

*Board of County Commissioners*

**Orange Avenue  
Roadway Conceptual Analysis Study**

**March 24, 2020**

# Presentation Outline

- Study Overview
- Existing Conditions
- Development of Alternatives
- Preferred Alternative
- Public Involvement
- Action Requested





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# Study Overview

- **Orange Avenue project limits**
  - County line to Florida's Turnpike
  - 0.61 Miles
- **Study Area**
  - Tupperware SunRail Station
  - Town Center Boulevard
  - Mary Louis Lane
  - Osceola Parkway

Study Area





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# Existing Conditions

- Two-lane undivided arterial roadway
- 45 MPH speed limit
- No median
- No curb/gutter
- No sidewalks / bicycle facilities
- Horizontal S-curve geometry
- Adjacent wetlands
- In the South Florida Water Management District

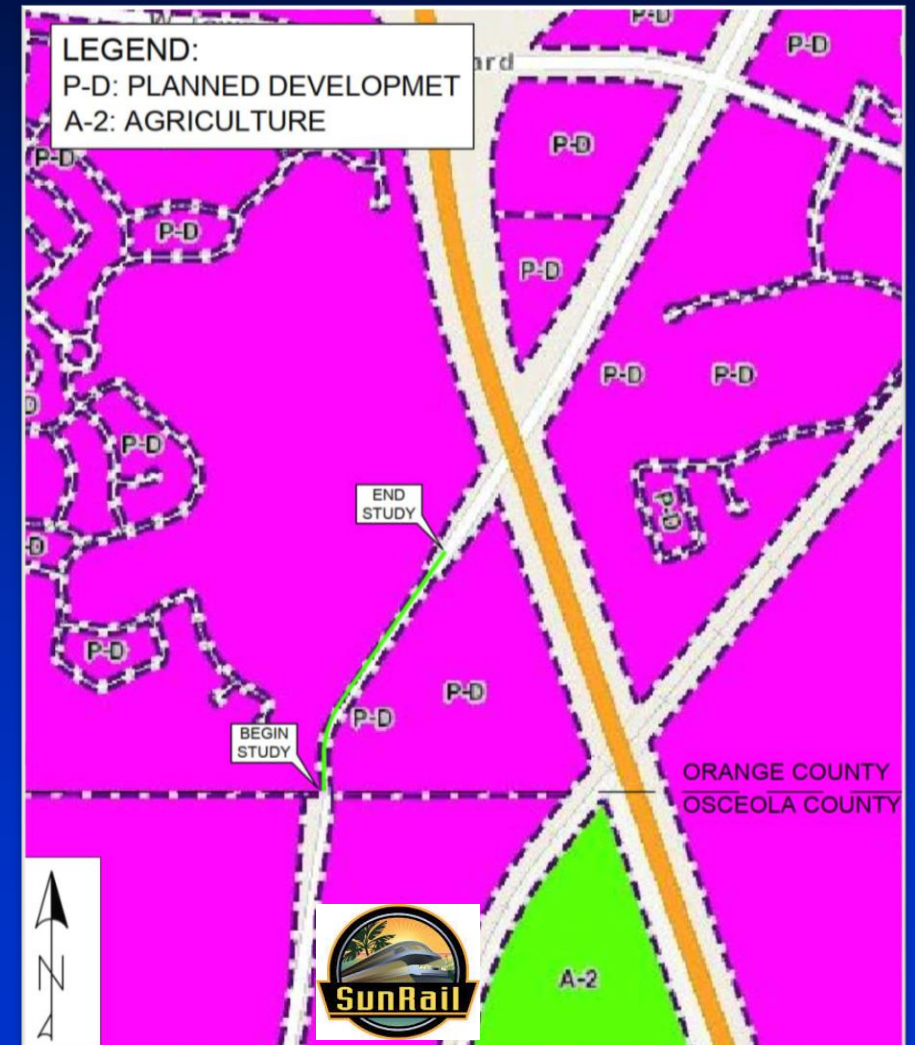




# Existing Conditions

- Dominant land use and zoning Planned Development (PD)
- Includes Orange County portion of the Deerfield Land Corporation Transit Oriented Development (TOD)
- Currently no pedestrian or bicycle access to Tupperware SunRail Station
- Two new two-lane bridges constructed by Florida's Turnpike

## Land Use Characteristics



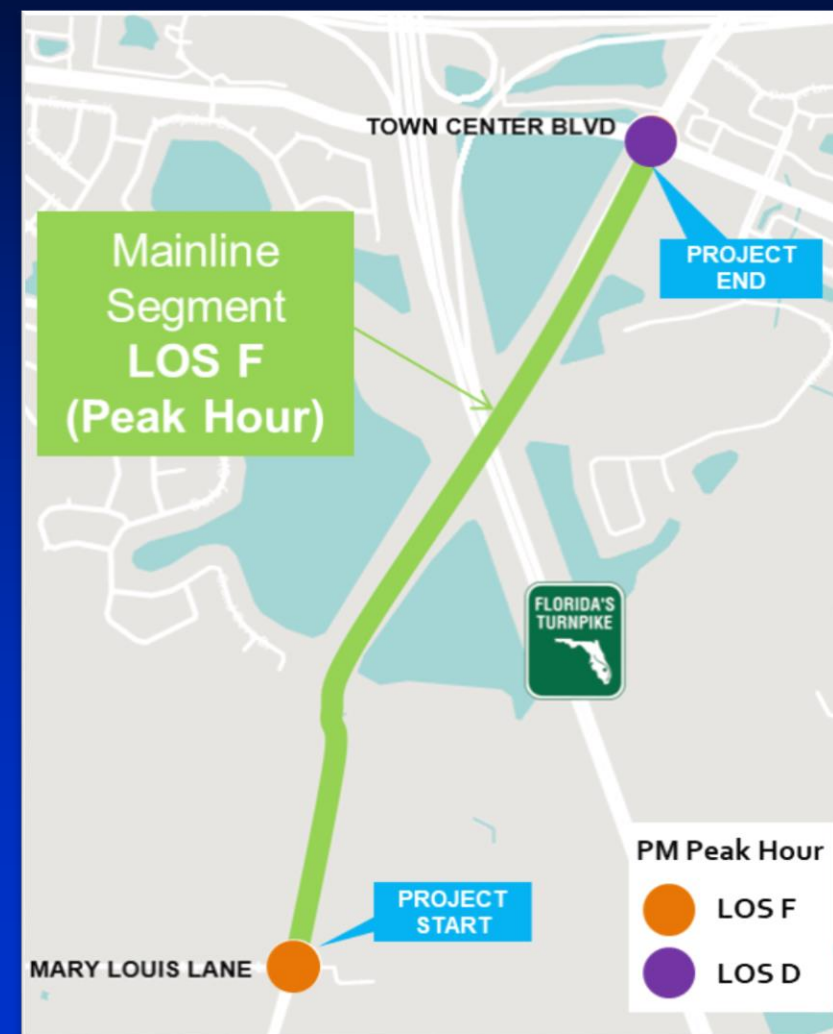


# Existing Conditions

- Roadway Average Annual Daily Traffic (AADT) of 24,463 vehicles per day

## Existing Level of Service (LOS)

Study Segment Peak Hour	LOS F
Mary Louis Lane and Orange Avenue Intersection	LOS F
Town Center Boulevard and Orange Avenue Intersection	LOS D



Note: For Mary Louis Lane, LOS shown is for worse scenario based on stop control approach





# Existing Conditions

- 41 crashes on the two-lane study segment of Orange Avenue
- 3 crashes at Mary Louis Lane intersection (2 Injuries)
- Crashes clustered on S-curve
- Majority of crashes off-road and rear-end
- 3 fatalities in traffic study limits, two within the RCA segment

Source: Signal-4 Analytics 1/1/2014 to 1/1/2018

## 5-Year Crash Analysis

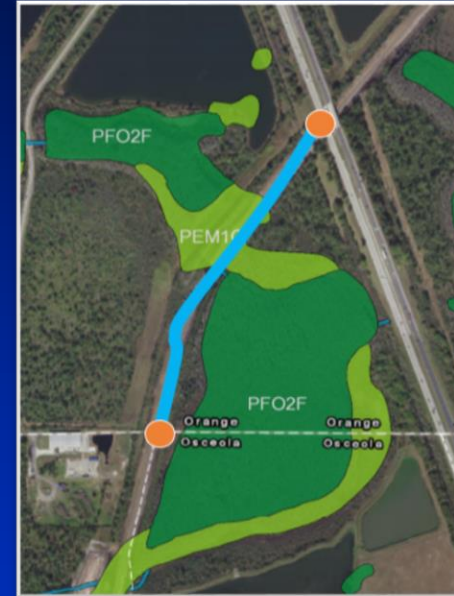




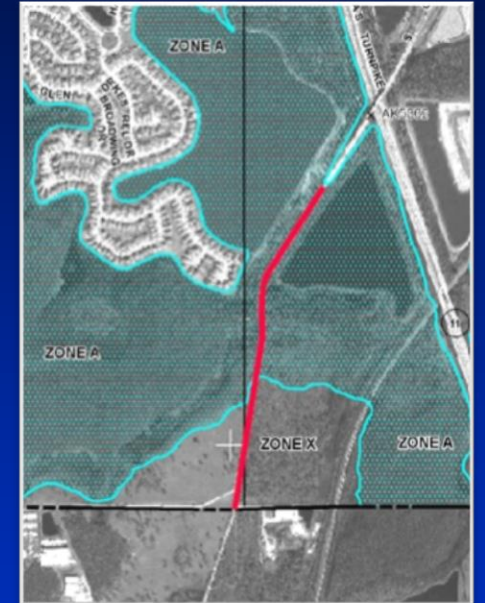
# Existing Conditions

- **Existing drainage and floodplain**
  - Water flows to adjacent wetlands
  - Series of Reinforced Concrete Pipes (RCP) under roadway for drainage
- **Environmental analysis**
  - Wetlands on both sides of study corridor
  - Within Fish & Wildlife Consultation area for Wood stork
  - Protected species include Bald eagle, Sand skink, Gopher tortoise and American alligator
  - RCP currently acting as a wildlife crossing

**Environmental Analysis**



**Floodplain**





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# Development of Alternatives

- Future traffic conditions
  - Increase by 10,805 to 35,286 vehicles AADT

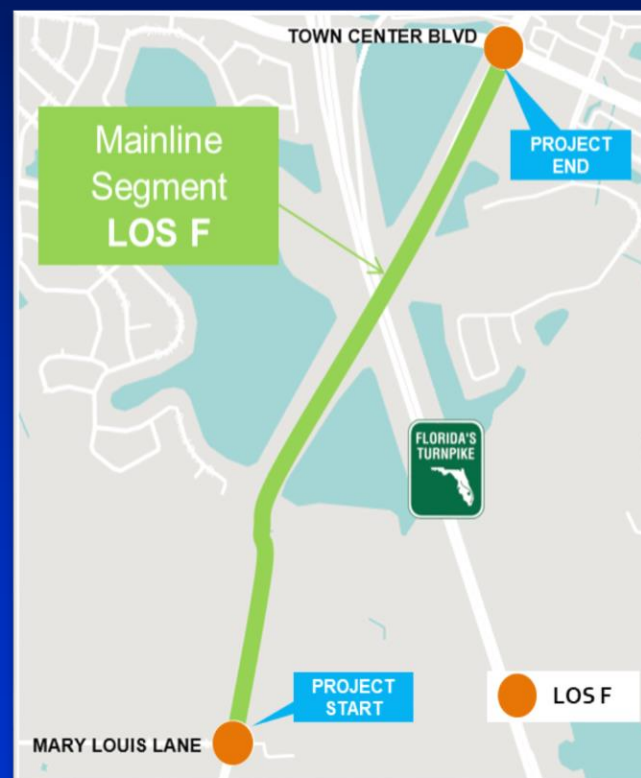
## 2045 No Build Level of Service

Study Segment	LOS F
Intersections	LOS F

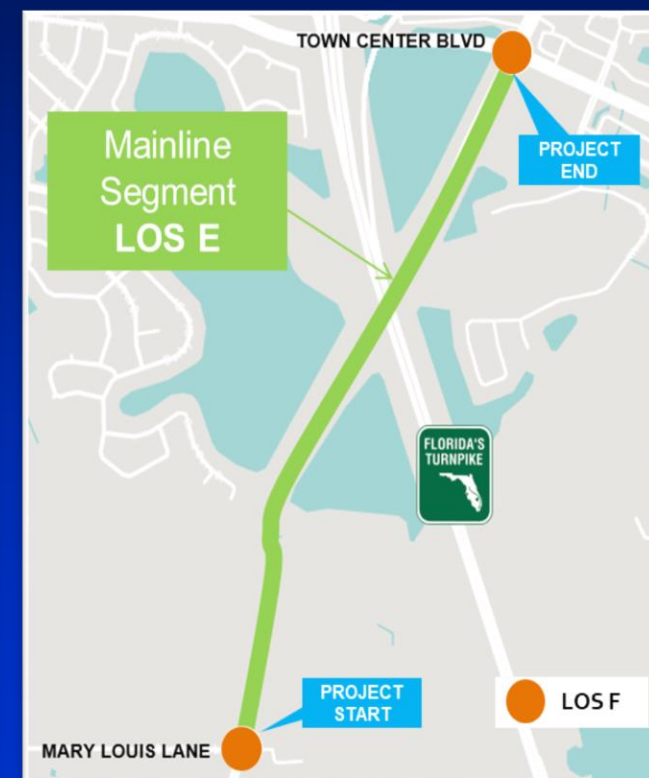
## 2045 Build Level of Service

Study Segment	LOS E
Intersections	LOS F

### No-Build 2045



### Build 2045



Note: LOS shown is for worse scenario



# Development of Alternatives

## ■ Typical section elements

- Four 11' travel lanes, curb/gutter
- Buffered bicycle lanes, 5' sidewalks
- Raised 20' median
- Improved lighting

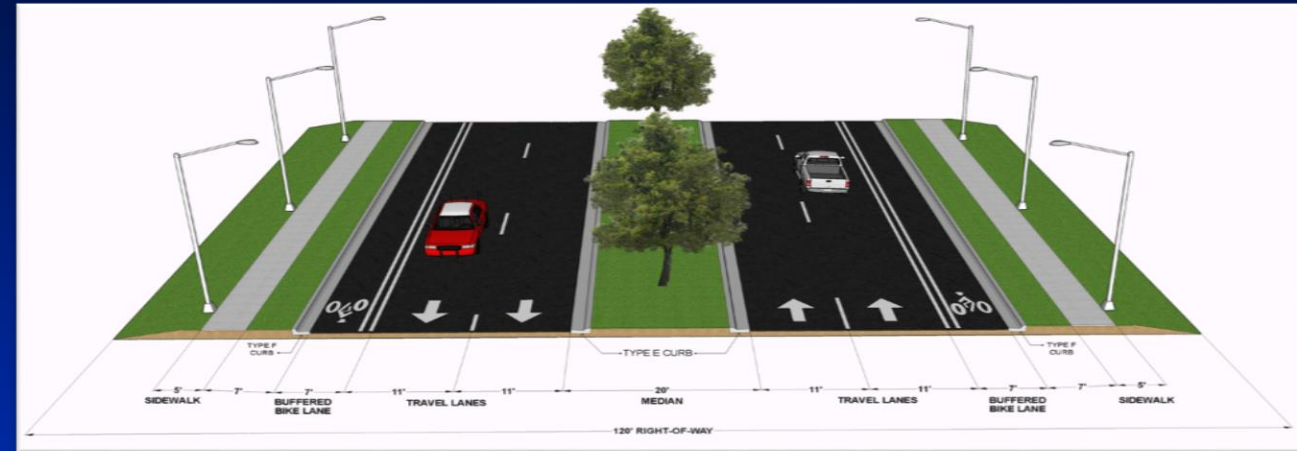
## ■ Alignments

- East, west, and center
- All require right-of-way

## ■ Ponds

- One dry pond on existing Orange County property
- One joint use pond on Deerfield Land Corporation property

## Typical Section





# Development of Alternatives

Evaluation Criteria	Alternative Improvements		
	1	2	3
<b>Community Impacts</b>			
<b>Residential</b>			
Single Family Homes Impacted (Each)	0	0	0
Single Family Homes Displaced (Each)(Roadway)	0	0	0
Single Family Homes Displaced (Each)(Ponds)	0	0	0
Vacant Land Impacts	0	0	0
<b>Business</b>			
Businesses Impacted (Each)	0	0	0
Businesses Displaced (Each)	0	0	0
<b>Right-of-Way Impacts</b>			
Acres Impacted (Roadway)	0.85	1.23	0.86
Acres Impacted (Joint Pond with Tupperware)	4.94	4.94	4.94
Total Acres Impacted	5.79	6.17	5.80
<b>Environmental Impacts</b>			
Wetland Impacts (acres) <sup>1</sup>	1.29	1.60	1.59
Potential Contamination Sites Impacted	None	None	None
Threatened and Endangered Species Impacts	Minimal	Minimal	Minimal
<b>Mitigation Banking Costs<sup>2</sup></b>			
Wetlands (Based on \$145,000/Credit)	\$140,287.50	\$174,000.00	\$172,912.50
<b>Project Costs</b>			
Design Cost	\$654,221.43	\$654,221.43	\$654,221.43
Right-of-way Costs <sup>3</sup>	\$2,263,990.00	\$2,313,007.00	\$2,152,420.00
Construction Costs	\$6,542,214.27	\$6,542,214.27	\$6,542,214.27
Mitigation Banking Costs <sup>2</sup>	\$140,287.50	\$174,000.00	\$172,912.50
<b>Total Costs</b>	<b>\$9,600,713.20</b>	<b>\$9,683,442.70</b>	<b>\$9,521,768.20</b>

**Notes:**  
 1. Wetland impacts include direct impacts.  
 2. Mitigation banking costs are preliminary with final costs to be determined during the design phase.  
 3. Right of Way cost estimates are for budgeting purposes only and cannot substitute for appraisals. No potential business damages were included in these estimates.

<b>Design</b>	<b>\$654,221.43</b>
<b>Right-of-Way Acquisition</b>	<b>\$2,313,007.00</b>
<b>Roadway Construction</b>	<b>\$6,542,214.27</b>
<b>Wetland Mitigation</b>	<b>\$174,000</b>
<b>Total Cost</b>	<b>\$9,683,442.70</b>

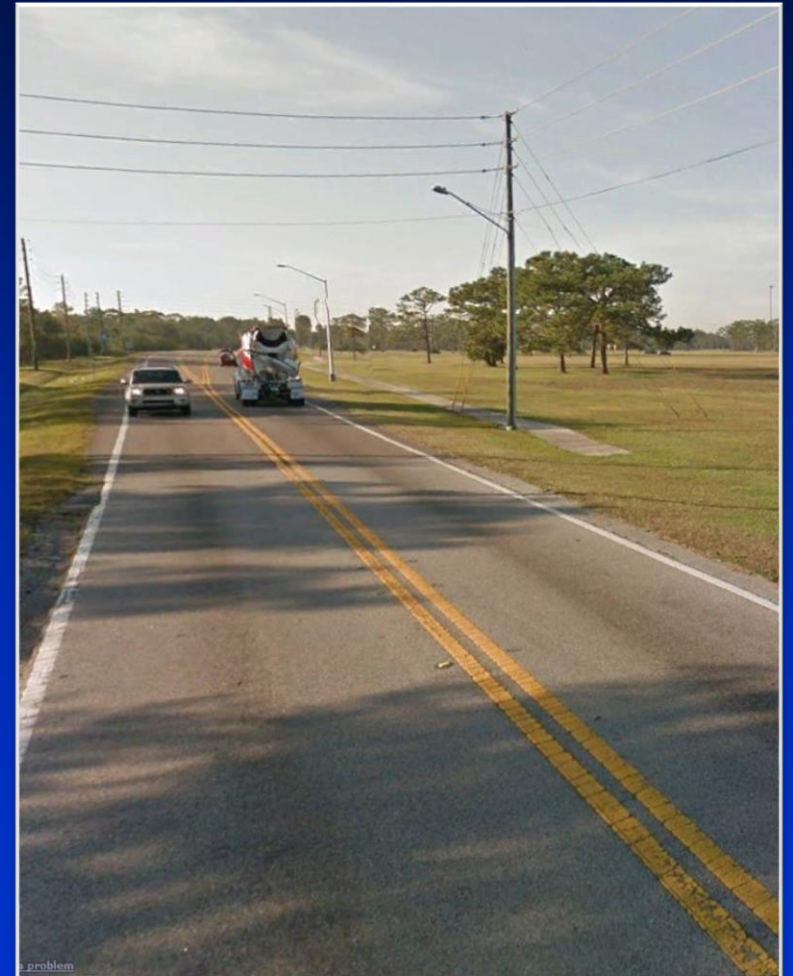
## Preliminary Cost Estimate

### Evaluation Matrix



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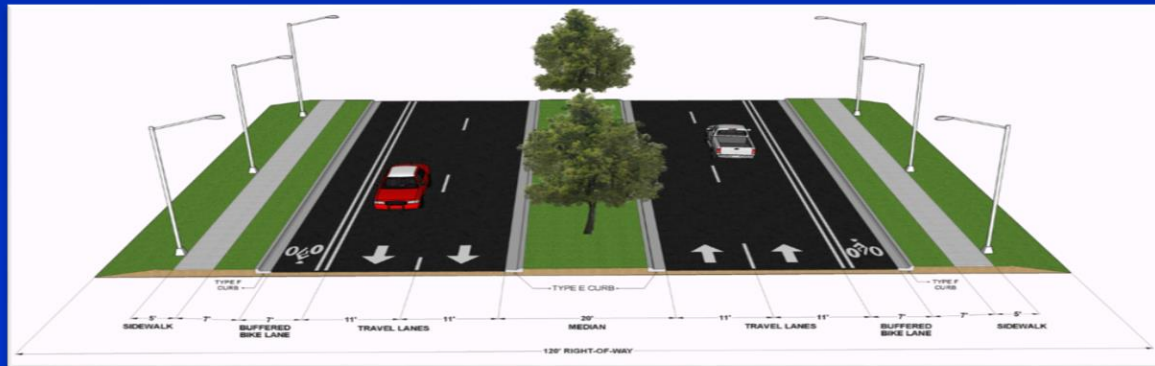
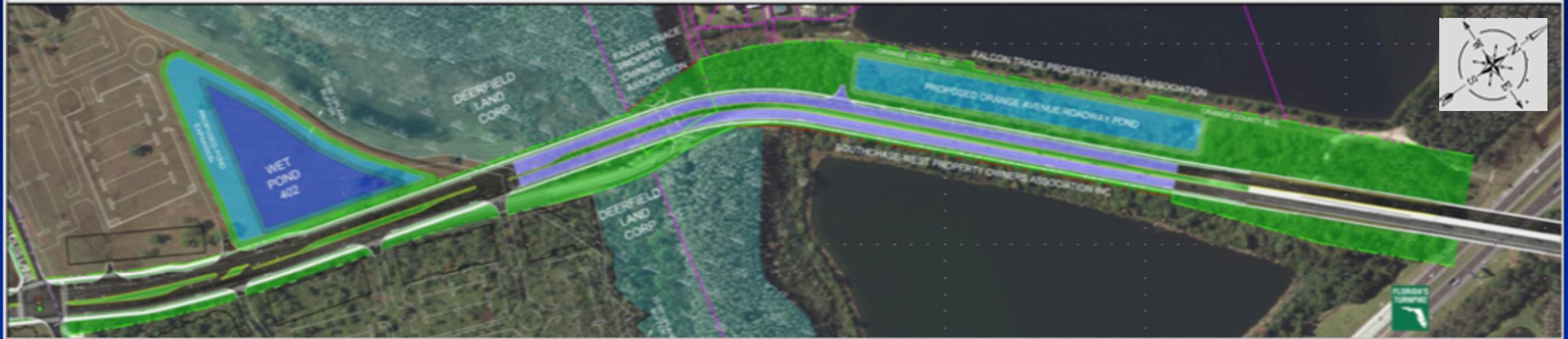




# Development of Alternatives

## Orange Avenue RCA Study Center Alignment

### ALTERNATIVE 2 - PREFERRED ALTERNATIVE







## Preferred Alternative

- Improves roadway geometry reducing crashes
- Relieves congestion improving comfort and safety of users
- Provides pedestrian and bicycle access to transit
- Curb/gutter and ponds will attenuate stormwater impacts to improve water quality
- New box culvert maintains wetlands connection and provides improved wildlife crossing



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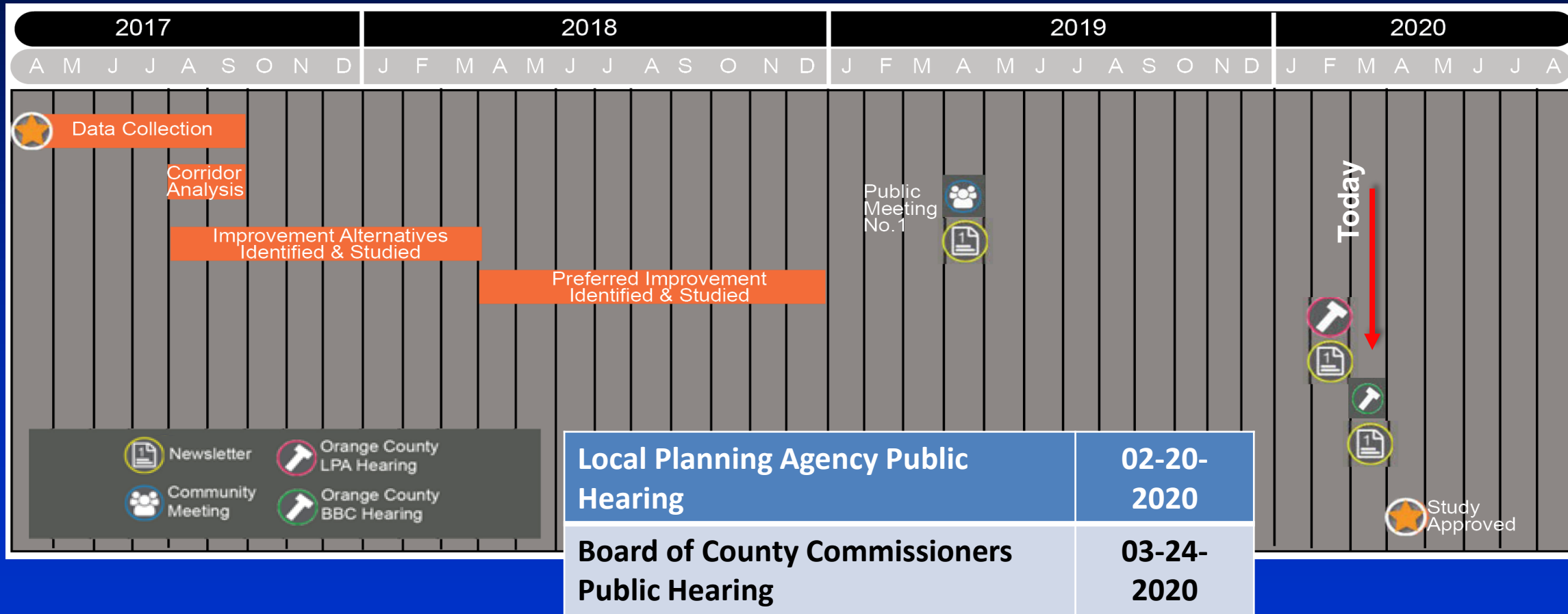
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# Public Involvement

## Schedule




[www.orangeavestudy.com](http://www.orangeavestudy.com)



# Recommended Alternative

- Implement Long Range Transportation Plan (Obj. T1.1)
- Implement financially-feasible multimodal transportation system (Obj, T1.3)
- Ensure LOS standards are met on County roads with unincorporated Orange County (Obj. T1.3)
- Build street, pedestrian and bicycle networks that provide interconnectivity and access to multimodal transportation facilities (Obj. T3.2)

## Consistency with the Comprehensive Plan



**ORANGE COUNTY  
FLORIDA**

**COMPREHENSIVE PLAN  
2010 - 2030**  
GOALS, OBJECTIVES & POLICIES

ADOPTED: MAY 19, 2009  
AMENDED: February 6, 2018,  
THROUGH ORDINANCE 2018-06  
EFFECTIVE: March 30, 2018

PREPARED BY:  
ORANGE COUNTY COMMUNITY, ENVIRONMENTAL  
AND DEVELOPMENT SERVICES DEPARTMENT  
ORANGE COUNTY PLANNING DIVISION



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## Action Requested

- Find the Orange Avenue Roadway Conceptual Analysis Study consistent with the Comprehensive Plan
- Approve the study and approval to Initiate design, right-of-way acquisition and construction