



SR 9/I-95 Interchange at 45th Street PD&E Study

Palm Beach County, Florida

FPID No.: 436519-1-22-01 | FAP No.: 0951-682-1 | ETDM No.: 14225

Palm Beach County MPO

October 19, 2017



Presentation Outline

Overview of Planning and Programming

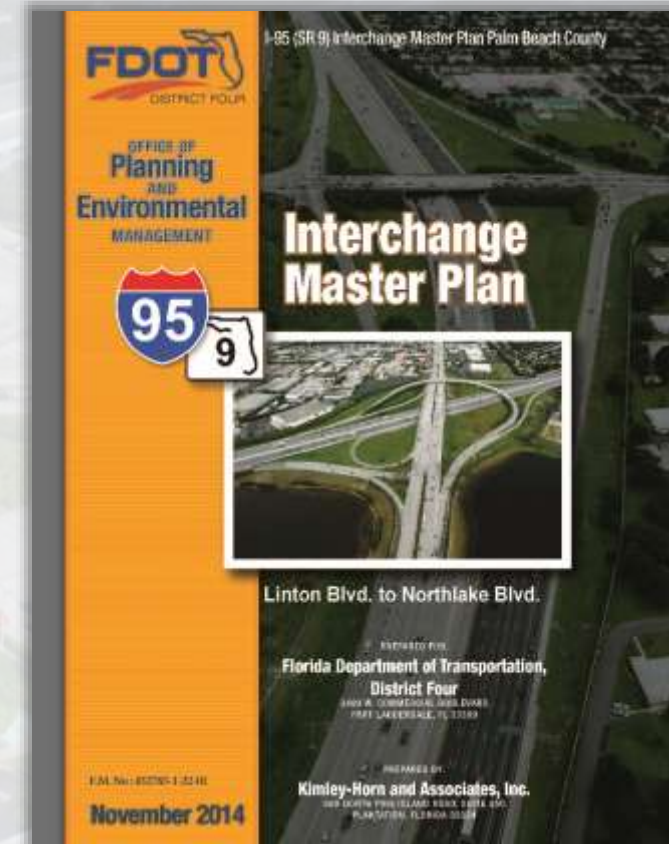
- I-95 Interchange Master Plan
- Strategic Intermodal System (SIS)
- Project Development Process

Overview of the I-95 at 45th Street PD&E Study

- Project Limits:
 - SR 9/I-95: from S of 45th Street to N of 45th Street
 - 45th Street: From Village Boulevard to Congress Avenue
 - Palm Beach County, Florida
- Project Manager
 - Robert Lopes, P.E.

SR 9 (I-95) Interchange Master Plan | Palm Beach County

- Completed in December 2014
- Evaluated 17 interchanges
 - From Linton Boulevard to Northlake Boulevard
- Analyzed interchanges to determine existing and potential future deficiencies
- Coordinated with Local Agencies and MPO
- Identified operational and safety needs
 - Developed short-term improvements
 - Developed long-term conceptual design alternatives
- Facilitated programming of future interchange studies and projects through the SIS program

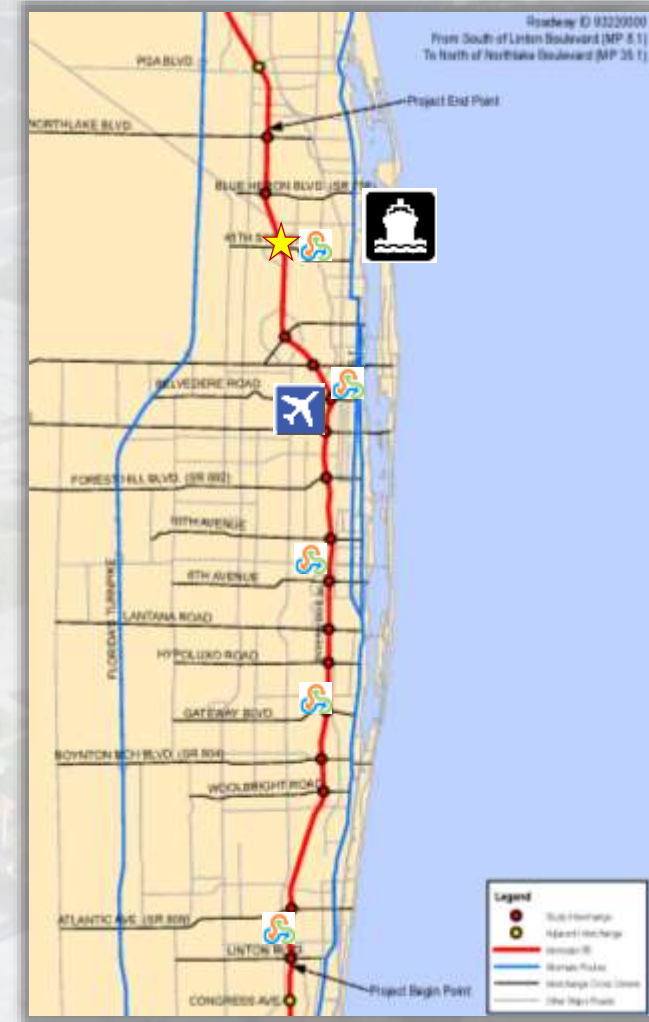


SR 9 (I-95) Interchange Master Plan | Palm Beach County

Study Results

- FDOT incorporated recommendations into:
 - Design Projects
 - PD&E Studies

FDOT programs PD&E Studies and Design Projects based on priority and SIS funding availability.



Strategic Intermodal System (SIS)

- Established by the Florida Legislature in 2003 (F.S. 339.61)
- State Funded Program
- Focuses state resources on transportation facilities most critical to statewide travel, including:
 - ✓ Interstates
 - ✓ Interchanges
 - ✓ Airports
 - ✓ Seaports
 - ✓ Spaceports
 - ✓ Rail
 - ✓ Highways of Interregional Significance
 - ✓ “Last Mile” Connectors
- SIS Planning Documents:
 - ✓ First 5 Year Plan – projects funded in 5 Year work program
 - ✓ Second 5 Year Plan – planned projects years 6-10
 - ✓ SIS Cost feasible Plan – projects projected for years 11-25
 - ✓ SIS Multi Modal Unfunded Needs Plan



Project Development Process Flow Chart



*Categorical Exclusion Type II

Project Study Area



LIMITS:

SR 9/I-95: from S of 45th Street to N of 45th Street
 45th Street: From Village Boulevard to Congress Avenue
 Palm Beach County, Florida

MUNICIPALITIES:

City of West Palm Beach
 Town of Mangonia Park
 City of Riviera Beach

Purpose and Need

Project Purpose:

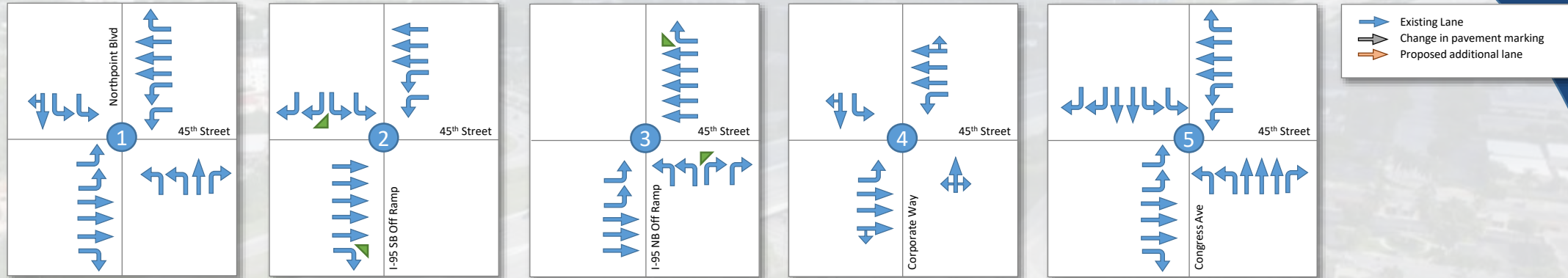
- Identify short-term and long-term needs within the study area;
- Develop design concepts to address traffic spillback onto I-95;
- Improve interchange operations, reduce congestion, and increase safety at the study interchange.

Project Need:

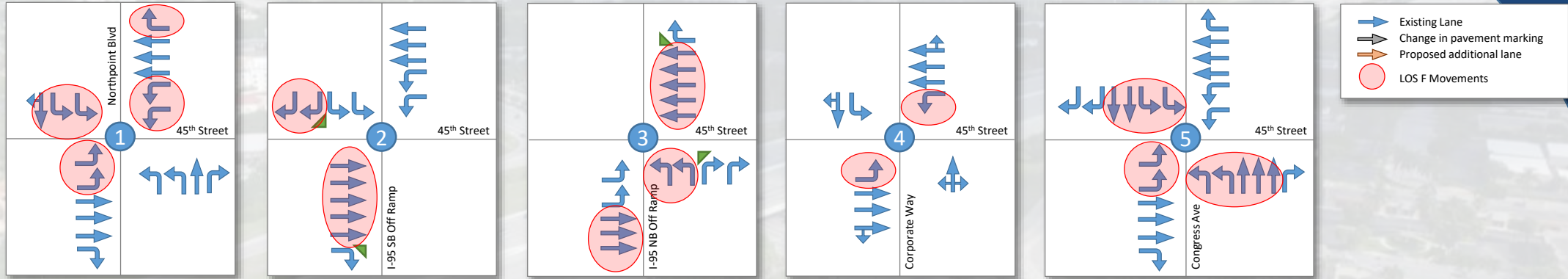
- Alleviate existing and future traffic congestion thereby improving safety at the interchange.



Existing Year Conditions - Lane Configuration, Delay and LOS



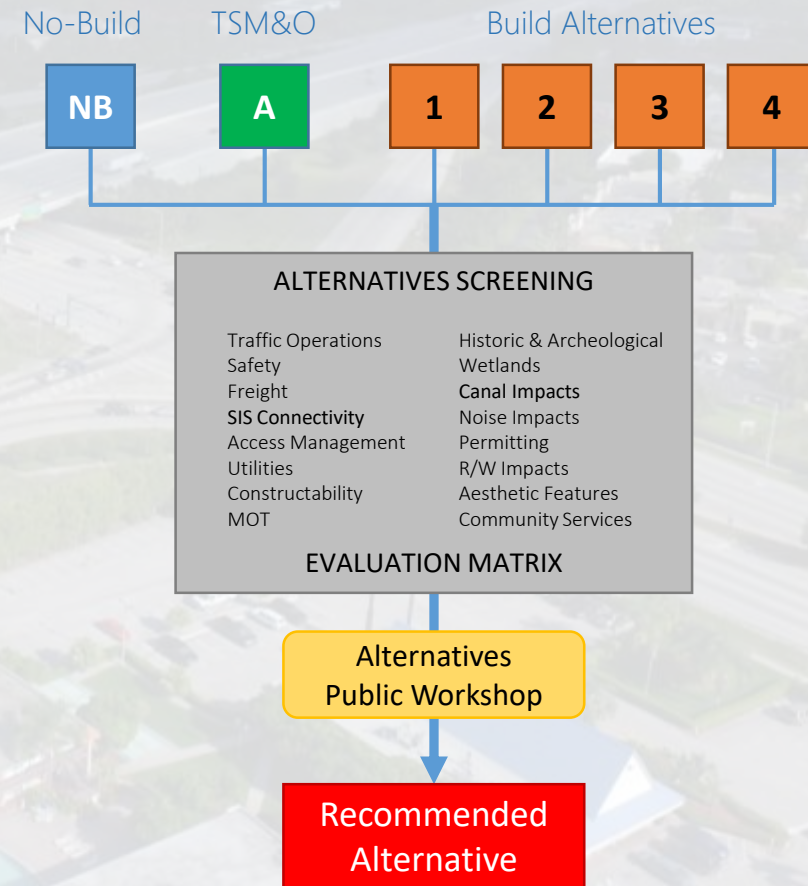
No-Build 2040 Year Conditions - Lane Configuration, Delay and LOS



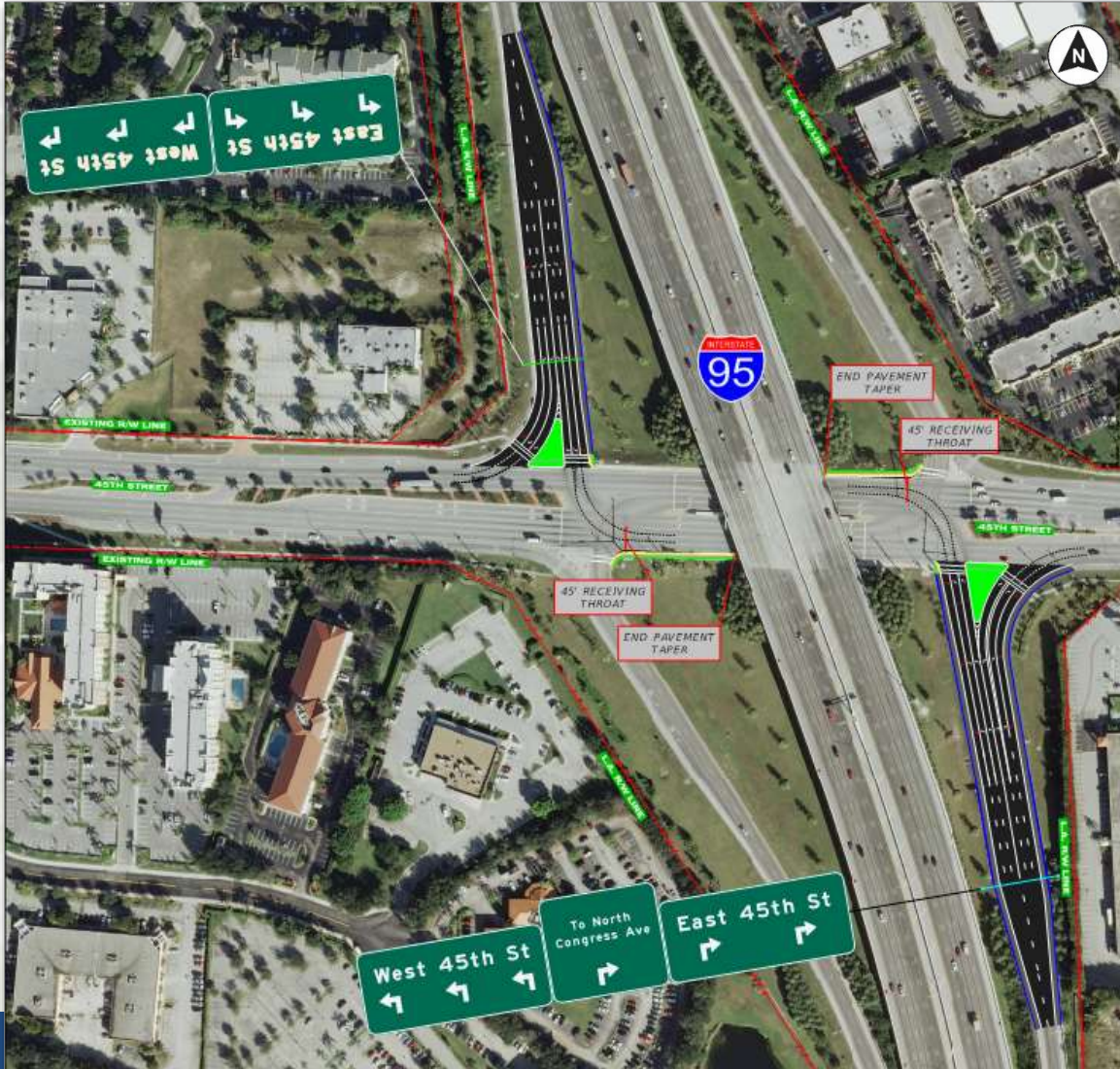
Alternatives Analysis

- **No-Build**
- **Transportation System Management & Operations (TSM&O)**
 - Short Term
 - Open to Traffic in 3-5 Years
 - No Right-of-Way Impacts
 - Lower Cost
- **Build Alternatives**
 - Long Term
 - Open to Traffic in 8-10 Years
 - Ultimate Improvements

Alternatives Evaluation Process



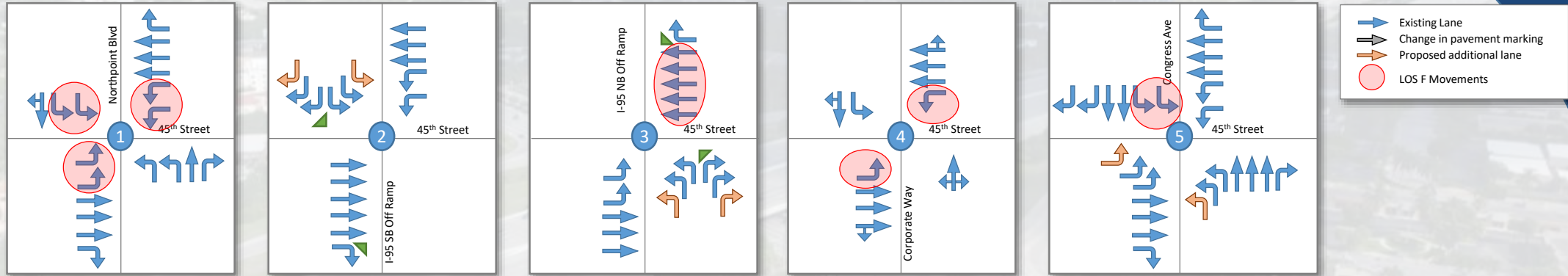
Alternatives Analysis | TSM&O



- Add additional right and left turn lane at the ramp intersections
- Add directional signage on NB off-ramp to North Congress Avenue
- Add one EB and one NB left turn lane at Congress Avenue
- Provide travel information system
- Develop signal system strategies



TSM&O 2040 Year Conditions - Lane Configuration, Delay and LOS



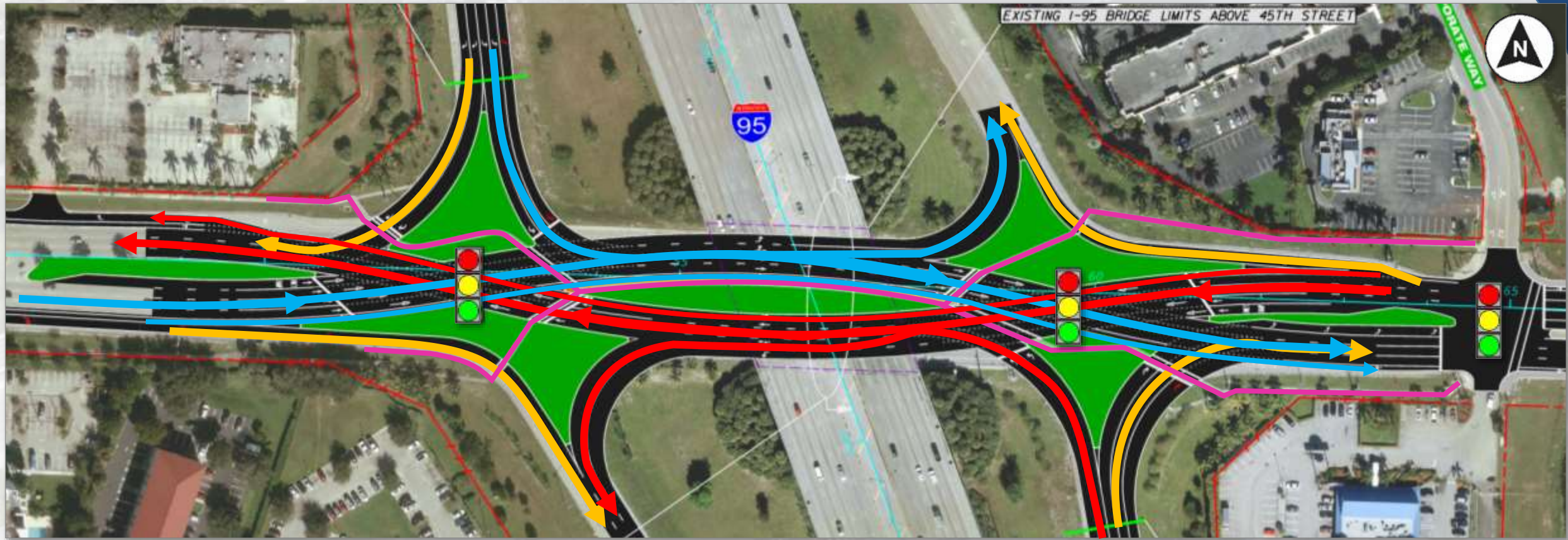
Alternatives Analysis | Alternative 1 – 45th Street Widening



Alternatives Analysis | Alternative 2 – Diverging Diamond Interchange



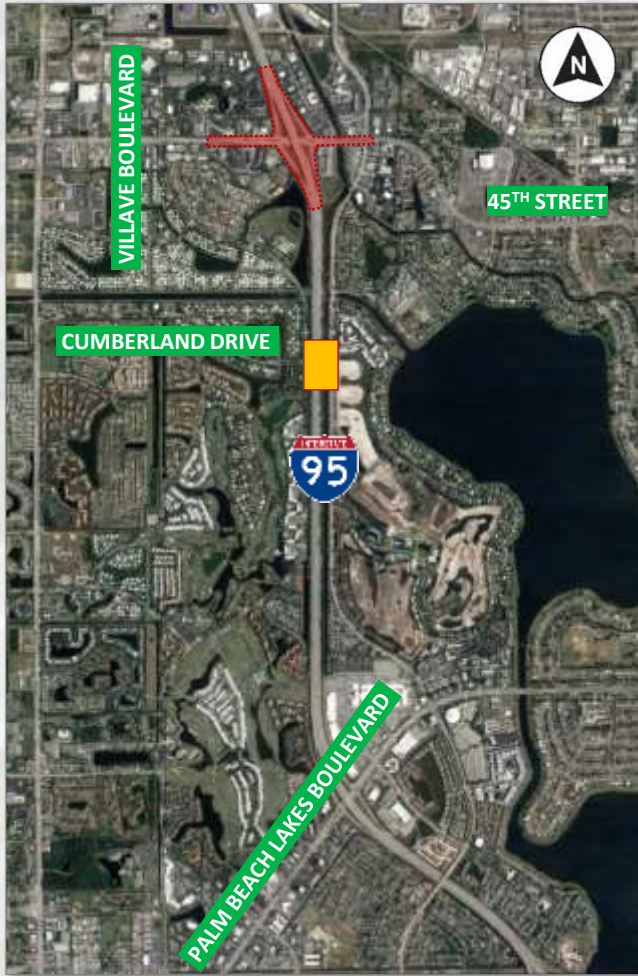
Alternatives Analysis | Alternative 2 – Diverging Diamond Interchange



Alternatives Analysis | Alternative 3 – SR 710 Ramps

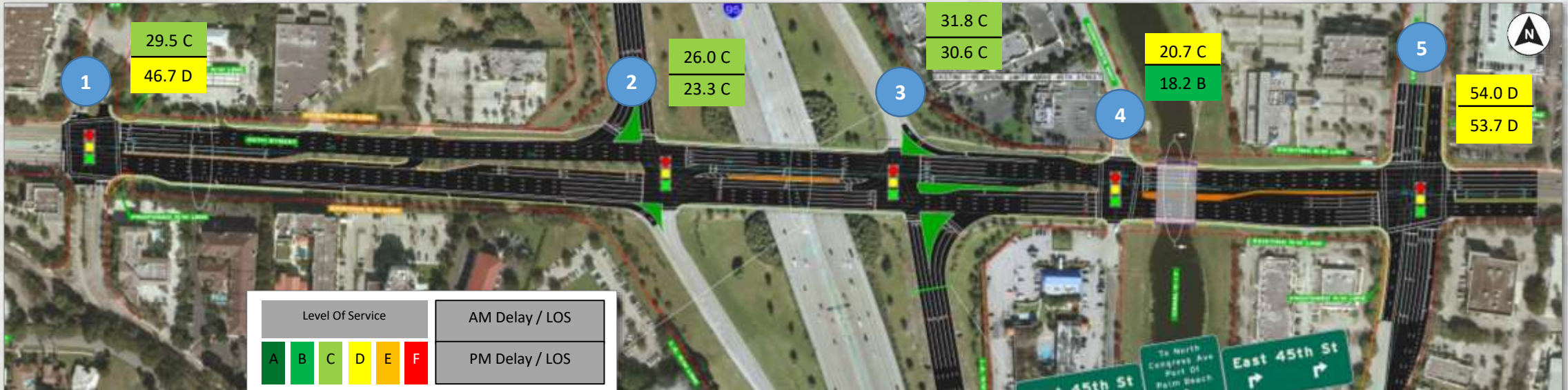
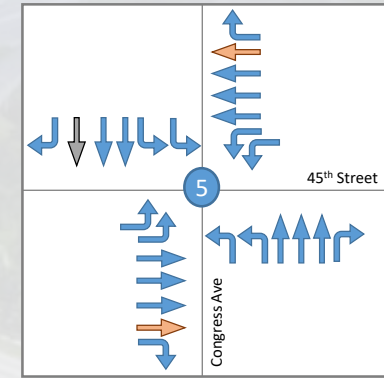
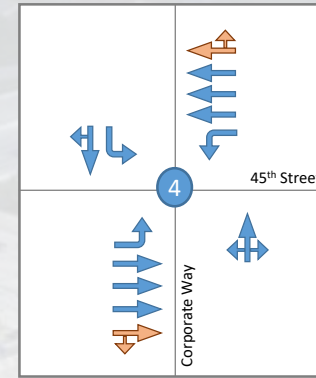
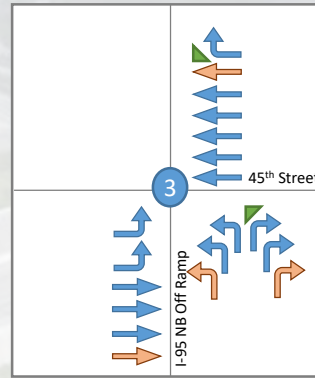
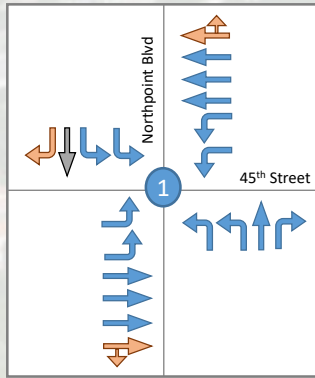
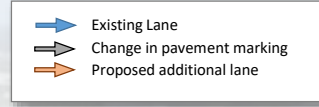


Alternatives Analysis | Alternative 4 – Cumberland Drive Extension



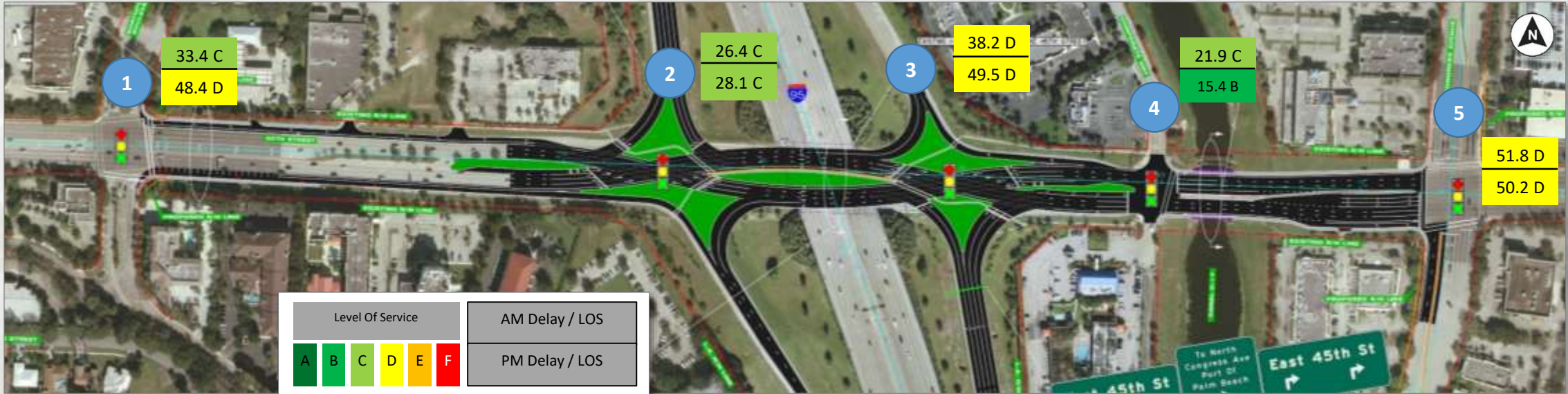
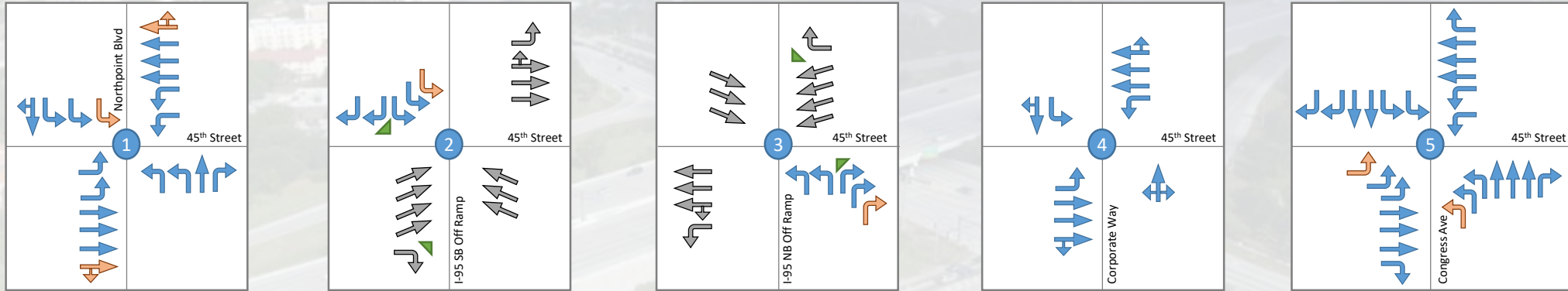
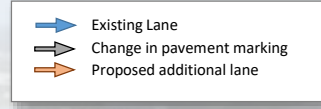
Alternative 1 – 2040 Year Conditions

Lane Configuration, Delay and LOS



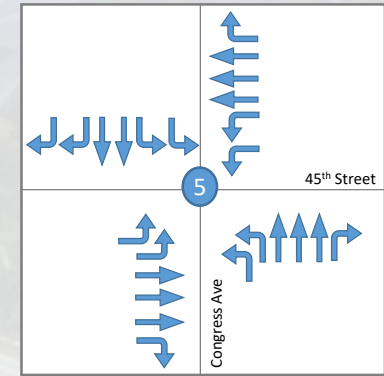
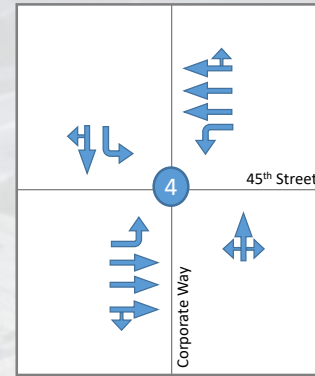
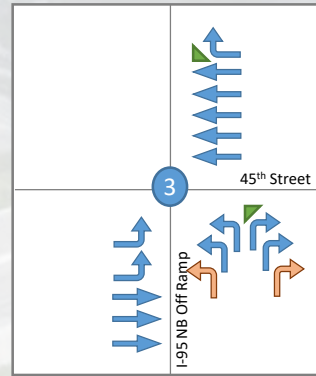
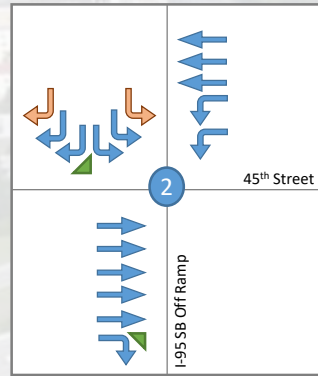
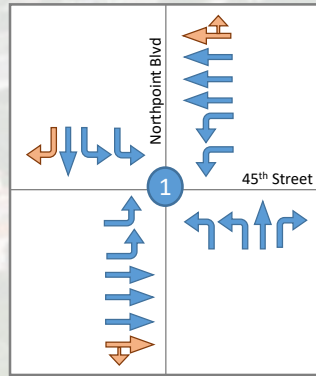
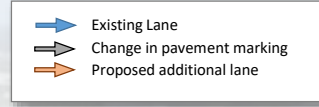
Alternative 2 – 2040 Year Conditions

Lane Configuration, Delay and LOS



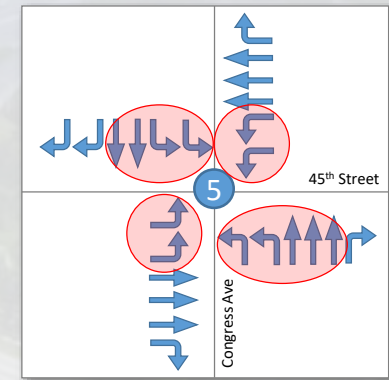
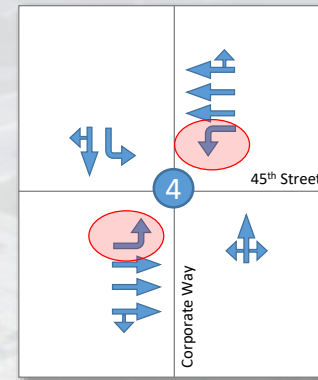
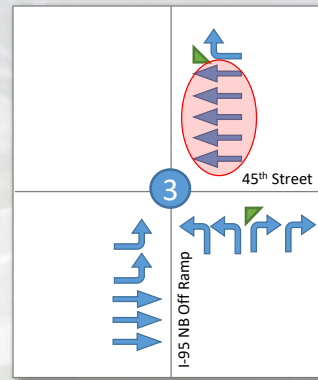
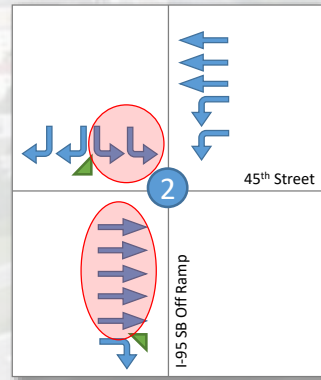
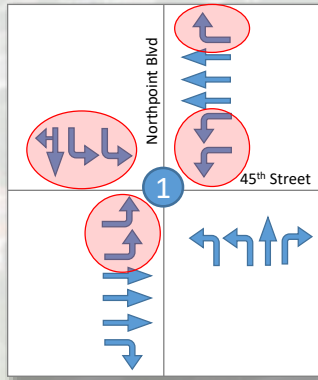
Alternative 3 – 2040 Year Conditions

Lane Configuration, Delay and LOS



Alternative 4 – 2040 Year Conditions

Lane Configuration, Delay and LOS



Alternative Evaluation Matrix

PARAMETERS		NO BUILD	TSM&O	ALT 1	ALT 2	ALT 3	ALT 4
Engineering	Geometric Compliance to Design Criteria	3	3	4	5	4	4
	Access Management	3	3	5	5	1	4
	Multimodal (Transit/Pedestrian/Bicycle)	3	3	4	4	3	4
	Mobility	1	2	5	5	4	4
	Safety Impacts	1	2	4	4	4	4
	Utility Impacts	3	3	2	3	1	1
	Maintenance of Traffic	3	3	5	4	2	1
	Meets Purpose & Need	1	2	5	5	2	2
Social-Economic	Social & Neighborhood Impacts	3	3	4	4	2	1
	Relocation Potential	3	3	4	4	1	3
	Community Services Facilities	3	3	3	3	3	3
	Economic & Employment Impacts	3	3	3	3	3	3
	Public Comments	2	3	4	5	3	1
Environmental	Wetlands and Essential Fish Habitat	3	3	2	3	2	2
	Water Quality and Quantity	3	3	4	4	2	3
	Wildlife and Habitat	3	3	3	3	2	3
	Cultural/Historical/Archeological	3	3	3	3	2	2
	Noise Impacts	3	3	4	4	2	1
	Air Quality	2	2	4	4	3	3
	Contamination	3	3	3	3	2	3
Cost	Engineering/CEI/Construction	3	4	5	5	1	2
	Right-of-Way/Business Damages	3	5	4	4	2	3
SCORE		58	65	84	87	51	57

Preliminary Cost Estimate

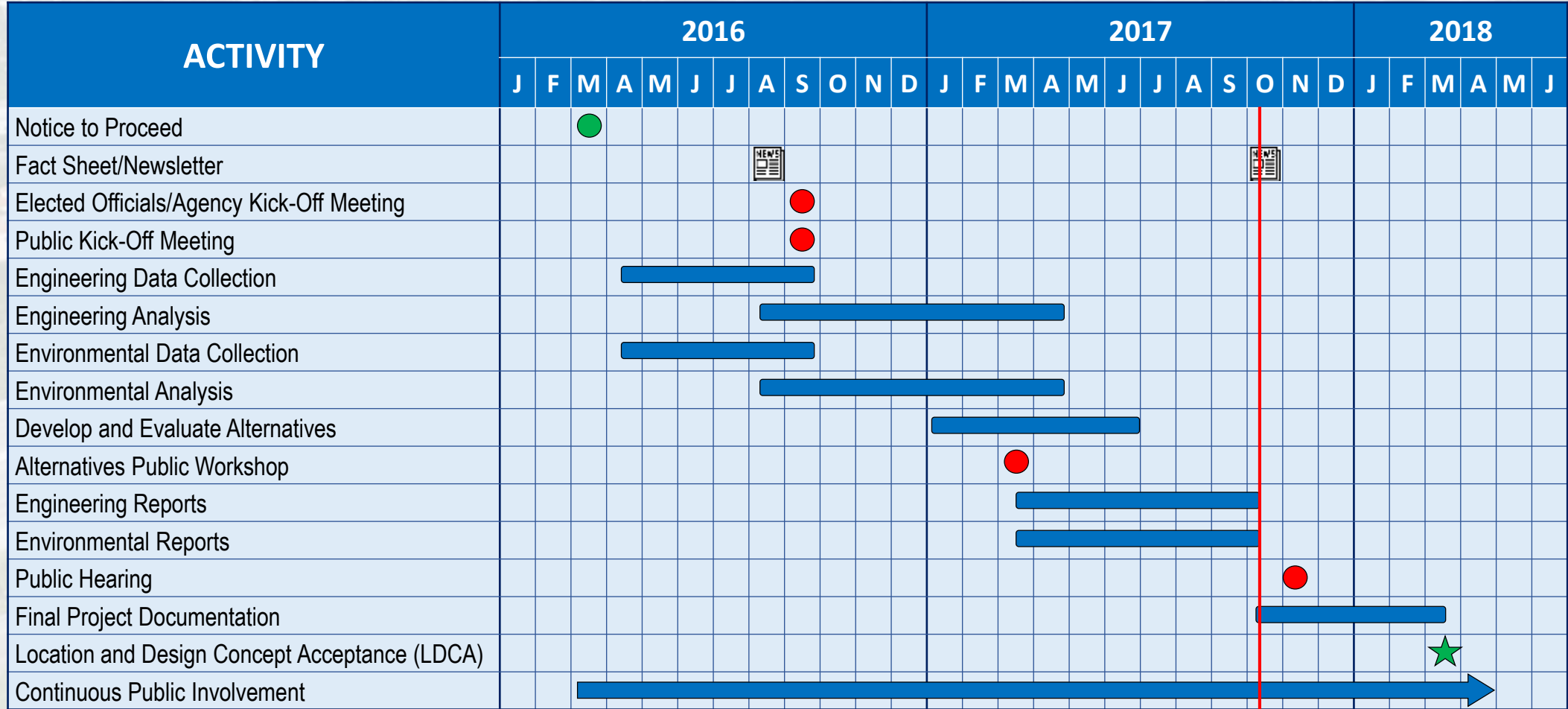
COMPONENT	TSM&O	ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4
Roadway Construction	\$3,880,000	\$9,778,000	\$9,295,000	\$54,207,000	\$26,362,000
Engineering/Design (10% Construction)	\$388,000	\$978,000	\$930,000	\$5,421,000	\$2,636,000
CEI (15% Construction)	\$582,000	\$1,467,000	\$1,394,000	\$8,131,000	\$3,954,000
Right-of-Way Acquisition	\$0	\$2,261,000	\$2,261,000	\$4,581,000	\$2,000,000
TOTAL COST	\$4,850,000	\$14,484,000	\$13,880,000	\$72,340,000	\$34,952,000

Public Involvement

- Agency & Public Kick-Off Meetings — September 13, 2016
- Elected Officials/Agencies Briefings
 - Palm Beach County Engineering
 - Palm Beach County MPO
 - City of West Palm Beach
 - Town of Mangonia Park
 - City of Riviera Beach
- Alternatives Public Workshop — March 28, 2017
- Other Meetings
 - Coordination with City of West Palm Beach & Town of Mangonia Park
 - 45th Street Corridor Summit – Multiagency Discussion
- Public Hearing — November 2, 2017



Summary Schedule



TODAY

Long Range Transportation Plan (LRTP)

- I-95 at 45th Street Interchange Project FM #436519-1
 - Current approval for statewide SIS funds for all phases
 - Work Program FY 2018 – FY 2022 and SIS 2nd Five

Phase	PD&E	Design	ROW	Const
Fiscal Year(s)	2016-2017	2021	2022-2023	2026
Funding ⁽¹⁾	\$1,792,126	\$6,000,000	\$19,516,258	\$80,432,086

Note: (1) Shown in Year of Expenditure (YOE) dollars



THANK YOU

For more information, please call, email or write to:

Robert Lopes, PE

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