

*Florida Department of Transportation*  
**District One**

**DESIGN-BUILD  
REQUEST FOR PROPOSAL  
for  
I-4 Fog/Low Visibility Detection System Design/Build  
Project,  
Polk County**

**Financial Projects Number(s): 427315-2-52-01  
Federal Aid Project Number(s): 0041 232 I  
Contract Number: E1089**

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## ATTACHMENTS

The Attachments listed below are hereby incorporated into and made a part of this Request for Proposal (RFP) as though fully set forth herein.

Project Advertisement  
Division I Design-Build Specifications  
Divisions II and III Special Provisions identified by the Department to be used on the Project:  
Mobilization (SP1010000DB)  
Contractor Quality Control General Requirements (SP1050813DB)  
DEV688 Road Weather Information System  
SP0073100, Legal Requirements and Responsibilities to the Public – Cargo Preference Act (CPA)  
Traffic Control Device - Remote Control Relay WebRelay Quad X-WR-4R3

Bid Price Proposal Forms:

1. Bid Blank (375-020-17)
2. Design-Build Proposal of Proposer (375-020-12)
3. Design-Build Bid Proposal Form (700-010-65)
4. Bid or Proposal Bond (375-020-34)
5. DBE Forms (as applicable)

## REFERENCE DOCUMENTS

The following documents are being provided with this RFP. Except as specifically set forth in the body of this RFP, these documents are being provided for reference and general information only. They are not being incorporated into and are not being made part of the RFP, the contract documents, or any other document that is connected or related to this Project except as otherwise specifically stated herein. No information contained in these documents shall be construed as a representation of any field condition or any statement of facts upon which the Design-Build Firm can rely upon in performance of this contract. All information contained in these reference documents must be verified by a proper factual investigation. The bidder agrees that by accepting copies of the documents, any and all claims for damages, time, or any other impacts based on the documents are expressly waived.

District Seven Freeway Management System (FMS) As-Built Plans  
District Five FMS As-Built Plans  
Subtask 3C: TMC and Communications System Integration Plan  
I-4 Fog Concept Plans (Straight Line Diagrams)  
FPID 201214-3, I-4 at SR 559 Plans  
E1N03, I-4 at US 27 Bold Landscaping Plans  
District Seven Intelligent Transportation System (ITS) Design Guidelines Checklist  
District Seven ITS Construction Checklists  
District Seven Grounding Standards  
ITS Facilities Management (ITSFM) Forms  
Electrical Design Documentation  
Structural Design Report  
Preliminary Requirements Traceability Verification Matrix (RTVM)  
Rolling Ball Analysis for CCTV & DMS

District Seven Labels and Locate Wire Standard  
427315-2 PCE Memo

## **I. Introduction:**

The Florida Department of Transportation (Department) has issued this RFP to solicit competitive bids and proposals from Proposers for the design, procurement, and construction of the I-4 Fog/Low Visibility Detection System in Polk County between the eastern interchange with the Polk Parkway (mile marker (MM) 41) and the Osceola County line (approximately at CR 532 (MM 57.7)). This system shall include installing Roadway Weather Information Systems (RWISs) to detect reduced visibility conditions, replacing existing closed-circuit television (CCTV) cameras with new thermal/infrared (IR) cameras to view the corridor, replacing amber dynamic message signs (DMSs) with color DMSs to disseminate information to motorists, and installing new beacon signs to alert motorists to low visibility conditions. The I-4 Fog/Low Visibility Detection System shall be integrated into District Seven's SunGuide<sup>®</sup> software for operation from their Regional Transportation Management Center (RTMC). Testing of and training on the system is also required.

This project is intended to provide motorist alerts along the project limits of the I-4 corridor in the event of fog or smoke intrusion through the use of existing and newly installed ITS components. The corridor contains existing ITS devices, including DMSs, CCTV cameras, microwave vehicle detection systems (MVDSs), field control cabinets, power services, a fiber optic network, and all ancillary components that comprise an operational ITS network. These devices are controlled from the District Seven RTMC.

It is the Department's intent that all Project construction activities be conducted within the existing Right-of-Way. The Design-Build Firm may submit a Technical Proposal that requires the acquisition of additional Right-of-Way if the subject acquisition was approved during the Alternative Technical Concept (ATC) process. Any Technical Proposal that requires the acquisition of additional Right-of-Way will not extend the contract duration as set forth in the Request for Proposal under any circumstances. The Department will have sole authority to determine whether the acquisition of additional Right-of-Way on the Project is in the Department's best interest, and the Department reserves the right to reject the acquisition of additional Right-of-Way.

If a Design-Build Firm intends to submit a Technical Proposal that requires the acquisition of additional Right-of-Way, the Design-Build Firm shall discuss such a proposal with the Department as part of the ATC process. If a Design-Build Firm submits a Technical Proposal that requires the acquisition of additional Right-of-Way and the Design-Build Firm fails to obtain Department approval as part of the ATC process, then the Department will not consider such aspects of the Proposal during the Evaluation process. If the Design-Build Firm's Technical Proposal requires additional Right-of-Way approved by the ATC process, the additional Right-of-Way will be required to be directly acquired by the Department. The Design-Build Firm shall submit, along with the Technical Proposal, Right-of-Way maps and legal descriptions including area in square feet of any proposed additional Right-of-Way parcels in the Technical Proposal. The additional Right-of-Way will be acquired by the Department in accordance with all applicable state and federal laws, specifically including but not limited to the Uniform Relocation Assistance and Real Property Acquisition Policies for Federal and Federally Assisted Programs (42 USC Chapter 61) and its implementing regulations. This includes completing a SEIR/NEPA evaluation as appropriate. All costs concerning the acquisition of additional Right-of-Way will be borne solely by the Design-Build Firm. These costs include, but are not limited to consultant acquisition, appraisal services, court fees, attorney and any expert fees, property cost, etc. The Department will have sole discretion with respect to the entire acquisition process of the additional Right-of-Way.

If the Design-Build Firm's Technical Proposal requires additional Right-of-Way, the acquisition of any such Right-of-Way shall be at no cost to the Department, and all costs associated with securing and making ready for use such Right-of-Way for the Project shall be borne solely by the Design-Build Firm as a part of the Design-Build Firm's Lump Sum Price Bid. The Department will not advance any funds for any such Right-of-Way acquisition and the Design-Build Firm shall bear all risk of delays in the acquisition of the additional property, regardless of cause or source.

The Department will provide to the successful Design-Build Firm an estimate of all costs related to the acquisition and use of the additional Right-of-Way for the project. At the time the Design-Build Firm returns the executed contract to the Department, the Design-Build Firm will provide the Department funds equal to the amount of the Department's estimate along with a Letter of Credit approved by the Department in an amount equal to 100% of the Department's estimate. If additional funds beyond the Department's estimate are anticipated, the Design-Build Firm shall be solely responsible for all such costs and provide the same to the Department upon ten (10) days written notice from the Department. The Letter of Credit is for the purpose of securing the obligations of the Design-Build Firm with respect to the acquisition and use of additional Right-of-Way. The Letter of Credit will be released upon the Department's determination that all costs related to the acquisition of and making ready for use of the additional Right-of-Way have been satisfied. Any remaining funds provided will be returned to the Design-Build Firm.

Any additional Right-of-Way must be acquired prior to the commencement of any construction on or affecting the subject property. The Design-Build Firm waives any and all rights or claims for information, compensation, or reimbursement of expenses with respect to the Design-Build Firm's payment to the Department for costs associated with the acquisition of the additional Right-of-Way. The additional Right-of-Way cannot be used for any construction activity or other purpose until the Department has issued an applicable parcel clear letter or a Right-of-Way Certification for Construction.

If the Department's attempt to acquire the additional Right-of-Way is unsuccessful, then the Design-Build Firm shall provide a design of the Project within existing Right-of-Way and be required to complete the Project solely for the Lump Sum Price Bid, with no further monetary or time adjustments arising therefrom. Under no circumstances will the Department be liable for any increase in either time or money impacts the Design-Build Firm suffers due to the Design-Build Firm's proposed acquisition of additional Right-of-Way, whether or not the acquisition is successful.

**Description of Work:**

This project will include the design and construction of the I-4 Fog/Low Visibility Detection System along I-4 from the eastern interchange with the Polk Parkway (MM 41) to the Osceola County line (approximately at CR 532 (MM 57.7)). The Design-Build Firm shall design and prepare a complete set of construction plans, a specifications package, and Technical Special Provisions for all ITS devices and supporting infrastructure and equipment within the scope of the Project. Elements of work shall include providing design plans, communications design, ITS software and hardware design, technical specifications, traffic control plans, design documentation report, development of system test and acceptance procedures, training, and incidental items as applicable to the project.

ITS-related design and construction shall include:

- 1 RWIS (wind, precipitation, visibility, and atmospheric sensors)
- 10 RWISs (visibility sensor only)
- 12 Thermal/IR CCTV camera systems replacing existing CCTV cameras
- 4 20-millimeter (mm) full color DMSs replacing existing amber DMSs (half-span truss locations)
- 58 Flashing Beacon signs (to be designed by the Design-Build Firm using Department Standard Index No. 11862)
- Necessary communications, power, and grounding

The newly installed components shall be connected to the existing ITS infrastructure utilizing, to the maximum extent possible, the existing power, field cabinet space, and network infrastructure located within the project corridor limits.

The design shall be consistent with existing Statewide and District Seven ITS projects.

**A. Design-Build Responsibility:**

The Design-Build Firm shall be responsible for survey, structural investigation, design, preparation of all documentation related to the acquisition of all permits not acquired by the Department, preparation of any and all information required to modify permits acquired by the Department if necessary, MOT, demolition and salvage, construction, integration, testing, and training during the Project duration time indicated in the Proposal. The Design-Build Firm shall coordinate all utility relocations.

The Design-Build Firm shall be responsible for compliance with Design and Construction Criteria (Section VI) which sets forth requirements regarding survey, design, construction, and MOT during construction, requirements relative to Project management, scheduling, and coordination with other agencies and entities such as state and local government, utilities, and the public.

The Design-Build Firm shall examine the Contract Documents and the site of the proposed work carefully before submitting a Proposal for the work contemplated and shall investigate the conditions to be encountered, as to the character, quality, and quantities of work to be performed and materials to be furnished and as to the requirements of all Contract Documents. Written notification of differing site conditions discovered during the design or construction phase of the Project will be given to the Department's Project Manager.

The Design-Build Firm shall examine boring data, where available, and make their own interpretation of the subsoil investigations and other preliminary data, and shall base their bid on their own opinion of the conditions likely to be encountered. The submission of a Proposal is prima facie evidence that the Design-Build Firm has made an examination as described in this provision.

The Design-Build Firm shall deliver all subsystems/devices/components required in this RFP and shall determine the exact locations and quantities of the ITS field elements to meet the requirements of this RFP.

The Design-Build Firm shall ensure that all ITS field elements and ancillary components are compatible with and supported within the SunGuide® software, unless otherwise approved by the Department. The Design-Build Firm shall ensure that all ITS devices are on the Approved Product List (APL) prior to installation in the field.

The Design-Build Firm shall demonstrate good project management practices while working on this Project. These include communication with the Department and others as necessary, management of time and resources, and documentation. The Design-Build Firm shall coordinate its schedule with the Department when the Department’s presence is needed or requested.

Upon receiving Notice to Proceed (NTP), the Design-Build Firm shall take responsibility for litter removal and mowing a five-foot perimeter around all installed boxes, pole/device installations, staging areas, and stock pile areas. Mowing frequency will be based on maintaining the turf and vegetation height between 5 inches and 12 inches. The Design-Build Firm shall coordinate with affected local maintaining agencies to eliminate work conflicts. This total cost shall be included in the Design-Build Firm’s price proposal.

**B. Department Responsibility:**

The Department will provide contract administration, management services, construction engineering and inspection (CEI), environmental oversight, and quality acceptance reviews of all work associated with the development and preparation of the contract plans, permits, and construction of the improvements. The Department will provide Project-specific information and/or functions as outlined in this document.

In accordance with 23 CFR 636.109 of the Federal Highway Administration (FHWA), in a Federal Aid (FA) project, the Department shall have oversight, review, and approval authority of the permitting process.

**II. Schedule of Events:**

Below is the current schedule of the events that will take place in the procurement process. The Department reserves the right to make changes or alterations to the schedule as the Department determines is in the best interest of the public. Proposers will be notified sufficiently in advance of any changes or alterations in the schedule. Unless otherwise notified in writing by the Department, the dates indicated below for submission of items or for other actions on the part of a Proposer shall constitute absolute deadlines for those activities and failure to fully comply by the time stated shall cause a Proposer to be disqualified.

<b>Date</b>	<b>Event</b>
October 26, 2015	Advertisement
November 16, 2015	Letters of Interest (LOI) for Phase I of the procurement process due in District Office by 5:00 pm local time
December 3, 2015	Proposal Evaluators submit LOI Scores to Contracting Unit 5:00 pm local time
December 9, 2015	Contracting Unit provides LOI scores and Proposal Evaluators’ comments to Selection Committee 2:00 pm local time
December 15, 2015	Public Meeting of Selection Committee to review and confirm LOI scores 10:00 am local time

<b>Date</b>	<b>Event</b>
December 17, 2015	Notification to Responsive Design-Build Firms of the LOI scores 2:00 pm local time
December 17, 2015	Deadline for all responsive Design-Build Firms to affirmatively declare intent to continue to Phase II of the procurement process 2:00 pm local time
December 17, 2015	Shortlist Posting 4:00 pm local time
December 18, 2015	Final RFP provided to Design-Build Firms providing Affirmative Declaration of Intent to continue to Phase II of the procurement process
December 22, 2015	Mandatory Pre-proposal meeting at 2:00 pm local time in the District One Headquarters, 801 N. Broadway Avenue, Bartow FL, 33830. All Utility Agency/Owners with which the Department contemplates an adjustment, protection, or relocation is possible are to be invited to the mandatory Pre-Proposal meeting.
January 19, 2016	Final deadline for submission of requests for Design Exceptions or Design Variations.
January 26, 2016	Deadline for submittal of questions for which a response is assured prior to the submission of the Technical Proposal. All questions shall be submitted to the Pre-Bid Q&A website.
February 2, 2016	Deadline for the Department to post responses to the Pre-Bid Q&A website for questions submitted by the Design-Build Firms prior to the submittal of the Technical Proposal.
February 9, 2016	Technical Proposals due in District Office by 2:00 pm. local time
February 10, 2016	Deadline for Design-Build Firm to “opt out” of Technical Proposal Page-Turn meeting.
February 17, 2016	Technical Proposal Page-Turn Meeting. Times will be assigned during the Pre-Proposal Meeting. 30 minutes will be allotted for this Meeting.
March 17, 2016	Question and Answer Session. Times will be assigned during the Pre-Proposal Meeting. One hour will be allotted for questions and responses.
March 23, 2016	Deadline for submittal of Written Clarification letter following Question and Answer Session 2:00 pm local time
March 25, 2016	Deadline for submittal of questions for which a response is assured prior to the submission of the Price Proposal. All questions shall be submitted to the Pre-Bid Q&A website.
March 29, 2016	Deadline for the Department to post responses to the Pre-Bid Q&A website for questions submitted by the Design-Build Firms prior to the submittal of the Price Proposal.
April 1, 2016	Price Proposals due in District Office by 11:00 am local time.
April 1, 2016	Public announcing of Technical Scores and opening of Price Proposals at 11:00 am local time in the District One Headquarters, 801 N. Broadway Avenue, Bartow FL, 33830.
April 12, 2016	Public Meeting of Selection Committee to determine intended Award
April 12, 2016	Posting of the Department’s intended decision to Award
May 2, 2016	Anticipated Award Date

Date	Event
May 17, 2016	Anticipated Execution Date

### III. Threshold Requirements:

#### A. Qualifications:

Proposers are required to be pre-qualified in all work types required for the Project. The technical qualification requirements of Florida Administrative Code (F.A.C.) Chapter 14-75 and all qualification requirements of F.A.C. Chapter 14-22, based on the applicable category of the Project, must be satisfied.

#### B. Joint Venture Firm:

Two or more firms submitting as a Joint Venture must meet the Joint Venture requirements of Section 14-22.007, F.A.C. Parties to a Joint Venture must submit a Declaration of Joint Venture and Power of Attorney Form No. 375-020-18, prior to the deadline for receipt of Letters of Interest.

If the Proposer is a Joint Venture, the individual empowered by a properly executed Declaration of Joint Venture and Power of Attorney Form shall execute the Proposal. The Proposal shall clearly identify who will be responsible for the engineering, quality control, geotechnical, and construction portions of the Work.

#### C. Price Proposal Guaranty:

A Price Proposal guaranty in an amount of not less than five percent of the total bid amount shall accompany each Proposer's Price Proposal. The Price Proposal guaranty may, at the discretion of the Proposer, be in the form of a cashier's check, bank money order, bank draft of any national or state bank, certified check, or surety bond, payable to the Department. The surety on any bid bond shall be a company recognized to execute bid bonds for contracts of the State of Florida. The Price Proposal guaranty shall stand for the Proposer's obligation to timely and properly execute the contract and supply all other submittals due therewith. The amount of the Price Proposal guaranty shall be a liquidated sum, which shall be due in full in the event of default, regardless of the actual damages suffered. The Price Proposal guaranty of all Proposers shall be released pursuant to Section 3-4 of the Division I Design-Build Specifications.

#### D. Pre-Proposal Meeting:

Attendance at the Pre-Proposal Meeting is mandatory. Any affirmatively declared proposer failing to attend will be deemed non-responsive and automatically disqualified from further consideration. The purpose of this meeting is to provide a forum for the Department to discuss with all concerned parties the proposed Project, the design and construction criteria, Critical Path Method (CPM) schedule, method of compensation, instructions for submitting proposals, Design Exceptions, Design Variations, and other relevant issues. In the event that any discussions at the Pre-Proposal Meeting require, in the Department's opinion, official additions, deletions, or clarifications of the RFP, the Design and Construction Criteria, or any other document, the Department will issue a written addendum to this RFP as the Department determines is appropriate. No oral representations or discussions which take place at the Pre-Proposal Meeting will be binding on the Department. The FHWA will be invited on FA Oversight Projects in order to discuss the Project in detail and to clarify any concerns. Proposers shall direct all questions to the

Department's Question and Answer website:

<https://www3b.dot.state.fl.us/BidQuestionsAndAnswers/Proposal.aspx/SearchProposal>

**E. Technical Proposal Page-Turn Meeting:**

The Department will meet with each Proposer, formally for 30 minutes, for a Page-Turn Meeting. The FHWA will be invited on FA Oversight Projects. The purpose of the Page-Turn Meeting is for the Design-Build Firm to guide the Technical Review Committee through the Technical Proposal, highlighting sections within the Technical Proposal that the Design-Build Firm wishes to emphasize. The Page-Turn Meeting will occur between the dates the Technical Proposal is due and the Question and Answer (Q&A) session occurs, per the Schedule of Events section of this RFP. The Department will terminate the Page-Turn Meeting promptly at the end of the allotted time. The Department will record all or part of the Page-Turn Meeting. All recordings will become part of the Contract Documents. The Page-Turn Meeting will not constitute discussions or negotiations. The Design-Build Firm will not be permitted to ask questions of the Technical Review Committee during the Page-Turn Meeting. An unmodified aerial or map of the project limits provided by the Design-Build Firm is acceptable for reference during the Page-Turn Meeting. The unmodified aerial or map may not be left with the Department upon conclusion of the Page-Turn Meeting. Use of other visual aids, electronic presentations, handouts, etc., during the Page-Turn Meeting is expressly prohibited. Upon conclusion of the 30 minutes, the Technical Review Committee is allowed 5 minutes to ask questions pertaining to information highlighted by the Design-Build Firm. Participation in the Page-Turn Meeting by the Design-Build Firm shall be limited to eight representatives from the Design-Build Firm. Design-Build Firms desiring to opt out of the Page-Turn Meeting may do so by submitting a request to the Department.

**F. Q&A Session:**

The Department may meet with each Proposer, formally, for a Q&A Session. The FHWA will be invited on FA Oversight Projects. The purpose of the Q & A Session is for the Department to seek clarification and ask questions, as it relates to the Technical Proposal, of the Proposer. The Department may terminate the Q & A Session promptly at the end of the allotted time. The Department shall record all or part of the Q & A Session. All recordings will become part of the Contract Documents. The Q & A Session will not constitute "discussions" or negotiations. Proposers will not be permitted to ask questions of the Department except to ask the meaning of a clarification question posed by the Department. No supplemental materials, handouts, etc. will be allowed to be presented in the Q & A Session. No additional time will be allowed to research answers.

Within one week of the Q & A Session, the Design-Build Firm shall submit to the Department a written clarification letter summarizing the answers provided during the Q & A Session. The questions, answers, and written clarification letter will become part of the Contract Documents and will be considered by the Department as part of the Technical Proposal. The Design-Build Firm shall not include information in the clarification letter which was not discussed during the Q&A Session. In the event the Design-Build Firm includes additional information in the clarification letter which was not discussed during the Q&A Session and is not otherwise included in the Technical Proposal, such additional information will not be considered by the Department during the evaluation of the Technical Proposal.

The Department will provide some (not necessarily all) proposed questions to each Design-Build Firm as they relate to their Technical Proposal approximately 24 hours before the scheduled Q & A Session.

**G. Protest Rights:**

Any person who is adversely affected by the specifications contained in this RFP must file a notice of intent to protest in writing within 72 hours of the posting of this RFP. Pursuant to Sections 120.57(3) and 337.11, Florida Statutes (F.S.), and Rule Chapter 28-110, F.A.C., any person adversely affected by the agency decision or intended decision shall file with the agency both a notice of protest in writing and bond within 72 hours after the posting of the notice of decision or intended decision, or posting of the solicitation with respect to a protest of the terms, conditions, and specifications contained in a solicitation, and will file a formal written protest within 10 days after the filing of the notice of protest. The formal written protest shall be filed within 10 days after the date of the notice of protest if filed. The person filing the protest must send the notice of intent and the formal written protest to:

Clerk of Agency Proceedings  
Department of Transportation  
605 Suwannee Street, MS 58  
Tallahassee, Florida 32399-0458

Failure to file a notice of protest or formal written protest within the time prescribed in Section 120.57(3), F.S., or failure to post the bond or other security required by law within the time allowed for filing a bond shall constitute a waiver of proceedings under Chapter 120, F.S.

**H. Non-Responsive Proposals:**

Proposals found to be non-responsive shall not be considered. Proposals may be rejected if found to be in nonconformance with the requirements and instructions herein contained. A proposal may be found to be non-responsive by reasons including, but not limited to, failure to utilize or complete prescribed forms, conditional proposals, incomplete proposals, indefinite or ambiguous proposals, failure to meet deadlines, and improper and/or undated signatures.

Other conditions which may cause rejection of proposals include evidence of collusion among Proposers, obvious lack of experience or expertise to perform the required work, submission of more than one proposal for the same work from an individual, firm, joint venture, or corporation under the same or a different name (also included for Design-Build Projects are those proposals wherein the same Engineer is identified in more than one proposal), failure to perform or meet financial obligations on previous contracts, employment of unauthorized aliens in violation of Section 274A (e) of the Immigration and Nationalization Act, or in the event an individual, firm, partnership, or corporation is on the United States Comptroller General's List of Ineligible Design-Build Firms for Federally Financed or Assisted Projects.

The Department will not give consideration to tentative or qualified commitments in the proposals. For example, the Department will not give consideration to phrases such as "we may" or "we are considering" in the evaluation process for the reason that they do not indicate a firm commitment.

Proposals will also be rejected if not delivered or received on or before the date and time specified as the due date for submission.

**I. Waiver of Irregularities:**

The Department may waive minor informalities or irregularities in Proposals received where such is merely a matter of form and not substance, and the correction or waiver of which is not prejudicial to other Proposers. Minor irregularities are defined as those that will not have an adverse effect on the Department's interest and will not affect the price of the Proposals by giving a Proposer an advantage or benefit not enjoyed by other Proposers.

1. Any design submittals that are part of a Proposal shall be deemed preliminary only.
2. Preliminary design submittals may vary from the requirements of the Design and Construction Criteria. The Department, at their discretion, may elect to consider those variations in awarding points to the Proposal rather than rejecting the entire Proposal.
3. In no event will any such elections by the Department be deemed to be a waiving of the Design and Construction Criteria.
4. The Proposer who is selected for the Project will be required to fully comply with the Design and Construction Criteria for the price bid, regardless that the Proposal may have been based on a variation from the Design and Construction Criteria.

**J. Modification or Withdrawal of Technical Proposal:**

Proposers may modify or withdraw previously submitted Technical Proposals at any time prior to the Technical Proposal due date. Requests for modification or withdrawal of a submitted Technical Proposal shall be in writing and shall be signed in the same manner as the Technical Proposal. Upon receipt and acceptance of such a request, the entire Technical Proposal will be returned to the Proposer and not considered unless resubmitted by the due date and time. Proposers may also send a change in sealed envelope to be opened at the same time as the Technical Proposal, provided the change is submitted prior to the Technical Proposal due date.

**K. Department's Responsibilities:**

This RFP does not commit the Department to make studies or designs for the preparation of any proposal, nor to procure or contract for any articles or services.

The Department does not guarantee the details pertaining to borings, as shown on any documents supplied by the Department, to be more than a general indication of the materials likely to be found adjacent to holes bored at the site of the work, approximately at the locations indicated.

**L. Design-Build Contract:**

The Department will enter into a Lump Sum contract with the successful Design-Build Firm. In accordance with Section V of this RFP, the Design-Build Firm will provide a Schedule of Values to the Department for their approval. The total of the Schedule of Values will be the lump sum contract amount.

The terms and conditions of this contract are fixed price and fixed time. The Design-Build Firm's submitted bid (time and cost) is to be a lump sum bid for completing the scope of work detailed in the RFP.

**M. Financial Qualifications and Project Financial Plan (Financial Proposal):** *(Not applicable to this Project)*

**IV. Disadvantaged Business Enterprise (DBE) Program:**

**A. DBE Availability Goal Percentage:**

The Department of Transportation has an overall, race-neutral DBE goal. This means that the State's goal is to spend a portion of the highway dollars with Certified DBEs as prime Design-Build Firms or as subcontractors. Race-neutral means that the Department believes that the overall goal can be achieved through the normal competitive procurement process. The Department has reviewed this Project and assigned a DBE availability goal shown in the Project Advertisement and on the bid blank/contract front page under "% DBE Availability Goal". The Department has determined that this DBE percentage can be achieved on this Project based on the number of DBEs associated with the different types of work that will be required.

Under 49 C.F.R. Part 26, if the overall goal is not achieved, the Department may be required to return to a race-conscious program where goals are imposed on individual contracts. The Department encourages Design-Build Firms to actively pursue obtaining bids and quotes from Certified DBEs.

The Department is reporting to the FHWA the planned commitments to use DBEs. This information is being collected through the Department's Equal Opportunity Compliance (EOC) system.

**B. DBE Supportive Services Providers:**

The Department has contracted with a consultant, referred to as DBE Supportive Services Provider, to provide managerial and technical assistance to DBEs. This consultant is also required to work with prime Design-Build Firms, who have been awarded contracts, to assist in identifying DBEs that are available to participate on the Project. The successful Design-Build Firm should meet with the DBE Supportive Services Provider to discuss the DBEs that are available to work on this Project. The current DBE Supportive Services Provider for the State of Florida can be found in the Equal Opportunity website at: <http://www.dot.state.fl.us/equalopportunityoffice/serviceproviders.shtm>

**C. Bidders Opportunity List:**

The Federal DBE Program requires States to maintain a database of all Firms that are participating, or attempting to participate, on Department of Transportation (DOT)-assisted contracts. The list must include all Firms that bid on prime contracts or bid or quote subcontracts on DOT-assisted projects, including both

DBEs and Non-DBEs.

A Bid Opportunity List should be submitted through the EOC system which is available at the [Equal Opportunity Office Website](#). This information should be returned to the Equal Opportunity Office within three days of submission of the Proposal.

## **V. Project Requirements and Provisions for Work:**

### **A. Governing Regulations:**

The services performed by the Design-Build Firm shall be in compliance with all applicable Manuals and Guidelines, including, the Department, FHWA, American Association of State Highway and Transportation Officials (AASHTO), and additional requirements specified in this document. Except to the extent inconsistent with the specific provisions in this document, the current edition, including updates, of the following Manuals and Guidelines shall be used in the performance of this work. Current edition is defined as the edition in place and adopted by the Department at the date of advertisement of this contract, with the exception of the Standard Specifications for Road and Bridge Construction (Divisions II & III), Special Provisions and Supplemental Specifications, Manual on Uniform Traffic Control Devices (MUTCD), Design Standards, and Revised Index Drawings. The Design-Build Firm shall use the edition of the Standard Specifications for Road and Bridge Construction (Divisions II & III), Special Provisions and Supplemental Specifications, Design Standards, and Revised Index Drawings in effect at the time the bid price proposals are due in the District Office. The Design-Build Firm shall use the 2009 edition of the MUTCD (as amended in 2012). It shall be the Design-Build Firm's responsibility to acquire and utilize the necessary manuals and guidelines that apply to the work required to complete this Project. The services will include preparation of all documents necessary to complete the Project as described in Section I of this document.

1. Florida Department of Transportation Roadway Plans Preparation Manual (PPM)  
<http://www.dot.state.fl.us/rddesign/PPMManual/PPM.shtm>
2. Florida Department of Transportation Specifications Package Preparation Procedure  
<http://www2.dot.state.fl.us/proceduraldocuments/procedures/bin/630010005.pdf>
3. Florida Department of Transportation Design Standards  
<http://www.dot.state.fl.us/rddesign/DesignStandards/Standards.shtm>
4. Florida Department of Transportation Standard Specifications for Road and Bridge Construction (Divisions II & III), Special Provisions and Supplemental Specifications  
<http://www.dot.state.fl.us/specificationsoffice/Default.shtm>
5. Florida Department of Transportation Surveying Procedure  
<http://www2.dot.state.fl.us/proceduraldocuments/procedures/bin/550030101.pdf>
6. Florida Department of Transportation EFB User Handbook (Electronic Field Book)  
[http://www.dot.state.fl.us/surveyingandmapping/doc\\_pubs.shtm](http://www.dot.state.fl.us/surveyingandmapping/doc_pubs.shtm)
7. Florida Department of Transportation Drainage Manual  
<http://www.dot.state.fl.us/rddesign/Drainage/ManualsandHandbooks.shtm>

8. Florida Department of Transportation Soils and Foundations Handbook  
<http://www.dot.state.fl.us/structures/Manuals/SFH.pdf>
9. Florida Department of Transportation Structures Manual  
<http://www.dot.state.fl.us/structures/DocsandPubs.shtm>
10. Florida Department of Transportation Current Structures Design Bulletins  
<http://www.dot.state.fl.us/structures/Memos/currentbulletins.shtm>
11. Florida Department of Transportation Computer Aided Design and Drafting (CADD) Manual  
<http://www.dot.state.fl.us/ecso/downloads/publications/Manual/default.shtm>
12. Florida Department of Transportation Computer Aided Design and Drafting (CADD) Production Criteria Handbook  
<http://www.dot.state.fl.us/ecso/downloads/publications/CriteriaHandBook/>
13. Florida Department of Transportation Production Criteria Handbook CADD Structures Standards  
<http://www.dot.state.fl.us/ecso/downloads/publications/CriteriaHandBook/>
14. Instructions for Design Standards  
<http://www.dot.state.fl.us/structures/IDS/IDSportal.pdf>
15. AASHTO – A Policy on Geometric Design of Highways and Streets  
[https://bookstore.transportation.org/collection\\_detail.aspx?ID=110](https://bookstore.transportation.org/collection_detail.aspx?ID=110)
16. MUTCD - 2009  
<http://mutcd.fhwa.dot.gov/>
17. Safe Mobility For Life Program Policy Statement  
<http://www2.dot.state.fl.us/proceduraldocuments/procedures/bin/000750001.pdf>
18. Traffic Engineering and Operations Safe Mobility for Life Program  
<http://www.dot.state.fl.us/trafficoperations/Operations/SafetyisGolden.shtm>
19. Florida Department of Transportation American with Disabilities Act (ADA) Compliance – Facilities Access for Persons with Disabilities Procedure  
<http://www2.dot.state.fl.us/proceduraldocuments/procedures/bin/625020015.pdf>
20. Florida Department of Transportation Florida Sampling and Testing Methods  
<http://www.dot.state.fl.us/statematerialsoffice/administration/resources/library/publications/fstm/disclaimer.shtm>
21. Florida Department of Transportation Flexible Pavement Coring and Evaluation Procedure  
<http://www.dot.state.fl.us/statematerialsoffice/administration/resources/library/publications/materialsmanual/documents/v1-section32-clean.pdf>
22. Florida Department of Transportation Design Bulletins and Update Memos  
<http://www.dot.state.fl.us/rddesign/Bulletin/Default.shtm>
23. Florida Department of Transportation Utility Accommodation Manual

- <http://www.dot.state.fl.us/specificationsoffice/utilities/UAM.shtm>
24. AASHTO LRFD Bridge Design Specifications  
[https://bookstore.transportation.org/category\\_item.aspx?id=BR](https://bookstore.transportation.org/category_item.aspx?id=BR)
  25. Florida Department of Transportation Flexible Pavement Design Manual  
<http://www.dot.state.fl.us/rddesign/PM/publicationS.shtm>
  26. Florida Department of Transportation Rigid Pavement Design Manual  
<http://www.dot.state.fl.us/rddesign/PM/publicationS.shtm>
  27. Florida Department of Transportation Pavement Type Selection Manual  
<http://www.dot.state.fl.us/rddesign/PM/publicationS.shtm>
  28. Florida Department of Transportation Right-of-Way Manual  
<http://www.dot.state.fl.us/rightofway/Documents.shtm>
  29. Florida Department of Transportation Traffic Engineering Manual  
<http://www.dot.state.fl.us/TrafficOperations//Operations/Studies/TEM/TEM.shtm>
  30. Florida Department of Transportation Intelligent Transportation System Guide Book  
[http://www.dot.state.fl.us/TrafficOperations/Doc\\_Library/Doc\\_Library.shtm](http://www.dot.state.fl.us/TrafficOperations/Doc_Library/Doc_Library.shtm)
  31. Federal Highway Administration Checklist and Guidelines for Review of Geotechnical Reports and Preliminary Plans and Specifications  
<http://www.fhwa.dot.gov/engineering/geotech/pubs/reviewguide/checklist.cfm>
  32. AASHTO Guide for the Development of Bicycle Facilities  
[https://bookstore.transportation.org/collection\\_detail.aspx?ID=116](https://bookstore.transportation.org/collection_detail.aspx?ID=116)
  33. Federal Highway Administration Hydraulic Engineering Circular Number 18 (HEC 18).  
[http://www.fhwa.dot.gov/engineering/hydraulics/library\\_arc.cfm?pub\\_number=17](http://www.fhwa.dot.gov/engineering/hydraulics/library_arc.cfm?pub_number=17)
  34. Florida Department of Transportation Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways  
<http://www.dot.state.fl.us/rddesign/FloridaGreenbook/FGB.shtm>
  35. Florida Department of Transportation Project Development and Environment Manual, Parts 1 and 2  
<http://www.dot.state.fl.us/emo/pubs/pdeman/pdeman1.shtm>
  36. Florida Department of Transportation Driveway Information Guide  
<http://www.dot.state.fl.us/planning/systems/programs/sm/accman/pdfs/driveway2008.pdf>
  37. AASHTO Highway Safety Manual  
<http://www.highwaysafetymanual.org/>
  38. Florida Statutes  
<http://www.leg.state.fl.us/Statutes/index.cfm?Mode=View%20Statutes&Submenu=1&Tab=statutes&CFID=14677574&CFTOKEN=80981948>

The materials used by and workmanship completed by the Design-Build Firm shall meet or exceed industry

standards. All materials, equipment, supplies, installations, and testing shall comply with the Project requirements, the following standards, as applicable, and all other applicable standards and requirements. If multiple requirements or standards are specified for any single item or component of the Project, the most stringent requirement or standard shall govern.

The following list of standards and organizations that guide industry standards and best practices is not meant to be all inclusive:

- The American Society of Testing and Materials (ASTM) standards
- Institute of Electrical and Electronics Engineers (IEEE) standards
- International Standards Organization (ISO) standards
- The American National Standards Institute (ANSI)
- The National Electrical Manufacturers Association (NEMA)
- The Underwriters' Laboratories, Inc. (UL)
- The National Board of Fire Underwriters (NBFU)
- The National Fire Protection Association (NFPA)
- The Society of Automotive Engineers (SAE)
- The Electrical Testing Laboratories (ETL)
- Bellcore Technical Advisories and Technical Requirements
- The Electronic Industries Alliance (EIA)
- The National Electrical Code (NEC)
- The National Electrical Safety Code (NESC)
- The Joint Electronic Devices Engineering Council (JEDEC)
- The Radio-Electronics-Television Manufacturers Association (RETMA)
- The Lightning Protection Institute (LPI)
- The Rural Electrification Administration (REA)
- The International Radio Consultative Committee (CCIR)
- The International Telephone and Telegraph Consultative Committee (CCITT)
- The American Standard Code for Information Interchange (ASCII)
- The National Television Systems Committee (NTSC)
- The International Telecommunications Union (ITU)
- The Moving Picture Experts Group (MPEG)
- The Bureau of Radiological Health – Optical Radiation Hazard specifications

- The Telecommunications Industries Association (TIA)
- AASHTO
- The Federal Aviation Administration (FAA)
- The Federal Communications Commission (FCC)

**B. Innovative Aspects:**

All innovative aspects shall be identified separately as such in the Technical Proposal.

An innovative aspect does not include revisions to specifications, standards, or established Department policies. Innovation should be limited to the Design-Build Firm's means and methods, roadway alignments, approach to Project, etc. Those changes to the Design Concept may be considered together with innovative construction techniques, as well as other areas, as the basis for grading the Technical Proposals in the area of innovative measures.

1. **ATC Proposals:** *(Not applicable to this Project)*
2. **One-on-One ATC Proposal Discussion Meetings:** *(Not applicable to this Project)*
3. **Submittal of ATC Proposals:** *(Not applicable to this Project)*
4. **Review and Approval of ATC Submittals:** *(Not applicable to this Project)*
5. **Incorporation of Approved ATCs into the Technical Proposal:** *(Not applicable to this Project)*

**C. Geotechnical Services:** *(Not applicable to this Project)*

**D. Department Commitments:**

The Design-Build Firm will be responsible for adhering to the Project commitments identified below:

- District Seven will operate the I-4 Fog/Low Visibility Detection System under an agreement with Districts One and Five

**E. Environmental Permits:**

1. **Storm Water and Surface Water:**

Plans shall be prepared in accordance with Chapters 373 and 403, F.S. and Chapters 40 and 62, F.A.C.

2. **Permits:**

The following Southwest Florida Water Management District (SWFWMD) permits were documented in the Project corridor: ERP 11896.038 DOT I-4 Widening Sections 3-4 and 5; 11896.032 DOT I-4 Polk County Section 6; 11896.029 DOT I-4 Polk County Section 9 Mod; and 11896.033 FDOT I-4 Widening Section 7. If permit modifications are required, the Design-Build Firm shall be responsible for modifying the issued permits as necessary to accurately depict the final design. The Design-Build Firm shall be responsible for any necessary permit time extensions or re-permitting in order to keep the environmental permits valid throughout the construction period. The Design-Build Firm shall provide the Department with draft copies of any and all permit applications, including responses to agency Requests for Additional Information, requests to modify the permits, and/or requests for permit time extensions, for review and approval by the Department prior to submittal to the agencies.

All applicable data shall be prepared in accordance with Chapters 373 and 403, F.S.; Chapters 40 and 62, F.A.C.; Rivers and Harbors Act of 1899; Section 404 of the Clean Water Act; 23 Code of Federal Regulations (CFR) 771; 23 CFR 636; and parts 114 and 115, Title 33, CFR. In addition to these Federal and State permitting requirements, any dredge and fill permitting required by local agencies shall be prepared in accordance with their specific regulations. Preparation of all documentation related to the acquisition of all applicable permits will be the responsibility of the Design-Build Firm. Preparation of complete permit packages will be the responsibility of the Design-Build Firm. The Design-Build Firm is responsible for the accuracy of all information included in permit application packages. As the permittee, the Department is responsible for reviewing, approving, and signing the permit application package, including all permit modifications or subsequent permit applications. This applies whether the project is Federal or State funded. Once the Department has approved the permit application, the Design-Build Firm is responsible for submitting the permit application to the environmental permitting agency. A copy of any and all correspondence with any of the environmental permitting agencies shall be sent to the District Environmental Management Office. If any agency rejects or denies the permit application, it is the Design-Build Firm's responsibility to make whatever changes necessary to ensure the permit application is approved.

The Design-Build Firm shall pay all permit fees. Any fines levied by permitting agencies shall be the responsibility of the Design-Build Firm. The Design-Build Firm shall be responsible for complying with all permit conditions.

Wetland mitigation may be required to offset unavoidable surface water and wetland impacts. A cursory review of the proposed corridor documented wetlands and surface waters adjacent to or within areas where I-4 Fog/Low Visibility Detection equipment may be installed. Mitigation fees will be the responsibility of the Design-Build Firm. If any permit applications completed by the Design-Build Firm propose wetland and surface water impacts that require mitigation, the Design-Build Firm shall be responsible for providing to the Department the amount and type of wetland impacts as soon as the impacts are identified (including temporary impacts and/or any anticipated impacts due to construction staging or construction methods), but no later than Phase III plans. The Department will direct the use of a mitigation site, private mitigation bank, or the Department Mitigation Plan in accordance with 373.4137, F.S.

Any additional mitigation required due to design modifications proposed by the Design-Build Firm shall be the responsibility of the Design-Build Firm and shall be satisfied through the purchase of mitigation

bank credits. The Design-Build Firm shall purchase credits directly from a permitted mitigation bank. In the event that permitted mitigation bank credits are unavailable or insufficient to meet the Project needs, the Design-Build Firm will be responsible for providing alternative mitigation consistent with the provisions of Section 373.4173, F.S., and acceptable to the permitting agency(ies). The Design-Build Firm shall be solely responsible for all costs associated with permitting activities and shall include all necessary permitting activities in their schedule.

However, notwithstanding anything above to the contrary, upon the Design-Build Firm's preliminary request for extension of Contract Time, pursuant to 8-7.3, being made directly to the District Construction Engineer, the Department reserves unto the District Construction Engineer, in their sole and absolute discretion, according to the parameters set forth below, the authority to make a determination to grant a non-compensable time extension for any impacts beyond the reasonable control of the Design-Build Firm in securing permits. Furthermore, as to any such impact, no modification provision will be considered by the District Construction Engineer unless the Design-Build Firm clearly establishes that it has continuously from the beginning of the Project aggressively, efficiently, and effectively pursued the securing of the permits, including the utilization of any and all reasonably available means and methods to overcome all impacts. There shall be no right of any kind on behalf of the Design-Build Firm to challenge or otherwise seek review or appeal in any forum of any determination made by the District Construction Engineer under this provision.

**F. Railroad Coordination: *(Not applicable to this Project)***

**G. Survey:**

The Design-Build Firm shall perform all surveying and mapping services necessary to complete the Project. Survey services must also comply with all pertinent Florida Statutes and applicable rules in the Florida Administrative Code. All surveying and mapping work must be accomplished in accordance with the Department's Surveying Procedure, Topic Nos. 550-030-101; Right-of-Way Mapping Procedure, Topic No. 550-030-015; and Aerial Surveying Standards for Transportation Projects Procedure, Topic No. 550-020-002. This work must comply with Chapter 5J-17, F.A.C., pursuant to Section 472.027, F.S. This survey also must comply with Chapter 177, F.S.

**H. Verification of Existing Conditions:**

The Design-Build Firm shall be responsible for verification of existing conditions, including research of all existing Department records and other information. This section is intended to provide a general overview of the existing conditions of the Department's ITS and its components, such as the fiber optic cable (FOC) communications infrastructure within the Project limits. The Design-Build Firm shall refer to the ITS As-Built Plans provided with this RFP as Reference Documents for additional information, and shall be responsible for field verifying all existing site conditions within the Project limits.

The ITS components shall be defined as follows:

- **CCTV Camera System:** The CCTV Camera System consists of pan, tilt, zoom (PTZ) cameras along the corridor. The CCTV cameras are used by Department staff for incident management and traffic monitoring. The cameras are integrated and communicate with Local Hubs along the corridor via the

single mode FOC communications backbone installed along the corridor.

- DMS System: The DMS System consists of mainline DMSs and provides roadway information and travel times. The mainline DMSs are located at select locations along the corridor. The mainline DMSs are connected and communicate via the single-mode FOC communications backbone installed along the corridor. The four DMSs on the western end of the project are mounted on half-span truss structures, while the two DMSs located on the eastern end of the corridor are mounted on cantilever structures.
- MVDSs: The MVDS consists of non-intrusive, microwave technology sensors used to collect vehicle volume, speed, and occupancy data from mainline travel lanes. The detectors are installed on stand-alone concrete poles and/or attached to other ITS device structures in a side-fire configuration to detect data on a lane-by-lane basis. The MVDS is used for incident detection by Department staff and communicates via the single-mode FOC communications backbone installed along the corridor.
- FOC: The Department's ITS communication infrastructure consists of a 72-count single-mode FOC communication backbone and 12-count single-mode FOC drops to ITS field elements at ITS cabinet locations. The FOC is in an underground conduit system. At locations where fiber splicing is done outside the device cabinets, splice boxes are placed in the vicinity of ITS cabinets to facilitate the 12-count FOC drops.
- ITS cabinets are installed for CCTV cameras, MVDSs, and DMSs, and installations can be for individual or multiple ITS field elements at the same or nearby locations. ITS cabinets include network equipment, video encoders, media converters, device servers, Power Distribution Units (PDUs), Uninterruptible Power Supplies (UPSs), and batteries. The ITS cabinets have 100 megabits per second (Mbps) or 1 gigabit per second (Gbps) Managed Field-Hardened Ethernet Switches (MFESs) and manual disconnects for portable generators. Some ITS poles have NEMA boxes installed to allow ITS maintenance staff to connect into and calibrate the MVDSs when the associated cabinet is in an inaccessible location.
- For clarification purposes, any reference in this RFP to the mainline fiber optic backbone that is installed along the corridor shall be defined as the "backbone". The FOC between the backbone and ITS components shall be defined as the "ITS lateral".
- Communication between local ITS cabinets and the Hubs use TCP/IP over a 100 Mbps or 1 Gbps Ethernet Optical Network. From Master Hub to Master Hub, communication is accomplished using TCP/IP over a 1 or 10 Gbps Ethernet Optical Network. The Department limits the demand on the Ethernet segments and fiber pairs to 60 percent or less of the capacity supported by optical communication devices in order to maximize the quality of the signal. The Department also limits the number of IP addresses on the Hub to local device network to prevent Spanning Tree Protocol issues.
- There is one existing Master Hub within the Project limits located at the Polk Parkway interchange.
- The electrical service, including transformers, has been designed to meet the electrical requirements of the ITS field elements, including the ITS cabinets, and the length of the electrical cabling. Copper conductors for ITS electrical service are typically installed in underground conduit. Electrical conductors are installed in a separate conduit from the ITS FOC. ITS electrical service pull and junction boxes have been equipped with additional locking devices to prevent unauthorized access

and theft of copper cables. There is one existing CCTV camera, located at MM 51.4, which uses solar power and UPS battery backup power as the primary electrical source.

By execution of the contract, the Design-Build Firm specifically acknowledges and agrees that the Design-Build Firm is contracting and being compensated for performing adequate investigations of existing site conditions sufficient to support the design developed by the Design-Build Firm, and that any information is being provided merely to assist the Design-Build Firm in completing adequate site investigations. Notwithstanding any other provision in the contract documents to the contrary, no additional compensation will be paid in the event of any inaccuracies in the preliminary information.

**I. Submittals:**

1. **Component Submittals:** *(Not applicable to this Project)*
2. **Phase Submittals:**

The Design-Build Firm shall provide the documents for each phase submittal listed below to the Department's Project Manager. The particular phase shall be clearly indicated on the documents. The Department's Project Manager will send the documents to the appropriate office for review and comment. Once all comments requiring a response from the Design-Build Firm have been satisfactorily resolved as determined by the Department, the Department's Project Manager will initial, date, and stamp the signed and sealed plans and specifications as "Released for Construction".

**90% Phase Submittal:**

- 10 copies of 11" X 17" plans
- 6 copies of design documentation
- 6 copies of Technical Special Provisions
- 3 CDs containing the above information in .pdf format

**Final Submittal:**

- 3 sets of signed and sealed 11" X 17" plans
- 10 copies of signed and sealed 11" X 17"
- 6 sets of signed and sealed design documentation
- 6 copies of signed and sealed design documentation
- 3 sets of final documentation, including voltage drop calculations for electrical wire sizing
- 1 signed and sealed copy of Construction Specifications Package or Supplemental Specifications Package
- 3 copies of signed and sealed Construction Specifications Package or Supplemental Specifications Package
- 2 electronic copies of Technical Special Provisions on CD
- 3 CDs containing the above information in .pdf format

3. **Requirements to Begin Construction:**

The Design-Build Firm may choose to begin construction prior to completion of the Phase Submittals and the Department stamping the plans and specifications Released for Construction except for bridge construction. To begin construction, the Design-Build Firm shall submit signed and sealed plans for the specific activity; submit a signed and sealed Construction Specifications Package or Supplemental Specifications Package; obtain regulatory permits as required for the specific activity; obtain utility agreements and permits, if applicable; and provide five days notice before starting the specific activity. The plans to begin construction may be in any format, including report with details, 8 1/2" X 11" sheets or 11" X 17" sheets, and only the information needed by the Design-Build Firm to construct the specific activity needs to be shown. Beginning construction prior to the Department stamping the plans and specifications Released for Construction does not reduce or eliminate the Phase Submittal requirements.

### **As-Built Set:**

The Design-Build Firm's Professional Engineer in responsible charge of the Project's design shall professionally endorse (sign, seal, and certify) the As-Built Plans, the Special Provisions, and all reference and support documents. The professional endorsement shall be performed in accordance with the Department PPM.

The Design-Build Firm shall complete the As-Built Plans as the Project is being constructed. All changes made subsequent to the "Released for Construction" Plans shall be signed/sealed by the Engineer of Record (EOR). The As-Built Plans shall reflect all changes initiated by the Design-Build Firm or the Department in the form of revisions. The As-Built Plans shall be submitted prior to the start of the Operational Test for Department review.

As-Built Plans shall include Global Positioning System (GPS) locations of all newly installed ITS infrastructure, field elements, pull boxes, and splice boxes. GPS locations shall be recorded at sub-foot accuracy. When specifying GPS coordinates, single datum shall be utilized for all measurements and the datum used shall be noted in the forms.

In addition, prior to Final Acceptance, the Design-Build Firm shall submit completed ITSFM data entry forms for all new ITS field elements, fiber optic infrastructure, electrical service infrastructure, and network equipment. The Department shall review, certify, and accept the As-Built Plans prior to issuing Final Acceptance of the project in order to complete the As-Built Plans.

The Department shall certify the As-Built Plans per Chapter 5.12 of the Construction Project Administration Manual (TOPIC No. 700-000-000).

The Design-Build Firm shall furnish to the Department, upon Project completion, the following:

- 1 set of 11" X 17" signed and sealed approved As-Built plans (in MicroStation format)
- 3 sets of 11 "X 17" copies of the signed and sealed plans
- 3 sets of final documentation (if different from final component submittal)
- 2 Final Project CDs

- 2 CDs of the Final signed and sealed approved As-Built plans in .pdf format

4. **Milestones:**

In addition to various submittals mentioned throughout this document, the following milestone submittals will be required:

- 90% Design Submittal
- RTVM – Submitted monthly with the Certified Monthly Estimate and Payment
- Project Specifications
- Shop Drawings
- Design Approval for Construction
- Material Acquisition
- Final Design Submittal
- IP Addressing
- Integration Plan
- ITS Test Plans and Test Results
- Training Plans
- As-Built Plans

5. **Railroad Submittals: *(Not applicable to this Project)***

**J. Contract Duration:**

The Department has established a Contract Duration of 450 calendar days for the subject Project.

**K. Project Schedule:**

The Design-Build Firm shall submit a Schedule, in accordance with Subarticle 8-3.2 (Design-Build Division I Specifications). The Design-Build Firm's Schedule shall allow for up to 15 calendar days (excluding weekends and Department observed Holidays) for the Department's review of all submittals.

No Special Events have been identified for this Project.

The minimum number of activities included in the Schedule shall be those listed in the Schedule of Values and those listed below:

- Anticipated Award Date
- NTP
- Design Submittals (90% and Final)
- Shop Drawing Submittals
- Shop Drawing Review
- Design Survey

- Submittal Reviews by the Department and FHWA
- Design Review / Acceptance Milestones
- Materials Quality Tracking
- Submittal Data Form Submittal
- Start of Construction
- Existing System Test and Maintenance Acceptance
- ITS Underground Construction (conduits, pull boxes, splice boxes, etc.)
- ITS Pole and Structure Construction (ITS poles, structures, and foundations)
- ITS Device Installation
- Hub Access Plan
- Integration
- ITS Stand-alone Testing and Department acceptance for each device
- Subsystem Testing and Department Acceptance
- Operational Testing and Department Acceptance
- DMS Acceptance Test
- Training
- Document Submittal Schedule
- Construction Mobilization
- Environmental Permit Acquisition
- Foundation Design
- Foundation Construction
- MOT Design
- Permit Submittals
- MOT Set-Up (per duration)
- Erosion Control
- Holidays (shown as non-work days)
- Additional Construction Milestones as determined by the Design-Build Firm
- Final Completion Date for All Work

**L. Key Personnel/Staffing:**

The Design-Build Firm's work shall be performed and directed by key personnel identified in the Letter of Interest and/or Technical Proposal by the Design-Build Firm. In the event a change in key personnel is requested, the Design-Build Firm shall submit the qualifications of the proposed key personnel and include the reason for the proposed change. Any changes in the indicated personnel shall be subject to review and approval by the District Construction Engineer. The Department shall have sole discretion in determining whether or not the proposed substitutions in key personnel are comparable to the key personnel identified in the Letter of Interest and/or Technical Proposal. The Design-Build Firm shall have available professional staff meeting the minimum training and experience set forth in Chapter 455, F.S.

**M. Partner/Teaming Arrangement:**

Partner/Teaming Arrangements of the Design-Build Firm (i.e., Prime Contractor or Lead Design Firm) cannot be changed after submittal of the Letter of Interest without written consent of the Department. In the event a change in the Partner/Teaming Arrangement is requested, the Design-Build Firm shall submit the reason for the proposed change. Any changes in the Partner/Teaming Arrangement shall be subject to review and approval by the Department's Chief Engineer. The Department shall have sole discretion in determining whether or not the proposed substitutions in Partner/Teaming Arrangements are comparable to the Partner/Teaming Arrangements identified in the Letter of Interest and/or Technical Proposal.

**N. Meetings and Progress Reporting:**

The Design-Build Firm shall anticipate periodic meetings with Department personnel and other agencies as required for resolution of design and/or construction issues. These meetings may include:

- Department technical issue resolution
- Local government agency coordination
- Coordination meetings with District Seven ITS Maintenance Contractor
- MOT Workshop
- Permit agency coordination
- Scoping Meetings
- System Integration Meetings

During design, the Design-Build Firm shall meet with the Department's Project Manager on a monthly basis and provide a one-month look-ahead of the activities to be completed during the upcoming month.

During construction, the Design-Build Firm shall meet with the Department's Project Manager on a weekly basis and provide a one-week look-ahead for activities to be performed during the coming week.

**O. Public Involvement:**

**1. General:**

Public involvement is an important aspect of the Project. Public involvement includes communicating to all interested persons, groups, and government organizations information regarding the development of the Project. A Public Involvement Consultant (PIC) has been hired by the Department to carry out an exhaustive Public Involvement Campaign and a marketing effort. The Design-Build Firm will continue to be part of the Public Involvement effort, but on a limited basis as described below.

**2. Community Awareness:**

The Design-Build Firm shall review and comment on a Community Awareness Program provided by the PIC for the Project.

**3. Public Meetings:**

The Design-Build Firm shall provide all support necessary for the PIC to hold various public meetings,

which may include:

- Kick-off or introductory meeting
- Transportation Planning Organization (TPO) Meetings
- Public Information Meetings
- Meetings with elected and appointed officials
- Meetings with special interest groups (private groups, homeowner associations, environmental groups, minority groups, and individuals)

The Design-Build Firm shall include attendance at two meetings per month for the term of the contract to support the public involvement program.

For any of the above type meetings, the Design-Build Firm shall provide all technical assistance, data, and information necessary for the PIC to produce display boards, printed material, video graphics, computerized graphics, etc., and information necessary for the day-to-day exchange of information with the public, all agencies, and elected officials in order to keep them informed as to the progress and impacts that the proposed Project will create. This includes workshops, information meetings, and public hearings.

The Design-Build Firm shall, on an as-needed basis, attend the meetings with an appropriate number of personnel to assist the Department's Project Representative/PIC. The Design-Build Firm shall forward all requests for group meetings to the PIC. The Design-Build Firm shall inform the PIC of any meetings with individuals that occur without prior notice.

#### 4. **Public Workshops, Information Meetings:**

The Design-Build Firm shall provide all the support services listed in No. 3 above. All legal/display ads announcing workshops, information meetings, and public meetings will be prepared and paid for by the PIC.

The Department will be responsible for the legal/display advertisements for design concept acceptance. The PIC will be responsible for preparing and mailing (includes postage) all letters announcing workshops and information meetings.

#### 5. **Public Involvement Data:**

The Design-Build Firm is responsible for the following:

- Coordinating with the PIC.
- Identifying possible permit and review agencies and providing names and contact information for these agencies to the PIC.
- Providing required expertise (staff members) to assist the PIC on an as-needed basis.
- Preparing color graphic renderings and/or computer generated graphics to depict the proposed improvements for coordination with the Department, local governments, the Urban Design Guidelines Committee, and other agencies.

The collection of public input occurs throughout the life of the Project and requires maintaining files, newspaper clippings, letters, and especially direct contacts before, during, and after any of the public meetings. Articles such as those mentioned shall be provided to the PIC for their use and records.

In addition to collecting public input data, the Design-Build Firm may be asked by the PIC to prepare responses to any public inquiries as a result of the public involvement process. The Department shall review all responses prior to mailing.

**P. Quality Management Plan (QMP):**

**1. Design:**

The Design-Build Firm shall be responsible for the professional quality, technical accuracy, and coordination of all surveys, designs, drawings, specifications, and other services furnished by the Design-Build Firm under this contract.

The Design-Build Firm shall provide a Design QMP which describes the Quality Control (QC) procedures to be utilized to verify, independently check, and review all design drawings, specifications, and other documentation prepared as a part of the contract. In addition, the QMP shall establish a Quality Assurance (QA) program to confirm that the QC procedures are followed. The Design-Build Firm shall describe how the checking and review processes are to be documented to verify that the required procedures were followed. The QMP may be one utilized by the Design-Build Firm as part of their normal operation or it may be one specifically designed for this Project. The Design-Build Firm shall submit a QMP within 15 working days following issuance of the written Notice to Proceed. A marked up set of prints from the QC review shall be sent in with each review submittal. The responsible Professional Engineer or Professional Surveyor that performed the QC review, as well as the QA Manager, will sign a statement certifying that the review was conducted.

The Design-Build Firm shall, without additional compensation, correct all errors or deficiencies in the surveys, designs, drawings, specifications, and/or other services.

**2. Construction:**

The Design-Build Firm shall be responsible for developing and maintaining a Construction QC Plan in accordance with Section 105 of the Standard Specifications which describes their QC procedures to verify, check, and maintain control of key construction processes and materials.

The sampling, testing, and reporting of all materials used shall be in compliance with the Sampling, Testing and Reporting Guide (STRG) provided by the Department. The Design-Build Firm will use the Department's database(s) to allow audits of materials used to assure compliance with the STRG. The Department has listed the most commonly used materials and details in the Department's database. When materials being used are not in the Department's database list, the Design-Build Firm shall use appropriate material details from the STRG to report sampling and testing. Refer to the State Materials Office website for instructions on gaining access to the Department's databases:

<http://www.dot.state.fl.us/statematerialsoffice/quality/programs/qualitycontrol/contractor.shtm>

The Design-Build Firm shall prepare and submit to the Engineer a Job Guide Schedule (JGS) using the Department database in accordance with Section 105 of the Standard Specifications.

The Department shall maintain its rights to inspect construction activities and request any documentation from the Design-Build Firm to ensure quality products and services are being provided in accordance with the Department's Materials Acceptance Program.

**Q. Liaison Office:**

The Department and the Design-Build Firm will designate a Liaison Office and a Project Manager who shall be the representative of their respective organizations for the Project.

**R. Engineers Field Office: *(Not applicable to this Project)***

**S. Schedule of Values:**

The Design-Build Firm is responsible for submitting estimates requesting payment. Estimates requesting payment will be based on the completion or percentage of completion of tasks as defined in the Schedule of Values. Final payment will be made upon Final Acceptance by the Department of the Design-Build Project. Tracking DBE participation will be required under normal procedures according to the Construction Project Administration Manual. The Design-Build Firm must submit the Schedule of Values to the Department for approval. No estimates requesting payment shall be submitted prior to Department approval of the Schedule of Values.

Upon receipt of the estimate requesting payment, the Department's Project Manager will make judgment on whether or not work of sufficient quality and quantity has been accomplished by comparing the reported percent complete against actual work accomplished.

**T. Computer Automation:**

The Project shall be developed utilizing computer automation systems in order to facilitate the development of the contract plans. Various software and operating systems were developed to aid in assuring quality and conformance with Department policies and procedures. The Department supports MicroStation and GEOPAK as its standard graphics and roadway design platform as well as Autodesk's AutoCAD Civil 3D as an alternate platform. Seed Files, Cell Libraries, User Commands, MDL Applications, and related programs developed for roadway design and drafting are in the FDOT CADD Software Suite. Furnish As-Built documents for all building related components of the project in MicroStation format. It is the responsibility of the Design-Build Firm to obtain and utilize current Department releases of all CADD applications.

The Design-Build Firm will be required to furnish the Project's CADD files after the plans have been Released for Construction. The Design-Build Firm's role and responsibilities are defined in the

Department's CADD Manual. The Design-Build Firm will be required to submit final documents and files which shall include complete CADD design and coordinate geometry files in Intergraph/MicroStation format.

As part of the As-Built Set deliverables, field conditions shall be incorporated into MicroStation design files. Use the cloud revision utility as well as an "AB" revision triangle to denote field conditions on plan sheets.

**U. CEI:**

The Department is responsible for providing CEI and QA Engineering.

The Design-Build Firm is subject to the Department's Independent Assurance (IA) Procedures.

**V. Testing:**

The Department or its representative will witness and/or perform verification and resolution sampling and testing activities at both on-site and off-site locations such as pre-stress plants, batch plants, structural steel and weld, fabrication plants, etc. in accordance with the latest Specifications.

**W. Value Added:**

The Design-Build Firm may provide Value Added Project Features, in accordance with Article 5-14 of the Specifications for the following features:

- Any products or features the Design-Build Firm desires.

The Design-Build Firm shall develop the Value Added criteria, measurable standards, and remedial work plans in the Design-Build Firm's Technical Proposal for features proposed by the Design-Build Firm.

**X. Adjoining Construction Projects:**

The Design-Build Firm shall be responsible for coordinating construction activities with other construction projects that are impacted by or impact this Project. This includes projects under the jurisdiction of local governments, the Department, or other regional and state agencies.

This includes:

- FPN: 201214-3, I-4 at SR 559 Interchange

The Design-Build Firm shall closely coordinate with the adjacent project team(s) when placing ITS devices in order to maintain optimal device spacing and to ensure a continuous FOC communication network.

**Y. Issue Escalation:**

In the event issues arise during prosecution of the work, the resolution of those issues will be processed as

described below unless revised by a project specific Partnering Agreement.

The escalation process begins with the Construction Project Manager. All issues are to be directed to the Construction Project Manager. If the issue cannot be resolved by the Construction Project Manager in coordination with the Resident Engineer and Design Project Manager as applicable, the Construction Project Manager shall forward the issue to the District Construction Engineer who will coordinate with the District Design Engineer, as applicable. Each level shall have a maximum of five calendar days (excluding weekends and Department observed holidays) to answer, resolve, or address the issue. The Design-Build Firm shall provide all supporting documentation relative to the issue being escalated. The five calendar-day period (excluding weekends and Department observed holidays) begins when each level in the issue escalation process has received all required supporting documentation necessary to arrive at an informed and complete decision. The five calendar day period (excluding weekends and Department observed holidays) is a response time and does not infer resolution. Questions asked by the Department may be expressed verbally and followed up in writing within one calendar day (excluding weekends and Department observed holidays). Responses provided by the Design-Build Firm may be expressed verbally and followed up in writing within one working day (excluding weekends and Department observed holidays). Once a response is received from the District Construction Engineer, the Construction Project Manager will respond to the Design-Build Firm in a timely manner, but not to exceed three calendar days (excluding weekends and Department observed holidays).

The Design-Build Firm shall provide a similar issue escalation process for their organization with personnel of similar levels of responsibility.

Should an impasse develop, the Dispute Review Board shall assist in the resolution of disputes and claims arising out of the work on the Contract.

**VI. Design and Construction Criteria:**

**A. General:**

All design and construction work completed under the Contract shall be in accordance with the United States Standard Measures.

**B. Vibration and Settlement Monitoring: *(Not applicable to this Project)***

**C. Geotechnical Services: *(Not applicable to this Project)***

**D. Utility Coordination:**

The Design-Build Firm shall utilize a single dedicated person responsible for managing all utility coordination. This person shall be contractually referred to as the Utility Coordination Manager and shall be identified in the Design-Build Firm's Proposal. The Design-Build Firm shall notify the Department in writing of any change in the identity of the Utility Coordination Manager. The Utility Coordination Manager shall have the following knowledge, skills, and abilities:

1. A minimum of four years of experience performing utility coordination in accordance with

- Department standards, policies, and procedures.
2. Knowledge of the Department plans production process and utility coordination practices.
  3. Knowledge of Department agreements, standards, policies, and procedures.

The Design-Build Firm's Utility Coordination Manager shall be responsible for managing all utility coordination for both Sunshine and non-Sunshine subscribers, including, but not limited to, the following:

1. Ensuring that all utility coordination and activities are conducted in accordance with the requirements of the Contract Documents.
2. Identifying all existing utilities and coordinating any new installations.
3. Reviewing proposed utility permit application packages and recommending approval/disapproval of each permit application based on the compatibility of the permit as related to the Design-Build Firm's plans.
4. Scheduling and attending utility meetings, preparing and distributing minutes of all utility meetings, and ensuring expedient follow-up on all unresolved issues.
5. Distributing all plans, conflict matrices, and changes to affected Utility Agency/Owners (UA/Os) and making sure this information is properly coordinated.
6. Identifying and coordinating the execution and performance under any agreement that is required for any utility work needed with the Design-Build Project.
7. Preparing, reviewing, approving, signing, coordinating the implementation of, and submitting to the Department for review, all Utility Agreements.
8. Resolving utility conflicts.
9. Obtaining and maintaining all appropriate "Sunshine State One Call of Florida" tickets.
10. Calling non-subscribers to Sunshine State One Call a minimum of 48 hours and a maximum of 96 hours before any excavation work
11. Performing Constructability Reviews of plans prior to construction activities with regard to the installation, removal, temporary removal, de-energizing, deactivation, relocation, or adjustment of utilities.
12. Providing periodic Project updates to the Department Project Manager and District Utility Office, as requested.
13. Coordination with the Department on any issues that arise concerning reimbursement of utility work costs.

**Table 1: Summary of UA/Os Having Facilities within the Proposed Project Limits**

UAO	Contact Information	Phone Number Email Address
AT&T	Nancy Spence	770.918.5424
City of Auburndale	John Dickson	(863)965-5511

		jdickson@auburndalefl.com
Bright House Networks	Tom Sansing	863.288.2340 ext. 84264 tom.sansing@mybriighthouse.com
Central Florida Gas	Tim O'Connor	863.292.2933 toconnor@chpk.com
Florida Gas Transmission	Joseph E. Sanchez	407.838.7171 joseph.e.sanchez@sug.com
Duke Energy	Sharon Dear	(407)942-9421 sharon.dear@duke-energy.com
Gulfstream Natural Gas System, LLC	Fred Deloach	941.723.7108 fred.deloach@williams.com
Verizon Florida, Inc.	Fred Valdes	863.688.9717 fred.n.valdes@verizon.com
Level 3 Communications LLC	Richard Simonton	407.754.0106 ext. 0609 richard.simonton@level3.com
City of Lakeland Electric	Kris Hayes	(863)834-6486 kris.hayes@lakelandelectric.com
Verizon Business (MCI)	Bryan Lantz	(813)740-1231 bryan.lantz@verizon.com
City of Polk City	Patricia Jackson	(863)984-1375 Patricia.Jackson@mypolkcity.org
Polk County Utilities	Ryan Bengsch	(863)298-4193 RyanBensch@polk-county.net
Tampa Electric Company	Arlene Brown	(813)275-3428 albrown@tecoenergy.com
Comcast Cablevision	Cesar Rivera	(407)849-3610 Cesar_Rivera@cable.comcast.com

The Design-Build Firm may request the utility to be relocated to accommodate changes from the Concept Plans; however, these relocations require the Department's approval.

For a reimbursable utility relocation where the UA/O desires the work to be done by their contractor, the UA/O will perform the work in accordance with the utility work schedule and permit, and bill the Department directly.

- E. Roadway Plans: *(Not applicable to this Project)***
- F. Geometric Design: *(Not applicable to this Project)***
- G. Design Documentation, Calculations, and Computations:**

The Design-Build Firm shall submit to the Department design documentation, notes, calculations, and computations to document the design conclusions reached during the development of the construction plans.

The design notes and computation sheets shall be fully titled, numbered, dated, indexed, and signed by the designer and the checker. Computer output forms and other oversized sheets shall be folded to a standard size, 8½" x 11". The data shall be in a hard-back folder for submittal to the Department. At the Project completion, a final set of design notes and computations, signed by the Design-Build Firm, shall be submitted with the As-Built Plans and tracings.

The design documentation, notes, calculations, and computations shall include, but not be limited to, the following data:

1. Design Standards and criteria used for the Project
2. Documentation of decisions reached resulting from meetings, telephone conversations, or site visits

**H. Structure Plans: *(Not applicable to this Project)***

**I. Specifications:**

Department Specifications may not be modified or revised. Technical Special Provisions shall be written only for items not addressed by Department Specifications, and shall not be used as a means of changing Department Specifications.

The Design-Build Firm shall prepare and submit a signed and sealed Construction Specifications Package for the Project, containing all applicable Divisions II and III Special Provisions and Supplemental Specifications from the Specifications Workbook in effect at the time the Bid Price Proposals were due in the District Office, all Divisions II and III specifications provided as Attachments to this RFP, and any signed and sealed Technical Special Provisions. Any subsequent modifications to the Construction Specifications Package shall be prepared, signed, and sealed as a Supplemental Specifications Package. The Specifications Package shall be prepared, signed, and sealed by the Design-Build Firm's EOR who has successfully completed the mandatory Specifications Package Preparations Training.

The website for completing the training is at the following URL address:

<http://www2.dot.state.fl.us/SpecificationsEstimates/PackagePreparation/TrainingConsultants.aspx>

Specification Workbooks are posted on the Department's website at the following URL address:

<https://www2.dot.state.fl.us/SpecificationsPackage/Utilities/Membership/login.aspx?ReturnUrl=%2fspecificationspackage%2fDefault.aspx>.

Upon review and approval by the Department, the Construction Specifications Package will be stamped "Released for Construction", and initialed and dated by the Department.

**J. Shop Drawings:**

The Design-Build Firm shall be responsible for the preparation and approval of all Shop Drawings. Shop Drawings shall be in conformance with the Department's PPM when submitted to the Department and shall bear the stamp and signature of the Design-Build Firm's EOR and Specialty Engineer, as appropriate. The Department shall review the Shop Drawing(s) to evaluate compliance with Project requirements and provide any findings to the Design-Build Firm. The Department's procedural review of Shop Drawings is to assure that the Design-Build Firm's EOR has approved and signed the drawing, and the drawing has been independently reviewed and is in general conformance with the plans. The Department's review is not meant to be a complete and detailed review. Upon review and approval of the Shop Drawing, the Department will initial, date, and stamp "Released for Construction" or "Released for Construction as Noted".

The Design-Build Firm shall submit Shop Drawings for all proposed technologies/products that are to be procured for the Project to the Department for acceptance. The Department or its representative may request additional information and/or demonstration of the equipment for approval, and the Department reserves the right to reject any equipment that in its discretion is determined to be non-compliant with the Department's design standards, specifications, or the requirements of this Project. The Design-Build Firm shall not submit a large volume of Shop Drawings (not in bulk) at one time. Shop Drawings shall be submitted independently as they are prepared by the Design-Build Firm in order for the Department to have adequate time to review prior to making recommendations.

Shop Drawing submittals must be accompanied by sufficient information for adjoining components or areas of work to allow for proper evaluation of the Shop Drawing(s) submitted for review.

**K. Sequence of Construction:**

The Design-Build Firm shall construct the work in a logical manner and with the following objectives as guides:

1. Maintain or improve, to the maximum extent possible, the quality of existing traffic operations, both in terms of flow rate and safety, throughout the duration of the Project.
2. Minimize the number of different TCP phases, i.e., number of different diversions and detours for a given traffic movement.
3. Coordinate with adjacent construction projects and maintaining agencies.
4. Coordinate with the District Seven SunGuide® Center.

**L. Stormwater Pollution Prevention Plans (SWPPP):**

The Design-Build Firm shall prepare a Storm Water Pollution Prevention Plan (SWPPP) as required by the National Pollution Discharge Elimination System (NPDES). The Design-Build Firm shall refer to the Department's Project Development and Environment Manual and Florida Department of Environmental Protection (FDEP) Rule 62-621.300(4)(a) for information in regard to the SWPPP. The SWPPP and the Design-Build Firm's Certification (FDEP Form 62-621.300(4)(b) NOTICE OF INTENT (NOI) TO USE

GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES) shall be submitted for Department review and approval. Department approval must be obtained prior to beginning construction activities.

**M. Temporary TCP:**

**1. Traffic Control Analysis:**

The Design-Build Firm shall design a safe and effective Temporary TCP to move vehicular and pedestrian traffic during all phases of construction. Topics to be addressed shall include, but are not limited to, construction phasing, utility relocation, drainage structures, signalization, ditches, front slopes, back slopes, drop offs within clear zone, temporary roadway lighting, and traffic monitoring sites. Special consideration shall be given to the drainage system when developing the construction phases. Positive drainage must be maintained at all times.

The Temporary TCP shall address how to assist with maintenance of traffic throughout the duration of the contract.

The Temporary TCP shall be prepared by a certified designer who has completed the Department's Advanced Maintenance of Traffic training course, and in accordance with the Department's Design Standards and the PPM.

Transportation Management Plans (TMPs) are required for significant projects which are defined as:

1. A project that, alone or in combination with other concurrent projects nearby, is anticipated to cause sustained work zone impacts.
2. All Interstate system projects within the boundaries of a designated Transportation Management Area (TMA) that occupy a location for more than three days with either intermittent or continuous lane closures.

A TMP will consist of three components:

- (1) Temporary TCP component;
- (2) Transportation Operations (TO) component; and
- (3) Public Information (PI) component

Additional information can be found in Volume 1/Chapter 10 of the PPM.

**2. Temporary TCP:**

The Design-Build Firm shall utilize Index Series 600 of the Department's Design Standards where applicable. Should these standards be inadequate, a detailed Temporary TCP shall be developed. The Design-Build Firm shall prepare plan sheets, notes, and details to include the following: typical section sheet(s), general notes and construction sequence sheet(s), typical detail sheet(s), and TCP sheet(s).

The Design-Build Firm shall prepare additional plan sheets such as detours, cross sections, profiles,

drainage structures, temporary roadway lighting, retaining wall details, and sheet piling as necessary for proper construction and implementation of the Temporary TCP.

**3. Traffic Control Restrictions:**

There will be NO LANE CLOSURES allowed between the hours of 5:00 AM and 10:00 PM. A lane may only be closed during active work periods. Pacing operations are only allowed between the hours of 11:00 PM and 4:00 AM. All lane closures, including ramp closures, must be reported to the local emergency agencies, the media, the District PIO, and the FDOT District Seven RTMC a minimum of seven days prior to the closure. Also, the Design-Build Firm shall develop the Project to be able to provide for all lanes of traffic to be open in the event of an emergency.

**N. Environmental Services/Permits/Mitigation:**

The Design-Build Firm will be responsible for preparing designs and proposing construction methods that are permissible. The Design-Build Firm will be responsible for any required permits, permit modifications, and permit fees. All permits required for a particular construction activity will be acquired prior to commencing the particular construction activity. Delays due to incomplete or erroneous permit application packages, agency rejection, agency denials, agency processing time, or any permit violations, except as provided herein, will be the responsibility of the Design-Build Firm, and will not be considered sufficient reason for a time extension or additional compensation. As the permittee, the Department is responsible for reviewing, approving, signing, and submitting the permit application package, including all permit modifications, or subsequent permit applications.

The Department has conducted an investigation of the Project site and determined that potential gopher tortoise habitats could be impacted by the Project. All coordination by the Design-Build Firm with the Department regarding gopher tortoises will be completed through the District Environmental Management Office. Prior to construction commencement, the Design-Build Firm shall be responsible for an assessment of all potential gopher tortoise habitats that could be impacted by the project. The habitat will be systematically surveyed according to the current guidelines published by the Florida Fish and Wildlife Conservation Commission (FWC). If gopher tortoise burrows are found, all practicable measures will be employed to avoid impacts. Any areas where the Design-Build Firm proposes to protect burrows to remain on-site with “exclusionary fencing” shall be reviewed and approved by the Department. The Design-Build Firm shall submit an “exclusionary fencing” plan for review prior to any “exclusionary fencing” installation. The Design-Build Firm shall be responsible for obtaining an FWC permit for the relocation of gopher tortoises and commensals from burrows which cannot be avoided. If the FWC rejects or denies the permit application, it is the Design-Build Firm’s responsibility to make any changes necessary to ensure the permit application is approved. The Design-Build Firm shall be responsible for any necessary permit extensions or re-permitting in order to keep the relocation permit valid throughout the construction period. The Design-Build Firm will be required to pay all permit fees including any and all fees associated with the relocation of gopher tortoises. The Design-Build Firm shall be responsible for their relocation, which shall be performed at a time as close as practicable to the start of construction activities at the site of the burrows. If new burrows are found after relocation, their occupants will also be relocated. A copy of the permit and any subsequent reports to FWC must be provided to the District Environmental Management Office.

The Department has also conducted an investigation of the project site and determined that sand skink habitats could be impacted by the project, including several sections with previously documented skink occurrence. Prior to construction commencement, the Design-Build Firm shall conduct an evaluation of suitable skink habitat as defined in the US Fish and Wildlife Service's (USFWS) Florida Species Conservation and Consultation Guide for the Sand Skink and Blue-tailed (Bluetail) Mole Skink ([http://www.fws.gov/verobeach/ReptilesPDFs/20120206\\_Skink%20CCG\\_Final.pdf](http://www.fws.gov/verobeach/ReptilesPDFs/20120206_Skink%20CCG_Final.pdf)). A two-tiered approach is used to determine the presence or absence of Sand Skinks and Bluetail Mole Skinks: pedestrian surveys and coverboard surveys. The Design-Build Firm shall note areas with documented skink activities (either live individuals or S-shaped/sinusoidal tracks) and report their findings to the District Environmental Management Office. The Department will review the Design-Build Firm's findings relative to the Design-Build Firm's proposed improvements. If skinks or skink activity areas are noted, the Design-Build Firm shall avoid these areas, unless no other practicable alternatives exist. If the Design-Build Firm's proposed improvements will result in avoidable impacts to occupied skink habitat, the Department will coordinate as expeditiously as practicable with the USFWS and other third-party entities as necessary. The Department will not be liable for any time delays resulting from coordination required with USFWS and other third-party entities, and the Design-Build Firm will be required to pay any fees arising from unavoidable skink habitat mitigation.

Unless specifically identified otherwise, the design and construction of any alternate design approach identified within this RFP is not a requirement of this RFP. The Design-Build Firm is not responsible for any permitting or commenting agency coordination or other impacts to the permit processes that would be associated with any alternate design approach, unless the Design-Build Firm chooses to include the alternate design approach in its Proposal.

**O. Signing and Pavement Marking Plans:** *(Not applicable to this Project)*

**P. Lighting Plans:** *(Not applicable to this Project)*

**Q. ITS Plans:**

**1. General:**

The Design-Build Firm shall prepare design plans and provide necessary documentation for the procurement and installation of the ITS devices as well as overall system construction and integration. The ITS Plans may be prepared on aerials. The construction plan sheets shall be in accordance with Department requirements and include, but not be limited to:

- Project Layout / Overview sheets outlying the locations of field elements
- Detail sheets on:
  - DMS structure, DMS attachment, DMS display/layout
  - CCTV camera structure, CCTV camera attachment, CCTV camera operation/layout
  - RWIS attachment, RWIS operation/layout
  - Beacon sign installation, Beacon sign operation/layout
  - Power service distribution
  - Wiring and connection details

- Conduit, pull box, and vault installation
- Communication hub and field cabinets
- System-level block diagrams
- Device-level block diagrams
- Field hub/router cabinet configuration details
- Fiber optic splicing diagrams
- System configuration/Wiring diagram/Equipment interface for field equipment at individual locations and communications hubs
- Maintenance of Communications (MOC) Plan

The Design-Build Firm is responsible for ensuring project compliance with the Regional ITS Architecture and Rule 940 as applicable. This includes, but is not limited to, the completion of the RTVM.

The Design-Build Firm shall detail existing ITS equipment and report which devices will be removed, replaced, or impacted by Project work.

## 2. Design and Engineering Services:

The Design-Build Firm shall be responsible for all ITS design and engineering services relating to the Project. The Design-Build Firm shall design the I-4 Fog/Low Visibility Detection System to be fully integrated into the existing Tampa Bay SunGuide® Program. The Department has developed one integrated and readily scalable system configuration for future Districtwide ITS deployments. The I-4 Fog/Low Visibility Detection System shall be designed to operate from the Tampa Bay SunGuide® RTMC. All ITS components shall be new unless otherwise identified for incorporation into the I-4 Fog/Low Visibility Detection System. The Design-Build Firm shall comply with the Department's System Engineering Management Plan (SEMP)/Intelligent Transportation System Architecture (ITSA) requirements and RTVM documentation.

The Design-Build Firm shall coordinate with the Department's maintenance contractor(s) to determine the location of existing ITS devices, lighting, underground conduits, cables, and infrastructure on-site.

The Design-Build Firm shall design the ITS field elements to meet FDOT and applicable industry standards. In addition, the Design-Build Firm shall complete and submit the checklists in the District Seven ITS Design Guidelines Checklist included in this RFP package, or the latest version which can be obtained by contacting the District Seven Project Manager/ITS Operations Manager. The Design-Build Firm shall submit the applicable documents and checklists with each design submittal.

The engineering scale for the plan sheets shall be 1 inch = 100 feet. Blowups or insets shall be provided at each ITS field element and electrical power service point. Inset scale shall be 1 inch = 40 feet or other scale as needed to clearly depict the details of the installation, as accepted by the Department. The Design-Build Firm shall ensure that the design plans include station numbering on each plan sheet.

The Design-Build Firm shall design the location of ITS field elements for ease of access by maintenance personnel and vehicles without lane closures. The Design-Build Firm shall minimize conduit crossings of I-4 to minimize conflicts with future construction projects along I-4. All ITS device locations shall be clear

of vegetation.

During the design phase, the Design-Build Firm shall submit documents and plans for review in accordance with the RFP. Following, for information only, is a listing of the required submittals. It is the responsibility of the Design-Build Firm to comply with all the submittal requirements included within or referenced within the Contract documents, whether listed below or not.

1. Updated RTVM
2. FDOT Standard Specifications, Section 603-5 documentation
3. Physical network diagram
4. Layer 2 (device) and Layer 3 (backbone) Ethernet network diagrams
5. Document requesting IP addressing scheme
6. Cabinet configuration sheets
7. Completed design checklists
8. Electrical design calculations which shall include:
  - Voltage drop calculation spreadsheet showing voltage drop and current for each link, and transformer voltages
  - Electrical riser diagram
  - Electrical one line diagram
  - Conduit
  - Grounding details
9. Final Plans for electrical and fiber optic conduits (if proposed to expedite construction in advance of the entire ITS package, the conduit plans shall include approval of the electrical design document)
10. Plan for Occupational Safety and Health Administration (OSHA) compliance when working around power lines
11. Soil survey results and geotechnical analysis
12. Structural design and plans
13. Plans and specifications for the Project
14. FCC permits and licenses
15. Wetland encroachment permits
16. Right-of-way easements
17. Evidence of utility coordination, including locating existing ITS FOC and electrical conduit

The design of the new system shall integrate with all the existing devices. The design shall include the necessary infrastructure and components to ensure proper connection of the new ITS components. This shall include, but not be limited to, all proposed ITS components of this Project, as well as existing sub-

systems that remain or are re-deployed as part of the final Project.

At a minimum, the ITS work in this Project consists of the following subsystems and elements of work:

- **Reduced Visibility Detection Subsystem:** The Design-Build Firm shall install RWIS visibility sensors at 11 locations along the corridor. The RWISs shall be connected to the RTMC via the FOC network. The Design-Build Firm shall install one complete RWIS as defined by the Department's Developmental Specification, Number 688. This installation shall also include a new concrete pole for RWIS installation and the equipment shall be installed per manufacturer's recommendations. The remaining 10 RWISs shall include visibility sensors only. The 10 RWISs shall be collocated with the other ITS devices on existing poles at their sites. Table 2 lists the conceptual RWIS locations and sensor types. It is the Design-Build Firm's responsibility to provide the number of RWIS devices required for complete corridor coverage.

**Table 2: RWIS Installation Locations and Sensor Types**

RWIS Location MM	RWIS Sensor(s)
41.2	Visibility
42.2	Visibility
44.1	Visibility
46.4	Visibility
48.1	Visibility
48.9	Visibility, Barometric, Wind, Precipitation
51.4	Visibility
53.2	Visibility
55.7	Visibility
56.8	Visibility
57.7	Visibility

The RWIS software shall be compatible with the SunGuide® software.

It is the Design-Build Firm's responsibility to ensure the RWIS subsystem provides complete overlapping coverage of the corridor. It is the Design-Build Firm's responsibility to ensure that all features, functions, and performance requirements are met.

The RWIS Remote Processing Unit (RPU) shall be capable of transmitting all collected data to the RTMC using Ethernet communications over single-mode FOC.

All RWISs shall be on the Department's Innovative Product List (IPL) or meet the requirements of FDOT Developmental Specification Section 688.

The Design-Build Firm is to install the 10 visibility sensor only RWISs and all ancillary components

using existing ITS installations and infrastructure. These RWISs shall be installed on existing steel and concrete CCTV camera and MVDS poles, a structural analysis by the Design-Build Firm permitting, per manufacturer's requirements. It appears that the existing poles are able to support RWIS devices. However, in the event existing structures are not suitable, new concrete poles are to be installed for the RWIS sensors at no additional cost to the Department. The Design-Build Firm shall determine the pole heights for each RWIS location. The Design-Build Firm shall design the RWIS controller and ancillary equipment to be installed in existing field cabinets. It appears that the existing cabinets can accommodate the additional RWIS equipment. However, if existing field cabinets cannot accommodate the RWIS controllers and ancillary equipment, new field cabinets shall be installed on new concrete poles at no additional cost to the Department. The RWIS sensors that are installed on CCTV camera poles that have lowering devices must be installed on a side of the pole that will not interfere with the operation of the lowering device.

- **MVDSs:** The existing MVDSs will be retained for use as part of the I-4 Fog/Low Visibility Detection System.
- **CCTV Camera Subsystem:** The project corridor currently has 12 existing CCTV camera installations. The Design-Build Firm shall replace these 12 CCTV cameras with 12 new Thermal/IR CCTV camera assemblies using the existing CCTV camera poles and support ancillary infrastructure. The CCTV camera assembly includes the dome CCTV camera, all mounting hardware, cabling, and power supplies. The new cameras will use the same conduit to access the ITS cabinets as the existing camera systems, although new cabling will be required. If an existing encoder is removed, the Design-Build Firm shall deliver this equipment to District Seven at a location specified by the District. There are seven CCTV camera installations where the CCTV cameras are mounted on 55- to 60-foot steel poles with camera lowering devices. There are five CCTV camera installations where the CCTV cameras are mounted on 40- to 45-foot square concrete poles without camera lowering devices. At locations where CCTV camera lowering devices exist, the Design-Build Firm shall replace the camera lowering system CCTV camera connection boxes and all ancillary hardware required. Table 3 indicates the MM location and CCTV camera installation type.

**Table 3: CCTV Camera Pole Installation Types**

CCTV Camera Location MM	Camera Pole Type/Height	Camera Lowering Device
41.3	Steel 55'-60'	Yes
42.2	Steel 55'-60'	Yes

CCTV Camera Location MM	Camera Pole Type/Height	Camera Lowering Device
44.1	Steel 55'-60'	Yes
46.4	Steel 55'-60'	Yes
48.1	Steel 55'-60'	Yes
48.9	Steel 55'-60'	Yes
51.4	Steel 55'-60'	Yes
53.2	Concrete 40'-45'	No
54.3	Concrete 40'-45'	No
56.3	Concrete 40'-45'	No
57.1	Concrete 40'-45'	No
57.3	Concrete 40'-45'	No

### General

These technical specifications describe the minimum physical and functional properties of a dome-style PTZ thermal detection system. The entire dome-style PTZ thermal detection system shall consist of:

- Thermal Sensor Unit
- Thermal Sensor Lens
- Visible Light (IR) Camera
- Dome-Style Pan/Tilt Housing

### Thermal Sensor Unit

The Thermal Sensor Unit shall not depend on any visible or invisible (infrared) illumination or image intensifier to “see”, i.e., produce images. The Thermal Sensor Unit shall be totally passive and not produce any energy or emit light in any bandwidth. The Thermal Sensor Unit shall allow the user to clearly identify images in the total absence of light. The Thermal Sensor Unit shall allow the user to see through rain, snow, smoke, and fog to view the thermal patterns and contrast in the scene.

The Thermal Sensor Unit shall provide thermal optics that automatically adjust to background thermal changes and do not require re-adjustment and/or thermal refocusing. The Thermal Sensor Unit shall not be susceptible to “image blooming” caused by bright lights.

The Thermal Sensor Unit shall come equipped with both a 2x and 4x Electronic Zoom. The resolution shall be halved for each instance of electronic zoom (i.e., the 640x480 detector shall have a resolution of 320x240 while utilizing the 2x electronic zoom, and a resolution of 160x120 while utilizing the 4x electronic zoom.)

The Thermal Sensor Unit image sensor shall provide a Noise Equivalent Temperature Difference (NETD) of < 75 millikelvin (mK), <50mK f/1.0 or lower.

The Thermal Sensor Unit shall include Auto Digital Detail Enhancement (Auto DDE), which is an advanced non-linear image processing algorithm. The Auto DDE function shall be fully automatic and require no input or adjustment from the user. The Auto DDE shall enhance the image detail to match the total dynamic range of the original image, allowing details to be visible to the user even in scenes with low or high thermal contrast. Auto DDE will increase the probability of detection of low contrast images. These settings shall be optimized for performance with Traffic Thermal Detection.

The Thermal Sensor Unit shall utilize Non-Uniformity Correction (NUC), which is a set of compensation factors for each pixel. NUC shall enable the following features and benefits:

- Eliminate the need for Focal Plane Array (FPA) temperature stabilization.
- Allow for near instantaneous sensor turn-on.
- Provide reduced system complexity and power consumption.
- Allow for a wider operating temperature range.

The Thermal Sensor Unit shall include Automatic Gain Control (AGC) circuitry to compensate for scene variations, improve image quality by avoiding saturation and distortion, and balance signal levels prior to display to maximize image quality.

The Thermal Sensor Unit shall feature both White-Hot and Black-Hot operating modes. In the White-Hot (default) mode, warmer objects will be displayed in white or lighter shades than cooler or background areas. In the Black-Hot mode, warmer images will be displayed as black or dark gray as compared to cooler or background objects.

The Thermal Sensor Unit shall provide standard National Television System Committee (NTSC) or Phase Alternating Line (PAL) analog composite thermal output (factory configured) to allow it to function as a direct replacement for a daylight sensor and to connect directly to industry standard thermal detection software cards and recording devices. The analog thermal signal shall be available via both a Bayonet Neill–Concelman (BNC) thermal output connector and a connector free terminal block. The thermal outputs shall be surge protected.

The Thermal Sensor Unit shall include a 10-year warranty on the thermal detector.

### **Thermal Sensor Description**

The Thermal Sensor Unit shall meet the following minimum requirements:

Sensor Type	Long-life VOx Uncooled Microbolometer w/10-year warranty
Spectral Response	7.5 to 13.5 $\mu$ m
Sensitivity (Thermal Sensor sensor)	< 75mk, <50mK f/1.0
Zoom	2x and 4x Electronic Zoom
Pixel Pitch	Between 17 and 25 Microns

Focus Range	Athermalized, Focus-Free
Serial Control Interface	RS-232, RS-422, Pelco D, or Bosch
Video Outputs	Both Composite Analog and IP
Composite Analog Video	NTSC or PAL
Streaming Video Compression	Two Independent Channels of streaming MPEG-4, H.264, or M-JPEG
Streaming Resolutions	D1, 4CIF, VGA, SIF, QVGA
User Interface	Via Windows-based application program (Windows-based GUI)
Supported Protocols	IPv4, HTTP, Bonjour, UPnP, DNS, NTP, RTSP, RTCP, RTP, TCP, UDP, ICMP, IGMP, DHCP, ARP, SCP
ONVIF Conformance	ONVIF 1.02
NTCIP Compliance?	Yes
Input Voltage	24 VAC/24 VDC
Power Consumption	At 24 VAC: 85 VA; At 24 VDC: 75 W

### **Visible Light Camera**

The Visible Light Camera shall be contained in the same housing as the Thermal Sensor Unit.

The Visible Light Camera shall have a variable focal length ranging from 3.4mm to 122.4mm and a horizontal field of view ranging in size from 57.8° to 1.7°.

The Visible Light Camera shall have a minimum effective resolution of 380,000 pixels.

The Visible Light Camera shall have no less than a 36x optical zoom capability.

The Visible Light Camera shall have no less than a 12x electronic zoom capability.

### **Dome-Style Pan/Tilt Housing**

The Dome-Style Pan/Tilt Housing shall contain both the Thermal Sensor Unit and the Visible Light Camera.

The Dome-Style Pan/Tilt Housing shall allow for no less than a 360° pan angle. The pan shall be continuous, i.e., to get from a position of 360° to a position of 1°, the user shall be able to pan the unit in either direction.

The Dome-Style Pan/Tilt Housing shall allow for no less than a 225° tilt angle range with no less than a 180° negative tilt range.

The Dome-Style Pan/Tilt Housing shall have a minimum pan and tilt speed of 0.5° to 60° per second.

The Dome-Style Pan/Tilt Housing shall have an Ingress Protection Rating of IP-66 or higher.

The Dome-Style Pan/Tilt Housing shall allow for no less than 128 programmable preset patterns, as well as radar slew to cue and slew to alarm functionality.

The Thermal CCTV Camera Assembly shall be SunGuide® compliant.

- **DMS Subsystem:** If possible, the Design-Build Firm shall replace the existing amber DMSs on existing half-span trusses with new full color DMSs. The half-span trusses were analyzed with new color DMSs and the installations were determined to be structurally sound. It is the responsibility of the Design-Build Firm to do their own analysis and determine if the existing structure can support the new color DMSs. If the Design-Build Firm finds that any of the structures is not capable of holding the proposed full color DMS, the existing amber DMS shall be retained on the existing structure. The two cantilever structures were analyzed and based on the structural calculations, these structures cannot support the replacement color DMSs. The amber DMSs will remain at these two locations. The new DMSs shall be walk-in, 20-mm full color, capable of 18-inch character heights with 3 lines of text with 21 characters per line at a font size of 23x15. The DMSs shall meet the FDOT Standard Specifications Section 700-4 and shall follow FDOT PPM, Volume 1, Chapter 7, Subsection 7.5.4.1.
- **Flashing Beacon Sign Subsystem:** The Design-Build Firm shall install 58 Roadside Flashing Beacon Sign assemblies. Flashing beacon sign assemblies shall be installed at locations along the corridor to inform the travelling public of possible limited visibility conditions. The Design-Build Firm shall install flashing beacon sign assemblies at all entrance ramps and at additional locations along the corridor (see Concept Plans). At every RWIS installation, there shall be four flashing beacon signs installed (two eastbound, two westbound), one in the median and one on the shoulder in each direction. These flashing beacons shall be connected to the nearest ITS field cabinet. Installations shall be as close as possible to the existing ITS cabinet to minimize conduit/cablings runs. The Flashing Beacon Sign Subsystem shall meet the requirements of FDOT Design Standards, Index Number 11862 for a conventional powered beacon mounted on a frangible pedestal pole base. The sign shall be a yellow warning sign with the message to be determined by the Design-Build Firm and approved by the Department.

A Flashing Beacon Web Relay Controller shall be installed to command and control the flashing beacon operations. Department and SwRI representatives have tested a Web Relay Control Module. The tested and certified model is produced by “Control By Web” and the model is “Web Relay-Quad”. This Web Relay is a web-based remote control contact closure unit that supplies four three-Amp relays to power the flashing beacons. The Web Relay Controllers shall be installed in existing ITS field cabinets. The Web Relay Controller shall be connected to the existing MFES.

- **Communications Subsystem:** The existing FOC network located throughout the corridor will be used to connect the new and the existing devices to the District Seven RTMC in Tampa.

### **IP Addressing Scheme**

The Design-Build Firm shall utilize the FDOT Standard IP Addressing Scheme to create a Project-specific list for all new ITS field elements that are installed as part of the Project.

The Department will provide the Design-Build Firm with as many IP addresses and multicast IP addresses as required for the CCTV camera video streams, RWIS, and Flashing Beacon Sign components.

The Design-Build Firm shall submit an Excel spreadsheet (Cabinet Configuration sheet) listing all IP addresses utilized in the Project in a format easily understood, including, but not limited to, the following information:

1. Sheet Number (from Plans)
2. Mile Marker
3. GPS Coordinates
4. Device Type (Model and Serial Numbers)
5. IP Address

The Design-Build Firm shall not use any IP addressing scheme or IP addresses other than those provided by the Department. The Department shall review and approve the Design-Build Firm's IP addressing scheme submittal prior to the Design-Build Firm's implementation of the scheme.

### **MFES**

A fully operational ITS network exists and is operational along the Project corridor limits. The existing MFES installed in each cabinet has unused Ethernet ports. However, if additional Ethernet ports are required, the Design-Build Firm shall provide additional port capacity by providing MFESs to provide the necessary ports for the operation of the system. The Design-Build Firm shall supply a MFES with enough capacity to support the Project Ethernet port requirements plus an additional port for maintenance purposes. The MFES shall meet the requirements of FDOT Standard Specifications, Section 684 Network Devices. If an additional MFES is provided, it shall be at no additional cost to the Department.

- **Power Subsystem:** The Project corridor contains existing power sources and power services that support existing ITS devices and components. The Design-Build Firm shall utilize existing power at all device locations that will be proposed as part of this Project. At the proposed four DMS replacement locations, per FDOT specifications and requirements, UPS systems designed to support DMS sign and controller operations for two hours will be required. A power analysis has been completed and it was determined that the existing power service can accommodate the system's projected electrical loads at 15 of the device locations. This analysis indicated that six sites require upgrading the transformers and/or re-designing the cable from the power source to the ITS field cabinet. The Concept Plans indicate the locations where power upgrades are necessary. The Design-Build Firm shall perform an analysis to determine whether the existing power source and power service can accommodate the electrical loads. If any existing electrical requirements cannot be

supported by existing electrical source or electrical service, the following requirements shall be adhered to, and all upgrade work shall be at no additional cost to the Department.

The Design-Build Firm shall contact and coordinate with the commercial electrical companies along the Project corridor. The Design-Build Firm shall work with the electrical companies to designate locations of electrical sources to provide new and adjusted electrical service as required for the Project. The Design-Build Firm shall pay all necessary fees and expenses required by the commercial electrical companies to establish new electrical power and for adjustment of existing service. The Design-Build Firm shall acquire billing addresses for each new power service location along with the responsible party for future bills. Along with other as-built documentation, the Design-Build Firm shall provide electrical calculations and other details of the implemented power service to the Department, including the GPS location of each power source.

For the purposes of load calculations, the Design-Build Firm can assume that the maintenance receptacles in only one cabinet on a power circuit (link) will be in use at one time. The system shall be capable of supplying no less than nine Amperes (amps) total to the maintenance receptacles while not exceeding the supply voltage tolerance of a five percent drop from the nominal 120 volts alternating current (VAC) within the cabinet or any other point in the power circuit (link). For voltage drop calculations, the worst case assumption of one nine-amp load at the furthest point on each link should be used, and shall be clearly identified within the voltage drop calculations documentation. Power cables shall be marked with one tag indicating direction or exit from underground facilities (i.e., vaults, primary junction boxes, service holes, manholes, secondary junction boxes, transformers). This tag shall indicate the general direction of the cable(s) to the next facility where the cable is located. The Department must approve the tags used before the procurement and installation. All tags shall be labeled with the next point of connection (i.e., transformer 1 to transformer 2). All equipment shall be numbered prior to tagging the cable. The Department will inspect the tagging prior to energizing.

The power subsystem shall contain readily accessible, manually resettable or replaceable circuit protection devices (such as circuit breakers or fuses) for equipment and power source protection. Power equipment shall be installed in areas to avoid wet locations and easy access by vehicles and maintenance personnel. All connections and equipment shall be outdoor-rated and protected from moisture and water intrusion. Exposed wiring is not permitted. Aluminum wound equipment (transformers) is not permitted.

Coordination of protection devices is required to minimize interruption of electrical service to other areas of the power system. The system shall be designed so that the protective device closest to the fault operates first.

All ancillary components shall be delivered along with the needed cables and connectors for power and communication. All installations and wiring shall meet the requirements of the NEC, and NESC. Grounding shall be in accordance with the requirements of NEC Article 250 and FDOT Standard Specifications, Sections 620 and 676.

Any additional power subsystem work shall be at no additional cost to the Department.

- Interface with the existing FMS: The Design-Build Firm shall connect the RWISs, CCTV cameras, and flashing beacon web relays to the existing MFESs located in the ITS cabinets. The SunGuide® instance at the District Seven RTMC will be configured to poll and command the I-4 Fog/Low Visibility Detection System components by District Seven with information provided by the Design-Build Firm.
- Cabinets: New ITS field cabinets shall meet the requirements of FDOT Standard Specifications, Section 676 Traffic Cabinets.

The Design-Build Firm shall ensure that all cable terminations and connecting terminal blocks are contained in a weather-proof aluminum enclosure that shall meet the applicable requirements for a NEMA 3R rated cabinet.

- Grounding, Lightning, and Surge Protection: At device locations impacted as part of this Project, all Project systems shall be protected from damage caused by lightning strikes, transient voltage surges, and induced current. The Design-Build Firm shall design, install, and test all grounding, lightning protection, and Surge Protection Device (SPD) subsystems in accordance with Underwriters Lab (UL) 96A specifications.

For all existing ITS devices that remain, no grounding upgrades will be required. However, for any location where a new device is being installed, the existing grounding must be brought up to compliance with current District Seven standards.

The Design-Build Firm shall furnish and install surge protectors for all cables and conductors (power, video, and data). All project subsystems, devices, and ancillary components with electrical interconnects shall be protected from voltage surges caused by lightning, transient voltage surges, and induced current at the time of installation of each device, as specified in Sections 620 and 676.

The Design-Build Firm shall provide a grounding system that meets the grounding requirements of the NEC (latest edition), and FDOT Standard Specifications Sections 620 and 676.

The Design-Build Firm shall ensure that the required lightning protection equipment for each device pole is securely attached on the pole at an elevation higher than the highest attached ITS device and/or component described herein (e.g., CCTV camera, RWIS, or DMS).

The Design-Build Firm shall provide all ITS field installation sites with both primary and secondary surge protection on the AC power. The Design-Build Firm shall connect the primary surge protection at the service entrance or main disconnect. The Design-Build Firm shall connect the secondary surge protection on the power distribution to the equipment.

All grounding and equipment grounding down conductors shall be encased within the pole or within rigid galvanized metal conduit both above and below ground per the current FDOT Design Standards. Air terminals shall be blunt-tipped and shall not be attached to structures with stainless steel bandings.

- Environmental Requirements: All subsystem ITS field elements and ancillary components, while

housed in their associated environmental enclosures, shall, at a minimum, comply with all applicable NEMA TS2 (latest edition) environmental specifications and Project requirements.

All enclosures, structures, poles, and mounts shall be designed to withstand sustained wind loads and wind gust factors in accordance with all appropriate FDOT standards.

The Design-Build Firm shall use manufacturer-recommended storage, handling, and installation methods to ensure that all new ITS field elements and ancillary components have complete protection from moisture and airborne contaminants, blowing rain at storm rates, wind, blowing sand, blowing dust, temperature, humidity, roadside pollutants, vandalism, and theft of equipment. Fatigue failures, internal moisture, corrosion, internal dust, and fungal growths noted during Department inspections shall be evidence that ITS field elements have not been properly protected or maintained and will be cause for the Department to reject any ITS field elements and ancillary components until they are replaced or satisfactorily maintained or repaired. The Design-Build Firm shall provide appropriate enclosures to prevent pests from attacking and damaging the subsystem ITS field elements and ancillary components.

- The Design-Build Firm shall prepare detailed Technical Special Provisions as needed and/or identified during the Project design phase, that will expand on the minimum requirements included in this RFP.

### 3. **Construction and Integration Services:**

The Design-Build Firm shall furnish, install, integrate, configure, test, and document all ITS infrastructure components, ITS field elements, and network equipment necessary to make the Project operational and able to be fully integrated into the RTMC. The Design-Build Firm shall maintain operation of the existing system 24 hours a day/7 days a week. The only exception allowed is the device on which the contractor is working.

The Design-Build Firm shall install the ITS field elements, subsystems, and ancillary components that are detailed in the Department-approved final design plans and specifications including, but not limited to, all required structures and foundations. Any deviations from the final design plans shall be submitted for review and approval by the Department.

The Design-Build Firm shall fully implement National Transportation Communications for Intelligent Transportation System Protocol (NTCIP)-compliant subsystems for the Project. The Design-Build Firm shall utilize the latest FDOT Management Information Base (MIB) definitions and objects for this Project.

The Design-Build Firm shall provide at least five working days advance notice when Department representatives are needed for meetings and field reviews. For other construction meetings, the Design-Build Firm shall provide at least two weeks notice to the applicable Department representatives, unless the CEI Senior Project Engineer approves a shorter notification period for specific topics.

All ITS devices that are replaced (including, but not limited to, CCTV cameras and DMSs) will be delivered to a location within District Seven as determined by the District.

When electrical or communication conduits are proposed for bridge attachment (under the bridge unless specifically approved by the Department), the Design-Build Firm shall work with the District One Structural Engineer to obtain approval of bridge attachments.

The Design-Build Firm shall coordinate with any landscaping projects to avoid conflicts with landscape plans within the Department right-of-way. The Design-Build Firm shall ensure that the design and construction of this ITS project is coordinated with existing and proposed landscape projects.

The Design-Build Firm shall furnish all tools, equipment, materials, supplies, and manufactured hardware, and shall perform all operations and equipment integration necessary to provide a complete, fully operational communication network as specified in the Project requirements. The Design-Build Firm shall install all items in accordance with the manufacturer's specifications and instructions or as directed by the Department.

The Design-Build Firm will provide the necessary equipment modifications to the existing CCTV camera lowering devices (where applicable) to facilitate the installation of the Thermal/IR CCTV camera system. The Design-Build Firm shall supply the necessary mounting hardware and equipment to facilitate mounting the Thermal/IR CCTV camera at the site of the existing CCTV camera mounting hardware.

The Design-Build Firm shall label each device location as follows: device I-4 MM.M BB where the device can be a CCTV camera, RWIS, Flashing Beacon Sign, or DMS; MM.M is the mile marker rounded to tenth of a mile (example: 45.4); BB is the travel direction (example NB). For a single location with multiple devices, list all devices.

During the Construction phase, the Design-Build Firm shall submit the following for Department review and approval. The following, for information only, is a listing of the required submittals. It is the responsibility of the Design-Build Firm to comply with all the submittal requirements included within or referenced within the Contract documents, whether listed below or not.

Prior to installation:

1. Updated RTVM
2. Testing schedule
3. Hub Access Plan
4. All documentation required by Standard Specifications, Section 603-5

After installation:

1. Witnessed grounding full fall-of-potential test reports, including signature of the witness
2. Test plans, including testing equipment, setup, manpower, and conditions needed for testing
3. Test procedures
4. Test data format

5. Witnessed optical time-domain reflectometer (OTDR) test reports, if applicable

Prior to integration:

1. Integration and network configuration plans
  2. Integration and network configuration schedule
  3. If different from resumes included in the technical proposal, names and resumes of persons who will perform integration and tests, and document test results
  4. Summary of the experience and qualifications of the instructional personnel
- FDOT SunGuide® Software Integration – All available information can be found at the SunGuide® Project Website:
    - [http://www.dot.state.fl.us/trafficoperations/ITS/Projects\\_Arch/SunGuide.shtm](http://www.dot.state.fl.us/trafficoperations/ITS/Projects_Arch/SunGuide.shtm)

#### **SunGuide® Software Compatibility & Integration**

The field devices are to be operated from the District Seven RTMC using the SunGuide® software system. The Design-Build Firm shall integrate the individual ITS field elements (i.e., CCTV cameras, RWIS controllers, DMS controllers, Flashing Beacon Sign controllers, serial and Ethernet communication devices) with the respective vendor-provided subsystem software such that each of the subsystems shall be operated as a stand-alone system. This configuration will form the basis for the Stand-alone Tests.

Once the Subsystem Tests are complete and the results approved by the Department, the Design-Build Firm shall provide all integration and configuration data and settings so the Department can integrate the ITS field elements into the existing SunGuide® central software. As soon as possible after completion of the Subsystem Tests, the Design-Build Firm shall provide to the Department all necessary information and data to facilitate the District's RTMC configuration and integration activities. The Department will complete the SunGuide® integration and configuration within 14 calendar days of receipt of the configuration and integration data and information from the Design-Build Firm. After SunGuide® integration is completed, the Design-Build Firm shall conduct the Operational Test.

The integration of the various subsystems within the SunGuide® software shall be the responsibility of the Department. The Design-Build Firm shall coordinate with the RTMC and provide the following services:

1. Conduct a site survey to prepare the creation of the system database, configuration files, system graphics, and other preparatory work for the integration of the SunGuide® software
2. Troubleshoot any Design-Build Firm-installed field hardware issues that affect the integration work
3. Furnish and install the field hardware and software required to operate the SunGuide® software
4. Provide ITS field device information, such as equipment configuration diagrams, IP addresses, protocols, and documentation (e.g., users' manual, troubleshooting guide, etc.)

5. Configure the ITS field devices for integration with the SunGuide® software, including link, lane, roadway, and device configurations
6. Provide post-installation services after testing the SunGuide® software. The services shall include providing documentation to allow the District to perform SunGuide® integration tasks, including but not limited to, populating the tables and creating map links
7. Meet with the Department to validate all required documents

All the licenses for the new ITS devices shall be transferred to the Department at/or before Final Acceptance. The installation media for the CCTV cameras, DMSs, and RWISs shall be provided and shall become the property of the Department after installation.

The Design-Build Firm shall coordinate with the Department to collect and provide the required information about each device that is to be utilized by the SunGuide® software. Examples of information for the system components are identified in the Tables below. The Design-Build Firm shall coordinate with the Department for the exact information to be provided for these devices.

**Table 4: CCTV Camera Data Configuration Documentation Requirements**

Data	Description
Camera Name	The data identifies the unique name of each camera.
Center ID	The data identifies the unique name of the center where each camera resides.
Protocol	The data specifies the protocol (values: SNMP, SNMP (PMPP)) for each camera.
Poll Process	The data provides the name of the driver for each camera.
Manufacturer	The data identifies the manufacturer of each camera.
Location Description	The data describes where each camera resides.
Roadway	The data identifies the roadway where each camera resides.
Direction	The data identifies the direction of the roadway where each camera is installed.
Latitude	The data identifies the latitude where each camera resides.
Longitude	The data identifies the longitude where each camera resides.
Op Status	The data identifies the operational status (values: Active, Error, Failed, OutOfService) of each camera.
Address Type1	The data identifies the address type (values: pmppAddress, commAddress) for each camera. (If pmppAddress, then the camera uses SNMP (PMPP); if commAddress, then the camera uses SNMP.)
Address Type2	The data specifies the address type (value: portServerAddress) of Address Type 2 if applicable.

**Table 4: CCTV Camera Data Configuration Documentation Requirements (cont.)**

Data	Description
Address	The data identifies the device address of each camera.
Port Server IP	The data identifies the IP address for the port server where each camera resides.
Port Server Port Number	The data identifies the port number for the port server where each camera resides.
Community Name	The data identifies the community name for each camera.
Attach to Video Device	If selected, additional IP video parameters must be supplied.

**Table 5: IP Video Data Documentation Requirements**

Data	Description
Video Device IP Address	The data identifies the IP address for the encoder.
Blackout	The data determines if the camera is restricted.
Video Device Type	The data identifies the video device type (IP video device) for the encoder.
IP Streaming Driver ID	The data identifies the unique IP video switch driver name.
Card Number	The data identifies the card number for the encoder.
Manufacturer	The data identifies the manufacturer values of the encoder.
Model	The data identifies the model of the encoder.
Streaming Type	The data identifies the streaming type (values: elementary, transport, program) for the encoder.
Secondary Interface	The data identifies the secondary interface for the encoder that enables users to maximize the number of inputs for the encoder.
Snapshot Requested	The data determines if snapshots are generated for the encoder.

**Table 6: DMS Data Configuration Documentation Requirements**

Data	Description
Sign Name	The data identifies the unique name of each DMS.
Center ID	The data identifies the unique name of the center where each DMS resides.
Protocol	The data specifies the protocol (values: SNMP, SNMP (PMPP), SunGuide® (for Trailblazers) for each DMS.
Connection Type	The data specifies how each DMS is connected to the network (values: Direct, Modem, Long Distance Modem).
Poll Process	The data specifies the name of the driver for each DMS.

Data	Description
Packet Timeout	The data identifies the amount of time the driver will wait on a response from a DMS before timing out. The recommended time is 5 seconds.
Packet Retry Limit	The data identifies how many times a packet is attempted before it errors out. For most signs, the recommended number is 2; for signs prone to errors, this number can be increased.

**Table 6: DMS Data Configuration Documentation Requirements (cont.)**

Data	Description
Command Retry Limit	The data identifies how many times a command is attempted before it errors out. A command consists of multiple packets. The recommended number is 1.
Op Status	The data provides the operational status (values: Active, OutOfService) for each DMS.
Manufacturer	Values: Name of the sign manufacturer.
Number of Lines	The data identifies the number of displayable lines for each DMS.
Number of Columns	The data identifies the number of characters that can be displayed using a normal font.
Beacons	The data identifies whether the sign has beacons and, if so, specify the beacon address.
Beacon Address	The data identifies the address where the sign receives activate/deactivate beacon requests.
Day Brightness Level	The data identifies the numeric value for the brightness setting during the daytime.
Night Brightness Level	The data identifies the numeric value for the brightness setting during the night time.
Font	The size of the font currently displayed. Represented in horizontal pixels by vertical pixels. (Example: 5 pixels x 7 pixels)
Sign Type	Values: Fiber Optic, LED, Flip-Disk, Shutter
Location Description	This is a text field describing the location of each DMS.
Roadway	The data identifies the roadway where each DMS resides.
Direction	The data identifies the direction of the roadway where each DMS resides.
Latitude	The data identifies the latitude where each DMS resides.
Longitude	The data identifies the longitude where each DMS resides.
Address Type 1	The data identifies the address type (values: PMPP, SunGuide®) for each DMS. (If PMPP, then the DMS protocol should be SNMP (PMPP); if SunGuide® or manufacturer specific, then the DMS should use the same protocol name.)
Address Type 2	The data identifies the specific address type (values: Direct, Port Server, Dialup) of Address Type 2.

Address	The data identifies the device address for each DMS.
Community Name	The data identifies the community name for each DMS.

**Table 7: DMS with TCP/IP Data Configuration Documentation Requirements**

Data	Description
Port Server IP Address	The field identifies the IP address for the port server where each DMS resides.
Port Server Port Number	The field identifies the port number for the port server where each DMS resides.

**Table 8: RWIS TCP/IP Data Configuration Documentation Requirements**

Data	Description
RPU IP Address	The field identifies the IP address for the RPU where each RWIS resides.
RPU Port Number	The field identifies the port number for the RPU where each RWIS resides.

**Table 9: Flashing Beacon TCP/IP Data Configuration Documentation Requirements**

Data	Description
Beacon Controller IP Address	The field identifies the IP address for the port server where each flashing beacon resides.
RPU Port Number	The field identifies the port number for the web relay controller where each flashing beacon resides.

**Device Protocol Compliance**

For the devices being deployed, the Design-Build Firm shall ensure that the protocol used by the devices to be controlled by the SunGuide® software is compliant with the protocols listed online at:

- <http://www.sunguidesoftware.com/about-hub/supported-protocols>

The Design-Build Firm may propose alternate ITS equipment; however, the Design-Build Firm shall be responsible for developing the drivers for these devices for integration into the SunGuide® software. The drivers for any devices shall conform to the latest SunGuide® Interface Control Documents available at:

- <http://sunguidesoftware.com/document-library/development?sid=255:Interface-Control-Documents>

To ensure compatibility for integration with all SunGuide® software, the Design-Build Firm shall coordinate with the SunGuide® software developer in developing the device drivers. Any drivers developed by the Design-Build Firm for the Project shall become the property of the Department upon Final Acceptance.

The Design-Build Firm shall provide all data necessary to populate the SunGuide® database to the Department. The Department, or its designated representative, will enter the appropriate data into the SunGuide® database at the RTMC under the oversight of the Design-Build Firm. At no time shall the Design-Build Firm be granted SunGuide® administrative rights or access to the Department's RTMC SunGuide® system.

SunGuide® Version 6.1 allows for NTCIP polling of RWIS systems. In addition, SunGuide® can now receive alerts from RWIS controllers when a preset threshold is exceeded. SunGuide® can also be configured to automatically display DMS messages, turn on flashing beacon signs, and create events for operator management.

The Design-Build Firm shall configure the system so that:

1. When fog and/or smoke is detected by one of the RWISs, it will turn on the beacons nearest that RWIS.
2. It will send an alert to the District Seven RTMC so that operators can view the incident via CCTV cameras and determine if further action is necessary.

The Design-Build Firm shall provide all equipment, parts, and configuration data necessary to integrate the ITS and communications subsystems into the RTMC. The Design-Build Firm shall integrate Layer 2. The Design-Build Firm shall schedule and coordinate the Layer 3 integration with the District Seven RTMC SunGuide® Center.

The Design-Build Firm shall meet with the Department at least 30 calendar days prior to any network related or integration work being done on the Project at the District Seven RTMC SunGuide® Center. This Pre-Integration meeting is to discuss any issues, concerns, and the Design-Build Firm's plan to minimize the impact to the existing ITS. The purpose of this meeting is to verify the Design-Build Firm's ITS integration plans by reviewing site survey information, IP addressing schemes, troubleshooting issues, coordination, and other design issues. In addition, at these meetings the Design-Build Firm shall identify any concerns regarding the integration and provide detailed information on how such concerns will be addressed and/or minimized. The Design-Build Firm shall provide a detailed overview of the schedule for bringing ITS field elements onto the network so the Department can schedule their resources to configure the RTMC systems in cooperation with the Design-Build Firm's schedule. The Design-Build Firm shall provide all documentation required to support system integration meetings, including detailed functional narrative text, and system and subsystem drawings and schematics. Also included shall be the documentation to demonstrate all elements of the proposed design which includes, but is not limited to: technical, functional, and operational requirements; ITS/communications; equipment; termination/patch panels; performance criteria; and details relating to interfaces to other ITS subsystems.

Once network and integration work begin, the Design-Build Firm shall meet with the Department, or his designated representative, weekly or at other frequencies agreed upon in writing by the Department, to discuss and coordinate integration activities. The Design-Build Firm shall provide a minimum of a two-week look-ahead of integration activities at each integration meeting. The Design-Build Firm shall, on a monthly basis, provide written progress reports that describe the items of concern and the work performed on each task. All action items resulting from the System Integration Meetings shall be satisfactorily

addressed by the Design-Build Firm and reviewed and approved by the Department. The Design-Build Firm shall designate an integration/network schedule coordinator. The integration/network schedule coordinator shall be responsible for coordinating and scheduling all network and integration activities that involve the RTMC.

The Design-Build Firm shall provide an Integration Plan detailing the process for integrating the new devices into the existing SunGuide® software. The Integration Plan shall detail all equipment, software, and scheduling to occur during the integration portion of the project. The Design-Build Firm shall submit the preliminary Integration Plan 30 days prior to the Pre-Integration Meeting. The Plan shall be finalized after the Meeting and again submitted to the Department for review and approval.

The Design-Build Firm shall design, construct, and integrate the Project such that all subsystem field elements, ITS field elements, and ancillary components within the Project are integrated with the SunGuide® software and hardware at the RTMC. The Design-Build Firm shall ensure that all the ITS field elements installed are 100 percent compatible with all the RTMC and ITS field elements installed during previous ITS projects on I-4 within the Project limits.

The Design-Build Firm shall coordinate all integration activities with the Department prior to commencement of any integration activities. The RTMC is a secured facility and access to it shall be scheduled at least one week in advance, per the RTMC Access Plan, with the ITS Operations Manager. All integration within the RTMC shall be scheduled at times other than during the normal weekday peak traffic hours (7:00 am to 9:00 am, and 3:30 pm to 7:00 pm) or as approved by the Department. The Design-Build Firm shall schedule and perform all field integration activities and coordinate all RTMC integration activities with the ITS Operations Manager. Remote virtual private network (VPN) access shall not be provided to the Design-Build Firm to access the ITS network of the District. The District Seven ITS Operations Manager, or his designated representative, will perform the SunGuide® integration tasks with the guidance and coordination of the Design-Build Firm, as necessary. The Design-Build Firm shall coordinate with the Central Office and Southwest Research Institute (SwRI), as necessary, to facilitate the District Seven integration activities. The Design-Build Firm shall provide to the District Seven ITS Operations Manager all necessary information and data to facilitate subsystem configuration and integration activities.

The Design-Build Firm shall complete all forms with the necessary information to enter the newly installed ITS devices into the ITSFM database. The Design-Build Firm shall provide the completed forms to the Department at the start of the 30-day System Operations Test.

#### 4. **ITS Maintenance Services**

The Design-Build Firm shall assume the responsibility of maintenance and repair for all existing and newly installed ITS devices and infrastructure within the Project limits when any existing ITS device is taken out of service or altered, or at the beginning of construction, whichever occurs first (as shown in the Design-Build Firm's schedule). The Design-Build Firm shall develop a test plan to determine the operational condition of all existing devices/infrastructure within the Project limits. The Department and the Design-Build Firm shall conduct an operational test 30 days prior to Released for Construction plans according to

the Design-Build Firm's schedule. All equipment will be made operational before it becomes the Design-Build Firm's responsibility.

For any areas of the project corridor that are under construction during the time that the Design-Build Firm for the I-4 Fog/Low Visibility Detection System is responsible for ITS maintenance, the Design-Build Firm shall coordinate with the contractor for the other projects to ensure maintenance is performed on the impacted area.

The Design-Build Firm shall provide maintenance of the ITS to the same level as currently provided by the Department's Maintenance Contractor for the project area. This includes preventive maintenance, as well as required routine maintenance. Annual preventive maintenance is performed on the following schedule:

- CCTV cameras – 4 times a year
- DMSs – 4 times a year
- HAR – 4 times a year
- RWISs – 4 times a year
- Wireless equipment – 4 times a year
- Hub sites – 4 times a year
- Generators – 12 times a year
- Cabinets – 3 times a year
- Detectors – 1 time a year

The Design-Build Firm's ITS maintenance responsibility shall continue until the written notice of Final Acceptance.

The Design-Build Firm shall provide all locates in the Project corridor from the receipt of Notice to Proceed until Final Acceptance, per FDOT Standard Specification 7-11.

Prior to assumption of the maintenance responsibilities, the Design-Build Firm shall provide:

1. ITS Maintenance and Repair Plan with a time schedule for typical repairs.
2. Written documentation that all personnel involved in the maintenance/repair of the ITS have had previous experience.
3. Names and resumes for personnel who will maintain and repair ITS infrastructure and field elements.

**5. Testing and Acceptance:**

All equipment furnished by the Design-Build Firm shall be subject to monitoring and testing to determine conformance with all applicable requirements. The Design-Build Firm is responsible for the coordination and performance of material inspection and testing, field acceptance tests, and system acceptance tests.

The Design-Build Firm shall develop a test schedule and test plans, conduct tests, and provide test results that demonstrate compliance with the Project requirements. The Design-Build Firm shall submit test plans and an updated RTVM to the Department for review and approval at least 60 calendar days in advance of the scheduled testing date. If the Department rejects or requests modifications to a test plan, the Design-Build Firm shall update and submit a revised test plan to the Department for approval. The Design-Build Firm shall allow 15 working days for the Department's review of the revised test plan. No test shall be conducted until the Department has approved the test plan. Test plans shall be based on and include the following:

1. The updated RTVM
2. A step-by-step outline of the test procedures and sequence to be followed demonstrating compliance with the Project requirements
3. A test set-up/configuration diagram showing what is being tested
4. A description of expected operation, output, and test results
5. An estimate of the test duration and proposed test schedule
6. A data form to be used to record all data and quantitative results obtained during the tests
7. A description of any special equipment, setup, manpower, or conditions required for the test
8. The number of test cases shall reflect the complexity of each subsystem, ITS field element, or ancillary component, and the content of test cases shall cover all functionalities claimed by the respective manufacturer
9. Approval of the EOR

The Design-Build Firm shall conduct, at a minimum, the following tests on all equipment:

- Stand-Alone Tests
- Subsystem Tests
- Operational Tests
- Acceptance Tests for DMSs

The Design-Build Firm shall furnish and maintain all required test equipment along with their services. All test equipment utilized shall have up-to-date calibration certification in accordance with the manufacturer's recommendations. The test equipment shall be made ready for use by the Design-Build Firm and/or the CEI at the time it is needed.

The Design-Build Firm shall notify the Department of the time, date, and place of each test at least 21 calendar days prior to the date the test is planned.

The tests shall be conducted in the presence of the CEI or other Department representative and EOR, unless otherwise approved in writing by the Department. The Department reserves the right to waive the right to witness certain tests.

Neither witnessing of the tests by the Department nor the waiving of the right to do so shall relieve the Design-Build Firm of the responsibility to comply with the Project requirements.

All equipment testing will be scheduled, witnessed, and signed off by approved CEI representative, construction technician, and EOR.

The Design-Build Firm shall submit in writing all test results performed by the manufacturer and the Design-Build Firm within 14 calendar days of the documented respective test date for review and approval by the Department.

Failure of any subsystem, ITS field element, or ancillary component to pass any test shall be counted as failed and non-compliant, and shall be replaced or repaired as needed until it passes the failed test. Replacement, repair, and retest of the failed subsystem, ITS field element, or ancillary component shall be at no additional cost to the Department. The Design-Build Firm shall not be granted time extensions for replacement, repair, and retest, even if the manufacturer or other cause beyond the Design-Build Firm's control caused the failure.

All testing, test documents, test equipment, and associated work and materials shall be at no additional cost to the Department.

### **Stand-Alone Tests**

The Design-Build Firm shall perform Stand-Alone Tests to demonstrate that all subsystems, ITS field elements, and ancillary components meet the relevant sections of the FDOT Standard Specifications and the RFP. The Stand-Alone Tests shall be performed on each ITS field element and ancillary component prior to connection of the field element to the communication subsystem. All the test results shall be documented and submitted to the Department after CEI and EOR approval.

The Design-Build Firm's Stand-Alone Test Plans shall verify the following items, as a minimum:

1. Verify that physical construction has been completed as per the requirements detailed herein, within the plan set, and as per Project requirements
2. Verify quality and tightness of ground and surge protector connections and that surge suppression complies with Standard Specifications, Section 620-2
3. Verify power supply voltages and outputs
4. Verify grounding meets the requirements of Standard Specifications, Section 620-3, including performing the full fall-of-potential method for grounding tests. Full fall-of-potential tests shall include a minimum of 10 test points spaced evenly from the ITS field element to the farthest grounding electrode from the ITS field element
5. Verify ITS field elements are properly connected to the power source and grounding
6. Verify installation of specified cables and connections between the MFES and the ITS field element
7. Verify configuration of IP address and sub-network mask
8. Verify presence and quality of ITS field element data and/or image output

9. Verify interconnection of the ITS field element with the Access Network's assigned FOC and verify that there is a green transmission LED illuminated
10. Perform a "ping" to verify connection of ITS field element

If any ITS field element or ancillary component fails to pass its Stand-Alone Test more than twice, it shall be replaced by the Design-Build Firm with a new ITS field element or ancillary component of same make and model, and the entire Stand-Alone Test shall be repeated until proven successful.

The Stand-Alone Tests shall be performed on each and every new ITS field element and ancillary component, including, but not limited to:

1. CCTV cameras
2. Camera lowering devices
3. DMSs (if newly installed)
4. RWISs
5. Device controllers
6. Flashing beacon sign controllers
7. MFES (if newly installed)

The CCTV camera and the DMS subsystems along the project corridor shall remain operational throughout the duration of the project. The timeframe for the cutover of these subsystems shall be kept to a minimum. The Design-Build Firm shall create a cutover plan to allow for the removal and replacement of the CCTV camera and DMS (if newly installed) subsystems. The cutover plan shall contain the device (CCTV camera or DMS), location, and time frame for the cutover. The cutover plan shall be submitted to the Department for review and approval. The maximum allowable times for the cutover of the devices are:

- 24 hours for CCTV cameras. The Design-Build Firm can have two CCTV cameras out of operation at a time, but they cannot be adjacent locations.
- 48 hours for DMSs (if newly installed)

### **Subsystem Tests**

The Design-Build Firm shall perform Subsystem Tests to demonstrate that all subsystem field elements and components meet the relevant sections of the FDOT Standard Specifications and the RFP. No Subsystem Tests shall be performed without a Department-approved Subsystem Test Plan. The Subsystem Test may begin when the Design-Build Firm has satisfied the Department that all work on the subsystem has been completed.

The Subsystem Test shall be performed utilizing the Project field equipment and communication system. The Design-Build Firm shall provide qualified personnel to support the diagnosis and repair of system equipment during the Subsystem Test as required.

Subsystem Tests shall be conducted for:

- CCTV cameras
- RWISs
- DMSs (if newly installed)
- Flashing beacon sign and controller assemblies

Each Subsystem Test shall consist of testing the subsystem communication from the District Seven RTMC over the Layer 2/Layer 3 Ethernet network using the manufacturer's software. These tests shall demonstrate that all installed ITS field elements and ancillary components meet the Project requirements.

In the event a subsystem fails the Subsystem Test and is rejected by the Department, the Design-Build Firm shall correct the problem. The Design-Build Firm shall repeat the Subsystem Test within seven calendar days after receiving the approval from the Department that a retest can be conducted.

### **Operational Test**

The Design-Build Firm shall conduct the Operational Test covering all project subsystems integrated with SunGuide® software and operable from the RTMC, operating continuously for a period of 30 consecutive calendar days without failure of any subsystem, ITS field element, or ancillary component.

The Design-Build Firm shall notify the Department in writing 14 calendar days before the scheduled commencement of the Operational Test. The Operational Test shall not be performed without prior written approval from the Department.

In the event that a subsystem, ITS field element, or ancillary component failure is identified by the Department or the Design-Build Firm, the Operational Test shall be shut down (Operational Test Shutdown). The Design-Build Firm shall diagnose and correct all deficiencies causing the Operational Test Shutdown. After the deficiency or deficiencies causing the Operational Test Shutdown has been corrected, the Design-Build Firm shall perform all applicable Stand-Alone and Subsystem Tests. Once the Stand-Alone and Subsystem Tests have passed, the Design-Build Firm shall request approval to restart the Operational Test. If approved by the Department, the Operational Test shall be restarted at day zero for a new 30 consecutive calendar day test period unless corrections are made within the requirements of Table 10: Allowable Outage Times. If the allowable times in Table 10 have not been exceeded, the Operational Test Shutdown shall be reclassified as an Operational Test Suspension and the Operational Test shall recommence at the point it was stopped, upon approval of the Department.

**Table 10: Allowable Outage Times**

Item	Allowable Times
Communication Subsystem	8 hours
CCTV Camera Subsystem	12 hours
DMS Subsystem	48 hours
Power Subsystem	8 hours

If the total number of Operational Test Shutdowns is three for the same subsystem, ITS field element, or ancillary component, the Design-Build Firm shall:

- a. Remove and replace the subsystem, ITS field element, or ancillary component with a new and unused unit as per the requirements of the RFP
- b. Perform again all applicable Stand-Alone and Subsystem Tests, as deemed necessary by the Department
- c. Upon written approval from the Department, restart the Operational Test for a new 30 consecutive calendar day period.

If the Design-Build Firm is unable to determine whether the cause of a problem is hardware or software related, the 30 calendar day Operational Test shall be allowed to restart from day zero, unless otherwise directed by the Department. However, the Operational Test shall not be deemed to have been successfully completed until the problem has been corrected.

All software required for diagnosing malfunctions of hardware and software/firmware shall be supplied by the Design-Build Firm and approved by the Department. A copy of all diagnostic software shall be submitted to the Department with full documentation. The Design-Build Firm shall submit diagnostic reports to demonstrate that errors were detected and corrected.

The Design-Build Firm shall maintain a daily log for all operations after the start of the Operational Test. Any and all replacement parts, hours, and a brief description of what was corrected shall be reported in the log. The Design-Build Firm shall submit to the Department the required documentation to prove that all subsystems, ITS field elements, and ancillary components have been successfully integrated and configured.

The Operational Test shall be performed with the RTMC Operators managing, monitoring, and controlling the ITS field elements in real-time to assure conformance of the Project requirements.

The Design-Build Firm shall perform Acceptance Tests for the DMSs in accordance with the requirements of Sections 700-4.21 and 700-4.22 of the Department's Standard Specifications, as amended by DCE Memorandum No. 15-15, dated September 1, 2015.

### **Training**

The Design-Build Firm or its designee shall conduct training for all Project subsystems and ITS field elements and shall accommodate up to 10 people at the RTMC or other location approved by the Department. All training shall be conducted prior to the written notice of Final Acceptance.

The total hours of training conducted shall be a minimum of four hours for each of the DMS, CCTV camera, RWIS, and flashing beacon subsystems. Training shall be designed to familiarize the Department and/or its designees with the design, operation, and maintenance of the subsystems furnished under this Contract. The training shall cover functionality, theory of operation, installation, calibration, operation, testing, maintenance, trouble-shooting, repair, and performance and operating parameters.

During each training class, time shall be included to discuss details of ITS field element placement,

numbering and naming conventions, and any other information that shall assist the operations and maintenance personnel to become familiar with the ITS field elements, as required.

Training shall be provided by personnel thoroughly familiar with the technology, operation, and maintenance of all equipment installed on the Project. This may be the combination of the Design-Build Firm's personnel and equipment manufacturer's representatives. The Design-Build Firm's personnel shall provide a single cohesive training session for the entire system as a unit in addition to specific ITS field element/subsystem training provided by the device vendor / manufacturer. A complete course outline and summary of the experience and qualifications of the instructional personnel shall be submitted to the Department for approval prior to the start of training. The instructional personnel shall have both technical ability and communication skills to convey the information to the attendees and to respond to technical and procedural questions. Training sessions may be combined and/or shortened with the agreement of Department and the Design-Build Firm.

The Design-Build Firm or its designee shall provide the training materials. These materials shall include, as a minimum, a course outline, a Microsoft Office PowerPoint presentation showing detailed subject material to be covered during training, operation and maintenance manuals, test equipment and tools, and any other needed information.

The Design-Build Firm shall video record, using DVD, all portions of all training, including Maintenance Personnel Training. All DVD recordings shall become the property of the Department at the end of each course given, with one copy of each DVD recording provided to the Department. All DVDs shall be provided to the Department prior to Final Acceptance.

If, at any time during a training course, the Department determines that the course is not being presented in an effective manner, the training for the course shall be suspended. The Design-Build Firm shall make the necessary changes to the course, resubmit the required training materials to the Department for approval, and reschedule the training course.

Prior to Final Acceptance, the Design-Build Firm shall provide:

1. Test results performed by any manufacturer, the Design-Build Firm, and/or the Department
2. CEI and FDOT maintenance sign-off of final inspection
3. Evidence that previously failed equipment has been corrected and retested
4. Operation and maintenance manuals
5. Training sessions and training videos, using DVD, covering all portions of all training
6. Approved as-built documentation as shown below

As-built documentation:

1. Warranty documentation
2. Completed ITSFM data entry sheets
3. Copy and licenses of all diagnostic software and full documentation

4. Updated RTVM to demonstrate that all units have been successfully reconfigured or updated and are in compliance with this contract. The final RTVM document shall be signed and dated by the Design-Build Firm's ITS EOR and by the CEI's Senior Project Engineer.
5. Power service forms

**R. Landscape Opportunity Plans: *(Not applicable to this Project)***

**VII. Technical Proposal Requirements:**

**A. General:**

Each Design-Build Firm being considered for this Project is required to submit a Technical Proposal. The Proposal shall include sufficient information to enable the Department to evaluate the capability of the Design-Build Firm to provide the desired services. The data shall be significant to the Project and shall be innovative, when appropriate, and practical.

**B. Submittal Requirements:**

The Technical Proposal shall be bound with the information, paper size, and page limitation requirements as listed herein.

A copy of the written Technical Proposal must also be submitted in searchable .pdf format, including bookmarks for each section, on a CD, DVD, or Flash Drive. Bookmarks which provide links to content within the Technical Proposal are allowed. Bookmarks which direct to information not included within the content of the Technical Proposal shall not be utilized. No macros will be allowed. Minimum font size of 10 shall be used. Times New Roman shall be the required font type.

Only upon request by the Department, provide calculations, studies, and/or research to support features identified in the Technical Proposal. This only applies during the Technical Proposal Evaluation phase.

Submit 1 Original, 7 CDs, DVDs or Flash Drives containing the Technical Proposal in .pdf format, and 7 collated, complete sets of hard copies of the Technical Proposal to:

Linda Roberts  
ATTN: Robin Stevens  
Florida Department of Transportation District One  
801 N. Broadway Avenue  
Bartow, FL 33830

The minimum information to be included:

Section 1: Project Approach

- Paper size: 8½" x 11". The maximum number of pages shall be 15, single-sided, typed pages including text, graphics, tables, charts, and photographs.

Double-sided 8½" x 11" sheets will be counted as 2 pages. 11"X17" sheets are prohibited.

- Describe how the proposed design solutions and construction means and methods meet the project needs described in this RFP. Provide sufficient information to convey a thorough knowledge and understanding of the project and to provide confidence the design and construction can be completed as proposed.
- Provide the term, measureable standards, and remedial work plan for any proposed Value Added features that are not Value Added features included in this RFP, or for extending the Value Added period of a feature that is included in this RFP. Describe any material requirements that are exceeded.
- Provide a Written Schedule Narrative that describes the Design and Construction phases and illustrates how each phase will be scheduled to meet the Project needs required of this RFP. Bar or Gantt charts are prohibited. Do not reveal or describe the Proposed Contract Time. Proposed Contract Time will be evaluated when Bid Price Proposals are received.

#### Section 2: Plans and Technical Special Provisions

- The Plans shall complement the Project Approach.
- Provide any Technical Special Provisions which apply to the proposed work. Paper Size: 8½" x 11".

#### C. Evaluation Criteria:

The Department shall evaluate the written Technical Proposal by each Design-Build Firm. The Design-Build Firm should not discuss or reveal elements of the Price Proposal in the written proposals. A technical score for each Design-Build Firm will be based on the following criteria:

Item	Value
1. Design	35
2. Construction	30
3. Innovation	5
4. Value Added	10
<b>Maximum Score</b>	<b>80</b>

The following is a description of each of the above referenced items:

1. **Design (35 points)**

Credit will be given for the quality and suitability of the following elements:

- ITS design
- Design coordination plan minimizing design changes
- Geotechnical investigation plan
- Geotechnical load test program
- Minimizing impacts through design to:
  - Environment
  - Public
  - Structures
- TCP design
- Incident Management Plan
- Aesthetics
- Utility Coordination and Design
- Design considerations which improve recycling and reuse opportunities

Credit will be given for an understanding of the existing ITS and for a high level of comprehension of the new devices. The quality of the cut-over plan for the transition from the existing system to the new system will be evaluated.

Credit will be given for design and utility coordination efforts that minimize the potential for adverse impacts and project delays due to utility involvement.

Credit will be given for development of design approaches which minimize periodic and routine maintenance. The following elements should be considered: access to provide adequate inspections and maintenance, and impacts to long-term maintenance costs.

2. **Construction (30 points)**

Credit will be given for the quality and suitability of the following elements:

- Safety
- ITS construction
- Construction coordination plan minimizing construction changes
- Minimizing impacts through construction to:
  - Environment
  - Public
  - Structures
- Implementation of the environmental design and Erosion/Sediment Control Plan
- Implementation of the MOT Plan
- Implementation of the Incident Management Plan

- Utility Coordination and Construction

Credit will be given for developing and deploying construction techniques that enhance project durability, reduce long-term and routine maintenance, and those techniques which enhance public and worker safety. This shall include, but not be limited to, minimization of lane closures, visual obstructions, construction sequencing, and drastic reductions in speed limits.

Credit will be given for ensuring all environmental commitments are honored.

Credit will be given for construction and utility coordination efforts that minimize the potential for adverse impacts and project delays due to utility conflicts.

**3. Innovation (5 points)**

Credit will be given for introducing and implementing innovative design approaches and construction techniques which address the following elements:

- Maximize the use of existing ITS devices and infrastructure
- Minimize or eliminate utility relocations
- Materials
- Workmanship
- Enhance design and construction aspects related to future expansion of the transportation facility

**4. Value Added (10 points)**

Credit will be given for the following Value Added features:

- Broadening the extent of the Value Added features of this RFP while maintaining existing threshold requirements
- Exceeding minimum material requirements to enhance durability of project components
- Providing additional Value Added project features proposed by the Design-Build Firm

**D. Final Selection Formula:**

The Department shall publicly open the sealed bid proposals and calculate an adjusted score using the following formula:

$$\frac{BPP}{TS} = \text{Adjusted Score}$$

BPP = Bid Price Proposal

TS = Technical Score (Combined Scores from Letter of Interest and Technical Proposal)

The Department reserves the right to consider any proposal as non-responsive if any part of the Technical Proposal does not meet established codes and criteria. If the Proposed Contract Time is greater than Maximum Contract Time of 450 calendar days, the Bid Price Proposal will be considered non-responsive.

**E. Final Selection Process:**

After the sealed bids are received, the Department will have a public meeting for the announcement of the Technical Scores and opening of sealed Bid Price Proposals. This meeting will be recorded. At this meeting, the Department will announce the score for each member of the Technical Review Committee, by category, for each Proposer and each Proposer's Technical Score. Following announcement of the Technical Scores, the sealed Bid Price Proposals will be opened and the adjusted scores calculated. The Selection Committee should meet a minimum of two calendar days (excluding weekends and Department observed holidays) after the public opening of the Technical Scores and Bid Price Proposals. The Department's Selection Committee will review the evaluation of the Technical Review Committee and the Bid Price Proposal of each Proposer as to the apparent lowest adjusted score and make a final determination of the lowest adjusted score. The Selection Committee has the right to correct any errors in the evaluation and selection process that may have been made. The Department is not obligated to award the contract and the Selection Committee may decide to reject all proposals. If the Selection Committee decides not to reject all proposals, the contract will be awarded to the Proposer determined by the Selection Committee to have the lowest adjusted score.

**F. Stipend Awards:**

The Department has elected to pay a stipend to a limited number of non-selected shortlisted Design-Build Firms to offset some of the costs of preparing the Proposals. The non-selected shortlisted Design-Build Firms meeting the stipend eligibility requirements of the Project Advertisement and complying with the requirements contained in this section will ultimately be compensated. The stipend will only be payable under the terms and conditions of the Design-Build Stipend Agreement and Project Advertisement, copies of which are included with this RFP. This RFP does not commit the Department or any other public agency to pay any costs incurred by an individual firm, partnership, or corporation in the submission of Proposals except as set forth in the Design-Build Stipend Agreement. The amount of the stipend will be \$25,000.00 per non-selected shortlisted Design-Build Firm that meets the stipend eligibility requirements contained in the Project Advertisement. The stipend is not intended to compensate any non-selected shortlisted Design-Build Firm for the total cost of preparing the Technical and Price Proposals. The Department reserves the right, upon payment of stipend, to use any of the concepts or ideas within the Technical Proposals, as the Department deems appropriate.

In order for a shortlisted Design-Build Firm to remain eligible for a stipend, the shortlisted Design-Build Firm must fully execute with original signatures and have delivered to the Department within one week after the shortlist protest period, four originals of the Design-Build Stipend Agreement, Form No. 700-011-14. The shortlisted Design-Build Firm shall reproduce the necessary copies. Terms of said agreement are

non-negotiable. A fully executed copy of the Design-Build Stipend Agreement will be returned to the shortlisted Design-Build Firm.

A non-selected shortlisted Design-Build Firm eligible for stipend compensation must submit an invoice for a lump sum payment of services after the selection/award process is complete. The invoice should include a statement similar to the following: "All work necessary to prepare Technical Proposal and Price Proposals in response to the Department's RFP for the subject Project".

## **VIII. Bid Proposal Requirements.**

### **A. Bid Price Proposal:**

Bid Price Proposals shall be submitted on the Bid Blank form attached hereto and shall include one lump sum price for the Project and the number of calendar days within which the Proposer will complete the Project. The lump sum price shall include all costs for all design, geotechnical surveys, engineering services, Design-Build Firm's quality plan, construction of the Project, and all other work necessary to fully and timely complete that portion of the Project in accordance with the Contract Documents, as well as all job site and home office overhead, and profit, it being understood that payment of that amount for that portion of the Project will be full, complete, and final compensation for the work required to complete that portion of the Project. One hard copy Bid Price Proposal shall be hand delivered in a separate sealed package to the following:

Linda Roberts  
ATTN: Robin Stevens  
Florida Department of Transportation District One  
801 N. Broadway Avenue  
Bartow, FL 33830

The package shall indicate clearly that it is the Bid Price Proposal, and shall identify clearly the Proposer's name and Project description. The Bid Price Proposal shall be secured and unopened until the date specified for opening of Bid Price Proposals.