

# US 278 Corridor Improvements

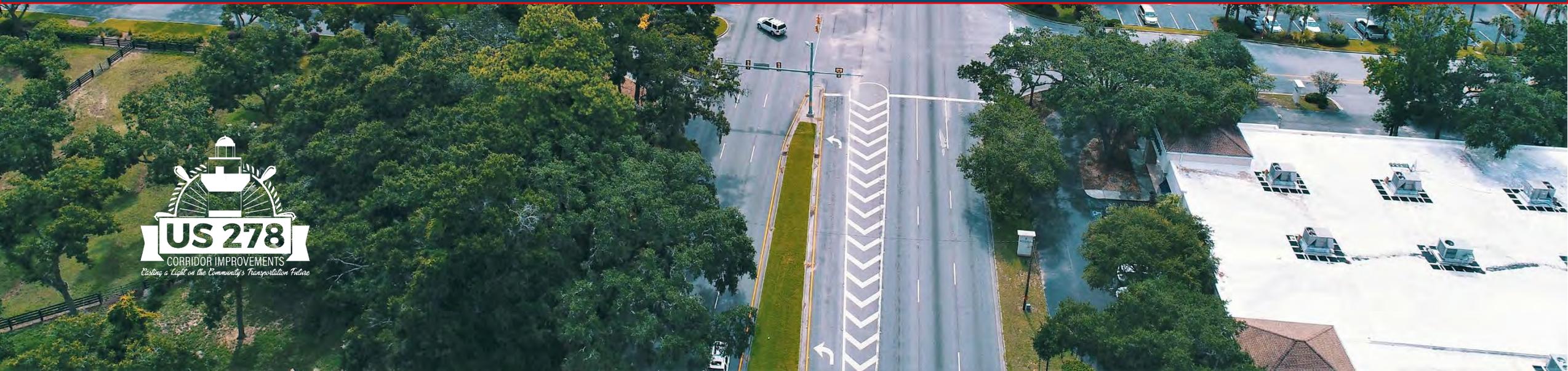
US 278 Corridor Improvements Stakeholder Meeting #5

May 28, 2020





# Project Management



# Purpose & Need

The purpose of this project is to address structural deficiencies at the existing eastbound Mackay Creek bridge, and reduce congestion along US 278 from Moss Creek Drive to Spanish Wells Road.



**Structural  
Deficiencies**



**Congestion**



---Public Engagement---



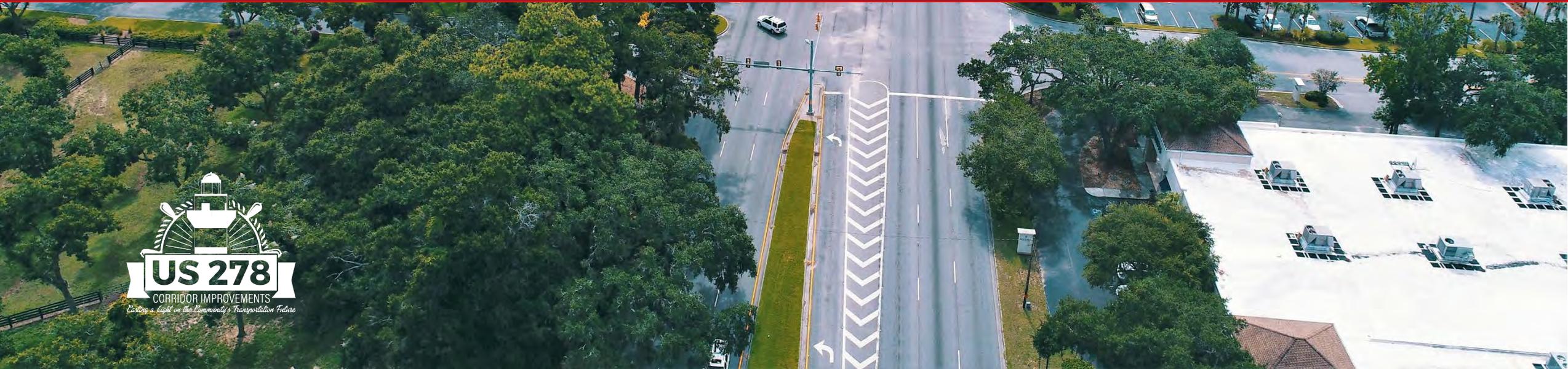
# The NEPA Process

## Start the Environmental Assessment

- Public Information Meeting 1
- Perform Technical Studies 2
- Develop Alternatives 3
- Analyze Alternatives 4
- Second Public Information Meeting 5
- Develop Preferred Alternative 6
- Prepare Environmental Assessment 7
- Public Hearing 8
- Revise Alternative 9
- FHWA Decision 10

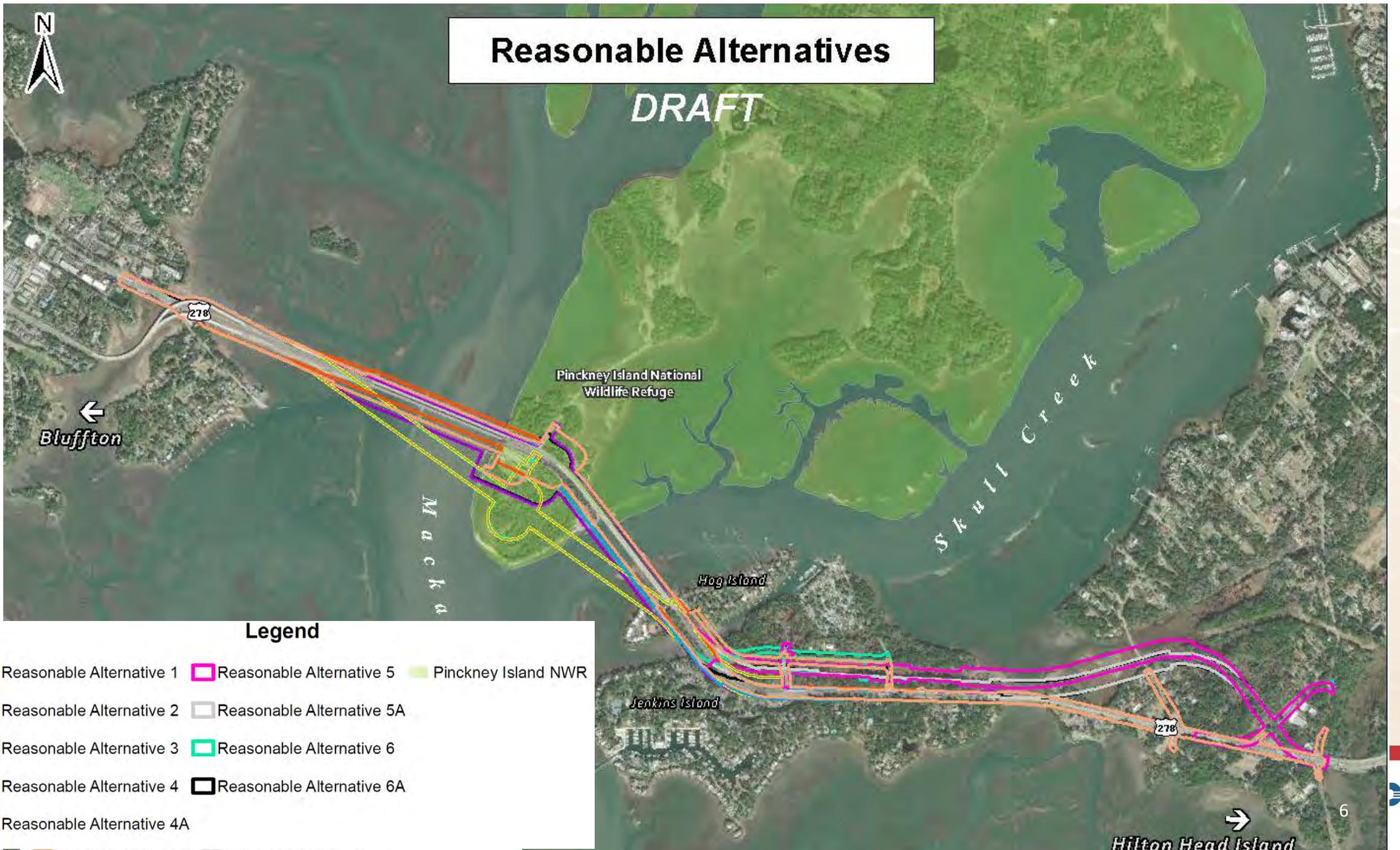


# Alternatives Update



# Reasonable Alternatives

DRAFT

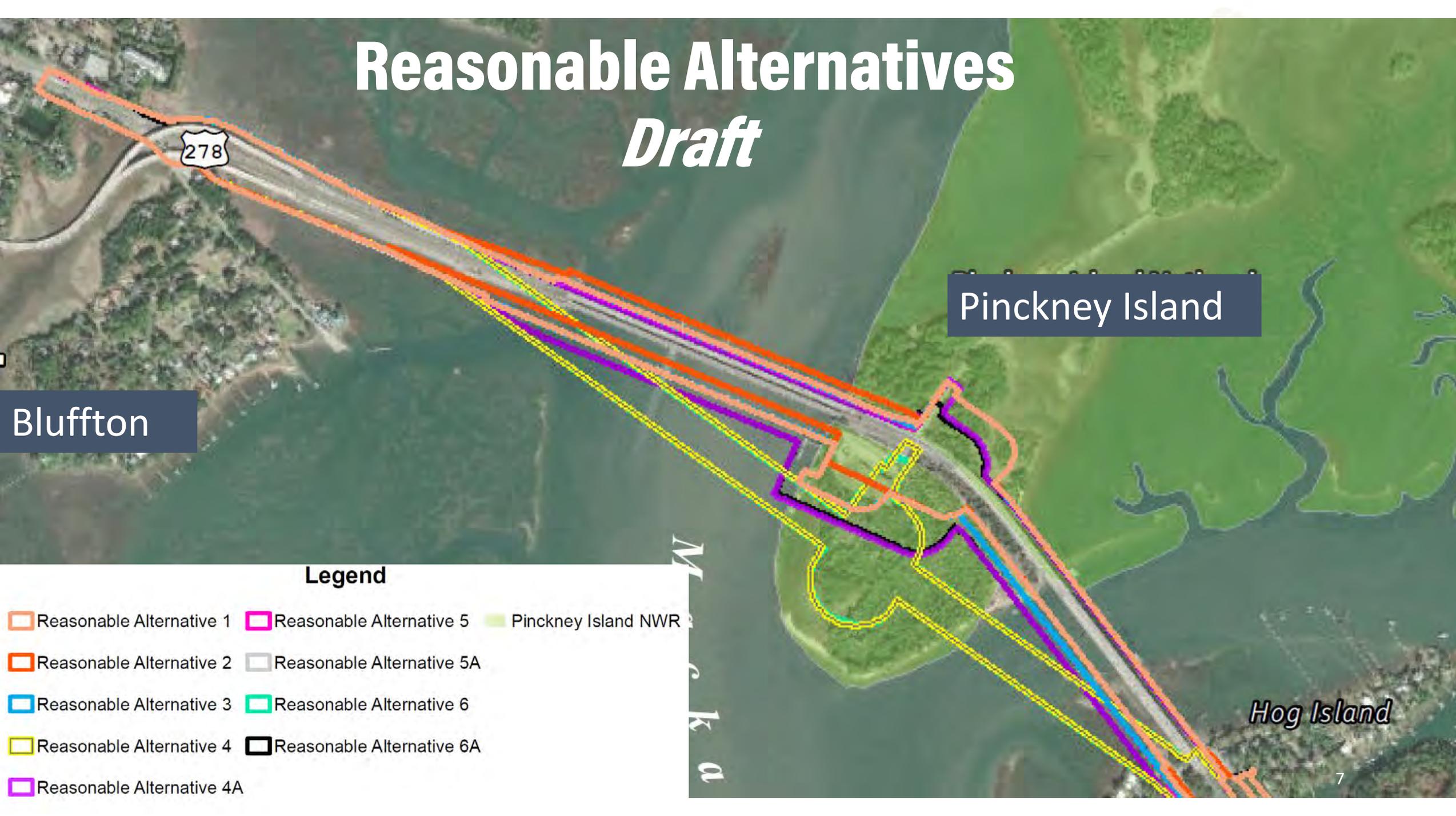


## Legend

- Reasonable Alternative 1
- Reasonable Alternative 2
- Reasonable Alternative 3
- Reasonable Alternative 4
- Reasonable Alternative 4A
- Reasonable Alternative 5
- Reasonable Alternative 5A
- Reasonable Alternative 6
- Reasonable Alternative 6A
- Pinckney Island NWR

# Reasonable Alternatives

## *Draft*



# Reasonable Alternatives

*Draft*



Hog Island

Jenkins Island

land  
Legend

- Reasonable Alternative 1
- Reasonable Alternative 2
- Reasonable Alternative 3
- Reasonable Alternative 4
- Reasonable Alternative 4A
- Reasonable Alternative 5
- Reasonable Alternative 5A
- Reasonable Alternative 6
- Reasonable Alternative 6A
- Pinckney Island NWR

Hilton Head Island

# US 278

## Reasonable Alternatives

All reasonable alternatives meet the purpose & need of the project and result in impacts on Pickney Island National Wildlife Refuge, Floodplains, Threatened & Endangered Species, Essential Fish Habitat, Shellfish Harvesting Waters, Environmental Justice communities, and Cultural Resources.



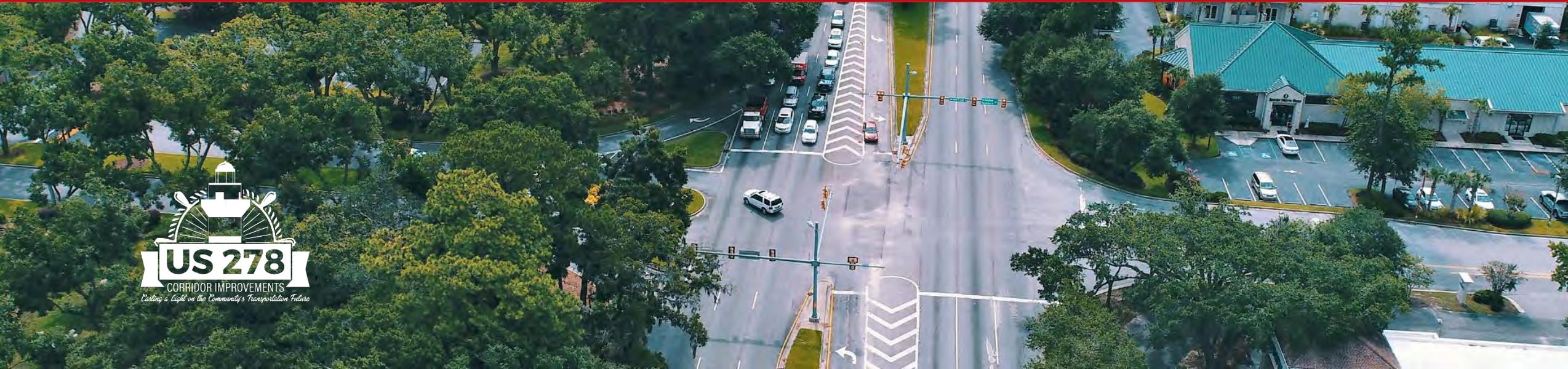
Reasonable Alternatives

|       | Delineated Wetlands | New Right-of-Way to be Purchased | Relocations | Meets Current Seismic Design Standards                    | Construction Duration |
|-------|---------------------|----------------------------------|-------------|---|-----------------------|
|       | TOTAL Acres         | Acres                            | TOTAL #     | # of Structures   | Years                 |
| RA 1  | 19.28               | 28.1                             | 10          | 1 of 4 (eastbound Mackay Creek)                           | 5                     |
| RA 2  | 18.4                | 27.2                             | 10          | 1 of 4 (westbound Mackay Creek)                           | 5                     |
| RA 3  | 19.3                | 31.5                             | 10          | 2 of 4 (eastbound Mackay Creek and eastbound Skull Creek) | 5                     |
| RA 4  | 18.9                | 35.2                             | 11          | 4 of 4 (both Mackay Creek and both Skull Creek)           | 3                     |
| RA 4A | 18                  | 36.8                             | 11          | 4 of 4 (both Mackay Creek and both Skull Creek)           | 3                     |
| RA 5  | 30.5                | 63.9                             | 17          | 2 of 4 (eastbound Mackay Creek and eastbound Skull Creek) | 5.5                   |
| RA 5A | 26.9                | 63.3                             | 20          | 2 of 4 (eastbound Mackay Creek and eastbound Skull Creek) | 5.5                   |
| RA 6  | 29.8                | 71.7                             | 18          | 4 of 4 (both Mackay Creek and both Skull Creek)           | 3.5                   |
| RA 6A | 25.3                | 72.3                             | 21          | 4 of 4 (both Mackay Creek and both Skull Creek)           | 3.5                   |

*Estimated construction costs range from \$218 to \$356 million*

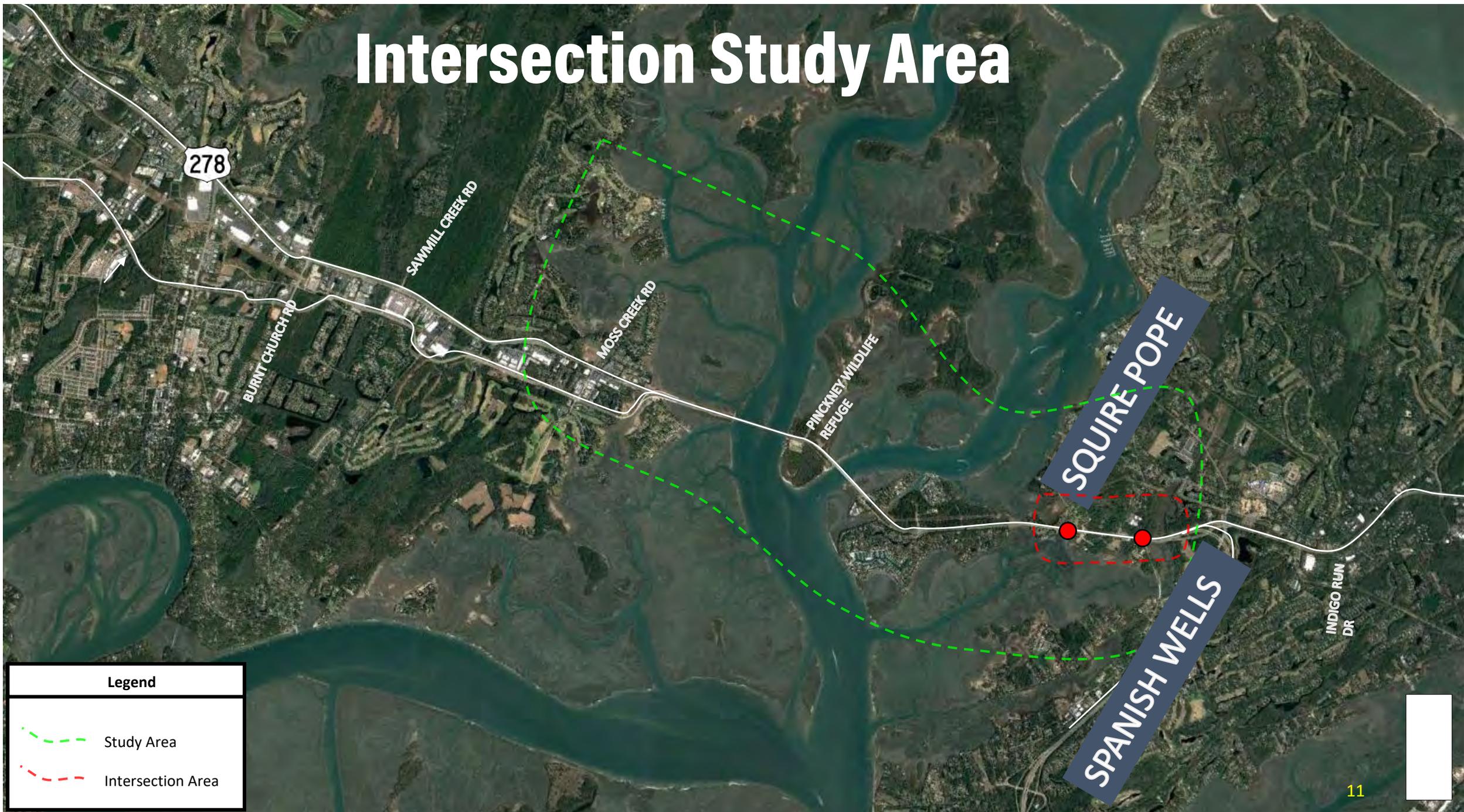


# US 278 Intersection Concepts



*Charting a Light on the Community's Transportation Future*

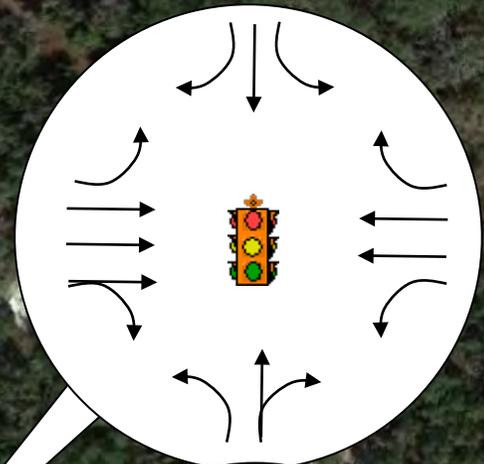
# Intersection Study Area



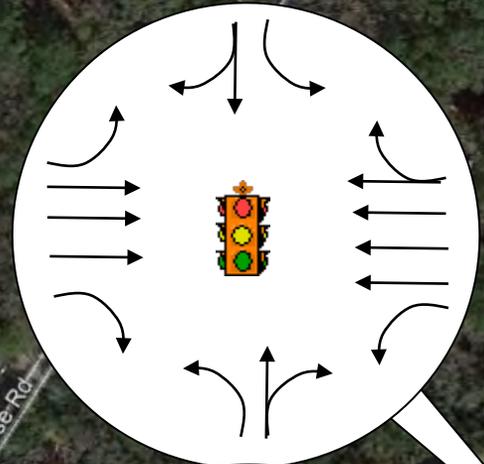
| Legend   |                   |
|--|-------------------|
|  | Study Area        |
|  | Intersection Area |

# Existing Intersection Layout (2018)

**SQUIRE POPE**



A (F)  
6.7 (87.9)



B (D)  
14.3 (46.8)

**US 278**

**SPANISH WELLS RD**

| Legend |               |
|--------|---------------|
| →      | Existing Lane |

| Levels of Service |                  |
|-------------------|------------------|
| AM (PM)           | Intersection LOS |
| AM (PM)           | Int. Delay       |

# Explored Intersection Concepts

## Squire Pope

1. Jughandle
2. Displaced Left
3. Continuous Green T
4. Flyover

## Spanish Wells

5. Detour Northbound Left
6. Half Diamond Interchange
7. Flyover
8. Displaced Left

## Multiple Intersections

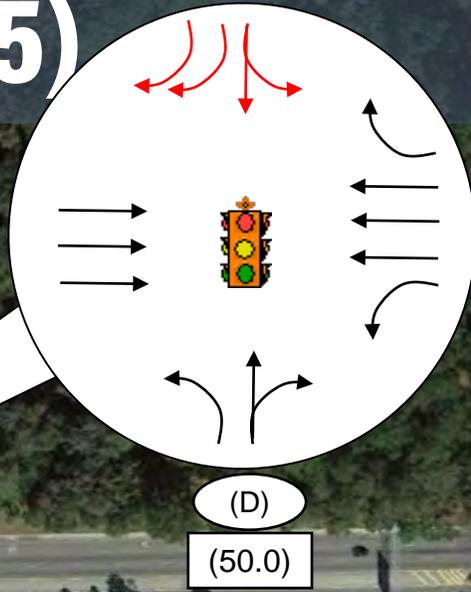
9. Maximize Lanes
10. Remove Lefts from Squire Pope & Spanish Wells – Signalize Old Wild Horse
11. Two T-Intersections at Old Wild Horse & Spanish Wells
12. Roundabouts with Underpass at Spanish Wells
13. Roundabouts for Left Turn Movements
14. Viaduct



# Proposed Concept 1 (2045)

“JUG-HANDLE”  
AT SQUIRE POPE RD

SQUIRE POPE  
SQUIRE POPE

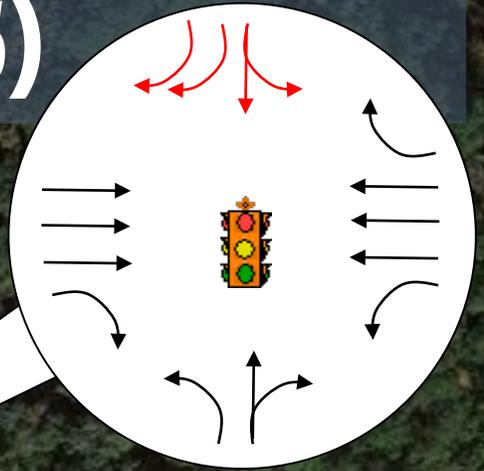


| Advantages  | Disadvantages  |
|---|--|
| <ul style="list-style-type: none"><li>• Increased Safety</li><li>• Removes Signal Phase</li><li>• Improves Operations</li></ul> | <ul style="list-style-type: none"><li>• ROW needed</li><li>• Drivers need to use right lane to turn left</li></ul> |

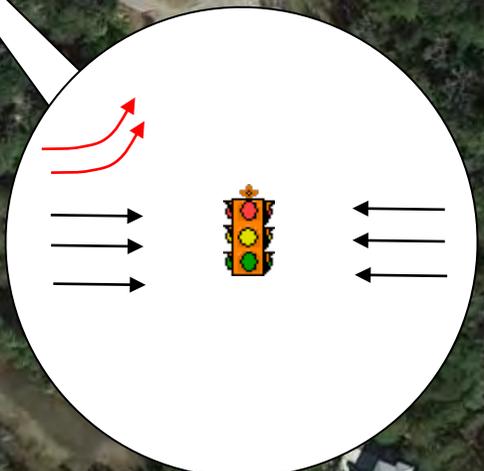
# Proposed Concept 2 (2045)

SQUIRE POPE

“DISPLACED EASTBOUND LEFT”  
AT SQUIRE POPE RD



(D)  
(48.4)



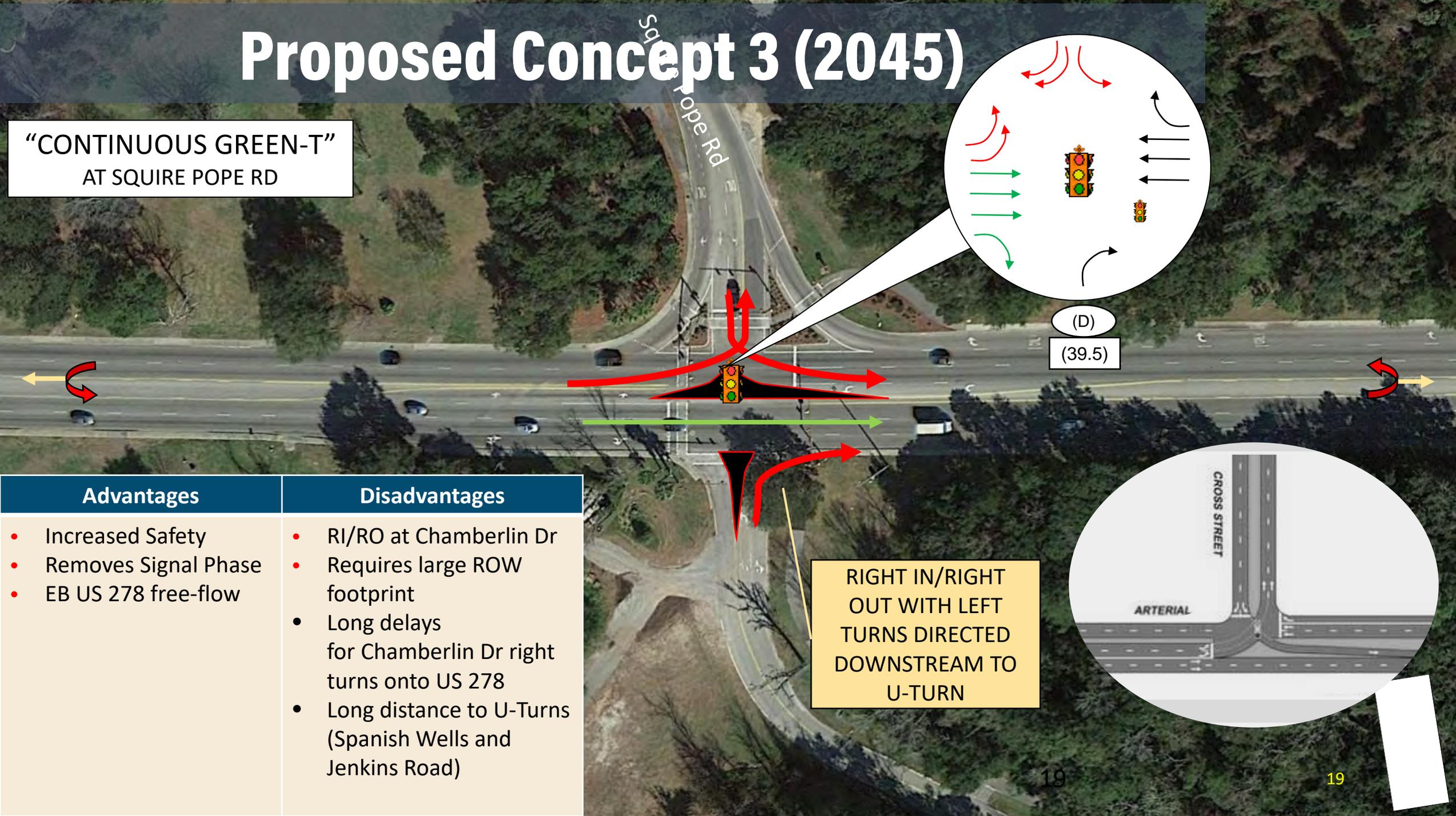
(F)  
(84.9)



| Advantages   | Disadvantages   |
|--|---|
| <ul style="list-style-type: none"> <li>• Increased Safety</li> <li>• Removes Signal Phase</li> <li>• Typically used for high opposing through movements</li> </ul> | <ul style="list-style-type: none"> <li>• ROW needed</li> <li>• Potential for wrong way travel</li> <li>• Potential right turn conflicts</li> <li>• Additional Signal</li> </ul> |

# Proposed Concept 3 (2045)

“CONTINUOUS GREEN-T”  
AT SQUIRE POPE RD



(D)  
(39.5)

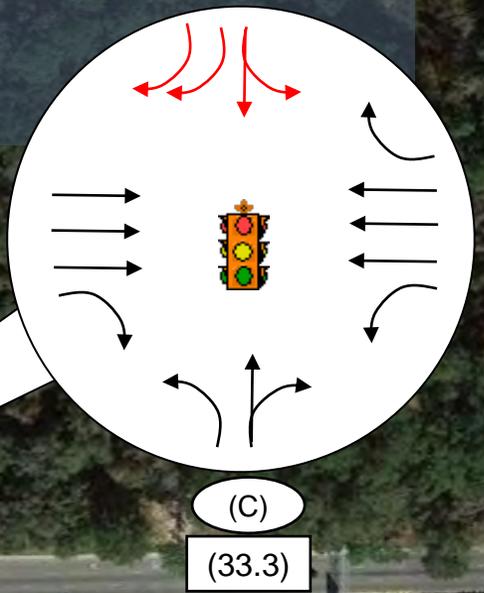
RIGHT IN/RIGHT  
OUT WITH LEFT  
TURNS DIRECTED  
DOWNSTREAM TO  
U-TURN

| Advantages  | Disadvantages  |
|---|--|
| <ul style="list-style-type: none"> <li>• Increased Safety</li> <li>• Removes Signal Phase</li> <li>• EB US 278 free-flow</li> </ul> | <ul style="list-style-type: none"> <li>• RI/RO at Chamberlin Dr</li> <li>• Requires large ROW footprint</li> <li>• Long delays for Chamberlin Dr right turns onto US 278</li> <li>• Long distance to U-Turns (Spanish Wells and Jenkins Road)</li> </ul> |

# Proposed Concept 4 (2045)

“LEFT TURN FLY-OVER”  
AT SQUIRE POPE RD

SQUIRE POPE



- | Advantages  | Disadvantages  |
|---|--|
| <ul style="list-style-type: none"><li>• Grade Separation</li><li>• Free flow travel to Squire Pope</li><li>• Removes Signal Phase</li></ul> | <ul style="list-style-type: none"><li>• High Cost</li><li>• ROW needed</li><li>• Visual Obstructions</li></ul> |

# Proposed Concept 5 (2045)

RESTRICT NORTHBOUND LEFT TURNS ON SPANISH WELLS RD AT US 278

US 278

SIGNIFICANT LEFT TURN VOLUME RESTRICTED

Spanish Wells

AN ALTERNATIVE IS TO TURN RIGHT ONTO US 278 & MAKE U-TURN AS SHOWN

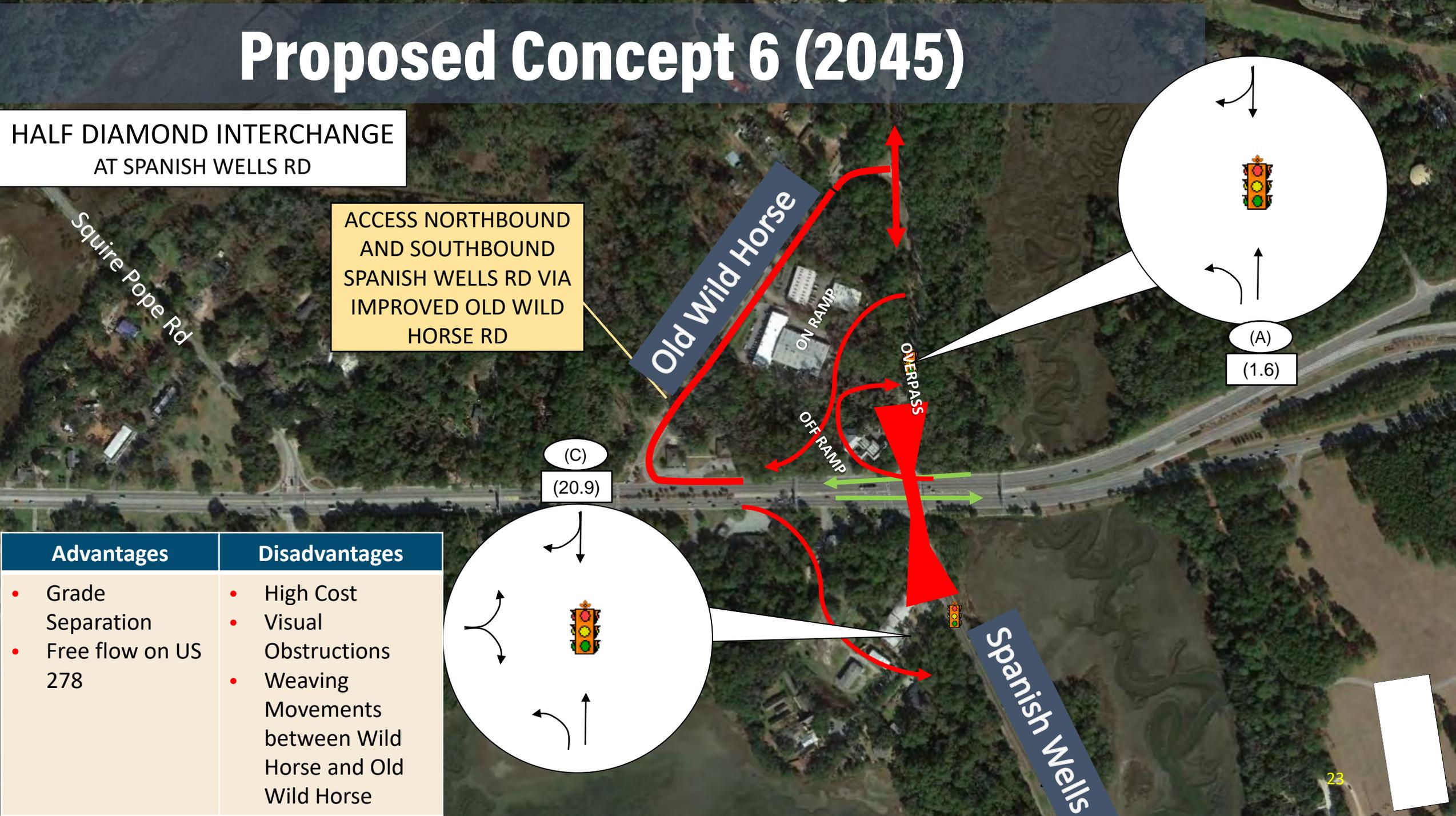
AN ALTERNATIVE IS TO BACKTRACK TO CROSS ISLAND PKWY AS SHOWN

| Advantages   | Disadvantages   |
|--|---|
| <ul style="list-style-type: none"> <li>• Increased Safety</li> <li>• Removes Signal Phase</li> <li>• Low Cost</li> </ul> | <ul style="list-style-type: none"> <li>• Long Travel Times</li> <li>• Special Signage</li> <li>• Weaving Movements at US 278 and Spanish Wells</li> </ul> |

# Proposed Concept 6 (2045)

## HALF DIAMOND INTERCHANGE AT SPANISH WELLS RD

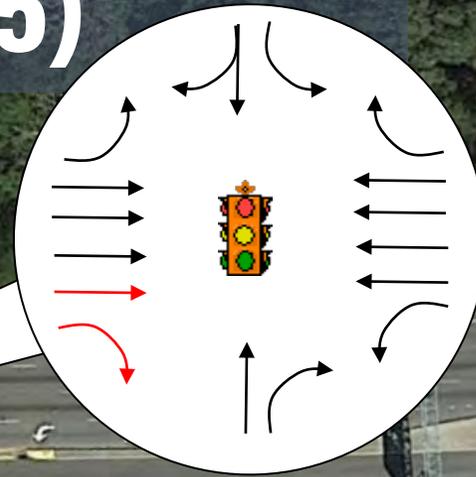
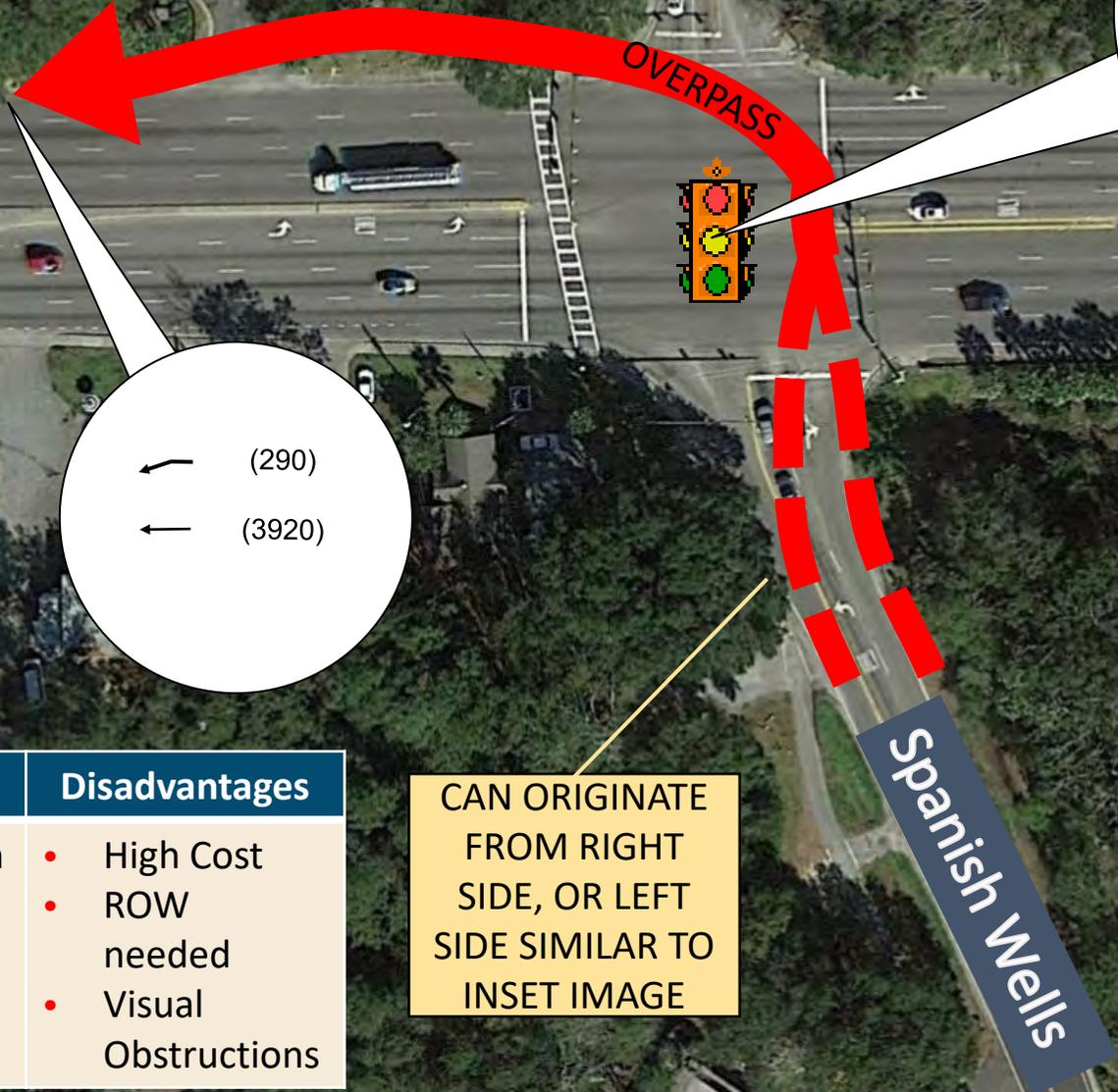
ACCESS NORTHBOUND  
AND SOUTHBOUND  
SPANISH WELLS RD VIA  
IMPROVED OLD WILD  
HORSE RD



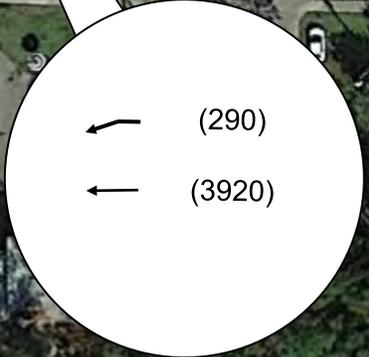
| Advantages  | Disadvantages   |
|---|---|
| <ul style="list-style-type: none"> <li>• Grade Separation</li> <li>• Free flow on US 278</li> </ul> | <ul style="list-style-type: none"> <li>• High Cost</li> <li>• Visual Obstructions</li> <li>• Weaving Movements between Wild Horse and Old Wild Horse</li> </ul> |

# Proposed Concept 7 (2045)

“LEFT TURN FLY-OVER”  
AT SPANISH WELLS RD

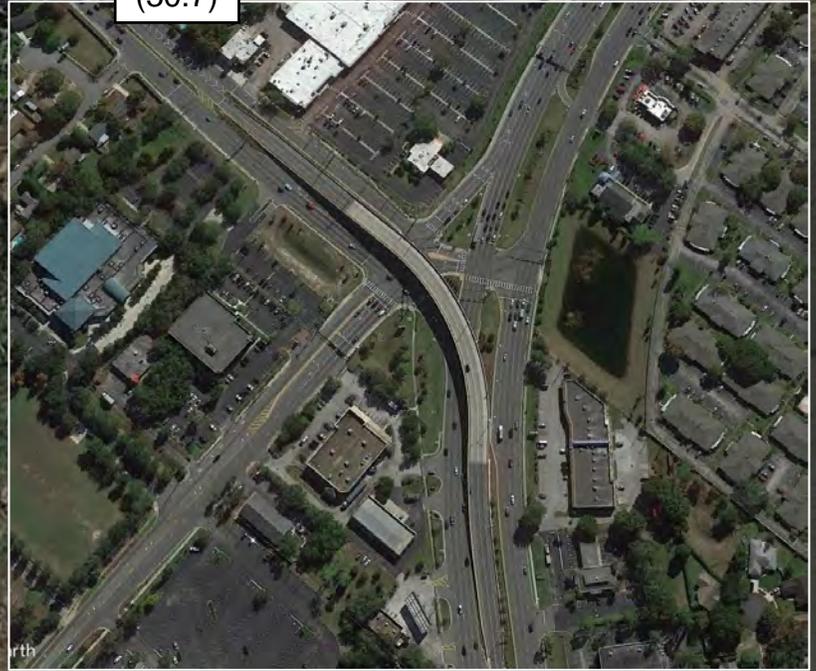


(C)  
(30.7)



CAN ORIGINATE FROM RIGHT SIDE, OR LEFT SIDE SIMILAR TO INSET IMAGE

| Advantages   | Disadvantages  |
|--|--|
| <ul style="list-style-type: none"> <li>• Grade Separation</li> <li>• Free flow travel to US 278</li> <li>• Removes Signal Phase</li> </ul> | <ul style="list-style-type: none"> <li>• High Cost</li> <li>• ROW needed</li> <li>• Visual Obstructions</li> </ul> |



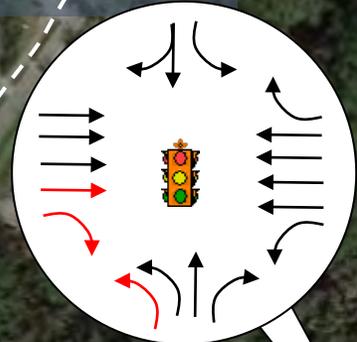
# Proposed Concept 8 (2045)

“DISPLACED EASTBOUND LEFT”  
AT SPANISH WELLS RD

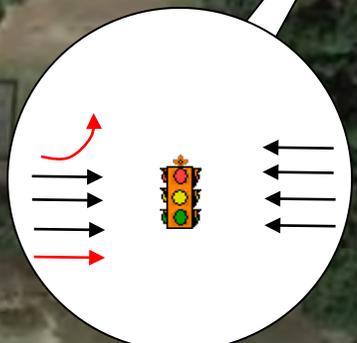
EASTBOUND LEFT TURN  
TRAFFIC REDIRECTED TO  
SPANISH WELLS  
RD/WILD HORSE RD TO  
REVERSE FLOW ON OLD  
WILD HORSE RD

DISPLACED LEFT  
TURN AT SPANISH  
WELLS RD

REMOVE LEFT TURNS  
FROM SQUIRE POPE RD



(E)  
(60.2)



(E)  
(66.4)



| Advantages   | Disadvantages   |
|--|---|
| <ul style="list-style-type: none"> <li>Increased Safety</li> <li>Removes Signal Phase</li> <li>Typically used for high opposing through movements</li> </ul> | <ul style="list-style-type: none"> <li>ROW needed</li> <li>Potential for wrong way travel</li> <li>Additional Signal</li> </ul> |

SQUIRE POPE

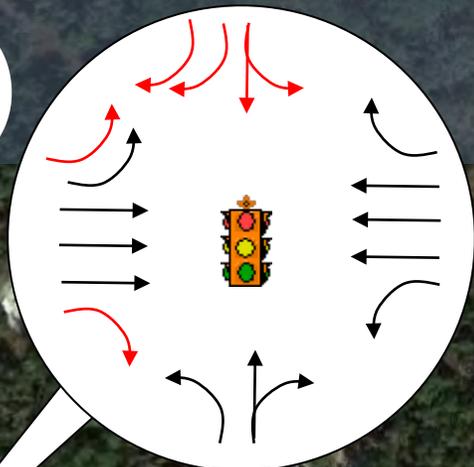
Spanish Wells

# Proposed Concept 9 (2045)

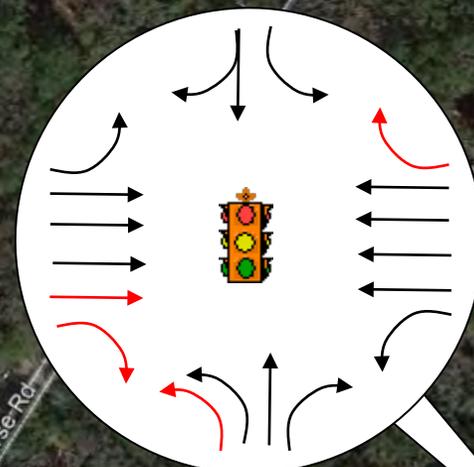
SQUIRE POPE

US 278

Spanish Wells



(D)  
(46.8)



(D)  
(45.6)

MAXIMIZE TURN LANES AT BOTH EXISTING INTERSECTIONS

| Legend |               |
|--------|---------------|
|        | Existing Lane |
|        | Proposed Lane |

| Advantages   | Disadvantages   |
|--|---|
| <ul style="list-style-type: none"> <li>• Low Cost</li> </ul> | <ul style="list-style-type: none"> <li>• Minimal LOS Improvements</li> <li>• Additional Signal Timing</li> <li>• Long tapers on side roads</li> </ul> |

# Proposed Concept 10 (2045)

“SIGNAL WITH LEFT TURNS DIVERTED FROM SQUIRE POPE RD AND SPANISH WELLS RD”  
AT OLD WILD HORSE RD

SQUIRE POPE

ADD LEFT TURN/  
U-TURN SIGNAL AT  
OLD WILD HORSE RD

Old Wild Horse

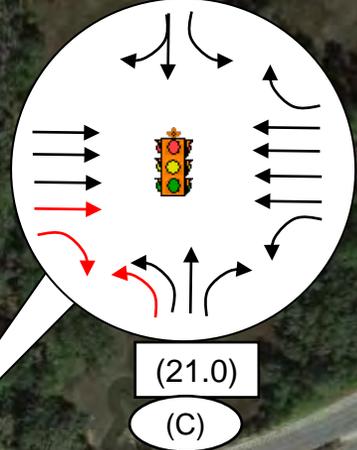
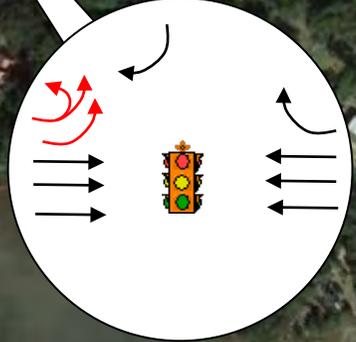
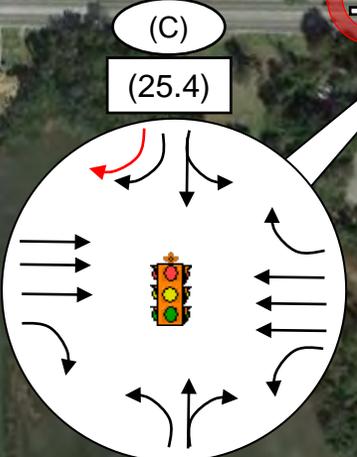
REMOVE EASTBOUND  
LEFT TURNS FROM  
SQUIRE POPE RD

(B)  
(19.7)

Spanish Wells

REMOVE EASTBOUND  
LEFT TURNS FROM  
SPANISH WELLS RD

| Advantages  | Disadvantages   |
|---|---|
| <ul style="list-style-type: none"> <li>Increased Safety</li> <li>Removes Signal Phase</li> <li>Low Cost</li> <li>Consolidates left turns</li> </ul> | <ul style="list-style-type: none"> <li>Additional Signal</li> <li>Special Signage</li> <li>Upgrades on Old Wild Horse to accommodate additional travel</li> </ul> |



# Proposed Concept 11 (2045)

“TWO ‘T’ INTERSECTIONS”  
AT OLD WILD HORSE AND SPANISH WELLS RD

CLOSE SOUTHBOUND  
LEG OF SPANISH WELLS  
RD/WILD HORSE RD AND  
US 278, ROADWAY STILL  
OPEN AND OPERATIONAL

(B)  
(14.5)

(C)  
(23.5)

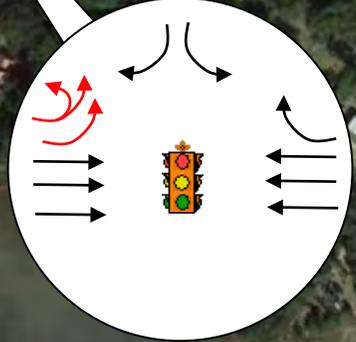
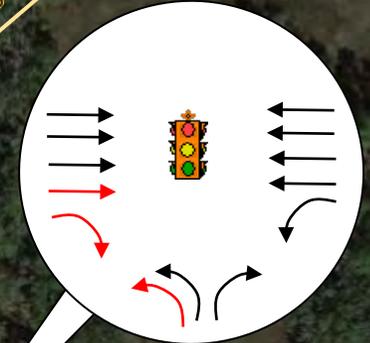
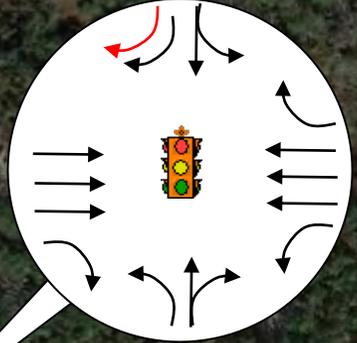
(C)  
(24.0)

CREATE 2 ‘T’  
INTERSECTIONS

SQUIRE POPE

Old Wild Horse

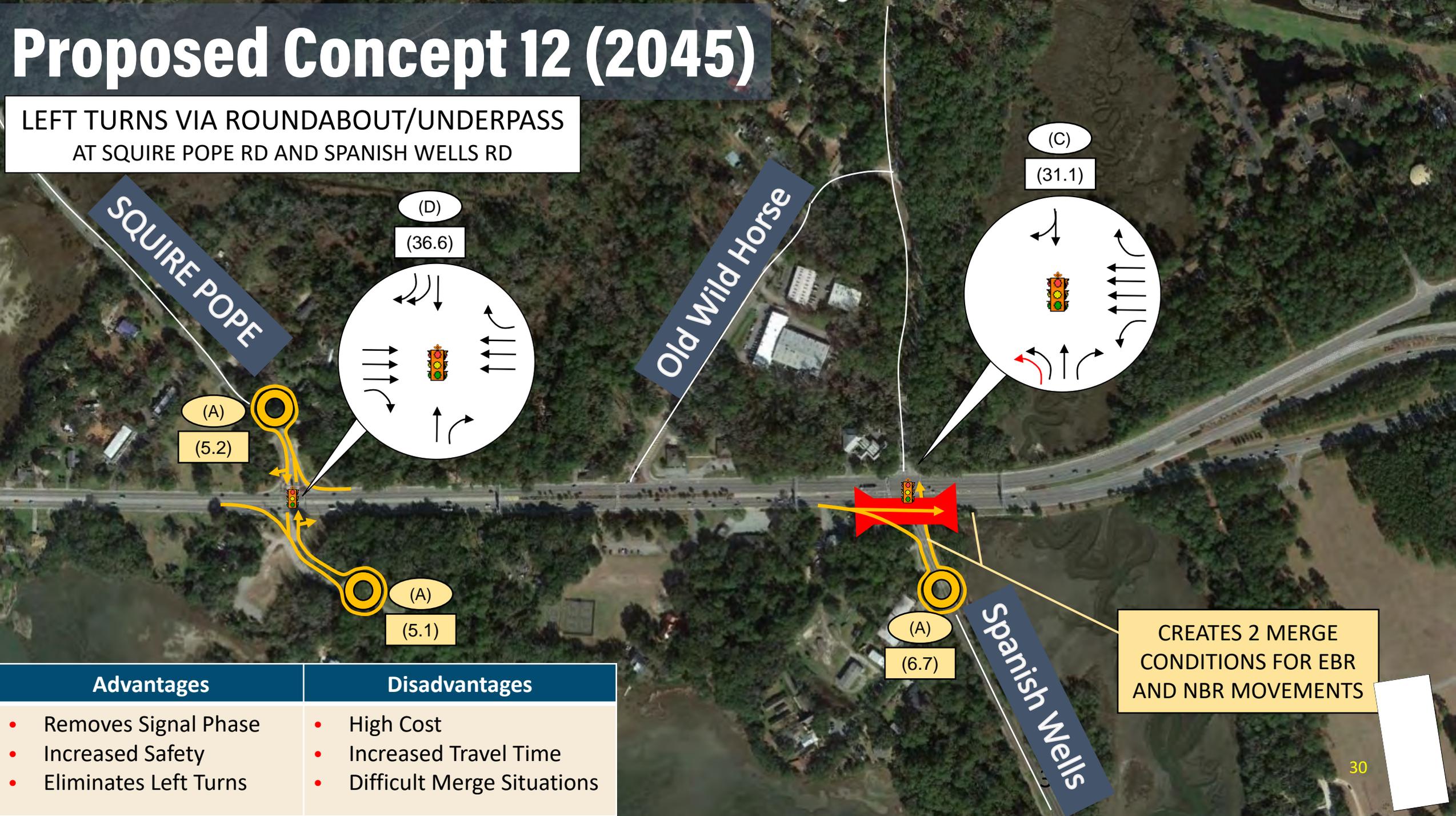
Spanish Wells



| Advantages  | Disadvantages  |
|---|--|
| <ul style="list-style-type: none"> <li>Improves Operations</li> <li>Removes Signal Phase</li> <li>Coordinates signals at 3 intersections</li> </ul> | <ul style="list-style-type: none"> <li>Additional Signal</li> <li>Indirect Movements</li> <li>Upgrades on Old Wild Horse to accommodate additional travel</li> </ul> |

# Proposed Concept 12 (2045)

LEFT TURNS VIA ROUNDABOUT/UNDERPASS AT SQUIRE POPE RD AND SPANISH WELLS RD

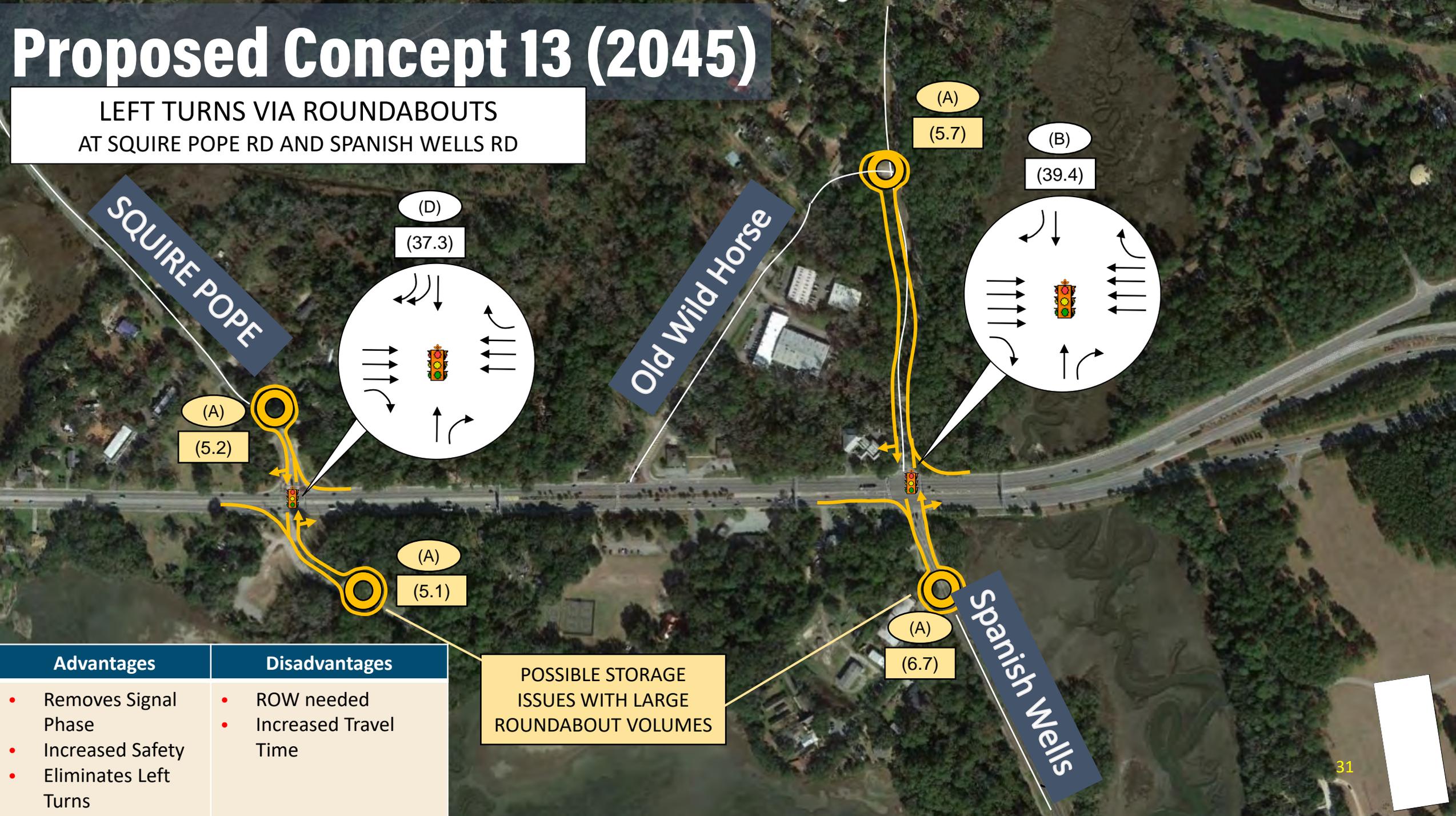


CREATES 2 MERGE CONDITIONS FOR EBR AND NBR MOVEMENTS

| Advantages  | Disadvantages  |
|---|--|
| <ul style="list-style-type: none"> <li>Removes Signal Phase</li> <li>Increased Safety</li> <li>Eliminates Left Turns</li> </ul> | <ul style="list-style-type: none"> <li>High Cost</li> <li>Increased Travel Time</li> <li>Difficult Merge Situations</li> </ul> |

# Proposed Concept 13 (2045)

LEFT TURNS VIA ROUNDABOUTS  
AT SQUIRE POPE RD AND SPANISH WELLS RD



| Advantages  | Disadvantages   |
|---|---|
| <ul style="list-style-type: none"> <li>Removes Signal Phase</li> <li>Increased Safety</li> <li>Eliminates Left Turns</li> </ul> | <ul style="list-style-type: none"> <li>ROW needed</li> <li>Increased Travel Time</li> </ul> |

POSSIBLE STORAGE ISSUES WITH LARGE ROUNDABOUT VOLUMES

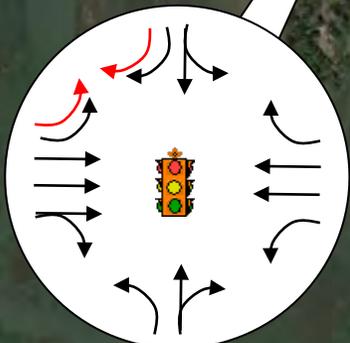
# Proposed Concept 14 (2045)

ELEVATED VIADUCT  
FROM JENKINS ISLAND TO CROSS ISLAND PARKWAY

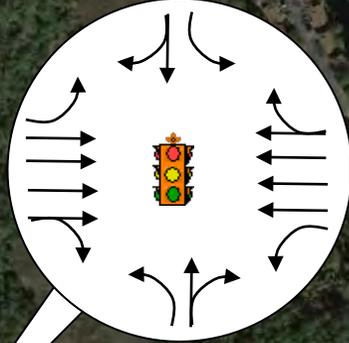
SQUIRE POPE

Old Wild Horse

Spanish Wells



(D)  
(52.1)



(D)  
(45.3)

| Advantages   | Disadvantages  |
|--|--|
| <ul style="list-style-type: none"> <li>• Adds capacity without changing US 278 footprint</li> <li>• Control Access</li> <li>• Separates local traffic</li> </ul> | <ul style="list-style-type: none"> <li>• High Cost</li> <li>• Visual Obstructions</li> <li>• Minimal LOS Improvements</li> </ul> |



# Intersection Concepts Summary

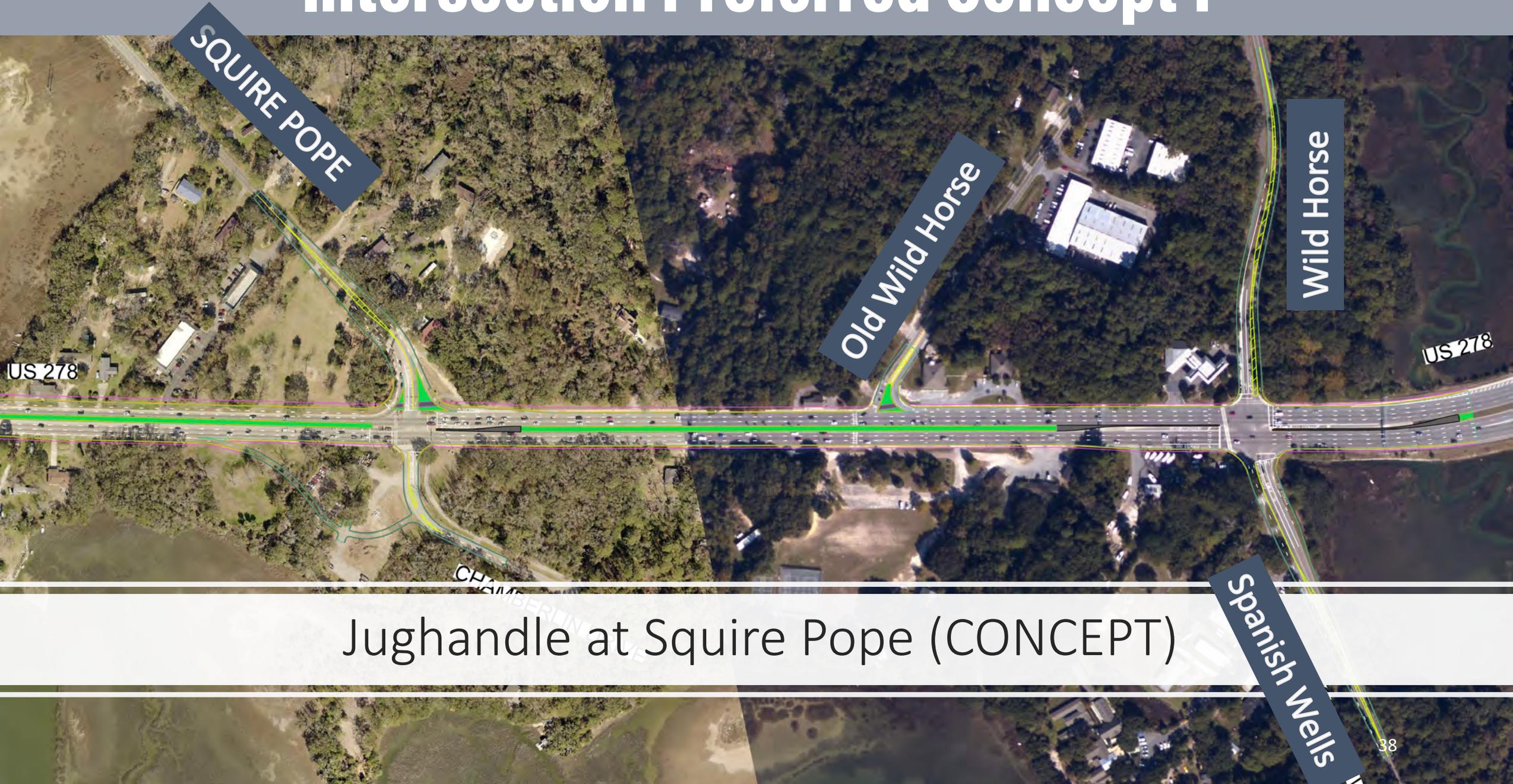
| Alternative            |  | Level of Service |                |               | New Travel Pattern | ROW Acquisition | Cost | View Obstructions | Advanced? |
|------------------------|--|------------------|----------------|---------------|--------------------|-----------------|------|-------------------|-----------|
|                        |  | Squire Pope      | Old Wild Horse | Spanish Wells |                    |                 |      |                   |           |
| Squire Pope            | 1 – Jughandle                            | D                | -              | D             |                    |                 |      |                   | Yes       |
|                        | 2 – Displaced Left                       | F/D              | -              | D             |                    |                 |      |                   | No        |
|                        | 3 – Continuous Green T                   | D                | -              | D             |                    |                 |      |                   | No        |
|                        | 4 – Flyover                              | C                | -              | D             |                    |                 |      |                   | Yes       |
| Spanish Wells          | 5 – Restricted NB Lefts                  | D                | -              | -             |                    |                 |      |                   | No        |
|                        | 6 – Half Diamond Interchange             | D                | -              | C/A           |                    |                 |      |                   | No        |
|                        | 7 – Flyover                              | D                | -              | C             |                    |                 |      |                   | No        |
|                        | 8 – Displaced Left                       | D                | -              | E/E           |                    |                 |      |                   | No        |
| Multiple Intersections | 9 – Maximize Lanes                       | D                | -              | D             |                    |                 |      |                   | Yes       |
|                        | 10 – Signal at Old Wild Horse            | C                | B              | C             |                    |                 |      |                   | Yes       |
|                        | 11 – Two T-Intersections                 | C                | C              | B             |                    |                 |      |                   | No        |
|                        | 12 – Roundabouts and Overpass            | D                | -              | C             |                    |                 |      |                   | No        |
|                        | 13 – Roundabouts for Left Turn Movements | D                | -              | B             |                    |                 |      |                   | No        |
|                        | 14 - Viaduct                             | D                | -              | D             |                    |                 |      |                   | No        |



# Preferred Intersection Concepts



# Intersection Preferred Concept 1

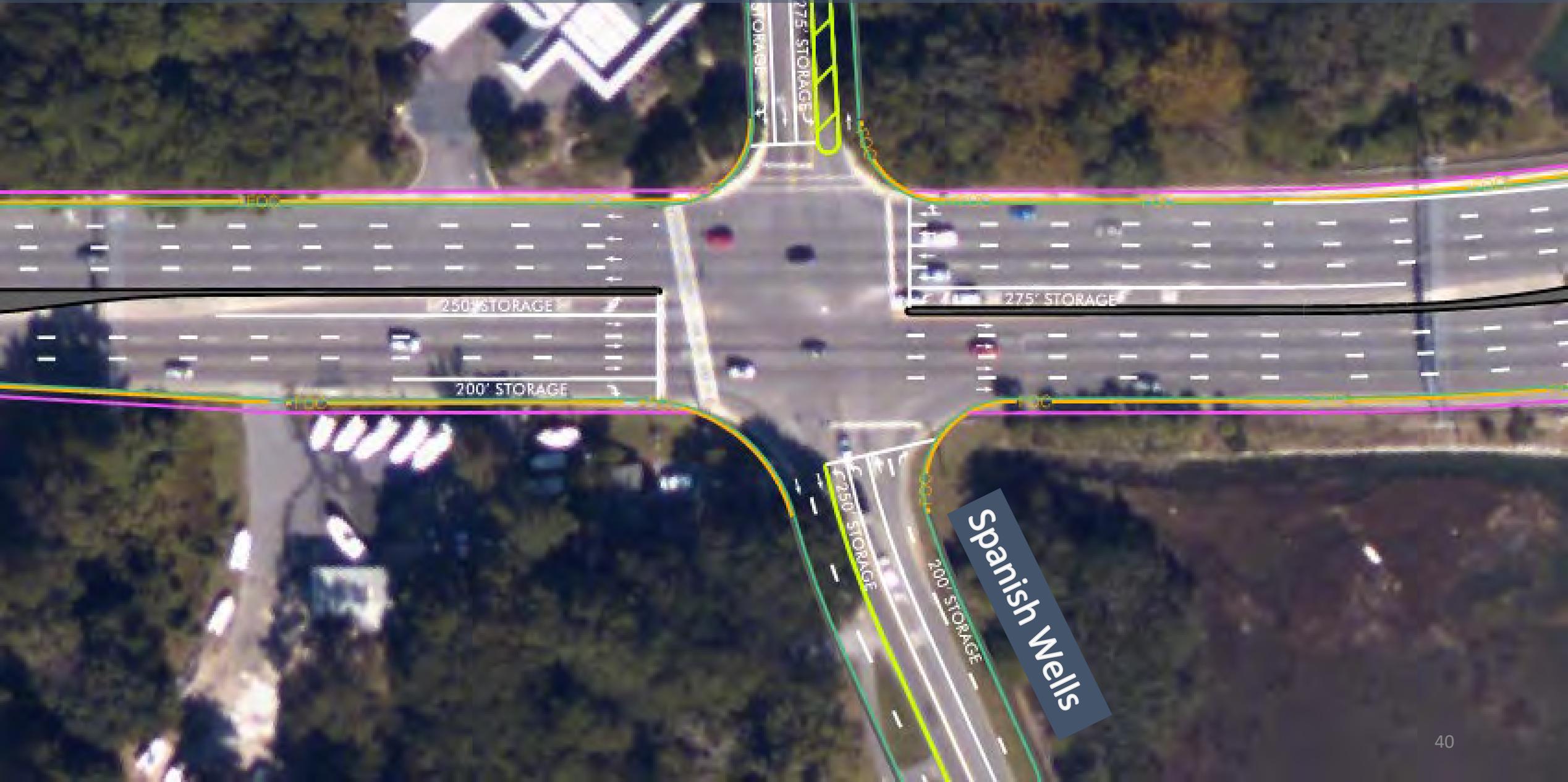


Jughandle at Squire Pope (CONCEPT)

# Intersection Preferred Concept 1



# Intersection Preferred Concept 1



# Intersection Preferred Concept 2



SQUIRE POPE

Old Wild Horse

Wild Horse

Spanish Wells

US 278

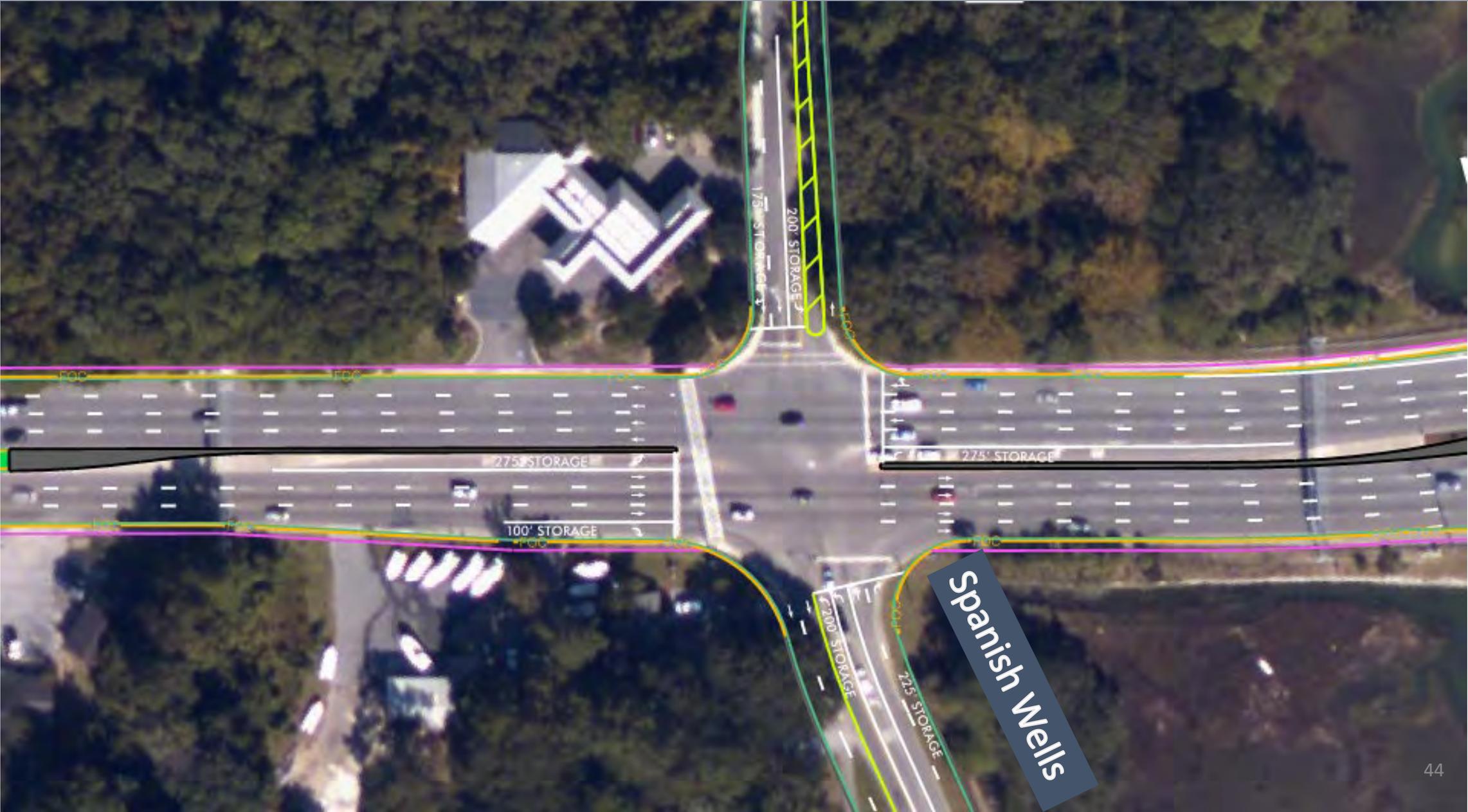
US 278

Flyover at Squire Pope (CONCEPT)

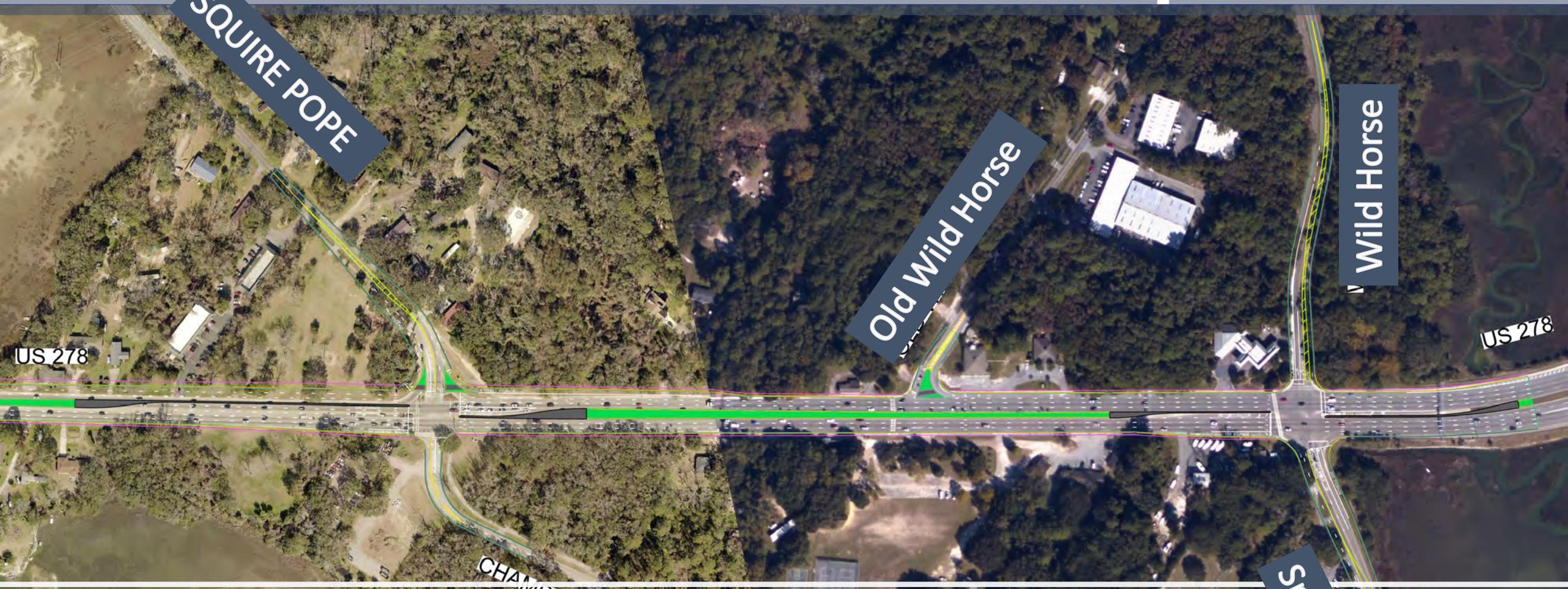
# Intersection Preferred Concept 2



# Intersection Preferred Concept 2



# Intersection Preferred Concept 3

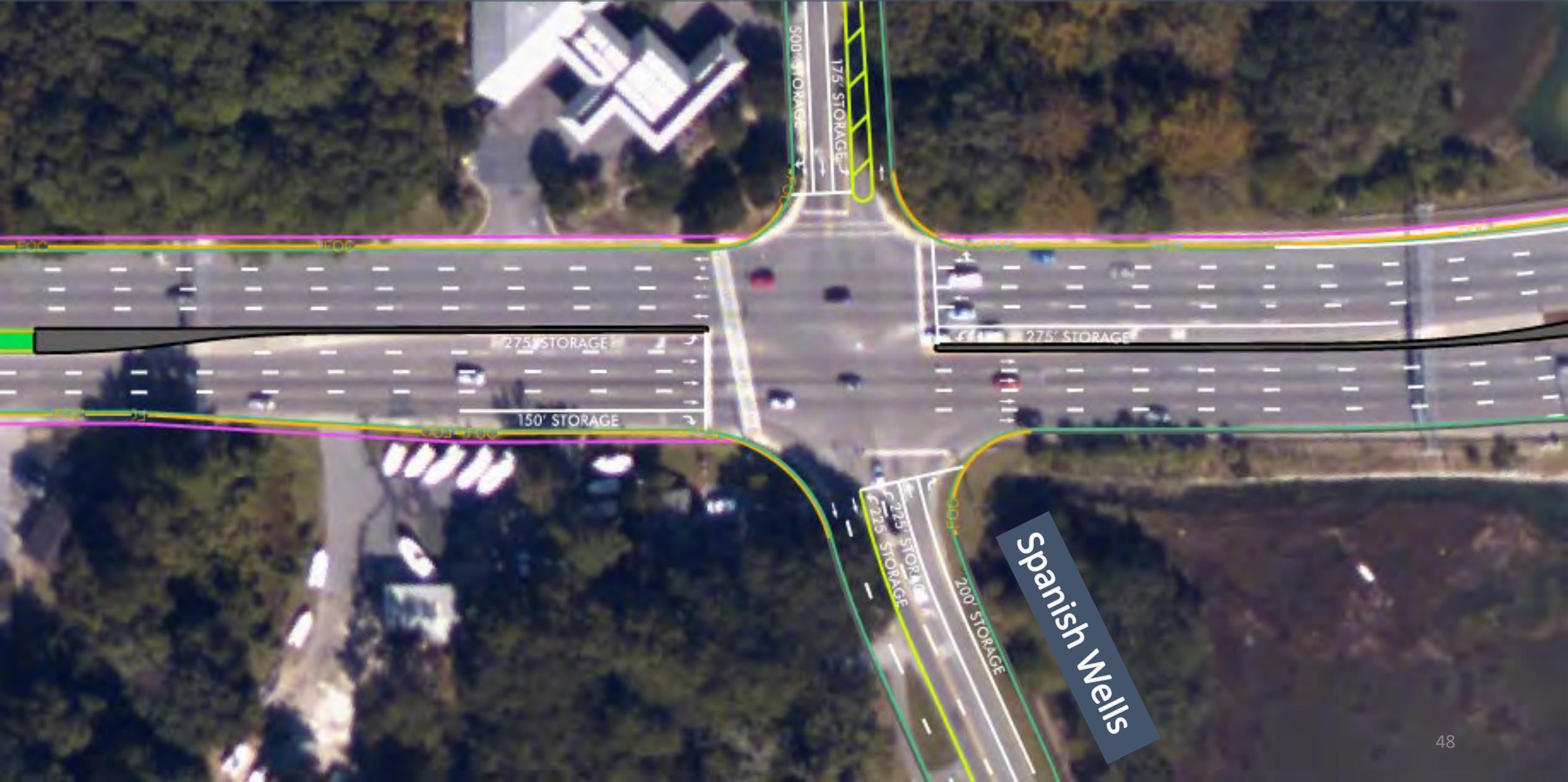


Maximize Lanes (CONCEPT)

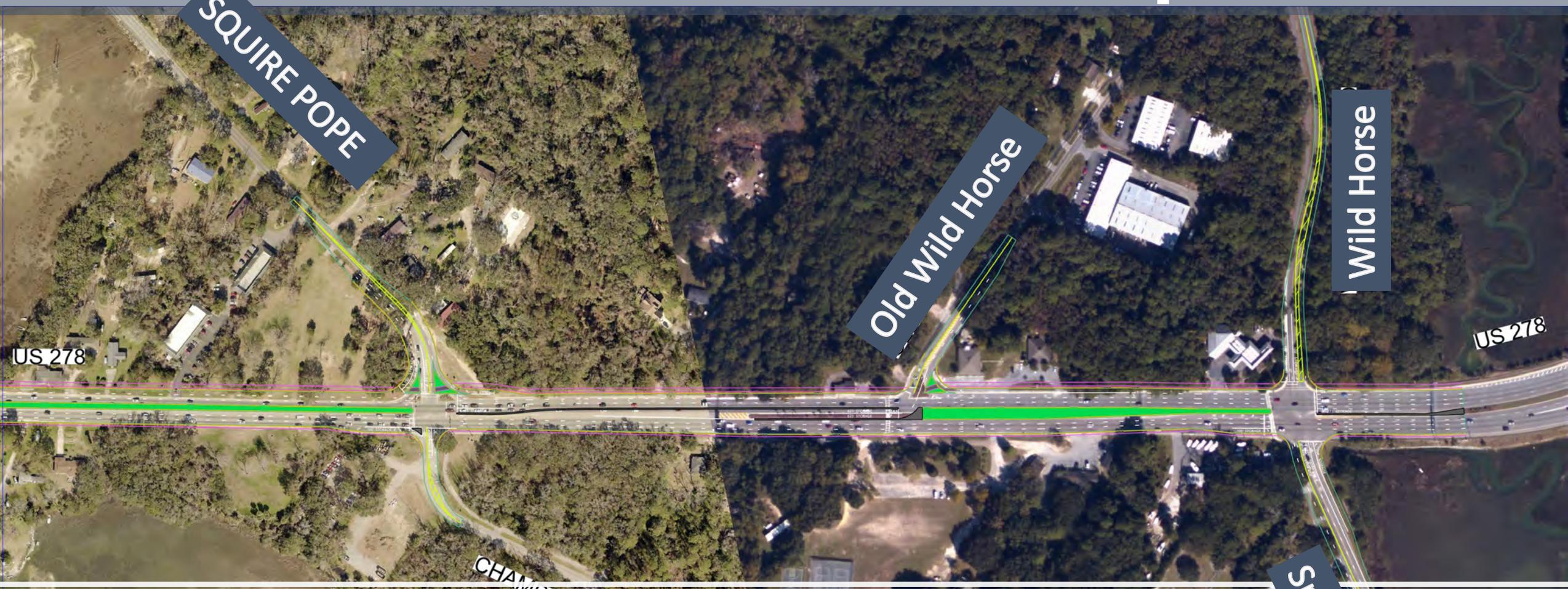
# Intersection Preferred Concept 3



# Intersection Preferred Concept 3

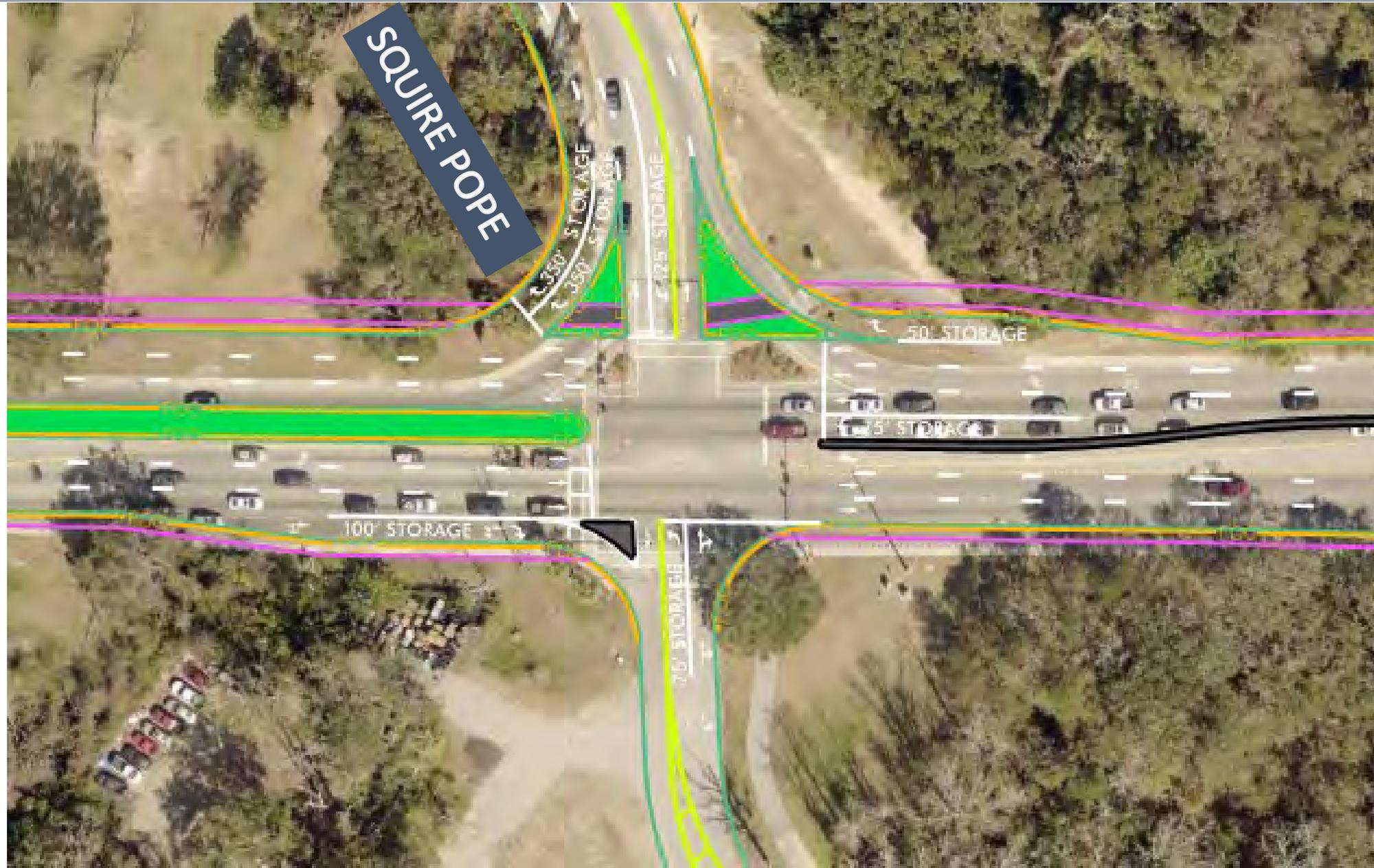


# Intersection Preferred Concept 4

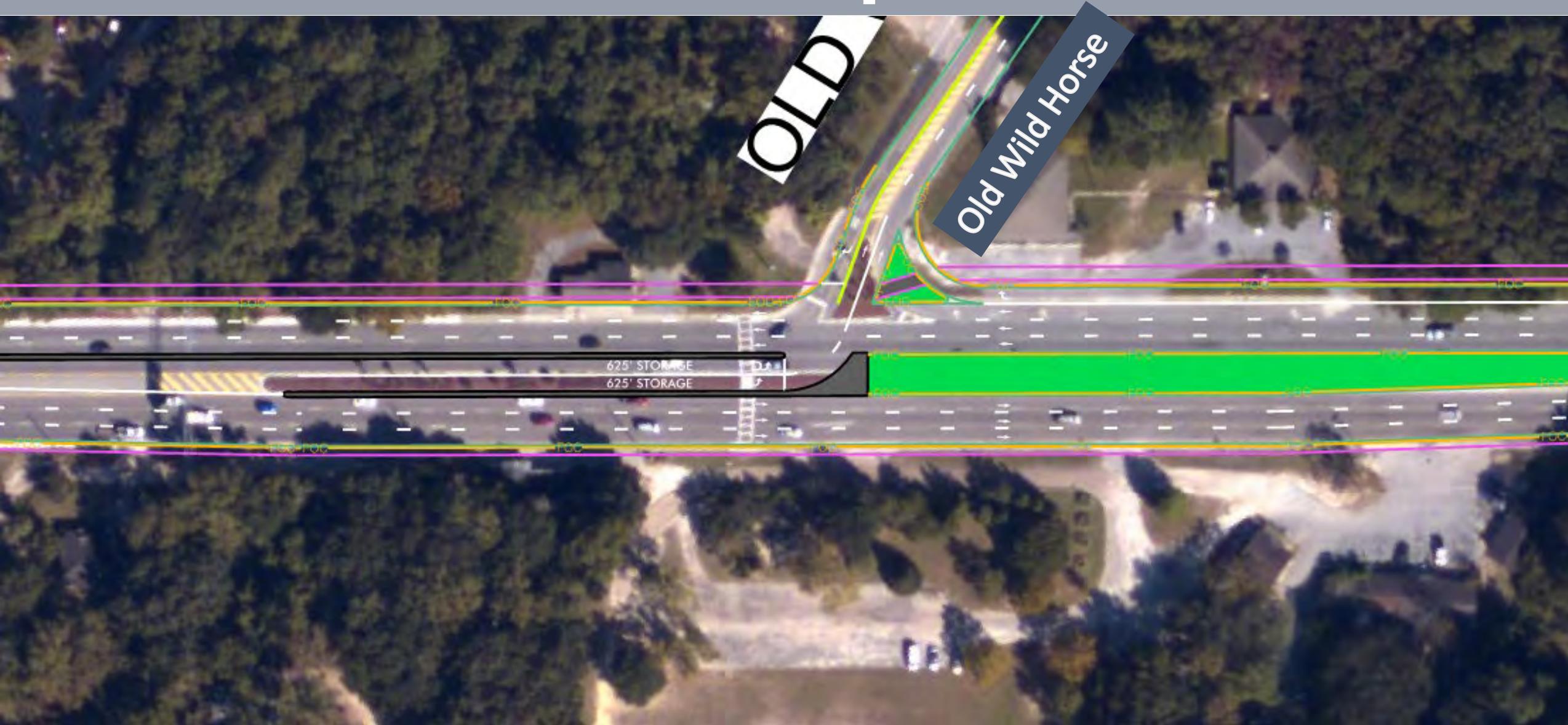


Signalize Old Wild Horse (CONCEPT)

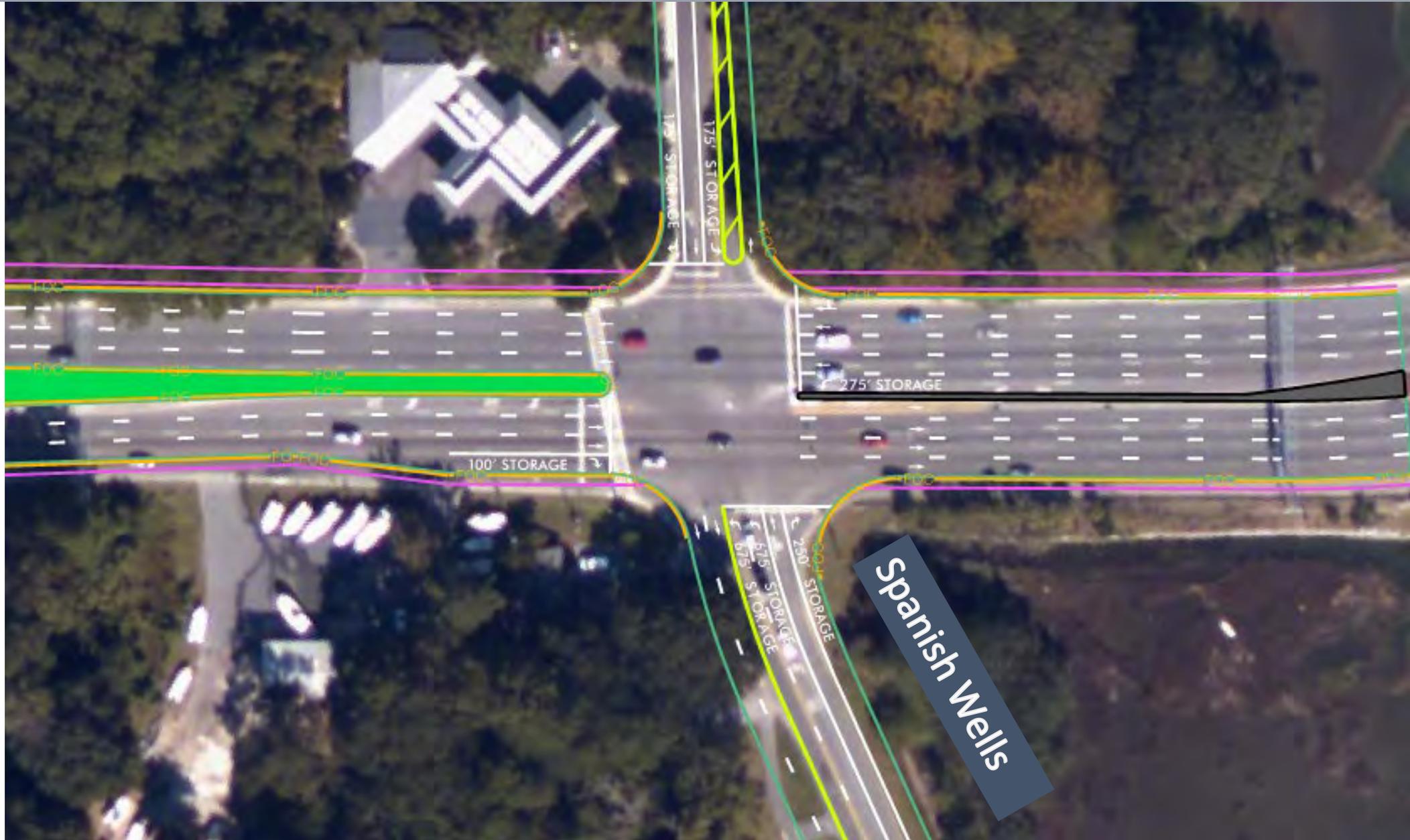
# Intersection Preferred Concept 4



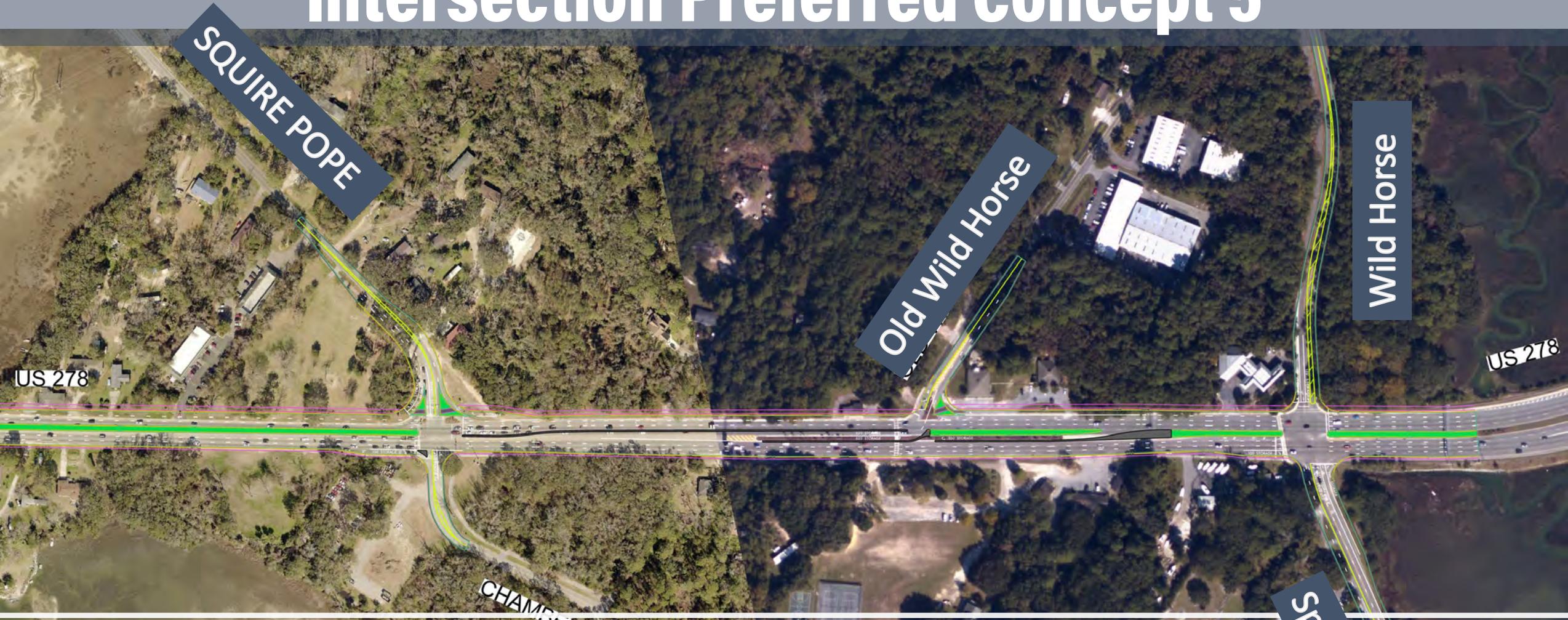
# Intersection Preferred Concept 4



# Intersection Preferred Concept 4



# Intersection Preferred Concept 5



Signalize Old Wild Horse – Alt A (CONCEPT)

# Intersection Preferred Concept 5

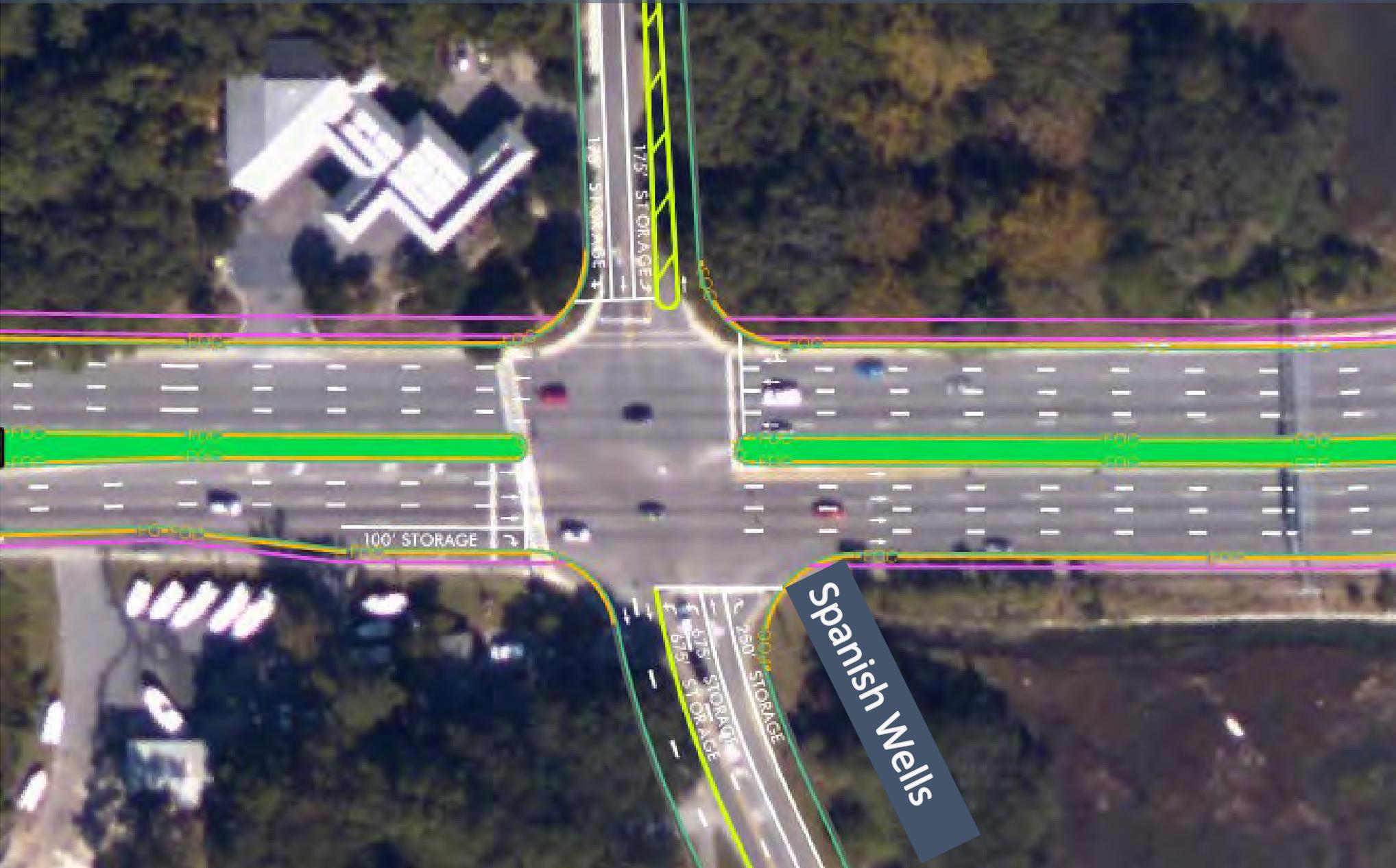


# Intersection Preferred Concept 5

Old Wild Horse



# Intersection Preferred Concept 5



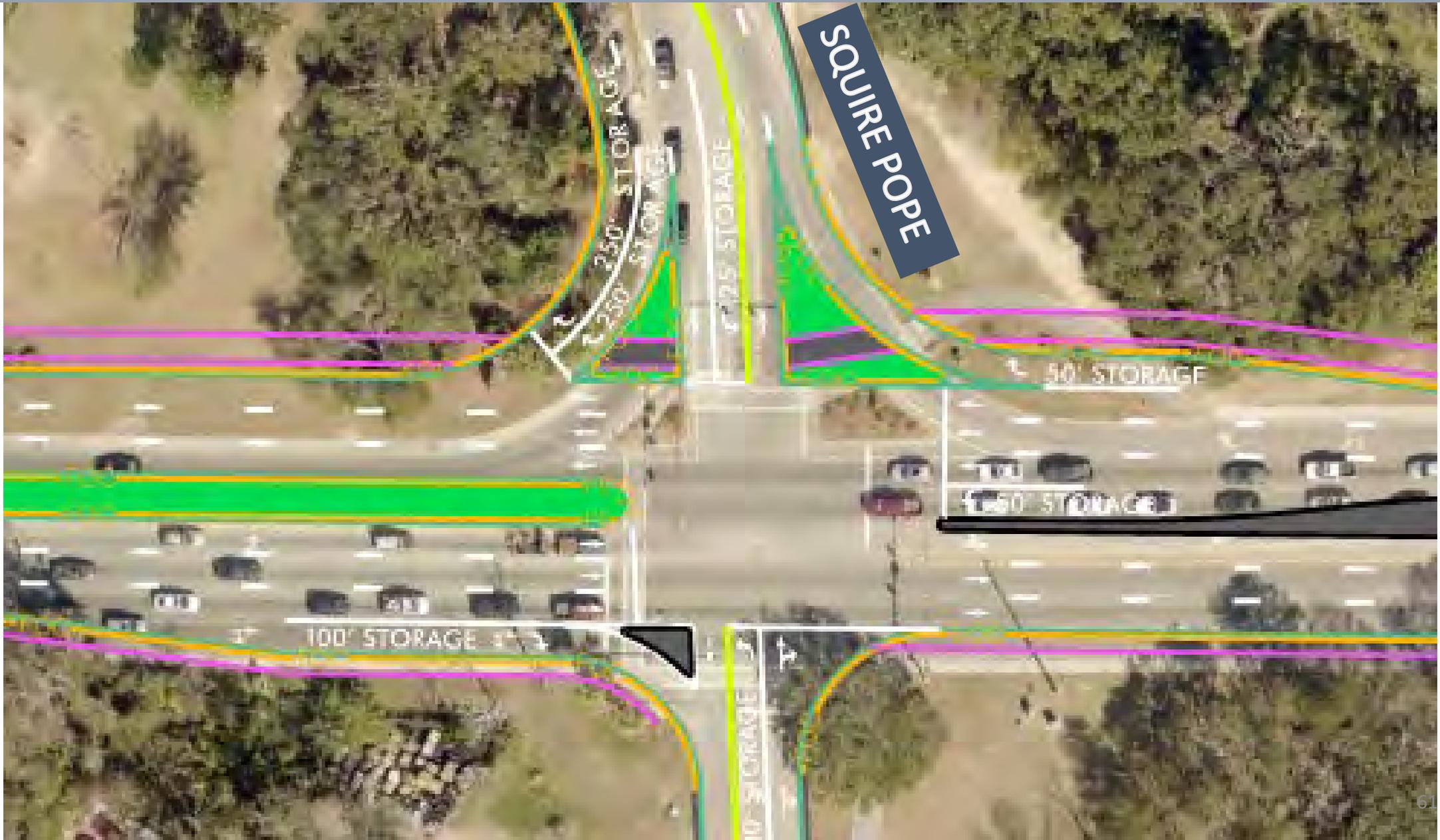
# Intersection Preferred Concept 6



Signalize Old Wild Horse – Alt B (CONCEPT)

Spanish Wells

# Intersection Preferred Concept 6

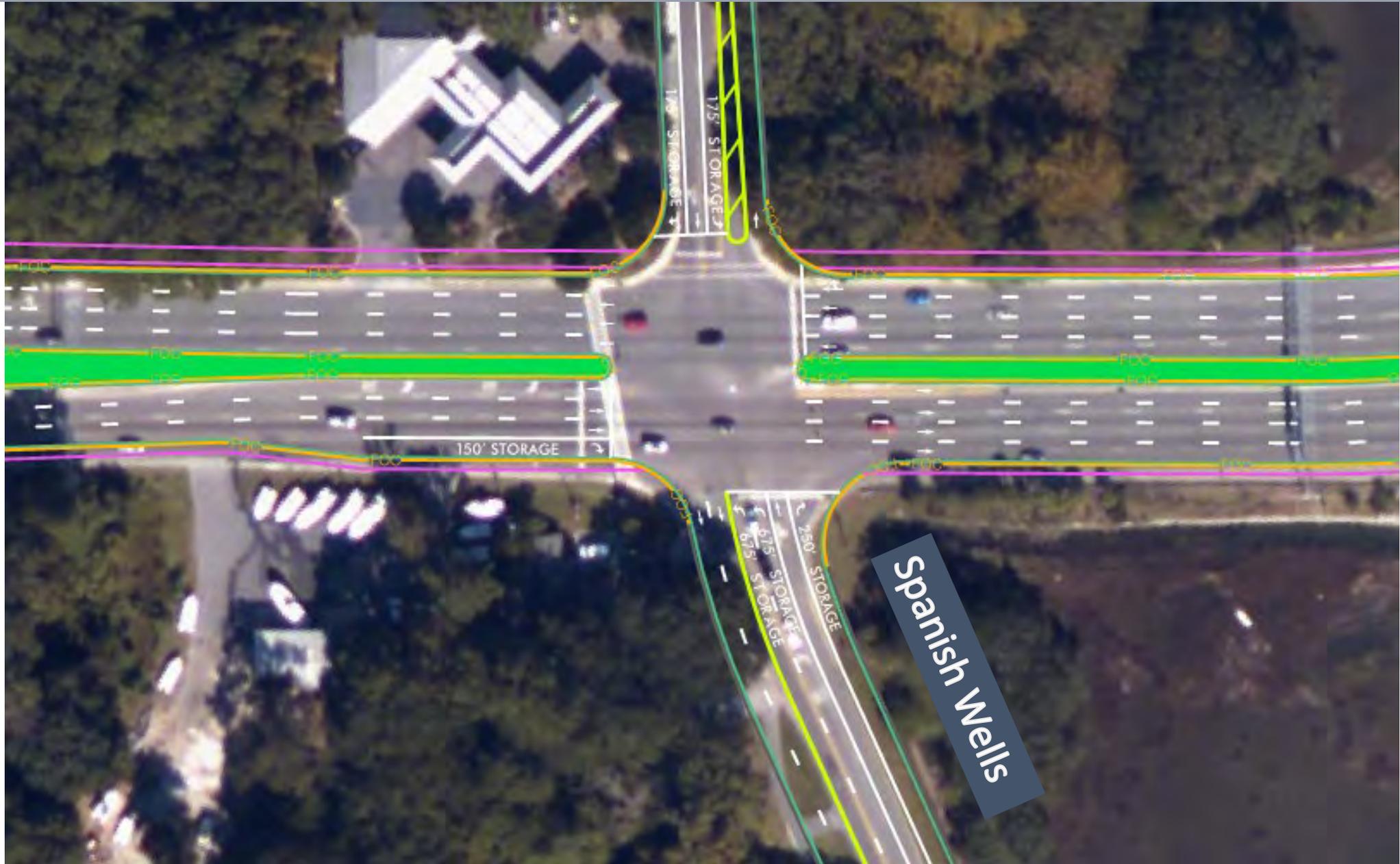


# Intersection Preferred Concept 6

Old Wild Horse



# Intersection Preferred Concept 6





# Questions?



*Charting a Light on the Community's Transportation Future*