State Highway System (SHS)** – All roadways that the Florida Department of Transportation operates and maintains; the State Highway System consists of the Florida Intrastate Highway System and other state roads.
- Statute** – A written law enacted by a duly organized and constituted legislative body.
- Strategic Intermodal System (SIS)** – Florida's system of transportation facilities and serves of statewide and interregional significance.
- Study Area** – Same as "traffic impact area" or simply the "impact area."
 The area affected by a new development.
- Study period** – An hour period on which to base quality/level of service analyses of a facility or service.
 A length in time including a future year of analysis.
- Sufficiency** – The determination that the applicant has supplied all of the necessary information in order to assess the development's regional impacts. Sufficiency can either be declared by an applicant (after responding to two requests for additional information by the RPC) or by the reviewing agencies.

System	– A combination of facilities or services forming a <i>network</i> . A combination of facilities selected for analysis.
System Capacity	– The maximum number of vehicles that can reasonably be expected to pass over a lane or a roadway during a given time period under prevailing roadway and traffic conditions. Typically, the maximum expressway capacity for automobiles is 2,000 vehicles per lane per hour.
Traffic	– A characteristic associated with the flow of vehicles.
Traffic Analysis Zone (TAZ)	– A geographic unit of analysis used to aggregate socioeconomic data (household and employment data).
Traffic Attenuation	– As traffic from a specific site travels longer distances, the number of those site generated trips attenuate (drop) because more and more people reach their final destinations.
Traffic Counts	– Annual Average Daily Traffic (AADT) counts.
Transit Capacity and Quality of Service Manual (TCQSM)	– The document and operational methodology from which the Q/LOS Handbook's bus quality/level of service analyses are based.
Transit system structure	– The Transit Capacity and Quality of Service Manual's analytical methodology of transit stops, route segments, and system.
Transitioning	– In the text of this Handbook, the same as <i>transitioning area</i> .
Transitioning area	– An area that exhibits characteristics between <i>rural</i> and <i>urbanized/urban</i> .
Transitioning/urban	– The grouping of transitioning areas and urban areas into one analysis category in the <i>Generalized Tables</i> and software.
Transit-Oriented Developments	– A mixed-use residential or commercial area designed to maximize access to public transport as defined under Section 163.3164(46), F.S.
Transportation Concurrency Exception Areas (TCEA)	– An urban area delineated by a local government where infill and redevelopment are encouraged, and where exceptions to the transportation concurrency requirement are made, providing that alternative modes of transportation, land use mixes, urban design, connectivity, and funding are addressed. Applies to local governments that have designated and implemented these areas prior to legislative changes in 2011.
Transportation Concurrency Management Area (TCMA)	– A geographically compact area designated in a <i>local government comprehensive plan</i> where intensive development exists, or is planned, so as to ensure adequate mobility and further the achievement of identified important state planning goals and policies, including discouraging the proliferation of urban sprawl, encouraging the revitalization of an existing downtown and any designated redevelopment area, protecting natural resources, protecting historic resources, maximizing the efficient use of existing public facilities, and promoting public transit, bicycling, walking, and other alternatives to the single-occupant automobile. Applies to local governments that have designated and implemented these areas prior to legislative changes in 2011.
Transportation demand data	– Includes current and historical traffic volumes, turning movement counts, traffic characteristics such as peaking and directional factors, ridership data, and bicycle and pedestrian activity.
Transportation Element	– Goals, objectives and policies creating the jurisdiction's transportation system.
Transportation Methodology Meeting	– Technical discussions take place regarding the details of the applicant's methodology to answer Question 21 of the ADA. Before the Transportation Methodology meeting, the applicant prepares a detailed transportation methodology to be submitted to the reviewing agencies.

Transportation Monitoring and Modeling Studies	– (M & M) A method of ensuring the traffic impacts to any regional roadway affected by a development of regional impact (DRI) do not fall below its adopted level of service (or other performance standard).
Transportation Monitoring Studies	– These studies usually require the collection and analysis of transportation data to verify assumptions associated with internal capture (or community capture if applicable), background growth rates, and other assumptions made during the ADA. The studies are usually required by a condition in the development order.
Transportation System Data	– Include the physical and functional characteristics of the transportation system.
Travel time	– The average time spent by vehicles traversing a roadway.
Trip End	A single or one-direction vehicle movement with either the origin or the destination inside the study site and one origin or destination external to the land use.
Trip Assignment	– Determines the amount of traffic that will use each access point and route on the roadway network and determines the number of site-generated turning and through movements at each intersection and roadway segment of the study area network.
Trip Distribution	– Trip-making characteristics between the proposed development and off-site areas to determine trip origins and destinations.
Trip Generation	– The number and type of trips associated with site development.
Trip Generation Equations	– Trip generation fitted equations based on data collected.
Trip Generation Rates	– Weighted average trip generation rate based on one unit of independent variable.
Trip Types	– Three types of trips generated by ITE trip generation:
	1) Primary trips
	2) Pass-by trips
	3) Diverted trips
Truck	– In this Handbook the same as <i>heavy vehicle</i> .
Two-way	– Movement allowed in either direction.
Undivided	– As used in the Generalized Tables, a roadway with no <i>median</i> .
Urban area	a) A place with a population between 5,000 and 50,000 and not in an <i>urbanized area</i> . b) A general characterization of places where people live and work.
Urban infill	– A land development strategy aimed at directing higher density residential and mixed-use development to available sites in developed areas to maximize the use of adequate existing infrastructure; often considered an alternative to low density land development.
Urbanized area	– An area within an MPO's designated urbanized area boundary. The minimum population for an urbanized area is 50,000 people.
v/c	– The ratio of <i>demand flow rate</i> to <i>capacity</i> of a signalized intersection, segment or facility.
Vehicle	– A motorized mode of transportation.
Volume	– In this Handbook usually the number of vehicles, and occasionally persons, passing a point on a roadway during a specified time period, often 1 hour; a volume may be measured or estimated, either of which could be a constrained value or a hypothetical demand volume.
ZDATA	– Socioeconomic data input to FSUTMS.

- 1st Request for Additional Information** – After a review to determine if an ADA is sufficient, a request for the applicant to provide additional information.
- 1st Sufficiency Determination** – Sufficiency is the determination that the applicant has supplied all of the necessary information in order to assess the development's regional impacts. Sufficiency can either be declared by an applicant or by the reviewing agencies.
- 2nd Request for Additional Information** – Similar to the ADA Review/1st Request for Additional Information, the applicant will provide written responses to the agency's 1st Request for Additional Information and provide the responses for agency review.
- 2nd Sufficiency Determination** – RPCs have the responsibility to coordinate with all affected agencies with regard to both the notification and coordination of the review.

Appendix I

FDOT Transportation Site Impact Handbook Website and Document URLs

The FDOTTransportationImpactHandbook.com website is maintained by the FDOT Systems Planning Office to support the Transportation Site Impact Handbook. The handbook is designed to be a work in progress that is updated as required.

The document contains many URLs to resource materials on the internet. In order to minimize the number of broken links that occur as websites change over time, many of the .pdf documents were copied to a centralized location. This appendix is a listing of the URLs to the documents. The bit.ly/ link is a shortened URL that accesses the current location of the document in the RESOURCES tab of the website. The website is organized with the following tabs:

HOME	The latest copy of the Transportation Site Impact Handbook is linked from the HOME page. The recommended practice is to right click, and save the document to your computer. When the document is opened in Acrobat, and a link is clicked, it will open a window in a browser. This will make navigation easy between the two windows.
NOTES	Previous versions of the handbook will be listed here.
RESOURCES	Brief descriptions and links to the documents referenced in the handbook. They are listed in different categories, as well as a complete list of documents.
PRESENTATIONS	Supporting audio/visual presentations that explain specific topics. As new presentations are developed, this section will be updated.
TRAINING	Schedule of upcoming training events.
CONTACTS	List of District and Central Office contacts for more information
All Statutes found within the Transportation Site Impact Handbook can be located at:	www.leg.state.fl.us/Statutes/index.cfm?Mode=View%20Statutes&Submenu=1&Tab=statutes&CFID=158342927&CFTOKEN=11600739 bit.ly/cVEjkA
All Administrative Codes found within the Transportation Site Impact Handbook:	https://www.flrules.org/notice/search.asp bit.ly/cnkFlv

Chapter 1

Transportation Site Impact Handbook Website:	FDOTTransportationImpactHandbook.com bit.ly/FDOTTSH
DEO's website:	www.floridajobs.org/community-planning-and-development
Quality/Level of Service Handbook:	www.dot.state.fl.us/planning/systems/programs/sm/los/pdfs/2013%20QLOS%20Handbook.pdf bit.ly/1fmUCjc
Incorporate Transit into the FDOT DRI Review Process:	teachamerica.com/TIH/PDF/77703.pdf bit.ly/d544uu
How We Shall Grow:	www.myregion.org/
How Shall We Grow PDF:	www.myregion.org/clientuploads/pdfs/HSWG_final.pdf
DEO FAQs:	www.floridajobs.org/frequently-asked-questions-directory/frequently-asked-questions/category/95b6d798fea4-4d0c-8780-0d58825a5cad/x
Reorganization Chapter 163, Part II, F.S.:	www.floridajobs.org/community-planning-and-development/programs/comprehensive-planning/amendment-submittal-and-processing-guidelines/community-planning-act-summaries/reorganization-of-chapter-163-florida-statutes http://bit.ly/1dnFV0D

We have tried to have the most up to date information. However, due to changes in growth management legislation in 2011 and 2012 we recommend you check with the links we have provided in this handbook.

Chapter 2

Mike on Traffic:	mikeontraffic.com/how-to-professionally-review-a-traffic-study/
TCQSM:	www.trb.org/main/blurbs/153590.aspx
NCHRP Report 616:	teachamerica.com/TIH/PDF/nchrp_rpt_616.pdf
2010 Highway Capacity Manual:	www.trb.org/Main/Blurbs/164718.asp https://www.flrules.org/gateway/readFile.asp?sid=0&tid=0&cno=14-96&caid=250859&type=4&file=14-96.doc bit.ly/1nNTDhH
Rule 14-96, F.A.C.:	https://www.flrules.org/gateway/readFile.asp?sid=0&tid=0&cno=14-97&caid=250956&type=4&file=14-97.doc bit.ly/1jfQ8ia
Rule 14-97, F.A.C.:	www.dot.state.fl.us/planning/systems/programs/sm/transition/information/default.shtml bit.ly/1gq5dpP
FDOT Standard K Factor:	www.dot.state.fl.us/planning/statistics/trafficdata/ptf.pdf teachamerica.com/tih/PDF/2012ptf.pdf
FDOT Project Traffic Forecasting Handbook:	www.dot.state.fl.us/planning/statistics/trafficdata/ptf.pdf teachamerica.com/tih/PDF/TCBP.pdf
Transportation Concurrency Best Practices (DCA 2007):	teachamerica.com/tih/PDF/TCBP.pdf bit.ly/a3Bsg3
Producing a TDP:	teachamerica.com/tih/PDF/ProducingaTDP.pdf
Framework for TOD:	teachamerica.com/tih/PDF/FrameworkTOD_0715.pdf
FTI Request Form:	www.dot.state.fl.us/planning/statistics/trafficdata/fti.shtml
Florida Traffic Online:	www2.dot.state.fl.us/FloridaTrafficOnline/viewer.html teachamerica.com/tih/PDF/2013QLOSHandbook.pdf bit.ly/1kTDlun
Quality/Level of Service Handbook:	www.mikeontraffic.com/top-9-things-to-review-with-a-field-visit/ www.mikeontraffic.com/11-items-to-get-from-aerials-when-preparing-for-a-field-visit/
Mike on Traffic:	www.mikeontraffic.com/11-items-to-get-from-aerials-when-preparing-for-a-field-visit/
Incorporate Transit into the FDOT DRI Review Process:	teachamerica.com/TIH/PDF/77703.pdf bit.ly/d544uu
Multimodal Trade-off Analysis in Traffic Impact Studies:	teachamerica.com/TIH/PDF/Multimodal_Tradeoff.pdf bit.ly/dg69In
LOS Procedure 525-000-006:	www.dot.state.fl.us/planning/systems/programs/sm/los/pdfs/LOS%20Procedure.pdf
Interchange Access Request:	www.dot.state.fl.us/planning/systems/programs/sm/intjus/default.shtml
A/V Trip Generation Presentation	teachamerica.com/GrowthManagement/13-TripGenerationBasics&Pitfalls/
ITE Trip Generation Manual:	http://www.ite.org/tripgeneration/trippubs.asp
A/V Pass by Trips Presentation:	teachamerica.com/growthmanagement/15-Pass-byTrips/index.htm
Transit Oriented Development:	www.fltod.com/
Accessing Transit Handbook:	teachamerica.com/TIH/PDF/2008_Transit_Handbook.pdf
FDOT Public Transit Office:	www.dot.state.fl.us/transit/
Internal Capture Example (3 uses):	teachamerica.com/TIH/PDF/2013Kaku.pdf
Internal Capture Example (4 uses):	teachamerica.com/TIH/PDF/2013kakuExample.xls
A/V Internal Capture	teachamerica.com/growthmanagement/14InternalCapture/
FDOT Research Documents:	www.dot.state.fl.us/research-center/documents.shtml
NCHRP 684:	teachamerica.com/TIH/PDF/nchrp_rpt_684.pdf onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_684.pdf

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Excel Spreadsheet NCHRP 684:	onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_684.xlsx
Community Capture:	http://www.dot.state.fl.us/planning/systems/programs/sm/siteimp/PDFs/capturemeth.pdf bit.ly/1oFfpRA
A/V Background Traffic and Trends:	teachamerica.com/GrowthManagement/12BackgroundTraffic&Trends/
Traffic Trends Analysis Tool:	teachamerica.com/TIH/PDF/Trend-V02_XML.xls
FHWA Travel Monitoring:	www.fhwa.dot.gov/policyinformation/travel_monitoring/tvt.cfm
A/V Modeling Methods:	http://teachamerica.com/GrowthManagement/18-ModelingMethods/
FSUTMS online:	www.fsutmsonline.net/online_training/index.html
A/V Manual Distribution:	teachamerica.com/GrowthManagement/17-ManualDistribution/
Transit Boardings Estimation Tool:	www.tbest.org/
NCHRP 255	teachamerica.com/tih/PDF/nchrp255.pdf
NCHRP 255 Webinar:	fhwa.na3.acrobat.com/p95484356/
Turns 5:	teachamerica.com/tih/PDF/turns5-V02_XML.xls
Driveway Information Guide:	www.dot.state.fl.us/planning/systems/programs/sm/accman/pdfs/driveway2008.pdf
Technical Resources on Access Management:	www.dot.state.fl.us/planning/systems/programs/sm/accman/default.shtm
NCHRP Report 616:	teachamerica.com/TIH/PDF/nchrp_rpt_616.pdf
A/V Standard Site Impact Process	teachamerica.com/GrowthManagement/11StandardSiteImpactProcesss/
Performance Measures:	www.dot.state.fl.us/research-center/Completed_Proj/Summary_PL/FDOT_BDK77_977-14_rpt.pdf
Transit Guidelines:	teachamerica.com/TIH/PDF/77703.pdf
Multimodal Guidelines:	teachamerica.com/TIH/PDF/Multimodal_Tradeoff.pdf
Highway Capacity Manual:	www.trb.org/Main/Blurbs/164718.aspx
FDOT Interchange Handbook:	www.dot.state.fl.us/planning/systems/programs/sm/intjus/default.shtm
ITE Traffic Impact Analyses:	www.ite.org/emodules/scriptcontent/Orders/ProductDetail.cfm?pc=RP-020D
Accessing Transit:	teachamerica.com/TIH/PDF/2008_Transit_Handbook.pdf bit.ly/bH78M4
Transit Cooperative Research Program (TCRP) Report 100:	144.171.11.107/Main/Public/Blurbs/153590.aspx bit.ly/aDLDdt

Chapter 3

Florida's Growth Management Act:	www.leg.state.fl.us/statutes/index.cfm?App_mode=Display_Statute&URL=Ch0163/part02.htm&StatuteYear=2009&Title=%2D%3E2009%2D%3EChapter%20163%2D%3EPart%20II
Procedure 525-010-101:	www2.dot.state.fl.us/proceduraldocuments/procedures/bin/525010101.pdf
Florida Statutes:	www.leg.state.fl.us/statutes/index.cfm
Florida Administrative Code:	https://www.flrules.org/
Expedited State Review Flowchart:	www.floridajobs.org/fdcp/dcp/Procedures/Files/ExpeditedStateReviewProcessFlowchart.pdf
State Coordinated Review Flowchart:	www.floridajobs.org/fdcp/dcp/Procedures/Files/StateCoordinatedReviewProcessFlowchart.pdf
Objections, Recommendations and Comments, Reports, Notices of Intent and Public School Interlocal Agreements:	dca.deo.myflorida.com/finddocumentsonline/
Guide to the Annual Update of the Capital Improvements Element:	www.floridajobs.org/community-planning-and-development/programs/technical-assistance/planning-initiatives/infrastructure-planning/capital-improvements-element bit.ly/1fWiRVW
Sample Spreadsheet on Information for Concurrency Management Systems:	www.cutr.usf.edu/research/access_m/pdf/CMS.xls bit.ly/9PKn7T
District Review of Local Government Comprehensive Plans:	www2.dot.state.fl.us/proceduraldocuments/procedures/bin/525010101.pdf bit.ly/cioJs9
Transportation Concurrency Best Practices Guide:	teachamerica.com/TIH/PDF/TCBP.pdf bit.ly/a3Bsg3
Florida Administrative Code Rule 73C-40:	https://www.flrules.org/gateway/readFile.asp?sid=0&tid=0&cno=73C-40&caid=609565&type=4&file=73C-40.doc
Escambia County Example:	myescambia.com/business/ds/optional-sector-plan
Collier County Example:	ShowDocument.aspx?documentid=30764">www.coliergov.net/Modules>ShowDocument.aspx?documentid=30764
GIS Based CMS for Local Government:	www.dca.state.fl.us/fdcp/dcp/transportation/Files/GISBasedCMSLocalGovt.pdf
MMTD QOS Handbook:	teachamerica.com/tih/PDF/MMAreawideQOS1211.pdf
Model Regulations and Plan Amendments for Multimodal Transportation Districts Report:	teachamerica.com/tih/PDF/MMTD%20Model%20Regs.pdf bit.ly/c1bNwQ
Transit Development Plan:	www.dot.state.fl.us/transit/Pages/Draft_Guidance_for_Producing_a_TDP.doc
Framework for Transit Oriented Development:	www.floridajobs.org/community-planning-and-development/programs/technical-assistance/planning-initiatives/urban-planning/transit-oriented-development bit.ly/TOD_framework
FDOT Policy Planning resources:	www.dot.state.fl.us/planning/policy/community/
FDOT Q/LOS resources:	www.dot.state.fl.us/planning/systems/sm/los/default.shtm
TOD in Florida website	www.fltod.com/research_and_case_studies.htm
Institute of Transportation Engineers	www.ite.org/
SIS and Emerging SIS facilities	www.dot.state.fl.us/planning/systems/programs/mspi/brochures/default.shtm
Reconnecting America	reconnectingamerica.org/
Framework for Transit Oriented Development	teachamerica.com/tih/pdf/FrameworkTOD_0715.pdf
A Citizen's Guide to Better Streets	teachamerica.com/tih/pdf/How_to_Engage_Your_Transportation_Agency_AARP.pdf
Comprehensive Plan Amendment Submittal and Processing Guidelines:	www.floridajobs.org/community-planning-and-development/programs/comprehensive-planning/amendment-submittal-and-processing-guidelines

Evaluation and Appraisal Reports- Division of Community Planning:	www.floridajobs.org/community-planning-and-development/programs/comprehensive-planning/evaluation-and-appraisal-of-comprehensive-plans bit.ly/1dab082
Capital Improvement Elements- Division of Community Planning:	www.floridajobs.org/community-planning-and-development/programs/technical-assistance/planning-initiatives/infrastructure-planning/capital-improvements-element bit.ly/1fWiRVW
Developments of Regional Impact (DRI) and Florida Quality Developments:	www.floridajobs.org/community-planning-and-development/programs/developments-of-regional-impact-and-florida-quality-developments
Sector Planning Program:	www.floridajobs.org/community-planning-and-development/programs/technical-assistance/planning-initiatives/rural-planning/sector-planning-program
Transportation Planning:	www.floridajobs.org/community-planning-and-development/programs/technical-assistance/planning-initiatives/infrastructure-planning/transportation-planning
Transit Oriented Development:	www.floridajobs.org/community-planning-and-development/programs/technical-assistance/planning-initiatives/urban-planning/transit-oriented-development
Mobility Fees:	www.floridajobs.org/community-planning-and-development/programs/technical-assistance/planning-initiatives/urban-planning/mobility-fees
Rural Land Stewardship Area Program:	www.floridajobs.org/community-planning-and-development/programs/technical-assistance/planning-initiatives/rural-planning/rural-land-stewardship-area-program
DEO Community Planning:	www.floridajobs.org/community-planning-and-development

Chapter 4

List of Dense Urban Land Areas:

www.floridajobs.org/community-planning-and-development/programs/developments-of-regional-impact-and-florida-quality-developments/list-of-local-governments-qualifying-as-dense-urban-land-areas
bit.ly/1fWDJK1

Guidelines and Performance Measures to Incorporate Transit and Other Multimodal Considerations into the FDOT DRI Review Process:

DRI Procedures:

DEO DRI web page:

Growth Management and Comprehensive Planning:

DEO Residential Thresholds by Population Listing:

Notice of Proposed Change (NOPC)

Annual or Biennial Reports

Incorporate Transit into the FDOT DRI Review Process:

Transportation Demand Management Resources:

Interchange Handbook:

Incorporation TDM into the Land Development Process:

Leadership in Energy and Environmental Design (LEED) Certification:

Model Regulations and Plan Amendments for MMTDs:

Accessing Transit: Design Handbook for Florida Bus Passenger Facilities:

LYNX Central Florida Mobility Design Manual:

LYNX Central Florida Customer Amenities Manual:

FDOT Districts 1 and 7 Transit Facility Handbook:

FDOT District 4 Transit Facilities Guidelines:

Palm Tran Transit Design Manual:

Jacksonville Transportation Authority Mobility Access Program Handbook

Developer Participation in Providing for Bus Transit Facilities/Operations:

teachamerica.com/TIH/PDF/77703.pdf
bit.ly/d544uU

<https://www.flrules.org/gateway/ChapterHome.asp?Chapter=73C-40>

www.floridajobs.org/community-planning-and-development/programs/developments-of-regional-impact-and-florida-quality-developments

www.floridajobs.org/community-planning-and-development/programs/comprehensive-planning
bit.ly/1nB15wo

www.floridajobs.org/fdcp/dcp/DRIFQD/Files/DRIThreshold.pdf

www.floridajobs.org/fdcp/dcp/DRIFQD/Files/NOPC.doc

www.floridajobs.org/fdcp/dcp/DRIFQD/Files/BIENNIAL.doc

teachamerica.com/TIH/PDF/77703.pdf
bit.ly/d544uU

www.nctr.usf.edu/clearinghouse/

http://www.dot.state.fl.us/planning/systems/programs/sm/intjus/default.shtml

www.nctr.usf.edu/pdf/576-11.pdf

www.usgbc.org/DisplayPage.aspx?CategoryID=19

bit.ly/9XEFMH

www.nctr.usf.edu/pdf/527-07.pdf

bit.ly/chf2Ht

teachamerica.com/TIH/PDF/2008_Transit_Handbook.pdf

bit.ly/bH78M4

teachamerica.com/tih/PDF/lynxdocs_mobility_manual.pdf

bit.ly/aovTKd

teachamerica.com/tih/PDF/lynxdocs_Amenities_Manual.pdf

bit.ly/awLbzH

teachamerica.com/tih/PDF/fdot_d1_d7_transit_facility_handbook.pdf

bit.ly/9tOJfl

teachamerica.com/tih/PDF/UpdatedD4TransitFacilitiesGuidelines.pdf

bit.ly/cijGPd

teachamerica.com/tih/PDF/transit-design-manual.pdf

bit.ly/drTgo3

www.jtafla.com/Business/showPage.aspx?Sel=63

teachamerica.com/tih/PDF/Land%20Developer.pdf

bit.ly/dyJsOv

Chapter 5

Lake Sumter MPO Roadway Constraint Policy:	teachamerica.com/tih/PDF/Lane_Constraint_Policy.pdf bit.ly/cN9D0D
Plans Prep Manual:	www.dot.state.fl.us/rddesign/PPMManual/2014/Volume1/2014Volume1.pdf
Multimodal Tradeoff Analysis in Traffic Impact Studies:	teachamerica.com/tih/PDF/Multimodal_Tradeoff.pdf bit.ly/c44l1o
Context Sensitive Solutions:	www2.dot.state.fl.us/proceduraldocuments/procedures/bin/000650002.pdf
Transportation Proportionate Share Agreement:	teachamerica.com/tih/PDF/06%20Transportation%20Proportionate%20Share%20Agreement.pdf bit.ly/9JllsV
Corridor Preservation Best Practices:	teachamerica.com/tih/PDF/BestPracticesReport.pdf bit.ly/cWowAF
Strategies for Comprehensive Corridor Management:	teachamerica.com/tih/PDF/ICCM%20FINAL%20NOV%203%202004%20REV.pdf bit.ly/c5rM8I
Managing Corridor Development:	teachamerica.com/tih/PDF/corridor.pdf
Accomplishing Alternative Access on Major Transportation Corridors:	teachamerica.com/tih/PDF/18%20Accomplishing%20Alternative%20Access%20on%20Major%20Transportation%20Corridors.pdf bit.ly/aNYhGJ
National TDM Clearinghouse:	www.nctr.usf.edu/clearinghouse/
Incorporating TDM into the Land Development Process:	www.nctr.usf.edu/abstracts/abs576-11.htm
Interchange Access Request User's Guide:	http://www.dot.state.fl.us/planning/systems/programs/sm/intjus/default.shtm
Transit Oriented Development Design Guidance:	www.dot.state.fl.us/rail/PlanDevel/RSAC/Mtg3files/Delaney%20handout%202.pdf
Accessing Transit: Design Handbook for Florida Bus Passenger Facilities:	teachamerica.com/TIH/PDF/2008_Transit_Handbook.pdf bit.ly/bH78M4
Land Developer Participation in Providing for Bus Transit Facilities/Operations:	teachamerica.com/tih/PDF/Land%20Developer.pdf bit.ly/dyJsOv
FDOT's Multimodal Transportation Districts and Area-wide Quality of Service Handbook.	teachamerica.com/tih/PDF/MMAreawideQOS1211.pdf
Model Regulations and Plan Amendments for Multimodal Transportation Districts:	teachamerica.com/tih/PDF/MMTD%20Model%20Regs.pdf bit.ly/dpMmkO
Procedure on Development of the Florida Intrastate Highway System:	www2.dot.state.fl.us/proceduraldocuments/procedures/bin/525030250.pdf bit.ly/bH10d1
SIS Criteria and Thresholds:	teachamerica.com/tih/PDF/AdoptedSISCriteria2010.pdf
Policy on the Geometric Design of Streets and Highways, (AASHTO):	https://bookstore.transportation.org/item_details.aspx?id=110 bit.ly/cHueAj
Transportation Costs:	www.dot.state.fl.us/planning/policy/costs/
Model Ordinance for Proportionate Fair-Share Mitigation of Development Impacts :	teachamerica.com/tih/PDF/model-ordinance.pdf bit.ly/djSqVJ
Transportation Concurrency Best Practices Guide:	teachamerica.com/TIH/PDF/TCBP.pdf
Mobility Fee Methodology:	www.floridajobs.org/fdcp/dcp/MobilityFees/Files/CUTRMobilityFeeFinalReport.pdf

Please note that some Adobe Presenter presentations may perform better on Microsoft Internet Explorer than other browsers.

We have tried to have the most up to date information. However, due to changes in growth management legislation in 2011 and 2012 we recommend you check with the links we have provided in this handbook.