

FINDING OF COMPLIANCE

St. Johns River Crossing Northern and Southern Alternatives

Clay and St. Johns Counties, Florida

BACKGROUND:

FDOT established three purpose and need goals to guide the development of potential solutions to existing transportation problems in the project area as described in the Draft Environmental Impact Statement. These are:

1. Provide additional capacity to improve current and future transportation network deficiencies,
2. Improve emergency evacuation, and.
3. Promote and support employment and economic development.

Based on previous studies, public input, and the final desktop analysis, the Black, Purple, Brown, Orange, Green, and Pink Alternatives were carried forward for detailed evaluation in this Draft EIS, along with the No Build Alternative. FDOT reduced the width of the final Build Alternatives from 400 feet to 324 feet, in an effort to avoid or minimize environmental and community impacts. However, the results of the final desktop analysis showed that there was still a potential to impact conservation and recreation properties within the reduced right-of-way width of the Brown, Orange, Green, and Pink Alternatives. To avoid or minimize potential impacts to these areas, FDOT developed four additional alternatives for detailed analysis: Brown 2, Orange 2, Green 2, and Pink 2.

All Build Alternatives involve a new bridge across the St. Johns River. The two northern alternatives (Black and Purple Alternatives) would cross the river north of Green Cove Springs, and the existing Shands Bridge to the south would remain in place. The eight southern alternatives (Brown 1 and 2, Orange 1 and 2, Green 1 and 2, and Pink 1 and 2 Alternatives) would cross the river near the existing Shands Bridge, which would be removed after the new bridge was completed.

Based on an evaluation of the northern and southern alternatives the Clay and St. Johns Board of County Commissioners have identified Pink 1 as the Locally Preferred Alternative.

1. GOAL: Provides Additional Capacity

Network Capacity

- Northern Alternatives: All the Northern Build Alternatives improve network performance by increasing system capacity over the No Build Alternative.
- Southern Alternatives: All the Southern Build Alternatives improve network performance by increasing system capacity over the No Build Alternative.

Network Vehicle Travel Time Reduction

Network Vehicle Travel Time Reduction is a measure of reduced congestion as compared to the No Build Alternative.

- Northern Alternatives: The Black and Purple Alternatives rank as the 3rd highest ranked group.
- Southern Alternatives: Orange 1 and 2 and Pink 1 and 2 Alternatives rank first and second in meeting this measure of effectiveness.

Corridor Bridge Volume across the St. Johns River

- Northern Alternatives: Black carries the most volume of 78,900 vehicles per day.
- Southern Alternatives: Pink 1 and 2 and Green 1 and 2 carry the second highest volume at 74,700 vehicles per day.

Annual Cost of Traffic Congestion: Lower cost means better roadway performance.

- Northern Alternatives: Black = \$8,432,000, Purple = \$8,367,000
- Southern Alternatives = Brown 1 and 2 = \$8,478,000, Orange 1 and 2 = \$8,185,000, Green 1 and 2 = \$8,638,000, Pink 1 and 2 = \$8,871,000

Therefore, Orange 1 and 2 Alternatives provides the better roadway performance.

Estimated Savings from Traffic Congestion

- Northern Alternatives: Black and Purple alternatives at \$3.4 billion
- Southern Alternatives: Orange 1 and 2 = \$3.6 billion; Pink 1 and 2 = \$2.9 Billion

Therefore, Orange 1 and 2 provides greater monetary savings from traffic congestion.

Reference: DEIS, Chapter 3.

2. GOAL: Emergency Evacuation

All the alternatives provide some benefit by increasing the amount of roadway west of the St. Johns River. Depending on the alternative, lane miles west of the river increase between 28.12 and 50.57 lane miles over the No-Build condition.

Although all the alternatives provide some evacuation benefit, the southern alternatives (Brown 1 and 2, Orange 1 and 2, Green 1 and 2, and Pink 1 and 2) provide the greatest amount of lane miles west of the St. Johns River. Consequently, these alternatives remove the highest number of people and vehicles from the areas of potential flooding on the east side of the St. Johns River. The southern alternatives remove over 5,000 more vehicles, on average, from east of the river when compared to the northern alternatives.

- Northern Alternatives: Least amount of lane miles west of St. Johns River and highest number of cars in a queue east of the river (in areas of potential flooding).
- Southern Alternatives: Greatest amount of lane miles west of St. Johns River and less number of cars in queue east of the river (in areas of potential flooding).

Therefore, the Southern Alternatives perform better as emergency evacuation routes than the Northern Alternatives.

Reference: DEIS, Chapter 3.

3. GOAL: Economic Development

Economic developments that are adjacent to or within two miles of a local access interchange are likely to benefit to the greatest extent in terms of economic impact. More interchanges can mean better access from residential areas to commercial areas and employment centers, and result in additional economic stimulus.

Accessibility to Approved or Planned Residential Developments within 2 miles of proposed interchanges

- Northern Alternatives: Black = 10, Purple = 8
- Southern Alternatives = Brown 1 and 2 = 12, Orange 1 and 2 = 12, Green 1 and 2 = 8, Pink 1 and 2 = 8

Therefore, the Southern Alternatives provide greater or equal access to planned residential development.

Reference: page 35, Land Use and Economics Discipline Report

Greatest Potential Economic and Employment Opportunities: Commercial, Industrial, and Office Uses within 2 miles of proposed interchanges

- St. Johns County - Northern Alternatives: Black and Purple
- Clay County - Southern Alternatives: Brown 1 and 2, Orange 1 and 2, Green 1 and 2, Pink 1 and 2

Greatest Job Creation and Tax Revenues

- St. Johns County – Black, Brown 1 and 2, Orange 1 and 2
- Clay County – Brown 1 and 2, Pink 1 and 2

In Clay County, the southern alternatives, Brown 1 and 2, Orange 1 and 2, Green 1 and 2, and Pink 1 and 2, provide the greatest accessibility to future commercial, industrial, and office uses identified in the comprehensive plan and other planned areas. The Brown 1 and 2 and Pink 1 and 2 Alternatives also provide the greatest opportunities for future job creation and tax revenue generation.

In St. Johns County, the Black and Purple Alternatives provide the greatest accessibility to future commercial, industrial, and office uses identified in the comprehensive plan. The Black, Brown 1 and 2, and Orange 1 and 2 Alternatives would provide the greatest accessibility to employment-type uses identified in planned areas and would also provide the greatest opportunities for job creation and tax revenue generation.

Based on available DRI documents, FDOT looked at the total projected annual *ad valorem* tax revenues (primarily property and sales tax) that would be generated at build out of these DRIs. FDOT looked at only those DRIs where development has not yet commenced or is at less than 5 percent complete (so that only new, future tax revenues were considered). The combined annual estimated tax revenues from these planned developments at full build out will exceed \$672 million.

Additional forecasted development is anticipated to have an increased beneficial effect on local and regional economies and would continue to increase the demand for consumer goods from local businesses.

Employment Areas and DRI Tax Revenues within 2 Miles of Interchanges

Alternative	Commercial, Industrial, Office in Comp Plans (acres)		Commercial, Industrial, Office in DRIs and Other Planned Areas* (acres)		Total Commercial, Industrial, Office (acres)		DRI Job Creation within Radius**		DRI Revenues within Radius*** (\$millions)	
	Clay	St. Johns	Clay	St. Johns	Clay	St. Johns	Clay	St. Johns	Clay	St. Johns
Black	730	2,003.15	1,742.58	948.43	2,472.58	2,951.58	940	18,744	\$6.89	\$78.38
Purple	730	2,003.15	1,742.58	539.57	2,472.58	2,542.72	940	16,375	\$6.89	\$42.71
Brown 1 and 2	3,300	1,569.17	3,167.93	580.81	6,467.93	2,149.98	1,254	16,932	\$13.98	\$51.07
Orange 1 and 2	2,200	1,569.17	3,049.44	580.81	5,249.44	2,149.98	671	16,932	\$10.16	\$51.07
Green 1 and 2	2,200	17.73	3,049.44	459.83	5,249.44	477.56	671	2,271	\$10.16	\$34.38
Pink 1 and 2	3,300	17.73	3,167.93	459.83	6,467.93	477.56	1,254	2,789	\$13.98	\$34.38

* Includes DRIs as well as Branan Field, Lake Asbury, and Peter's Creek.

**Based on the percent of a DRI's commercial, industrial, and office areas that are within the 2 mile radius multiplied by the total number of jobs to be created.

***Calculated by taking the percent of the DRI within the 2 mile radius and applying it to that DRI's total revenue.

St. Johns County due to approved or in place DRI's benefits more than Clay County on the economic revenue benefits. With six I-95 interchanges in the county and its proximity to major employment centers in Jacksonville, there would seem to be little additional value of the project alternatives to the county as an economic driver.

Clay County is one of only two Florida counties with a population greater than 150,000 not served by an Interstate Highway or Interstate-type, multilane, limited access highway. The proposed alternatives would make Clay County less isolated in the perception of the marketplace as a result of its being more accessible to inbound traffic as well as commuting by residents to employment and shopping centers primarily in southeast and west Jacksonville. This would also help promote employment-based office and industrial development by making the County more accessible to workers, customers, and suppliers from outside the County. Clay County will benefit from having their large total commercial, industrial, and office development acreage be within 2 miles of proposed interchanges.

Reference: Table 13, Land Use and Economics Discipline Report

404(b)(1) COMPLIANCE:

Northern Alternative Alignments

No significant adaptations of the guidelines were made relative to this evaluation.

The discharge of dredge or fill material for the proposed construction of the Black or Purple Alternatives involves the dredging or filling of jurisdictional waters of the United States. Each of these two Northern Alternatives involves the construction of a new bridge in a new location across the St. Johns River.

The acres of wetland jurisdictional impacts (surface waters, SAV's and wetlands (primary/direct and fragment) are:

- Black Alternative = 836.91 acres
- Purple Alternative = 569.91 acres

Wetlands and aquatic systems were avoided as much possible during the development of the alternative alignment. Box culverts will be placed at the minor stream crossings while the larger stream systems are to be bridged. Minimization efforts also included reduction of the required right-of-way from 400 feet to 324 feet and narrowing the dredged or fill footprint in waters of the U.S. or wetlands. The Northern Alternatives construct a new bridge at a new location on the river adding 0.91 acres of SAV impacts. The Southern Alternatives construct a new bridge at the current Shands Bridge location; removal of the existing Shands Bridge allows for re-vegetation of SAV's in the shallow waters at the old bridge's location. Compensatory mitigation will be offered for unavoidable wetland impacts as well as impacts to SAV riverine habitat. Clean fill material will be used for the road construction. BMP will be utilized to control turbidity during construction. Turbidity screens, hay bales, swales, erosion and sediment control structures and temporary seeding or sodding with grasses are some of the BMP that will be utilized to prevent sediment transport to adjacent wetlands and aquatic systems. A sediment and erosion control plan will be composed which outlines the BMP that will be employed.

The drainage system associated with the Northern Alternatives will be designed to provide treatment and attenuation of stormwater in accordance with Florida regulations. The design will mimic natural conditions thereby maintaining the existing drainage patterns and water level fluctuations which will minimize substrate impacts.

The planned disposal of dredge or fill material at the Northern Alternatives would not violate any applicable State water quality standards. The dredging or filling will not violate the Toxic Effluent Standards of Section 307 of the Clean Water Act.

Use of the Northern Alternatives dredge or fill sites will not harm any endangered species or their critical habitat.

The proposed disposal of dredge or fill material will not result in significant adverse effects on human health and welfare, including municipal and private water supplies, recreation and

commercial fishing, plankton, fish, shellfish, wildlife, and special aquatic sites. The life stages of aquatic life and other wildlife will not be adversely affected. Significant adverse effects on aquatic ecosystem diversity, productivity and stability, and recreational, aesthetic and economic values will not occur.

On the basis of the guidelines, the proposed Northern Alternatives dredge and fill sites is specified as complying with the inclusion of appropriate and practical conditions to minimize pollution or adverse effects to the aquatic ecosystem.

Southern Alternative Alignments

No significant adaptations of the guidelines were made relative to this evaluation.

The discharge of dredge or fill material for the proposed construction of the Southern Alternative alignments involves the dredging or filling of jurisdictional waters of the United States. Each of these southern alternatives involves the construction of a new bridge adjacent to the existing Shands Bridge which will be demolished thus restoring St Johns River habitat.

The acres of wetland jurisdictional impacts (surface waters, SAV's, wetlands - primary/direct and fragment) are:

- Brown 1 = 575.04 acres
- Brown 2 = 558.39 acres

- Orange 1 = 552.04 acres
- Orange 2 = 541.39 acres

- Green 1 = 571.04 acres
- Green 2 = 560.39 acres

- Pink 1 = 593.04 acres
- Pink 2 = 577.39 acres

Wetlands and aquatic systems were avoided as much possible during the development of the Southern Alternative alignments. Box culverts will be placed at the minor stream crossings while the larger stream systems are to be bridged. Minimization efforts also included reduction of the required right-of-way and narrowing the dredged or fill footprint in waters of the U.S. or wetlands. Compensatory mitigation will be offered for unavoidable wetland impacts as well as impacts to SAV riverine habitat. Clean fill material will be used for the road construction. BMP will be utilized to control turbidity during construction. Turbidity screens, hay bales, swales, erosion and sediment control structures and temporary seeding or sodding with grasses are some of the BMP that will be utilized to prevent sediment transport to adjacent wetlands and aquatic systems. A sediment and erosion control plan will be composed which outlines the BMP that will be employed.

The drainage system associated with the Southern Alternatives will be designed to provide treatment and attenuation of stormwater in accordance with Florida regulations. The design will mimic natural conditions thereby maintaining the existing drainage patterns and water level fluctuations which will minimize substrate impacts.

The planned disposal of dredge or fill material at the Southern Alternatives would not violate any applicable State water quality standards. The dredging or filling will not violate the Toxic Effluent Standards of Section 307 of the Clean Water Act.

Use of the Southern Alternative dredge and fill sites will not adversely affect any endangered species or their critical habitat.

The proposed Southern Alternative dredge and fill sites will not result in significant adverse effects on human health and welfare, including municipal and private water supplies, recreation and commercial fishing, plankton, fish, shellfish, wildlife, and special aquatic sites. The life stages of aquatic life and other wildlife will not be adversely affected. Significant adverse effects on aquatic ecosystem diversity, productivity and stability, and recreational, aesthetic and economic values will not occur.

On the basis of the guidelines, the proposed Southern Alternatives dredge and fill sites is specified as complying with the inclusion of appropriate and practical conditions to minimize pollution or adverse effects to the aquatic ecosystem.

CONCLUSIONS REGARDING COMPLIANCE WITH SECTION 404(b)(1) GUIDELINES:

With respect to meeting the Purpose and Need goals as described above, the Southern Alternative alignments perform better overall than the Northern Alternative alignments because:

- Goal: Provides Additional Capacity
 - Reduces network travel time
 - Lowers the cost of traffic congestion
 - Greater savings from traffic congestion
- Goal: Emergency Evacuation
 - Provides greatest amount of lane miles west of the river
 - Removes greater number of people & vehicles from areas of potential flooding
- Goal: Economic Development
 - Greater access to planned residential development
 - Greater potential to provide economic development to both St. Johns and Clay counties when comparing the commonalities of economic development that will benefit both counties.

Both Clay and St. Johns County Boards of Commissioners have passed resolutions identifying the Pink 1 Alternative as the Locally Preferred Alternative.

With respect to the overall impacts on natural resources, the Northern Alternative alignments propose construction of a new bridge crossing over the St. Johns River at a new location therefore adding impacts at a new location in the river.

A table summarizing a comparison of the alternatives in meeting the goals of the project's purpose and need statement follows this page.

**St. Johns River Crossing
Alternatives Summary Comparison
Meeting Purpose and Need**

Resource or Parameter	No Build	Black	Purple	Brown 1	Brown 2	Orange 1	Orange 2	Green 1	Green 2	Pink 1	Pink 2
ALTERNATIVE CHARACTERISTICS											
Length of Alternative (miles)	N/A	36	26	34	34	33	33	31	31	31	31
Number of Local Access Interchanges	N/A	8	6	9	9	9	9	7	7	7	7
New Bridge Crossing of St. Johns River	N/A	Yes	Yes	No	No	No	No	No	No	No	No
TRAFFIC AND TRANSPORTATION											
2030 Network Travel Time Reduction (daily vehicle hours)	N/A	737,463	726,500	696,579	696,579	791,642	791,642	642,943	642,943	751,811	751,811
Rank		3	4	5	5	1	1	6	6	2	2
Corridor Volume Across the St. Johns River (AADT)	N/A	78,900	74,600	74,600	74,600	74,100	74,100	74,700	74,700	74,700	74,700
Rank		1	3	3	3	4	4	2	2	2	2
Estimated Savings from Traffic Congestion (\$billions)	N/A	\$3.4B	\$3.4B	\$3.3B	\$3.3B	\$3.6B	\$3.6B	\$3.2B	\$3.2B	\$2.9B	\$2.9B
Rank		2	2	3	3	1	1	4	4	5	5
Annual Cost of Traffic Congestion (\$millions)	11,836	8,432	8,367	8,478	8,478	8,185	8,185	8,638	8,638	8,871	8,871
Rank		3	2	4	4	1	1	5	5	6	6
EMERGENCY EVACUATION											
Evacuation Effectiveness (vehicles in queue east of river)	61,723	54,297	54,175	48,373	48,373	49,038	49,038	49,038	49,038	48,373	48,373
Rank		1	2	3	3	2	2	2	2	3	3
Emergency Evacuation Lane Miles West of River	96.0	124.12	124.59	146.57	146.57	144.05	144.05	144.05	144.05	146.57	146.57
Rank		3	4	1	1	2	2	2	2	1	1

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**St. Johns River Crossing
Alternatives Summary Comparison
Meeting Purpose and Need**

Resource or Parameter	No Build	Black	Purple	Brown 1	Brown 2	Orange 1	Orange 2	Green 1	Green 2	Pink 1	Pink 2
SOCIOECONOMICS / ECONOMIC DEVELOPMENT											
Consistency with Local Plans	N/A	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Existing & Proposed Developments Served by Proposed Interchanges (number within 2 miles)	N/A	10	8	12	12	12	12	8	8	8	8
Rank		2	3	1	1	1	1	3	3	3	3
Total Commercial, Industrial, Office (acres) – Clay Co.	N/A	2,472.58	2,472.58	6,467.93	6,467.93	5,249.44	5,249.44	5,249.44	5,249.44	6,467.93	6,467.93
Rank		3	3	1	1	2	2	2	2	1	1
Total Commercial, Industrial, Office (acres) – St. Johns Co.	N/A	2,951.58	2,542.72	2,149.98	2,149.98	2,149.98	2,149.98	477.56	477.56	477.56	477.56
Rank		1	2	3	3	3	3	4	4	4	4
DRI Revenues within Radius (\$millions) – Clay Co.	N/A	\$6.89	\$6.89	\$13.98	\$13.98	\$10.16	\$10.16	\$10.16	\$10.16	\$13.98	\$13.98
Rank		3	3	1	1	2	2	2	2	1	1
DRI Revenues within Radius (\$millions) – St. Johns Co.	N/A	\$78.38	\$42.71	\$51.07	\$51.07	\$51.07	\$51.07	\$34.38	\$34.38	\$34.38	\$34.38
Rank		1	3	2	2	2	2	4	4	4	4
PUBLIC SERVICES											
Emergency Response Times	Increase	Decrease	Decrease	Decrease	Decrease	Decrease	Decrease	Decrease	Decrease	Decrease	Decrease
SECTION 404(b)(1) JURISDICTIONAL WETLANDS											
Primary and Fragment (acres)	N/A	748	477	502	488	484	476	501	493	518	505
Submerged Aquatic Vegetation (acres)	N/A	0.91	0.91	1.04	0.39	1.04	0.39	1.04	0.39	1.04	0.39
Surface Water (acres)	N/A	88	85	72	70	67	65	69	67	74	72
Total Acres (acres)	N/A	836.91	569.91	575.04	558.39	552.04	541.39	571.04	560.39	593.04	577.39
Rank		1	6	4	8	9	10	5	7	2	3

