



Financial Management Number:
432639-6-22-01

Federal Aid Project Number:
0202-054-P

Efficient Transportation
Decision Making
Number: 14230

Project Development & Environment (PD&E) Study

SR 90 (SW 8th Street and SW 7th Street)

From SR 9/SW 27th Avenue to 5/US-1/Brickell Avenue

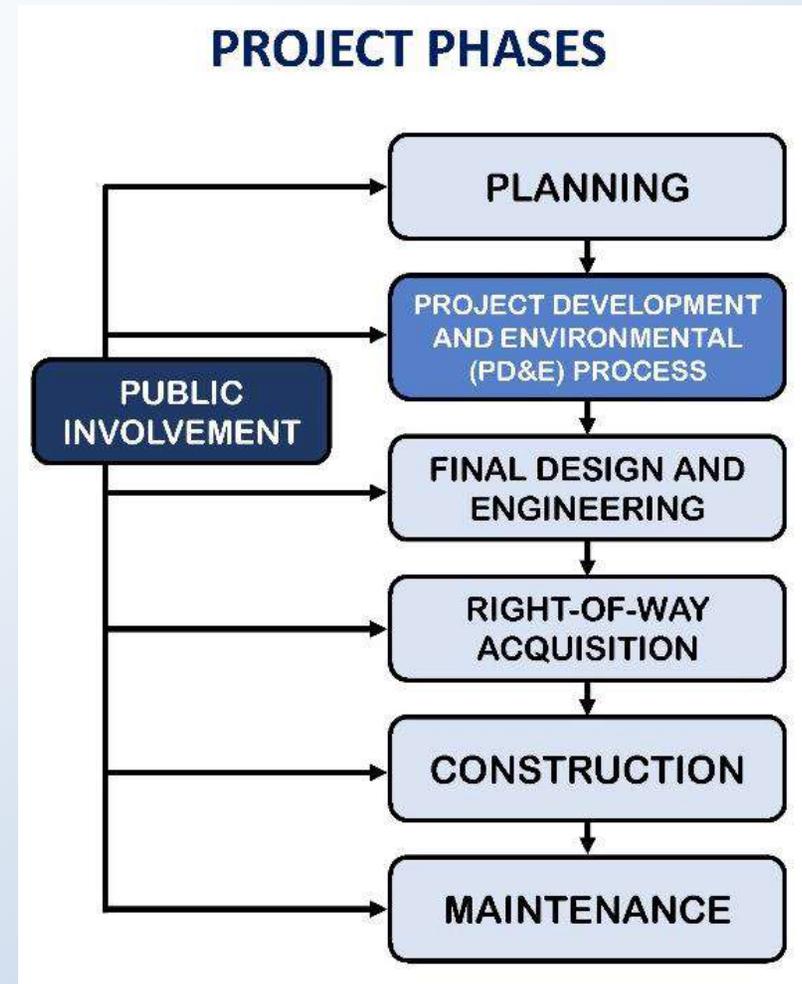
November 17, 2016

Presentation Outline

- Introduce the Project
- Outline the Study Process
- Project Discussion

Project Development & Environment (PD&E) Study

The objective of a PD&E Study is to develop viable engineering solutions that address the purpose and need for the project, incorporate community and agency input, and minimize effects to the natural and social environment.



PD&E Study Process



Study Area



From SR 9/SW27th Avenue to SR 5/US-1/Brickell Avenue

Study Area

SIX NEIGHBORHOODS

West Flagler

Shenandoah

Little Havana

The Roads

Brickell

Riverside



Study Area

STATE HISTORIC HIGHWAYS

- SW 8th Street/Calle Ocho
From the Palmetto Expressway (SW 74th Avenue) to Brickell Avenue
- Brickell Avenue
From the Miami River south to SE 25th Road



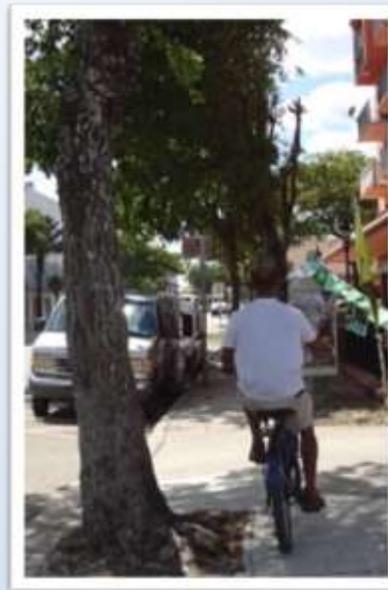
Purpose and Need

- Safety
 - Improve Safety

Crash data collected for 2011 to 2014
Crash data for 2015 will be collected

Data analyzed yearly by:

- Crash Type
- Severity
- Lighting Conditions
- Surface Conditions
- Weather Conditions
- Day of the week & time



Purpose and Need

- Traffic Operations

- Improve traffic operations and multimodal level of service

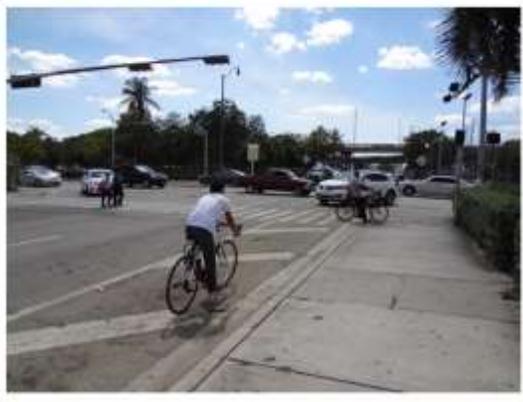
Substantial growth in transportation demand is anticipated through 2040 – 0.89% to 1.9% annually.

Note: Multimodal level of service (LOS) is a measure used to evaluate all modes of transportation (automobile, pedestrian, bicycle, and transit) in order to assess the efficiency of the transportation facility. A LOS A being the best and LOS F being the worst.



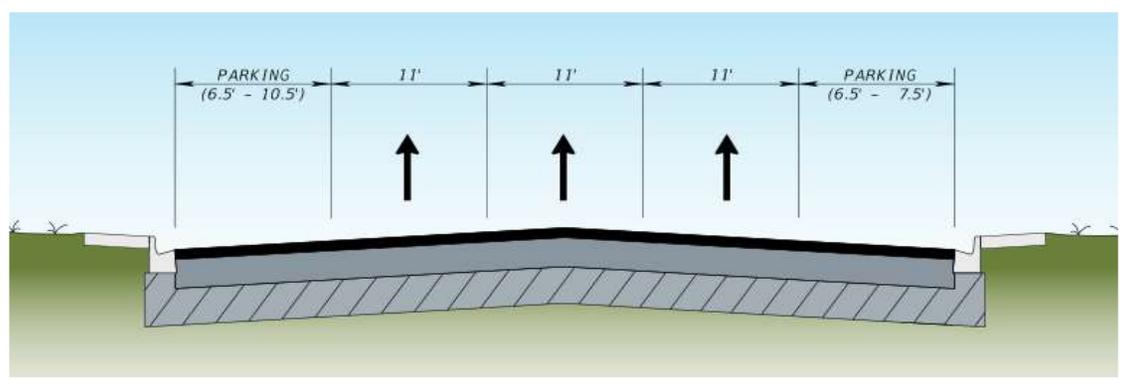
Purpose and Need

- Social Demands and Economic Development
 - Improve access to urban central business districts
- Modal Interrelationships
 - Improve multimodal connectivity

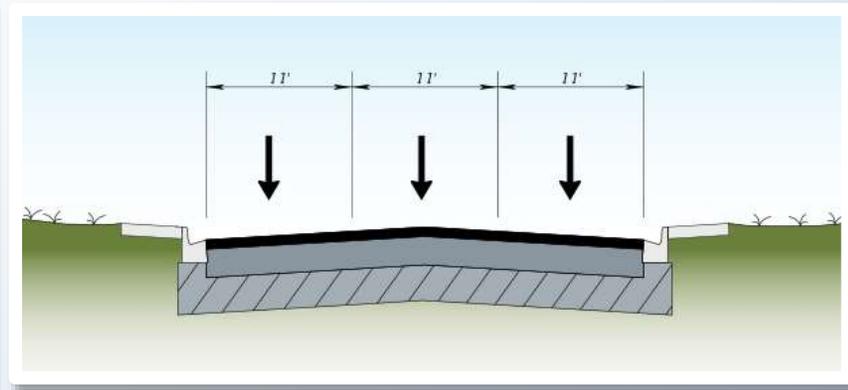


EXISTING CONDITIONS

ROADWAY



SW 8th Street



SW 7th Street



EXISTING CONDITIONS

STRUCTURES

- I-95 southbound over Miami River - 870356
 - I-95 northbound over Miami River - 870453
 - I-95 northbound over SW 1st Avenue - 870451
-
- Pre-stressed AASHTO beams
 - No loading restrictions
 - High sufficiency rating

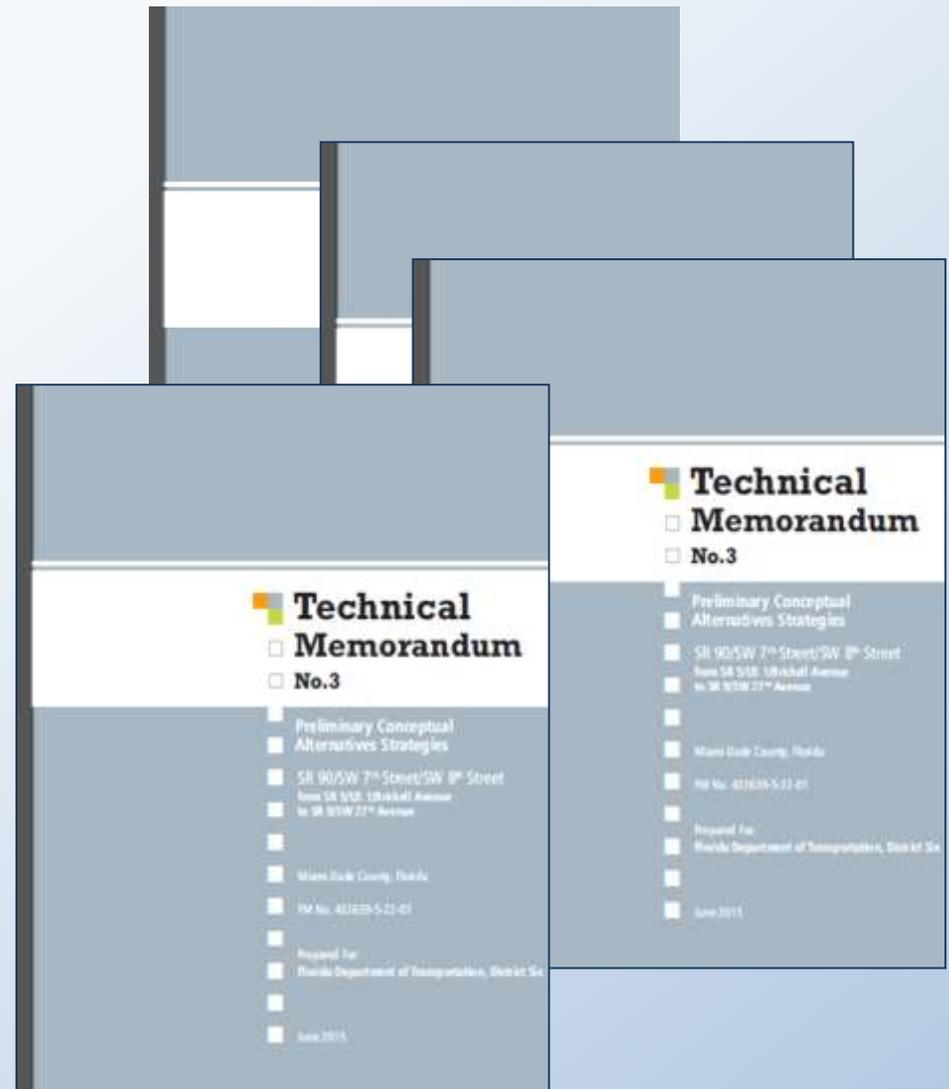


Previous Planning Study

■ Feasibility Study-

Completed June 2015

SR 90 from SR 5/Brickell Avenue to
SR 9/SW 27th Avenue

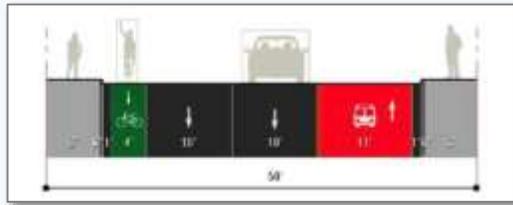


Previous Feasibility Study

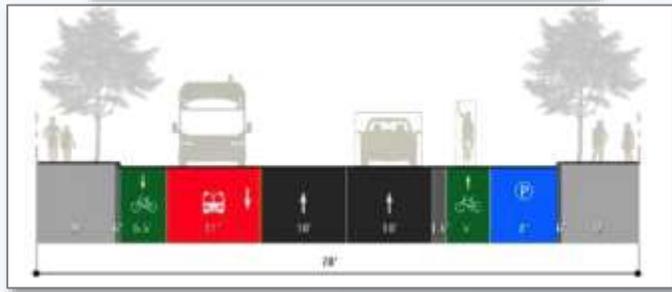
PRELIMINARY BUILD SCENARIOS – SW 7TH/SW 8TH STREETS

2 Lanes + Transit

SW 7TH
Street

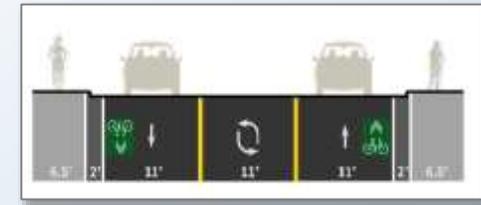


SW 8TH
Street

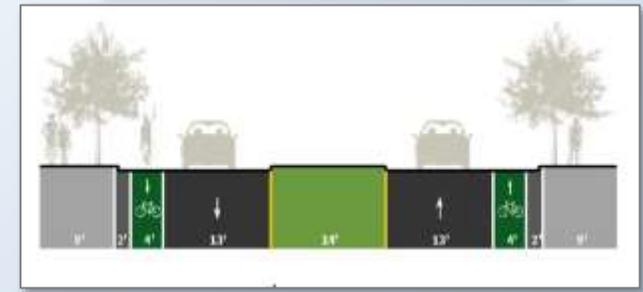


2 Way

SW 7TH
Street



SW 8TH
Street



Previous Feasibility Study

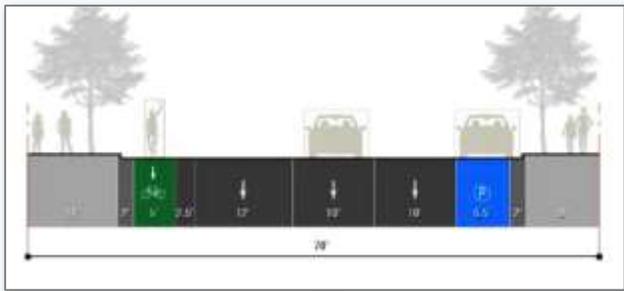
PRELIMINARY BUILD SCENARIOS – SW 7TH/SW 8TH STREETS

3 Lanes Reversed

SW 7TH
Street



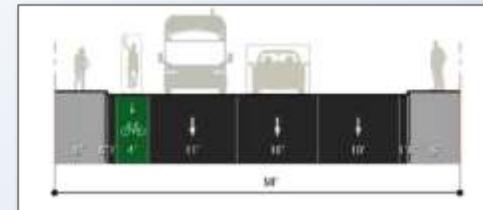
SW 8TH
Street



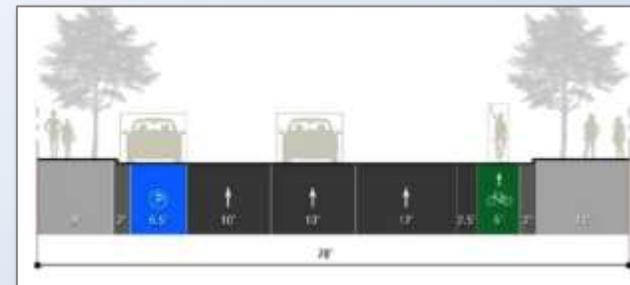
➡ Mixed Traffic Flow Direction

3 Lane Alternative

SW 7TH
Street



SW 8TH
Street

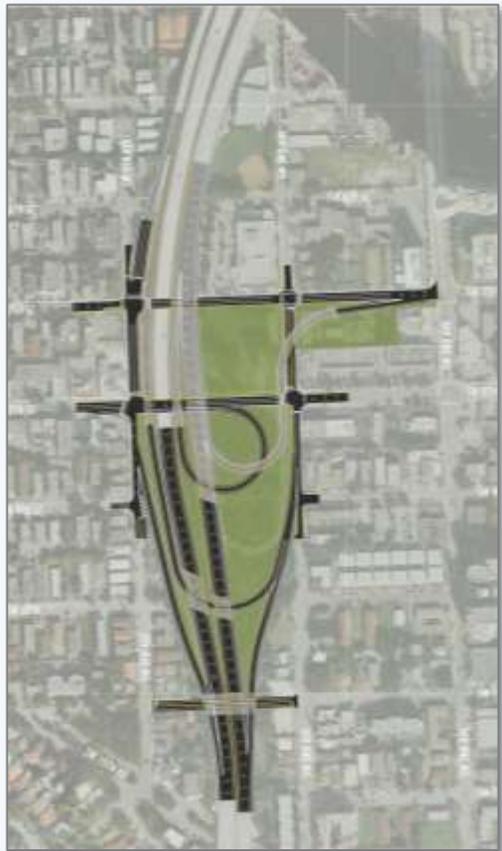


➡ Mixed Traffic Flow Direction

Previous Feasibility Study

PRELIMINARY BUILD SCENARIOS – I-95 INTERCHANGE

Alternative 1



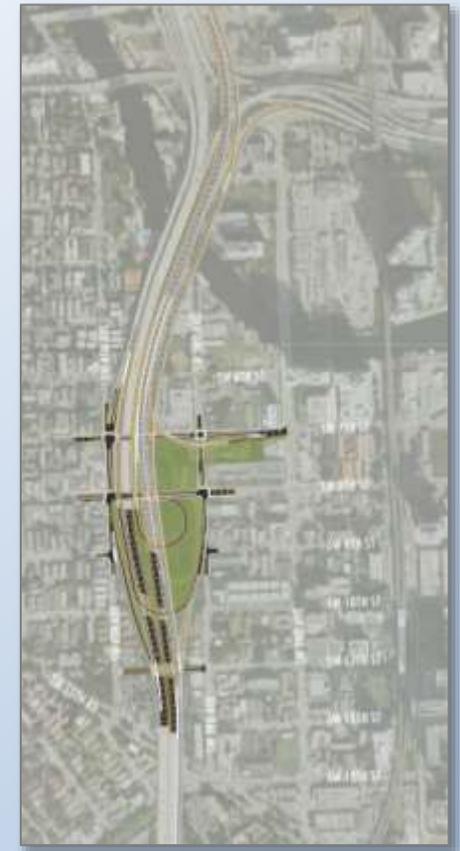
Alternative 2



Alternative 3



Alternative 4



PD&E Study

STUDY COMPONENTS

- Engineering
- Environmental
- Public Involvement



Engineering – Complete Streets

A street where the entire right-of-way is planned, designed and operated for all modes of transportation and all users regardless of age and ability.

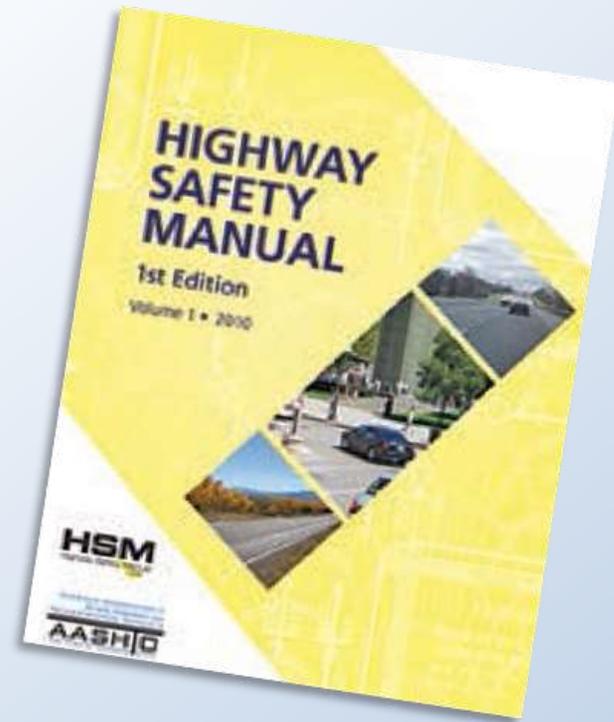
- ADA accessible sidewalks with frequent and safe crossings
- Bicycle lanes
- Pedestrian lighting and accessible pedestrian signals
- Special bus lanes
- Comfortable and accessible public transportation stops
- Landscape curb extensions
- Roundabouts
- On-street parking



Engineering – Safety Analysis

Crash Analysis

- Highway Safety Manual
- Crash prediction procedures
- Analysis of Crash Types
- Calculation of Safety Ratio
- Identification of High Crash Locations
- Development of Mitigation Measures



Engineering – Safety Analysis

Crash Statistics – SW 8th Street

SW 8th Street from SW 27th Avenue to Brickell Avenue		Number of Crashes Year				4 Year Total Crashes	Mean Crashes Per Year	%
		2011	2012	2013	2014			
CRASH TYPE	Rear End	100	143	147	144	534	134	28.1%
	Head On	1	2	0	1	4	1	0.2%
	Angle	86	114	115	131	446	112	23.5%
	Left Turn	10	10	13	8	41	10	2.2%
	Right Turn	0	7	2	4	13	3	0.7%
	Sideswipe	85	97	121	112	415	104	21.9%
	Backed Into	5	1	4	7	17	4	0.9%
	Pedestrian	9	15	20	10	54	14	2.8%
	Bicycle	6	4	7	5	22	6	1.2%
	Fixed Object	8	6	9	2	25	6	1.3%
	Other Non Fixed Object Collisions	14	21	22	17	74	19	3.9%
	Parked Motor Vehicle	11	20	18	16	65	16	3.4%
	Non-Collisions	0	4	2	2	8	2	0.4%
	Others	58	63	57	68	246	62	13.0%
	Total Crashes	382	487	519	511	1899	475	100.0%

Engineering – Safety Analysis

Crash Statistics – SW 7th Street

SW 7th Street from Brickell Avenue to SW 27th Avenue		Number of Crashes Year				4 Year Total Crashes	Mean Crashes Per Year	%
		2011	2012	2013	2014			
CRASH TYPE	Rear End	54	75	96	144	369	92	24.6%
	Head On	0	0	0	1	1	0	0.1%
	Angle	94	164	132	131	521	130	34.7%
	Left Turn	2	2	8	8	20	5	1.3%
	Right Turn	0	2	1	4	7	2	0.5%
	Sideswipe	48	82	73	112	315	79	21.0%
	Backed Into	3	5	1	7	16	4	1.1%
	Pedestrian	10	4	6	10	30	8	2.0%
	Bicycle	0	1	3	5	9	2	0.6%
	Fixed Object	4	6	3	2	15	4	1.0%
	Other Non Fixed Object Collisions	3	1	3	17	24	6	1.6%
	Parked Motor Vehicle	3	1	3	16	23	6	1.5%
	Non-Collisions	5	2	0	2	9	2	0.6%
	Others	24	40	35	68	167	42	11.1%
Total Crashes		247	384	361	511	1503	376	100.0%

Engineering – Safety Analysis

Total Crashes by Year – SW 8th Street



Engineering – Safety Analysis

Total Crashes by Year- SW 7th Street



Engineering – Traffic Analysis

Traffic Data:

- Review of TMCs from the Feasibility Study
- Calculation of Traffic Growth Rates
- Collection of Recent Signal Timing Plans



Travel Demand Forecasting

Arterial Traffic Analysis
(ARTPLAN and Synchro)

Interchange Modification
Report (IMR)
(Synchro and VISSIM)

Engineering – Traffic Analysis

Travel Demand Forecasting

Review and Development of Existing Year (2015)
AADT, and AM and PM Peak Hour Volumes



Subarea Model



Design Year (2040) AADT, and AM/PM Peak Hour Volumes
(Using SERPM 7 and TmTool/TURNS 5 tools)

Interim Year (2030) AADT, and AM/PM Peak Hour Volumes
(Interpolated from 2015 and 2040 Traffic Volumes)

Opening Year (2020) AADT, and AM/PM Peak Hour Volumes
(Interpolated from 2015 and 2040 Traffic Volumes)

Engineering – Traffic Analysis

Arterial Traffic Analysis (ARTPLAN)

Multimodal Segment LOS

Automobile

Bicycle

Pedestrian

Transit

Intersections

- Traffic Operations:
Cycle Length, Thru g/C, and % Left/Right Turns
- Geometry:
Thru/Left Turn Lanes and Left Turn Storage

Segments

- Traffic Factors:
K, D, PHF, % H. Veh.
- Geometry:
Length, # Thru Lanes, and Median Type
- Traffic Operations:
AADT, Posted Speed, FFS
- Parking Activity

- Auto Lane Width
- Bike Pavement Condition
- Bike Lane/Side Path Configuration

- Sidewalk Configuration

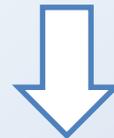
- Bus Frequency
- Passenger Load Factor
- Amenities
- Bus Stop Type

Engineering – Traffic Analysis

Arterial Traffic Analysis (Synchro)

Input Data:

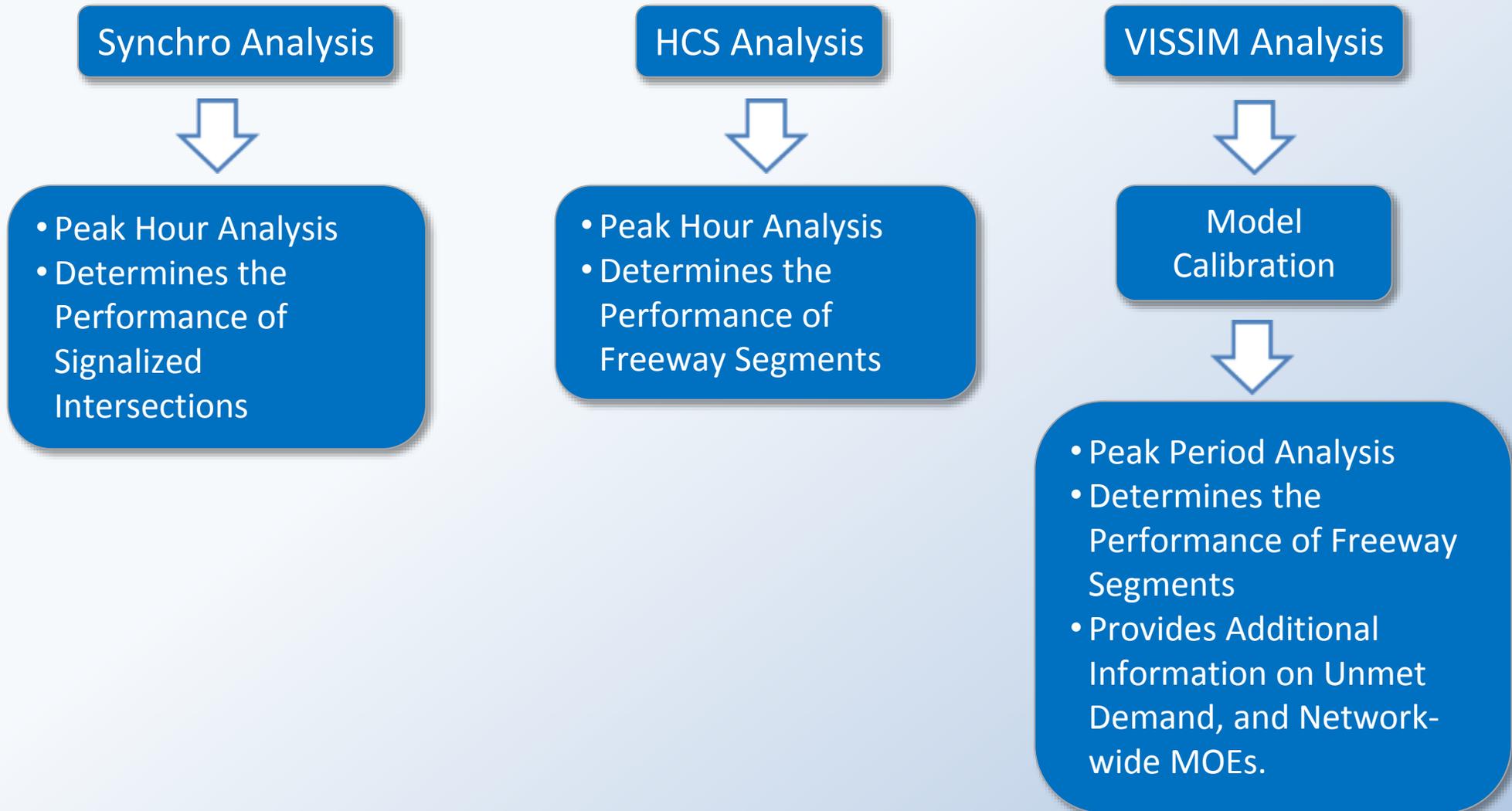
- Detailed signal timing plans
- *Roadway Geometry (# of lanes, left/right turn storage lanes)*
- *Traffic Data (peak hour volumes for existing and future conditions)*
- *Traffic Factors (PHF, % T)*



Automobile Segment and Intersection LOS

Engineering – Traffic Analysis

Interchange Modification Report (IMR)

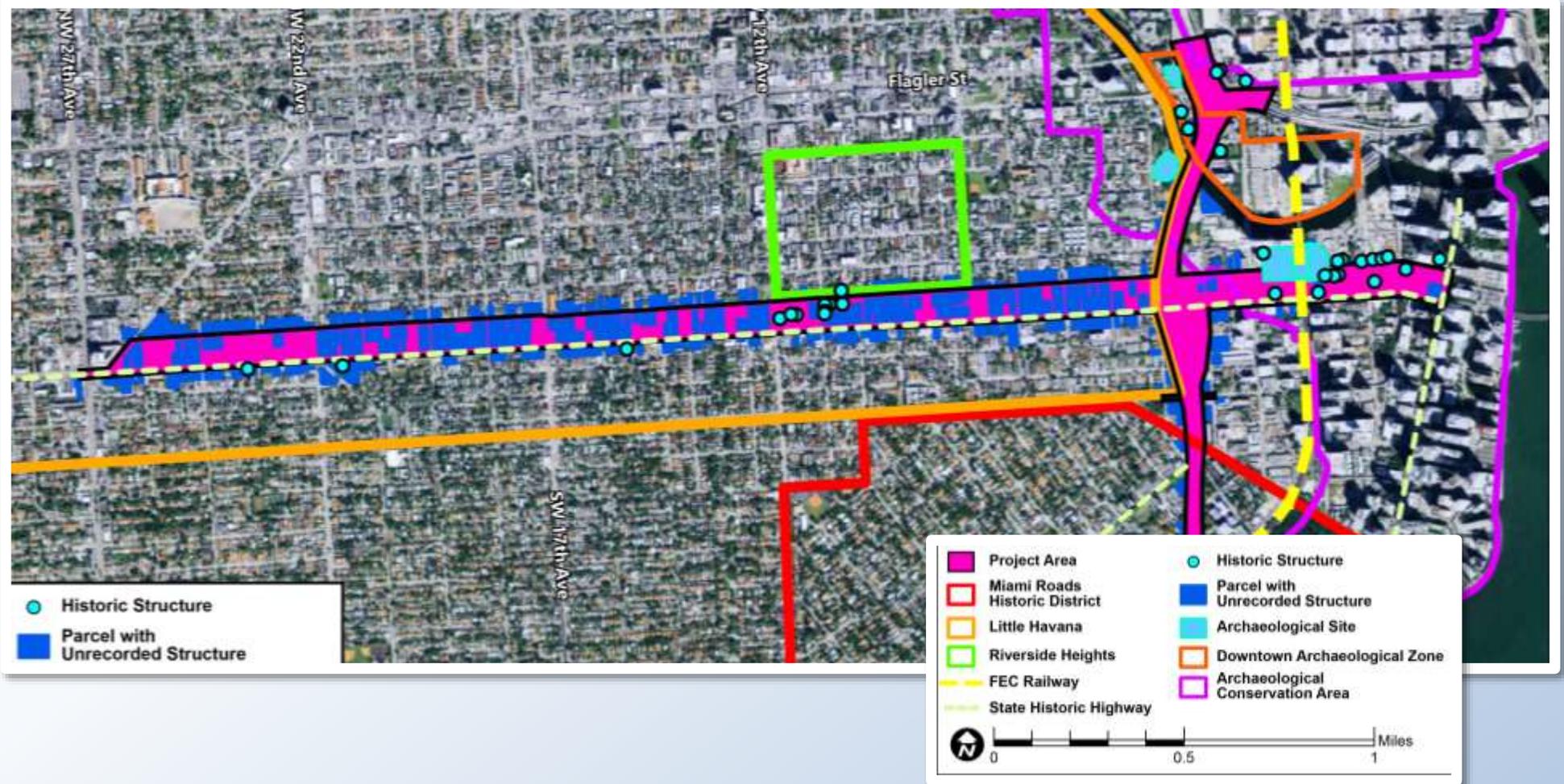


Environmental Analysis

- **CULTURAL RESOURCES**
- **PHYSICAL EFFECTS**
Contamination, Air Quality, Noise
- **NATURAL RESOURCES**
Water Quality and Wetlands



Environmental- Cultural Resources



Environmental- Cultural Resources

CULTURAL RESOURCES

Historic Resources within the Area of Potential Effect

- 33 previously recorded buildings
- One previously recorded historic District: Miami Roads
- Two potential historic districts: Riverside Heights/Little Havana
- Over 400 unrecorded historic buildings
- National Register – eligible FEC railway
- Two state historic highways: Calle Ocho and Brickell Avenue



Environmental

Potential Section 4(f) Resources

Section 4(f) is part of federal law that requires special effort be made to protect publicly owned parks and recreational lands.

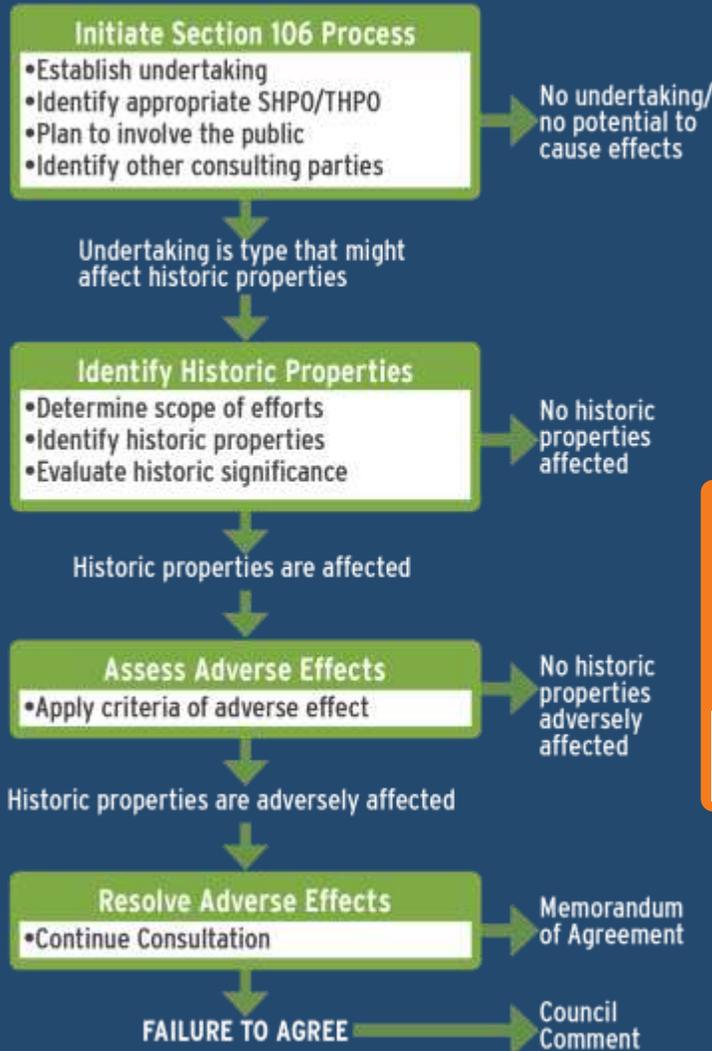


Environmental

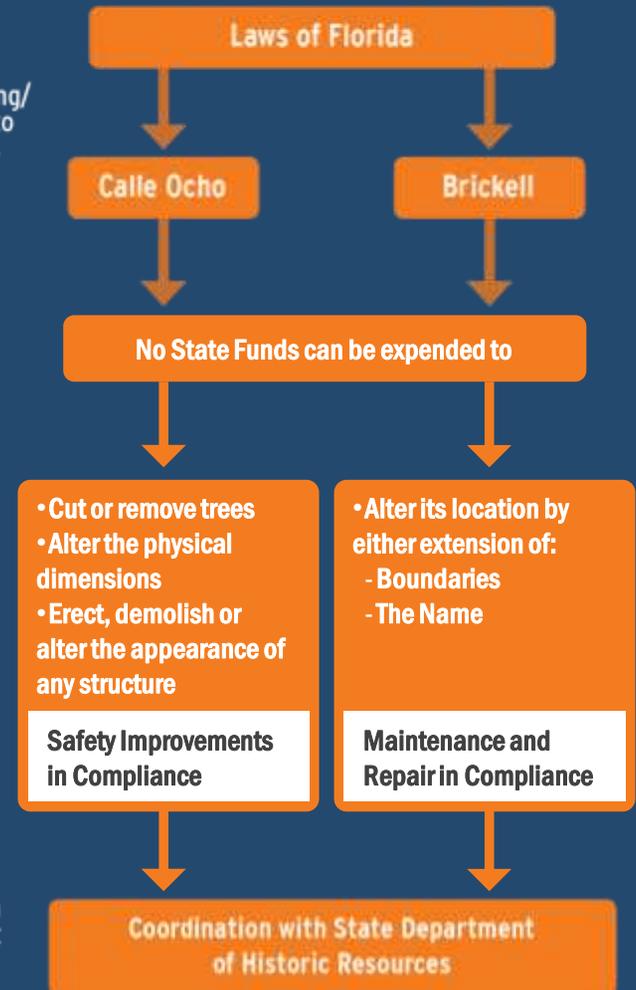
4(F)



SECTION 106 PROCESS



HISTORIC HIGHWAYS



Environmental - Physical Effects

CONTAMINATION IMPACT ASSESSMENT

Potential contamination sites:

- Gas stations, dry cleaners, light industry
- Typical for dense complex urban environment

Main area of concern: I-95 Interchange

- Subsurface construction may impact soil and/or groundwater
- Evaluate underground utility work, stormwater pond locations, ROW acquisition

AIR QUALITY

- Air Quality Technical Memorandum

NOISE

- Noise Study Report



Environmental – Natural Resources

WATER QUALITY

- Biscayne Bay is a sole source aquifer

SPECIAL DESIGNATIONS

- Biscayne Bay Aquatic Preserve;
Outstanding Florida Waters

(Note: Includes Miami River in vicinity of project – ETDM Moderate Degree of Effect, due primarily to proximity to Biscayne Bay)



WETLANDS AND ESSENTIAL FISH HABITAT

- No direct impacts expected

WILDLIFE AND HABITAT

- Assessment of wildlife and habitat will be conducted

Public Involvement

MEETINGS

- Elected Officials/Agencies/Public Kick-off Meeting
- Project Advisory Group (PAG)
- Alternatives Public Workshop
- Public Hearing



PROJECT WEBSITE

- www.fdotmiamidade.com/CalleOchoStudy.html

Questions / Comments

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