

ATTACHMENT “A”

Scope of Services

River to Sea Intelligent Transportation Systems (ITS) Master Plan - Phase 2

Purpose

The purpose of this planning study is to provide guidance to the TPO for making rational, outcome-driven decisions relating to investment in ITS projects and strategies. The targeted outcome is an integrated and coordinated, multi-agency ITS system that maximizes the safety and efficiency of the multi-modal transportation system. The study will build on efforts completed in Phase 1 of the ITS Master Plan and the Florida Department of Transportation’s District 5 ITS Master Plan. This Phase 2 project will result in the creation of an ITS Master Plan for the River to Sea (R2C) TPO. The ITS Master Plan will determine ITS mobility and safety needs, identify applicable ITS strategies, develop alternative project concepts, and develop concept requirements to determine the value of each alternative, update the regional ITS architecture as may be needed to accommodate Volusia and Flagler County, and recommend high value alternatives for development *based on cost and benefit*, all with the aim of providing a prioritized list of projects sufficiently defined to submit to FDOT for programming in the Department’s 5-year Work Program.

The study will utilize Transportation System Management and Operations (TSM&O) principles. TSM&O is a performance driven approach for solving traffic related problems and minimizing congestion through the utilization of ITS, signal system control, and other management and operational strategies to locate and correct the causes of delays in real-time.

Existing, previously inventoried infrastructure identified in in Phase 1 of the ITS Master Plan and the Florida Department of Transportation’s District 5 ITS Master Plan will be accounted for in this plan. Consistency with the Vision, Goals, and Objectives established in Phase 1 of the Master Plan shall be ensured. The Master Plan shall incorporate various methodologies in conformance with the national, statewide, and regional architectures to improve the efficiency of the existing transportation network through performance monitoring, active arterial management, and coordinating freeway and arterial management strategies.

The River to Sea TPO (R2CTPO) ITS Master Plan will document transportation issues, determine needs for the deployment of ITS projects and/or strategies, contain essential ITS-related staffing and technology information and recommendations to address the needs, staffing and provide a system-wide implementation strategy. The report shall contain necessary background research, technical analysis, and coordination with local and regional agencies. The Plan shall comply with federal regulations concerning the use of federal funds (and for all practical purposes, State of Florida funds as well). Specifically, ITS deployment is governed by 23 CFR Part 940.9 Section D of the Federal Highway Administration (FHWA) Final Rule (referred to herein as “FHWA Rule 940”) and a similar Federal Transit Authority (FTA) Policy covering transit ITS projects (the “FTA ITS Policy”).

Task 1 – Coordination and Review

The Consultant will be available for immediate response including meetings, phone calls and deliverables as requested by the TPO. The turn-around time will be determined by TPO. Meetings with stakeholders and other agencies within the TPO planning boundary will be organized by the Consultant. The Consultant will periodically meet with the Technical Working Group to present findings and receive input on the ITS Master Plan. Upon completion of a draft report, the Consultant will present findings and recommendations to the Citizens Advisory Committee (CAC), the Technical Advisory Committee (TCC), and the TPO Board. Provision of handouts and presentation materials will be the responsibility of the Consultant.

Deliverables:

As determined by the TPO's Project Manager, the Consultant will 1) organize meetings with the Technical Working Group and other stakeholders, 2) give presentations on the draft report to the CAC, TCC, and TPO Board, and 3) develop and provide presentation materials, agendas, and summary minutes for meetings and presentations.

Task 2 -Determine ITS Needs

The Consultant will assess the full extent of the multi-modal transportation system serving the TPO's planning area to identify significant safety and mobility issues and needs. When possible, each issue or need shall be described in terms that support a determination of relative priority for resolving it, and should include its relevant dimensions (e.g., spatial extent, duration, frequency, intensity, etc.). A combination of tasks from Phase 1, Task 1: ITS Vision, Goals and Objectives; Task 2: Existing Conditions/Infrastructure/Inventory; and Task 3: Transportation-Related Focus Topics will be used to assist in identifying ITS needs. Information provided by the counties, cities, law enforcement agencies, and FDOT – captured in the Existing Conditions Technical Memorandum and the Florida Department of Transportation's District 5 ITS Master Plan – along with comments received from the Technical Working Group will be considered. The Consultant shall take into consideration the TPO's adopted Long Range Transportation Plan and municipal and agency plans when compiling these needs. Results will be provided in a concise format for clear identification of needs.

The Consultant shall identify means to interconnect city, county, law enforcement, and FDOT Traffic Management Centers (TMCs) to facilitate the real-time sharing of transportation-related data and information. A proposed network between the TMCs operated by each county, city, and other operating agencies will be described in detail. The discussion should result in a recommendation on the optimal alternative for implementing a network using existing software and technology or the development of new software and technology. The recommendation should describe agreements, protocols and procedures needed to implement a TMC network; how resources will be shared, managed and operated. Having a TMC network may be a short-term alternative if the TPO considers establishing a regional TMC in the future or co-locates to the new FDOT District 5 Regional Traffic Management Center in Sanford, FL. The discussion of the short and long term alternatives for staffing and operating TMCs in the planning area will consider the location, type, size, and recommendations and requirements based on the present and future needs. Discussion will include information regarding central software and specific elements of a TMC, such as servers, video walls, encoders/decoders, workstations, racks, switches, etc. Further information such as capability of the current

TMCs, a detailed list of required equipment for a network of TMCs, staffing needs, staff roles and responsibilities, maintenance costs, and cost estimates will also be included. This document will include existing reimbursement agreements between the agencies.

Additional descriptive information will be provided on creating or expanding TMCs in the TPO's planning area. This discussion will focus on location, type, size, and recommendations and requirements based on the stakeholders' present and future needs.

Deliverable:

Technical Memorandum including 1) a matrix of all ITS needs and 2) documenting the process used to determine the needs.

Task 3 – Identify Applicable ITS Projects and Strategies

The Consultant shall review the transportation focus topics and issues identified in Phase 1, Task 3 and the needs identified in the preceding task. This review shall determine the nature and cause(s) of each need and determine if there are any candidate ITS projects or strategies to address or mitigate the issue or need. The Consultant shall also consider the potential for future technologies and how they may be utilized to meet needs. After candidate ITS projects and/or strategies have been identified, the candidates will be screened by the Consultant to establish an initial priority for each of the projects. This will include Identifying ITS projects and/or strategies (future and present). The consultant shall identify the potential ITS projects and/or strategies and prioritize them based on quantified benefits and where possible on lifecycle costs. The Consultant will propose strategies to address operations and maintenance needs to include staffing needs, define performance requirements, and identify existing and future ITS deployments in the TPO's planning area.

The Consultant shall provide guidelines prescribing circumstances in which the following ITS improvements and strategies may be expected to yield significant benefits relating to reduced travel delay, reduced emissions, improved travel reliability, and/or improved safety:

- traffic surveillance (e.g., CCTV);
- advanced traffic management system (ATMS);
- traffic incident management;
- corridor adaptive traffic control systems;
- emergency vehicle traffic signal pre-emption;
- transit traffic signal priority and queue jumping;
- traffic and weather information systems;
- work zone management;
- variable speed limits;
- traveler information systems;
- parking guidance and information systems;
- dynamic real time data collection and management;
- and other(s) as identified by the Technical Working Group or stakeholders

A comparison of these proposed ITS projects and strategies to existing conditions and planned deployments will be conducted. The Consultant shall document the findings of this task in a Technical Memorandum. Projects and strategies identified in the Technical Memorandum will support the ITS Master Plan Vision, Goals

and Objectives. A thorough discussion and review of all types of ITS strategies shall be included with identification and justification for those specific improvements which are most applicable to the function, operation and geographic needs of the stakeholders.

Deliverable:

Technical Memorandum including 1) a comprehensive listing and description of candidate ITS improvements and strategies to address or mitigate each of the needs identified in the preceding task and 2) requirements for a TMC network.

Task 4 – Update District 5 Regional ITS Architecture (RITSA)

The Regional ITS Architecture helps define the ITS system elements and the standard information that is exchanged between these elements. Guidelines for developing a Regional Architecture are defined in the National ITS Architecture. A Volusia County Regional ITS Architecture was developed in 2002, but has not been updated. However, FDOT District 5 completed a district-wide Regional ITS Architecture in April 2015 that includes both Volusia and Flagler counties.

The Consultant shall work with TPO staff and the Technical Working Group to determine the relevant capabilities to the stakeholders' issues and needs, and to customize these capabilities to suit the TPO. The Consultant will work with TPO staff and the Technical Working Group to verify and possible update and enhance the District 5 Regional ITS Architecture reflecting the stakeholders' needs. The architecture shall conform to the National ITS Architecture.

The State of Florida has an existing process for updating the Statewide ITS Architecture (SITSA) through the Change Management Board (CMB), the Consultant will discuss with both the Technical Working Group and the FDOT ITS Representative(s) the process by which any updates to the SITSA are considered by the CMB.

Deliverable:

The Consultant will provide a Technical Memorandum documenting the review and evaluation of the FDOT District 5 RITSA and the National ITS Architecture as it relates to Volusia and Flagler County, and providing specific recommendations for updating the RITSA.

Task 5 – Form a Concept of Operations

A Concept of Operations (CONOPS) will provide a high-level, non-technical overview of the Intelligent Transportation System to be deployed. It shall describe how the existing and proposed ITS system will be used from the viewpoint of the stakeholders. It shall include: a general description of the current ITS systems and ITS services provided; the transportation situations being addressed; identification of any desired changes, assumptions and constraints or operational issues; specifics on using/operating the system including interagency relationships and responsibilities; methods to train and involve stakeholders; and requirements for system support and maintenance. Stakeholders will be consulted to determine their needs and preferences.

The CONOPS will summarize the needs and preferences of each stakeholder and how they will interact and utilize the system. In some instances where a conflict between the needs and preferences of various stakeholders arises, the CONOPS document will address these conflicts and document the resultant outcome

of which items will be implemented by the project or system and which items have been considered but will not be included. Ultimately, the CONOPS will serve as a record of the system needs, requirements, interactions, agreements and constraints in regard to all parties involved from the conception through maintenance of the Intelligent Transportation System.

The Consultant will meet with each of the stakeholders upon project award to discuss their project roles and needs; to determine the current state of the anticipated deployment of any proposed ITS projects. This assessment will enable the Consultant to determine if any suggestions can be made regarding possible changes to technologies or operational concepts described being planned for deployment, which could provide equal or better results with less initial and future costs.

Deliverable:

The Consultant will provide a CONOPS that defines the roles and responsibilities for maintenance and operation of ITS and also includes the level of information sharing, status and control between agencies.

Task 6 – Create a Prioritized ITS Master Plan

The Consultant shall develop a prioritized ITS Master Plan based on the work performed in the prior tasks and from the Technical Working Group's input. The ITS Master Plan shall summarize the results of these tasks and shall provide a guide for the implementation of ITS strategies over the near-term (0-5 years) and long-term (6-10 + years). The plan will describe the existing ITS systems and projects programmed in the TIP to establish baseline conditions. The prioritized ITS Master Plan shall take into account the TPO's Congestion Management Process (CMP), Long Range Transportation Plan (LRTP), and any regional ITS policies. The potential projects will take into consideration current systems found to operate with legacy equipment as well as new systems to address identified ITS needs.

The Consultant shall provide a Deployment Plan associated with this Master Plan identifying a series of ITS projects potentially implemented by various modal agencies where applicable. To prioritize the list of potential ITS projects, the Consultant will develop a screening criteria and apply this criteria to each project. The screening criteria will be defined with the Technical Working Group's input and include factors such as:

- Contributes to the achievement of the ITS Vision, Goals, and Objectives
- Mitigates an identified transportation problem
- Improves dissemination of traffic related data and information for useful purposes
- Improves identification and response to traffic incidents
- Implements a network of TMCs
- Reduces recurring and nonrecurring congestion
- Improves travel efficiency and/or reliability
- Improves safety of the transportation network
- and other(s) as identified by the Technical Working Group or stakeholders

The Consultant will meet with the Technical Working Group to discuss the results of the screening process. Following the screening process, the Consultant will develop a timeframe for deploying projects: Near-term, immediate activities, or long-term considerations.

This ITS Deployment Plan shall identify improvements associated with:

- Emerging technologies
- Transit
- Freight
- Arterials
- Short-term improvements
- Long-term improvements
- Traffic Management Center

The Consultant shall provide an assessment for each project including the following information:

- Project Description
- Benefits
- Relationship of projects to the ITS Architecture
- Cost estimates – initial and ongoing, including personnel
- Potential implementing entity
- Potential funding sources or cost sharing recommendations

The Consultant will work with TPO staff and the Technical Working Group to establish performance measures for projects and the Master Plan.

Deliverables:

The Consultant will document the ITS Master Plan, timeframe for deployment and implementation identified within this task in a draft Final Report. A thorough discussion and review of all elements within the draft Final Report shall be conducted by the River to Sea TPO. After all comments have been received, the Consultant will prepare and submit a Final Report.