

Project Management



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AGENDA

◆ PD&E

- Alternatives to be Evaluated
- Data Collection
- Documentation
- Continual Coordination
- Schedule
- Context Sensitive Solutions
- Everyday Counts

INTRODUCTION

Typical tasks accomplished in a PD&E study includes the following:

- ❑ Data collection
- ❑ Identification of project needs
- ❑ Development of alternatives
- ❑ Environmental analysis and report preparation/review
- ❑ Public involvement
- ❑ Coordination
- ❑ Evaluation and selection of alternatives
- ❑ Value Engineering (VE)
- ❑ Documentation

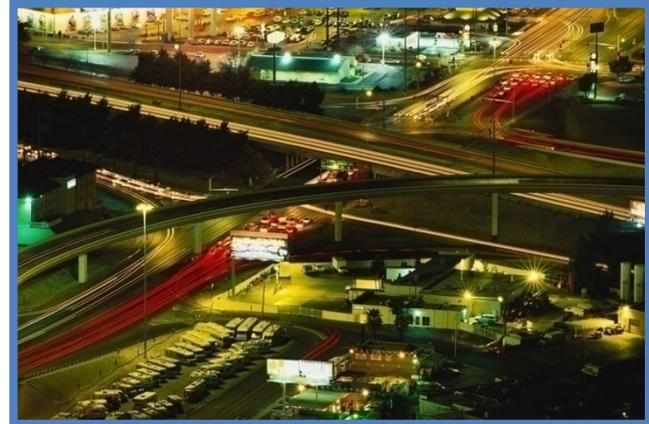
ALTERNATIVES TO BE EVALUATED

- ◆ **Based on project need and design standards, develop conceptual alternatives**
 - No-Action alternative
 - Transportation Systems Management and Operations (TSM&O Strategies)
 - Multi-Modal Alternatives
 - Build Alternatives
- ◆ **Meet Purpose and Need**

IDENTIFICATION OF PROJECT NEEDS

Projects Involving the Interstate and providing access:

- Interchange Justification Report (IJR)
- Interchange Modification Report (IMR)
- Systems Interchange Modification Report (SIMR)



NO-ACTION ALTERNATIVE

- ◆ Describe the beneficial and adverse effects of doing no improvements
- ◆ Describe how the No-Action alternative addresses (or doesn't address) the need
- ◆ **ALWAYS** carry the No-Action Alternative through the entire study

TRANSPORTATION SYSTEMS MANAGEMENT and OPERATIONS (TSM&O) ALTERNATIVE

- ◆ **An alternative which optimizes the performance and utilization of existing infrastructure.**
 - Managed Lanes
 - Conversion to Toll Facility
 - Operational Improvements
 - Multi-modal improvements
- ◆ **May have been addressed in a Traffic Operations Study**

BUILD ALTERNATIVES

- ◆ **Meet the “Need” identified**

- Capacity- widening?
- New Corridor
- Interchange/Intersection - Operations
- Safety

- ◆ **Are feasible**

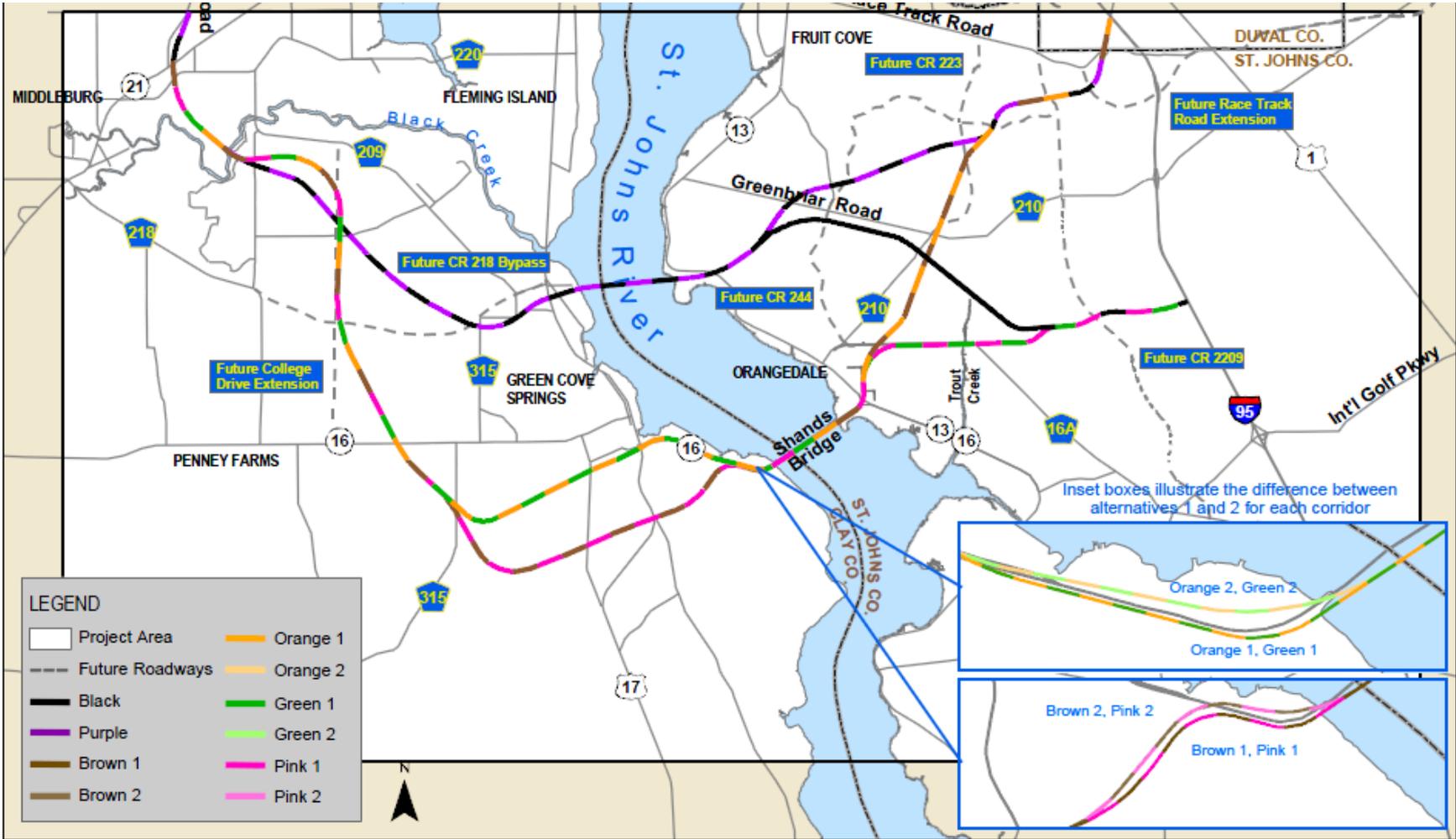
- ◆ **FDOT Procedure Topic No.: 525-030-020**

- Consider tolling on all capacity projects on Limited Access facilities
- Other considerations for Controlled Access facilities

BUILD ALTERNATIVES

- ◆ **May go through iterations**
- ◆ **Begin to identify where Variances and Exceptions may be needed**
- ◆ **Begin to identify impact avoidance and minimization**
- ◆ **Develop a consistent naming convention**
 - Alternative 1, Alternative 1a, Alternative 1b...
- ◆ **Alternatives laid out on base maps using aerials and survey data**

BUILD ALTERNATIVES



DEVELOPMENT OF ALTERNATIVES

◆ Data Collection

- Survey
- Traffic
- Existing Conditions

◆ Establish Engineering Controls

◆ Preliminary Engineering – at a minimum

- Design traffic
- Horizontal alignment
- Vertical alignment in special areas (check vertical clearance to bridges)
- Preliminary stormwater assessment
- Special details to address public or ETAT comments received during the ETDM Programming Screen and the PD&E phase.

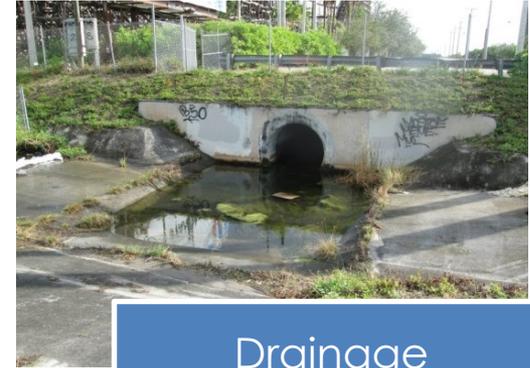
ENGINEERING CONCERNS



Utilities



Beam Damage



Drainage



Florida Gas Transmission



Nearby Airports



Pavement

DATA COLLECTION

- ◆ FDOT Roadway Characteristics Inventory (RCI)
- ◆ Existing Roadway Plans
- ◆ Straight-line Diagrams
- ◆ Existing Structures Plans
- ◆ Crash Data
- ◆ Existing Signage
- ◆ Existing Utilities
- ◆ Railroads (if applicable)
- ◆ Transportation Plans



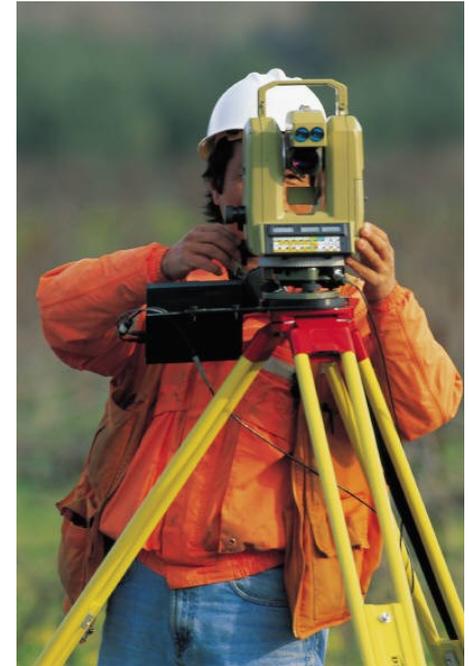
AERIALS

- ◆ **Scope identifies coverage areas**
 - Determines if using existing aerials or new ones flown
- ◆ **Scope outlines “scale”**
 - Project Location Map 1"=300'
 - Alternatives 1" = 100'
- ◆ **Smaller scale (lower #) is better for close-up views (intersections, interchanges)**



SURVEY

- ◆ **PD&E Study usually has some level of survey**
 - Low Altitude Mapping Photography (LAMP)
 - Digital Terrain Modeling (DTM)
- ◆ **Initial survey work (at beginning of project)**
 - Base line
 - Roadway Center line
- ◆ **Save some survey time for later issues**
 - Pond borings
 - Side streets
- ◆ **Level of survey project dependent**
 - Subsurface utility exploration



DESIGN TRAFFIC

- ◆ **FDOT Design Traffic Procedure No.: 525-030-120**
- ◆ **Traffic Study**
 - Previously done vs. part of PD&E
- ◆ **Traffic Methodology**
- ◆ **Traffic Forecasts/Projected Volumes**
- ◆ **Level of Service**
- ◆ **Design Traffic Technical Memorandum**
 - Documents Traffic volumes that will be addressed by conceptual alternatives



DESIGN TRAFFIC ANALYSIS

- ◆ Establishes Design Traffic Volumes
- ◆ Addresses Opening, Interim and Design Years
 - AADT and Design Hour
 - LOS
 - Year LOS hit “F”
- ◆ Examines Multi-Modal
 - Bus, Rail, Ports ...
- ◆ Pedestrian Counts



INTERCHANGE DESIGN TRAFFIC

- ◆ **Projects Involving the Interstate and providing access:**
 - Interchange Justification Report (IJR)
 - Interchange Modification Report (IMR)
- ◆ **To be coordinated with the DIRC**
- ◆ **Approved by the Lead Agency**



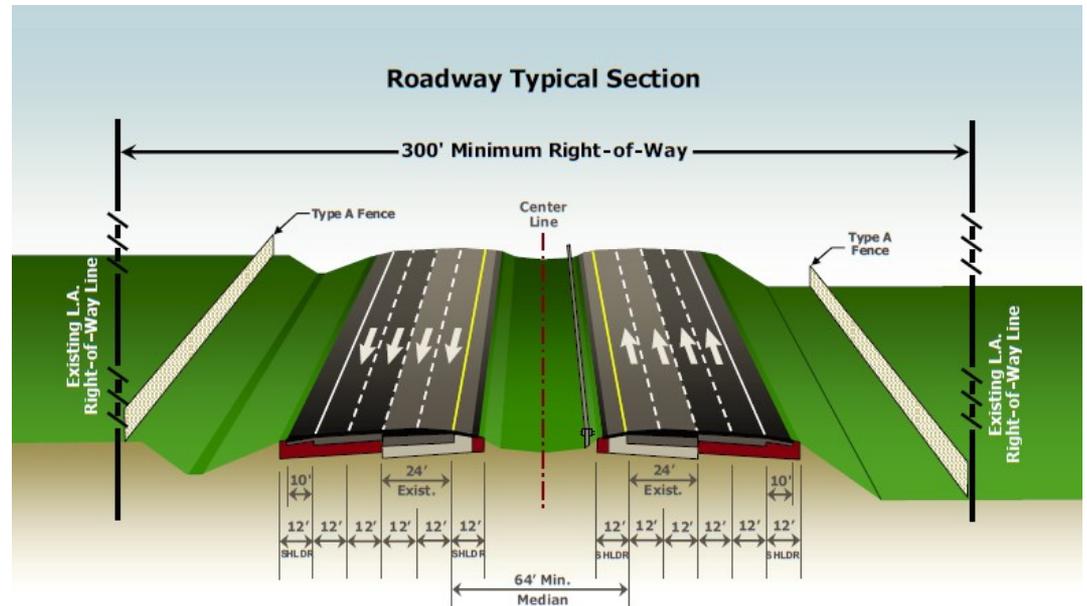
DESIGN CRITERIA

◆ Establish controls and standards for design

- Functional Classification
- Design Speed
- Access Classification
- Season High Water
- Clear Zones
- Shoulder / Median / Lane Width
- Grades
- Side Slopes
- Minimum Horizontal and Vertical Clearance
- Superelevation
- Sight Distance

TYPICAL SECTIONS

- ◆ Functional Classification
- ◆ Traffic
- ◆ Design Speed
- ◆ Design Controls



VARIATIONS AND EXCEPTIONS

- ◆ **Design Variations – Below PPM Criteria but an exception not needed**
 - Approval required by District Design Engineer
- ◆ **Exceptions – Below PPM and AASHTO criteria**
 - Approval required by District Design Engineer
- ◆ **Design Speed Variation and Exception on SIS Facility**
 - Approval required by Chief Engineer following review by State Transportation Planner
- ◆ **Review approvals required by others in Chapter 23 PPM**
 - FHWA Divisions Administrator
 - State Roadway Design Engineer
 - District / State Structures Design Engineer
- ◆ **Process or identify in PD&E – check scope**

EXCEPTIONS

Below PPM and AASHTO

- ◆ Design Speed
- ◆ Lane Width
- ◆ Shoulder Width
- ◆ Bridge Width
- ◆ Structural Capacity
- ◆ Vertical Clearance
- ◆ Grades
- ◆ Cross Slope
- ◆ Superelevation
- ◆ Horizontal Alignment
- ◆ Vertical Alignment
- ◆ Stopping Sight Distance
- ◆ Horizontal Clearance

❖ FHWA - 13 Point Meeting

Design Variations and Exceptions Summary		
Compliance	Design Elements	Location/Description
Design Variations	Bridge Width	Bridge No. 860430 and Bridge No. 860431 over the South Fork New River
	Vertical Clearance	I-595 over the I-95 NB lanes measures 16.43 ft. I-595 over the I-95 SB lanes measures 16.33 ft. Park and Ride ramp north of Broward Boulevard over the I-95 SB lanes measures 16.02 ft. Sunrise Boulevard (SR 838) over the I-95 NB lanes measures 16.41 ft. I-95 over Griffin Road (SR 818) measures 16.42 ft. I-95 over NW 6 Street (Sistrunk Boulevard) measures 16.48 ft. (16.5-ft is ok – field verify)
	Horizontal Alignment	Nine curves do not meet the minimum length requirement as per PPM
	Vertical Alignment	Eight curves do not meet the minimum K-Value requirement. Two sag curves and 7 crest curves do not meet the minimum length requirement.
Design Exceptions	Lane Width	Express lanes and two general purpose lanes will be 11 ft. wide from Marina Mile Boulevard (SR 84) to Sunrise Boulevard (SR 838).
	Shoulder Width	At the following locations, shoulder widths will be reduced. Outside shoulder widths will vary from 3 ft. to 9 ft. and inside shoulders will range from 8 ft. to 11 ft.: -SW 42 Street -SR 84 -South Fork New River -Davie Boulevard (SR 736) -Sunrise Boulevard (SR 838)
	Vertical Clearance	I-95 clearance over Oakland Park Boulevard (SR 816) is 15.29 ft.

ONCE ALTERNATIVES ARE DEVELOPED...

◆ Examine Engineering Impacts

- Drainage
- Structures
- Utilities
- Right of way

◆ Examine Environmental Impacts

- Natural
- Socio-Cultural
- Physical



DRAINAGE ANALYSIS

- ◆ **Potential drainage solutions are developed**
 - Exfiltration Trenches
 - Swales
 - Environmental Look Around (ELA)
 - *Adjacent property stormwater management systems*
 - Off-Site Ponds (Positive systems vs Closed Basin systems)
 - Curb and Gutter (Urban)
- ◆ **Meet with Water Management District**
 - Determine Criteria for treatment

10 STEP POND SITING PROCESS

- ◆ **Step 1** - Collect Initial Data/Drainage Kick-off Meeting
- ◆ **Step 2** – Pond Siting Kick-off Meeting
- ◆ **Step 3** – Evaluate Conceptual Options
- ◆ **Step 4** – Team Meeting to Screen Alternatives
- ◆ **Step 5** – Detailed Evaluation of Alternatives
- ◆ **Step 6** – Team Meeting to Summarize Impacts and Analysis
- ◆ **Step 7** – Draft Pond Siting Report
- ◆ **Step 8** – Team Meeting to Make final Recommendations
- ◆ **Step 9** – Complete Pond Siting Report
- ◆ **Step 10** – Hand-off Meeting between PD&E and Design

POND SITING MATRIX

Weight of Factor		Factor	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score
1-10			1-10		1-10		1-10	
		Alternative Number (Pond ID)	2-3		3A-1		3A-2	
		Brief Description of Alternative	Pond will satisfy System 3A and System 3B requirements.		Pond will satisfy System 3A and System 3B requirements.		Pond will satisfy System 3A and System 3B requirements.	
		Parcel Number	00404334000003000		00404327000003010		00404327000003010	
		Parcel Size (Acres)	3.4 Acres		3.4 Acres		3.4 Acres	
1	6	Zoning (Right of Way)	2	12	2	12	2	12
2	7	Land Use	2	14	2	14	2	14
3	10	Right of Way Costs	5	50	2	20	2	20
4	10	Drainage Considerations	2	20	3	30	4	40
5	5	Flood Zone FEMA	3	15	4	20	3	15
6	10	Contamination and Hazardous Materials	5	50	8	80	8	80
7	6	Utilities	4	24	4	24	4	24
8	8	Threatened and Endangered Species and Associated Costs	3	24	3	24	3	24
9	5	Noise	10	50	10	50	10	50
10	8	Wetlands and Protected Uplands and Associated Costs	7	56	7	56	7	56
11	9	Cultural Resources Involvement and Associated Costs	10	90	10	90	10	90
12	5	Section 4(f)	10	50	10	50	10	50
13	6	Public Wellfield	5	30	7	42	7	42
14	7	Construction	5	35	7	49	10	70
15	9	Maintenance	5	45	5	45	5	45
16	2	Aesthetics (Compatibility with local master plan)	4	8	4	8	3	6
17	8	Public Opinion and Adjacent Residency Concerns	4	32	5	40	5	40
18	5	Other: CERP	5	25	5	25	5	25
		Comments						
		Score	630		679		703	
		Ranking						

Comments: scores are given from 1 to 10. More points means better or more desired alternative.

DRAINAGE AND WATER REPORTS

◆ Pond Siting Report (PSR)

- Identifies potential and preferred pond site locations
 - *ROW Impacts*
 - *Wetland Impacts*
 - *Other Environmental*
 - *Conveyance*

◆ Location Hydraulic Report (LHR)

- Identifies impacts to floodplains

◆ Water Quality Impact Evaluation (WQIE)

ALTERNATIVES MATRIX

◆ Required Information on Matrix

- Constructability
- Construction Cost
- Engineering Cost
- ROW Costs
- Bicycle Pedestrian Facilities
- Temporary Traffic Control
- Environmental Impacts
- Social and Economic Impacts
- Operational Analysis
- Safety Benefits

QUANTITATIVE MATRIX

PROJECT DEVELOPMENT AND ENVIRONMENT STUDY FOR I-95 FROM STIRLING ROAD (SR 848) TO OAKLAND PARK BOULEVARD (SR 816)

LEGEND		Engineering						Socio-Economic					Environment				Cost		S C O R E	R A N K				
		Geometric Compliance to Design Criteria	Access Management	Multimodal Issues (Transit/Pedestrian/Bicycle)	Mobility	Safety Impacts	Utility Impacts	Maintenance of Traffic	Meets Purpose & Need	Displacements Residential / Businesses	Social & Neighborhood Impacts	Economic & Employment Impacts	Community Services / Features	Public Comments	Noise Impact	Air Quality	Contamination	Biological / Wetland Impacts			Water Quality	Cultural / Historic / Archaeological	Engineering, CEI & Construction	Right of Way / Business Damages
5	SUBSTANTIAL POSITIVE EFFECT OR BEST ALTERNATIVE																							
4	GENERALLY POSITIVE EFFECT OR GOOD ALTERNATIVE																							
3	GENERALLY NO EFFECT OR MODERATE ALTERNATIVE																							
2	GENERALLY NEGATIVE EFFECT OR INFERIOR ALTERNATIVE																							
1	SUBSTANTIAL NEGATIVE EFFECT OR WORST ALTERNATIVE																							
ALTERNATIVES																								
No Build		4	3	2	1	2	5	5	1	5	2	2	3	2	3	2	3	3	2	3	5	5	63	4
Build Alternative 1		3	3	5	5	4	3	2	5	5	3	3	3	4	3	3	2	3	3	3	4	5	74	1
Build Alternative 1A		3	3	5	4	4	3	2	5	5	3	3	3	4	3	3	2	2	3	3	3	2	68	3
Build Alternative 1B		3	3	5	4	4	3	2	5	5	3	3	3	4	3	3	2	2	3	3	3	5	71	2

EVALUATION MATRIX – QUANTITATIVE MATRIX

ENVIRONMENTAL CONCERNS



Wetland Identification /
proximity to navigable
waters



Wetland Habitat and
quality of habitat



Upland community
description and habitat
use

QUALITATIVE MATRIX

PROJECT DEVELOPMENT AND ENVIRONMENT STUDY FOR I-95 FROM STIRLING ROAD (SR 848) TO OAKLAND PARK BOULEVARD (SR 816)

VARIABLES	NO-BUILD ALTERNATIVE	BUILD ALTERNATIVE 1	BUILD ALTERNATIVE 1A	BUILD ALTERNATIVE 1B
ENGINEERING				
Geometric Compliance to Design Criteria	The No Build Alternative has similar deficiencies as both Build Alternatives. However, the Build Alternative would allow you to improve some of these deficiencies.	Variations: Border Width, Vertical Clearance, Horizontal Curve Length, Vertical Curve Length, Stopping Sight Distance, Exceptions: Vertical Clearance, lane width, shoulder width (in reduced and constrained typical sections), horizontal clearance,	Variations: Border Width, Vertical Clearance, Horizontal Curve Length, Vertical Curve Length, Stopping Sight Distance, Exceptions: Vertical Clearance, lane width, shoulder width (in reduced and constrained typical sections), horizontal clearance,	Variations: Border Width, Vertical Clearance, Horizontal Curve Length, Vertical Curve Length, Stopping Sight Distance, Exceptions: Vertical Clearance, lane width, shoulder width (in reduced and constrained typical sections), horizontal clearance,
Access Management	No access management modifications proposed	No access management modifications proposed	No access management modifications proposed	No access management modifications proposed
Multimodal Issues/ Transit	No impact	Provides ability to incorporate regional express bus service	Provides ability to incorporate regional express bus service	Provides ability to incorporate regional express bus service
Mobility	Increased congestion	Added capacity with Express Lanes and travel time reliability. Improved operation of General Purpose Lanes	Added capacity with Express Lanes and travel time reliability. Improved operation of General Purpose Lanes	Added capacity with Express Lanes and travel time reliability. Improved operation of General Purpose Lanes
Safety Impacts	No safety improvements	Additional capacity will likely improve safety.	Additional capacity will likely improve safety	Additional capacity will likely improve safety
Utility Impacts	No impacts	Moderate impacts at interchanges and I-95 mainline bridges	Moderate impacts at interchanges and I-95 mainline bridges	Moderate impacts at interchanges and I-95 mainline bridges
Maintenance of Traffic	No construction, no traffic disruption and no impacts	moderate impacts during construction	Build Alternative 1A requires widening of northbound CD road bridge which will result in greater MOT impacts than Build Alternative 1.	Build Alternative 1B requires construction underneath the Sunrise Boulevard overpass and will also result in slightly greater MOT impacts than Build Alternative 1.
Purpose and Need	Does not meet Purpose and Need	Meets Purpose and Need	Meets Purpose and Need	Meets Purpose and Need
SOCIO-ECONOMIC				
Displacement of Residences & Businesses	None	No right of way acquisition for off-sit ponds and roadway improvements. No corner clips necessary to improve ramps at Stirling Rd. and Griffin Rd.	No right of way acquisition for off-sit ponds and roadway improvements. No corner clips necessary to improve ramps at Stirling Rd. and Griffin Rd.	No right of way acquisition for off-sit ponds and roadway improvements. No corner clips necessary to improve ramps at Stirling Rd. and Griffin Rd.
Social & Neighborhood Impacts	None	Provides ability to incorporate regional express bus service which offers an alternative to auto travel and addresses needs of low-income users and disadvantage groups.	Provides ability to incorporate regional express bus service which offers an alternative to auto travel and addresses needs of low-income users and disadvantage groups.	Provides ability to incorporate regional express bus service which offers an alternative to auto travel and addresses needs of low-income users and disadvantage groups.
Economic & Employment Impacts	No impacts	Improved mobility, throughput, travel speeds and travel time reliability for this important SIS facility supports economic development. Reduced congestion improves access to businesses, freight activity centers, local distribution facilities and freight corridors	Improved mobility, throughput, travel speeds and travel time reliability for this important SIS facility supports economic development. Reduced congestion improves access to businesses, freight activity centers, local distribution facilities and freight corridors	Improved mobility, throughput, travel speeds and travel time reliability for this important SIS facility supports economic development. Reduced congestion improves access to businesses, freight activity centers, local distribution facilities and freight corridors
Community Services / Features	No impacts	No impacts	No impacts	No impacts
Public Comments	Public generally understands the need for improvements to I-95.	Generally in favor	Generally in favor	Generally in favor
ENVIRONMENT				
Noise Impact	No Effect, but no ability to add noise abatement	Noise impacts identified at 13 areas, noise barrier found reasonable for 1 area.	Noise impacts identified at 13 areas, noise barrier found reasonable for 1 area.	Noise impacts identified at 13 areas, noise barrier found reasonable for 1 area.
Air Quality	Potential impact from increased congestion	Air quality analysis shows no adverse impact from project	Air quality analysis shows no adverse impact from project	Air quality analysis shows no adverse impact from project
Contamination	No Impacts	Potential impact due to work adjacent to construction, including drainage, adjacent to high and medium risk sites	Potential impact due to work adjacent to construction, including drainage, adjacent to high and medium risk sites	Potential impact due to work adjacent to construction, including drainage, adjacent to high and medium risk sites
Biological / Wetland Impacts	No impacts	Stormwater Swale with hydrophytic vegetation - 1.47 acres of direct impact/0.57 acres of indirect impact; "other surface waters" - 1.51 acres of direct impact/0.81 acres of indirect impact (includes mangrove fringe impact)	Greater impacts to mangrove fringe (other surface waters)	Greater direct wetland impact; greater impacts to "other surface waters"
Water Quality	No Impacts	Equivalent water quality treatment will be provided	Equivalent water quality treatment will be provided	Equivalent water quality treatment will be provided
Cultural / Historic / Archaeological	No impacts	Historic resources will be avoided	Historic resources will be avoided	Historic resources will be avoided
COST				
Engineering, CEI & Construction	No construction, no cost involved (\$ 0)	\$77,000,000 - however tolling option provides a revenue source to pay for improvements and maintain the system	\$ 86,400,000.00 - However, tolling option provides a revenue source to pay for improvements and maintain the system	\$77,300,000.00 - However, tolling option provides a revenue source to pay for improvements and maintain the system
Right of Way- Business Damages	No R/W acquisition or business damages , no cost involved (\$0)	No right of way acquisition to develop improvements	No right of way acquisition to develop improvements	No right of way acquisition to develop improvements

EVALUATION MATRIX - QUALITATIVE COMPARISON

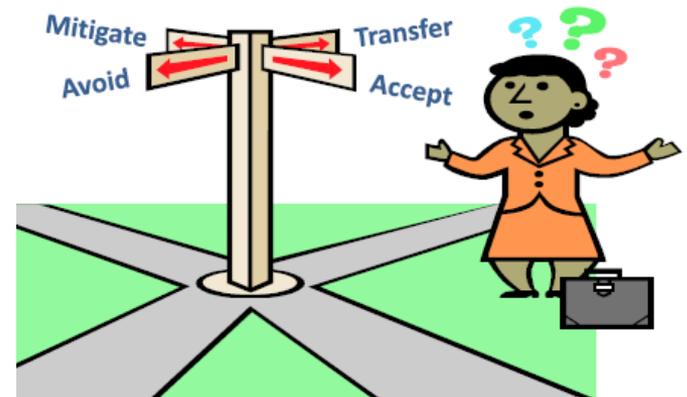
ALTERNATIVES WORKSHOP

- ◆ Once Alternatives are developed and initial impacts identified
- ◆ Hold an Alternatives Public Workshop
 - Present alternatives
 - Gather public comment
 - Help refine alternatives



VALUE ENGINEERING/ RISK ASSESSMENT

- ◆ Required for projects costing \$20 MIL +
- ◆ Schedule with District VE Team
 - Week-long event
 - VEIR prepared in advance
- ◆ Summarize VE recommendations in PER and Environmental Document
- ◆ Cost Risk Assessment



REFINE ALTERNATIVES

- ◆ Incorporate Public Comments
- ◆ Incorporate Value Engineering
- ◆ Make adjustments to alternatives as necessary
- ◆ One alternative will begin to become the “Recommended Alternative”

PUBLIC MEETING OR HEARING

- ◆ **Once Alternatives are Refined**
 - FDOT Recommended Alternative
 - Present Alternatives
 - Present the No-Action Alternative
 - Gather public comment



RECOMMENDED ALTERNATIVE

- ◆ **Finalize Recommended Alternative**
 - Respond / address hearing comments
 - Transmit final documents to FHWA
- ◆ **Recommended Build vs. No Action**
- ◆ **FHWA approves alternative = Preferred Alternative**

PREFERRED ALTERNATIVE

- ◆ FHWA grants Location and Design Concept Acceptance (LDCA)

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Publication Date: 10/18/2013



PUBLIC NOTICE

On September 3, 2013, the Federal Highway Administration granted Location and Design Concept Acceptance for the following project:

State Road (SR) 9/1-95 Project Development and Environment (PD&E) Study in Broward County, Florida

*Financial Management Number: 429804-1-22-01
Efficient Transportation Decision Making (ETDM) No.: 13168
Project Limits: From SR 848/Stirling Road to North of SR 816/Oakland Park Boulevard*

The study evaluated alternatives for the segment of SR 9 / I-95 from SR 848/Stirling Road to north of SR 816 / Oakland Park Boulevard to maximize long-term capacity needs, long-term mobility needs, travel reliability and travel options for drivers. The Recommended Alternative will convert the existing High Occupancy Vehicle (HOV) lanes to tolled Express Lanes and add one additional tolled Express Lane to the median of I-95, in each direction. This also provides for the opportunity to incorporate regional express bus service. The Express Lanes will have variable toll pricing based on congestion to optimize traffic flow. This project will now proceed to the next phase of development. For more information please contact:

Ray Holzweiss
Project Manager
District Four
Consultant Management
Florida Department of Transportation
3400 West Commercial Boulevard
Fort Lauderdale, Florida 33309-3421
(954) 777-4425

Toll free: 1-866-336-8435 ext. 4425
ray.holzweiss@dot.state.fl.us

Public participation is solicited without regard to race, color, national origin, age, sex, religion, disability or family status.

DOCUMENTATION

◆ Documentation

- Environmental Document
- Environmental Technical Studies
- Preliminary Engineering Report
- Engineering Technical Reports

◆ **A complete project file must be kept. The project file should be available to provide to the lead agency upon request.**

◆ Administrative Record

ENVIRONMENTAL DOCUMENT

- ◆ All Reasonable (EIS) Alternatives objectively evaluated
- ◆ Briefly discuss reasons for eliminated alternatives
- ◆ Include No-Action Alternative
- ◆ If one exists, identify Lead Agency approved Preferred Alternative
- ◆ Include mitigation opportunities

ENVIRONMENTAL DOCUMENT

- ◆ **Type 2 CE:** Block 2b
- ◆ **EA:** Alternatives Considered
- ◆ **EIS:** Alternatives Including Proposed Action
- ◆ **SEIR:** Section 2b

ENVIRONMENTAL DOCUMENT – ALTERNATIVES SECTION

- ◆ Alternatives Development
- ◆ Alternatives Considered but Eliminated
- ◆ Alternatives Considered for Additional Study

ENVIRONMENTAL DOCUMENT

◆ Alternative Development

- Project History
- Planning Reports
- Alternative Corridor Evaluation (ACE)
- Description of original alternatives that were considered and the methodology used for evaluation

ENVIRONMENTAL DOCUMENT

◆ Alternatives Considered but Eliminated

- Eliminated during Planning, ACE or PD&E
- What point in process and criteria used to eliminate
- Who was involved in establishing criteria
- Rationale used for elimination

ENVIRONMENTAL DOCUMENT

◆ Alternatives Considered for Additional Study

- Description of each alternative
 - *Termini*
 - *Typical section*
 - *ROW requirements*
 - *Cost*
 - *Impacts*

PRELIMINARY ENGINEERING REPORT

- ◆ **Purpose is to provide technical engineering information**
 - Supplements information provided in the Environmental Document
 - Supports the decisions made related to the project alternatives
 - Describes the Preferred Alternative
- ◆ **Signed and sealed by a Florida Registered Professional Engineer**

OUTLINE OF PRELIMINARY ENGINEERING REPORT

◆ 1. Cover Page

- The cover page should contain the following statement:
- “This preliminary engineering report contains detailed engineering information that fulfills the purpose and need for project _____.”

OUTLINE OF PRELIMINARY ENGINEERING REPORT

◆ 2. Summary of Project

- a. The summary of the *PER* should include
 - “This preliminary engineering report contains detailed engineering information that fulfills the purpose and need for project _____.”
- b. Commitments and Recommendations
- c. Description of Proposed Action

OUTLINE OF PRELIMINARY ENGINEERING REPORT

- ◆ **3. Existing Conditions** – Include information obtained in accordance with *Section 4-2.5.2.2*
- ◆ **4. Planning Phase/Corridor Analysis**
- ◆ **5. Project Design Standards** - List required design standards obtained in accordance with *Section 4-2.5.2.1*

OUTLINE OF PRELIMINARY ENGINEERING REPORT

◆ 6. Alternative Alignment Analysis

- a. No - Build Alternative (advantages and disadvantages should be considered)
- b. Transportation Systems Management and Operations
- c. Multi-Modal Alternatives
- d. Alternative Evaluation (for each alternative)
- e. Evaluation Matrix – compare all major impacts
- f. Preferred Alternative - explain alternative chosen by and the rationale

OUTLINE OF PRELIMINARY ENGINEERING REPORT

- ◆ **7. Design Details of Preferred Alternative** (including Typical Section Package)
- ◆ **8. Conceptual Design Plans**
- ◆ **9. List of Technical Reports Completed for the Project**

COORDINATION

- ◆ Commitments
- ◆ Design
- ◆ ROW
- ◆ Drainage
- ◆ Structures
- ◆ Utilities/Rail
- ◆ Planning (Planning Consistency)
- ◆ Lead Federal Agency
- ◆ Resource Agencies
- ◆ Local Government
- ◆ Others



AGENCY COORDINATION

- ◆ **Meet with USACE, WMD and NMFS to discuss WER findings**
- ◆ **Meet with USFWS and/or NMFS to discuss ESBA findings (based on species involved)**
- ◆ **Submit ESBA for Concurrence on Effects**
 - Concurrence Letter concluding informal consultation (could include commitments)
 - USFWS/NMFS Biological Opinion if adverse effects (formal consultation)
- ◆ **Meet with NMFS to discuss EFH results**
 - NMFS closes consultation or
 - NMFS issues Conservation Recommendations
- ◆ **Noise Study Report**
 - Noise Study report is sent to Local Planning Officials after LDCA

AGENCY COORDINATION

◆ Section 4(f)

- Prepare Determination of Applicability (DOA)
- Meet with FHWA to review DOA
- FHWA issues Request for Additional Information
- Evaluate avoidance alternative (with alternatives)
- Evaluate minimization alternative (with alternatives)

◆ Prepare Draft de minimus letter for FHWA

- Preliminary de minimus finding
- FHWA issues final de minimus finding (i)after hearing, ssued with LDCA)

◆ Prepare Draft Section 4(f) – Programmatic or Individual

- Preliminary de minimus finding
- FHWA review 4(f) document
- FHWA signs Section 4(f) document – after hearing, concurrent with LDCA – assumes no public objection to Section 4(f) impacts during comment period

AGENCY COORDINATION

- ◆ **Cultural Resources Assessment Survey (no NHRP resources)**
 - Prepare Research Design (good for large project) / CRAS
 - FHWA reviews CRAS and coordinates with SHPO for concurrence
 - SHPO reviews CRAS
 - SHPO issues concurrence letter on CRAS (preferably before hearing)

- ◆ **Cultural Resources Assessment Survey (Section 106 No Adverse Effects)**
 - Prepare Draft Section 106 Consultation Case Study – Preferred alternative is needed to finalize, otherwise Case Study begins after hearing
 - FHWA reviews Case Study and coordinates with SHPO - FHWA determines that the Section 4(f) impacts are considered de minimus and requests concurrence
 - SHPO reviews Case Study
 - *Concurs no adverse effect under Section 106 of the Historic Preservation Act*
 - *Concurs de minimus under Section 4(f) of the Department of Transportation Act*
 - *SHPO may include recommendations (commitments)*

AGENCY COORDINATION

◆ Cultural Resources Assessment Survey (Section 106 Adverse Effects)

- Prepare Draft Section 106 Consultation Case Study – Preferred alternative is needed to finalize, otherwise Case Study begins after hearing
- Prepare Draft Programmatic Section 4(f) or Draft Individual 4(f) Statement
- FHWA reviews Case Study and coordinates with SHPO
- Consultation meetings, teleconferences are held to discuss effects and ways to avoid, minimize or mitigate adverse effects
- SHPO reviews Case Study
 - *Concurs with adverse effect under Section 106 of the Historic Preservation Act*
- Final Section 106 Case Study is prepared
- Prepare Draft MOA
- FHWA/SHPO review MOA
- Final 4(f) document prepared (follows completion of MOA)
- FHWA reviews 4(f)
- FHWA reviews individual 4(f) in Washington, DC

SCHEDULE

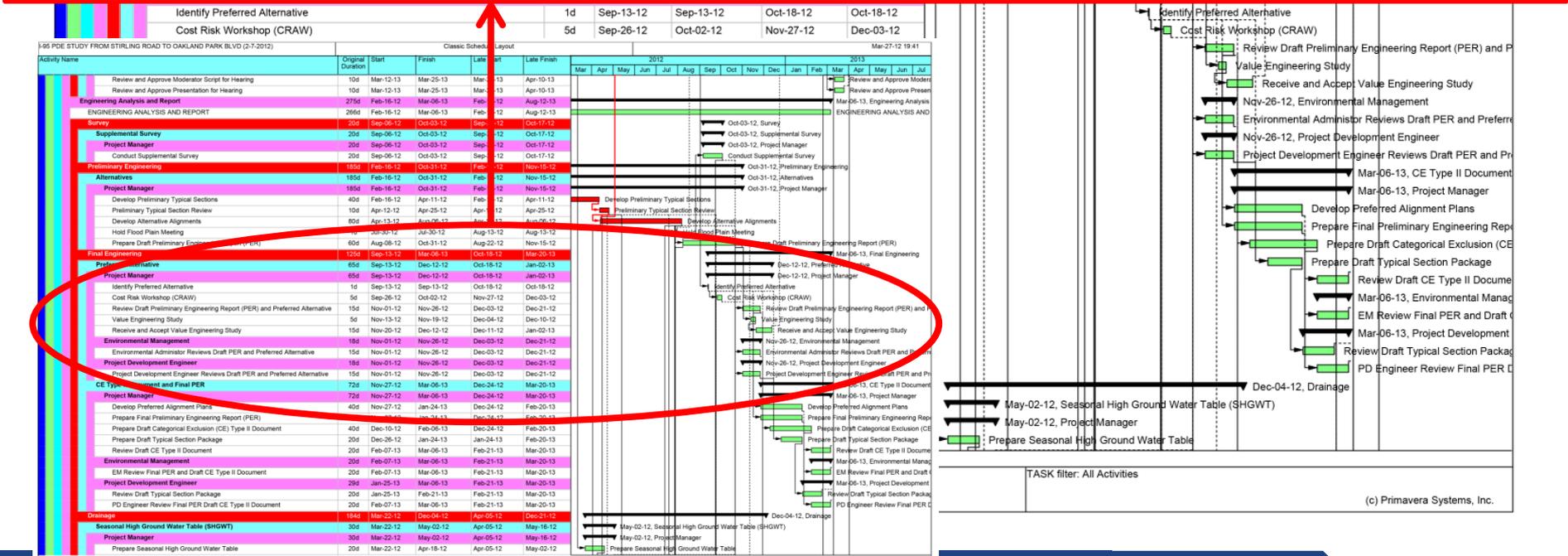
◆ PSM Codes to track PD&E Studies

- ETDM / ETAT Programming Screen Start / Summary Report published
- Advance Notification
- Start Date – SEIR, CE & EA
- Planning Consistency Completion
- Public Involvement Activities
 - *Notice of Intent – EIS*
 - *DEIS Scoping Meeting*
 - *Workshop*
 - *Hearing*
- Alternatives Development Complete
- Environmental Document submittal to SEMO for review and approval (EA & EIS)
- Environmental Document submittals to FHWA
- Environmental Document approval by FHWA

SCHEDULE

I-95 PDE STUDY FROM STIRLING ROAD TO OAKLAND PARK BLVD (2-7-2012) Classic Schedule Layout Mar-27-12 19:41

Activity Name	Duration	Start	Finish	Start	Finish	Start	Finish
Alternatives	185d	Feb-16-12	Oct-31-12	Feb-16-12	Nov-15-12		
Project Manager	185d	Feb-16-12	Oct-31-12	Feb-16-12	Nov-15-12		
Develop Preliminary Typical Sections	40d	Feb-16-12	Apr-11-12	Feb-16-12	Apr-11-12		
Preliminary Typical Section Review	10d	Apr-12-12	Apr-25-12	Apr-12-12	Apr-25-12		
Develop Alternative Alignments	80d	Apr-13-12	Aug-06-12	Apr-13-12	Aug-06-12		
Hold Flood Plain Meeting	1d	Jul-30-12	Jul-30-12	Aug-13-12	Aug-13-12		
Prepare Draft Preliminary Engineering Report (PER)	60d	Aug-08-12	Oct-31-12	Aug-22-12	Nov-15-12		
Final Engineering	125d	Sep-13-12	Mar-06-13	Oct-18-12	Mar-20-13		
Preferred Alternative	65d	Sep-13-12	Dec-12-12	Oct-18-12	Jan-02-13		
Project Manager	65d	Sep-13-12	Dec-12-12	Oct-18-12	Jan-02-13		
Identify Preferred Alternative	1d	Sep-13-12	Sep-13-12	Oct-18-12	Oct-18-12		
Cost Risk Workshop (CRAW)	5d	Sep-26-12	Oct-02-12	Nov-27-12	Dec-03-12		
Review Draft Preliminary Engineering Report (PER) and Preferred Alternative	15d	Nov-01-12	Nov-26-12	Dec-03-12	Dec-21-12		
Value Engineering Study	5d	Nov-13-12	Nov-19-12	Dec-04-12	Dec-10-12		
Receive and Accept Value Engineering Study	15d	Nov-20-12	Dec-12-12	Dec-11-12	Jan-02-13		
Environmental Management	18d	Nov-01-12	Nov-26-12	Dec-03-12	Dec-21-12		
Environmental Administor Reviews Draft PER and Preferred Alternative	15d	Nov-01-12	Nov-26-12	Dec-03-12	Dec-21-12		
Project Development Engineer	18d	Nov-01-12	Nov-26-12	Dec-03-12	Dec-21-12		
Project Development Engineer Reviews Draft PER and Preferred Alternative	15d	Nov-01-12	Nov-26-12	Dec-03-12	Dec-21-12		



EVERY DAY COUNTS/LEVEL OF DETAIL



- ◆ **FHWA ORDER Classification Code 6640.1A - Policy on Permissible Project Related Activities during the NEPA process, dated October 1, 2010**
 - Explains the level of preliminary design engineering detail allowed in PD&E studies.
 - Aim is to reduce project delivery time.



EVERY DAY COUNTS

- ◆ During PD&E, the Districts may perform specific preliminary design activities without prior approval from FHWA. However, until a project is approved as a Type 2 CE, EA with FONSI, or Record of Decision (ROD), no final design activities are allowed to proceed without FHWA coordination

PRELIMINARY DESIGN VS FINAL DESIGN

- ◆ **Preliminary Design - Defines the general project location and design concepts. It includes, but is not limited to, preliminary engineering and other activities and analysis, such as environmental assessments, topographic surveys, metes and bounds surveys, geotechnical investigations, hydrologic analysis, utility engineering, traffic studies, financial plans, revenue estimates, hazardous materials assessments, general estimates of the types and quantities of materials, and other work needed to establish parameters for the final design.**

PRELIMINARY DESIGN VS FINAL DESIGN

- ◆ **Final Design - Any design activities following preliminary design and expressly includes the preparation of final construction plans and detailed specifications for the performance of construction work, final plans, final quantities and final engineer's estimate for construction.**

EVERY DAY COUNTS

- ◆ FHWA will allow any work to be completed by FDOT in the PD&E process that is listed as “preliminary” in the *Sequence of Plans Preparation Chapter, Volume 2, Chapter 2, PPM, Topic No. 625-000-008, and Figure 2.1.*
 - Most items are in the preliminary phase or “P” through Phase II or 60% Design Phase.

EVERY DAY COUNTS

Topic #625-000-008
Plans Preparation Manual, Volume 2 - English

January 1, 2013
Revised – January 1, 2014

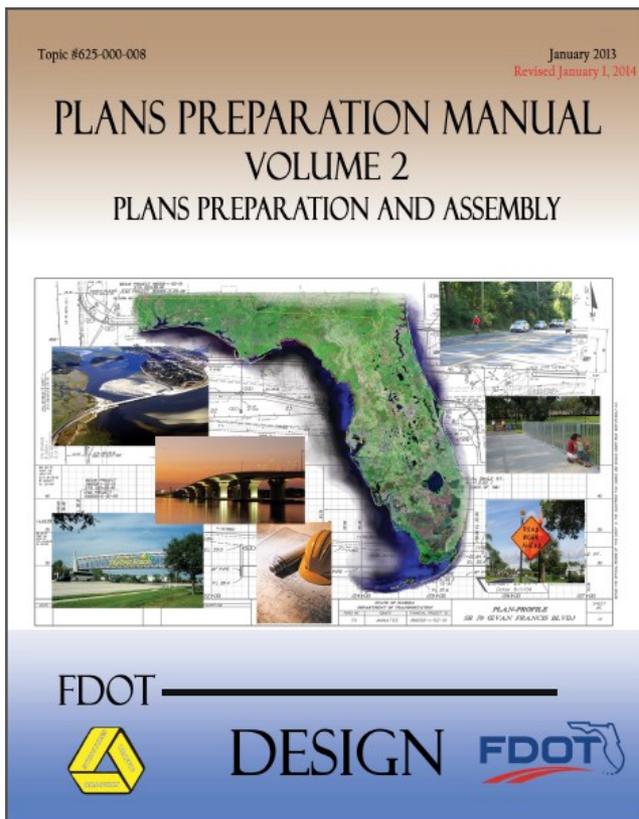


Figure 2.1 Summary of Phase Submittals
Provide the sheets listed as applicable

ITEM	PHASE I	PHASE II	PHASE III	PHASE IV
Key Sheet	P	P	C	F
Signature Sheet		P	C	F
Summary of Pay Items		P	C	F
Drainage Map	P	P	C	F
Interchange Drainage Map	P	P	C	F
Typical Section	P	C	C	F
Summary of Quantities			C	F
Summary of Drainage Structures		P	C	F
Optional Materials Tabulation		P	C	F
Project Layout	P	C	C	F
Roadway Plan-Profile	P	P	C	F
Special Profile	P	P	C	F
Back-of-Sidewalk Profile	P	C	C	F
Interchange Layout	P	P	C	F
Ramp Terminal Details		P	C	F
Intersection Layout/Detail	P	P	C	F
Drainage Structures		P	C	F
Three-Sided/Box Culvert Details			C	F
Lateral Ditch Plan-Profile		P	C	F
Lateral Ditch Cross Section		P	C	F
Retention/Retention Ponds		P	C	F
Cross Section Pattern		P	C	F
Roadway Soil Survey		P	C	F
Cross Sections	P	P	C	F
Stormwater Pollution Prevention Plan		P	C	F
Temporary Traffic Control Plans	P	P	C	F
Utility Adjustments		P	C	F
Project Network Control Sheets	P	C	C	F
Selective Clearing and Grubbing		P	C	F
Developmental Design Standards		C	C	F
Mitigation Plans		C	C	F
Miscellaneous Structures Plans		P	C	F
Signing and Pavement Marking Plans		P	C	F
Signalization Plans		P	C	F
Intelligent Transportation System (ITS) Plans		P	C	F
Lighting Plans		P	C	F
Landscape Plans	P	P	C	F
Utility Work by Highway Contractor Agreement Plans			C	F
Contract Time			P	F
Toll Facility Plans				
Site/Civil	P	P	C	F
Architectural	P	P	C	F
Structural	P	P	C	F
Electrical		P	C	F
Mechanical		P	C	F
Plumbing		P	C	F
Communications		P	C	F
Systems		P	C	F

Sequence of Plans Preparation

2-8

EVERY DAY COUNTS

- Any advanced engineering work performed on one alternative prior to final NEPA approval must be approved by FHWA.
- Must not prejudice the objective comparison of all the alternatives or limit alternatives.
- Comparison of alternatives must be done in a fair and balanced manner.

EVERY DAY COUNTS/FHWA APPROVAL FORM

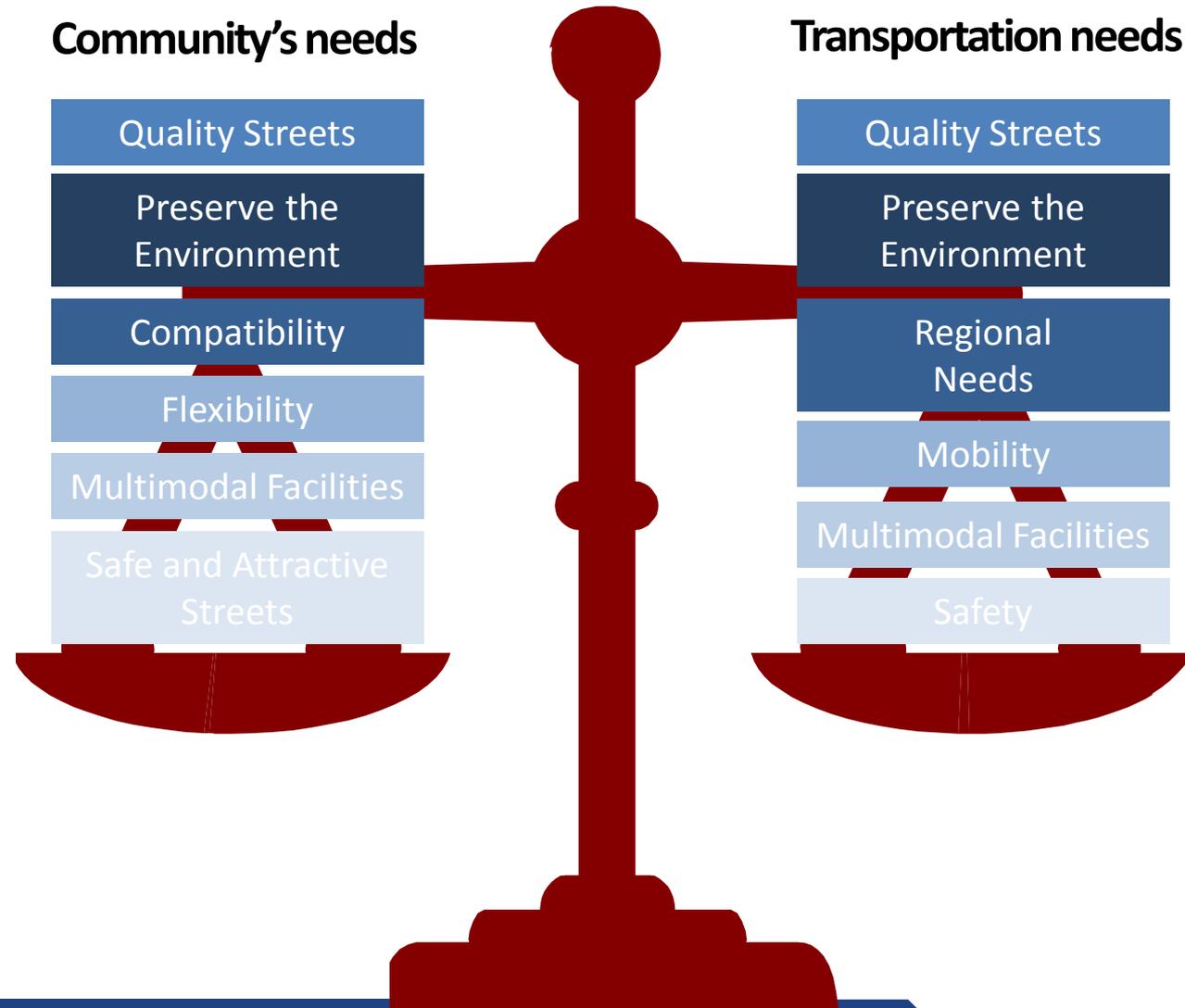
Approval to Advance Preliminary Design Activities			
Document Information:			
Date: (Current Date)	Document Type: EIS/EA/CE 2	Status: Draft/Final	
Project Name:	(PD&E Project Title)	FM #: (PD&E FM#)	
Project Limits:	(NEPA Logical Termini/PD&E Study limits)	ETDM #:	
		FAPN #:	
		Attachment	
1) Provide a brief description of the project purpose			
2) Briefly Describe Alternative being advanced (i.e., existing facility, within existing right-of-way, proposed typical section, etc.)			
3) Has alternative been presented to public			
		yes/no	
4) Identify what advanced design is requested and reasons for developing the preferred alternative to a higher level of detail. (ie 30% design, additional survey, etc)			
5) Summarize commitments that affect the findings and/or design, if any			
		Project Commitment Record	
6) Is Planning Consistency Form complete?			
		yes/no	
7) Indicate if additional design is necessary to make or support findings or permitting as appropriate. (including but not limited to the examples below)			
a) Section 106			
b) Section 4(f)			
c) USFWS			
d) NMFS			
e) Concurrent 404b(1)			
f) Concurrent state ERP			
g) Concurrent USCG Bridge Permit			
** Undertaking these activities prior to a NEPA decision is at the risk of the FDOT. FHWA will not be committed to a record of decision or funding of an alternative. **			
FDOT Name:		Date:	Phone #:
FDOT Signature:		Email:	
Project is approved for preliminary engineering:			
Additional information required:		Explain:	
FHWA Signature:		Date:	

WHAT IS CONTEXT SENSITIVE SOLUTIONS?

Topic No.: 000-650-002-a

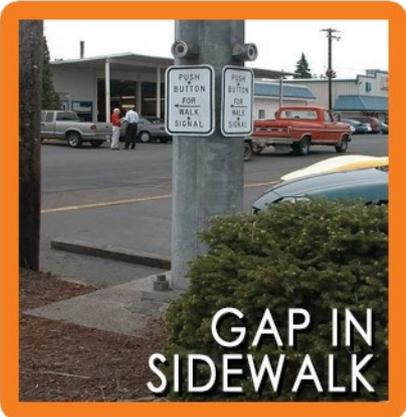
It is the policy of the Florida Department of Transportation (FDOT) to use a CSS approach on transportation projects.

By definition, Context Sensitive Solutions (CSS) is an approach to resolving transportation challenges by considering a community's unique characteristics, values and goals.



THIS APPROACH SEEKS TO BALANCE SAFETY AND MOBILITY WITH LOCAL PRIORITIES

THIS IS NOT CSS



PRESERVING AND ENHANCING RESOURCES



AESTHETICS

Attractive design elements contribute to the visual appeal of a transportation project. These features should be exciting as stand alone objects and should complement their surroundings.



HISTORY

The preservation of historic features is important to a community's unique past. These features should be included in ways that highlight their significance.



ENVIRONMENT

Air and water quality, endangered species, animal habitats, landscapes, and vegetation all deserve special consideration. Road projects should respect the natural environment.



SCENIC VIEWS

Striking views appeal to our senses and emotions. Scenic landscapes cause us to develop emotional attachments to distinctive places.



GATEWAYS

Entry monuments greet residents and visitors to a community or jurisdiction. They introduce an area's name without distracting travelers.

CSS CHALLENGES

- **COORDINATION**
- **SCHEDULING**
- **CONSTRUCTION COST**
- **LONG TERM OPERATION AND MAINTENANCE**
 - Lighting
 - Landscaping

◆ **EDUCATE**

- Get Involved - become part of the planning process
- Contact MPO
- Contact City/County
- Contact local representatives
- Support project and dedicate funding

◆ **COORDINATE**

- Involve all members of a community: residents, business owners, local officials and environmental agencies. It is important for these stakeholders to stay involved throughout the entire design process.

APPROACH TO CSS

- ◆ **Understand Community's Vision**
- ◆ **Balance the Needs of the Community with the Transportation Needs**
- ◆ **Conceptual Design / Determine Constraints**
- ◆ **Involve the Public and Local Stakeholders**
- ◆ **Team Approach to Design**



THINKING BEYOND THE PAVEMENT

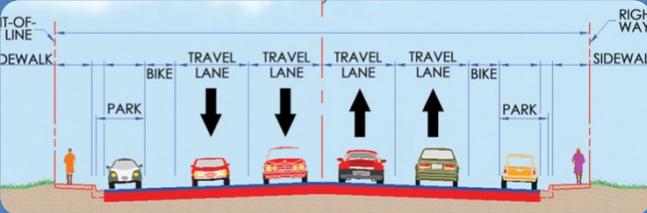


ON-STREET BICYCLE LANES



CURB EXTENSIONS

- IMPROVES VISIBILITY
- SHORTENS PEDESTRIAN CROSSING DISTANCE



TRAFFIC CALMING

- IN CERTAIN AREAS, NARROWING TRAVEL LANES MAY BE APPROPRIATE



LANDSCAPED ISLANDS

- COMBINED WITH ON-STREET PARKING WHERE RIGHT-OF-WAY IS LIMITED

THINKING BEYOND THE PAVEMENT

Shared Use Paths

Used by pedestrians, joggers, skaters, bicyclists, and equestrians



PATH WIDTHS

Wider sidewalks provide space for outdoor cafes, events, etc.

DESIGNS

Combine with other aesthetic elements : decorative lighting, landscaping, others

PEDESTRIAN AMENITIES

- Benches, public art, plazas, etc.
- Creates a sense of community

THINKING BEYOND THE PAVEMENT



BUS STOP AND AMENITIES

- Stable, level and unobstructed landing pad for special needs users
- Far-side bus stops (stops located directly after the intersection) result in fewer traffic delays, improves sight distance and causes fewer conflicts
- Sheltered benches protect users

THINKING BEYOND THE PAVEMENT

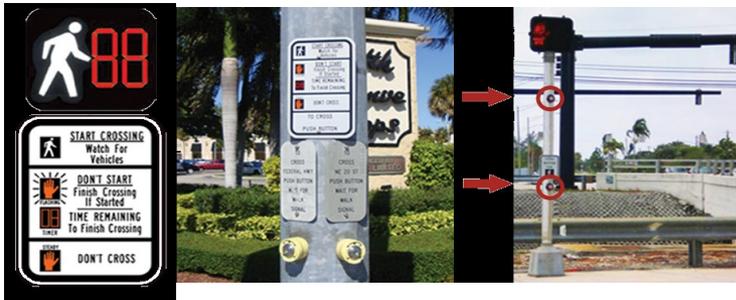


MIDBLOCK CROSSINGS

- May be needed when there is significant pedestrian crossing demand and distances between intersections are great
- An engineering study is required

PEDESTRIAN SIGNALS

- Indicates time remaining for both pedestrians and drivers alike
- In equestrian areas, users should be able to reach push button without dismounting from their horse



CROSSINGS

- Alternative paving treatments such as patterned / textured pavement may be used (architectural pavers are not recommended on State Highway Systems)



FOR MORE INFORMATION

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References:

FDOT PD&E Manual

- *Available at:*

<http://www.dot.state.fl.us/emo/pubs/pdeman/pdeman1.shtm>

Questions



SOME ACRONYMS...

SEIR – State Environmental Impact Report

CE – Categorical Exclusion

EA – Environmental Assessment

EIS – Environmental Impact Statement

VEIR – Value Engineering Information Report

USACE – US Army Corp of Engineers

WMD – Water Management District

NMFS – National Marine Fisheries Services

WER – Wetland Evaluation Report

ESBA – Endangered Species Biological Assessments

EFH – Essential Fish Habitat

CRAS – Cultural Resources Assessment Survey