

## Table of Contents

<b>Table of Contents</b> .....	<b>i</b>
<b>List of Tables</b> .....	<b>ii</b>
<b>List of Figures</b> .....	<b>ii</b>
<b>Acronyms and Abbreviations Used in this Report</b> .....	<b>iii</b>
<b>Summary</b> .....	<b>iv</b>
<b>1. Introduction</b> .....	<b>1</b>
1.1 Study Objectives .....	1
<b>2. Project Description</b> .....	<b>1</b>
2.1. Build Alternatives.....	2
2.1.1. Purple Alternative .....	3
2.1.2. Black Alternative.....	3
2.1.3. Pink 1 and Pink 2 Alternatives.....	4
2.1.4. Brown 1 and Brown 2 Alternatives .....	4
2.1.5. Green 1 and Green 2 Alternatives.....	5
2.1.6. Orange 1 and Orange 2 Alternatives .....	6
2.2. No Build Alternative .....	6
<b>3. Methodology</b> .....	<b>6</b>
3.1. Characteristics of Resource .....	6
3.2. Regulations and Impact Criteria .....	7
3.3. Study Approach.....	7
<b>4. Affected Environment</b> .....	<b>8</b>
4.1. Description of the Study Area.....	8
4.2. Existing Conditions.....	8
4.2.1. Fire Rescue Services .....	8
4.2.2. Emergency Medical Services .....	9
4.2.3. Law Enforcement Services.....	9
4.2.4. Schools.....	10
4.2.5. Religious Facilities.....	13
4.2.6. Other Public Service Facilities.....	16
4.2.7. Utilities.....	17
<b>5. Project Effects</b> .....	<b>19</b>
5.1. Permanent Effects.....	19
5.1.1. No Build Alternative .....	19

5.1.2.	Common Effects Among the Build Alternatives.....	19
5.1.3.	Black and Purple Alternatives .....	19
5.1.4.	Brown 1, Brown 2, Orange 1 and Orange 2 Alternatives .....	20
5.1.5.	Green 1, Green 2, Pink 1 and Pink 2 Alternatives.....	20
5.2.	Temporary Effects During Construction .....	21
<b>6.</b>	<b>Measures to Avoid or Minimize Project Effects .....</b>	<b>22</b>
<b>7.</b>	<b>References.....</b>	<b>23</b>

### List of Tables

Table 1:	Proposed Fire Stations .....	8
Table 2:	Existing Schools.....	11
Table 3:	Proposed Schools.....	13
Table 4:	St. Johns County Religious Facilities.....	15
Table 5:	Clay County Religious Facilities.....	14
Table 6:	Utility Providers .....	18
Table 7:	Environmental Effects Matrix .....	20

### List of Figures

Figure 1:	Project Alternatives.....	2
Figure 2:	Emergency Services.....	10
Figure 3:	Existing and Proposed School Sites.....	12
Figure 4:	Churches and Other Religious Institutions .....	15
Figure 5:	Community Facilities.....	17
Figure 6:	Utilities and Water\Sewer Provider Zones .....	18
Figure 7:	Potentially Impacted Utilities.....	21

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## Acronyms and Abbreviations Used in this Report

<b>CR</b>	County Road
<b>DRI</b>	Development of Regional Impact
<b>EIS</b>	Environmental Impact Statement
<b>EMS</b>	Emergency Medical Services
<b>FDEP</b>	Florida Department of Environmental Protection
<b>FDOT</b>	Florida Department of Transportation
<b>FHWA</b>	Federal Highway Administration
<b>GIS</b>	Geographic Information System
<b>JEA</b>	Jacksonville Electric Authority
<b>LRTP</b>	Long Range Transportation Plan
<b>NEPA</b>	National Environmental Policy Act
<b>PUD</b>	Planned Unit Development
<b>ROW</b>	Right-of-Way
<b>SJRWMD</b>	St. Johns River Water Management District
<b>SR</b>	State Road
<b>TPO</b>	North Florida Transportation Planning Organization
<b>USACE</b>	United States Army Corps of Engineers



## Summary

This report examines the potential effects the St. Johns River Crossing Project could have on public services and utilities in the project study area. The analysis demonstrated that impacts may involve possible relocations of 3 public service facilities, the taking of 9.26 acres of Blacks Ford Swamp (an effluent disposal site), and the potential relocation of several utilities, including a wireless service tower. The project may also provide benefits to existing services as a result of a new transportation facility, including improved emergency response times and decreased travel times for county residents to public facilities.

## 1. Introduction

The Florida Department of Transportation (FDOT) identified the need for an improved highway corridor and bridge crossing in the area of the St. Johns River between Clay and St. Johns Counties. The St. Johns River Crossing Project is an effort to decide what the best solution to address that need is, while trying to minimize the effect that solution might have on the communities and the environment in the two counties.

Three goals were established to guide the FDOT in developing potential solutions to existing transportation problems in the project area (further defined below):

- Provide additional capacity to improve current and future transportation network deficiencies
- Promote and support employment and economic development
- Improve emergency evacuation

These goals were then consolidated into a statement of purpose to be used to evaluate alternatives and identify the one that would best serve the area's transportation needs:

To address population growth and resulting traffic by providing additional capacity that meets the area's transportation, economic, employment and safety needs while avoiding, minimizing, and/or mitigating effects on the affected communities and the environment.

Rapid population growth in the project area has resulted in additional traffic and congestion on local roads, a situation that is expected to worsen in the future. Providing additional capacity to improve current and future transportation network deficiencies in the near term would help alleviate the congestion while providing access for residents to local employment centers, thus promoting and supporting economic development. Perhaps most important, an improved crossing of the St. Johns River would result in a more efficient emergency evacuation, thus potentially saving lives.

### 1.1 Study Objectives

The purpose of this study is to identify the potential impacts of the St. Johns River Crossing Project on public services and utilities and examine possible mitigation strategies to reduce the effect of those impacts if they were to occur.

## 2. Project Description

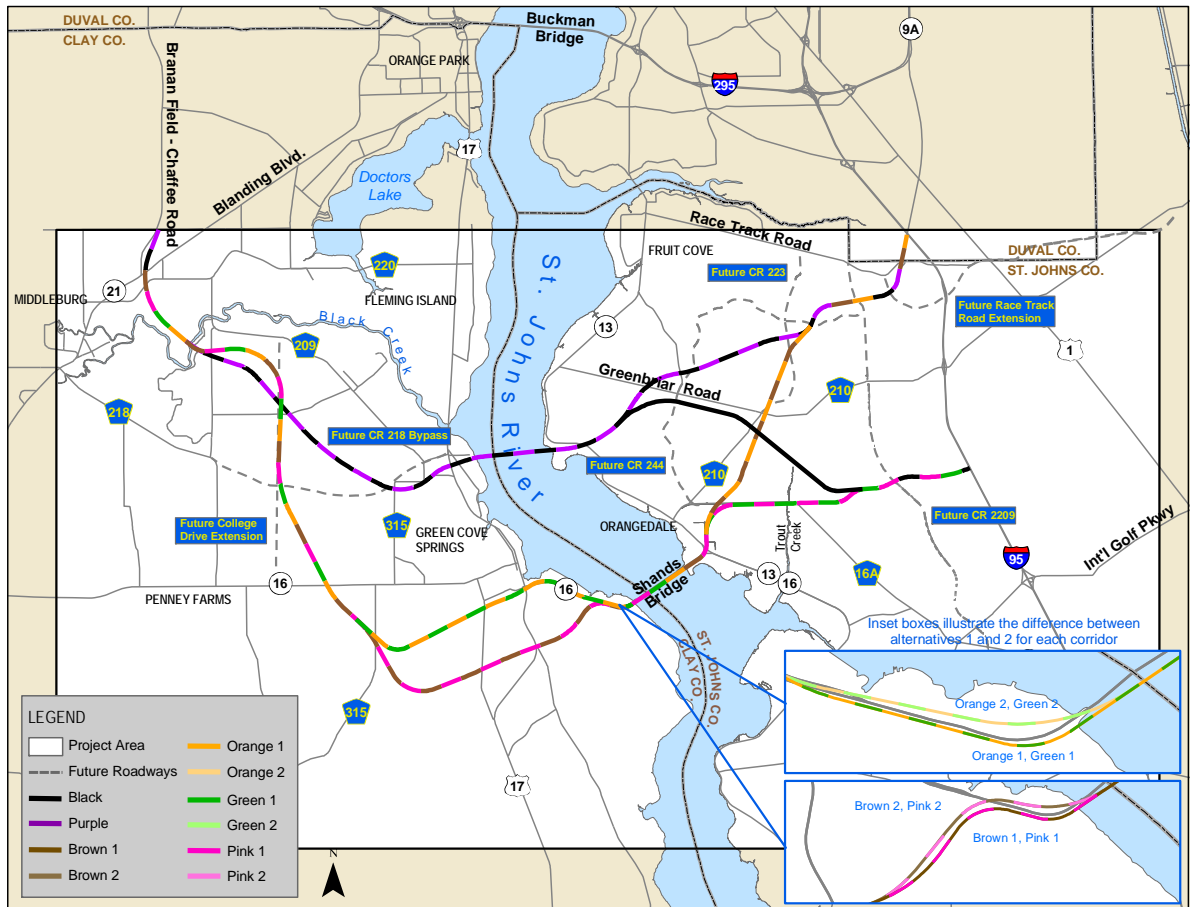
The St. Johns River Crossing Project is the development of a new limited-access highway corridor from Branam Field-Chaffee Road to I-95, including the construction of a new bridge over the St. Johns River. The project would look similar to existing highway facilities in the

area including Interstate 10 and Interstate 295. The proposed right-of-way (ROW) width used during the alternatives analysis was 324 feet. The facility would consist of a combination of four, six or eight lanes depending on the traffic needs for each corridor, but still within 324-feet.

### 2.1. Build Alternatives

Along with the No Build Alternative, the alternatives examined in this analysis are: Purple, Black, Orange 1, Orange 2, Green 1, Green 2, Pink 1, Pink 2, Brown 1 and Brown 2. These ten alternatives are illustrated in *Figure 1* and described below.

Figure 1: Project Alternatives



The first segment for all the alternatives starts at the intersection of Branan Field-Chaffee Road and SR 21 in Clay County and continues to the Black Creek crossing. This segment continues to a point just east of CR 739, where the first independent alternative alignment begins.

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### **2.1.1. Purple Alternative**

The Purple Alternative proceeds in a southeasterly direction away from Black Creek toward Green Cove Springs and crosses the St. Johns River at one of its narrower locations, proceeding into St. Johns County. The alternative continues in a northeasterly direction toward the proposed SR 9B/I-95 interchange near the St. Johns County/Duval County line. The Purple Alternative then turns towards the east, intersecting CR 2209 south of Race Track Road. The alternative continues to the northeast, connecting to I-95 at SR 9B.

Interchanges along the Purple Alternative would be provided in Clay County at SR 21, the proposed College Drive extension, and US 17. Interchanges in St. Johns County would be provided at Greenbriar Road, CR 2209, the planned Race Track Road Extension, and I-95.

The Purple Alternative uses a 4-lane roadway section from Branan Field-Chaffee Road to the interchange with the proposed College Drive extension in Clay County. From the College Drive extension interchange, the Purple Alternative crosses the river with a 6-lane bridge, continuing with a 6-lane roadway section until a location just west of the interchange at CR 2209 in St. Johns County. From the CR 2209 interchange, the alternative uses an 8-lane roadway section to its terminus at I-95.

### **2.1.2. Black Alternative**

The Black Alternative is the same as the Purple Alternative, but with an additional segment that provides a direct connection to I-95 south of CR 210. The additional segment of the Black Alternative begins by splitting from the northern segment just south of Greenbriar Road and west of the proposed CR 244 in St. Johns County. The alternative continues east, paralleling Greenbriar Road to the south and then proceeds in a southeasterly direction, crossing CR 210 approximately ¼ mile south of the Greenbriar Road/CR 210 intersection. The Black Alternative continues southeasterly, crossing Trout Creek approximately 1 mile north of CR 16A. The alternative then turns east towards I-95, terminating approximately 3 miles south of CR 210 and 3 miles north of International Golf Parkway.

Interchanges along the Black Alternative would be provided in Clay County at SR 21, the proposed College Drive extension, and US 17. Interchanges in St. Johns County would be provided at Greenbriar Road, CR 2209, the planned Race Track Road Extension, and I-95 for the northern segment and at CR 210, CR 2209 and I-95 for the southern segment.

The Black Alternative uses a 4-lane roadway section from Branan Field-Chaffee Road to the interchange with the proposed College Drive extension in Clay County. From the College Drive extension interchange, the Black Alternative uses a 6-lane roadway section and crosses the river with a 6-lane bridge to the split east of the St. Johns River.

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After the split, the northern segment of the Black Alternative continues with a 6-lane section but then transitions into an 8-lane section from a location just west of the CR 2209 interchange to the segments terminus at I-95. After the split, the southern segment of the Black Alternative uses a 4-lane roadway section to the interchange with I-95.

### **2.1.3. Pink 1 and Pink 2 Alternatives**

After crossing Black Creek, the Pink 1 Alternative turns south towards SR 16, paralleling the proposed College Drive extension on the east. The alternative intercepts a power line easement just south of the proposed CR 218 Bypass and then parallels it on its western side to its intersection with SR 16. The alternative continues to follow the power line on the west side south of SR 16, crossing CR 315. East of CR 315, the Pink 1 Alternative proceeds in a northeasterly direction, intersecting US 17 south of Green Cove Springs. After crossing US 17, the Pink 1 Alternative continues east toward the existing Shands Bridge, just east of the Reynolds Industrial Park. The Pink 1 Alternative then crosses the St. Johns River into St. Johns County, paralleling the existing Shands Bridge and SR 16 on the south. The alternative continues east, paralleling CR 16A to the south and intersecting the proposed CR 2209 roadway just west of I-95. The alternative continues east, terminating at I-95, approximately 2.5 miles north of the I-95/International Golf Parkway interchange.

Interchanges along the Pink 1 Alternative would be provided in Clay County at SR 21, CR 739, the proposed CR 218 Bypass, SR 16, and US 17. Interchanges in St. Johns County would be provided at CR 16A, CR 2209, and I-95.

The Pink 2 Alternative follows the same route as the Pink 1 Alternative with an exception in route location east of the Reynolds Industrial Park in Clay County. The Pink 2 Alternative parallels SR 16 on the north side continuing east towards the St. Johns River. The alternative crosses the St. Johns River parallel and to the south of the existing Shands Bridge, following the same route location as the Pink 1 Alternative.

The Pink 1 and 2 Alternatives use a 4-lane roadway section from Branan Field – Chaffee Road to the interchange with SR 16 in Clay County. From SR 16, the alternatives transition to a 6-lane roadway and bridge section to their terminus at I-95 in St. Johns County.

### **2.1.4. Brown 1 and Brown 2 Alternatives**

The Brown 1 Alternative follows the same route as the Pink 1 Alternative in Clay County to just east of the St. Johns River. The alternative then proceeds north towards the proposed SR 9B/I-95 interchange, intersecting with CR 210 just east of the CR 210/Greenbriar Road intersection. The Brown 1 Alternative continues north across CR 210 and turns east, intersecting the proposed CR 2209 roadway. As with the Purple Alternative, the Brown 1 Alternative connects to I-95 at SR 9B.

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Interchanges along the Brown 1 Alternative would be provided in Clay County at SR 21, CR 739, the proposed CR 218 Bypass, SR 16, and US 17. Interchanges in St. Johns County would be provided at CR 16A, CR 210, CR 2209, the planned Race Track Road Extension, and I-95.

The Brown 2 Alternative follows the same route as the Brown 1 Alternative with an exception in route location east of the Reynolds Industrial Park in Clay County. The Brown 2 Alternative parallels SR 16 on the north side continuing east towards the St. Johns River. The alternative crosses the St. Johns River parallel and to the south of the existing Shands Bridge, following the same route location as the Brown 1 Alternative.

The Brown 1 and 2 Alternatives use a 4-lane roadway section from Branan Field – Chaffee Road to the interchange with SR 16 in Clay County. From SR 16, the alternatives transition to a 6-lane roadway and bridge section to a location just west of the interchange with CR 2209 in St. Johns County. From the CR 2209 interchange, the Brown 1 and 2 Alternatives use an 8-lane roadway section to their terminus at I-95.

#### **2.1.5. Green 1 and Green 2 Alternatives**

The Green 1 Alternative follows the same route as both the Pink 1 and Brown 1 Alternatives to a point just south of SR 16 in Clay County. The alternative then takes an easterly course north of the Pink 1 and Brown 1 Alternatives. The Green 1 Alternative skirts the southern fringe of Green Cove Springs, intersecting US 17 near the existing SR 16 intersection. From this point to the Shands Bridge, the alternative collocates with SR 16. The new facility would reconstruct SR 16 and have parallel one-way frontage roads on either side, providing local access to the Reynolds Industrial Park and the development north of SR 16. At the western end of the Shands Bridge, the alternative assumes the same route as the Pink 1 Alternative across the St. Johns River, continuing to its terminus with I-95 in St. Johns County.

Interchanges along the Green 1 Alternative would be provided in Clay County at SR 21, CR 739, the proposed CR 218 Bypass, SR 16, and US 17. Interchanges in St. Johns County would be provided at CR 16A, CR 2209 and I-95.

The Green 2 Alternative follows the same route as the Green 1 Alternative with an exception in route location east of the Reynolds Industrial Park in Clay County. The Green 2 Alternative parallels SR 16 on the north side continuing east towards the St. Johns River. The alternative crosses the St. Johns River parallel and to the south of the existing Shands Bridge, following the same route location as the Green 1 Alternative.

The Green 1 and Green 2 Alternatives use a 4-lane roadway section from Branan Field – Chaffee Road to the interchange with SR 16 in Clay County. From SR 16, the alternatives transition to a 6-lane roadway and bridge section to their terminus at I-95 in St. Johns County.

### **2.1.6. Orange 1 and Orange 2 Alternatives**

The Orange 1 Alternative follows the same alignment as the Green 1 Alternative in Clay County and across the St. Johns River to a location just east of SR 13 in St. Johns County. The alternative then assumes the Brown 1 Alternative routing, heading north then east to the proposed SR 9B/I-95 interchange.

Interchanges along the Orange 1 Alternative would be provided in Clay County at SR 21, CR 739, the proposed CR 218 Bypass, SR 16, and US 17. Interchanges in St. Johns County would be provided at CR 16A, CR 210, CR 2209, the planned Race Track Road Extension, and I-95.

The Orange 2 Alternative follows the same route as the Orange 1 Alternative with an exception in route location east of the Reynolds Industrial Park in Clay County. The Orange 2 Alternative parallels SR 16 on the north side continuing east towards the St. Johns River. The alternative crosses the St. Johns River parallel and to the south of the existing Shands Bridge, following the same route location as the Orange 1 Alternative.

The Orange 1 and Orange 2 Alternatives use a 4-lane roadway section from Branan Field – Chaffee Road to the interchange with SR 16 in Clay County. From SR 16, the alternatives transition to a 6-lane roadway and bridge section to a location just west of the interchange with CR 2209 in St. Johns County. From the CR 2209 interchange, the Orange 1 and Orange 2 Alternatives uses an 8-lane roadway section to their terminus at I-95.

## **2.2. No Build Alternative**

Consistent with requirements of NEPA and FHWA guidelines, this analysis considers an alternative that assesses what would happen to the environment in the future if the proposed project were not built. This alternative, called the No Action or No Build Alternative, includes the routine maintenance improvements of the existing roads in the study area and the currently programmed, committed, and funded roadway projects as included in the TPO 2030 LRTP. While the No Build Alternative does not meet the project needs, it provides a baseline condition to compare and measure the effects of all the Build Alternatives.

## **3. Methodology**

### **3.1. Characteristics of Resource**

Local governments, utility districts, and private companies provide public services and utilities to the residents within the project study area. The public services examined in this study include community centers, emergency medical services (EMS), fire and police protection, government offices, religious facilities, and schools. The utilities examined include electricity, natural gas, water, wastewater collection, and telecommunications.

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### 3.2. Regulations and Impact Criteria

If a project has the potential to affect public services and utilities by increasing demand beyond the capability of service providers or by disrupting service, the National Environmental Policy Act (NEPA) requires that these impacts be considered in an environmental impact analysis. In general, roadway projects are expected to benefit public services because they are designed to provide long-term improvements to traffic flow. However, such projects may affect public services and utilities by temporarily disrupting service during the construction period. Construction may require relocation or adjustment of utility lines or facilities or may interfere temporarily with police, fire, and emergency services.

The primary statutes and regulations that apply to public services and utilities include:

- National Environmental Policy Act (NEPA) 42 U.S.C. 4231: Requires federal agencies to assess the environmental impact of all major federal actions.
- CFR Title 23 – Reimbursement for Utility Relocation: Deals with the accommodation of and reimbursement for relocation of utility facilities on the right-of-way of Federal-aid highways.
- Section 23 USC 123: Deals with the reimbursement to the State for the cost of relocating utilities.
- Uniform Relocation Assistance and Real Property Acquisition Act of 1970, as amended: Regulates acquisitions and relocations of residential and business properties impacted by a federal action.

### 3.3. Study Approach

Information on public services and utilities was gathered by reviewing the comprehensive plans for Clay and St. Johns Counties, examining Clay and St. Johns Counties' websites, and through the use of geographic information system (GIS) data created by agencies such as the Florida Department of Transportation (FDOT), St. Johns River Water Management District (SJRWMD), and the Florida Department of Environmental Protection (FDEP). The locations of public service facilities, utilities, and service zones were mapped and overlaid onto an aerial photograph of the project area. A desktop analysis was then performed using GIS to identify facilities and utilities crossed by the project alternatives or that had the potential to be affected in an indirect manner.

Mitigation strategies were developed based on these findings, previous project experiences, and the experience of professionals involved with municipal planning.

## 4. Affected Environment

### 4.1. Description of the Study Area

For this report, the study area is the same as the project area so that indirect effects, such as travel times to public facilities, can be accounted for. Impacts to services more distant from the project than the study area boundaries are not anticipated. The study area encompasses large portions of Clay and St. Johns Counties in northeast Florida, south of Duval County. Clay and St. Johns Counties are separated by the St. Johns River and are directly connected by the two-lane Shands Bridge, which provides the only connection between the two counties. Both counties have experienced rapid population growth in recent decades, and this rate of growth is expected to continue through 2030. The area has historically been rural but has transitioned in recent years to suburban with the approval and construction of several Developments of Regional Impact (DRIs) and Planned Unit Developments (PUDs). Green Cove Springs, located in Clay County along the St. Johns River, is the only city in the study area.

### 4.2. Existing Conditions

#### 4.2.1. Fire Rescue Services

Fire stations that serve the residents in the project study area are shown in *Figure 2*.

Table 1: Existing and Proposed Fire Stations

St. Johns County Fire Stations		Clay County Fire Stations	
Station	Station Name	Station	Station Name
2	Switzerland	14	Middleburg
3	Orangedale	15	Lake Asbury
16	World Golf Village	16	Penney Farms
17	Sampson	20	Green Cove Springs
18	Proposed Pine Island	22	Fleming Island
21	Proposed Northwest District	24	Virginia Village
22	Proposed Nocatee Station		

The St. Johns County Fire Department's Master Plan (St. Johns County, 2007) includes the addition of several new stations in the study area by 2012 based on population growth and the need to provide a comparable level of service to that being provided in other areas with similar population and building densities. New stations include the Pine Island area station to be located at Pine Island Rd. and US 1 in 2008, the

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Northwest District station to be located on CR 223 near Race Track Road in 2011, and the Nocatee station in 2012.

The Clay County Fire Rescue Memorandum (Clay County, 2007) does not include the construction of any new stations. However, the county does plan to expand Station 20.

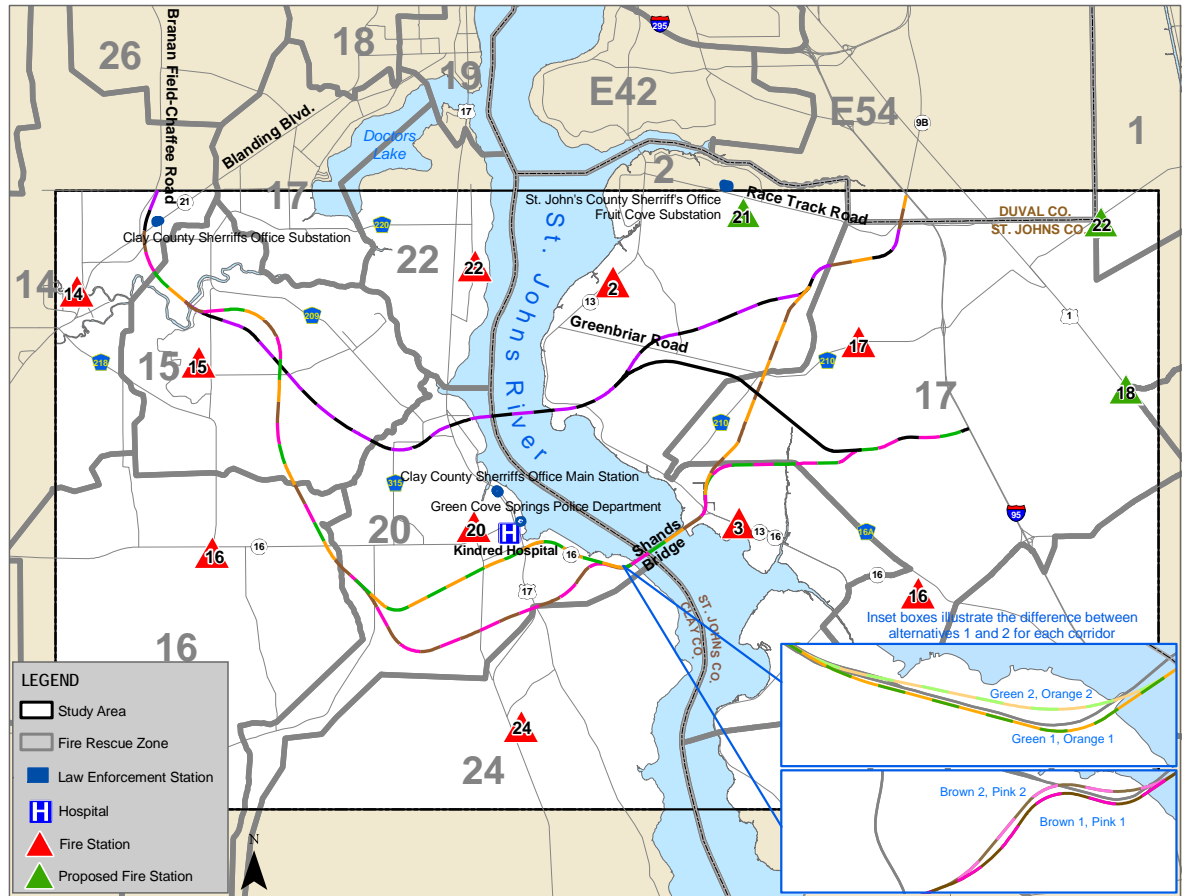
#### **4.2.2. Emergency Medical Services**

The Kindred Hospital-North Florida is an 80 bed facility located on Oak Street in Green Cove Springs and is the only hospital facility located in the project study area (*Figure 2*). There are several other hospitals located near the study area including Orange Park Medical Center, which is approximately 3 miles north of the study area in Clay County, Flagler Hospital, which is approximately 5.5 miles southeast of the study area in St. Johns County, and Baptist Medical South, which is approximately 2 miles north of the study area in Duval County. A new hospital facility is also planned for the area. St. Vincent's was approved in May 2008 by Florida's Agency for Health Care Administration to build a new 98-bed hospital near the intersection of Branan Field-Chaffee Road and Blanding Boulevard in Clay County.

#### **4.2.3. Law Enforcement Services**

Residents in the study area are served by the Clay County Sherriff's Office, the Green Cove Springs Police Department, and the St. Johns County Sherriff's Office (*Figure 2*). The Green Cove Springs Police Station is located on Spring Street and the Clay County Sheriffs Office is located on North Orange Avenue in Clay County. A Clay County Sheriff's Office Substation exists in the study area just west of the Blanding Boulevard / Branan Field-Chaffee Road interchange and is included in the Branan Field-Chaffee Road Project. The St. Johns County Sherriff's Office is located in St. Augustine, approximately 4 miles east of the project study area. The Fruit Cove substation of the St. Johns County Sherriff's Office is located in the northern part of the study area near Race Track Road.

Figure 2: Emergency Services



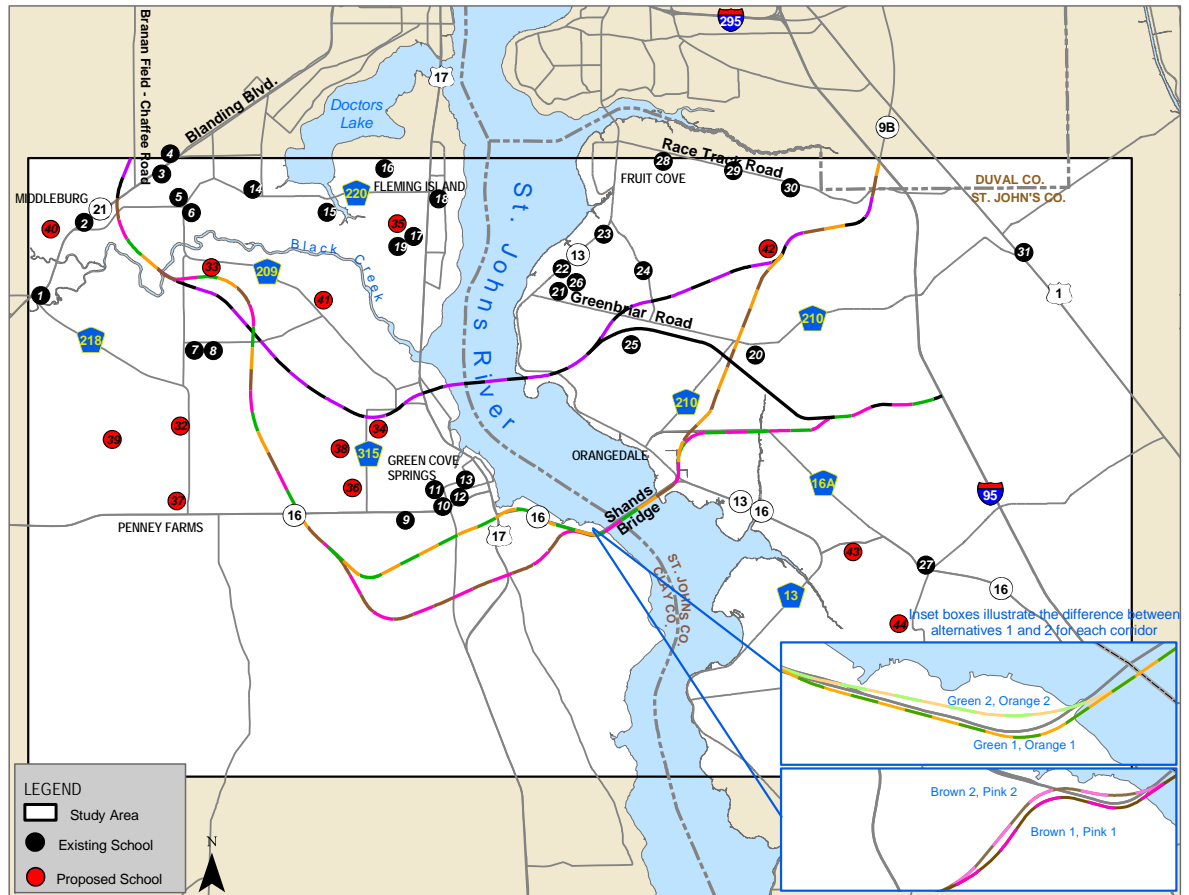
#### 4.2.4. Schools

In Clay County, several school facilities are clustered near the Branan Field-Chaffee Road / Blanding Boulevard interchange in the northwest portion of the study area and along SR 16 in Green Cove Springs. In St. Johns County, schools are clustered near the segment of Greenbriar Road between SR 13 and CR 210. Existing school and proposed school sites within the project study area are displayed in *Figure 3*.

Table 2: Existing Schools

Clay County Schools		St. Johns County Schools	
Reference No.	School Name	Reference No.	School Name
1	Middleburg Elementary	20	Hickory Creek Elementary
2	Middleburg High School	21	Switzerland Point Middle School
3	Madiera Christian Academy	22	St. Johns Grammar School
4	Annunciation Catholic School	23	Switzerland Living Waters Preschool
5	La Petite Academy	24	Cunningham Creek Elementary
6	Rideout Elementary	25	Bartram Trail High School
7	Lake Asbury Elementary	26	Timberlin Creek Elementary
8	Lake Asbury Junior High	27	Mill Creek Elementary
9	Clay High	28	Julington Creek Elementary
10	C.E. Bennett Elementary	29	Fruit Cove Middle
11	Green Cove Springs Junior High	30	Durbin Creek Elementary
12	Administration Offices	31	Allen D. Nease Senior High
13	Bannerman Learning Center		
14	Doctor's Inlet Elementary		
15	Swimming Pen Creek Elementary		
16	Fleming Island Elementary		
17	Fleming Island Senior High		
18	Robert M. Patterson Elementary		
19	Thunderbolt Elementary		

Figure 3: Existing and Proposed School Sites



Twenty-four new schools are planned for Clay County within the next 20 years (School District of Clay County, 2007). Ten of these schools are within the project area. Construction is already underway for the Shadowlawn Elementary School located near CR 218 in Lake Asbury, which is expected to open in August 2008. Other schools are in their early planning stages. Between 2012 and 2017, five new schools are planned for construction, including a high school in the Lake Asbury area, an elementary school in North Lake Asbury area, an elementary school in Green Cove Springs, a junior high in the Fleming Island area, and an elementary school in the Saratoga Springs DRI area. Between 2017 and 2027, three other schools are planned, including a junior high in the Saratoga Springs DRI area, an elementary school in Thunder Road area, and an elementary school in the Middleburg area. The large number of new schools in the area is due to the rapid growth experienced in the past few years and the projected future growth.

St. Johns County has plans to construct several new schools in the area over the next 5 years, including a high school near the Durbin Crossing DRI, an elementary school, and

a middle school (St. Johns County, 2008). Three K-8 schools are also planned to be built in the five year time horizon but sites have not been identified. St. Johns County includes two new elementary schools in its long range plan but locations have yet to be determined.

Table 3: **Proposed Schools**

Clay County Proposed Schools		St. Johns County Proposed Schools	
Reference No.	School Name or Type	Reference No.	School Name or Type
32	Shadowlawn Elementary	42	Senior High
33	Elementary	43	Elementary
34	Elementary	44	Junior High
35	Junior High		
36	Elementary		
37	Senior High		
38	Junior High		
39	Elementary		
40	Elementary		
41	Junior High		

#### 4.2.5. Religious Facilities

A large number of churches in the study area were identified during the inventory process. In Clay County, the churches are primarily located along the existing major roadways, including SR 21, SR 16, US 17 and CR 220. In Green Cove Springs, they are generally located within the different neighborhoods of the city. In St. Johns County, several churches are located along SR 13, north of the proposed alternatives. A number of other facilities exist throughout the St. Johns County portion of the study area, several of which are in close proximity to the proposed alternatives. Churches and other religious institutions located in the project study area are displayed in **Figure 4**.

Table 4: Clay County Religious Facilities

Clay County Religious Facilities			
Reference No.	Name	Reference No.	School Name or Type
1	First Baptist Church of Middleburg	25	Green Cove Springs Church of Christ
2	United Methodist Church	26	Mt. Zion African Methodist Episcopal
3	Living Waters of Middleburg	27	Little Rock Baptist Church
4	Madeira Baptist Church	28	Church of God in Christ
5	St. Peter's Lutheran Church	29	Church Our Lord Jesus Christ
6	Vineyard Community Church	30	New Life Temple Fellowship
7	Church of the Bretheren	31	First African Baptist Church
8	Black Creek Church of Christ	32	First Presbyterian Church
9	Lake Asbury Baptist Church	33	St. Mary's Episcopal Church
10	Middleburg United Methodist (Future Site)	34	First United Methodist
11	Russell Baptist Church	35	First Baptist Church of Green Cove Springs
12	Green Cove Springs Baptist Church	36	Sacred Heart Catholic Church
13	Church of God	37	Kindom of God in Christ
14	First Black Creek Baptist	38	Mt. Pleasant Missionary Baptist
15	Kingdom Hall of Jehovah's Witness	39	Sunshine Holiness Church
16	Penney Farms New Hope Baptist Church	40	Living Waters Worship Center
17	New Bethel Baptist Church	41	Sunrise Baptist Church
18	Living Soul Full Bible Holiness Church	42	Celebration Fellowship Church
19	Congregational Holiness Church	43	Pentecostal Holiness Church
20	Grace Baptist Church	44	Hickory Grove Baptist Church
21	Faith Baptist Church	45	Christian Fellowship Church
22	Little Ruth Baptist Church	46	Green Cove Springs Assembly of God
23	Shiloh Baptist Church	47	Living Waters of Middleburg
24	Orange Avenue Baptist Church		

Figure 4: Churches and Other Religious Institutions

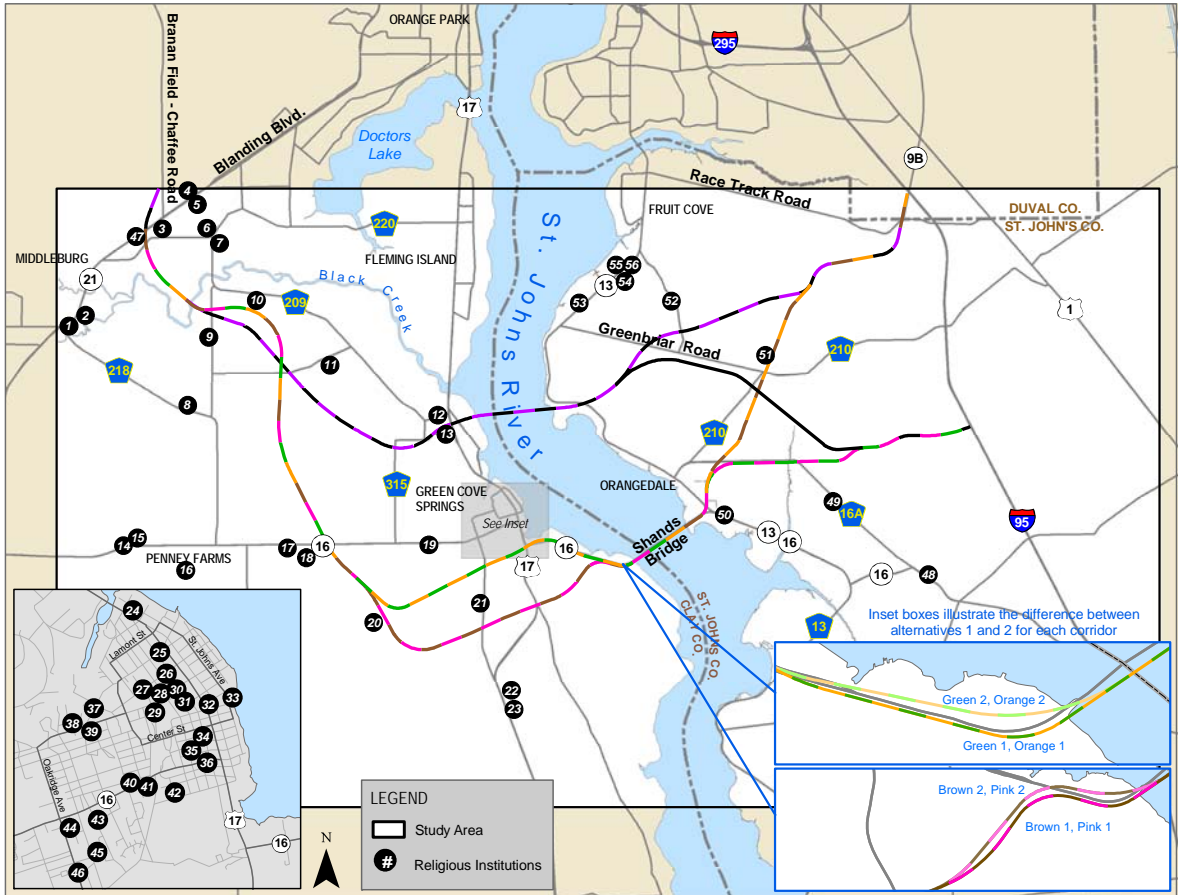


Table 5: St. Johns County Religious Facilities

St. Johns County Religious Facilities			
Reference No.	Name	Reference No.	Name
48	Mill Creek Baptist Church	53	Switzerland Community Church
49	St. Joseph Missionary Baptist	54	Swiss Cove Christian Church
50	Mt. Olive Baptist Church	55	San Juan Del Rio Catholic Church
51	Trinity Baptist Church	56	Geneva Presbyterian Church
52	Lighthouse Baptist Church		

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#### 4.2.6. Other Public Service Facilities

There are three libraries in the project study area. Libraries in Clay County include the Green Cove Springs Public Library on Ferris Street and the Headquarters Library on Fleming Island. In St. Johns County, there is the William Bartram Public Library in the Fruit Cove area.

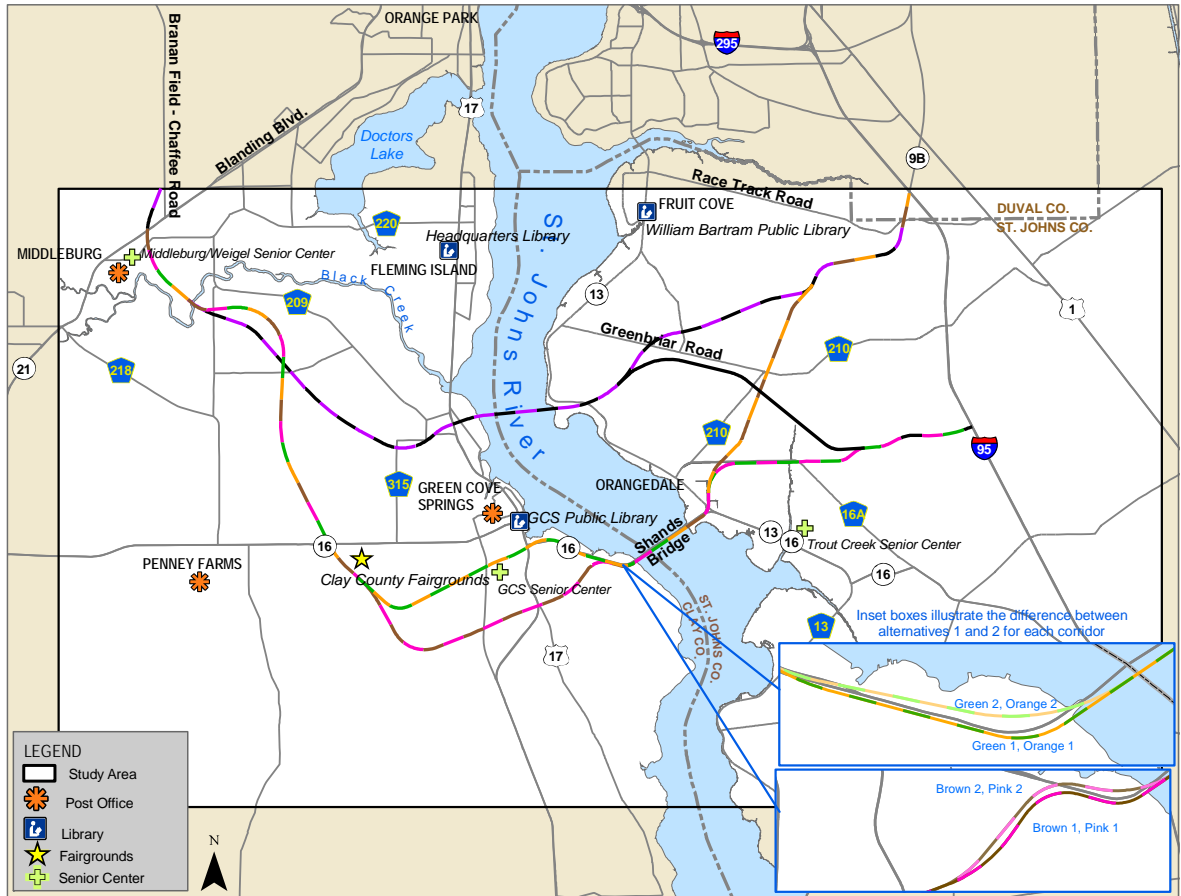
The Green Cove Springs Post Office located on Palmer Street, the Middleburg Post Office located on Main Street, and the Penney Farms Post Office located on Lewis Avenue, are in the Clay County portion of the project study area. No main post office is located in the St. Johns County portion of the project study area, but the residents are served by a post office facility located in the Switzerland area off of SR 13 between Greenbriar Rd and Roberts Rd.

Two community centers serve the study area; the Middleburg Community Center on Main Street in Clay County and the Trout Creek Park Community Center on SR 13 south of Orangedale in St. Johns County. There are also several senior centers in the study area; the Green Cove Springs Senior Center at 604 Walnut Street, the Middleburg / Weigel Senior Center at 3916 Section Street and the Trout Creek Senior Center at 6795 Collier Road in Orangedale.

Clay County also has a fairgrounds facility, the Paul E. Reinhold Agricultural Fairgrounds located at 2497 SR 16, just west of Green Cove Springs. The facility includes a grandstand arena, three exhibit buildings, an 110,000 square-foot multi-purpose pavilion, and three smaller enclosed pavilions.

A map identifying the locations of community centers and facilities in the study area is shown in *Figure 5*.

Figure 5: Community Facilities



#### 4.2.7. Utilities

Major utility providers, including those for electric, telephone, cable, water/sewer and gas, within the project study area are listed in **Table 6**. The location of utilities including sewage treatment facilities, water treatment facilities, solid waste disposal facilities, gas stations and major power lines are shown in **Figure 6**. Locations of utilities were identified using Clay and St. Johns Counties’ 2006 parcel data. Properties with a land use code corresponding to utility use were analyzed in this study.

Figure 6: Utilities

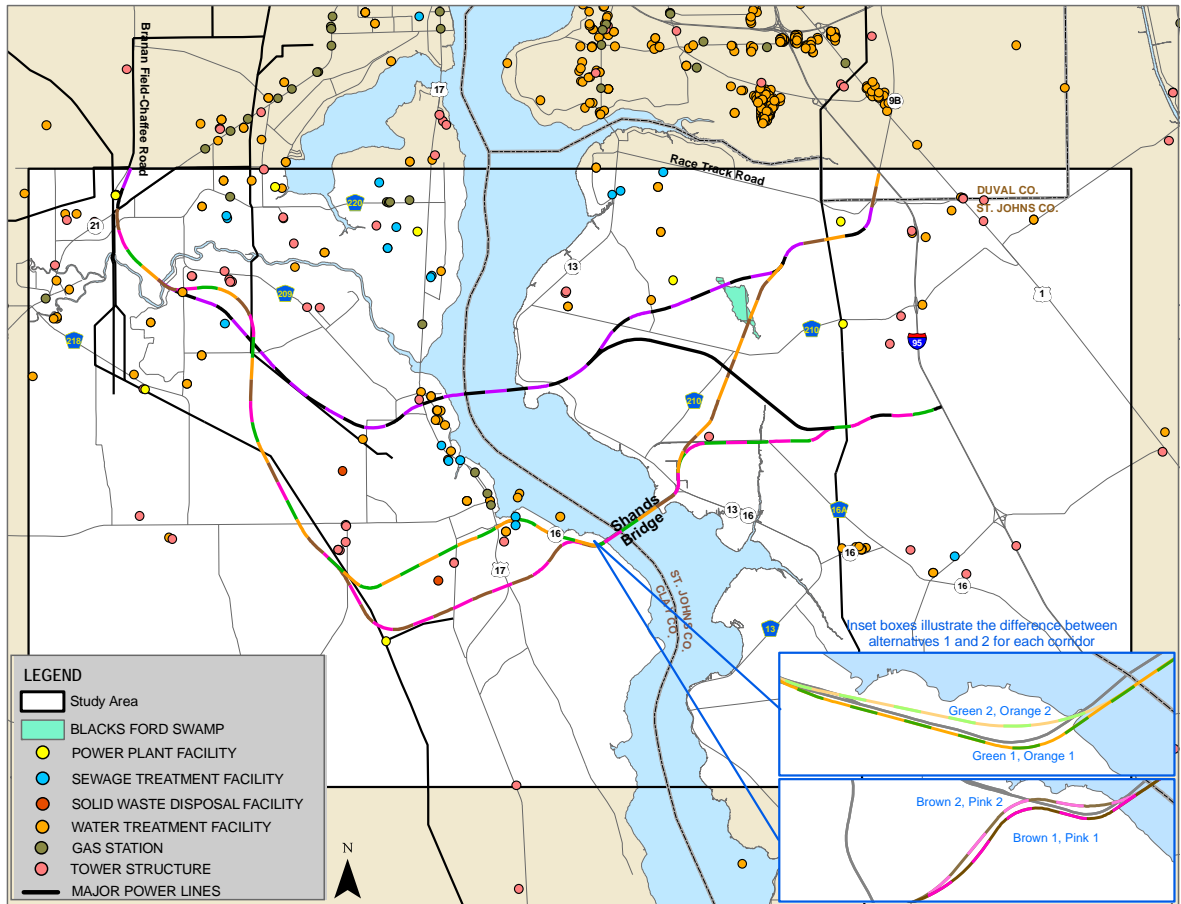


Table 6: Utility Providers

Utility Service	Clay County	St. Johns County
<i>Electric</i>	Florida Power & Light Green Cove Springs Utility Services Clay Electric Cooperative	Florida Power & Light Jacksonville Electric Authority
<i>Telephone</i>	Bellsouth	Bellsouth Auglink Communications Inc.
<i>Cable</i>	Time Warner Comcast Network	Time Warner
<i>Water / Sewer</i>	Clay County Utility Authority Green Cove Springs Utility Services	Jacksonville Electric Authority Fruit Cove Properties St. Johns County Utilities City of St. Augustine
<i>Gas</i>	Teco Peoples Gas Domestic Gas Sawyer Gas	Teco Peoples Gas

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## 5. Project Effects

### 5.1. Permanent Effects

Permanent effects occur as a result of highway design as well as during operation over the long term. Permanent effects could include relocations and changes in demand or access to a public service or utility. This section discusses only those public services and utilities that could be permanently affected by the project.

#### 5.1.1. No Build Alternative

The No Build Alternative would not improve traffic flow between Clay and St. Johns Counties, as the two-lane Shands Bridge would remain the only connection between the counties. Residents wishing to use a public service facility on the opposite side of the river would experience increased travel time in the future as population builds and traffic on the Shands Bridge increases. Because there would be no change to existing utilities, no effects are anticipated.

#### 5.1.2. Common Effects Among the Build Alternatives

The addition of any of the proposed alternatives would enhance mobility in the area and generally decrease emergency response times for fire, police, and medical rescue compared to the No Build Alternative since emergency vehicles would have a new, less congested route option. A build alternative may also reduce traffic on other roads in the area compared to the No Build, which would serve to further reduce response times. In addition, a new highway facility would also improve residents' travel times and access to public service facilities in the area.

All of the alternatives result in the relocation of the Living Waters of Middleburg on Blanding Blvd. (*Figure 7*).

The project is not expected to cause an increase in demand for public services or utilities in excess of their capabilities because it is being built in response to the rapid growth that has been experienced in the area and is expected to continue with or without the project. Counties and other service providers are aware of this growth and are already planning for it.

#### 5.1.3. Black and Purple Alternatives

The Black and Purple Alternatives would require the relocation of power lines in 5 places. They would also involve the relocations of Wyatt Phil Rev Et Al Church of God, a wireless service tower, a gas station, and a water supply restoration well that accompanies the gas station, all in the Mahama Bluff neighborhood. The gas station property had a reported release of petroleum product on 6 December 1991, and the current cleanup status for this site is listed as ongoing. Should this property be acquired,

continued remedial action would occur in coordination with FDEP. Further examination of this impact can be found in the Contamination Assessment.

Jacksonville Electric Authority (JEA) would be permanently affected by the Black and Purple Alternatives as they would require filling of a portion of the Blacks Ford Swamp in St. Johns County (*Figure 7*). The Blacks Ford Swamp is a 311-acre effluent disposal site operated by JEA under permit from the FDEP since 1999. Either alternative would result in a loss of 3.49 acres of the natural receiving wetland. Should this impact impair the ability of JEA to continue using this facility for effluent discharge, a new location would have to be found and permitted.

**5.1.4. Brown 1, Brown 2, Orange 1 and Orange 2 Alternatives**

The Brown 1, Brown 2, Orange 1, and Orange 2 Alternatives would result in the relocation of power line facilities at 7 locations (*Figure 7*).

Jacksonville Electric Authority (JEA) would be permanently affected by the Brown 1, Brown 2, Orange 1, and Orange 2 Alternatives as they would require filling of a portion of the Blacks Ford Swamp in St. Johns County. Either alternative would result in a loss of 9.26 acres of the natural receiving wetland. Should this impact impair the ability of JEA to continue using this facility for effluent discharge, a new location would have to be found and permitted.

**5.1.5. Green 1, Green 2, Pink 1 and Pink 2 Alternatives**

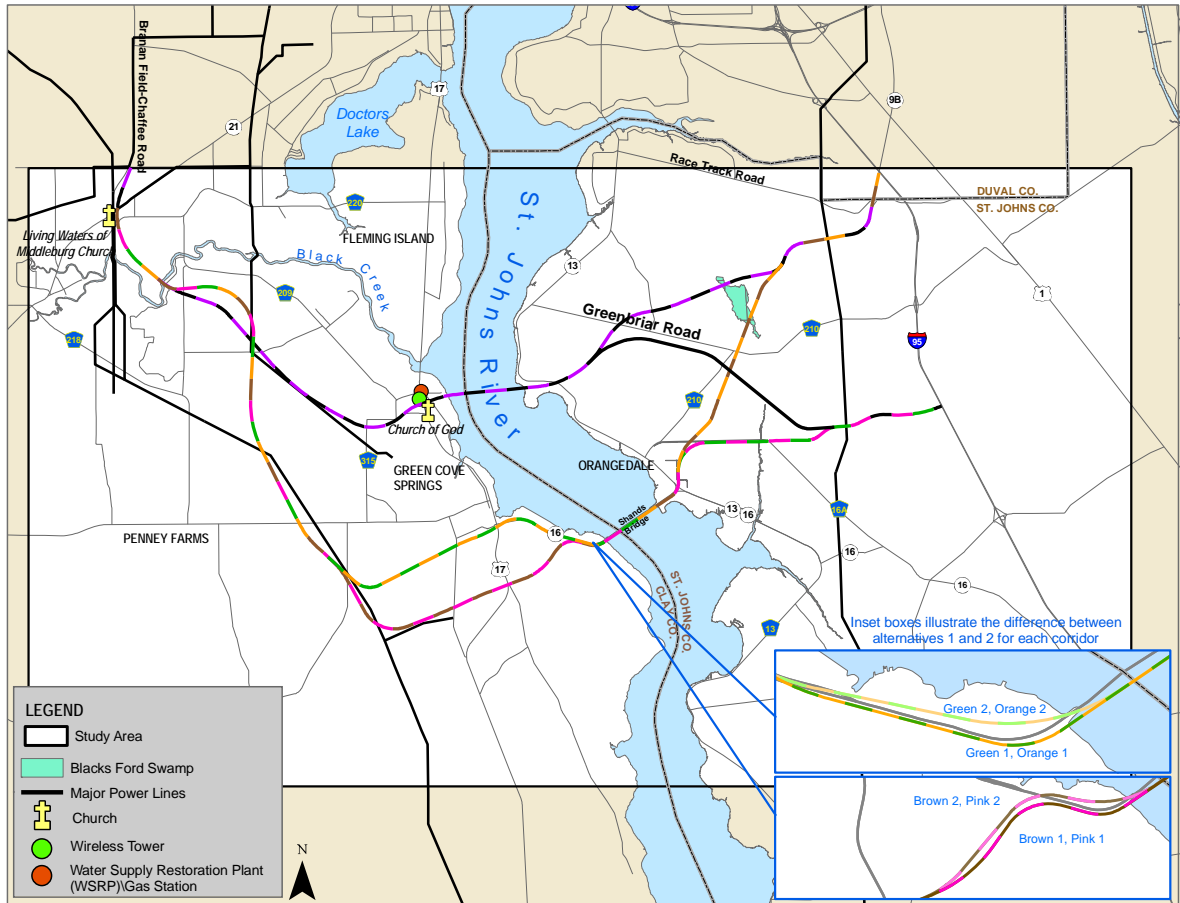
The Green 1, Green 2, Pink 1 and Pink 2 Alternatives would involve the relocation of power lines at 7 locations (*Figure 7*).

Table 7: Environmental Effects Matrix

Physical Resource Effects	No Build	Black	Purple	Brown 1 and 2	Green 1 and 2	Orange 1 and 2	Pink 1 and 2
Religious Facilities	0	2	2	1	1	1	1
Blacks Ford Swamp (acres)	0	3.49	3.49	9.26	0	9.26	0
Service Towers	0	1	1	0	0	0	0
Power Line Crossings*	0	5	5	7	7	7	7
WSRP/ Gas Station	0	1	1	0	0	0	0
Emergency Response Times**	+	-	-	-	-	-	-

\* The same power line may be crossed more than once. \*\* (+) increase, (-) decrease

Figure 7: Potentially Impacted Public Services and Utilities



## 5.2. Temporary Effects During Construction

Construction activities would result in the temporary lane closures of some roads, which may increase congestion on those and neighboring roads. Resulting congestion could slow emergency response times and road closures may affect emergency vehicle access to those areas.

Construction activities could require temporary increases in some public services and utilities, including electrical and communication. Although a health and safety plan would be in place, the potential for construction related accidents could result in an increased need for emergency medical aid; any such impact is expected to be temporary and minor.

During construction, pile-driving and earth-moving activities may affect some utilities. There may be a need to temporarily reroute utility lines and/or cables, resulting in outages. These outages are anticipated to be short term and intermittent. Possible subsequent effects of utility relocations on other utilities would be reviewed prior to action. Exact locations of utilities would be reviewed with utility providers during final design.

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## 6. Measures to Avoid or Minimize Project Effects

This section discusses measures to mitigate potential adverse effects of the project. These measures may be refined or revised upon selection of the preferred alternative and when construction techniques are finalized.

The project would compensate for the unavoidable negative effects by coordinating with all necessary service providers and utility providers during final design to ensure that access is maintained and alternate routes are developed to avoid delays in travel and response times during construction. Potential mitigation measures include:

- Notify and coordinate with the fire departments for waterline relocations that may affect water supply for fire suppression, and establish alternate supply lines prior to any breaks.
- Notify and coordinate with the fire departments during construction to ensure all calls can be handled during those times by providing alternative routes.
- Provide emergency service providers and police departments with advance notification of construction schedules and any planned street closures.
- Coordinate with school officials during construction.
- Schedule evening construction, where allowed, to reduce congestion during the peak hours, and therefore have less effect on school bus routes.
- Field-verify the exact locations and depths of underground utilities prior to construction.
- Notify neighborhoods of utility interruptions by providing a schedule of construction activities in those areas.
- Coordinate with service providers and provide them with project schedules to minimize the effects of utility relocations (equipment procurement times, relocations in advance of construction, etc.).
- Prepare a consolidated utility plan consisting of key elements such as existing locations, potential temporary locations, and potential new locations for utilities; sequence and coordinated schedules for utility work; and detailed description of any service disruptions. This plan would be reviewed by and discussed with affected utility providers prior to the start of construction to reduce effects.
- Mitigation for fill placed in the Black Fords Swamp will be mitigated under permit with the USACE (See Wetlands Discipline Report).
- Design the preferred alternative to minimize impacts on utilities.

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