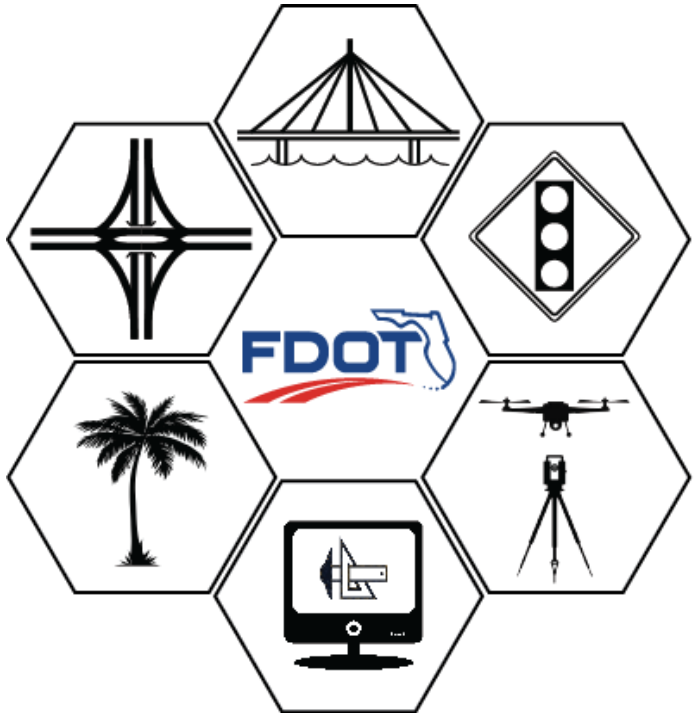


FDOT TRANSPORTATION SYMPOSIUM 2019

Interchange Access Requests (IARs) in Florida

Maria Overton, PE, and Amy Causseaux

Agenda

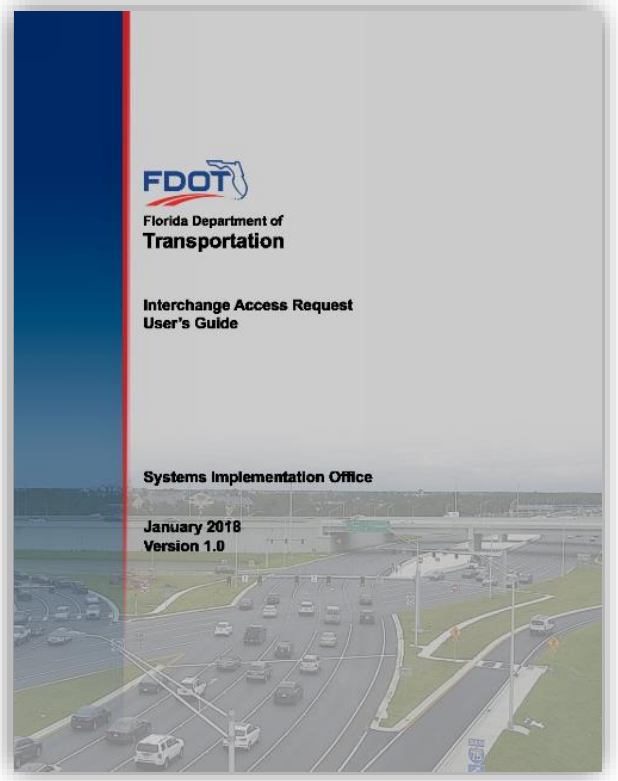
- Overview
- FHWA Policy and Programmatic Agreement
- Approval Process
- Approval Authorities
  - Non-programmatic Agreement Projects
  - Programmatic Agreement Projects
  - Tolling Authorities
- Methodology and Analysis
- Documentation and Review
- IAR Re-evaluations
- Complex Weave Segments
- Break in Limited Access
- Florida Interchange Portal

Interchange Access Requests

- Requests for new or modified access to
  - Interstate Highway System
  - Non-interstate limited access facilities on the State Highway System (SHS)
- An Interchange Access Request (IAR) shows that a proposed interchange proposal is Safety, Operational and Engineering (SO&E) viable
- The Requestor of an IAR can be
  - FDOT
  - Local government
  - Metropolitan Planning Organization (MPO) or Transportation Planning Organization (TPO)

Interchange Access Request User's Guide

- Current version released January 2018
- Provides guidance related to process, policies, technical requirements, documentation to satisfy State and Federal requirements
- Available online at Systems Implementation Office website
  - https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/content/planning/systems/programs/sm/intjus/pdfs/fdot_iaurg_january_2018.pdf



Other Handbooks/Manuals

- FDOT Design Manual (FDM)
- Highway Capacity Manual (HCM)
- Microsimulation analysis
- FHWA Traffic Analysis Toolbox Volume III
- FDOT Traffic Forecasting Handbook
- AASHTO Greenbook

Interchange Access Requests - Types

- Interchange Justification Report (IJR)
  - Proposed new full or partial interchange
- Interchange Modification Report (IMR)
  - Significant modification to existing interchange
- Interchange Operational Analysis Report (IOAR)
  - Minor modification to existing interchange

FDOT Statutes, Rules and Policies

- Florida Statute – 338.01, F.S
  - New or modified interchanges must meet requirements of the Authority to establish and regulate access facilities
- FDOT Rule Chapter – 14-97 F.A.C.
  - Interchange spacing standards and other criteria for medians and driveways adjacent to the interchange
- FDOT Policy Statement – 000-525-015
  - To minimize the addition of new access points to limited access facilities to maximize operation and safety of transportation movements

FDOT Procedures

- FDOT Procedure – 525-030-120: Project Traffic Forecasting
- FDOT Procedure – 525-030-160: New or Modified Interchanges
- FDOT Procedure – 525-030-020: Capacity Improvement Alternatives
- FDOT Procedure – 525-030-260: SIS Highway Component Standards and Criteria
- FDOT Procedure – 650-000-001: Project Development and Environment Manual

FHWA's Interstate System Access Policy

- Policy statement entitled "Access to the Interstate System"
  - May 22, 2017
  - Replaces the old August 2009 Policy

- The Policy focuses on technical feasibility of proposed changes in terms of
  - SO&E Acceptability

- All Interchange Access Requests are required to follow the May 2017 Policy
  - Two (2) FHWA Policy Points

FHWA Policy Point 1

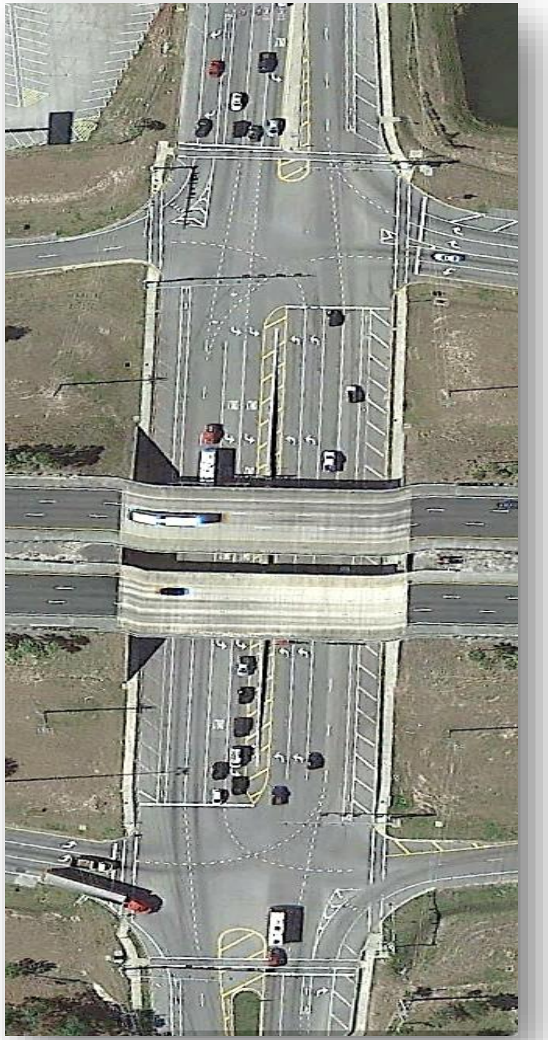
An operational and safety analysis has concluded that the proposed change in access does not have a significant adverse impact on the safety and operation of the Interstate facility (which includes mainline lanes, existing, new, or modified ramps, ramp intersections with crossroads) or on the local street network based on both the current and the planned future traffic projections. The analysis should, particularly in urbanized areas, include at least the first adjacent existing or proposed interchange on either side of the proposed change in access (23 CFR 625.2(a), 655.603(d), and 771.111(f)). The crossroads in the local street network that at least one first major intersection on either side of the proposed change in access, should be included in this analysis to the extent necessary to fully evaluate the safety and operational impacts that the proposed change in access and other transportation improvements may have on the local street network (23 CFR 625.2(a) and 655.603(d)). Requests for a proposed change in access should include a description and assessment of the impacts and ability of the proposed changes to safely and efficiently collect, distribute, and accommodate traffic on the Interstate facility, ramps, intersection of ramps with crossroads, and local street network (23 CFR 625.2(a) and 655.603(d)). Each request should also include a conceptual plan of the type and location of the signs proposed to support each design alternative (23 U.S.C. 109(d) and 23 CFR 655.603(d)).

"The IAR does not have a significant adverse impact on the operation and safety of the freeway system"

FHWA Policy Point 2

The proposed access connects to a public road only and will provide for all traffic movements. Less than "full interchanges" may be considered on a case-by-case basis for applications requiring special access, such as managed lanes (e.g., transit, HOVs, HOT lanes) or park and ride lots. The proposed access will be designed to meet or exceed current standards (23 CFR 625.2(a), 625.4(a)(2), and 655.603(d)). In rare instances where all basic movements are not provided by the proposed design, the report should include a full-interchange option with a comparison of the operational and safety analyses to the partial-interchange option. The report should also include the mitigation proposed to compensate for the missing movements, including wayfinding signage, impacts on local intersections, mitigation of driver expectation leading to wrong-way movements on ramps, etc. The report should describe whether future provision of a full interchange is precluded by the proposed design.

"The proposed access connects to a public road only and will provide for all traffic movements"



Programmatic Agreement

Formally known as:

"PROGRAMMATIC AGREEMENT BETWEEN THE FEDERAL HIGHWAY ADMINISTRATION FLORIDA DIVISION AND THE FLORIDA DEPARTMENT OF TRANSPORTATION REGARDING THE REVIEW AND APPROVAL OF SPECIFIC TYPES OF CHANGES IN INTERSTATE-SYSTEM ACCESS"

IN PLACE APRIL 2, 2015

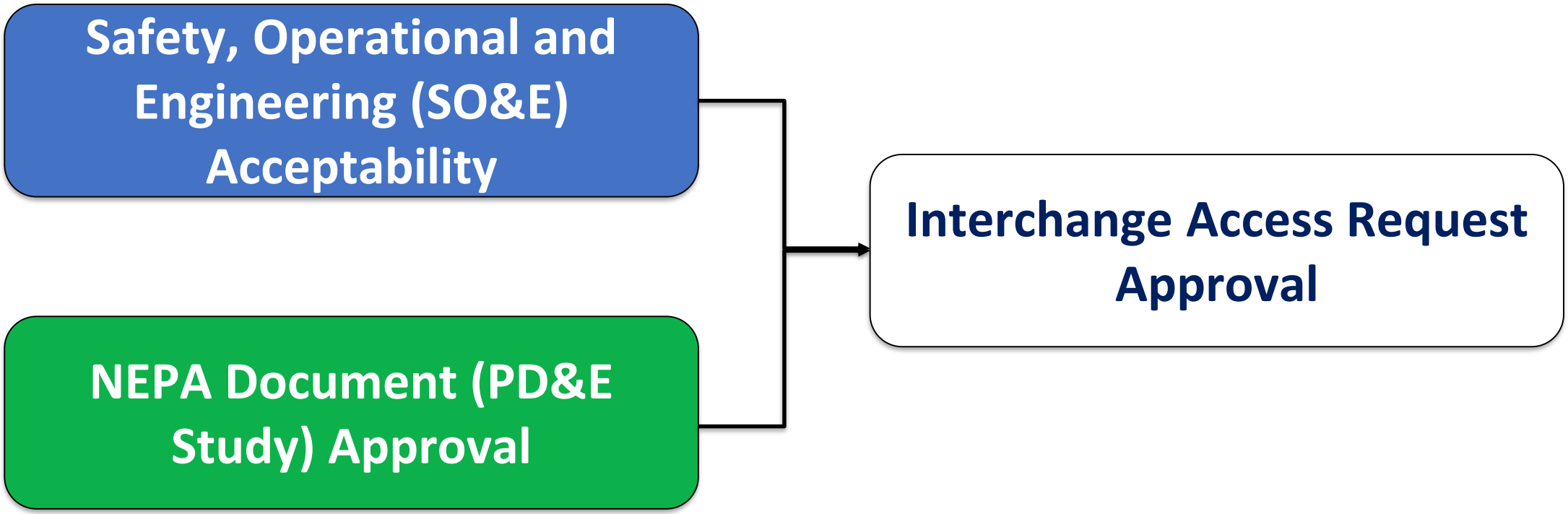
Programmatic Agreement

- FHWA Division Office and FDOT establish Programmatic Agreement status during initiation stage
- Streamline and expedite the review and approval of IARs
- FHWA signs (affirmative determination) after completion of PD&E
- Refer to IARUG for more information

Stakeholders

- Requestor
  - Develop, sign and submit to the IRC a Methodology Letter of Understanding (MLOU) and IAR documenting the agreed-upon study methodology
- Interchange Review Coordinator (IRC)
  - Point of contact for all requestors
- State Interchange Review Coordinator (SIRC)
  - Provide guidance for rules, policies and procedures related to IAR
- Systems Management Administrator (SMA)
  - Responsible for the approval of IARs after they have been reviewed by the SIRC
  - Coordinates with FHWA on matters related to interchange projects and FDOT processes
- Federal Highway Administration (FHWA)
  - Responsible for protecting the structural and operational integrity of the interstate

Interchange Access Request Approval Process

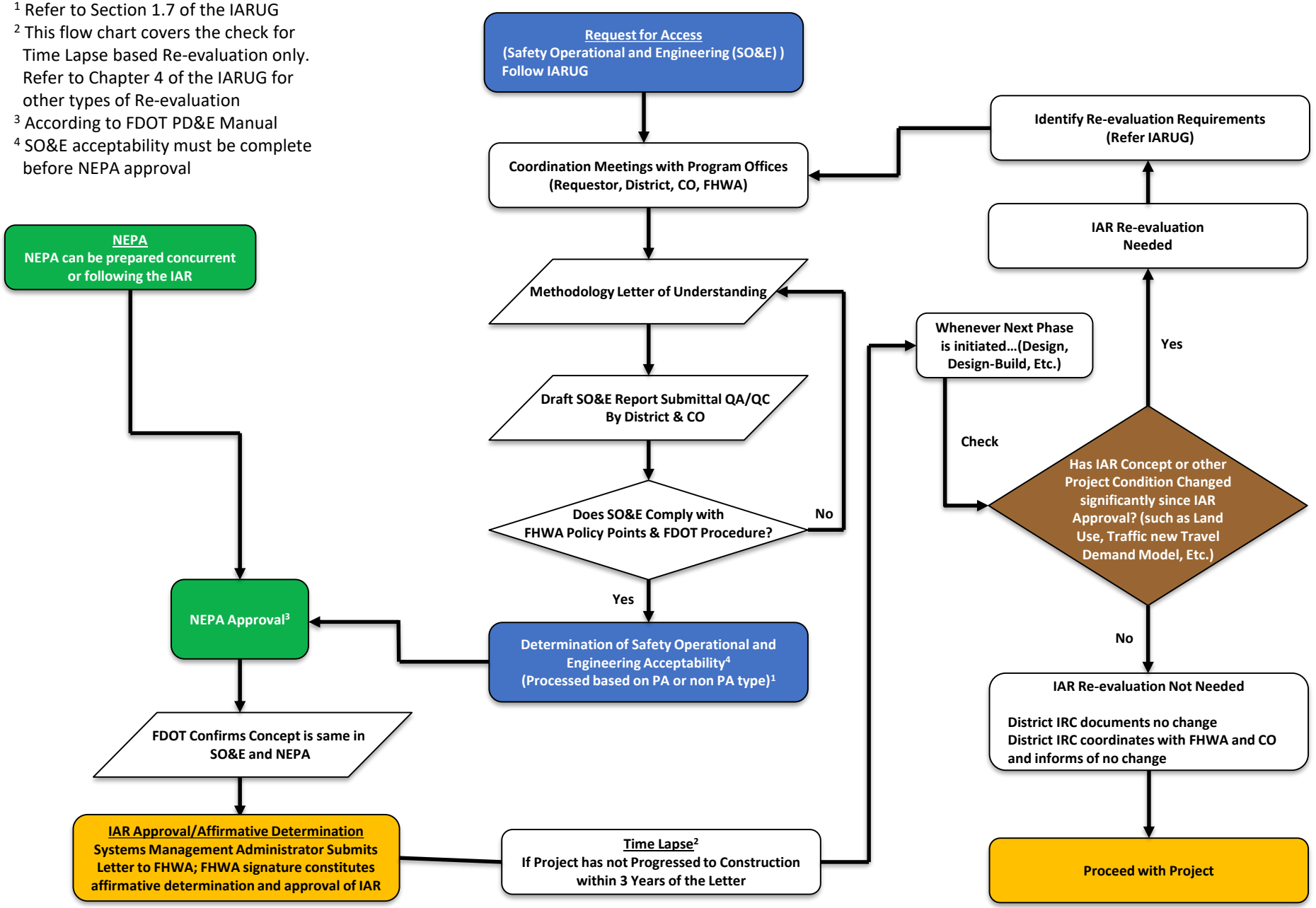


Approval process consists of two parts

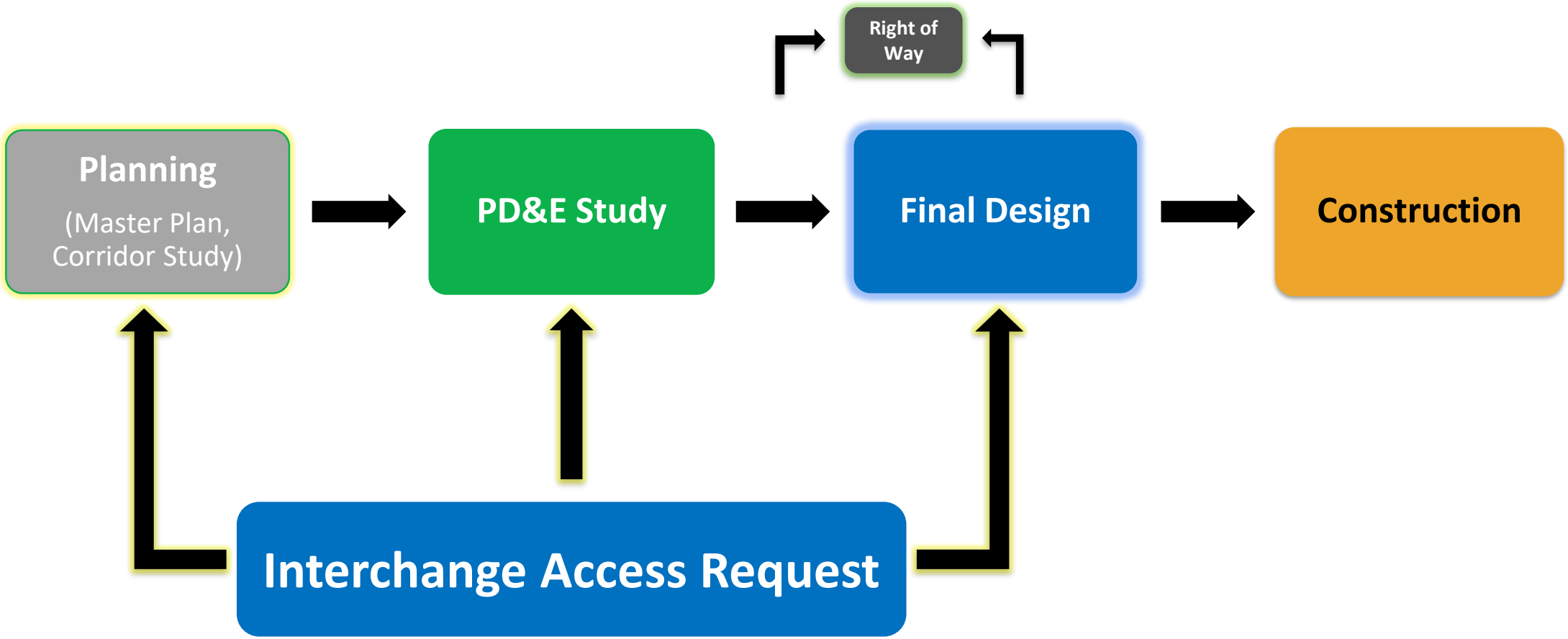
Interchange Access Request (IAR)
Safety, Operational & Engineering (SO&E) Process

Notes

[1] Refer to Section 1.7 of the IARUG
[2] This flow chart covers the check for Time Lapse based Re-evaluation only. Refer to Chapter 4 of the IARUG for other types of Re-evaluation
[3] According to FDOT PD&E Manual
[4] SO&E acceptability must be complete before NEPA approval



Project Development Process



Approval Authorities – Non PA Projects

Non-Programmatic Interchange Access Request Approval Authorities

Approval Authority		MLOU			Interchange Access Request					
					Interstate			Non-Interstate		
		IJR	IMR	IOAR[1]	IJR	IMR	IOAR[1]	IJR	IMR	IOAR
Requestor		✓	✓		✓	✓		✓	✓	✓
District	IRC	✓	✓		✓	✓		✓	✓	✓
	District Secretary							✓	✓	✓
Central Office	Systems Management Administrator	✓	✓		✓	✓		✓		
	Assistant Secretary for Strategic Development				✓					
FHWA		✓	✓		✓	✓				

Note: ✓ Review and approve the document

1 All IOAR projects qualify for delegation under the PA. The IRC will determine the need for an MLOU.

Approval Authorities – PA Projects

Programmatic Interchange Access Request Approval Authorities

Approval Authority		MLOU			IAR		
		IJR	IMR	IOAR[1]	IJR	IMR	IOAR
Requestor		✓	✓	✓	✓	✓	✓
District IRC		✓	✓	✓	✓	✓	✓
Central Office	Systems Management Administrator	✓	✓	✓	✓	✓	✓
	Chief Engineer (or Delegate)				✓	✓	✓
	Assistant Secretary for Strategic Development (or Delegate)				✓		
FHWA					•	•	•

Note: ✓ Review and approve the document
1 For an IOAR, the IRC will determine the need for an MLOU
• Concurs with FDOT Chief Engineer's determination of engineering, operational and safety acceptability, as agreed upon in the PA. FHWA Transportation Engineers should be involved when developing the MLOU.

Approval Authorities – Tolling Authorities

Non-Interstate Toll Facility Interchange Access Request Approval Authorities

Approval Authority	Florida's Turnpike			Other Expressway Authorities		
	IJR*	IMR*	IOAR	IJR*	IMR*	IOAR
Requestor	✓	✓	✓	✓	✓	✓
Turnpike IRC	✓	✓	✓			
District IRC	✓	✓		✓	✓	
Systems Management Administrator	✓			✓		

Note: ✓ Review and approve the document

* District IRC acceptance will not be needed for IJRs, IMRs not on the state highway system or IJRs, IMRs not affecting state highways. This determination will be made in coordination with District IRC and SIRC during the project.

Methodology Letter of Understanding

- Required for all IJRs and IMRs
- Requestor and IRC start drafting MLOU once project need is determined.
- The MLOU is used to reach a consensus among all stakeholders.
- Meeting should be conducted to discuss the access proposal and MLOU for the access request.
- Any fatal flaws to IAR acceptance should be identified and resolved.

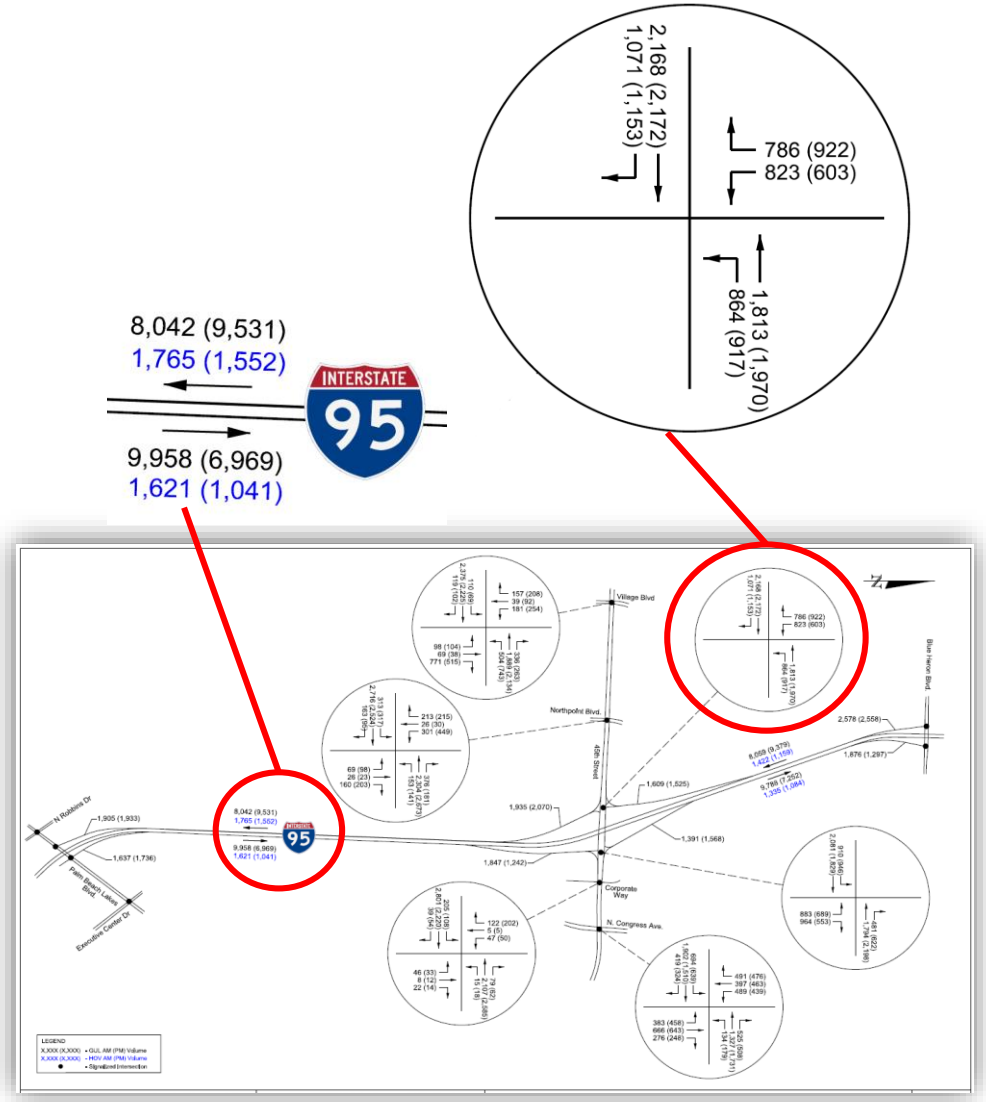
PLEASE NOTE: ANY WORK DONE PRIOR TO SIGNING MLOU IS AT RISK!!!

Review and Acceptance of MLOU

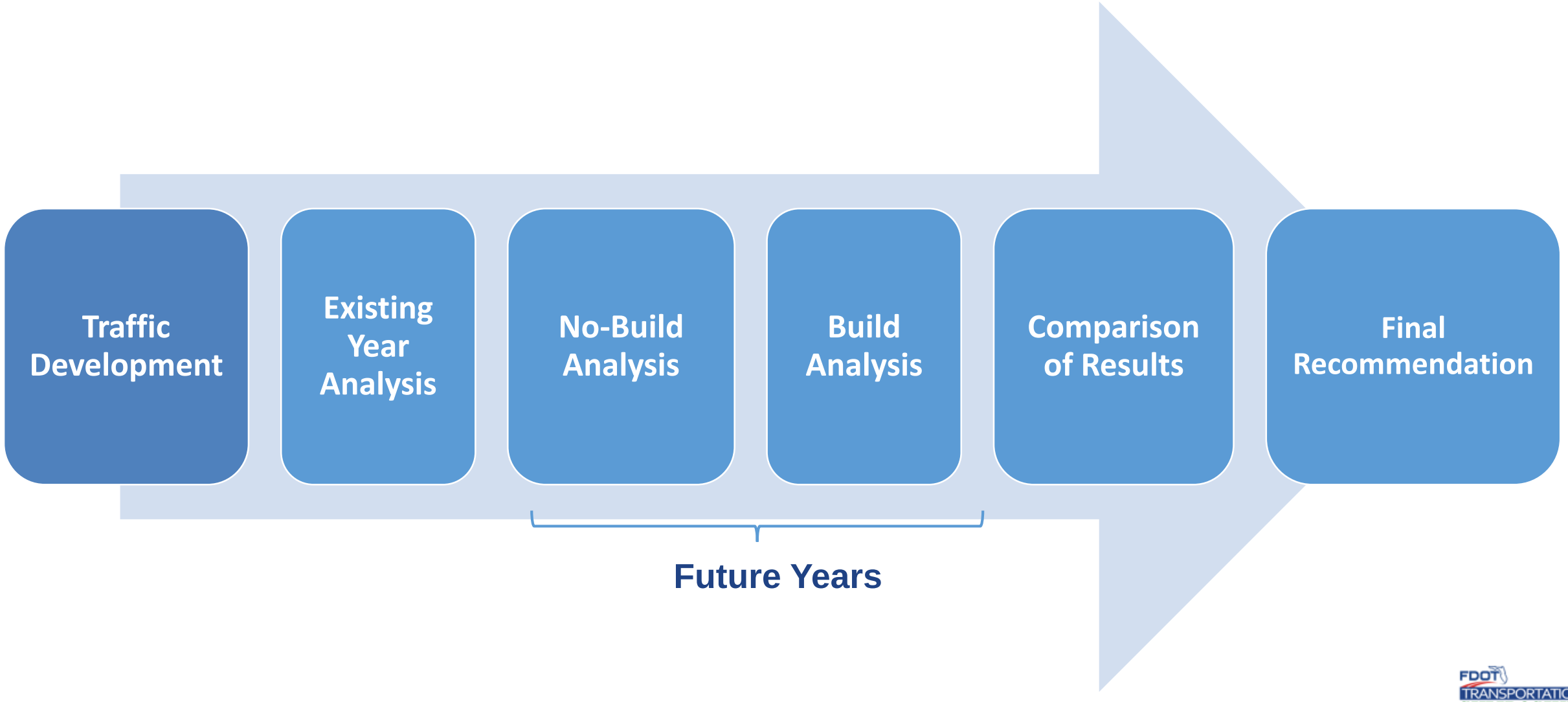
- Stakeholders shall accept and sign the MLOU after they concur with the MLOU requirements and needs.
- Requestor shall prepare amendments, should they be asked for, and submit them for approval.
- All parties must approve the amendment.

Project Traffic Development

- IAR documents the traffic development methodology
- The IAR must develop AADTs and DDHVs for
  - Existing Year
  - Opening Year
  - Interim Year (if needed)
  - Design Year
- Tables and figures should be provided showing the developed AADTs and DDHVs

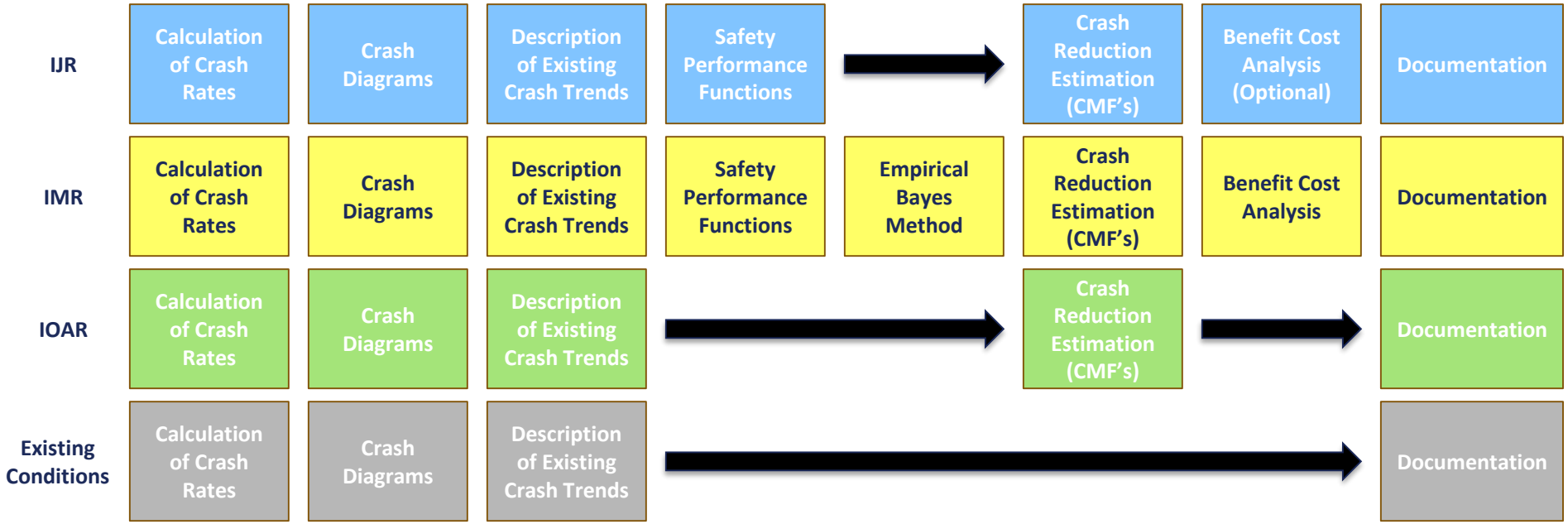


Traffic Operational Analysis



Safety Analysis

- IARs require a safety analysis (IARUG Section 3.3)



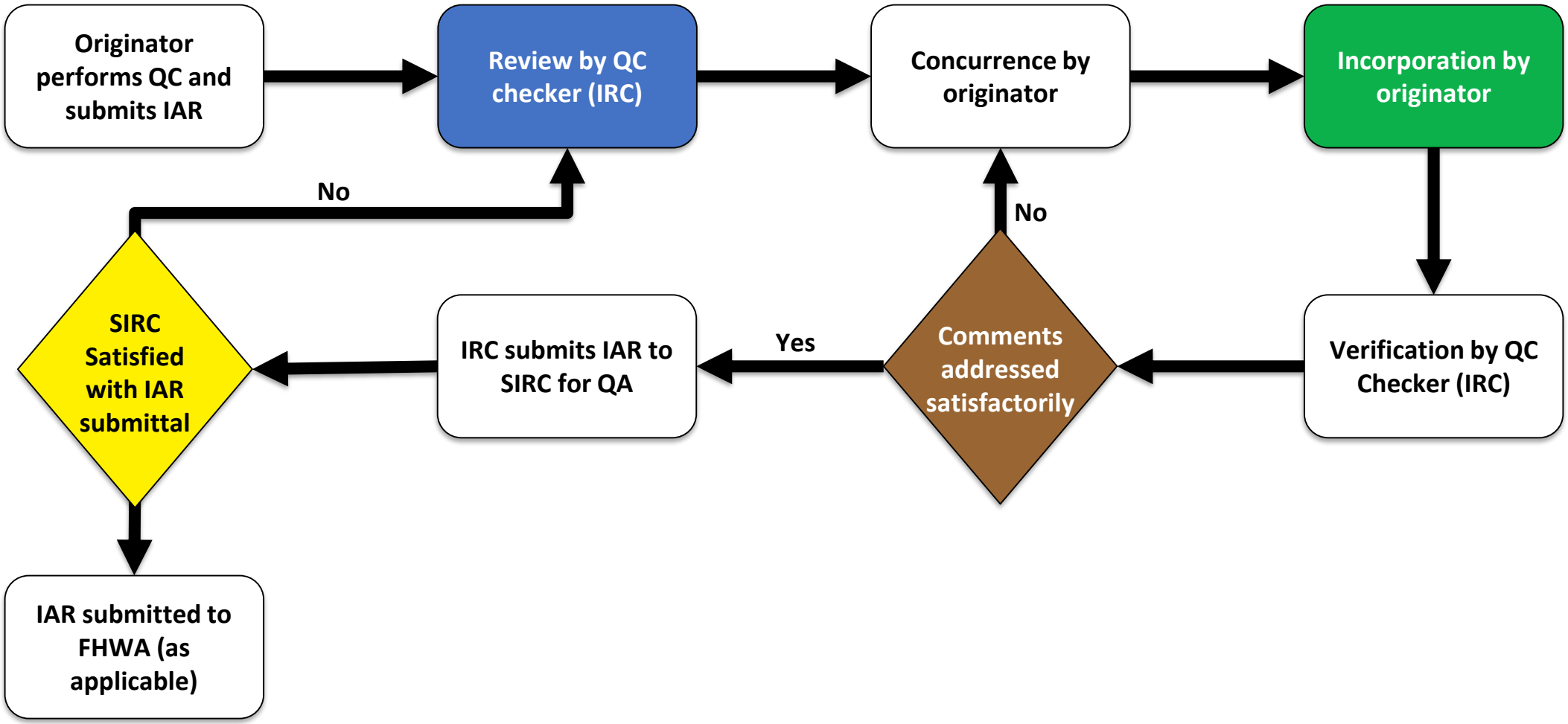
- Safety analysis based on the procedures in the Highway Safety Manual (HSM)

Interchange Access Request

- Developed as a stand-alone document consistent with the MLOU.
- If other reports available, relevant information should be summarized.
- Understandable to the unfamiliar reader
- Determines the safety, operational and engineering (SO&E) acceptability of the IAR.
- The report must address the FHWA's two policy points.

Documentation Requirements

IAR Review Process



Interchange Access Requests – Other Considerations

- IAR shall be consistent with adopted statewide and local transportation plans
- IAR shall consider all fatal flaws and environmental issues that might influence the NEPA compliance phase of the project
- Funding plan to be in place prior to approval of IAR proposal

IAR Re-evaluation

- Re-evaluations are required for one of more of the following conditions:
  1. Change in an approved IAR design concept
  2. Significant change in conditions (traffic characteristics, land use type, environment)
  3. Failure of an IAR to progress to the construction phase within **three** years of approval (time lapse)
     - Check during initiation of the next project phase
- MLOU shall be prepared for all IAR re-evaluations
- PMs must coordinate with the District IRC to identify the need for re-evaluation (FDM 110)

General Interchange Information

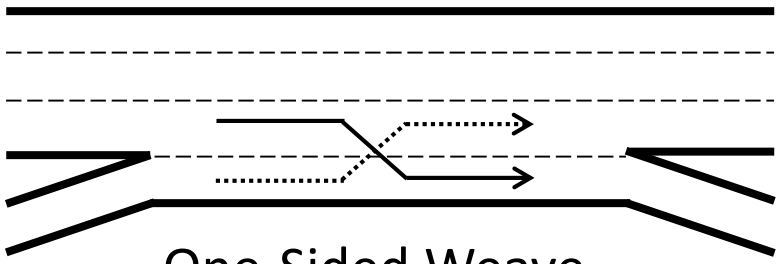
- The SO&E approval of an IAR constitutes approval of the concept layout
  - It does not constitute approval of the actual design
  - The IAR document also identifies the need for a design exception or variation
- Coordinate with FDOT Systems Implementation Office

FDOT TRANSPORTATION SYMPOSIUM 2019

Interchange Access Requests
Complex Weave Segments

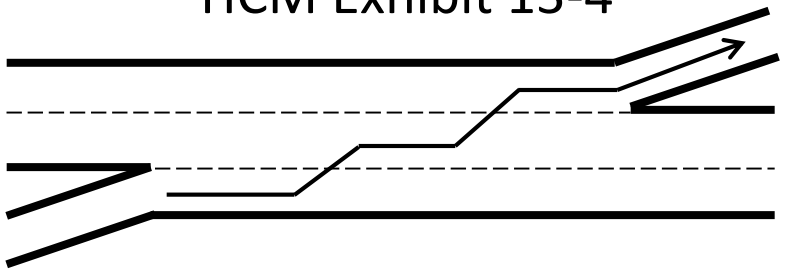
Express Lanes Weave Analysis – Simple Weave

- Two merging traffic streams followed by two diverging traffic streams
- HCM analysis



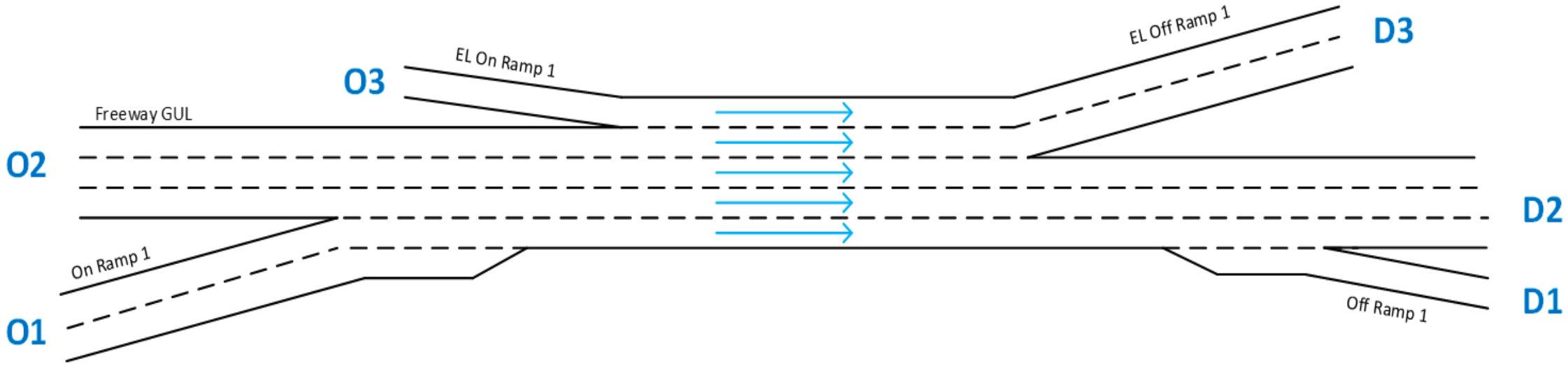
One-Sided Weave
HCM Exhibit 13-3

Two-Sided Weave
HCM Exhibit 13-4



Express Lanes Weave Analysis – Complex Weave

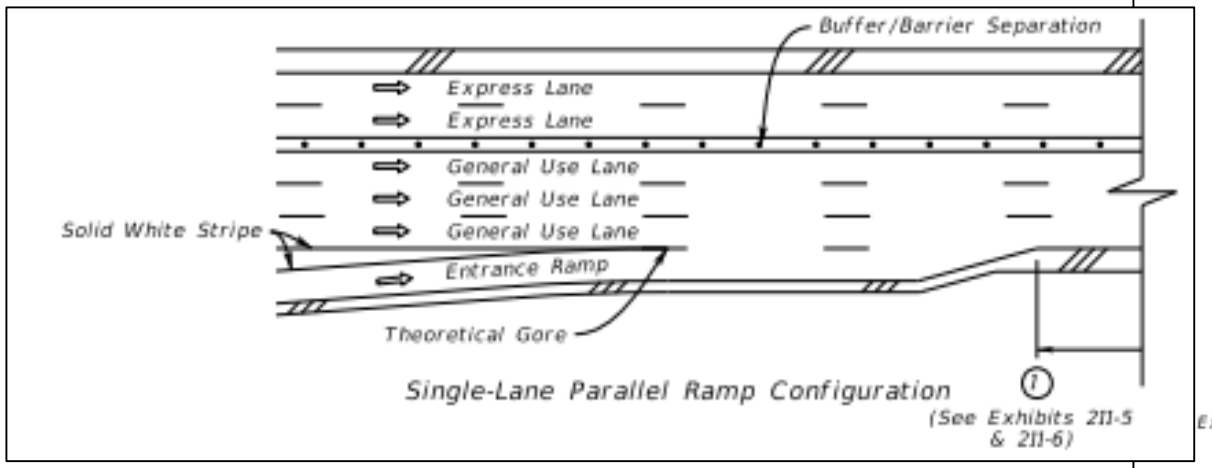
- Formed by several ramp junctions in sequence
- Cannot be analyzed using HCM
- Microsimulation analysis

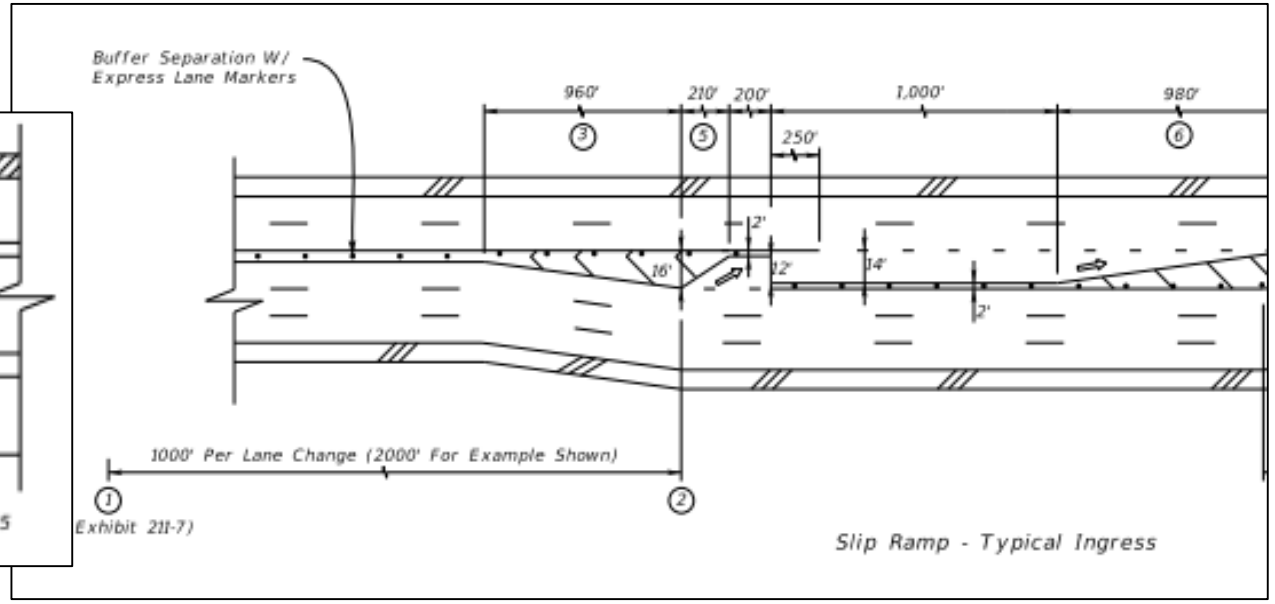


Complex Weave Concerns

- Operations and safety of the complex weave segments closely spaced
- Documentation to show the need for complex weave
  - Why can’t the complex weave be avoided?
- Is Capacity of the Weave Segment Adequate?
- Is the complex weave segment safe?

Weave Segment Length





- Guidance in FDM Exhibits 211-3 through 211-8
- Express lanes egress: 1,000 feet per lane change plus deceleration lane length to General Use Lane
- Express lanes ingress: 1,000 feet per lane change plus acceleration lane length from General Use Lane entrance

Recommendations

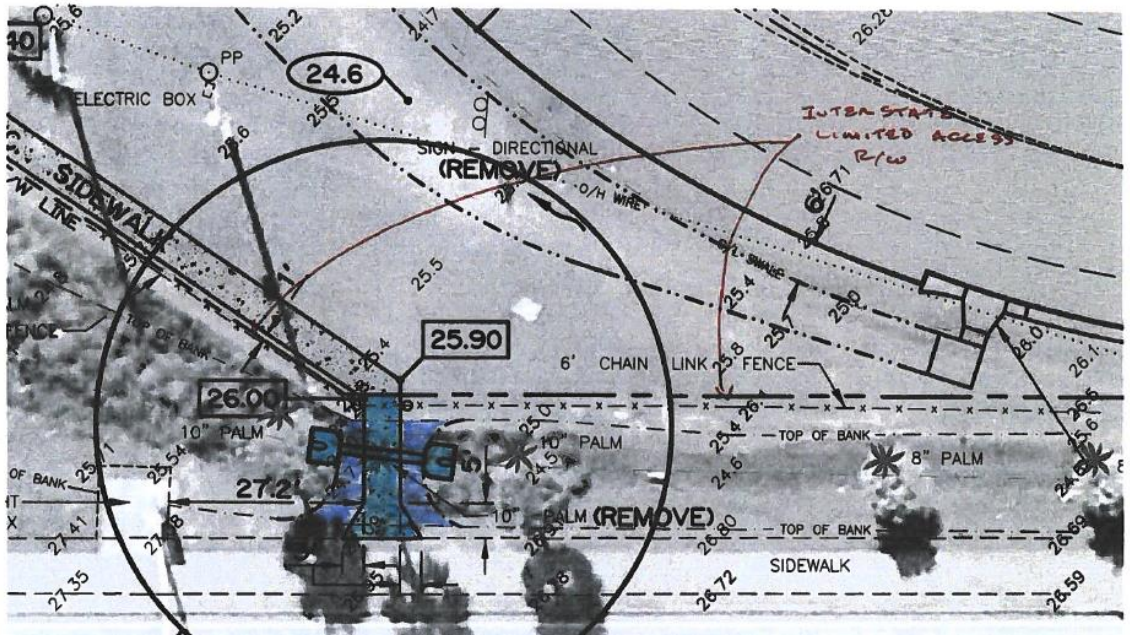
- Avoid formation of complex weave segments
- Evaluate alternate techniques/designs to accommodate Express Lanes (EL)
  - Direct Connect ramps
  - EL slip ramp connection to the service interchange ramp
  - EL slip ramp connection to the service interchange
  - EL ramps connection to the right side of GUL
  - EL slip ramp connection to frontage roads

Recommendations (Cont.)

- If Complex weave segments are unavoidable
  - Evaluate the capacity and length of the weave segment
- Microsimulation
- Coordinate with FHWA and FDOT Central Office
- Document reasons why complex weave cannot be avoided

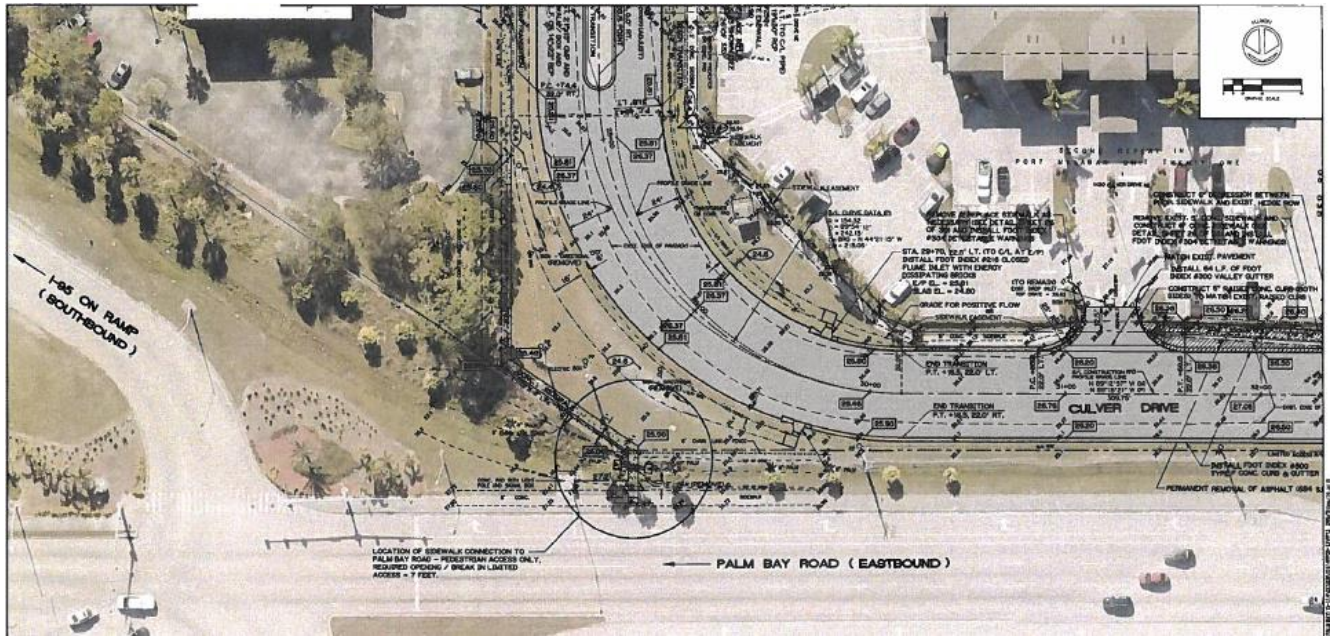
Break in Limited Access – Non Vehicular

- A break in limited access due to vehicular traffic requires preparation of an IAR
  - Follow process as per FDOT IARUG
- A break in the limited access facilities other than vehicular is treated like a Locked Gate Access (i.e., sidewalk)
- No IAR is needed for non vehicular access
  - Consult CO to determine the type of action
- Follow IARUG Section 1.6 and other relevant Manuals/Handbooks



Break in Limited Access – Non Vehicular (Cont.)

- The request was to connect a new sidewalk to an existing sidewalk
- No IAR is required in this case
- Coordinate with FDOT District Offices and Central Office Systems Implementation
- FHWA approval is required for break in limited access



Florida Interchange Portal

- To provide a central storage location for information used in IARs:
  - Location
  - Interchange type
  - Safety statistics
  - Existing traffic operations
  - Previous studies
  - Traffic forecasts
  - Design plans
  - Interchange photos
  - Project benefits

Questions?

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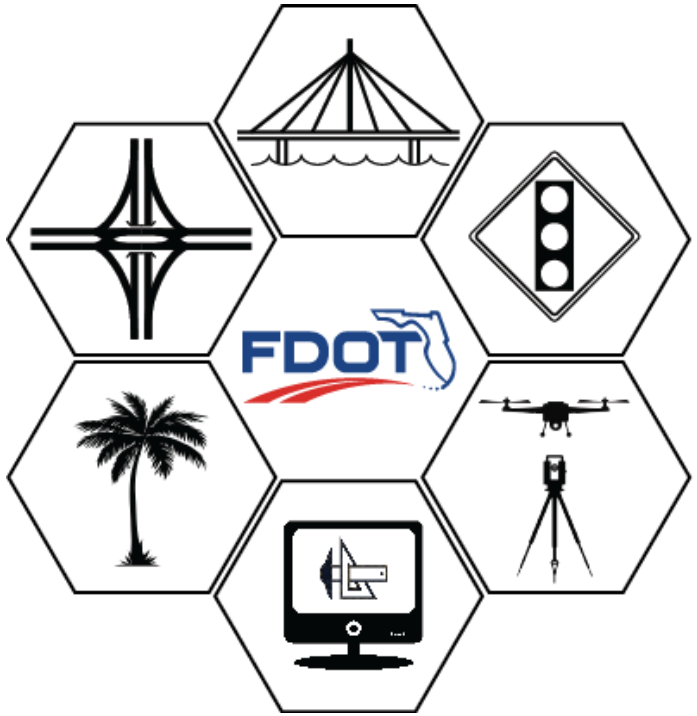

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Thank You!

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