



# WEKIVA PARKWAY

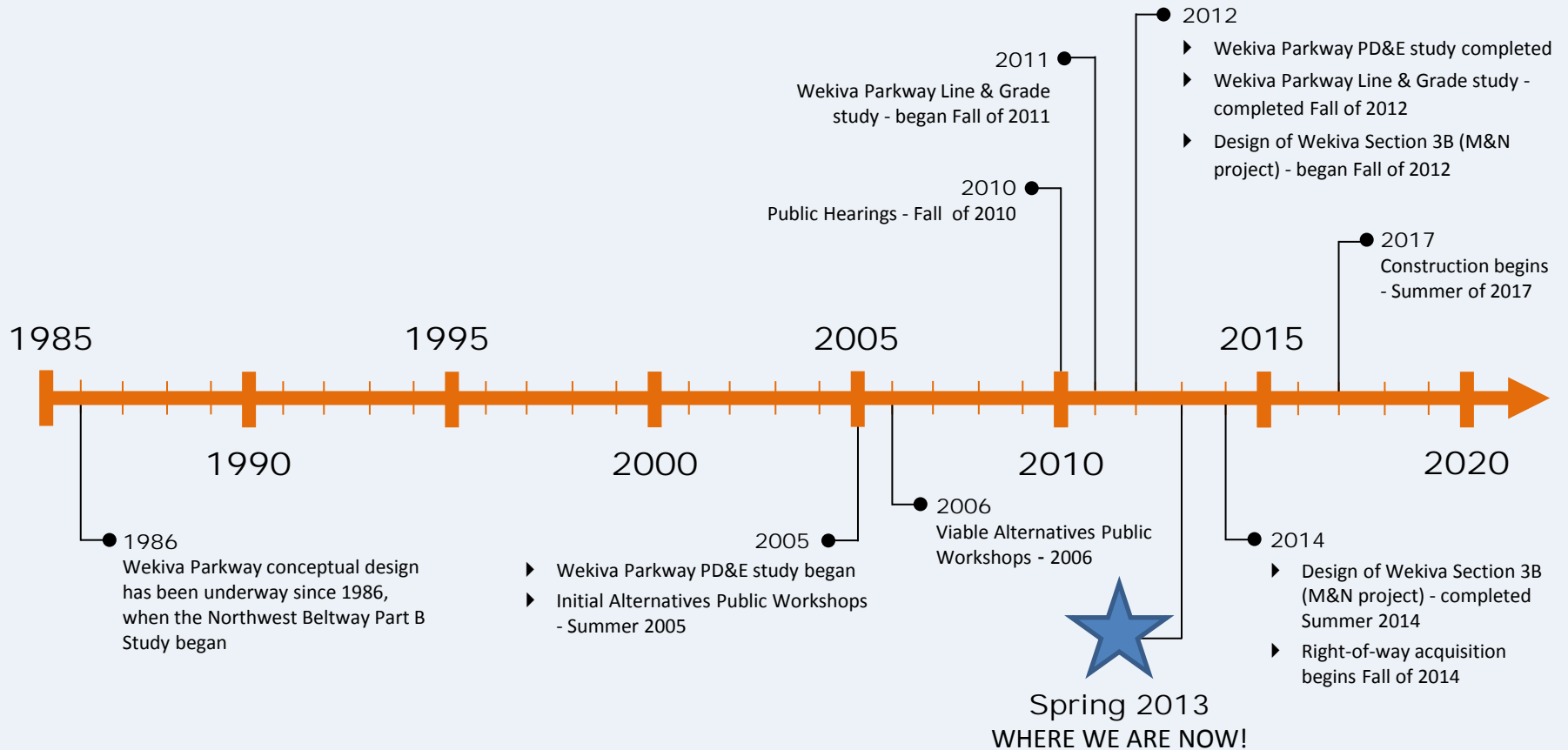
SR 46 at US 441  
Alternatives Analysis

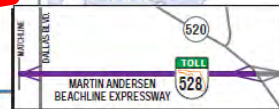
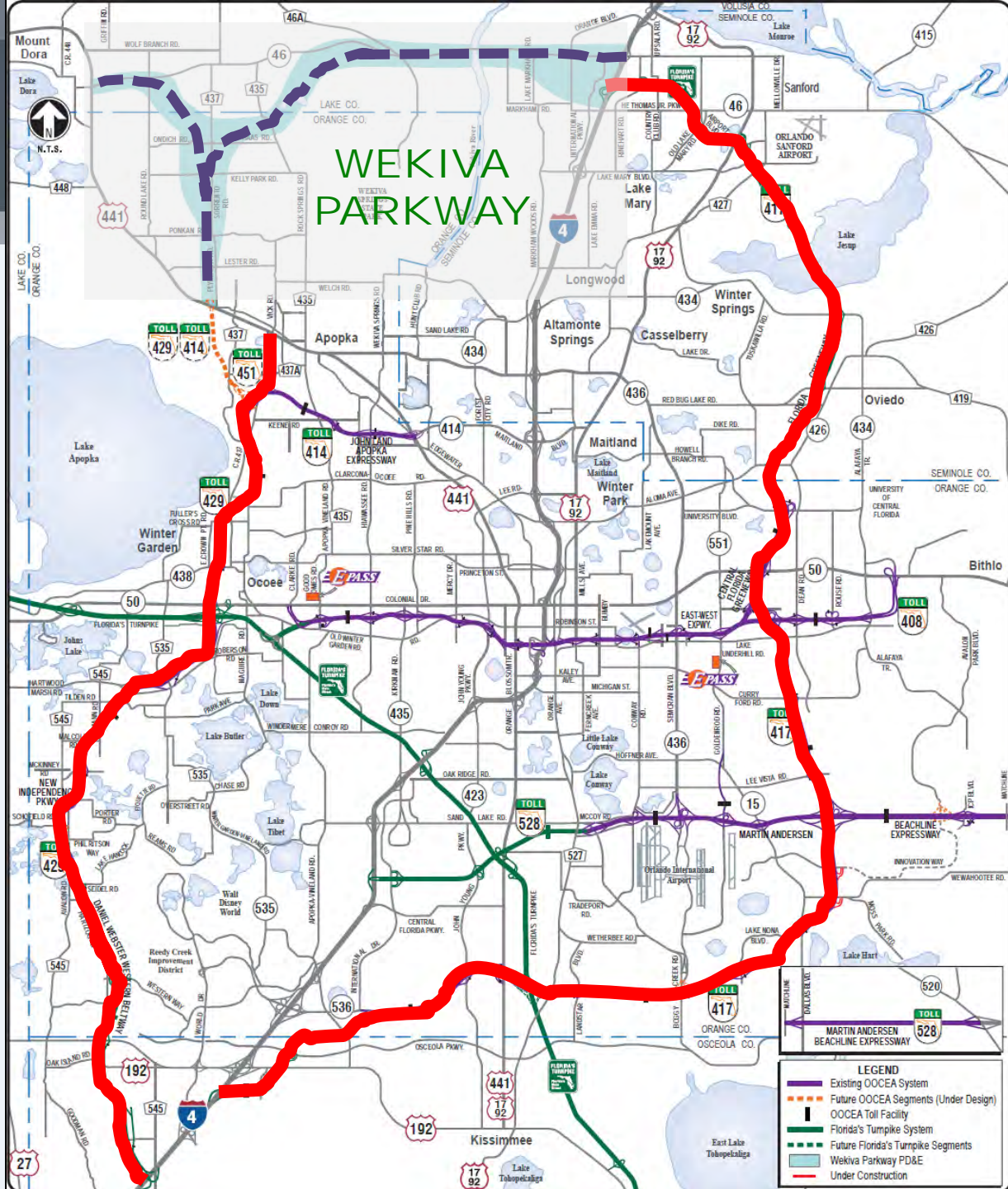
March 5, 2013



moffatt & nichol

# PROJECT HISTORY





- LEGEND**
- Existing OOCEA System
  - Future OOCEA Segments (Under Design)
  - OOCEA Toll Facility
  - Florida's Turnpike System
  - Future Florida's Turnpike Segments
  - Wekiva Parkway PD&E
  - Under Construction

# EVALUATION CRITERIA



# ALTERNATIVES DISCUSSION



- **Existing Condition - Baseline**
- **Grade Separated Intersection with Dual Left Turns**
- **Flipped Grade Separated Intersection with Triple Left Turns**
- **Single Point Urban Interchange**
- **At Grade Intersection with Fly-Over Bridge**

# EXISTING CONDITION



## PROS

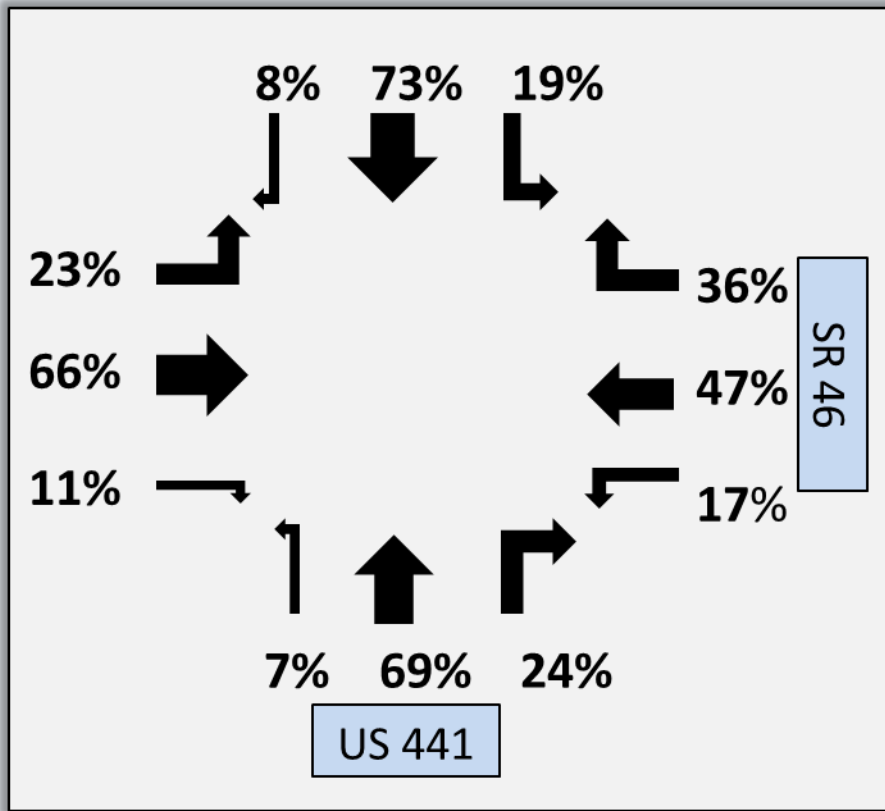
- No costs
- No impacts

## CONS

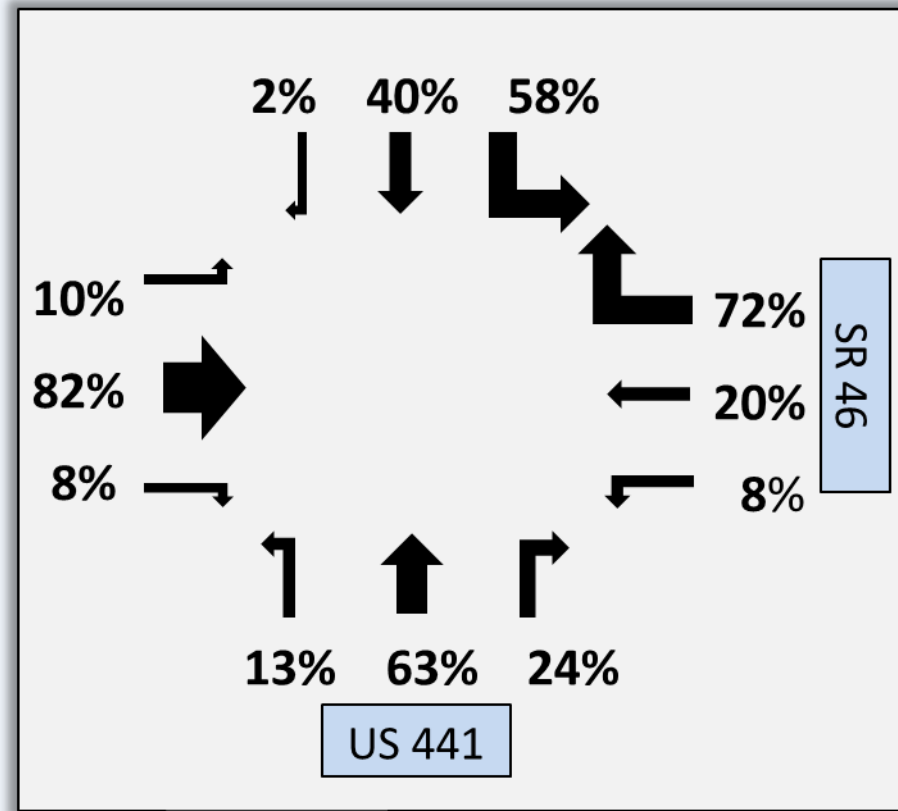
- Traffic fails in opening year (2019)
- Traffic fails in design year (2039)

*Without improvement to the existing configuration, the intersection will exceed capacity in 2019, causing severe traffic congestion*

# Existing Traffic vs. Future

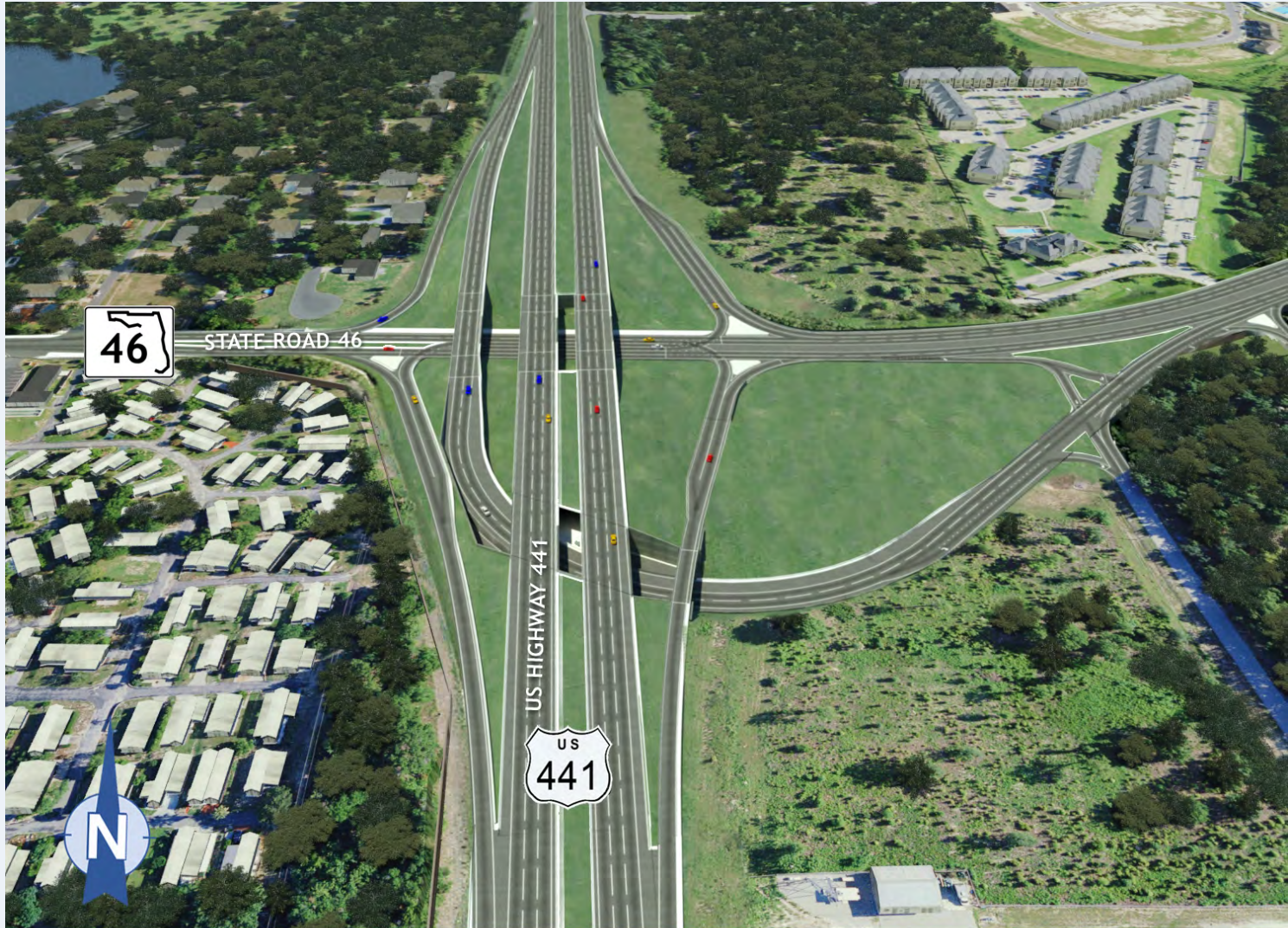


Existing Traffic Movements



Future Traffic Movements

# GRADE SEPARATED INTERSECTION WITH DUAL LEFT TURNS



GRADE SEPARATION INTERSECTION WITH DUAL LEFT TURNS





GRADE SEPARATED INTERSECTION WITH DUAL LEFT TURNS – WESTBOUND VIEW



GRADE SEPARATED INTERSECTION WITH DUAL LEFT TURNS – EASTBOUND VIEW



GRADE SEPARATED INTERSECTION WITH DUAL LEFT TURNS – BIRD'S EYE VIEW

PROS	CONS
<ul style="list-style-type: none"> <li>• Addresses major traffic movement</li> <li>• Minor wetland impacts</li> </ul>	<ul style="list-style-type: none"> <li>• High construction cost</li> <li>• Large R/W impacts</li> <li>• Requires relocation of 6 residences</li> <li>• Traffic fails in design year (2039)</li> </ul>

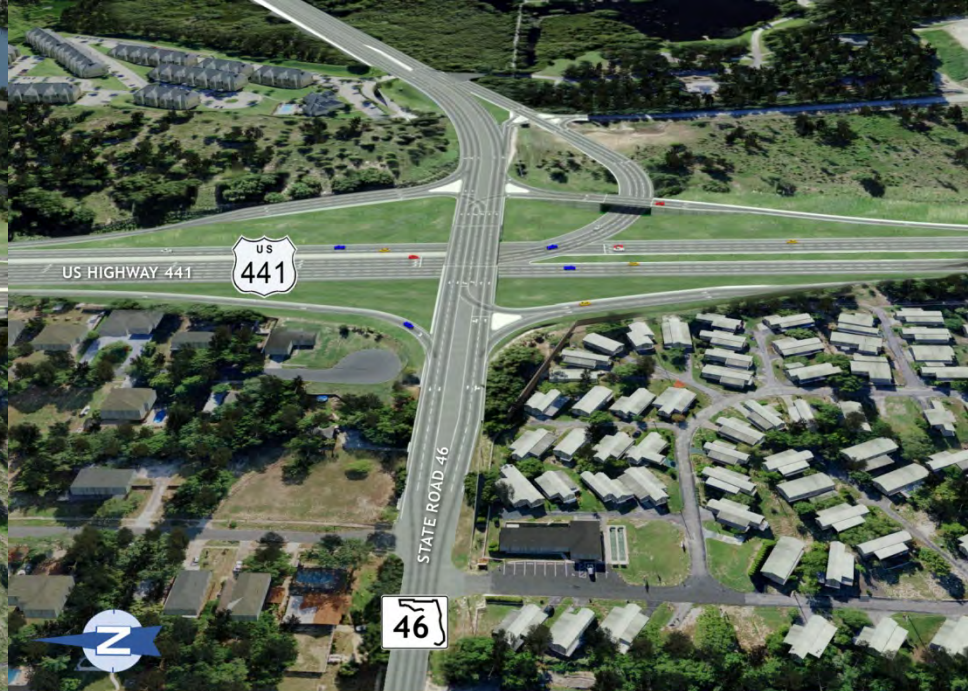
# FLIPPED GRADE SEPARATED INTERSECTION WITH TRIPLE LEFT TURNS



FLIPPED GRADE SEPARATED INTERSECTION WITH TRIPLE LEFT TURNS



FLIPPED GRADE SEPARATED INTERSECTION WITH TRIPLE LEFT TURNS – WESTBOUND VIEW



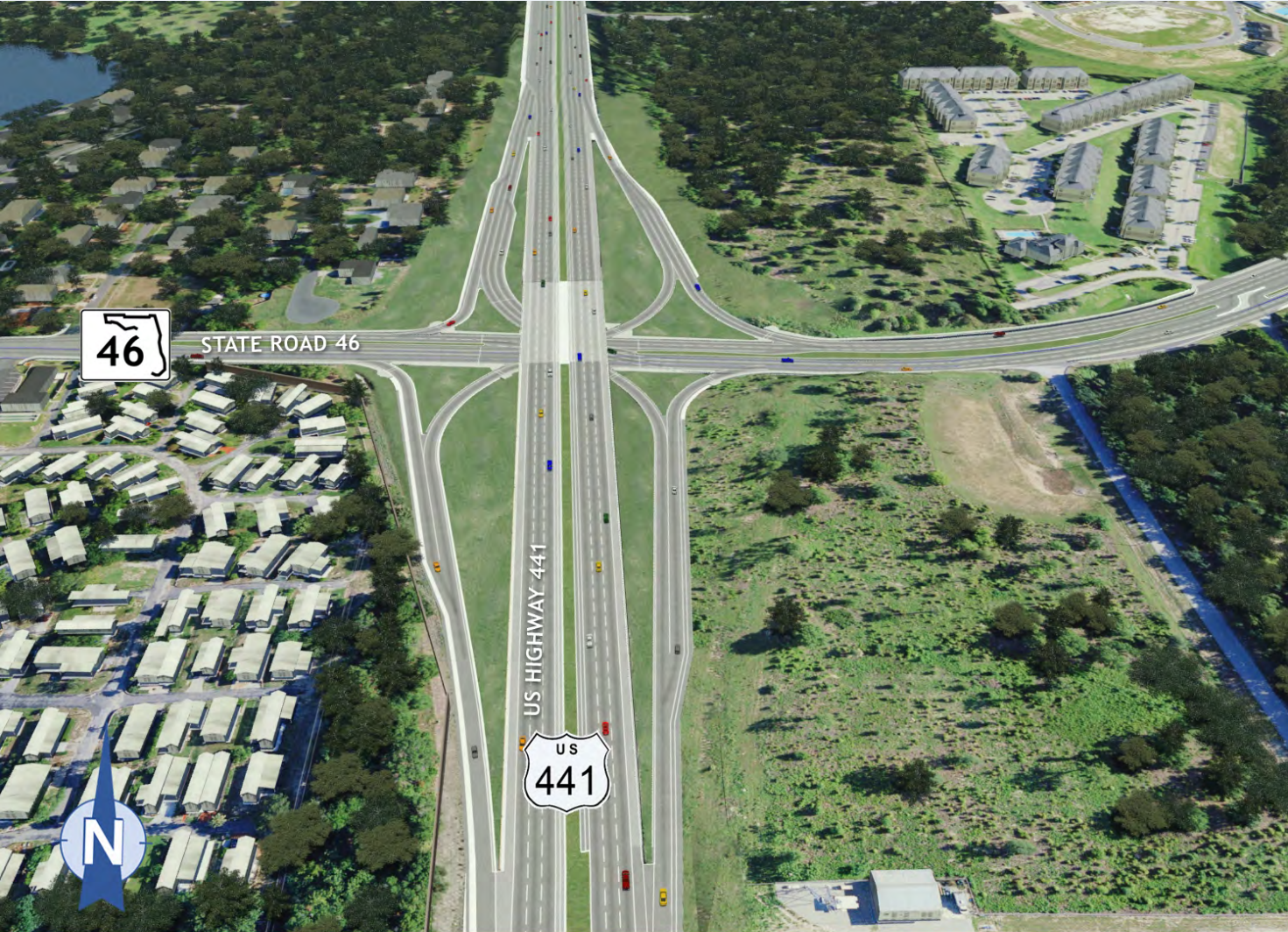
FLIPPED GRADE SEPARATED INTERSECTION WITH TRIPLE LEFT TURNS – EASTBOUND VIEW



FLIPPED GRADE SEPARATED INTERSECTION WITH TRIPLE LEFT TURNS – BIRD'S EYE VIEW

PROS	CONS
<ul style="list-style-type: none"> <li>• Addresses major traffic movement</li> <li>• Minor wetland impacts</li> </ul>	<ul style="list-style-type: none"> <li>• High construction cost</li> <li>• Traffic fails in design year (2039)</li> <li>• Non-typical interchange design unfamiliar to drivers</li> <li>• Requires relocation of 6 residences</li> </ul>

# SINGLE POINT URBAN INTERCHANGE



SINGLE POINT URBAN INTERCHANGE



SINGLE POINT URBAN INTERCHANGE - WESTBOUND VIEW



SINGLE POINT URBAN INTERCHANGE - EASTBOUND VIEW



SINGLE POINT URBAN INTERCHANGE – BIRD'S EYE VIEW

**PROS**

- Addresses major traffic movement
- Lowest construction cost
- Avoids wetland impacts

**CONS**

- Constrains future improvements
- Poor pedestrian / bike access
- Local traffic conflicts with major traffic movements
- Requires relocation of 6 residences

# AT GRADE INTERSECTION WITH FLY-OVER BRIDGE





AT GRADE INTERSECTION WITH FLY-OVER BRIDGE – WESTBOUND VIEW



AT GRADE INTERSECTION WITH FLY-OVER BRIDGE – EASTBOUND VIEW





AT GRADE INTERSECTION WITH FLY-OVER BRIDGE – BIRD'S EYE VIEW

PROS	CONS
<ul style="list-style-type: none"> <li>• Addresses major traffic movement and separates it from major traffic</li> <li>• Low construction cost</li> <li>• Minimum R/W impacts</li> <li>• Only option not requiring residential relocations</li> <li>• Best traffic capacity for design year (2039)</li> </ul>	<ul style="list-style-type: none"> <li>• Higher wetland impacts</li> </ul>

# EVALUATION MATRIX



 	Existing Diamond Interchange	Grade Separated Intersection with Dual Left Turns	Flipped Grade Separated Intersection with Triple Left Turns	Single Point Urban Interchange	At Grade Intersection With Fly-Over Bridge
Right-of-Way Impacts (Acres)	0	27.7	28.6	24.2	23.3
Right-of-Way Impacts (\$ millions) <i>(R/W cost estimate is for west of Pond Road only)</i>	0	\$10.3	\$9.1	\$7.8	\$6.0
Right-of-Way Impact (Acres) to the Mount Dora Water Treatment Plant	0	5.4	7.9	4.8	3.6
Construction Cost (\$ millions)	0	\$46.0	\$41.8	\$35.1	\$36.5
Estimated Total Cost (\$ millions)	0	\$56.3	\$50.9	\$42.9	\$42.5
Wetland Impacts (Acres)	0	0.26	0.3	0	1.5
Residential Relocations (# of Residents)	0	6	6	6	0
Utility Impacts (# of owners)	0	7	7	7	7
Opening Year (2019) Traffic Level of Service	F	B	B	B	B
Opening Year (2019) Intersection Delay (seconds)	83.3	11.6	11.6	17.3	13.5
Design Year (2039) Traffic Level of Service	F	F	F	C	B
Design Year (2039) Intersection Delay (seconds)	302.8	113.4	127.2	23.2	17.3
Bicycle and Pedestrian Compatibility	no facilities	minimum conflicts	NB conflicts	EB / WB conflicts	minimum conflicts
Max Bridge Elevation (over existing SR 46)	21.5'	25'	26.5'	27'	27'
Constructability Issues	n/a	complex	complex	average	average

**\*Traffic Level of Service Key:**

- A: Free flow
- B: Reasonably free flow
- C: Stable flow
- D: Approaching unstable flow
- E: Unstable flow
- F: Forced or breakdown flow





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