

# Sumter County

C-470 Preliminary Engineering Study

From I-75 to Lake County Line

Public Hearing

May 11, 2010





# **Sumter County**

*C-470 Preliminary Engineering Study*

## **Presentation Outline**

- I. Study Overview**
- II. Alternatives Evaluated**
- III. Public Involvement**
- IV. Staff Recommendations**
- V. Next Steps / Input & Questions**

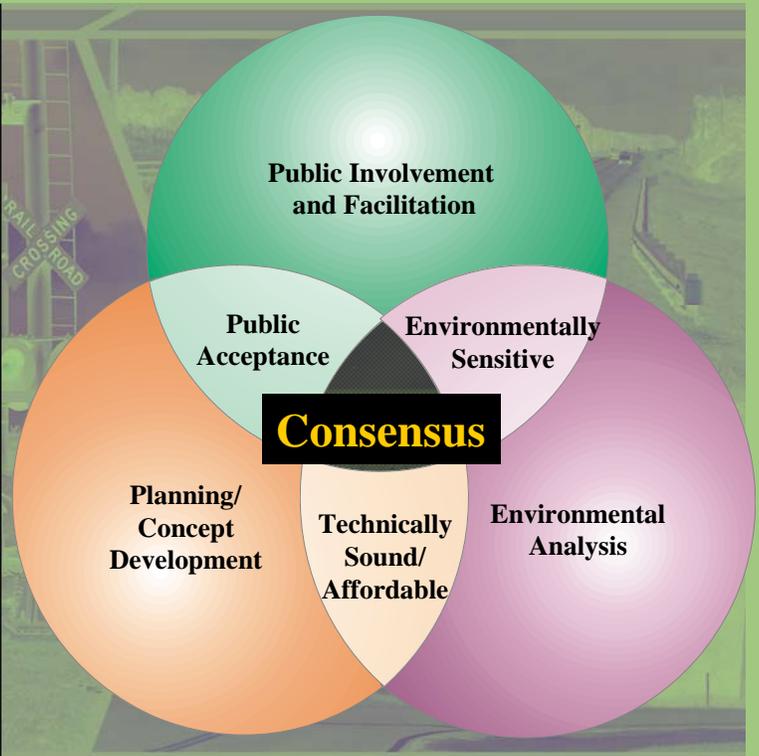


# Sumter County

C-470 Preliminary Engineering Study

## Study Overview: Study Process

- Existing Conditions Data Collection
- Engineering Analysis
- Environmental Evaluations
- Public Involvement

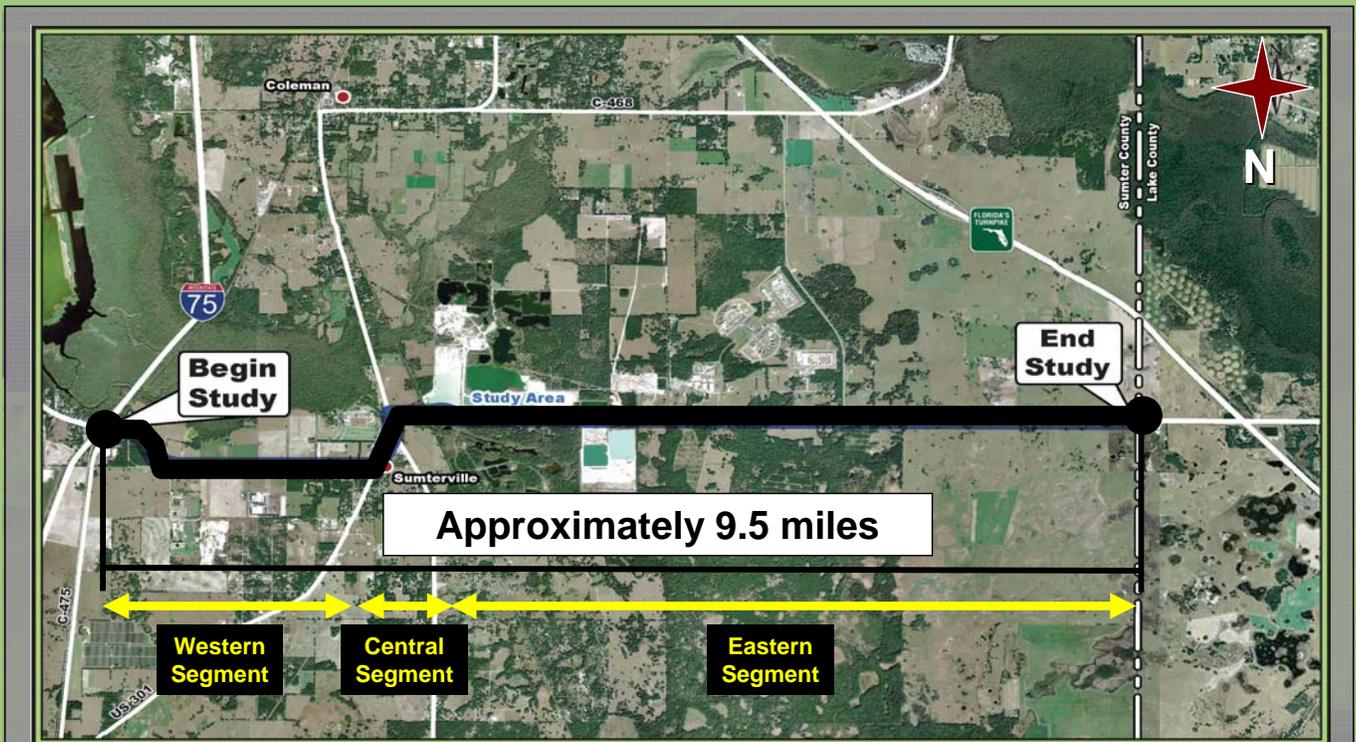




# Sumter County

C-470 Preliminary Engineering Study

## Study Overview: Study Limits





# Sumter County

C-470 Preliminary Engineering Study

## Study Overview: Study Segments

- **Interstate 75 to US 301**
  - Roadway Curvature
  - CSX Rail-line
  - SWFWMD Land
- **US 301/SR 471 Intersections**
  - Shady Brook Golf Course
  - Lake Panasoffkee Outfall
  - SECO Main Office
  - Sumterville Cemetery
- **US 301 to Lake County Line**
  - Mining Operations
  - Overhead Electric
  - Federal Lands
  - County Line/Turnpike Interchange





## **Sumter County**

*C-470 Preliminary Engineering Study*

### ***Project Need***

- Growth in Land Use and Population
- Systems Continuity
- Consistency with Adopted Long Range Plans
- Safety Considerations
- Future Travel Demand



# Sumter County

C-470 Preliminary Engineering Study

Future Travel Demand

- Travel Demand Modeling & Analysis
  - Central Florida Regional Planning Model (CFRPM) v4.5
  - Based on Socio-Economic Data & Traffic Analysis Zones
  - Incorporates Future Land Use Planning & Growth
- Future Traffic Demand Forecast
  - Based on 2035 Design Horizon
- Level of Service (LOS) Standards
  - “D” for C-470 from I-75 to US 301
  - “C” for C-470 from US 301 to Turnpike
  - “D” for US 301 from C-470 (W) to C-470 (E)





# **Sumter County**

**C-470 Preliminary Engineering Study**

## **Level of Service**

**LOS A / B**



**LOS E / F**





# **Sumter County**

**C-470 Preliminary Engineering Study**

## **Level of Service**

**LOS C / D**





# Sumter County

C-470 Preliminary Engineering Study

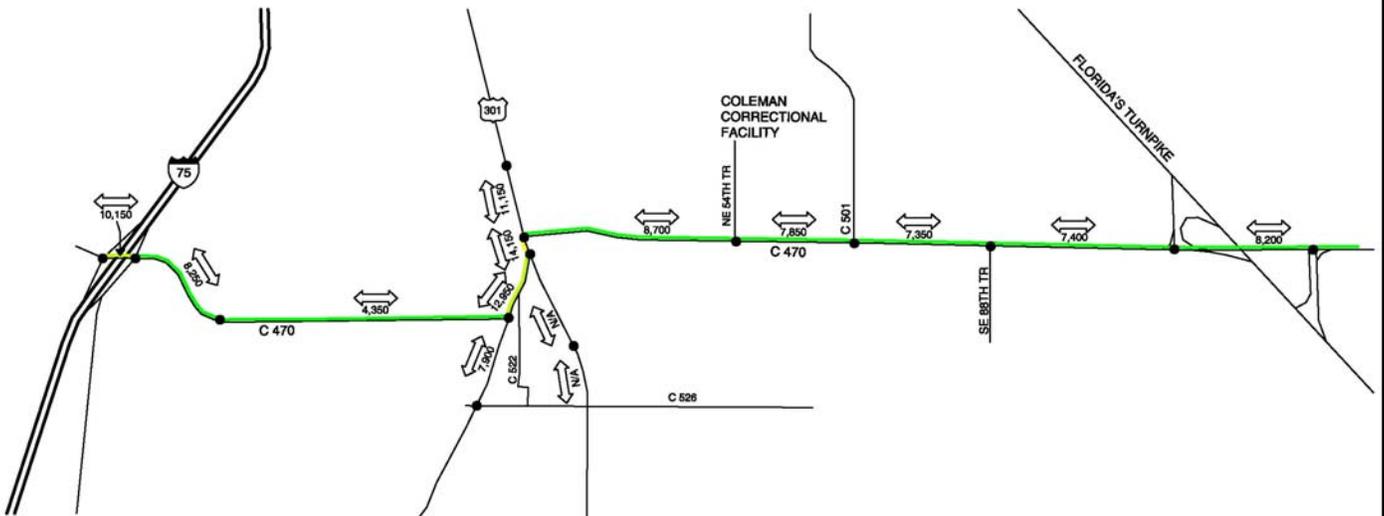
Existing Traffic (2009)

## Daily Traffic Volumes

- C-470 (W): 4,300 to 10,100
- US 301: 12,900 to 14,200
- C-470 (E): 7,400 to 8,700

### LEGEND

- ⇔ = ANNUAL AVERAGE DAILY TRAFFIC (AADT)  
xx,xxx
- SEGMENT LEVEL-OF-SERVICE (LOS)
- = LOS - A OR B
  - = LOS - C
  - = LOS - D
  - = LOS - E
  - = LOS - F





# Sumter County

C-470 Preliminary Engineering Study

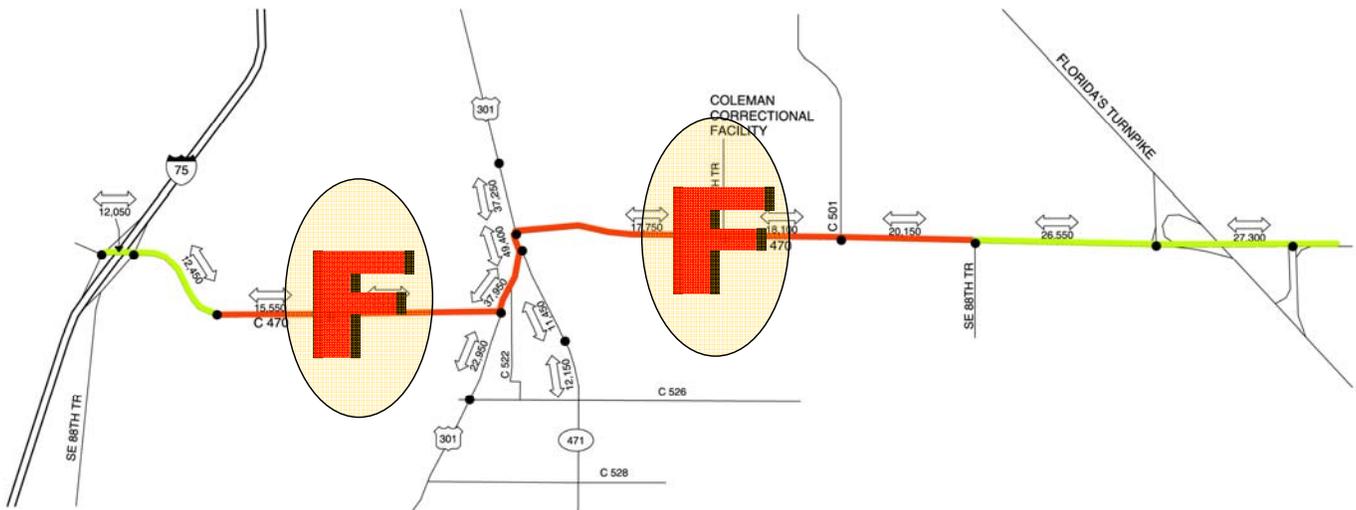
## Future Traffic (2035)

### • No-Build Scenario (2-lanes)

- C-470 (W): 12,100 to 17,000
- US 301: 38,000 to 49,400
- C-470 (E): 17,800 to 26,700

#### LEGEND

- xx,xxx = ANNUAL AVERAGE DAILY TRAFFIC (AADT)  
SEGMENT LEVEL-OF-SERVICE (LOS)  
— = LOS - A OR B  
— = LOS - C  
— = LOS - D  
— = LOS - E  
— = LOS - F





## **Sumter County**

**C-470 Preliminary Engineering Study**

## **Accommodating Future Traffic**

- Add Capacity (More Travel Lanes)
  - Improve Existing C-470
  - Alternate Routes
- Systems Continuity
  - Eliminate Off-Set Intersections





# **Sumter County**

**C-470 Preliminary Engineering Study**

## **Roadway Concepts**

### **Facility Type**

- Urban, Rural, Suburban
- **Traffic / Travel Demand**
- **Surrounding Land Use**
- **Speed Limit**
- **Design Criteria**
- **Community Vision**
- **Stormwater Management**





## **Sumter County**

### **C-470 Preliminary Engineering Study Stormwater Management**

- Drainage Retention Areas (DRAs)
  - Open / Closed Facility
  - Wet or Dry Ponds
  - Limited Treatment in Median
  - Sized for Ultimate 6 Lane Concept
  - Line Item in Comparative Evaluation
  - Locations to be Determined





# **Sumter County**

**C-470 Preliminary Engineering Study**

## **Presentation Outline**

I. Study Overview

**II. Alternatives Evaluated**

III. Public Involvement

IV. Staff Recommendations

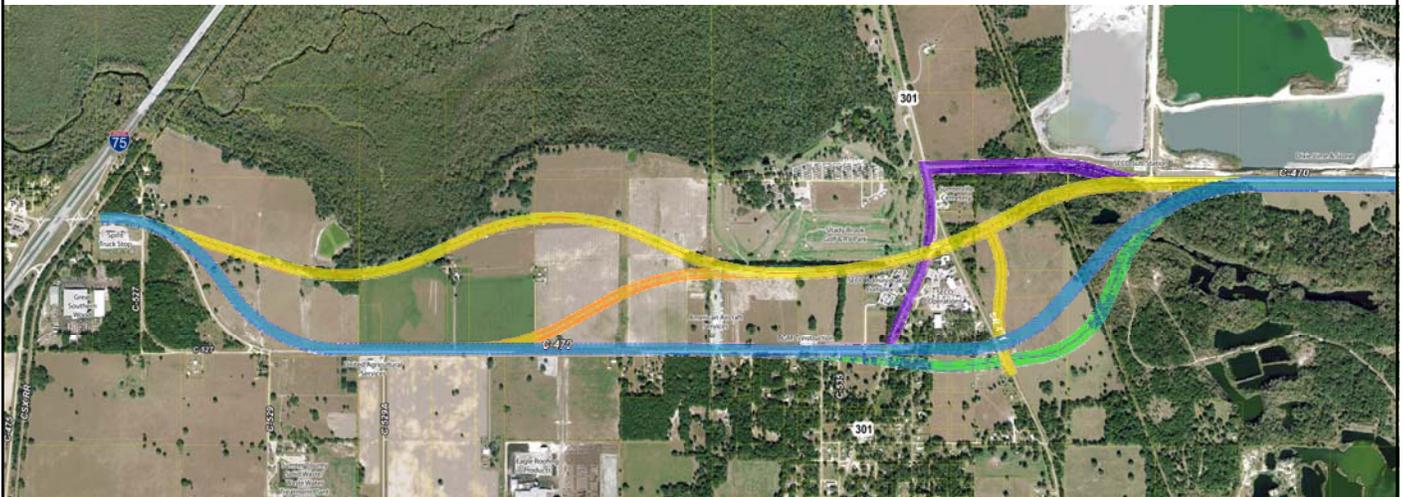
V. Next Steps / Input & Questions



**Within the Western Half of Study Area**

- Alternative 1 
- Alternative 2 
- Alternative 3 
- Alternative 4 
- Alternative 5 

**A 4-Lane Roadway is Required to Accommodate Future Traffic.**





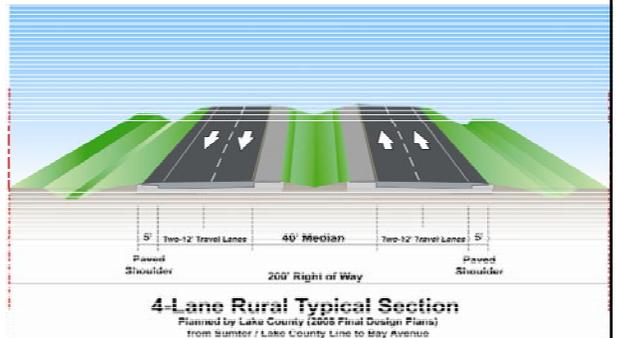
# Sumter County

C-470 Preliminary Engineering Study

## Alignment Locations

### Within the Eastern Half of Study Area

- Common to Alternatives 1 – 5
- East of US 301 to County Line
- Tie Into Lake County Project





# Sumter County

C-470 Preliminary Engineering Study

## Roadway Concepts

### Western Segment

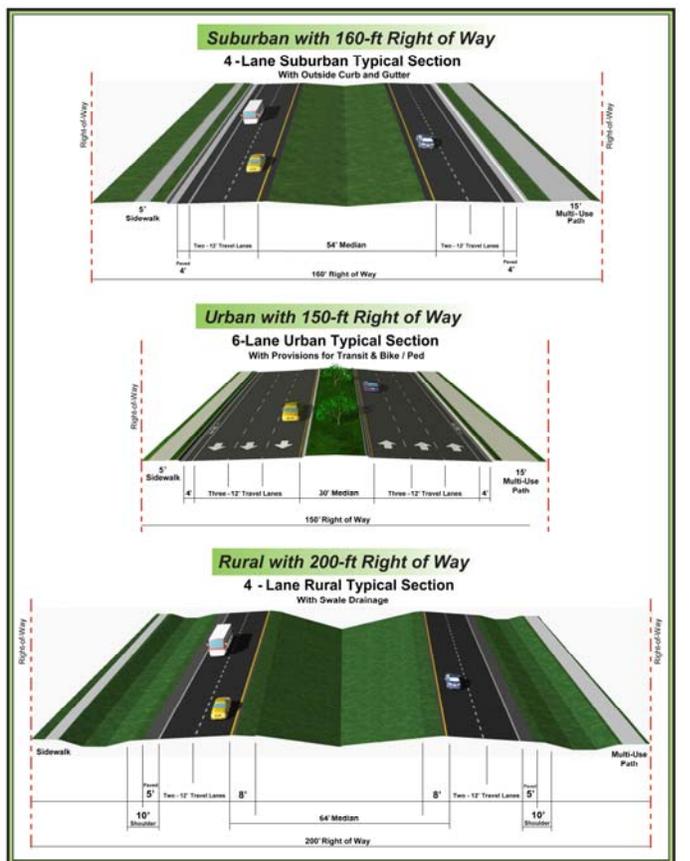
- I-75 to US 301
  - Varying Speed Limits
  - Industrial Land Uses
  - Railroad Crossing / I-75 Interchange
  - R/W Needs: 160 Feet

### Central Segment

- US 301 (C-470 W) to (C-470 E)
  - Commercial Land Use
  - Community of Sumterville
  - Sumterville Cemetery
  - R/W Needs: 150 Feet

### Eastern Segment

- US 301 to Lake County Line
  - Industrial & Rural Land Uses
  - Varying Speed Limits
  - Future Development
  - R/W Needs: 200 Feet





## Evaluation Factors

- Travel Service
- Community Impacts
- Environmental Impacts
- Project Cost





# Sumter County

C-470 Preliminary Engineering Study

## Comparative Evaluation

### Project Length

- 9.63 to 9.90 Miles
- Less than 4% variation

### Right of Way Needs

- Range from 120 to 153 Acres

### No. of Parcels Impacted

- Range from 44 to 67

### Potential Relocations

- Range from 1 to 5 Properties Impacted

### Natural Environment

- Wetlands Impacted
  - 6.7 to 7.2 Acres (minor)
- Threatened & Endangered
  - Low Occurrences
  - Minimal to No Impacts Expected

### Other Environment

- Potential Historic Sites
- Public Lands

### Project Cost

- \$85.2 Million – Alternative 1
- \$88.7 Million – Alternative 5
- Small Variation ( $\pm 4\%$ )



# Sumter County

## C-470 Preliminary Engineering Study

## Comparative Evaluation

EVALUATION FACTORS	ALTERNATIVE ALIGNMENTS					
	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	NO BUILD
<b>Travel Service</b>						
Project Length (miles)	9.84	9.56	9.63	9.63	9.63	9.90
Number of Signals (#)	2	2	2	2	2	2 (Existing)
Projected Traffic Volumes	17,550 - 57,500	17,900 - 29,800	17,900 - 29,800	21,100 - 33,350	21,100 - 33,350	12,050 - 49,400
Number of Lanes	4 (6 on US 301)	4	4	4	4	None
Eliminates Offset Intersections	No	Yes	Yes	Yes	Yes	No
<b>Community Impacts</b>						
Parcels Impacted:						
- Residential	8	24	24	9	9	None
- Commercial	9	9	5	5	5	None
- Other	42	34	32	32	30	None
- Total	59	67	61	46	44	None
Potential Relocations:						
- Residential	0	1	3	0	0	None
- Commercial	0	1	1	0	0	None
- Other	2	2	1	1	1	None
- Total	2	4	5	1	1	None
Right-of-Way Required (Acres)	105.67	117.26	119.94	130.13	135.18	None
Potential Historic/ Archaeological Impacts	8 Sites	7 Sites	8 Sites	8 Sites	7 Sites	None
<b>Environmental Impacts</b>						
Wetlands (acres)	6.78	6.78	6.78	7.07	7.21	None
Uplands Habitat (acres)	160.16	171.52	171.66	169.27	166.83	None
Outstanding Florida Waters (acres)	0.00	0.00	0.00	0.00	0.00	None
Public Lands (acres)	0.33	0.19	0.20	0.34	0.36	None
Threatened and Endangered Species	Low	Low	Low	Low	Low	None
Floodplains (acres) <sup>1</sup>	None	None	None	None	None	None
Stormwater Management Areas Required (acres)	14.7	17.2	17.2	18.7	17.9	None
Sinkhole Potential	Low	Medium	Medium	High	High	None
Potential Contamination Sites (#)	0	1	0	0	0	None
<b>Project Cost (\$ Millions)</b>						
Final Design <sup>7</sup>	\$5.33	\$5.28	\$5.31	\$5.18	\$5.16	\$0.00
Right-of-Way Acquisition <sup>8</sup>	\$18.06	\$20.17	\$20.57	\$22.32	\$22.96	\$0.00
Roadway Construction <sup>4</sup>	\$57.05	\$56.73	\$57.11	\$55.83	\$55.66	\$0.00
Environmental Mitigation (Wetlands) <sup>5</sup>	\$0.68	\$0.68	\$0.68	\$0.71	\$0.72	\$0.00
Contingency <sup>6</sup>	\$4.06	\$4.14	\$4.18	\$4.20	\$4.23	\$0.00
<b>Total Costs</b>	<b>\$85.17</b>	<b>\$86.99</b>	<b>\$87.86</b>	<b>\$88.24</b>	<b>\$88.73</b>	<b>\$0.00</b>



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## **Presentation Outline**

I. Study Overview

II. Alternatives Evaluated

**III. Public Involvement**

IV. Staff Recommendations

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# Sumter County

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## Alignment Locations

### Staff Recommended Alternative

- 4 lanes
- Combination of Alternatives 4 and 5
- I-75 to Approx. 1 mile East of US 301
- Continuous C-470 Alignment

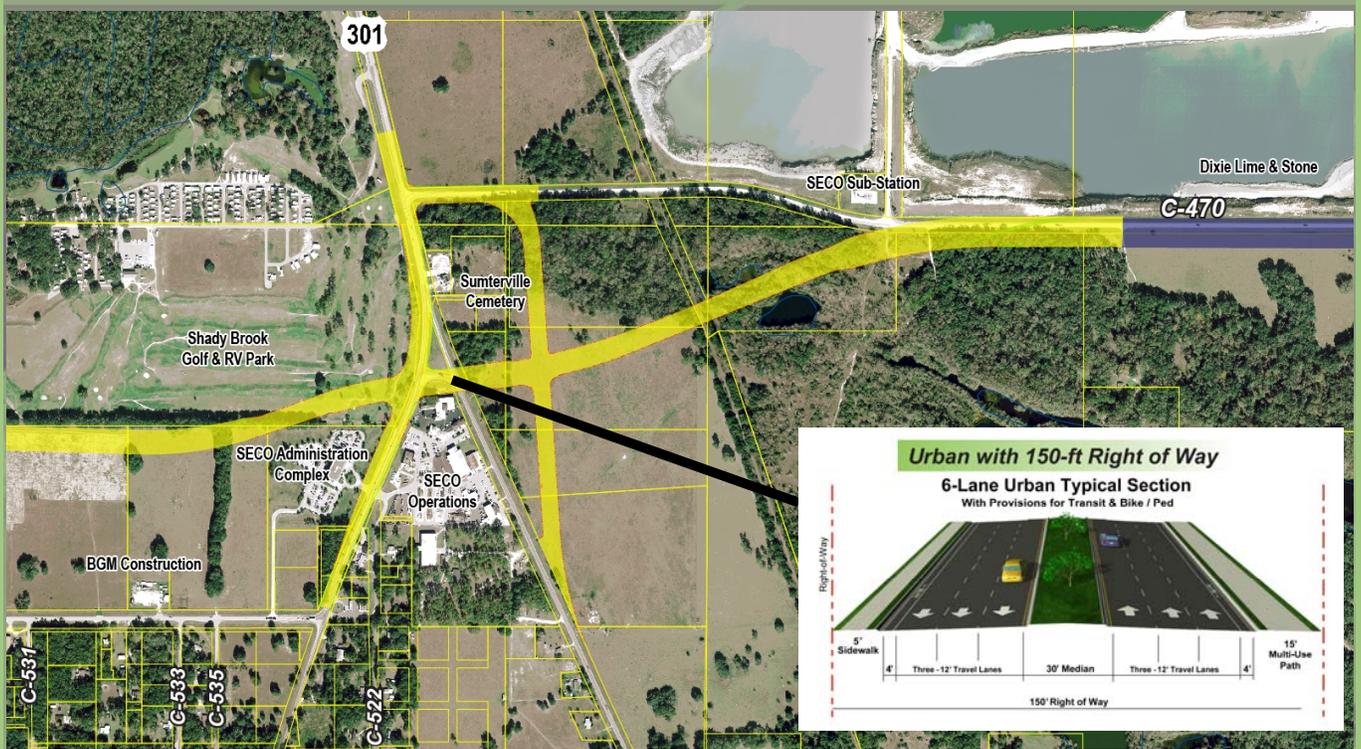




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C-470 Preliminary Engineering Study

## Alignment Locations

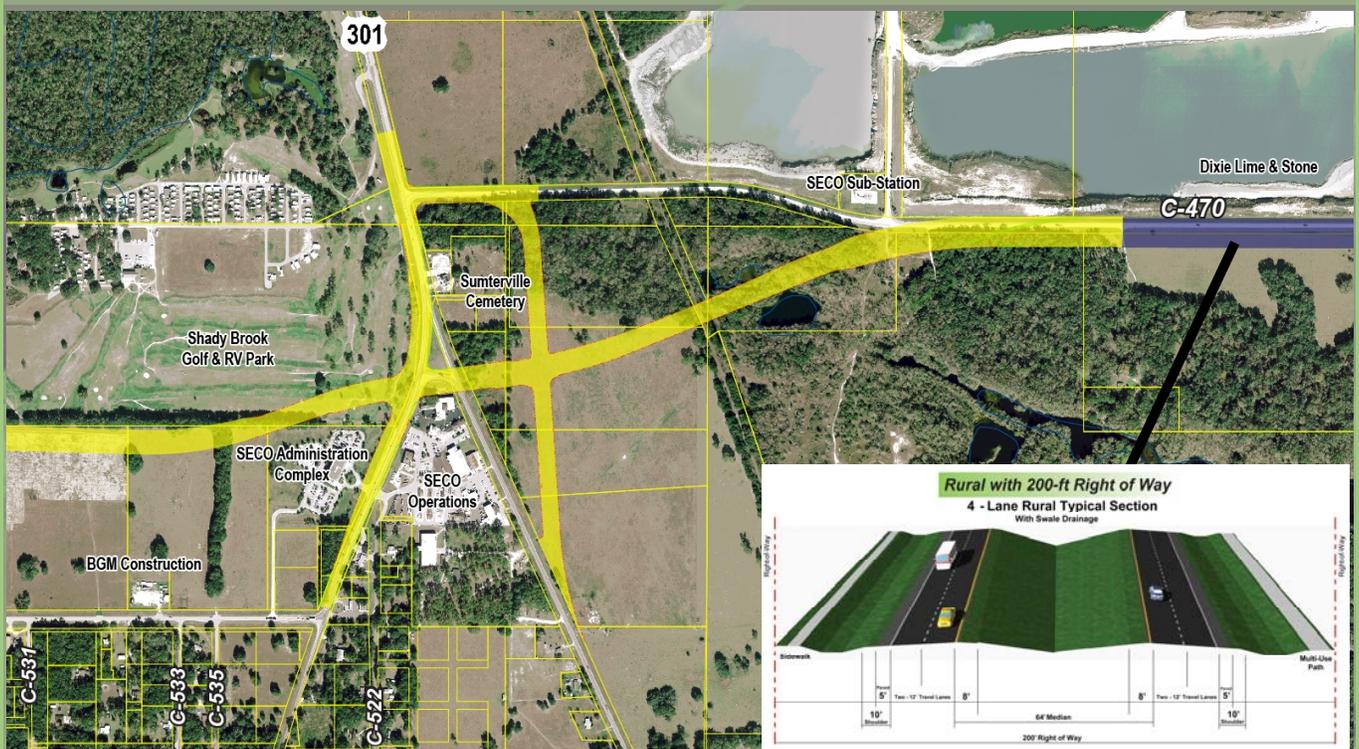




# Sumter County

C-470 Preliminary Engineering Study

## Alignment Locations



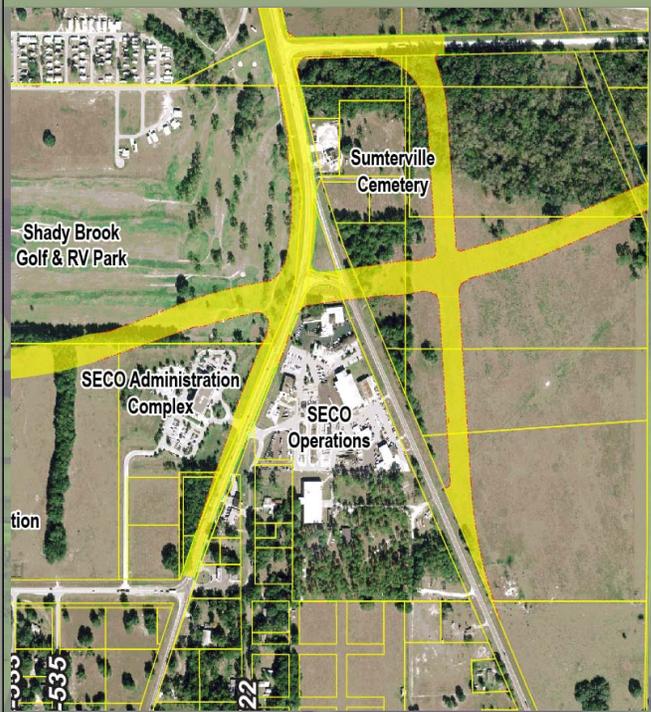


# Sumter County

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## Alignment Locations

- Realigns SR 471
  - Reconfigure existing
  - SECO Customer Service Parking (24 spaces)
- Improvements to US 301
  - 150 Ft. R/O/W
- Intersection Geometry
  - C-470 / SR 471
  - C-470 / US 301
  - Spacing (960 Ft.)

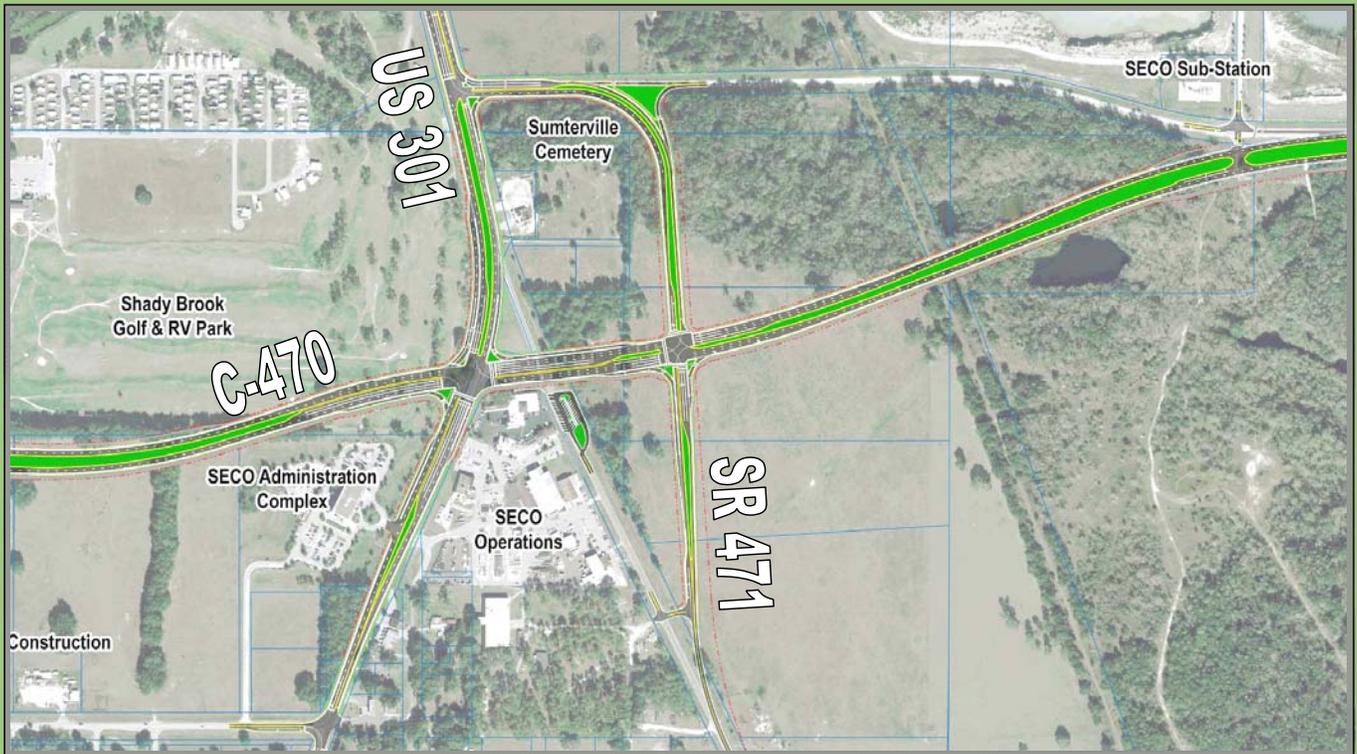




# Sumter County

C-470 Preliminary Engineering Study

## Concept Details





# Sumter County

C-470 Preliminary Engineering Study

US 301 / SR 471 Area





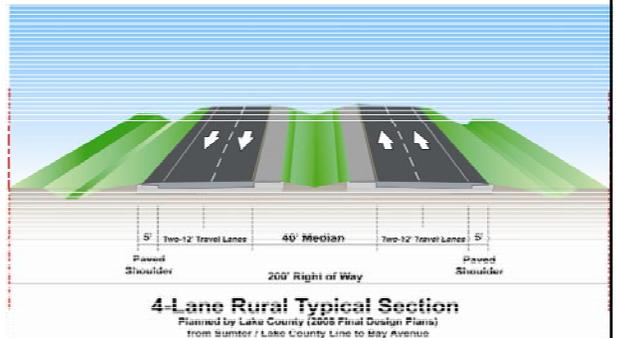
# Sumter County

C-470 Preliminary Engineering Study

## Alignment Locations

### Within the Eastern Half of Study Area

- East of US 301 to County Line
- 200 FT. of R/O/W
- Ties Into Lake County Project





# Sumter County

## C-470 Preliminary Engineering Study

## Comparative Evaluation

EVALUATION FACTORS	ALTERNATIVE ALIGNMENTS						
	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6 Staff Recommendation	NO BUILD
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Eliminates Offset Intersections	No	Yes	Yes	Yes	Yes	No	No
<b>Community Impacts</b>							
Parcels Impacted:							
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- Commercial	0	1	1	0	0	0	None
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- Total	2	4	5	1	1	1	None
Right-of-Way Required (Acres)	105.67	117.26	119.94	130.13	135.18	126.05	None
Potential Historic/ Archaeological Impacts	8 Sites	7 Sites	8 Sites	8 Sites	7 Sites	8 Sites	None
<b>Environmental Impacts</b>							
Wetlands (acres)	3.27	5.05	5.03	8.12	8.26	6.03	None
Uplands Habitat (acres)	160.16	171.52	171.66	169.27	166.83	175.82	None
Outstanding Florida Waters (acres)	0.00	0.00	0.00	0.00	0.00	0.00	None
Public Lands (acres)	0.33	0.19	0.20	0.34	0.36	0.46	None
Threatened and Endangered Species	Low	Low	Low	Low	Low	Low	None
Floodplains (acres) <sup>1</sup>	None	None	None	None	None	None	None
Stormwater Management Areas Required (acres)	14.7	17.2	17.2	18.7	17.9	18.7	None
Sinkhole Potential	Low	Medium	Medium	High	High	High	None
Potential Contamination Sites (#)	0	1	0	0	0	0	None
<b>Project Cost (\$ Millions)</b>							
Final Design <sup>2</sup>	\$5.33	\$5.28	\$5.31	\$5.18	\$5.16	\$5.26	\$0.00
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Environmental Mitigation (Wetlands) <sup>5</sup>	\$0.33	\$0.51	\$0.50	\$0.81	\$0.83	\$0.60	\$0.00
Contingency <sup>6</sup>	\$4.04	\$4.13	\$4.17	\$4.21	\$4.23	\$4.21	\$0.00
<b>Total Costs</b>	<b>\$84.80</b>	<b>\$86.81</b>	<b>\$87.67</b>	<b>\$88.35</b>	<b>\$88.84</b>	<b>\$88.43</b>	<b>\$0.00</b>



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C-470 Preliminary Engineering Study

## Comparative Evaluation

### Project Length

- 9.50 to 9.90 Miles
- Less than 5% variation

### Right of Way Needs

- Range from 120 to 153 Acres

### No. of Parcels Impacted

- Range from 44 to 67

### Potential Relocations

- Range from 1 to 5 Properties Impacted

### Natural Environment

- Wetlands Impacted
  - 3.3 to 8.3 Acres (minor)
- Threatened & Endangered
  - Low Occurrences
  - Minimal to No Impacts Expected

### Other Environment

- Potential Historic Sites
- Public Lands

### Project Cost

- \$84.8 Million – Alternative 1
- \$88.8 Million – Alternative 5
- Small Variation ( $\pm 5\%$ )



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# **Sumter County**

**C-470 Preliminary Engineering Study**

## **Next Steps**

- **Board Discussion / Questions**
- **Approval of Staff Recommendation**
- **Finalize and Submit Project Documentation**
- **Begin Design Phase**



## **Sumter County**

**C-470 Preliminary Engineering Study**

### **Contact Information**

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## **Sumter County**

**C-470 Preliminary Engineering Study**

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