ITS Master Plan Update

For North Florida Regional ITS Master Plan

July 2010
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Prepared by HNTB Corporation
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<td>12/23/2009</td>
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<td>Sharma</td>
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<td>Shaw</td>
<td>7/7/2010</td>
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1. Introduction

1.1. Purpose

In April 2006, the North Florida TPO, then called the First Coast Metropolitan Planning Organization, in partnership with the Jacksonville Transportation Authority, Florida Department of Transportation District 2, City of Jacksonville, and other members of the First Coast ITS Coalition developed a Regional Intelligent Transportation Systems Master Plan to:

- Establish the region's vision and goals for intelligent transportation systems
- Determine the steps needed to achieve those goals
- Guide the Coalition in coordinating, integrating, and prioritizing projects

The study area encompassed four counties within the North Florida TPO boundary - Clay, Duval, Nassau, and St. Johns. The project was completed in the fall of 2007. The Regional Intelligent Transportation Systems Master Plan was divided into the following four parts:

- **First Coast Regional Intelligent Transportation Systems Operational Concept**, which presents the regional mission, vision, goals and objectives, identifies the stakeholders that play a part in regional intelligent transportation system activities, and defines their roles and responsibilities for providing key transportation services within the region.

- **First Coast Regional Intelligent Transportation Systems Architecture**, which is a roadmap for transportation systems integration in the First Coast region over the next ten years.

- **Approach to Intelligent Transportation Systems Project Planning and Implementation**, which defines a process that will bring the proposed projects into the funding mainstream of either the North Florida TPO or other mechanism for areas outside the North Florida TPO.

- **Five- and Ten-year Implementation Plan**, which establishes the planned deployments for the members of the Coalition in the near- and mid-term periods.

The Five- and Ten-year Implementation Plan that was developed as an end product of the ITS Master Plan is used as a guidance for regional ITS implementation. This ITS Master Plan update is developed to evaluate the status of these five and ten year goals and to identify additional ITS needs for the region.

1.2. Study Area

The project study area consists of four counties within the North Florida TPO service area - Clay, Duval, Nassau, and St. Johns Counties. The North Florida TPO service area covers the entire Duval County region and major portions of Clay, Nassau, and St. Johns Counties. The study area is also bounded by Atlantic Ocean to the east. Figure 1.1 shows the study area.
The following stakeholders participated in the meeting held on October 13, 2009 and provided information on the existing condition of regional ITS programs and helped outline the future ITS candidate corridors.

- Florida Department of Transportation (FDOT), District 2
- North Florida Transportation Planning Organization (North Florida TPO)
- Jacksonville Transportation Authority (JTA)
- City of Jacksonville
- Florida Highway Patrol
- St. Johns County
- Nassau County
- Clay County

The regional ITS Master Plan identified several other regional stakeholders. A copy of the list of regional stakeholders is provided in Appendix A.
2. Existing ITS

2.1. Existing ITS

On October 13, 2009, the North Florida TPO organized a stakeholder meeting and invited all stakeholders in the region to discuss future and current ITS deployment. The purpose of the meeting was to receive an update on the status of the current ITS goals for the region and facilitate discussion on the status of the previously identified Five- and Ten-year ITS Master Plan goals as well as identify future ITS projects.

The corridor segments with current ITS devices within the North Florida TPO service area are listed below:

- I-95: segment between I-295 south interchange and Duval County line
- I-295: southwest quadrant segment between I-10 and I-95
- McDuff Avenue: segment between Beaver Street on north and Roosevelt Blvd on south
- US 10/Atlantic Boulevard: segment between Beach Boulevard and SR A1A
- SR 152/Baymeadows Road: segment between San Jose Boulevard and SR 9A
- SR 115/Southside Boulevard: segment between SR 202 and Philips Highway
- US 17/Roosevelt Boulevard: segment between I-295 and Kingsley Avenue
- Central Business District (CBD): Downtown Jacksonville CCTVs and State, Union, and Bay Streets

Other ITS devices in place are the four Road Weather Information System wind sensor devices that are tested by the FDOT to develop automatic wind speed notification. These wind sensors are installed at four bridges within the North Florida TPO service area, they are:

- SR 9A, Dames Point Bridge ~Duval County
- I-295, Buckman Bridge ~Duval County
- SR 302 Bridge ~St. John’s County
- SR A1A, Vilano Bridge ~St. John’s County

Figure 2.1 shows the location and limits of these corridors and RWIS stations. Table 2.1 shows the checklist that was developed in the stakeholders meeting showing the status of previously identified Five- and Ten-year ITS Master Plan goals.
Figure 2.1

Existing ITS Corridors
**Table 2.1 Status of 2006 Master Plan**

**ITS Master Plan - Five Year Plan**

<table>
<thead>
<tr>
<th>Transportation Division/Goal</th>
<th>Action Taken</th>
<th>Action Type</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Transportation Management Centers and Traveler Information</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. My511 Traveler Information System - Personalized Web and Phone Traffic Alerts</td>
<td>✓</td>
<td>✓</td>
<td>Website is active and work is completed for personalized alerts.</td>
</tr>
<tr>
<td>2. Regional Traffic Management Center (RTMC)</td>
<td>✓</td>
<td>✔</td>
<td>A new regional TMC is programmed for five year plan at a centralized location.</td>
</tr>
<tr>
<td>3. Integrated ITS Services into Regional Transportation Management Center</td>
<td>✓</td>
<td>✔</td>
<td>100% design complete, programmed for next five years.</td>
</tr>
<tr>
<td>4. Transportation Critical Infrastructure Security</td>
<td>✓</td>
<td>✔</td>
<td>Project ongoing in association with JTA.</td>
</tr>
<tr>
<td>5. Integrated Secure Data Fusion Center</td>
<td>✔</td>
<td></td>
<td>A centralized data management subsystem located in the new RTMC will serve all transportation and public safety sectors to ensure timely and ready access to all pertinent data and information (fused data), while at the same time protecting sensitive or proprietary data and information from unauthorized access.</td>
</tr>
<tr>
<td><strong>Freeway and Arterial Management System</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. ITS Cameras, Sensors, and Message Sign Systems Deployment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- I-295 from I-95 South to Main Street</td>
<td>✓</td>
<td>✓</td>
<td>Southwest quadrant is complete; Northwest quadrant is under construction.</td>
</tr>
<tr>
<td>- SR 9A from Main Street to I-95 South</td>
<td>✓</td>
<td>✓</td>
<td>Northeast quadrant is under construction; Southeast quadrant is programmed to start in 2010.</td>
</tr>
<tr>
<td>- I-95 from I-295 to the SJC Line</td>
<td>✓</td>
<td>✓</td>
<td>Significant work is completed and project is under construction.</td>
</tr>
<tr>
<td>2. ITS Signal System Upgrades -Phase I</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- SR 152 (Baymeadows Road)</td>
<td>✓</td>
<td></td>
<td>Between San Jose Road and SR 9A North</td>
</tr>
<tr>
<td>- SR 115 (Southside Boulevard)</td>
<td>✓</td>
<td></td>
<td>Between Philips Highway and J. Turner Butler</td>
</tr>
<tr>
<td>- McDuff Avenue</td>
<td>✓</td>
<td></td>
<td>Between Beaver St. and Roosevelt Blvd.</td>
</tr>
<tr>
<td>- Central Business District (CBD)</td>
<td>✓</td>
<td></td>
<td>Bay, Union, and State Street improvements and various CCTVs.</td>
</tr>
<tr>
<td>- SR 10 (Atlantic Boulevard)</td>
<td>✓</td>
<td></td>
<td>Between Beach Blvd. and SR A1A</td>
</tr>
<tr>
<td>- US 17 (Roosevelt Boulevard)</td>
<td>✓</td>
<td></td>
<td>Between I-295 South and Kingsley Ave.</td>
</tr>
<tr>
<td>- US 90/SR 212 (Beach Boulevard)</td>
<td>✓</td>
<td>✓</td>
<td>Between Atlantic Blvd. and SR A1A</td>
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<tr>
<td>- SR 126/US 1 (Emerson Road)</td>
<td>✓</td>
<td>✓</td>
<td>Between Philips Highway and I-95 northbound</td>
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<tr>
<td>- SR 115 (Len Turner Road)</td>
<td>✓</td>
<td></td>
<td>Between I-95 and I-295</td>
</tr>
<tr>
<td>- Monument Road</td>
<td>✓</td>
<td></td>
<td>Between Atlantic Blvd. and Ft. Caroline Rd.</td>
</tr>
<tr>
<td>- SR 13 (San Jose Boulevard)</td>
<td>✓</td>
<td></td>
<td>Between Mandarin Road and Philips Highway. Significant work is completed.</td>
</tr>
<tr>
<td>- US 17/SR 5 (Main Street)</td>
<td>✓</td>
<td></td>
<td>Between 1st Street and 63rd Street</td>
</tr>
<tr>
<td>- US 1 (Philips Highway)</td>
<td>✓</td>
<td></td>
<td>Between I-95 and SR 9A</td>
</tr>
<tr>
<td>- US 1 (in St. Johns County)</td>
<td>✓</td>
<td></td>
<td>Between Old Moultrie Rd. and SR 16</td>
</tr>
<tr>
<td>- SR A1A (in St. Johns County)</td>
<td>✓</td>
<td></td>
<td>Between Palm valley Road and SR 202</td>
</tr>
<tr>
<td>- SR 111 (Edgewood Avenue)</td>
<td>✓</td>
<td></td>
<td>Between W Beaver St. and I-95</td>
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<td>- SR 10/US 90 (Beaver Street)</td>
<td>✓</td>
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<td>Between I-95 and Chaffee Rd.</td>
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## Transportation Division/Goal

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<tr>
<td>Yes</td>
<td>No</td>
<td>Programmed</td>
</tr>
<tr>
<td>- Argyle Forest Boulevard</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>- Kernan Boulevard</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>- Hodges Boulevard</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>- SR 21 (Blanding Boulevard)</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>- SR 200</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

### 3. ITS Signal System Upgrades with Cameras and Message Signs - Phase II

- **US 17 (Roosevelt Boulevard)**
  - Action: ✓
  - Action Type: Programmed
  - Comments: Between I-295 and Kingsley Avenue. Only CCTV; no DMS.

- **SR 10 (Atlantic Boulevard)**
  - Action: ✓
  - Action Type: Programmed
  - Comments: Between Beach Blvd. and SR A1A. Only CCTV; no DMS.

- **US 90/SR 212 (Beach Boulevard)**
  - Action: ✓
  - Action Type: Programmed
  - Comments: Between Atlantic Blvd. and SR A1A. Only CCTV; no DMS.

- **SR 152 (Baymeadows Road)**
  - Action: ✓
  - Action Type: Programmed
  - Comments: Between San Jose Road and SR 9A north. Only CCTV; no DMS.

- **US 1 (Philips Highway)**
  - Action: ✓
  - Action Type: Programmed
  - Comments: Between I-95 and SR 9A. Only CCTV; no DMS.

- **SR 115 (Lem Turner Road)**
  - Action: ✓
  - Action Type: Programmed
  - Comments: Between I-95 and I-295. Only CCTV; no DMS.

- **Monument Road**
  - Action: ✓
  - Action Type: Programmed
  - Comments: Between Atlantic Blvd. and Ft. Caroline Rd. Only CCTV; no DMS.

- **SR 21 (Blanding Blvd.)**
  - Action: ✓
  - Action Type: Programmed
  - Comments: Between Collins Rd. and Old Jennings Rd. Only CCTV; no DMS.

- **SR 200 (in Nassau County)**
  - Action: ✓
  - Action Type: Programmed
  - Comments: Between I-95 and CR 107/Nassauville Rd. Only CCTV; no DMS.

### 4. Stadium Contraflow Signal System for the Jacksonville Sports Complex at Bay Street

- **US 17 (Roosevelt Boulevard)**
  - Action: ✓
  - Action Type: Programmed
  - Comments: Work is completed and testing was completed successfully.

### Transit

1. **ITS Transit Signal Priority on Atlantic Blvd.**
   - Action: ✓
   - Action Type: Programmed
   - Comments: Testing is complete; ready for integration in DOT system. Implemented on six signal systems on Atlantic Blvd.

2. **Bus Automatic Vehicle Location (AVL)**
   - Action: ✓
   - Action Type: Programmed
   - Comments: AVL installed in all JTA buses.

3. **I-Stop Electronic Lighted Bus Stop Signage**
   - Action: ✓
   - Action Type: Programmed
   - Comments: Approximately 15 signs are installed.

4. **Automatic Passenger Counter (APC)**
   - Action: ✓
   - Action Type: Programmed
   - Comments: Installed in all JTA buses.

5. **Real Time Transit Information Signage**
   - Action: ✓
   - Action Type: Programmed
   - Comments: Real time transit information signage includes DMS and other signs.

6. **ITS Transit Signal Priority Implementation**
   - Action: ✓
   - Action Type: Programmed
   - Comments: Priority corridors selected are Beach, Atlantic, and Blanding Boulevards.

7. **Bus On-board Cameras**
   - Action: ✓
   - Action Type: Programmed
   - Comments: On-board cameras are installed in 68 buses.

8. **Queue Jump (Bus Priority Signal Phasing)**
   - Action: ✓
   - Action Type: Programmed
   - Comments: Completed in Regency Square area; additional locations are programmed for next five years with 30% design.

9. **Smartcard Fare Collection**
   - Action: ✓
   - Action Type: Programmed
   - Comments: Significant work is completed and project is underway.

10. **Universal Trip Planner for Transit Impacts**
    - Action: ✓
    - Action Type: Programmed
    - Comments: Phase I work is complete. Upgrade is underway with Google.

11. **Transit Signal Priority for Bus Rapid Transit Corridors**
    - Action: ✓
    - Action Type: Programmed
    - Comments: Work is ongoing for priority corridors.

12. **Transit and Highway Commuter Alert System**
    - Action: ✓
    - Action Type: Programmed
    - Comments: Web based system; in Phase II testing.

13. **Transit Signal Priority on Additional Corridors**
    - Action: ✓
    - Action Type: Programmed
    - Comments: Corridor priority list is ready; project is planned to be advertised in 2010.

14. **Extended Personalized Transit Information Services**
    - Action: ✓
    - Action Type: Programmed
    - Comments: Phase I implementation is complete.

15. **Information Kiosks**
    - Action: ✓
    - Action Type: Programmed
    - Comments: Install at major hubs, with 1/2 mobile units. Plans of having two way audio/video in future.
<table>
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<th>Transportation Division/Goal</th>
<th>Action Taken</th>
<th>Action Type</th>
<th>Comments</th>
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<tbody>
<tr>
<td>16. Parking Integration and Direction Signage/Notice</td>
<td>Yes</td>
<td>Programmed</td>
<td>Alert system in downtown area using DMS and text alerts.</td>
</tr>
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</table>

**Miscellaneous**

1. Integrated Traffic and Emergency Management System  
   - ✓  
   - Programmed  
   - Comments: This system includes real-time ambulance routing and communications to avoid congestion and rail road crossings that block access to trauma centers.

2. Integrated Freeway/Expressway Management  
   - Yes  
   - Programmed  
   - Comments: This system includes highway advisory radio on existing ITS-equipped freeways, ramp meters, and/or arterial message signs at key interchanges to encourage diversion during incidents; and integration of my511, message signs, and radio to deliver alerts, rerouting info, and road weather information.

3. Integrated Arterial Corridor Operations for Blanding Blvd./US 17  
   - Yes  
   - Programmed  
   - Comments: This system includes adaptive signal control, transit signal priority and queue jumps, message signs, highway advisory radio, highway surveillance and control cameras, and real-time traffic information through enhanced "My511" with situation alerts to encourage telecommuting.

4. WiFi on Transit Corridors  
   - Yes  
   - Programmed  
   - Comments: WiFi will first be provided along BRT routes only.

5. Cell Phone Fare Payment  
   - Yes  
   - Programmed  
   - Comments: Cell Phone payment is a further advancement to the SmartCard fare collection system.
2.2. Individual Systems Evaluation

2.2.1. Interstate 95

The current limit of ITS deployment along I-95 is between I-295 and Nassau County line within Duval County. The FDOT District 2 operates and maintains this section of I-95. Figure 2.2 shows this section of the I-95 Corridor.

Along this section of I-95, the existing ITS features available are Motorist Aid Call Boxes, Road Ranger Service Patrols, Advanced Traveler Information System (ATIS), Closed Circuit Television (CCTV) cameras, Dynamic Message Signs (DMS), and Vehicle Detection Systems (VDS).

2.2.2. Interstate 295

The current limit of ITS deployment along I-295 loop is the southwest quadrant between I-10 and I-95 south interchange within Duval County. The FDOT District 2 operates and maintains this section of I-295. Figure 2.3 shows this section of the I-295 corridor.

Along this section of I-295, the existing ITS features available are Motorist Aid Call Boxes, Road Ranger Service Patrols, Advanced Traveler Information System (ATIS), Closed Circuit Television (CCTV) cameras, Dynamic Message Signs (DMS), and Vehicle Detection Systems (VDS).

2.2.3. McDuff Avenue

The current limit of ITS deployment along McDuff Avenue is between Beaver St. and Roosevelt Blvd. in Duval County. The City of Jacksonville operates and maintains this section of McDuff Avenue. Figure 2.4 shows this section of the corridor.

Along this section of McDuff Avenue, the exiting ITS features available are ITS Traffic Signal Controllers. These systems are located at the signalized intersections along the length of the corridor segment.

2.2.4. SR 10/Atlantic Boulevard

The current limit of ITS deployment along Atlantic Boulevard is between Beach Boulevard and SR A1A within Duval County. The FDOT District 2 operates and maintains this section of Atlantic Boulevard. Figure 2.5 shows this section of the corridor segment.

Along this section of Atlantic Boulevard, the existing ITS features available are ITS Traffic Signal Controllers, CCTV cameras, and DMS signs. These systems are located at or near the signalized intersections along the length of the corridor segment.

2.2.5. SR 152/Baymeadows Road

The current limit of ITS deployment along Baymeadows Road is between San Jose Boulevard to the west and SR 9A to the east within Duval County. The FDOT District 2 operates and maintains this section of Baymeadows Road. Figure 2.6 shows this roadway segment.

Along this section of Baymeadows Road, the existing ITS features available are ITS Traffic Signal Controllers and CCTV cameras. These systems are located at or near the signalized intersection along the length of the corridor segment.
Figure 2.2. Existing ITS Deployment on I-95
Figure 2.3. Existing ITS Deployment on I-295
Figure 2.4. Existing ITS Deployment on McDuff Avenue
Figure 2.5. Existing ITS Deployment on SR 10/Atlantic Boulevard
Figure 2.6. Existing ITS Deployment on SR 152/Baymeadows Road
2.2.6. SR 115/Southside Boulevard

The current limit of ITS deployment along Southside Boulevard is between Philips Highway and J. Turner Blvd. (SR 202) within Duval County. The FDOT District 2 operates and maintains this section of Southside Boulevard. Figure 2.7 shows this section of the corridor.

Along this section of Southside Boulevard, the existing ITS features available are ITS Traffic Signal Controllers. These systems are located at all signalized intersections along the length of the corridor segment.

2.2.7. US 17/Roosevelt Boulevard

The current limit of ITS deployment along Roosevelt Boulevard is between I-295 to the north and Kingsley Avenue to the south within Duval County. The FDOT District 2 operates and maintains this section of Roosevelt Boulevard. Figure 2.8 shows this section of the corridor.

Along this section of Roosevelt Boulevard, the existing ITS features available are ITS Traffic Signal Controllers. These systems are located at the signalized intersection along the length of the corridor segment.

2.2.8. Central Business District

The limits of current ITS deployment within the Central Business District (CBD) is between I-95 to the west and south and Martin Luther King Junior Parkway to the east and north. The City of Jacksonville operates and maintains the roadways within the CBD. Figure 2.9 shows the roadways within the CBD.

Within the CBD, the existing ITS features available are ITS Traffic Signal Controllers, CCTV cameras, DMS signs, and Uninterruptible Power Supply (UPS) systems. These systems are located at or near the signalized intersection along major roadways within the CBD such as, State Street, Union Street, Beaver Street, Main Street, etc.

Along with the ITS systems mentioned above, a contraflow signal system that enables the operation of reversible lanes for planned special events at the Jacksonville Municipal Stadium (Jaguars Stadium) is in operation along Bay Street.

2.2.9. Road Weather Information System (RWIS) Wind Sensors

RWIS wind sensors are installed at four different locations: Dames Point Bridge, Buckman Bridge, SR 312 Bridge, and Vilano Bridge. These pilot locations are under evaluation and testing for automatic wind speed update to the traffic management center and public safety agencies.
Figure 2.7. Existing ITS Deployment on SR 115/Southside Boulevard
Figure 2.8. Existing ITS Deployment on US 17/Roosevelt Boulevard
Figure 2.9. Existing ITS Deployment in Central Business District
2.3. Existing Fiber Optic Network

The North Florida TPO service area has extensive fiber optic networks that are laid out by the following three agencies:

1. Florida Department of Transportation (FDOT)
2. Jacksonville Electrical Authority (JEA)
3. City of Jacksonville (COJ)

These fiber optic networks allow building up a framework to remotely access ITS devices to operate the roadway facility from the traffic management center or other designated locations. Figure 2.10 shows the three fiber optic networks existing within North Florida TPO service area.
3. Programmed ITS Projects

In April 2009, the North Florida ITS Coalition led by the North Florida TPO in partnership with the FDOT District 2, Jacksonville Transportation Authority, City of Jacksonville, and others, developed a comprehensive list of projects that are programmed under the five and ten year ITS system upgrades within the North Florida region.

Figure 3.1 shows the programmed ITS projects along with the project limits, cost of implementation, available funding source, and the fiscal year of implementation of these ITS projects. The various funding sources available for these projects are Congestion Mitigation and Air Quality (CMAQ) funds, State Implementation Plan (SU) funds, FDOT Growth Management funds, FDOT ten year Cost Feasible Plan funds, and the Strategic Intermodal Systems (SIS) Plan funds.

The coalition has programmed a wide range of ITS projects through the next five years. These projects include and are not limited to:

- Freeway and Arterial Management Systems
- ITS Complaint Signal Controllers
- ITS Complaint Cameras
- Transit Signal Priority Systems
- Commuter Service Programs
- Road Ranger Services
- Road Weather Information System (RWIS) Wind Sensors
- Regional Traffic Management Center (RTMC)

These programmed ITS projects, when complete, will be integrated into the existing ITS services within the North Florida region.
Programmed ITS Projects

- **SR 200 ITS Signal Deployment**
  - Limit: I-95 to Duval Road
  - Cost: $200,000
  - Source: SU
  - FY: 2008/09

- **Main Street Transit Signal Priority**
  - Limit: 1st St. and 63rd St.
  - Cost: $400,000
  - Source: SU
  - FY: 2010/11

- **SR 9A Freeway Management System**
  - Limit: Northeast Quadrant (I-10 to I-95)
  - Cost: $8,690,061
  - Source: FDOT Ten-Year Cost Feasible Plan
  - FY: 2009/2010

- **SR 9A Freeway Management System**
  - Limit: Southeast Quadrant (I-10 to I-95)
  - Cost: $11,972,801
  - Source: DIH/ACEN
  - FY: 2010/11

- **SR 9A Freeway Management System**
  - Limit: Northeast Quadrant (I-10 to I-95)
  - Cost: $1,795,000
  - Source: FDOT Growth Management/SIS Plan
  - FY: 2009/10

Other Projects:

1. **ITS Systems Manager Contract**
   - Limit: North Florida TPO Service Area
   - Cost: $280,000
   - Source: SU
   - FY: 2010 thru 2011

2. **TPO Clean Cities Coalition 5-year Implementation Plan**
   - Limit: North Florida TPO Service Area
   - Cost: $100,000
   - Source: CMAQ
   - FY: 2009/10

3. **Road Weather Information System (RWIS)**
   - Limit: 6 Bridges
   - Cost: $200,000
   - Source: SU
   - FY: 2010/11

**Legend**

- North Florida TPO Boundary
- Major Roads
- Cities
- Water Bodies
- County Boundaries
- Ongoing Projects
- Programmed Projects
- Approved Projects
- Phase I RWIS Locations

**Figure 3.1**
4. Priority Corridors for ITS Deployment

A project kickoff meeting with the regional stakeholders was organized by the North Florida TPO in October, 2009, to receive feedback and comments and to identify priority corridors for ITS deployment. A copy of meeting minute notes is attached in Appendix B.

In this stakeholder’s meeting, a map was developed identifying ITS priority corridors in the North Florida region. All of these priority corridors fall within the North Florida TPO service area.

The priority corridors identified includes additional sections of the roadways that already have ITS devices in place, additional ITS systems deployment along ITS corridors, and new roadways that currently do not have any ITS devices in place.

Figure 4.1 shows the priority corridors identified in the project kickoff meeting.
ITS Priority Corridors

Figure 4.1
5. ITS Needs and Cost Estimates

The ITS needs for the North Florida region are developed based on the existing and programmed ITS projects on the identified priority corridors. A list of candidate corridors for future ITS deployment was developed by the Northeast Florida ITS Coalition. The ITS needs along these candidate corridors is evaluated to identify future ITS projects.

Figure 5.1 shows the ITS needs for the North Florida TPO region highlighting the project limits and cost of implementation on the corridors. These projects can be used as a basis to update the five and ten year Implementation Plan of the Regional ITS Master Plan. The numbers shown in Figure 5.1 corresponds to that shown in Table 5.1.

Figure 5.2 shows the overall ITS deployment in the North Florida region that highlights the existing ITS corridors, needs corridors, and ongoing ITS projects.

The FHWA’s Research and Innovative Technology Administration cost database was used to provide cost estimates of individual ITS devices and communications.

5.1. Freeway Management

An increase in freeway surveillance and roadside traveler information is proposed as future needs in the North Florida service area. These upgrades include vehicle detection system, dynamic message signs, traffic cameras, etc. The following corridor segments were identified as candidate ITS corridors.

1. I-95: two segments of I-95 were identified: the segment in south is between Duval County line and Flagler County line in St. John's County, and the segment in north is between Nassau County line and Georgia State line in Nassau County. The combined length of these identified segments is approximately 39 miles.

2. I-10: the segment identified is between US 301 on west and I-95 on east. The length of this corridor segment is approximately 19 miles.

3. SR 202: the segment identified is between Philips Highway on west and SR A1A on east. The length of this corridor segment is approximately 12 miles.

4. Hart Bridge Expressway: the Hart Bridge Expressway is on SR 228 and the segment considered is between Parker Street on north and Atlantic Boulevard on south. The length of this corridor segment is approximately 2 miles.

5. SR 9B: this is a future road and the segment shown on the map is under construction. The limit of the segment identified is between SR 9A and CR 2209, which is also a future road. The length of this segment is approximately 4 miles.

6. Outer Beltway: this is a future road. The limit of the segment identified is between I-95 and I-10. The length of this segment is approximately 46 miles.

Figure 5.1 highlights these freeway needs segments.

Cost Estimate

The cost estimate of freeway management system includes the capital cost for fiber optic, dynamic message signs, traffic cameras, and vehicle detections system. The traffic cameras are assumed to be installed at every mile, two freeway dynamic message signs at each interchange, and vehicle detection system at each half mile. The ITS element cost is assumed to be: per camera $27,750, per DMS $200,000, and per vehicle detection system $10,000. The total cost estimated for future freeway management systems is $19,525,764 with an operations and maintenance cost of $635,685. Table 5.1 provides individual corridor cost breakdown.
Freeway and Arterial Corridors ITS Needs

Refer to Table 5.1 for detail
ITS Deployment Needs
Existing ITS Corridors
Ongoing ITS Projects
Programmed ITS Projects
Outer Beltway Future Road
SR 9B Future Road
North Florida TPO Boundary
Major Roads
Cities
Water Bodies
County Boundaries

Figure 5.2
*Fiber optic installation cost is $20,000 per mile with the O&M cost of $1,500 per mile.

**RWIS total capital and O&M cost includes capital and O&M costs for wireless communication.
5.2. Arterial Management

Additional arterial corridor segments were identified to install ITS signal system that includes ITS controller as well as CCTV installation at the signalized intersections. A field visit was performed in November 2009 and a list of all signalized intersections along the ITS needs corridors was generated. This information provides the basis of the estimation of ITS deployment costs along these corridors. These corridor segments are listed below:

1. SR 200/SR A1A: two segments of SR 200 were identified: the west segment is between Callahan and I-95, and the east segment is between Old Nassauville Road and SR A1A. The combined segment length of these corridor segments is approximately 20 miles with 14 signalized intersections.

2. SR 102/Airport Road: the segment identified is between Jacksonville International Airport on west and I-95 on east. The length of this corridor segment is approximately 2 miles with four signalized intersections.

3. SR 105/Heckscher Drive: the segment identified is between I-95 on west and Port of Jacksonville on east. The length of this corridor segment is approximately 8 miles with four signalized intersections.

4. Wonderwood Connector: the segment identified is also called McCormick Road and spans between SR 9A on west and SR A1A on east. The length of this corridor segment is approximately 9 miles with 15 signalized intersections.

5. SR 115/Lem Turner Blvd.: the segment identified is between I-295 on west and I-95 on east. The length of this corridor segment is approximately 9 miles with 17 signalized intersections.

6. SR 15/New Kings Road: the segment identified is between I-295 on west and SR 9A on east. The length of this corridor segment is approximately 14 miles with 30 signalized intersections.

7. SR 10/W. Beaver Street: the segment identified is between McDuff Avenue on west and Main Street on east. The length of this corridor segment is approximately 3 miles with 22 signalized intersections.

8. Us 90/Beach Boulevard: two segments of Beach Boulevard were identified: the west segment is between I-95 and Atlantic Boulevard, and the east segment is between San Pablo Road and SR A1A. The combined segment length of these corridor segments is approximately 4 miles with ten signalized intersections.

9. Monument Road: the segment identified is between Ft. Caroline Road on north and Atlantic Blvd. on south. The length of this corridor segment is approximately 6 miles with 12 signalized intersections.

10. SR A1A: two segments of SR A1A were identified: the north segment is between SR 202 and Atlantic Boulevard, and the south segment is between Palm Valley Road and Mickler Road. The combined segment length of these corridor segments is approximately 8 miles with 15 signalized intersections.

11. SR 202/J. Turner Butler: the segment identified is between Philips Highway on west and I-95 NB off Ramps on east. The length of this corridor segment is approximately 1 mile with four signalized intersections.

12. SR 115/Southside Blvd.: the segment identified is between SR 9A on north and SR 202 on south. The length of this corridor segment is approximately 10 miles with 10 signalized intersections.

13. SR 5/US 1/Philips Highway: the segment identified is between Southside Boulevard on north and Race Track Road on south. The length of this corridor segment is approximately 7 miles with seven signalized intersections.

14. SR 228/Normandy Boulevard: the segment identified is between 103rd Street on west and I-295 on east. The length of this corridor segment is approximately 8 miles with nine signalized intersections.

15. SR 134/103rd Street: the segment identified is between Normandy Boulevard on west and I-295 on east. The length of this corridor segment is approximately 8 miles with nine signalized intersections.

16. SR 21/Blanding Blvd.: the segment identified is between Collins Rd. on north and US 17 on south. The length of this corridor segment is approximately 7 miles with 16 signalized intersections.

17. US 17/SR 15: the segment identified is between Kingsley Avenue on south and CR 315 on north. The length of this corridor segment is approximately 13 miles with 17 signalized intersections.

18. Race Track Road: the segment identified is between US 1 on west and SR 13 on east. The length of this corridor segment is approximately 9 miles with nine signalized intersections.
19. SR 13/San Jose Boulevard: the segment identified is between Julington Creek on north and Shands Road on south. The length of this corridor segment is approximately 13 miles with six signalized intersections.

20. SR 13/SR 16: the segment identified is between Shands on west and CR 13 on east. The length of this corridor segment is approximately 4 miles with no signalized intersection. Only fiber optics will be installed to provide connection between the north and south identified priority corridors.

21. SR 16: the segment identified is between CR 13 on west and US 1 on east. The length of this corridor segment is approximately 15 miles with 13 signalized intersections.

22. CR 214/King Street: the segment identified is between I-95 on west and SR A1A on east. The length of this corridor segment is approximately 6 miles with nine signalized intersections.

23. SR 207/SR 312: the segment identified is between I-95 on west and SR A1A on east. The length of this corridor segment is approximately 8 miles with 12 signalized intersections.

24. SR A1A: the segment identified is between CR 214 on north and CR 206 on south. The length of this corridor segment is approximately 13 miles with 13 signalized intersections.

25. CR 210/Palm Valley Rd.: the segment identified is between SR 13 on west and SR A1A on east. The length of this corridor segment is approximately 23 miles with 14 signalized intersections.

26. US 301: the segment identified is between Mickler St. (Callahan) on north and Beaver St. on south. The length of this corridor segment is approximately 20 miles with 2 signalized intersections.

Figure 5.1 highlights these arterial corridor needs segments.

**Cost Estimate**

The arterial management systems include capital cost of fiber optics and ITS signal controller at each signalized intersections. The cost per ITS signal controller modification is assumed to be $45,000, which is based on the SR 200 project completed recently in the region. The operations and maintenance cost is assumed to be $3,000. The total capital cost estimated for all the corridors listed above is $21,745,395 with an operations and maintenance cost of $1,172,788. Table 5.1 provides individual corridor cost breakdown.

5.3. Traffic Incident Management – Dynamic Detour System

The dynamic detour system/trailblazers fall within the Traffic Incident Management program of ITS. The dynamic detour system or trailblazer is the project identified by the first coast stakeholders to provide detour notifications to the motorists on arterials before entering the freeways. This notification could be provided either electronically using dynamic message signs for arterials or through flashing beacons. The system should be placed on arterials, in advance of entering the freeways to receive traffic notification on limited access highways. However, the capital and operations and maintenance cost for using dynamic message signs is higher than probed flashing beacons. A concept of operations and prioritization study is planned for 2010-2011 that will study and evaluate the systems needs in greater detail.

The corridors selected for this application are the on-ramp interchanges along I-95, I-10, SR 202, and SR 9A. There are two options considered for deployment:

1. Option I: This option considers deployment of static signs with flashing beacons along each direction of the interchanging arterials.

2. Option II: This option considers deployment of arterial DMS along each direction of the interchanging arterials. This option costs approximately ten times the device capital cost considered in Option I.

**Cost Estimate**

Following Table 5.2 shows the summary of cost of devices and operations and maintenance (O&M) cost.
Table 5.2: Arterial Trailblazer Deployment Cost

<table>
<thead>
<tr>
<th>Freeway</th>
<th># Interchanges (On Ramps)</th>
<th>Capital Cost</th>
<th>O&amp;M Cost (per year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option I: Install Flashing Beacons*</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>I-95</td>
<td>35</td>
<td>$700,000.00</td>
<td>$49,000.00</td>
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<tr>
<td>I-295/SR 9A</td>
<td>30</td>
<td>$600,000.00</td>
<td>$42,000.00</td>
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<tr>
<td>I-10</td>
<td>12</td>
<td>$240,000.00</td>
<td>$16,800.00</td>
</tr>
<tr>
<td>SR 202/JTB</td>
<td>11</td>
<td>$220,000.00</td>
<td>$15,400.00</td>
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<tr>
<td>Option I Total</td>
<td></td>
<td>$1,760,000.00</td>
<td>$123,200.00</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Freeway</th>
<th># Interchanges (On Ramps)</th>
<th>Capital Cost</th>
<th>O&amp;M Cost (per year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option II: Install DMS**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I-95</td>
<td>35</td>
<td>$8,050,000.00</td>
<td>$402,500.00</td>
</tr>
<tr>
<td>I-295/SR 9A</td>
<td>30</td>
<td>$6,900,000.00</td>
<td>$345,000.00</td>
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<tr>
<td>I-10</td>
<td>12</td>
<td>$2,760,000.00</td>
<td>$138,000.00</td>
</tr>
<tr>
<td>SR 202/JTB</td>
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<td>$2,530,000.00</td>
<td>$126,500.00</td>
</tr>
<tr>
<td>Option II Total</td>
<td></td>
<td>$20,240,000.00</td>
<td>$1,012,000.00</td>
</tr>
</tbody>
</table>

*Flashing beacons cost is $10,000 each with an O&M cost of $700 per unit per year; assuming two flashing beacons per interchange.

**DMS: Dynamic Message Signs; assumed two DMS per interchange at $115,000 each with O&M cost of $5,700 per unit per year.

5.4. Road Weather Management

The road weather management system is planned for the bridge operations during high wind events. The automatic wind sensors are proposed to be installed on the bridge to measure the wind speeds and notify safety and operation agencies. The first coast stakeholders generated a list of 23 high priority bridges that spans across rivers and intracoastal waterways in the northeast Florida. A pilot project is being studied by the FDOT at four of these 22 locations at Buckman, Dames Point, Vilano, and SR 302 bridges. Additional six locations are programmed for 2010/2011 fiscal year (Phase I) with a concept of operations being developed by the North Florida TPO to study the operations of the system in greater detail.

Cost Estimate:

The device capital cost includes, the wind sensor, fiber optic, and wireless communication hardware costs. Table 5.3 shows the cost estimates of the RWIS wind sensor system deployment.

The deployment of wind sensor on the bridges is divided into two phases:

1. Phase I Priority Locations: six locations that are identified by the stakeholders as higher priority in the region to provide maximum coverage in the region.
2. Phase II Other Priority Locations: remaining 13 locations that consist of locations that are not included in Phase I and do not have existing wind sensors.
Table 5.3. RWIS Wind Sensor Deployment Cost

<table>
<thead>
<tr>
<th>Bridge</th>
<th>Existing/Planned Fiber</th>
<th>Nearest Fiber (Miles)</th>
<th>Wireless</th>
<th>Wireless (20 Years)</th>
<th>Fiber Optic</th>
<th>Device</th>
<th>Total</th>
<th>Wireless</th>
<th>Fiber Optic</th>
<th>Device</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-95, Fuller Warren Bridge</td>
<td>Yes</td>
<td>-</td>
<td>-</td>
<td>$-</td>
<td>-</td>
<td>$40,000</td>
<td>$40,000</td>
<td>-</td>
<td>-</td>
<td>$3,500</td>
<td>$3,500</td>
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<td>SR 115, Matthews Bridge</td>
<td>No</td>
<td>1.04</td>
<td>-</td>
<td>$20,800</td>
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<td>$60,800</td>
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<tr>
<td>SR 16, Shands Bridge</td>
<td>No</td>
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<td>Yes</td>
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<tr>
<td>US 90/SR 272, Beach Blvd Bridge</td>
<td>No</td>
<td>1.25</td>
<td>No</td>
<td>-</td>
<td>$25,000</td>
<td>$40,000</td>
<td>$65,000</td>
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<td>-</td>
<td>$3,500</td>
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<td>SR 200/SR A1A Intracostal Bridge</td>
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<td>10.20</td>
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<td>8.58</td>
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<td></td>
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<td>I-95, Trout River Bridge</td>
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<td>-</td>
<td>No</td>
<td>$-</td>
<td>-</td>
<td>$40,000</td>
<td>$40,000</td>
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<td>SR 13, Acosta Bridge</td>
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<td>-</td>
<td>No</td>
<td>$-</td>
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<td>$40,000</td>
<td>-</td>
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<td>SR 228/US 1, Hart Bridge</td>
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<td>-</td>
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<td>$40,000</td>
<td>-</td>
<td>-</td>
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<td>Wonderwood Connector Bridge</td>
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<td>US 90/SR 10, Main Street Bridge</td>
<td>Yes</td>
<td>1.10</td>
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<td>$40,000</td>
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<td>SR 105, Heckscher Dr. Bridge</td>
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<td>No</td>
<td>$-</td>
<td>$23,600</td>
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<td>$63,600</td>
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<td>SR 10, Atlantic Blvd Bridge</td>
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<td>0.70</td>
<td>No</td>
<td>$-</td>
<td>$14,000</td>
<td>$40,000</td>
<td>$54,000</td>
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<td>US 17, Doctors Inlet Bridge</td>
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<td>2.17</td>
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<td>CR 210, Palm Valley Intracostal Bridge</td>
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<td>12.34</td>
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<td>SR A1A, Matanzas Bridge</td>
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<td>13.77</td>
<td>Yes</td>
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<td>-</td>
<td>$40,000</td>
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<td>SR A1A, Bridges of Lions</td>
<td>No</td>
<td>1.16</td>
<td>No</td>
<td>$-</td>
<td>$23,200</td>
<td>$40,000</td>
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<td></td>
</tr>
<tr>
<td>Overall Project Total</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Note: RWIS wind sensor project also includes existing wind sensor system at Buckman, Dames Point, Vilano, and SR 312 Bridges.
5.5. Transit Management

The Jacksonville Transit Authority (JTA) programmed and planned various projects in the northeast Florida for transit management in the region. The transit planned projects are shown in Table 2.1 (Page 6) with a significant amount of work completed and several other projects underway. The three projects that are carried over to the next five to ten year program are:

1. Cell Phone Fare Payment: This is an extension of the Smartcard Fare collection system that is currently being deployed on all 180 buses operated by JTA. Once the Smartcard fare collection system is in place for the 180 JTA buses, the cell phone fare payment system will be integrated.

   **Cost Estimate:**
   The cost information for the cell phone payment system is not available at this time and further study is required.

2. Parking Integration and Direction Signage/Notice: This system will provide information to the transit riders in the park and ride lots about the parking space available and provide direction to the parking lot using electronic signs. The system will first be available in the downtown area for the transit riders and then will be followed at various other locations in Jacksonville. This system is currently planned at ten parking garages in the Jacksonville Downtown area.

   **Cost Estimate:**
   The parking monitoring system capital cost is $25,000 with $5,000 in operations and maintenance. Therefore, the system deployment cost is $250,000 with an operations and maintenance cost of $50,000.

3. WiFi on Transit Corridors: The WiFi system is currently being programmed for the next five years to provide WiFi access in the transit buses. The system would be initially implemented on the Bus Rapid Transit and Express Bus routes. There are currently six Bus Rapid Transit routes planned in the region. The WiFi system implementation will require installation of DS03 communication lines along the corridor along with the fiber optic lines. There are six corridor sections planned for Bus Rapid Transit, they are:
   a. Lem Turner Road: between I-295 and Main Street and continue on Main Street to I-95.
   b. Arlington Expressway/Atlantic Boulevard: between Main Street and Southside Boulevard
   c. Southside Boulevard: between Atlantic Boulevard and Philips Highway
   d. Philips Highway: between I-95 north interchange and Southside Boulevard
   e. Blanding Boulevard: between I-10 and Kingsley Avenue
   f. Beach Boulevard: between Southside Boulevard and SR A1A

   **Cost Estimate:**
   All of these corridors assume that the fiber optic network is existing and in operation. The initial estimated device cost is $5,000 with $50,000 in operations and maintenance per year for each corridor. The total cost of the system is estimated to be $30,000 with an operations and maintenance cost of $300,000. Table 5.1 shows the transit management program cost for these two projects.

5.6. Regional Traffic Management Center

A regional traffic management center is planned at a Jacksonville Downtown location. This facility may house five different local agency personnel to operate roadway and manage incidents in the region. These agencies are: FDOT, City of Jacksonville, Jacksonville Fire and Rescue Department, Jacksonville Sherriff’s Office, and Florida Highway Patrol.

**Cost Estimate:**
A funding is programmed to construct the regional traffic management center in 2010/2011 fiscal year.
5.7. IntelliDrive

IntelliDrive is the next generation technology planned by USDOT and automobile industry to resolve safety, mobility, and environmental challenges faced by the current surface transportation system. IntelliDrive is an USDOT effort to optimally utilize the wireless technology to integrate three different aspects of road travel: surface transportation elements, surrounding vehicles, and personal communication devices.

The USDOT is currently developing three applications, the IntelliDrive Safety, Mobility, and Environmental applications to address challenges faced on these three aspects of the surface transportation. The USDOT's goal is to complete the majority of its research by 2013. The aspects of the program that have proven sufficiently beneficial will be ready to be carried out by 2013. In 2013, USDOT also intends to decide whether the applications show enough promise to merit deployment, and to determine whether regulation or other government action will be needed to speed deployment of potentially lifesaving applications.

The three current key challenges faced by IntelliDrive are:

1. Resolving remaining technical challenges and testing and determining the actual benefits of applications.
2. Determining whether overall benefits are great enough to warrant deployment, and, if so, how the systems would be deployed.
3. Addressing public acceptance issues such as maintaining user privacy, and whether the systems in vehicles are effective, safe, and easy to use.

Cost Estimate:

In order to achieve IntelliDrive capability in the northeast Florida region, the Dedicated Short Range Communications (DSRC) devices should be installed at every half-mile along various corridors. These devices are proposed to be installed in four phases to spread the funding needed for deployment. Since this is a next generation technology, a detailed study is needed to estimate the software and operations costs of IntelliDrive before the cost and benefits of this technology can be fully determined and understood. Table 5.4 shows the DSRC deployment costs for the individual corridors.

The corridors are divided into four different phases for DSRC deployment:

1. Phase I Limited Access Highways: consists of all major limited access highways in the region such as, I-95, I-295/SR 9A, SR 202/JTB, and I-10.
2. Phase II, Other Limited Access Highways: consists of other limited access highways or high volume corridors in the region such as, Hart Bridge Expressway, Arlington Expressway, Martin Luther King Expressway, SR 9B, and SR 23/Branan Field Chaffee Road.
3. Phase III, Other State Road: consists of state roads in the region that are heavily travelled such as, SR 21, SR 13, SR 5/US 1, SR 200, SR 212, SR 90, and SR 15/US 17.
4. Phase IV, Other Arterials: consists of arterials that are listed in the needs arterial corridor list and not included in the previous phases such as, Airport Road, Heckscher Drive, and others shown in Table 5.4.
### Table 5.4. IntelliDrive DSRC Deployment Cost

<table>
<thead>
<tr>
<th>Road Name</th>
<th>Segment Length (miles)</th>
<th>DSRC Capital Cost</th>
<th>O&amp;M Cost (per year)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Phase I: Limited Access Highways</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I-95</td>
<td>81.40</td>
<td>$1,302,400.00</td>
<td>$162,800.00</td>
</tr>
<tr>
<td>I-295/SR 9A</td>
<td>62.00</td>
<td>$992,000.00</td>
<td>$124,000.00</td>
</tr>
<tr>
<td>I-10</td>
<td>18.69</td>
<td>$299,040.00</td>
<td>$37,380.00</td>
</tr>
<tr>
<td>SR 202/JTB</td>
<td>13.03</td>
<td>$208,480.00</td>
<td>$26,060.00</td>
</tr>
<tr>
<td><strong>Phase I Sub Total</strong></td>
<td>175.12</td>
<td>$2,801,920.00</td>
<td>$350,240.00</td>
</tr>
<tr>
<td><strong>Phase II: Other Limited Access Highways</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hart Bridge Expressway</td>
<td>1.76</td>
<td>$28,160.00</td>
<td>$3,520.00</td>
</tr>
<tr>
<td>Arlington Expressway</td>
<td>5.26</td>
<td>$84,160.00</td>
<td>$10,520.00</td>
</tr>
<tr>
<td>Martin Luther King Expressway</td>
<td>4.67</td>
<td>$74,720.00</td>
<td>$9,340.00</td>
</tr>
<tr>
<td>SR 9B (under construction)</td>
<td>6.60</td>
<td>$105,600.00</td>
<td>$13,200.00</td>
</tr>
<tr>
<td>SR 23, Branan Field Chaffee Road</td>
<td>2.60</td>
<td>$41,600.00</td>
<td>$5,200.00</td>
</tr>
<tr>
<td><strong>Phase II Sub Total</strong></td>
<td>20.89</td>
<td>$334,240.00</td>
<td>$41,780.00</td>
</tr>
<tr>
<td><strong>Phase III: Other State Roads</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SR 21, Blanding Blvd.</td>
<td>15.87</td>
<td>$253,920.00</td>
<td>$31,740.00</td>
</tr>
<tr>
<td>SR 13, San Jose Blvd.</td>
<td>14.72</td>
<td>$235,520.00</td>
<td>$29,440.00</td>
</tr>
<tr>
<td>SR 5/US 1, Philips Highway</td>
<td>17.70</td>
<td>$283,200.00</td>
<td>$35,400.00</td>
</tr>
<tr>
<td>SR 200, I-95 to Fernandina Beach</td>
<td>14.52</td>
<td>$232,320.00</td>
<td>$29,040.00</td>
</tr>
<tr>
<td>SR 212, Beach Blvd.</td>
<td>14.11</td>
<td>$225,760.00</td>
<td>$28,220.00</td>
</tr>
<tr>
<td>SR 90, Atlantic Blvd.</td>
<td>10.02</td>
<td>$160,320.00</td>
<td>$20,040.00</td>
</tr>
<tr>
<td>SR 15/US 17, Roosevelt Blvd.</td>
<td>12.68</td>
<td>$202,880.00</td>
<td>$25,360.00</td>
</tr>
<tr>
<td><strong>Phase III Sub Total</strong></td>
<td>99.62</td>
<td>$1,593,920.00</td>
<td>$199,240.00</td>
</tr>
<tr>
<td><strong>Phase IV: Other Arterials</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Airport Road</td>
<td>2.05</td>
<td>$32,800.00</td>
<td>$4,100.00</td>
</tr>
<tr>
<td>Heckscher Drive</td>
<td>8.12</td>
<td>$129,920.00</td>
<td>$16,240.00</td>
</tr>
<tr>
<td>Wonderwood Connector</td>
<td>9.17</td>
<td>$146,720.00</td>
<td>$18,340.00</td>
</tr>
<tr>
<td>SR 15/New Kings Road</td>
<td>14.13</td>
<td>$226,080.00</td>
<td>$28,260.00</td>
</tr>
<tr>
<td>W Beaver Street</td>
<td>3.09</td>
<td>$49,440.00</td>
<td>$6,180.00</td>
</tr>
<tr>
<td>SR A1A</td>
<td>25.26</td>
<td>$404,160.00</td>
<td>$50,520.00</td>
</tr>
<tr>
<td>Normandy Blvd.</td>
<td>8.08</td>
<td>$129,280.00</td>
<td>$16,160.00</td>
</tr>
<tr>
<td>103rd Street</td>
<td>7.71</td>
<td>$123,360.00</td>
<td>$15,420.00</td>
</tr>
<tr>
<td>Argyle Forest Blvd.</td>
<td>3.84</td>
<td>$61,440.00</td>
<td>$7,680.00</td>
</tr>
<tr>
<td>US 17/SR 15 (Kingsley Ave. to CR 315)</td>
<td>12.68</td>
<td>$202,880.00</td>
<td>$25,360.00</td>
</tr>
<tr>
<td>Race Track Road (SR 13 to US 1)</td>
<td>9.16</td>
<td>$146,560.00</td>
<td>$18,320.00</td>
</tr>
<tr>
<td>SR 13/SR 16 (Shands Rd. to CR 13)</td>
<td>3.95</td>
<td>$63,200.00</td>
<td>$7,900.00</td>
</tr>
<tr>
<td>SR 16 (CR 13 to US 1)</td>
<td>14.59</td>
<td>$233,440.00</td>
<td>$29,180.00</td>
</tr>
<tr>
<td>CR 214/ King St. (I-95 to SR A1A)</td>
<td>5.87</td>
<td>$93,920.00</td>
<td>$11,740.00</td>
</tr>
<tr>
<td>SR 207/SR 312 (I-95 to SR A1A)</td>
<td>7.71</td>
<td>$123,360.00</td>
<td>$15,420.00</td>
</tr>
<tr>
<td><strong>Phase IV Sub Total</strong></td>
<td>135.41</td>
<td>$2,166,560.00</td>
<td>$270,820.00</td>
</tr>
<tr>
<td><strong>Overall Project Total</strong></td>
<td>431.04</td>
<td>$6,896,640.00</td>
<td>$862,080.00</td>
</tr>
</tbody>
</table>

*DSRC: Dedicated Short Range Communications; assumed one DSRC device per half mile at $6,000 each with an O&M cost of $1,000 per unit per year.

Note: The software and operations cost is not included and a further study is needed to estimate the cost.
6. ITS Architecture Maintenance

6.1. Introduction

The North Florida TPO ITS Architecture was developed over several months between 2006 and 2007 as part of the North Florida TPO ITS Master Plan. The ITS Architecture encompasses the counties serviced by the North Florida TPO: Clay, Duval, Nassau, and St. Johns; as well as neighboring counties: Alachua, Baker, Bradford, Flagler, Putnam, and Union for some interaction with the TPO governed counties. The ITS Architecture was developed in compliance with the National ITS Architecture Version 5.1. The Turbo Architecture (Version 3.1) software was used to develop the Regional ITS Architecture.

The purpose of maintaining the ITS Architecture is to keep it current and up-to-date. This will in turn assist stakeholders to use it as a technical and institutional reference when developing specific ITS project plans. In order to serve as a regional framework, the ITS Architecture must be maintained so that it continues to reflect the current and planned ITS systems, networks, interconnections, etc. The following circumstances or conditions may trigger the need to update the existing ITS Architecture:

- Changes in regional ITS needs
- New stakeholders
- Changes in scope of services considered
- Changes in stakeholder of element names
- Changes in other Architectures

An important update from the previous version of the ITS Architecture is the change in the name of the governing body. The First Coast Metropolitan Planning Organization (First Coast MPO) has changed to North Florida Transportation Planning Organization (North Florida TPO). The Master Plan is amended to confirm to this change and the First Coast MPO is replaced with North Florida TPO in the ITS Master Plan as well as in the ITS Architecture. In addition, two new market packages: Transit Signal Priority and Transit Passenger Counting were added to the existing ITS Architecture.

6.2. Conformity

In order to fully utilize the ITS Architecture, ITS projects in the region must be designed in conformance with the North Florida Regional ITS Architecture. Additionally, federal requirements mandate that conformity with the ITS Architecture be demonstrated for ITS projects funded using federal Highway Trust Fund dollars (including those from the Mass Transit Account). To ensure that the North Florida ITS Regional Architecture and associated planning process conform to the federal policy, the process is articulated in the North Florida ITS Master Plan (formerly First Coast ITS Master Plan) as provided in the exhibit on next page. Any changes needed to this regulation to reflect the change in organization name are made and are highlighted in bold.
North Florida Transportation Planning Organization
North Florida Intelligent Transportation Systems (ITS) Master Plan
Rule 940/FTA Regulation Conformity

The following outlines the requirements of Rule 940 and the approach taken by the North Florida region. The Rule 940 language is shown in italics, with the approach for the North Florida region following.

Rule: The Regional ITS Architecture shall include, at a minimum, the following (940.9(d)):

Rule 1. A description of the region (940.9(d)(1))

The rule defines a region as the geographical area that identifies the boundaries of the Regional ITS Architecture and is defined by and based on the needs of the participating agencies and other stakeholders. In metropolitan areas, a region should be no less than the boundaries of the metropolitan planning area. The regional description should identify features that are relevant to the deployment of ITS projects as shown in the regional architecture. For the North Florida region, the description will include the counties, major cities, the modes being addressed, key geographical features that introduce congestion (e.g., waterways and bridges), major traffic generators (whether perpetual, such as ports, bases, etc., or event-based, such as Alltel Stadium), weather events that affect traffic operations, and tourism. The North Florida TPO has identified the four-county core of North Florida TPO, as well as the entire impact area of the region.

Rule 2. Identification of participating agencies and other stakeholders (940.9(d)(2))

The stakeholders already identified will represent the region well.

Rule 3. An operational concept that identifies the roles and responsibilities of participating agencies and stakeholders in the operation and implementation of the systems included in the regional ITS architecture (940.9(d)(3))

The Operational Concept (Part 1 of the ITS Master Plan developed by the North Florida TPO) identifies the who, what, when, and where of integrated operations.

Rule 4. Any agreements (existing or new) required for operations, including at a minimum those affecting ITS project interoperability, utilization of ITS related standards, and the operation of the projects identified in the regional ITS architecture (940.9(d)(4))

Often, the Architecture itself constitutes the agreement between agencies. Funding agreements for capital or operations funding, data privacy agreements, and operations agreements can sometimes be required as well. With the exception of funding agreements, many regions find that they can integrate and operate together without written agreements.

Rule 5. System functional requirements (940.9(d)(5))

A Systems Engineering analysis method, based on regional operational needs, was applied to identify the needed Market Packages and associated functional requirements for the North Florida region. This study followed a Systems Engineering process for the North Florida ITS Master Plan (North Florida IMP).

Rule 6. Interface requirements and information exchanges with planned and existing systems and subsystems (for example, subsystems and architecture flows as defined in the National ITS Architecture) (940.9(d)(6))

All selected Market Package data flows and system interface requirements were identified and referenced to the National Architecture and they conform to the FDOT District 2 ITS Architecture as well.

Rule 7. Identification of ITS standards supporting regional and national interoperability (940.9(d)(7))

Each data flow identified in the architecture was connected to a supporting standard. These standards support regional and national systems interoperability. Some of the standards may become U.S.DOT-adopted “critical” standards that specifically support national interoperability. As of this writing, there are no critical standards currently adopted by U.S.DOT. If U.S.DOT does adopt any standards, they will require that they be implemented on federally-funded ITS projects.

Rule 8. The sequence of projects required for implementation (940.9(d)(8))

The plan includes a short-term (identified as a 5-year horizon) and mid-term (10-year) horizon for implementation. A listing of project sequencing appears in the Transportation Improvement Programs (TIP) of the North Florida Transportation Planning Organization. Rule 940 emphasizes that the region ensure that projects be implemented in a logical sequence. For example, a communications backbone may be required before field devices can be connected. Based on the implementation approach selected, the required sequencing will be...
Rule 9. The agencies and other stakeholders participating in the development of the regional ITS architecture shall develop and implement procedures and responsibilities for maintaining it, as needs evolve within the region (940.9(f)).

The North Florida ITS Coalition will assist the regional stakeholders in identifying the roles and responsibilities for maintaining and updating the Regional ITS Architecture. The update approach typically depends on the expected pace of deployment. A regular schedule has been proposed, or an update might be triggered by the need to incorporate unanticipated activities into the Architecture.

Rule 10. All ITS projects funded with highway trust funds shall be based on a systems engineering analysis (940.11(a)).

While this step is beyond the scope of the North Florida IMP project per se, the Implementation Plan developed under this project (Part 3 of this ITS Master Plan developed by the North Florida TPO) takes this requirement into account.

To ensure conformity to the North Florida Regional ITS Architecture, new projects should be submitted using the North Florida Regional ITS Project Form, available through the North Florida ITS Coalition Web site. The online application will require users to submit the following information:

- Organization name
- Contact information
- Project name and detailed description
- Project schedule and funding information

The ITS Administrator will forward the notice to the North Florida ITS Architecture Steering Committee, who will determine each project’s conformity to the North Florida Regional ITS Architecture.

The North Florida TPO project planning guidance is updated to reflect the need for ITS projects to conform to the ITS Architecture. If the ITS Architecture Steering Committee deems it necessary, the Project Champion will be asked to submit a North Florida Regional ITS Architecture Update Form, also available through the North Florida ITS Coalition Web site. The Update Form, once accepted, is archived by the ITS Architecture Steering Committee, and these accepted Update Forms are considered a part of the North Florida Regional ITS Architecture and eligible for funding until they can be incorporated into the next formal ITS Architecture update.

The North Florida Architecture Project Update forms for all the existing, ongoing and programmed projects (Figure 5.2) are included in Appendix C of this document.
### 6.3. FHWA Regional Architecture Assessment Checklist

Federal Highway Administration (FHWA) assesses conformity to Rule 940 using a checklist. The completed checklist for the North Florida Regional ITS Architecture is given in Table 6.1.

**Table 6.1. FHWA Regional Architecture Assessment Checklist**

<table>
<thead>
<tr>
<th>Criteria/Question</th>
<th>Yes/No</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Architecture Scope and Region Description</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Is the region defined geographically? Have boundaries been established such as counties, municipal boundaries, metropolitan areas, statewide, etc.?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>b. Has a timeframe for the Architecture been defined? (For example, 5 or 10 years into the future, or the TIP/STIP planning period)?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>c. Has the scope of the Regional Architecture been defined (i.e. the range of services, institutions, or jurisdictions)? Does the scope seem appropriate given the circumstances?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td><strong>2. Stakeholder Identification</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Are the stakeholders identified in sufficient detail to understand who the players are and for what they are responsible? Are they identified by name, responsibility, jurisdiction, and/or typical roles and activities?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>b. Is the range of stakeholders commensurate with the defined scope of the regional Architecture?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>c. Does the range represent a broad cross-section of all transportation related organizations in the region?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>d. Is there sufficient information to assess the degree of involvement of each critical stakeholder in the Architecture development process?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td><strong>3. System Inventory</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Has a system inventory been defined?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>b. Does it include a list of applicable regional systems along with descriptions of each system and their functionality?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>c. Have National ITS Architecture subsystems and terminators been correctly linked to regional systems?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>d. Are user-defined entities described in sufficient detail to understand their function?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td><strong>4. Needs and Services</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Are needs and services defined and described?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>b. Are the needs and services adequately represented in the regional Architecture?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td><strong>5. Operational Concept</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Has an Architecture operational concept been described in sufficient detail for the existing systems to understand the roles and responsibilities (technical, financial, human resource, mutual relationship and functional areas) of the primary stakeholders and the systems they operate in the region?</td>
<td>Yes</td>
<td>As part of the ITS Master Plan</td>
</tr>
<tr>
<td>b. Has an Architecture operational concept been described in sufficient detail for the future systems?</td>
<td>Yes</td>
<td>As part of the ITS Master Plan</td>
</tr>
<tr>
<td><strong>6. Functional Requirements</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Have high-level functional requirements been identified for each regionally significant system that is included in the Architecture? (“Regionally significant systems” are defined as those with interfaces that cross agency boundaries.)</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>b. Are the requirements categorized by stakeholders?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>c. Are the requirements unambiguously stated in terms of shall statements?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>d. Is the Architecture output presented in a way that is understandable to a variety of audiences, including the public and decision-makers?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td><strong>7. Interfaces/ Information Flows</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Are interconnections defined to indicate what subsystems are connected together? Has this been illustrated by diagrams or tables?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>b. Have information flow diagrams or tables been developed to illustrate the information flows that are exchanged between subsystems?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>c. Is enough supporting information provided to understand the information exchanged?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Criteria/Question</td>
<td>Yes/No</td>
<td>Comments</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------------</td>
<td>--------</td>
<td>-------------------</td>
</tr>
<tr>
<td>d. Does the Architecture include appropriate linkages to overlapping or adjacent region Architectures?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>e. Is the connection status (existing or planned) identified for each link?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>f. Are there any important integration opportunities that may have been overlooked?</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

### 8. Project Sequencing

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes/No</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Has a plan been established by which projects would be defined and sequenced over time?</td>
<td>Yes</td>
<td>As part of the ITS Master Plan</td>
</tr>
<tr>
<td>b. Has an initial sequencing of currently defined projects been established?</td>
<td>Yes</td>
<td>As part of the ITS Master Plan</td>
</tr>
<tr>
<td>c. Does the sequencing adequately address the interdependencies among projects?</td>
<td>Yes</td>
<td>As part of the ITS Master Plan</td>
</tr>
<tr>
<td>d. Have opportunities to coordinate implementation schedules with other transportation improvements been investigated?</td>
<td>Yes</td>
<td>As part of the ITS Master Plan</td>
</tr>
</tbody>
</table>

### 9. Agreements

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes/No</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Has a list of the agreements, needed between key stakeholders in order to implement the projects that will come out of the regional ITS Architecture, been defined?</td>
<td>Yes</td>
<td>As part of the ITS Master Plan</td>
</tr>
<tr>
<td>b. Can existing agreements be used?</td>
<td>Yes</td>
<td>As part of the ITS Master Plan</td>
</tr>
</tbody>
</table>

### 10. Standards Identification

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes/No</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Are ITS standards described that are applicable to the development of projects coming out of the regional ITS Architecture?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>b. Are these standards associated with specific information flows or interconnects?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>c. Are there any important standards that may have been overlooked?</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

### 11. Using the Regional ITS Architecture

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes/No</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Is there a description for incorporating and using the regional ITS Architecture in the region’s planning process?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>b. Will a regional stakeholder organization or committee monitor and manage the planning process and the Architecture use? Are all important responsibilities addressed?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>c. Is there a description for using the regional ITS Architecture in support of project implementation?</td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>

### 12. Maintenance Plan

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes/No</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Is there a documented plan for maintaining the Architecture? (If not, are there informal agreements for how the regional Architecture will be maintained?)</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>b. Have the various reasons for updating the Architecture been addressed (project updates, new requirements or initiatives, etc.)?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>c. Is there a plan for communicating changes in the Architecture to stakeholders?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>d. Have the responsibilities of the various stakeholders or groups been well defined?</td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>

Other comments: 

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________
6.4. Market Packages

The North Florida Regional ITS Architecture was derived from the FDOT District 2 ITS Architecture. The database file corresponding to this ITS Architecture was customized to reflect the geographic boundaries and needs of the North Florida region. National ITS Architecture market packages were then used to further customize the North Florida Regional ITS Architecture. Market packages represent groups of information flows and standards in the National ITS Architecture that work together to implement a transportation service.

Apart from the standard market packages that were used in the previous version of the North Florida ITS Architecture, two additional market packages were introduced into the Regional ITS Architecture in this update. These market packages were identified and are described as below:

- Transit Signal Priority: this market package determines the need for transit priority on routes and at certain intersections and requests transit signal priority at these locations. The signal priority may result from limited local coordination between the transit vehicle and the individual intersection for signal priority or may result from coordination between transit management and traffic management centers. Coordination between the traffic and transit management is intended to improve on-time performance of the transit system to the extent that this can be accommodated without degrading overall performance of the traffic network.

- Transit Passenger Counting: this market package counts the number of passengers entering and exiting a transit vehicle using sensors mounted on the vehicle and communicates the collected passenger data back to the management center. The collected data can be used to calculate reliable ridership figures and measure passenger load capacity information at particular stops.

6.5. Interfaces and Standards

The North Florida Regional ITS Architecture consists of a database of detailed connections and interactions between different ITS Architecture elements. These connections between two elements are called “interfaces,” while the specific data that flows between two elements are called as “information flows.” Both interfaces and information flows are represented in the North Florida Regional ITS Architecture as diagrams, located on the North Florida IMP CD-ROM and the North Florida IMP web site. Information flows are also assigned a status out of the three shown below:

- Existing: the information flow has been implemented, or does occur
- Programmed: the information flow does not currently exist, but there are dedicated funds for its implementation, or
- Planned: the information flow is in the future, and has not been budgeted

Within the ITS Architecture, information flows are linked directly to ITS standards. ITS standards are industry-consensus standards that define how system components operate within a consistent framework. By specifying how systems and components interact, ITS standards promote interoperability.

The U.S.DOT’s ITS Standards Program is presently working with the standards development organizations to establish a national database for ITS standards. The following organizations participate in ITS standards activities under American National Standards Institute (ANSI) supervision:

- American Association of State Highway and Transportation Officials (AASHTO)
- American Society for Testing and Materials (ASTM)
- Institute of Electrical and Electronics Engineers (IEEE)
- Institute of Transportation Engineers (ITE)
- National Electrical Manufacturers Association (NEMA), and
- Society of Automotive Engineers (SAE)

In Florida, the FDOT Central Office ITS Department publishes the ITS standards for the state. Agencies using federal or state funds are required to conform to these standards.

6.6. Documentation

The updated ITS Architecture is provided on a CD attached in Appendix D.
Appendix A
Regional Stakeholders List
### Table 1-2: First Coast Regional ITS Stakeholders

<table>
<thead>
<tr>
<th>Airport Authorities</th>
<th>Florida Department of Law Enforcement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amtrak</td>
<td>Florida Division of Emergency Management</td>
</tr>
<tr>
<td>Archived Data Users</td>
<td>Florida Highway Patrol</td>
</tr>
<tr>
<td>Care-A-Van Transportation</td>
<td>Gainesville Transportation Services Division</td>
</tr>
<tr>
<td>Center for Simulation Education and Safety Research (University of Florida)</td>
<td>Gainesville-Alachua County Regional Airport Authority</td>
</tr>
<tr>
<td>CHEMTREC</td>
<td>Greyhound Bus Company</td>
</tr>
<tr>
<td>City of Atlantic Beach Police Department</td>
<td>Jacksonville Aviation Authority</td>
</tr>
<tr>
<td>City of Atlantic Beach Public Works Department</td>
<td>Jacksonville Port Authority</td>
</tr>
<tr>
<td>City of Fernandina Beach Department of Public Safety</td>
<td>Jacksonville Transportation Authority</td>
</tr>
<tr>
<td>City of Fernandina Beach Police Department</td>
<td>Local Agencies</td>
</tr>
<tr>
<td>City of Fernandina Beach Public Works Department</td>
<td>Local Agencies – Fire EMS/Rescue Departments</td>
</tr>
<tr>
<td>City of Green Cove Springs Police Department</td>
<td>Local Agencies – Police Departments</td>
</tr>
<tr>
<td>City of Green Cove Springs Public Works Department</td>
<td>Local Media</td>
</tr>
<tr>
<td>City of Jacksonville</td>
<td>Local Traffic Management Agencies</td>
</tr>
<tr>
<td>City of Jacksonville Beach Department of Public Safety</td>
<td>Local Transit Operators</td>
</tr>
<tr>
<td>City of Jacksonville Beach Police Department</td>
<td>Local Venue Promoters</td>
</tr>
<tr>
<td>City of Jacksonville Beach Public Works Department</td>
<td>Metropolitan Transportation Planning Organization</td>
</tr>
<tr>
<td>City of Jacksonville Department of Public Works</td>
<td>Nassau County Department of Public Safety</td>
</tr>
<tr>
<td>City of Jacksonville Emergency Management</td>
<td>Nassau County Emergency Management</td>
</tr>
<tr>
<td>City of Jacksonville Fire and Rescue</td>
<td>Nassau County Public Works Department</td>
</tr>
<tr>
<td>City of Jacksonville Sheriff’s Office</td>
<td>Nassau County Sheriff’s Office</td>
</tr>
<tr>
<td>City of Jacksonville Traffic Engineering Division</td>
<td>National Oceanographic and Atmospheric Administration</td>
</tr>
<tr>
<td>City of Neptune Beach Department of Public Safety</td>
<td>One Call System</td>
</tr>
<tr>
<td>City of Neptune Beach Police Department</td>
<td>Parking Facility Operators</td>
</tr>
<tr>
<td>City of Neptune Beach Public Works Department</td>
<td>Private Commercial Vehicle and Fleet Operators</td>
</tr>
<tr>
<td>City of Palatka</td>
<td>Private Concierge Service Provider</td>
</tr>
<tr>
<td>City of St. Augustine Department of Public Safety</td>
<td>Private Maintenance Contractors</td>
</tr>
<tr>
<td>City of St. Augustine Police Department</td>
<td>Private Sector ISPs</td>
</tr>
<tr>
<td>City of St. Augustine Public Works Department</td>
<td>Private Taxi Operators</td>
</tr>
<tr>
<td>Clay County Council On Aging</td>
<td>Private/Public Utilities</td>
</tr>
<tr>
<td>Clay County Department of Public Safety</td>
<td>Private/Public Regional Medical Centers</td>
</tr>
<tr>
<td>Clay County Emergency Management</td>
<td>Probe Information Providers</td>
</tr>
<tr>
<td>Clay County Public Works Department</td>
<td>Putnam County</td>
</tr>
<tr>
<td>Clay County Public Works Traffic Control Division</td>
<td>Rail Operators</td>
</tr>
<tr>
<td>Clay County Sheriff’s Office</td>
<td>Regional Public Safety Agencies</td>
</tr>
<tr>
<td>Council of Supply Chain Management Professionals</td>
<td>Regional Transit Management Agencies</td>
</tr>
<tr>
<td>Counties and Cities</td>
<td>St. Johns County Council on Aging</td>
</tr>
<tr>
<td>County and City Traffic Engineering</td>
<td>St. Johns County Department of Public Safety</td>
</tr>
<tr>
<td>County Emergency Management Agencies</td>
<td>St. Johns County Emergency Management</td>
</tr>
<tr>
<td>County Paratransit</td>
<td>St. Johns Public Works Department</td>
</tr>
<tr>
<td>County Public Safety Agencies</td>
<td>St. Johns Sheriff's Office</td>
</tr>
<tr>
<td>County Public Safety Agencies – Fire/EMS</td>
<td>St. Johns County Traffic and Transportation Department</td>
</tr>
<tr>
<td>County Public Safety Agencies – Sheriffs Department</td>
<td>SunGuide partners/ISP Vendor Team</td>
</tr>
<tr>
<td>County School Districts</td>
<td>Town of Baldwin Department of Public Safety</td>
</tr>
<tr>
<td>Florida Department of Transportation (FDOT)</td>
<td>Town of Baldwin Public Works Department</td>
</tr>
<tr>
<td>FDOT Commission for the Transportation Disadvantaged</td>
<td>Town of Orange Park Department of Public Safety</td>
</tr>
<tr>
<td>FDOT District 5/FHP</td>
<td>Town of Orange Park Police Department</td>
</tr>
<tr>
<td>FDOT District 2</td>
<td>Town of Orange Park Public Works Department</td>
</tr>
<tr>
<td>FDOT Motor Carrier Compliance Office</td>
<td>Traveler Information Radio Network</td>
</tr>
<tr>
<td>FDOT Turnpike Enterprise</td>
<td>Travelers</td>
</tr>
<tr>
<td>Financial Institutions</td>
<td>University of North Florida</td>
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<tr>
<td>First Coast MPO</td>
<td>US Coast Guard</td>
</tr>
<tr>
<td>Florida Department of Environmental Protection</td>
<td>Vehicle Infrastructure Integration (VII) Provider</td>
</tr>
<tr>
<td>Florida Department of Highway Safety and Motor Vehicles</td>
<td>US Department of Defense</td>
</tr>
</tbody>
</table>
Appendix B
Stakeholder Meeting Minutes
The following summarize the discussion items that occurred in the meeting:

- The project scope was discussed and the anticipated deliverables were listed.
- The need to share the Rule 940 checklist and the conformity info was identified and members present.
- Additions to the candidate ITS corridors were suggested and will be updated. The corridors that will be included are listed below,
  - SR 21 from US 17 to SR 23
  - US 17 extend it till SR 16
  - SR 200 from Port of Fernandina to I-95 to Callahan
  - Wonderwood Connector from SR 9A to Mayport
  - SR 16 from Shands to St. Augustine
  - CR 312 from Beach to Bridge
  - CR 207
  - SR 13 to Roberts
  - Racetrack/CR 210
  - SR A1A to CR 206 in Crescent
  - Argyle Forest from Blanding to Shindler
  - 103rd Street from I-295 to SR 23
  - US 90 from Beaver St., Mc Duff to Downtown
  - Normandy Boulevard from Cahoon Road to 103rd street
  - King Street in St. Augustine (Overhead cable id preferred than underground)
- Andrew Ames from St. Johns County mentioned that the ITS data for the St. Johns County area will be made available for integration into the current FDOT information already present.
- FDOT mentioned that they will bid for a project in early 2010 for ITS deployment between 8th Street and Center to A1A at CR 107.
- The 2007 ITS Master Plan near-term and mid-term plans were then evaluated to see the current status of these goals. The participating agencies provided information on their respective programs.
- A preliminary list of projects identified for implementation through the ITS Master Plan Update were discussed.
- The consultant then provided information on IntelliDrive Technology that would facilitate information sharing through individual vehicles along with the infrastructure. The participating agencies were requested if the study should update the Master Plan in order to account for this technology and NFTPO mentioned that for the current update they do not want any integration with this system and would look into this through any future updates.
- The representative from Nassau County mentioned that he can provide the contact information of their data warehousing agency, as some of their data is handled by a separate agency.
• The refinement of the “mission” and “vision” statements identified in the Master Plan were discussed. The agencies participating mentioned that they would work on this and provide the consultant with the modified “mission and vision” statements at a later stage. Some changes were suggested in the “vision” statement of the ITS Master Plan.
• The next steps in the project were discussed and the anticipated schedule was provided.

[Meeting Adjourned]
Appendix C
ITS Architecture Update Forms
Overview
The First Coast ITS Architecture Update Form allows stakeholders across the region to inform the North Florida TPO when projects or changes will impact the ITS Architecture. This will greatly simplify and streamline the Architecture update process, to occur every five years.

If requested to help maintain the Architecture, simply fill out the Update Form below and click submit. Your entry will be sent to the First Coast ITS Moderator who may contact you for follow up. The Update Form will be archived by the Architecture Steering Committee. Submitted Update Forms are considered part of the First Coast ITS Architecture and eligible for federal funding until they can be formalized in the next update.

Contact Information
Name of Submitter: Peter Vega
Submission Date: 12/14/2009
Organization: Florida DOT
Phone Number: 904-360-5463
Email: peter.vega@dot.state.fl.us

Project Form Referencing Information
Project Name: My Florida 511

Additional Information Needed
In specifics, what is being deployed?
My Florida 511 offers free, bilingual personalized services from the Florida Department of Transportation to the road users, where they can call 511, set their personalized alerts through e-mails, phone calls, or text messages along with free online access.

What standards are being used?
NTCP C2C and C2F Standards

Are you willing to share the data and information?
☑ Yes
☐ No

If yes, what key stakeholders will receive what data/information?
Instructions

The following instructions will assist you in filling out the First Coast Regional ITS Architecture Update Form.

- In “Contact Information,” enter the information that may be used to contact you for more information.

- In “Project Form Referencing Information,” enter the project’s name. Please record this information, as it will be used to identify your project in future updates and submissions.

- In “Additional Information Needed,” provide the following information:
  1. “In specifics, what is being deployed?” – Describe the project in greater detail, specifically any technologies, hardware, software, or systems being deployed.
  2. “What standards are being used?” – Provide ITS standards information. For more information on ITS standards, refer to Section Error! Reference source not found. Error! Reference source not found.
  3. “Are you willing to share the data and information?” – If you are planning to exchange or distribute new data and information either as part of this project or as a result of this project, or if you are open to the idea of sharing information, check the box marked “Yes.”
  4. “If yes, what key stakeholders will receive what data/information?” – If you answered yes to the previous question, specify what data would be available to exchange and which stakeholders or agencies. Be as specific as possible.
  5. “Other Pertinent Information” – Include here any other project information that may be relevant, or explain any answers that may be unclear from the previous sections of the form.
Overview
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Contact Information
Name of Submitter: Don Fullerton
Submission Date: 12/14/2009
Organization: City of Jacksonville
Phone Number: 904-387-8863
Email: don@coj.net

Project Form Referencing Information
Project Name: Stadium Contraflow

Additional Information Needed
In specifics, what is being deployed?
Deployed reversible lane signal systems for the Jacksonville sports complex on Bay Street. Some of the efforts include, signal controller upgrade, link signal timing system LAN using fiber optics or wireless communication, preemption system, etc.

What standards are being used?
FDOT Standard Specs: 650, 653, 660, 665, 670, 671, 676, 678, 690, 780, 782, 783, 784, 785, and 786

Are you willing to share the data and information?
- Yes
- No

If yes, what key stakeholders will receive what data/information?
Instructions

The following instructions will assist you in filling out the First Coast Regional ITS Architecture Update Form.

- In “Contact Information,” enter the information that may be used to contact you for more information.

- In “Project Form Referencing Information,” enter the project’s name. Please record this information, as it will be used to identify your project in future updates and submissions.

- In “Additional Information Needed,” provide the following information:
  1. “In specifics, what is being deployed?” – Describe the project in greater detail, specifically any technologies, hardware, software, or systems being deployed.
  2. “What standards are being used?” – Provide ITS standards information. For more information on ITS standards, refer to the form.
  3. “Are you willing to share the data and information?” – If you are planning to exchange or distribute new data and information either as part of this project or as a result of this project, or if you are open to the idea of sharing information, check the box marked “Yes.”
  4. “If yes, what key stakeholders will receive what data/information?” – If you answered yes to the previous question, specify what data would be available to exchange and which stakeholders or agencies. Be as specific as possible.
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First Coast ITS Architecture Update Form

Version: March 2007

Overview

The First Coast ITS Architecture Update Form allows stakeholders across the region to inform the North Florida TPO when projects or changes will impact the ITS Architecture. This will greatly simplify and streamline the Architecture update process, to occur every five years.

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Contact Information

Name of Submitter: Steve Arrington
Submission Date: 12/14/2009
Organization: JTA
Phone Number: 904-630-3119
Email: sarrington@jtafla.com

Project Form Referencing Information

Project Name: Atlantic Blvd. Transit Signal

Additional Information Needed

In specifics, what is being deployed?
Upgraded signals along Atlantic Blvd for transit signal priority.

What standards are being used?
TCIP-S-001 3.0.0. Standard for Transit Communications Interface Profiles.

Are you willing to share the data and information?

☐ Yes
☐ No

If yes, what key stakeholders will receive what data/information?
Data will be shared with the local stakeholders upon request.

Other Pertinent Information:

Also, please feel free to submit the optional First ITS Architecture Market Package Participation Form.

Instructions

The following instructions will assist you in filling out the First Coast Regional ITS Architecture Update Form.

- In “Contact Information,” enter the information that may be used to contact you for more information.

- In “Project Form Referencing Information,” enter the project’s name. Please record this information, as it will be used to identify your project in future updates and submissions.

- In “Additional Information Needed,” provide the following information:
  1. “In specifics, what is being deployed?” – Describe the project in greater detail, specifically any technologies, hardware, software, or systems being deployed.
  2. “What standards are being used?” – Provide ITS standards information. For more information on ITS standards, refer to the form.
  3. “Are you willing to share the data and information?” – If you are planning to exchange or distribute new data and information either as part of this project or as a result of this project, or if you are open to the idea of sharing information, check the box marked “Yes.”
  4. “If yes, what key stakeholders will receive what data/information?” – If you answered yes to the previous question, specify what data would be available to exchange and which stakeholders or agencies. Be as specific as possible.
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First Coast ITS Architecture Update Form

Overview
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Contact Information

Name of Submitter: Steve Arrington
Organization: JTA
Email: sarrington@jtafla.com
Submission Date: 12/14/2009
Phone Number: 904-630-3119

Project Form Referencing Information

Project Name: Bus AVL and Cameras

Additional Information Needed

In specifics, what is being deployed?

- Installed automatic vehicle location sensors on board of all transit vehicles. Also, installed CCTVs in 68 transit buses.

What standards are being used?


Are you willing to share the data and information?

- Yes
- No

If yes, what key stakeholders will receive what data/information?
Data will be shared with the local stakeholders upon request.

Other Pertinent Information:

Also, please feel free to submit the optional First ITS Architecture Market Package Participation Form.

**Instructions**

The following instructions will assist you in filling out the First Coast Regional ITS Architecture Update Form.

- In “Contact Information,” enter the information that may be used to contact you for more information.

- In “Project Form Referencing Information,” enter the project’s name. Please record this information, as it will be used to identify your project in future updates and submissions.

- In “Additional Information Needed,” provide the following information:
  1. “In specifics, what is being deployed?” – Describe the project in greater detail, specifically any technologies, hardware, software, or systems being deployed.
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Contact Information

Name of Submitter: Steve Arrington  Submission Date: 12/14/2009
Organization: JTA  Phone Number: 904-630-3119
Email: sarrington@jtafla.com

Project Form Referencing Information

Project Name: Automatic Passenger Counter

Additional Information Needed

In specifics, what is being deployed?
Installed automatic passenger counter on board of all transit vehicles.

What standards are being used?
TCIP-S-001 3.0.0. Standard for Transit Communications Interface Profiles

Are you willing to share the data and information?
☐ Yes
☐ No

If yes, what key stakeholders will receive what data/information?
Data will be shared with the local stakeholders upon request.

Other Pertinent Information:

Also, please feel free to submit the optional First ITS Architecture Market Package Participation Form.

**Instructions**

The following instructions will assist you in filling out the First Coast Regional ITS Architecture Update Form.

- In “Contact Information,” enter the information that may be used to contact you for more information.

- In “Project Form Referencing Information,” enter the project’s name. Please record this information, as it will be used to identify your project in future updates and submissions.

- In “Additional Information Needed,” provide the following information:
  1. “In specifics, what is being deployed?” – Describe the project in greater detail, specifically any technologies, hardware, software, or systems being deployed.
  2. “What standards are being used?” – Provide ITS standards information. For more information on ITS standards, refer to the form.
  3. “Are you willing to share the data and information?” – If you are planning to exchange or distribute new data and information either as part of this project or as a result of this project, or if you are open to the idea of sharing information, check the box marked “Yes.”
  4. “If yes, what key stakeholders will receive what data/information?” – If you answered yes to the previous question, specify what data would be available to exchange and which stakeholders or agencies. Be as specific as possible.
  5. “Other Pertinent Information” – Include here any other project information that may be relevant, or explain any answers that may be unclear from the previous sections of the form.
First Coast Regional ITS Architecture Update Form and Instructions

First Coast ITS Architecture Update Form
Version: March 2007

Overview
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Contact Information

<table>
<thead>
<tr>
<th>Name of Submitter:</th>
<th>Steve Arrington</th>
<th>Submission Date:</th>
<th>12/14/2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization:</td>
<td>JTA</td>
<td>Phone Number:</td>
<td>904-630-3119</td>
</tr>
<tr>
<td>Email:</td>
<td><a href="mailto:sarrington@jtafla.com">sarrington@jtafla.com</a></td>
<td></td>
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Project Form Referencing Information

<table>
<thead>
<tr>
<th>Project Name:</th>
<th>Transit Signal Priority for BRT</th>
</tr>
</thead>
</table>

Additional Information Needed

In specifics, what is being deployed?
Installing sensors for transit signal priority on bus rapid transit corridors.

What standards are being used?
TCIP-S-001 3.0.0, Standard for Transit Communications Interface Profiles.

Are you willing to share the data and information?
- Yes
- No

If yes, what key stakeholders will receive what data/information?
Data will be shared with the local stakeholders upon request.

Other Pertinent Information:

Also, please feel free to submit the optional First ITS Architecture Market Package Participation Form.

Instructions

The following instructions will assist you in filling out the First Coast Regional ITS Architecture Update Form.

- In “Contact Information,” enter the information that may be used to contact you for more information.

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First Coast ITS Architecture Update Form

Version: March 2007

Overview
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Contact Information

Name of Submitter: Steve Arrington  
Submission Date: 12/14/2009

Organization: JTA  
Phone Number: 904-630-3119

Email: sarrington@jtafla.com

Project Form Referencing Information

Project Name: Commuter Alert System

Additional Information Needed

In specifics, what is being deployed?
Installing ITS devices for commuter alert system on board of all transit vehicles.

What standards are being used?
TCIP: S-001 3.0.0. Standard for Transit Communications Interface Profiles

Are you willing to share the data and information?
☐ Yes
☐ No

If yes, what key stakeholders will receive what data/information?
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Other Pertinent Information:

Also, please feel free to submit the optional First ITS Architecture Market Package Participation Form.

Instructions

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First Coast Regional ITS Architecture Update Form and Instructions

First Coast ITS Architecture Update Form
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Project Form Referencing Information

| Project Name: | I-Stop; Lighted Bus Stop Signs |

Additional Information Needed

In specifics, what is being deployed?
Installed 15 lighted bus stop signs at the transit stops.

What standards are being used?
TCP: S-001 3.0.0, Standard for Transit Communications Interface Profiles.

Are you willing to share the data and information?
☐ Yes
☐ No

If yes, what key stakeholders will receive what data/information?
Data will be shared with the local stakeholders upon request.

Other Pertinent Information:

Also, please feel free to submit the optional First ITS Architecture Market Package Participation Form.

Instructions

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Project Form Referencing Information

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<th>Project Name:</th>
<th>Smartcard Fare Collection</th>
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Additional Information Needed

In specifics, what is being deployed?
Installing a system on board of all transit vehicles for automatic fare collection by using Smartcard.

What standards are being used?
TCP-S-001 3.0.0. Standard for Transit Communications Interface Profiles.

Are you willing to share the data and information?

- Yes
- No

If yes, what key stakeholders will receive what data/information?
Data will be shared with the local stakeholders upon request.

Other Pertinent Information:

Also, please feel free to submit the optional First ITS Architecture Market Package Participation Form.

Instructions

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Contact Information

Name of Submitter: Steve Arrington
Submission Date: 12/14/2009
Organization: JTA
Phone Number: 904-630-3119
Email: sarrington@jtafla.com

Project Form Referencing Information

Project Name: Universal Trip Planner

Additional Information Needed

In specifics, what is being deployed?
Working with Google to design a commuter information on the universal trip planner.

What standards are being used?
TCP-S-001 3.0.0. Standard for Transit Communications Interface Profiles.

Are you willing to share the data and information?
☐ Yes
☐ No

If yes, what key stakeholders will receive what data/information?
Data will be shared with the local stakeholders upon request.

Other Pertinent Information:

Also, please feel free to submit the optional First ITS Architecture Market Package Participation Form.

**Instructions**

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First Coast Regional ITS Architecture Update Form and Instructions

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Contact Information
Name of Submitter: Steve Arrington
Submission Date: 12/14/2009
Organization: JTA
Phone Number: 904-630-3119
Email: sarrington@jtafla.com

Project FormReferencing Information
Project Name: Cell Phone Fare Payment

Additional Information Needed
In specifics, what is being deployed?
Working on implementing an online system for fare payment using cell phones.

What standards are being used?
TCP-S-001 3.0.0. Standard for Transit Communications Interface Profiles.

Are you willing to share the data and information?
☑ Yes
☐ No

If yes, what key stakeholders will receive what data/information?
Instructions

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Also, please feel free to submit the optional First ITS Architecture Market Package Participation Form.
First Coast Regional ITS Architecture Update Form and Instructions

First Coast ITS Architecture Update Form
Version: March 2007

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Contact Information
Name of Submitter: Peter Vega
Submission Date: 12/14/2009
Organization: Florida DOT
Phone Number: 904-360-5463
Email: peter.vega@dot.state.fl.us

Project Form Referencing Information
Project Name: I-95 ITS Maintenance

Additional Information Needed
In specifics, what is being deployed?
Ongoing installation of various ITS devices such as, CCTV, DMS, and RTMS connected with fiber optic cables.

What standards are being used?
NTCP C2F, 1203, 1205, and 1208

Are you willing to share the data and information?
- [ ] Yes
- [ ] No

If yes, what key stakeholders will receive what data/information?
Data will be shared with the local stakeholders upon request. Also, public information is available through My FL 511 website.

Other Pertinent Information:

Also, please feel free to submit the optional First ITS Architecture Market Package Participation Form.

**Instructions**

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First Coast ITS Architecture Update Form

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Contact Information

Name of Submitter: Don Fullerton
Submission Date: 12/14/2009
Organization: City of Jacksonville
Phone Number: 904-387-8863
Email: don@coj.net

Project Form Referencing Information

Project Name: Baymeadow’s Road Signal System

Additional Information Needed

In specifics, what is being deployed?
Upgraded signal systems along Baymeadow’s Road to incorporate ITS capabilities. Also installed CCTVs at various intersections along this corridor.

What standards are being used?
NEMA TS2 Standard Controller and NTCIP C2F

Are you willing to share the data and information?

☑ Yes
☐ No

If yes, what key stakeholders will receive what data/information?
Data will be shared with the local stakeholders upon request.

Other Pertinent Information:

Also, please feel free to submit the optional [First ITS Architecture Market Package Participation Form](#).

**Instructions**

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First Coast Regional ITS Architecture Update Form and Instructions

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Contact Information
Name of Submitter: Don Fullerton
Submission Date: 12/14/2009
Organization: City of Jacksonville
Phone Number: 904-387-8863
Email: don@coj.net

Project Form Referencing Information
Project Name: Southside Blvd. Signal System

Additional Information Needed
In specifics, what is being deployed?
Upgraded signal systems along Southside Blvd. to incorporate ITS capabilities. Also installed CCTVs at two intersections along this corridor.

What standards are being used?
NEMA TS2 Standard Controller and NTCIP C2F.

Are you willing to share the data and information?
☑ Yes
☐ No

If yes, what key stakeholders will receive what data/information?
Instructions

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<tr>
<td>In specifics, what is being deployed?</td>
</tr>
<tr>
<td>Upgraded signal systems along McDuff Avenue to incorporate ITS capabilities.</td>
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<th>What standards are being used?</th>
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Other Pertinent Information:

Also, please feel free to submit the optional First ITS Architecture Market Package Participation Form.

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Project Form Referencing Information

<table>
<thead>
<tr>
<th>Project Name:</th>
<th>CBD Signal System Upgrades</th>
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</table>

Additional Information Needed

In specifics, what is being deployed?
Upgraded various signal systems in the CBD to incorporate ITS capabilities at intersections. Some of the efforts include, signal controller upgrade, link signal system LAN using fiber optics or wireless communication, preemption system, CCTV, etc.

What standards are being used?
NEMA TS2 Standard Controller and NTCIP C2F.

Are you willing to share the data and information?
- [ ] Yes
- [X] No

If yes, what key stakeholders will receive what data/information?
Data will be shared with the local stakeholders upon request.

Other Pertinent Information:

Also, please feel free to submit the optional First ITS Architecture Market Package Participation Form.

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**First Coast Regional ITS Architecture Update Form and Instructions**

**First Coast ITS Architecture Update Form**  
Version: March 2007

**Overview**

The First Coast ITS Architecture Update Form allows stakeholders across the region to inform the North Florida TPO when projects or changes will impact the ITS Architecture. This will greatly simplify and streamline the Architecture update process, to occur every five years.

If requested to help maintain the Architecture, simply fill out the update form below and click submit. Your entry will be sent to the First Coast ITS Moderator who may contact you for follow up. The Update Form will be archived by the Architecture Steering Committee. Submitted Update Forms are considered part of the First Coast ITS Architecture and eligible for federal funding until they can be formalized in the next update.

<table>
<thead>
<tr>
<th>Contact Information</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name of Submitter:</strong></td>
<td>Don Fullerton</td>
</tr>
<tr>
<td><strong>Submission Date:</strong></td>
<td>12/14/2009</td>
</tr>
<tr>
<td><strong>Organization:</strong></td>
<td>City of Jacksonville</td>
</tr>
<tr>
<td><strong>Phone Number:</strong></td>
<td>904-387-8863</td>
</tr>
<tr>
<td><strong>Email:</strong></td>
<td><a href="mailto:don@coj.net">don@coj.net</a></td>
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<tr>
<th>Project Form Referencing Information</th>
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<tbody>
<tr>
<td><strong>Project Name:</strong></td>
<td>Atlantic Blvd.nal System</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>Additional Information Needed</th>
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</thead>
<tbody>
<tr>
<td><strong>In specifics, what is being deployed?</strong></td>
<td>Upgraded signal systems along Atlantic Blvd. to incorporate ITS capabilities.</td>
</tr>
<tr>
<td><strong>What standards are being used?</strong></td>
<td>NEMA TS2 Standard Controller and NTCIP C2F.</td>
</tr>
<tr>
<td><strong>Are you willing to share the data and information?</strong></td>
<td>☑ Yes</td>
</tr>
<tr>
<td><strong>If yes, what key stakeholders will receive what data/information?</strong></td>
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Also, please feel free to submit the optional First ITS Architecture Market Package Participation Form.

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First Coast Regional ITS Architecture Update Form and Instructions

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Version: March 2007

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### Project Form Referencing Information

<table>
<thead>
<tr>
<th>Project Name:</th>
<th>San Jose Blvd Signal System</th>
</tr>
</thead>
</table>

### Additional Information Needed

**In specifics, what is being deployed?**

- Upgraded signal systems along San Jose Blvd. to incorporate ITS capabilities.

**What standards are being used?**

- NEMA TS2 Standard Controller and NTCIP C2F.

**Are you willing to share the data and information?**

- **Yes**
- **No**

**If yes, what key stakeholders will receive what data/information?**
Data will be shared with the local stakeholders upon request.

Other Pertinent Information:

Also, please feel free to submit the optional First ITS Architecture Market Package Participation Form.

**Instructions**

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Contact Information
Name of Submitter: Don Fullerton
Submission Date: 12/14/2009
Organization: City of Jacksonville
Phone Number: 904-387-8863
Email: don@coj.net

Project Form Referencing Information
Project Name: US 17 CCTV Deployment

Additional Information Needed
In specifics, what is being deployed?
Completed installation of several CCTVs on US 17

What standards are being used?
NTCIP C2F, NTCIP C2C, 1205, and 1208.

Are you willing to share the data and information?
☑ Yes
☐ No

If yes, what key stakeholders will receive what data/information?
Data will be shared with the local stakeholders upon request.

Other Pertinent Information:

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Appendix D
ITS Architecture Update
(Turbo Architecture) on CD