

DEPARTMENTAL INPUT
CONTRACT/PROJECT MEASURE ANALYSIS AND RECOMMENDATION

☒ New ☐ OTR ☐ Sole Source ☐ Bid Waiver ☐ Emergency Previous Contract/Project No. N/A

☐ Contract ☐ Re-Bid ☒ Other LIVING WAGE APPLIES: ☐ YES ☒ NO

Requisition No./Project No.: RFP-00774 TERM OF CONTRACT 7 YEAR(S) WITH 5 YEAR(S) OTR

Requisition /Project Title: ADVANCED TRAFFIC MANAGEMENT SYSTEM

Description: The Traffic Signals and Signs (TSS) Division of the Miami-Dade County Department of Transportation and Public Works (DTPW), seeks a Countywide upgrade of its existing Advanced Traffic Management System (ATMS) and traffic signal controllers. The DTPW TSS Division operates and maintains over 2,900 signalized intersections on state, county, and local roads within the County's geographical boundaries. The DTPW TSS Division staff monitor and manage the intersections from their Traffic Management Center (TMC) in Miami, Florida.

Issuing Department: DTPW Contact Person: FRANK AIRA Phone: 305-679-0002

Estimate Cost: \$120M

Funding Source: GENERAL FEDERAL OTHER
Operating

ANALYSIS

<u>Commodity Codes:</u>	<u>55080</u>			
Contract/Project History of previous purchases three (3) years Check here <input type="checkbox"/> if this is a new contract/purchase with no previous history.				
	<u>EXISTING</u>	<u>2ND YEAR</u>	<u>3RD YEAR</u>	
Contractor:				
Small Business Enterprise:				
Contract Value:	\$	\$	\$	
Comments:				
Continued on another page (s): <input type="checkbox"/> YES <input type="checkbox"/> NO				

RECOMMENDATIONS

	Set-aside	Sub-contractor goal	Bid preference	Selection factor
SBE				
Basis of recommendation: <div style="border: 1px solid black; height: 30px; width: 100%;"></div>				
Signed: <u>Brian Webster</u>		Date sent to SBD: <u>06/18</u>		
Copy to: <u>oca@miamidade.gov</u>		Date returned to DPM: <div style="border: 1px solid black; width: 150px; height: 20px;"></div>		

TECHNICAL REQUIREMENTS

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EXHIBITS TO THE TECHNICAL REQUIREMENTS

Attachment 1	Traffic Control Equipment Standards and Specifications Section 671 (Traffic Signal Controllers)
Attachment 2	Traffic Signal Controller Local Software Functional and Performance Specification

0506-3401-2018

Technical Requirements

Project No. XXXX

- Attachment 3 Central Traffic Management System Software Functional and Performance Specification
- Attachment 4 DTPW Division 01 Construction Specifications (General Requirements)
- Attachment 5 Traffic Control Equipment Standards and Specifications Section 600 (General Provisions for Traffic Control Devices)
- Attachment 6 Company Experience and References
- Attachment 7 Staffing Plan, Resumes, Project Experience and References
- Attachment 9 Requirements Traceability Matrix
- Attachment 10 System Requirements

Commented [WB(1)]: This is okay but a little problematic. It makes reference to conventional Progress Payments, we're specifically using milestones. Other conflicting language. This is purely for building construction.

Commented [FN(2R1)]: Division 01 is a set of general requirements used by the DTPW for horizontal construction including signalization projects. However, the copy provided needs to be updated specifically for this Project to be more consistent with the Design-Build version of Division 01.

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1. INTRODUCTION

1.01 PROJECT OBJECTIVE AND OVERVIEW

- A. The Traffic Signals and Signs (TSS) Division of the Miami-Dade County Department of Transportation and Public Works (DTPW), hereinafter referred to as the Department, seeks a Countywide upgrade of its existing Advanced Traffic Management System (ATMS) and traffic signal controllers.
- B. The proposed system (hereinafter referred to as the "System") must include County-approved Caltrans Model 2070LX controllers, local controller software, and a Countywide NTCIP-compliant ATMS software package that can communicate using the County's existing communications networks.
- C. The complete migration and integration of all signalized intersections to the proposed ATMS, local controller software, and Caltrans Model 2070LX controllers must be completed within five years from the Notice to Proceed. A minimum of 500 intersections per year must be retrofitted with the new Caltrans Model 2070LX controllers and integrated into the new Countywide NTCIP-compliant ATMS.

1.02 INNOVATION TO GOVERNMENT

- A. The CountyDepartment seeks to identify a cost-effective upgrade path for its existing system that accommodates current needs, extends the lifespan of the system, and provides additional capabilities, such as adaptive signal control and collection of signal performance metrics. Proposers to this RFP are encouraged, within the limits of the aforementioned specifications, to offer additional innovative concepts or ideas pertaining to the implementation of the new central traffic signal control software, replacement of existing Model D170E controllers, implementing a new local controller software and cost cutting strategies that would benefit the CountyDepartment in this endeavor.

1.03 EXISTING SYSTEM

- A. The DTPW TSS Division operates and maintains over 2,900 signalized intersections on state, county, and local roads within the County's geographical boundaries. The DTPW TSS Division staff monitor and manage the intersections from their Traffic Management Center (TMC) in Miami, Florida. Approximately 2,600 intersections are controlled using the McCain D170E controller. The remaining intersections are controlled by the Econolite Safetran Model 2070C controller (a Caltrans Model 2070LX controller). The intersections with D170E controllers are managed using the Kimley-Horn and Associates (KHA) KITS software; the remaining are managed by the Econolite Centracs ATMS. The current KITS ATMS owned by the CountyDepartment does not include support for the Caltrans Model 2070LX controller.
- B. There are approximately 500 signal timing coordination groupings throughout the County. Signals are grouped according to proximity and travel patterns along key arterial corridors. Deployment of the central traffic signal control software, controller hardware and software should target signalized intersections within signal coordination groups. The remaining traffic signals do not belong to any coordination group but have cellular communication with the central traffic signal control system.

Commented [WB(3)]: General note. I don't see where the physical construction requirements are specifically identified. I would expect to see a requirement for Maintenance and Protection of Traffic plan. Pedestrian safety. Are there seasonal, time or other restrictions for some intersections. Does the County want to see an installation plan that will show what intersections will be taken out and when? How many at one time? Disposal of the existing controllers.

Commented [WB(4)]: Where do we specifically state the number of controllers required?

Commented [FN(5R4)]: In the revised Section 2.05

Commented [WB(6)]: Where's the reference to controllers be on the County's QPL? Or did we remove that requirement?

Commented [FN(7R6)]: See Section 2.02 A. 3.

Commented [WB(8)]: We can structure the price sheet to include options. But we should call out this statement as being an option. We should also flag other options we would like to label and move them to the same location.

These traffic signals operate in actuated and/or semi-actuated, non-coordinated timing patterns 24 hours per day, 7 days per week, and 365 days per year.

- C. The CountyDepartment uses specialty controller cabinets designated as Types MD-552A, MD-552X, MD-660A and MD-660X with wiring and functional architecture similar to that of a Caltrans 332 traffic controller cabinet but with minor variations in the I/O mapping.

DRAFT

2. SCOPE OF SERVICES

2.01 OVERVIEW

- A. When under contract, the successful consultant (henceforth referred to as the "Consultant" or the "Systems Integrator") will be responsible for delivering an accepted System for the CountyDepartment which meet the objectives and requirements as stated in this RFP and its draft contract. All systems and services provided under the resulting contract must be consistent with County, state and federal laws and regulations.
- B. Work includes providing the System as specified by the CountyDepartment and all of the professional and construction services needed to meet the requirements of the Contract including project management, project initiation and planning, systems integration, system (hardware and software) delivery and implementation, database conversion and migration, training, and support.
- C. This section of the RFP, and the referenced attachments provide details on specific requirements, consultant responsibilities, and other critical information and specifications required for consultants to provide a viable response to the RFP. The consultant is solely responsible for meeting all the requirements in this RFP. Questions regarding any information contained in this RFP are encouraged.
- D. Submission of a proposal is an affirmation by the consultant that its organization complies with all the requirements and specifications set forth in this RFP and that its organization is capable of delivering the system and performing the services required in a manner consistent with the terms of this RFP and its draft contract, per the Consultant's proposed solution (as clarified). Further, the resulting contract's scope of service ~~shall~~will consist of the work elements and requirements per the County's RFP and the work elements and requirements per the Consultant's proposed scope of services, as clarified in the final negotiated contract.
- E. During the course of the Contract, the County reserves the right to approve all replacement prime consultant personnel; the County also reserves the right to approve any replacement subconsultant personnel after proposal submission and after contract execution.

2.02 REQUIREMENTS FOR ATMS, LOCAL SOFTWARE, AND CONTROLLER HARDWARE

- A. Only products that meet the following requirements will be considered:

1. ATMS central software.

- a. Central traffic management system software must be a scalable commercially-available off-the-shelf (COTS) with latest Windows-based Advanced Traffic Management System (ATMS) client-server software package from a traffic controller manufacturer. ATMS Software must:
 - 1) Meet the requirements of the Miami-Dade Central Traffic Management System Software Functional and Performance Specification including:
 - a) Supports transportation system management and operations of 3,200 intersections, including active arterial management, and be scalable to accommodate future growth of signalized intersections and other devices.
 - b) Provides full-functionality for operations with Caltrans Model 2070LX traffic signal controllers using the NTCIP.

Commented [WB(9)]: Any interest in Factor Acceptance Testing?

- c) Supports use of NTCIP for all communication with field controllers and must support all mandatory NTCIP objects defined in NTCIP 1101 and NTCIP 1201 and all mandatory and optional traffic signal controller requirements defined in NTCIP 1202. The system must comply with NTCIP standards for communication over TCP/IP.
- d) Operates properly using the County's existing cellular 4G LTE communications to field controllers.

2. Local signal controller software.

- a. Controller software must be a COTS product from the traffic controller manufacturer designed to run on a Linux operating system and Caltrans Model 2070LX hardware platform compliant with Miami-Dade County traffic signal controller hardware specifications and Caltrans TEES 2009 requirements including all Errata for a 2070LX Traffic Signal Controller unit. The controller software must:
 - 1) Meet the requirements of the Miami-Dade Traffic Signal Controller Local Software Functional and Performance Specification including:
 - a) Is compatible with all 170 type cabinets, including, but not limited to Miami-Dade County MD-552 and MD-660 series controller cabinets.
 - b) Fully support Caltrans TEES 2009 2070LX and ATC 5201 v06.25 controller requirements.
 - c) Provide functionality that meets or exceeds operational characteristics, including NTCIP support, as described in National Electrical Manufacturers Association (NEMA) TS-2-2016.
 - d) Support all mandatory traffic signal controller requirements and objects defined in NTCIP 1202.

3. Traffic signal controller hardware.

- a. Each traffic signal controller must be a Caltrans Model 2070LX controller unit that meets the requirements of Section 671 (Traffic Signal Controllers) of the Miami-Dade County Traffic Control Equipment Standards and Specifications.

2.03 CONSULTANT (SYSTEMS INTEGRATOR) RESPONSIBILITIES

- A. To ensure production viability and a smooth transition of the ATMS to the production environment and use by CountyDepartment staff (and its consultants), the Consultant will commit fully qualified professional resources to all the project phases. The CountyDepartment reserves the right to approve or reject the replacement of key personnel (project leadership) who may have responsibility with the ATMS project.
- B. The Consultant is required to assign a single project manager to the project who will act as the single point of contact with the County and will have full authority over all Consultant resources assigned to the project. The Consultant's project manager will be required to maintain a regular or as-needed physical presence on the TSS Division's TMC premises as agreed upon, at the project kick-off.
- C. The Consultant will provide the requested professional consultant services and produce all of the deliverables as specified in the RFP and as agreed-upon in the resulting contract. The Consultant

must perform all of the activities and tasks required to achieve all of the RFP's objectives, functions, outputs, and performance criteria stated therein, in a manner that meets all of the Project's and Contract's objectives, subject to available County funds. All services must be consistent with County, state and federal laws and regulations. All services provided by the Consultant must be appropriate and acceptable to the County Project Manager.

- D. During the life of the Project, the County Project Manager will review deliverables and evaluate them for completeness, clarity, adherence to generally recognized standards, and compliance with the County's intent as conveyed in this RFP, and contained in the resulting contract. A deliverable, phase, or milestone will not be considered complete until formal, written sign-off has been given by the County's Project Manager.
- E. The County will contract with a single prime consultant (the Consultant) to deliver a complete System that will provide the CountyDepartment with the required functionality and workflow process capabilities as detailed in this RFP. The CountyDepartment requires that the Consultant follow a phased approach to the design, development, and implementation of the ATMS to ensure that a comprehensive and expandable System is implemented during the term of the resulting contract and beyond. The exact approach and methodologies proposed by the Consultant to fulfill the deliverables and requirements of all phases as described below should be provided in the Technical Approach portion of a firm's Part I Technical and Management Proposal. The Consultant must address all the deliverables for the proposed phases in their project plan and organize and plan for the accomplishment of the work based on their experience with projects of similar scale and scope.

1. Project Initiation and Planning

- a. After consultant selection and contract execution the Project Initiation activity builds upon the Consultant's proposed project plan.
- b. During this activity, the project scope, schedule, and budget are refined and confirmed, and risk assessment activities advanced to the mitigation stage. The initial Project Plan and Project Management Plans are further developed, enhanced, and refined until they form a more definitive plan for completion of the project. Consultant deliverable requirements for the project initiation activities are described in Table 1.

Commented [WB(10)]: These must be finalized before contract award. We can use a project contingency to accommodate some changes.

Table 1, Project Initiation and Planning Phase Requirements

ID	Requirement	Deliverable
C-1	<p>The Consultant must refine and deliver its proposed project plans consistent with agreements made during contract negotiation. The plan must address:</p> <ul style="list-style-type: none"> • Work Breakdown Structure (WBS) • Proposed Countywide implantation phasing of controller database migration, controller deployment, and integration upon acceptance of the new ATMS • Project Schedule • Quality Management • Risk Management • Change Management • Acceptance Management • Issue Management and Escalation • Communication • Implementation/Transition (including migration plans) • Training <p>The Consultant must thereafter maintain and manage the project plan.</p>	Project Plan
C-2	<p>The Consultant must refine and deliver a project staffing plan that identifies individual resources assigned to each of the project activities.</p> <p>The Consultant must thereafter maintain and manage the project staffing plan, including efforts to meet any applicable contract goals.</p>	Staffing Plan

2. System Configuration

- a. The purpose of System Configuration is to create a technical solution that satisfies the functional requirements for the System. This activity begins with a detailed review and analysis of the functional requirements to confirm a common understanding of how to evolve the requirements into the system design. Technical specifications are created for the application developers, enabling them to build and test the system. In addition to designing the technical solution, system design is the time to initiate focused planning efforts for both the testing and data preparation activities. Test descriptions are to be developed, traced to requirements, and include the expected test results. Consultant deliverable requirements for the system design activities are described in Table 2.

Table 2, System Configuration Phase Requirements

ID	Requirement	Deliverable
C-3	The Consultant must develop and deliver a system architecture design document that describes the overall system architecture in terms of network, security, system, hardware, software, tools, peripherals, software licenses, and the logical distribution of system components and processes across the architecture.	System Architecture Design
C-4	During System Configuration, the Consultant must deliver system security design documentation describing the logical security architecture design, the physical security architecture design, and the design of all controls to be used to mitigate threats to the confidentiality, integrity and availability of the system and system data.	System Security Design
C-5	The consultant must identify and document the database schemas, file formats, data views, an entity relationship diagram, and data dictionary for the system.	Database Documentation
C-6	The Consultant must provide a programmer's manual for any language-independent application programming interface (API).	Programmer's Manual for API
C-7	The technical documentation must include: <ul style="list-style-type: none"> detailed specifications for hardware and software components system performance expectations data conversion approach for cleansing and loading historical data as well as population of new data 	Technical Documentation
C-8	The Consultant must document test plans defining: <ul style="list-style-type: none"> the overall strategy for validating the functionality of the system the approach to ensure test coverage of each requirement the individual test cases that will be performed to execute the testing strategy the environments in which the tests will be conducted <p>The test plans must include:</p> <ul style="list-style-type: none"> testing objectives scope of testing (both what is in and what is out of scope) responsibilities (who will be performing the test) testing approach testing sequence defect reporting and criteria 	Test Plans
C-9	The test case descriptions shall must be traced to requirements and include: <ul style="list-style-type: none"> test data needed to execute the tests preconditions required prior to the start of test criteria for suspending and resuming testing expected test results 	Test Case Descriptions

Commented [WB(11): This should be developed and included in the Technical Proposal and evaluated.

3. System Construction

- a. The System Construction phase consists of all activities required to build, test, and validate the new System to the point at which it can be turned over for System Acceptance. This includes construction of all components of the system, including utilities required to adequately prepare and load the data. In addition, System Construction consists of a series of tests of the system components, with each set of tests are to be performed against a progressively larger grouping of components until the operation of the system, in its entirety, has been verified. All actual test results must be documented, and necessary corrective actions ~~shall~~must be implemented in the system and system documentation. Status reports of testing progress ~~shall~~must be provided on a regular basis and ~~shall~~must include the status of corrective actions.
- b. The County Department typically deploys applications into a pre-production environment initially to ensure the applications are completely functional and defect free before transitioning the deployment to the production environment, which is reflected in the requirements below.
- c. Since the ultimate goal of this activity is to produce System that is ready for acceptance testing, an aspect of this phase ~~shall~~must be the creation of the various training materials and system documentation that support the new system, including preparation of technical support materials. These materials need to address both the use and maintenance of the system and ~~shall~~must play an integral part in the System Acceptance and System Implementation phases of the lifecycle. Deliverable requirements for the System Construction activities are described in Table 3.

Commented [WB(12): Does "typically" imply we will? Do you mean to state as fact that County will test pre-production.

Commented [FN(13R12): It means that the County typically does but not always. It is intended to be informational and describes the basis for the requirement of item C-13.

Table 3, System Construction Phase Requirements

ID	Requirement	Deliverable
C-10	During System Construction, the Consultant must deliver test results including detailed outcomes for the following: <ul style="list-style-type: none">• data migration tests• system tests (including performance tests)• security tests	Test Results
C-11	During System Construction, the Consultant must deliver test results that identify the version of each software component tested.	Test Results
C-12	During System Construction, the Consultant must deliver test progress reports that include: <ul style="list-style-type: none">• number of defects identified in testing• types of defects found• status of corrective actions	Test Progress Reports
C-13	During System Construction, the Consultant must deliver a validated system in the Pre-Production environment, to include the installation and integration of all ATMS components.	Validated Pre-Production System
C-14	During System Construction, the Consultant must update and deliver technical documentation to include corrective actions implemented as a result of testing activities.	Updated Technical Documentation

Commented [WB(14): So is this saying there will be a test in a pre-production environment.

Commented [FN(15R14): Yes.

ID	Requirement	Deliverable
C-15	During System Construction, the Consultant shall must develop and deliver the following user documentation: <ul style="list-style-type: none"> • User Manual • Database Administrator Manual, including installation and upgrade guides • System Administrator Manual • FAQs and scripts for technical support staff • Documentation on how to incorporate customizations during system upgrades 	User Documentation
C-16	During System Construction, the user manuals shall must include a collection of printable on-line documentation designed to instruct users in the operation of the System.	User Documentation

4. Data Conversion and Migration

- a. Prior to the installation of the new traffic signal controllers, the Contractor must convert existing signal timing databases to the format specific for the new local controller software. The conversion must ensure proper clearance intervals and safe signal operations, and maintain the same signal operational functions as the existing signal controllers. The database conversion must be performed by qualified professionals, and new timing documents submitted **shall must** be signed and sealed by a Professional Engineer licensed and registered in the State of Florida.
- b. The data necessary to populate the ATMS must be entered into the system, e.g. field equipment characteristics, sign and camera locations, etc.
- c. The deliverable requirements for the data migration activities are described in Table 4.

Table 4, Data Conversion and Migration Requirements

ID	Requirement	Deliverable
C-17	The Consultant must provide updated intersection signal timing documentation for each intersection.	Updated Signal Timing Documentation
C-18	The Consultant shall must provide data entry of all data necessary to populate the ATMS on the Pre-Production and Production Environments.	Approved entry of system data

Commented [FN(16)]: This must be converted into a list of requirements to populate Table 4.

5. System Acceptance

- a. System Acceptance is the point in the lifecycle at which every aspect of the application, along with any supporting data conversion routines and system utilities, are thoroughly validated by the **County Department** (or its representatives) prior to proceeding with System Implementation. This entire phase is centered on gaining sufficient evidence of the system's accuracy and functionality to be able to proceed to System Implementation with the highest level of confidence possible in the success of the system. In addition to confirming the operation of the system and its fit to the business needs that it is intended to satisfy, System Acceptance is also the point in the lifecycle during which all supporting

documentation and reference materials are refined and updated to guarantee their consistency with the final delivered system.

- b. Prior to any testing, the Contractor must prepare a comprehensive acceptance test plan for review and approval by the CountyDepartment. The plan must serve as a guide to operationally test system hardware, software and integration. The plan must include a detailed description of the tests to be conducted and the purpose of each test. Each test should be mapped to at least one of the functional requirements. Test procedures, including specific steps and the sequence of steps to be followed, must be specified.
- c. A testing schedule must be included in the acceptance test plan. This schedule must demonstrate the order in which tests are to be performed as well as the expected duration of each test. The testing schedule must include 30 days of final acceptance testing.
- d. The acceptance test plan must include evaluation criteria for each test based on the functional requirements matrix. The criteria set forth by the plan will be used as the standard by which the CountyDepartment will judge the success or failure of each test.
- e. Sample test report forms must also be provided in the acceptance test plan. Report forms must be designed for successful tests as well as anomalies and failures during testing. A form to report corrective actions, including changes to the software, or hardware, must also be designed and included in the plan.
- f. The CountyDepartment will review the acceptance test plan to ensure appropriate procedures have been designed to rigorously test the system software, hardware and integration. To assist the CountyDepartment in this review, the acceptance test plan must include a compliance matrix that confirms the tests evaluate all functional requirements. Upon written approval from the CountyDepartment, the Contractor can begin acceptance testing.
- g. Consultant deliverable requirements for the system acceptance activities are described in Table 5.

Commented [FN(17)]: This must be converted to a list of requirements to populate Table 5.

Table 5, System Acceptance Phase Requirements

ID	Requirement	Deliverable
C-19	During System Acceptance, the consultant must deliver final test results for the following: <ul style="list-style-type: none">• data validation results• data migration• acceptance test results (including performance tests)• security and vulnerability test results	Test Results
C-20	During System Acceptance, the consultant must deliver an accepted operational System.	Accepted System
C-21	During System Acceptance, the consultant must deliver accepted migrated data in the system.	Migrated Data

6. System Implementation

- a. The purpose of System Implementation can be summarized as the deployment and the transition of system support responsibilities. At a finer level of detail, deploying the system consists of executing all steps necessary to educate the system users on the use of the new system, placing the newly developed system into production, confirming that all data

required at the start of operations is available and accurate, and validating that business functions that interact with the system are functioning properly. Transitioning the system support responsibilities involves changing from a “system development” to a “system support and maintenance” mode of operation, with ownership of the new system moving from the consultant to the CountyDepartment. Deliverable requirements for the Implementation Activities are described in Table 6.

Table 6, System Implementation Phase Requirements

ID	Requirement	Deliverable
C-22	During Implementation, the Consultant must deliver an operational, accurate and formally accepted System to the <u>CountyDepartment</u> .	Operational System
C-23	During Implementation, the Consultant must deliver approved installation and data migration scripts to the <u>CountyDepartment</u> to promote the system to the Pre-Production and Production Environments.	Installation & Migration Scripts
C-24	During Implementation, the Consultant must install and deploy the system in the production environment in accordance with the approved Project Implementation and Transition Plan.	Operational System
C-25	During Implementation, the Consultant must conduct knowledge transfer in accordance with the approved project knowledge transfer approach.	Knowledge Transfer

7. Training Requirements

- a. The ATMS will be a mission critical complex system that will be used daily by many County staff and its consultants. The CountyDepartment considers the training of these users to be critical for acceptance of this system as well as the daily use of this system. The CountyDepartment will review and approve all consultant ATMS training staff and user training materials, including training plans and role-based training materials. The Consultant must prepare a training plan for the central traffic signal control software, controller hardware and software and the network. The CountyDepartment will identify all County and consultant staff to be trained annually by role.
- b. Training must be conducted at the CountyDepartment's TMC, Traffic Signal Shop and field locations as appropriate. The Consultant is encouraged to recommend the environment to be used for training, pre-production or production, as they provide their detailed description of training in their Technical Approach.
- c. The instructor or instructors provided by the Contractor must be proficient in the use of the ATMS software, hardware and controller software and must have previous formal classroom instructor training. Instructors must demonstrate a thorough knowledge of the material covered in the training and familiarity with the training manuals.
- d. If prerecorded lectures or other video presentations are part of the training, the instructor or a qualified substitute must also supplement recorded material. A qualified instructor must present all material to the CountyDepartment in person. The CountyDepartment reserves the right to review and approve all instructors. Should an instructor prove unsatisfactory to the CountyDepartment, the Consultant must provide an acceptable replacement within 3 days.

- e. Upon completion of the training, all training materials, including but not limited to instructor's manuals, training manuals, video and DVD/CDs will become the property of the CountyDepartment. As part of the documentation, the Contractor must provide the CountyDepartment with all changes and revisions to the training manuals and other training documentation. The CountyDepartment reserves the right to copy all training manuals and aids for use in future's training sessions.

Commented [FN(18)]: This must be converted to a list of requirements to populate Table 7

- f. Additional Consultant Training requirements are described in Table 7.

Table 7, Consultant Training Requirements

ID	Requirement	Deliverable
C-26	The Consultant must provide assistance to the <u>CountyDepartment</u> to implement an ATMS training environment in the Pre-Production Environment).	Training Environment
C-27	The Consultant must provide the capability to refresh the ATMS training environment for each training session.	Training Environment
C-28	The Consultant must deliver sufficient multiple sessions to accommodate the number of users identified by the <u>CountyDepartment</u> and to allow for the fact that TMC coverage needs to be maintained during the trainings.	Training Program
C-29	The Consultant must refine and deliver a training plan identifying the: <ul style="list-style-type: none"> • Schedule for all role-based training sessions • Consultant-provided resources to deliver training • Training evaluation collection, analysis, and improvement process • Success metrics identification, collection, and evaluation process • Expected training results • Post Training Support 	Training Plan
C-30	The Consultant must develop customized Systems role-based training and materials for each role. Role based training materials may include: <ul style="list-style-type: none"> • Participant Guidebooks (Printed and Electronic) including exercises • Instructor Guidebooks (Printed and Electronic) including exercises and answers • CD's containing the Participant Guidebooks in MS Word and PDF format • CD's containing the Instructor Guidebooks in MS Word and PDF format • PowerPoint Presentations • User Manuals • On-Line Help 	Training Materials
C-31	The Consultant must update impacted training material whenever software changes, including customizations, affect the operation of the software.	Training Material Updates

8. Support Requirements

- a. Support of the system after implementation is critical. The Support Requirements cover the initial application maintenance period and subsequent maintenance of the application during the term of the contract. The provision of on-going support will require attendance at periodic status meetings at which the scope of the support will be determined. The on-going support will include but not be limited to:
- 1) Reviewing commercial software package bug reports, enhancements, and upgrades.
 - 2) Reviewing custom software bug reports and enhancement requests.
 - 3) The Support Requirements are described in Table 8.

Table 8, Support Requirements

ID	Requirement	Deliverable
C-32	The consultant must follow the maintenance agreement portion of Contract Agreement that will cover the System from the final acceptance of the System in the production environment. The maintenance agreement covers the following: <ul style="list-style-type: none">• Remote diagnostics• Technical support from the consultant• On-site issue resolution if necessary• Fixes to the software (updates, upgrades, security patches, etc.)• Updates to user, technical, and training documentation to support software changes resulting from fixes• Integration of new equipment	Maintenance Agreement
C-33	The Consultant must provide technical and application support for end-users 24 x 7 x 365.	Technical Support
C-34	The Consultant must comply with the Service Level Objectives provided in Table 9 below.	Technical Support
C-35	The Consultant must: <ul style="list-style-type: none">• propose a backup and recovery process which meets <u>CountyDepartment</u>'s requirements• recommend disaster recovery processes• provide instructions for business continuity	Backup & BC/DR Processes
C-36	The Consultant must provide <u>CountyDepartment</u> personnel with access to an enhancement-tracking system.	Enhancement Tracking System Access
C-37	The Consultant must provide <u>CountyDepartment</u> personnel with access to an ATMS bug-reporting and defect-resolution system.	Defect Tracking System Access
C-38	The Consultant must attend on-going support status meetings with <u>CountyDepartment</u> personnel, as needed.	Technical Support

ID	Requirement	Deliverable
C-39	The Consultant must annually provide the <u>CountyDepartment</u> with the software release schedule for any off the shelf software components contained within ATMS.	Software Release Schedule

e-b. Support Service Level Objectives:

Table 9, Defect Service Levels Objectives

Defect Priority	Response Time	Resolution Time	Hours and Days of Coverage
Priority 1	1 hour	4 hours	24 hrs/day; 7 days/wk
Priority 2	4 hours	1 business day	8:00 a.m. to 8:00 p.m. ET weekdays
Priority 3	1 business day	2 business days	8:00 a.m. to 6:00 p.m. ET weekdays

- 1) Response Time is defined as the time between the receipt of the call and the time that a Support Team member begins working on the problem.
- 2) Resolution Time is defined as the time between when the Support Team member begins working on the problem and the time the problem was resolved.
- 3) A Priority 1 Defect is a problem whose nature and/or severity prevent the CountyDepartment from continuing its business. A Priority 1 Defect may have one or more of the following characteristics: (a) a critical function of the Application/Device is not available; (b) the Application/Device hangs indefinitely and/or causes other County applications to hang; (c) the Application/Device crashes and/or causes other County applications to crash; and/or (d) a security incident has occurred or is suspected to have occurred.
- 4) A Priority 2 Defect may have one or more of the following characteristics: (a) the performance, functionality or usability of one or more of the Application/Device's parts is severely degraded; (b) multiple users are impacted; and/or (c) one or more business functions are unavailable or unusable by the end users.
- 5) A Priority 3 Defect is a failure of a system or part thereof which has a minor impact on a CountyDepartment business process and can be handled on a non-immediate basis. Examples may include user requests (e.g., a report is not formatted correctly) and peripheral problems (e.g., output fails to print properly).
- 6) Consultant ~~shall~~**must** not close a Defect unless a Fix ~~shall have~~**has** been demonstrated to either: (a) repair the functionality, performance and usability of the Application/Device to its pre-Defect level or (b) improve the functionality, performance and usability of the Application/Device from its pre-Defect capability.
- 7) Unless, for a particular defect, the CountyDepartment has provided prior written approval for different response times, the Contractor ~~shall~~**must**, for each calendar month and for each Defect Priority level, respond to one hundred percent (100%) of

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reported Defects within the Maximum Response Time during Hours and Days of Coverage.

9. Consultant Performance Requirements

- a. The CountyDepartment will assign a County Project Manager (staff or consultant designee) to lead and coordinate the effort for the CountyDepartment. All deliverables, status reports, meetings, and project-related communications will go through the County's Project Manager for proper coordination and distribution unless otherwise directed by the County's Project Manager. Table 10 provides a description consultant performance requirements for interaction with the County's project team.

Table 10, Consultant Performance Requirements

ID	Requirement
C-40	The Consultant must request for and obtain approval from the County prior to appointing or replacing key personnel.
C-41	Should it become necessary to replace key personnel, the Consultant must provide replacement staff members for key personnel with equal or superior skills and qualifications, with full authority to act in that position for full performance under the Contract, and with rates not to exceed those of the originally supplied staff member.
C-42	The Consultant's project manager must serve as focal point of contact for <u>CountyDepartment</u> regarding project status, meetings & reporting requirements.
C-43	The Consultant's project manager is responsible for managing scope changes, and financial, administrative, and technical issues or concerns raised by the <u>CountyDepartment</u> .
C-44	The Consultant must work in cooperation with the <u>CountyDepartment</u> and its designated consultants/contractors to ensure proper coordination of the Project with other <u>CountyDepartment</u> initiatives.

2.04 TEAM EXPERIENCE AND QUALIFICATIONS

A. Consultant Experience and Qualifications

1. The CountyDepartment considers proposers' qualifications and experience to be of paramount importance. Proposers must document their experience as described in Response Requirements and Proposal Format.
2. The Consultant's team experience must be relevant and must be for services comparable, in scale and scope, to the CountyDepartment's Traffic Signal System's operation. The consultant Experience and Qualification requirements are described in in Table 11.

Table 11, Consultant Experience Requirements

ID	Requirement
C-45	The Consultant must have a minimum of five years of experience providing Advanced Traffic Management Systems, Systems Integration and installation services using the solution it has proposed.
C-46	The Consultant's ATMS experience must be verifiable and within the last ten years.
C-47	<p>The Consultant must be qualified by the Florida Department of Transportation in the following Rule 14-75, Florida Administrative Code Consultant Work Type Categories:</p> <ul style="list-style-type: none"> 6.1 Traffic Engineering Studies 6.2 Traffic Signal Timing 6.3.1 Intelligent Transportation Systems Analysis and Design 6.3.2 Intelligent Transportation Systems Implementation 6.3.3 Intelligent Transportation Systems Communications 6.3.4 Intelligent Transportation Systems Software Development 7.3 Signalization
C-48	<p>The Consultant must be technically certified pursuant to Miami-Dade County Administrative Order 3-39 in the following main work class category and work class designations:</p> <ul style="list-style-type: none"> 3.00 Highway Systems <ul style="list-style-type: none"> 3.04 Traffic Engineering Studies 3.07 Traffic Signal Timing 3.08 Intelligent Transportation Systems Analysis, Design, and Implementation 3.11 Signalization 16.00 General Civil Engineering 17.00 Engineering Construction Management <p>The Consultant (or qualified subconsultants) must be technically certified pursuant to Miami-Dade County Administrative Order 3-39 in the following main work class category and work class designations:</p> <ul style="list-style-type: none"> 11.00 General Structural Engineering 13.00 General Electrical Engineering 15.00 Surveying and Mapping <ul style="list-style-type: none"> 15.01 Land Surveying 19.00 Value Analysis And Life-Cycle Costing 19.03 Highway Systems

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ID	Requirement
C-49	The Consultant's traffic signal contractor must meet the licensing and qualification requirements stipulated in Article 1.05 of Section 600 of the Miami-Dade County Traffic Control Equipment Standards and Specifications (General Provisions for Traffic Control Devices).

B. Consultant Key Personnel

1. The Consultant must provide necessary staff to conduct the Project defined in this RFP, to perform all of the required tasks, and produce all required deliverables. The County requires that the proposer provides a project staffing plan that includes, at a minimum, the following key staff roles (positions) and any other roles that it considers instrumental to the Project. The staffing plan will also identify the timeframe the role will be involved, level at which they will participate over that timeframe, and the timeframe that the role will be at the CountyDepartment's TSS Division TMC versus located remotely.
 - a. Project Manager – Responsible for execution and coordination of all aspects of the Consultant's project plan and schedule; provides the primary point of contact for the County, also has authority to act on behalf of the Consultant.
 - b. Technical Architect – Responsible for the design and implementation of the proposed technical solution.
 - c. Software Engineer – Responsible for leading the software development activities for the implementation of the proposed system including: creation of application specifications, design and development for any custom software, configuration and implementation of any COTS software, and system testing activities.
2. In addition to these key personnel roles, the Consultant should identify any other key staff that are considered instrumental in the Project's successful completion. Persons identified for the positions described above are considered key personnel for the project, and the CountyDepartment requires the Consultant provide for the continuity of key personnel for the duration of the Project.
3. Substitutions for such key personnel cannot be made without CountyDepartment approval. Should it become necessary to replace the key personnel, the consultant must provide replacement staff with equal or superior skills and qualifications.
4. Table 12 specifies the requirements for key personnel.

Table 12, Consultant Key Personnel Requirements

ID	Requirement
C-50	<p>The Consultant must appoint key personnel to be responsible for coordinating with the <u>CountyDepartment</u> and managing project activities. Key personnel include:</p> <ul style="list-style-type: none"> • Project Manager • Technical Architect • Software Engineer

ID	Requirement
C-51	The Project Manager shall must have a minimum of 5 years of verifiable experience overseeing ATMS projects.
C-52	The Technical Architect shall must have a minimum of 5 years of experience designing and implementing ATMS solutions.
C-53	The Lead System/Software Engineer shall must have a minimum of 5 years of verifiable experience leading system/software activities for the implementation of ATMS systems.

2.05 MEASUREMENT AND PAYMENT

A. Compensation

~~1. Compensation provided by the Contract, through the various scheduled items having awarded Contract Unit Prices, constitutes full payment for completing the Work and meeting all requirements of the Project. Approved payments will be made only under items having awarded Contract Unit Prices that are measured and accepted by the County Project Manager.~~

~~1. The aforementioned compensation includes:~~

~~c. Full payment for furnishing any material, supply, equipment, tool, labor, supervision, or meeting any requirement that is reasonably inferred or incidental to the Work whether or not specifically called for by the Contract Documents.~~

~~d. Items of work that do not have awarded Contract Unit Prices, even if the items appear within the Articles of Specifications or anywhere else in the Contract Documents. These items will not be measured separately for payment. Compensation for performing any work or meeting any requirement associated with these items is included in approved payments made under the various scheduled items having awarded Contract Unit Prices.~~

~~A. Schedule of Values~~

~~1. A Schedule of Values is required for any lump sum items with Awarded Unit Prices.~~

~~1. Upon notification of intent to Award and prior to the Notice to Proceed, Consultant must submit to County Project Manager for review and approval, a preliminary Schedule of Values that:~~

~~h. Logically subdivides the Work covered by the lump sum item into component parts with sufficient detail to serve as the basis for progress payments during performance of the Work and correlates to the Work Progress Schedule.~~

~~i. Includes quantities and prices of items for all of the Work which when added together equal the Contract Unit Price for the lump sum item.~~

~~1. The Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Lump Sum Item to component parts of the Work under said Item.~~

~~1. When directed by County Project Manager, the Consultant will be required to submit at least 10 days prior to the next application for progress payment, a revised or updated Schedule of Values to address any changes in the Work.~~

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~~A. Method of Measurement:~~

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~~1. System Delivery and Integration:~~

~~n. The Contract unit price includes all costs, fees, materials and labor for work required for Project initiation and planning, system configuration, system construction, data conversion and migration, documentation, system acceptance, testing, system implementation, training and support (includes first five full Calendar years after ATMS acceptance by the County).~~

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~~1. ATMS central software:~~

~~p. The Contract unit price includes all software and hardware costs necessary for providing the ATMS central software system specified in the Contract Documents including County acceptance, and any additional training and support (includes first five full Calendar years after ATMS acceptance by the County) required by the Contract Documents not already provided elsewhere in the Contract prices.~~

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~~q. Includes all required software licenses.~~

~~1. Caltrans Model 2070LX controller with local controller software:~~

~~s. The Contract unit price is for each Miami-Dade County approved Caltrans Model 2070LX Controller including local controller software furnished, delivered, and received by the TSS Division Warehouse at 7100 NW 36 Street, Miami, FL 33166.~~

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~~t. Traffic Signal Controller must meet the requirements of Miami-Dade County Traffic Control Equipment Standards and Specifications Section 671 (Traffic Signal Controllers) and include County approved local controller software license.~~

~~u. Controllers must be delivered in batches not to exceed 25 controllers with a total "on-hand" inventory at the TSS Division Warehouse not to exceed 100 controllers at any time.~~

~~v. Final total quantities of controllers may vary from at least a minus (-) 30 percent to a plus (+) percent of the estimated quantity of 2,800 controllers.~~

~~1. Controller Field Installation:~~

~~x. Includes all costs necessary for pre inspection of intersection equipment, replacement of Model D170E controller with Caltrans Model 2070LX Controller, onsite verification of intersection operation, documentation, retuning Model D170E controller to the TSS Division.~~

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~~y. Final total quantities of Controller Field Installation may vary from at least a minus (-) 30 percent to a plus (+) percent of the estimated quantity of 2,800 intersections.~~

~~1. Annual System Support (after Year 5):~~

~~aa. The Contract unit price is the full annual cost to provide the required Systems Support following first five full Calendar years after ATMS acceptance by the County.~~

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~~1. Annual Systems Training (after Year 5):~~

~~cc. The Contract unit price is the full annual cost to provide the required Systems Training following first five full Calendar years after ATMS acceptance by the County.~~

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A. Basis of Payment

1. Base Items

	Description		
	System Delivery and Integration		
	ATMS central software		
	Caltrans Model 2070LX controller with local controller software		
	Controller field installation		
	Annual System Support (after Year 5)		
	Annual Systems Training (after Year 5)		

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	Description		

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Controller Hardware

Controller hardware will be measured per each. The contract unit price per assembly will include all labor, equipment, and miscellaneous materials necessary for a complete and accepted installation.

The payment will be made upon validation of proper intersection operation.

Controller Software

Controller software will be measured per each license. The contract unit price per software license will include full compensation for furnishing and installing the local traffic controller software; for all labor, equipment, tools and incidentals required for a complete and accepted installation.

The payment will be made upon validation of proper intersection operation.

Central Traffic Signal Control Software

Central traffic signal control software will be measure per each license.

The unit price per software license will include full compensation for furnishing and installing the central traffic signal control software on the County provided computer server(s) for a complete and accepted installation; for all labor, equipment, tools and incidentals required to complete the installation and configuration; for any necessary hardware and software configuration required to allow multiple workstations to have full access to the server(s); for all labor, equipment, tools required to integrate all new signal controllers into the central traffic signal control software.

The payment will be on a milestone basis as indicated below:

Installation of license on the County provided servers/workstations 15%

First batch of 600 intersections configured and online 15%

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Second batch of 600 intersections configured and online	15%
Third batch of 600 intersections configured and online	15%
Fourth batch of 600 intersections configured and online	15%
Fifth batch of 500 intersections configured and online	15%
Final acceptance of system	10%

~~Database Conversion~~

~~Database conversion will be measured per each intersection, and paid for at the unit price upon validation of proper intersection operation.~~

~~Documentation~~

~~Documentation services will be measured per lump sum.~~

~~The payment will be made on a milestone basis as indicated below:~~

Completion of 1st batch of 600 controller installations	15%
Completion of 2nd batch of 600 controller installations	15%
Completion of 3rd batch of 600 controller installations	15%
Completion of 4th batch of 600 controller installations	15%
Completion of 5th batch of 500 controller installations	15%
Final acceptance of system	25%

~~Training~~

~~Training services included in this document will be measured per lump sum and be paid for upon completion of the formal training and issuance of training certificates provided to the attendees.~~

~~Testing~~

~~Testing services for each implementation phase will be measured per lump sum and paid for as follows:~~

First batch of 600 intersections configured and accepted	15%
Second batch of 600 intersections configured and accepted	15%
Third batch of 600 intersections configured and accepted	15%
Fourth batch of 600 intersections configured and accepted	15%
Fifth batch of 500 intersections configured and accepted	15%

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1. ~~Final acceptance of system~~ ~~25%~~

2-B. New Software Development

a.1. Any new features which are not included in this Specifications for central traffic signal control software and local controller software may be requested by the ~~County~~Department. Such software development process must follow the County's IT development procedures located at: XXXXXXXXXXXXXXXXXXXXXXXX. New software development efforts will be measured per hour, and paid for at the unit price upon validation of proper software feature operations.

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Commented [WB(23R22)]: Agreed! Typically, milestones are created for a complete installation (hardware, software, testing) at each location or a block of locations. Design has been allowed as a milestone payment.

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3. NETWORK, SERVER, AND COMMUNICATIONS REQUIREMENTS

3.01 GENERAL DESIGN REVIEW AND SUPPORTING DOCUMENTATION

- A. The selected Proposer shall participate in two design reviews consisting of a Preliminary and Final Design Review. Design review meetings shall be held in which the selected Proposer conducts a presentation in accordance with a MDC approved agenda. Development of the design review agenda and schedule shall take into consideration MDC specific requirements, so as to maximize the time available for the review as well as participation of appropriate staff. In its presentation, the selected Proposer shall address, at a minimum, design approaches, concepts, and design details. The agendas for the Design Reviews shall be submitted to MDC at least seven (7) calendars days prior to the Design Reviews. During these design review meetings, action items shall be identified and documented, with each action item assigned to an individual for disposition by a predetermined response date. All action items identified during the design reviews shall be submitted to the MDC Project Manager for approval two (2) calendar days after the meeting.
- B. The selected Proposer shall submit for review and approval, copies of all documents, data, assembly and installation drawings required to convey concept, design, dimensions, maintenance, operation, and overall assembly aspects and interfaces required as a part of these design reviews. Drawings shall be accompanied by material specifications, process specifications, and test data required for review and approval of the drawings, including detailed parts drawings.
- C. MDC reserves the right to reject any document, without review, that is not in English and that is not readily understandable due to lack of proper grammar, spelling, sentence structure, or punctuation. MDC is under no obligation to expend extraordinary effort to interpret poorly written or translated documents.
- D. MDC reserves the right to request additional drawings, documents, or data, or any combination of documents, drawings, or data to support the review process. This additional information requested by MDC shall be delivered within five (5) calendar days of request. All design review meetings shall be held at County offices.
- E. The selected Proposer shall submit in hardcopy format an unbound original, complete design review submission package, twenty (20) copies of the complete package, and twenty (20) universal serial bus (USB) flash drive (thumb drive) of the complete package, for a total of forty (40) packages. All electronic copies of documents shall be in native AutoCAD, Word, Excel, or Visio formats and allow copy to clipboard permissions.

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3.02 DESIGN REVIEW SUBMITTALS

- A. Implementation and Transition Plan
1. The implementation plan shall include all aspects of the ATMS from Notice to Proceed (NTP) through the Final Acceptance Certificate. The first draft of the plan shall be submitted with the PDR package and the final plan shall be submitted for approval at the FDR (see PDR and FDR sections below). The Contractor shall clearly demonstrate an efficient and effective implementation and transition plan that minimizes impact to the current operations.
- a. The implementation and transition plan shall include all facilities and subsystems.
- b. The plan shall include a detailed MS Project plan with tasks and the respective owner. It shall provide, at a minimum, the following information for each phase:

- 1) Site preparation for System hardware and software, electrical, etc.
- 2) Schedule for the phased-in approach, including required tasks and activities.
- 3) Descriptions and drawings of any intermediate or temporary configurations required, per phase, which differ from final configuration.
- 4) Access to facilities with expected duration and hours.
- 5) MDC support personnel.
- 6) MDC operations impact or outages along with expected durations and contingency plans.

B. Design Diagrams

1. The Contractor shall submit all design diagrams during PDR and FDR for the following:
 - a. Electrical Diagrams
 - b. Mechanical Diagrams
 - c. Network Security Diagrams
 - 1) Accompanying Excel document with access control lists and firewall rule sets must be provided.
 - 2) Diagrams must show interconnections between the separate networks and what ports are open closed in the diagram.
2. The Contractor shall provide both logical and physical network infrastructure diagrams of the System to show the following:
 - a. Interconnections between separate networks
 - b. Nodes within the System.
 - c. All new and existing equipment.
 - d. Estimated Data Bandwidth Report
3. The Contractor shall provide a report of the network bandwidth utilization by the System. The report shall indicate minimum, maximum, average and total (weekly, monthly and yearly) data bandwidth utilization in table format per:
 - a. Node
 - b. Locations
 - c. Device
4. The Contractor shall include the assumptions used to generate the information in the report.

C. Reporting Requirements

1. All reports supplied by the selected Proposer shall be available and have the ability to be modified.
2. Reporting shall be implemented to ensure when large number of users are performing ad hoc retrieval from the stored information, the System performance shall not be adversely affected.

3. The Selected Proposer shall ensure the reports are run against non-production tables.
4. All reports provided shall support user-specified parameters that constrain the report content to specific date/time periods, assets, types, etc.
5. Report parameters shall have pre-configured defaults that are used to generate the report.
6. All parameters shall be printed with the report on a report cover page, or equivalent.
7. A report dictionary and schema describing the reports provided by the Contractor shall be provided for reports customizations.
8. The Contractor's System shall facilitate current and future reports as required. In addition the System shall facilitate dashboard reporting for analytics, trending and historical analysis.

D. Smart Mobility Requirements

1. The selected Proposer is to create an open data platform using Application Programming Interface (API) technologies that enable bi-directional data sharing.
2. This functionality enhances the integration capabilities to leverage system data for other applications and facilitate various integration with other systems.
3. The selected Proposer is required to integrate to MDCs Smart Mobility Platform and is responsible for any 3 third party cost to integrate.
4. All data including Signal Performance Measures shall be made accessible via the open API
5. The selected Proposer shall facilitate business intelligence, analysis and trending.

E. Infrastructure/Server Requirements

1. The selected proposer must submit as part of the design review an Infrastructure design document. The infrastructure design provided by the selected proposer must be approved by MDC and must be a solution that provides 24/7 high availability, fault-tolerance, security and ease of management. No single point of failures can exist. The failure of any single component, whether hardware or software, shall not impact the system as a whole. The Contractor shall facilitate separate Production, Development and Disaster Recovery environments for this solution. Reporting should also be designed in such a manner where a user running reports should not affect Mission-Critical functions.
2. Outside a cloud facilitated environment proposer's design must use the MDC facilitated infrastructure at the Regional Data Processing & Communications Center (RDPCC). MDC operates a private-cloud infrastructure where Server resources are provisioned as required.
3. With any design a clear division of Application, Database and Reporting functions must be present so that each component can fit into each individual environment. The Contractor shall manage permissions by Lightweight Directory Access Protocol (LDAP) Integration with Active Directory (AD) with the County's Federation Services.
4. Solution must separate Production, Development and Disaster Recovery environments. Reporting should also be designed in such a manner where a user running reports should not affect Mission-Critical functions.

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5. Application Servers operating out of MDC's VMWare clustered environment will provide numerous advantages, not limited to
 - a. High Availability - Which prevents the failure of any host from effecting the Virtual Machine hosting an application.
 - b. Portability - Which grants us seamless ability to upgrade server components as hardware ages, falls out of warranty, or fails, without rebuilding the Virtual Machine.
 - c. Daily Snapshots - Which allow us to recover from any intraday corruption of software.
 - d. Offsite Data Backups – Offloading of data to a different physical site for protection against an outage or disaster at one site.
 - e. Instant Resource Modification - Additional resources (CPU, Memory, Disk Space) can be provisioned on the fly
 - f. Centralized Management - One console to troubleshoot hardware and software failures.
 - g. Ease of Maintenance - Allows Miami-Dade County to take individual hosts offline for maintenance without a disruption of service.
6. This infrastructure is standardized on Windows Server 2016. A Standard "Class 4" Virtual Machine will consist of a Single CPU, 4GB RAM and 80GB C Drive. These resources can be scaled up if needed up to a 4CPU, 32GB RAM and 400GB total Disk Space Virtual Machine.
7. The vendor must clearly supply a list of all Servers required, along with detailed specifications on the resources needed to accommodate the entire scope of the project (with the final expected capacity of users and nodes). Miami-Dade County recommends that application design be scaled horizontally, allowing for additional application components to be provided on additional servers as opposed to just adding more power (CPU, RAM) to a single machine. Please note, once maximum Virtual Machine specifications for a single Virtual Machine are reached (see previous paragraph) they cannot be further increased.
8. MDC operates an Active Directory infrastructure and all users requiring network resources are assigned a user account. MDC requires all application logons and access levels to be integrated with the user's Active Directory account and/or user's group membership. The servers are joined to the Miami-Dade Domain thus permissions will be managed by Lightweight Directory Access Protocol (LDAP) Integration with Active Directory (AD) with the County's Federation Services. This allows for ease of management where MDC does not have to manage and maintain two separate systems for application access.
9. Access to the application should be designed in such a manner where an upgrade or change to the application does not require staff to go computer to computer to manually update software. If an application installation is needed on an individual workstation, that software should be self-managed and be able to be updated on-demand without interaction from MDC IT staff. MDC also operates an extensive Citrix XenDesktop and Xenapp environment (version 7.15 LTSR) which can be leveraged to provide a consistent client environment to users. In addition, if web servers are used, they must able to support the most current versions of Internet Explorer and/or Google Chrome as they are upgraded.
10. All Servers and installed software must comply with MDC Security Standards. MDC accepts, processes, stores and transmits Credit Card data for numerous applications thus must comply with the criteria within the Payment Card Industry Data Security Standard. The PCI-DSS provides for an open security testing and scanning baseline with tools available from numerous vendors. All ATMS related systems and applications must be secure at all times. Servers must be joined to our domain and have our Enterprise Anti-Virus client installed. Monthly Microsoft

Patching will be applied within same month of release. All installed software (including the application, third-party software and development environments e.g. .NET and/or JAVA) must be patched and up to date. We will also subject all ATMS related systems to regular Security scanning with our Qualys security system which scans against known CVEs. At no point should any sensitive data, including logon credentials, be stored or transmitted unencrypted.

11. Diagrams of all components along with data/port communications used must be provided.

F. Security Requirements

1. Any communications into or out of the County's network must be encrypted unless explicitly allowed by the Enterprise Security Office. All ATMS related systems must be able to send logging information into a central logging system for event audit and anomaly detection.
2. The County requires the use of and will provide Trend Micro endpoint protection software or an alternate at the County's discretion.
3. All MDC operating systems are patched with current critical OS updates and are patched monthly no later than 3 weeks after patch releases.
4. Security controls of the ATMS System will be evaluated against NIST 800-53 Rev. 4, NIST 800-82 Rev. 2, the NIST Cybersecurity Framework, and NIST framework-for-improving-critical-infrastructure-cybersecurity-core.

3.03 TRAFFIC SIGNAL PRIORITY (TSP)

A. Current TSP Functionality

1. Traffic signal priority (TSP) is a methodology whereby buses regularly traveling on surface roads are given priority passage through signalized intersections to improve their on-time service. TSP operation calls for special logic programmed in the traffic controller installed at the signalized intersection to be invoked once a designated Transit bus is detected within a defined proximity of an eligible signalized intersection. Once TSP operation is invoked, this special logic extends the green phase of the signal and informs the centralized system that this action was taken for monitoring, logging and operational evaluation purposes.
2. MDC uses Clever Devices' solution on the entire Metrobus fleet for Computer Aided Dispatch / Automated Vehicle Locating (CAD/AVL). Clever Devices' TSP solution is a center-to-center application which currently implements communication between its CAD/AVL system and an single Advanced Traffic Management System (ATMS) to exchange messages relevant to TSP for buses. When a vehicle equipped with a Clever Devices Intelligent Vehicle Network (IVN) reaches a pre-established distance from a TSP-capable intersection on a designated route, provided a set of configurable conditions (such as lateness and direction) are met, the on-board IVN generates a TSP request message (check-in) which travels over the available communication infrastructure to the Clever Devices' CAD/AVL system (CleverCad). CleverCAD communicates the TSP request to the ATMS center over an XML web service interface. The ATMS center is responsible for communication with the intersection controller to serve the TSP request based on other external conditions (such as serving pedestrian crossing or a preemption requests). A similar process is followed when the vehicle has cleared the TSP-capable intersection, where the on-board IVN transmits a TSP cancellation message (check-out) to the ATMS center.

3. The TSP business rules for TSP request/cancel messages are defined in the on-board system so that when the conditions are met, the IVN initiates the transmission of the corresponding check-in/check-out messages. Some of the parameters used on these business rules include vehicle location relative to the TSP-capable intersection, schedule deviation, passenger load, door status, vehicle heading and vehicle route. The on-board system requires the vehicle to be in Linear Positioning System (LPS) mode – similar to dead reckoning, to enable the TSP algorithm. To accomplish this, the vehicle Global Positioning System (GPS) needs to be engaged and the doors need to be cycled at the starting point of the TSP-enabled route variation, from this point onwards the system will calculate the distance to the TSP intersections along the route based on the GPS-reported location and the odometer pulses.
4. As mentioned above, upon receipt of the TSP check-in/check-out from the vehicle(s), Clever Cad builds the appropriate XML message(s) and sends it to the ATMS center via a XML message. The XML message includes information such as: intersection asset ID, vehicle ID, vehicle location (lat, long), event time (date/time stamp), event type (request or cancel), route number and trip direction among others. CleverCad captures any event received from the vehicle and any responses from the ATMS center (indicating whether the xml message was received correctly or not) into the CleverCad database for reporting purposes.

B. TSP Solution Requirement

1. The proposed Solution shall furnish an ATMS that tracks the location of the buses using the MDC CAD/AVL Solution Back Office System. Through this tracking feature and appropriate additional logic, the CAD/AVL Solution Back Office System shall be able to determine when a bus is within a pre-defined proximity of County signalized intersections properly equipped to support TSP operation and then send this information (Check-in and Check-out) in real-time to the ATMS central system software so that ATMS can determine whether or not TSP is to be granted based solely on MDC established rules of engagement.

Commented [FN(27)]: These articles belong elsewhere, not in the "Network, Server and Communications Requirements"

Commented [FN(28)]: This article does not belong in this Section but instead should be addressed by the ATMS functional and performance specifications.

3.04 CURRENT NETWORK INFRASTRUCTURE

- A. MDC currently utilizes DIGI WR21 and WR44 LTE cellular modems connected via a private AVPN. All network communication shall be secured and shall be approved MDC.

B. Can we itemize optional Contractor provided Turn-Key Maintenance and Support?

C. Can we incentivize value added proposal items we have not requested?

3.05 GENERAL PROVISION RECOMMENDATIONS

A. Software Licensing Requirements (Sample Agreement Attached)

1. Contractor shall grant to County a unlimited user enterprise perpetual, unlimited nodes, nonexclusive, royalty-free, license right (a) to use, access, and display Software and Third Party Software.

B. Quality Assurance Plan (QAP)

1. The Contractor shall submit a Quality Assurance Plan in accordance with the requirements below:

Commented [WB(29)]: The typical reference is to an ISO 9001 QA/QC Plan, mainly driven by "QC". Are sure you want this "QA" emphasis? Seems odd to mainly focus on process audits/reviews vs product quality.

2. The Contractor shall utilize a Quality Assurance Plan (QAP) to oversee the work of the Contract and to ensure that the ATMS is designed, procured, and manufactured/constructed in accordance with established design, engineering and quality requirements. These requirements provide the controls for design, procurement, installation, inspection and testing, which will enable MDC to be assured that the quality necessary for safe, secure and reliable operation of the ATMS is achieved. The Quality Assurance Plan (QAP) shall ensure compliance with the requirements of the Contract Documents within the Contractor, Subcontractor's and Supplier's organizations. The Contractor shall create and implement a Quality Assurance Plan (QAP) for the County's ATMS project. The QAP shall include all those planned and systematic actions and/or activities necessary to provide the County with a high level of confidence that the product(s) or services to be provided are of the highest quality throughout, and shall satisfy all areas of the contract. The QAP shall include the quality elements described in the FTA Quality Assurance/Quality Control (QA/QC) Guidelines (FTA-IT-90-5001-02.1) as revised, or the ISO 9001-2008 Standard. The Contractor's Quality Assurance Plan (QAP) shall include processes and methods to ensure compliance with the requirements of the Contract Documents within the Contractor, subcontractor's and supplier's organizations.
3. The Contractor, within fourteen (14) days from the issuance of Notice to Proceed (NTP), shall submit to the County a Quality Assurance Plan for the Project. This plan must include the processes and controls to be used for assuring the quality of design, production and installation. The Contractor shall submit to Transit, Quality Assurance Division, prior to commencement of work, three (3) copies of its complete ATMS QAP for review and approval, or assume the sole risk and expense of costs associated with repairs and/or re-installations due to contract work performed.
4. The Contractor shall maintain the QAP with the following requirements:
- a. The QAP shall align with the FTA QA/QC Guidelines Elements as a minimum, including the following:
 - 1) A written quality policy,
 - 2) Written procedures (test and inspection),
 - 3) A written statement by a duly authorized officer (executive level), stating the unyielding commitment of, and support by, the Company's principals and contract management personnel to the highest standards of quality through the implementation of the contract-specific QAP activities.
 - 4) The QAP shall be updated and submitted by the Contractor as necessary throughout the duration of the contract.
5. Within fourteen (14) days after submitting the QAP, and prior to the commencing work, the Contractor shall meet with Transit to discuss the Quality Assurance Plan, in order to obtain a mutual understanding of the Program Plan and the Transit Quality Program to include, minimally, the following topics:
- a. Control activities
 - b. Role of MDC
 - c. Role of Contractor's QA Representative
 - d. MDC administration and QA audits (Contractor and sub-contractors)
 - e. MDC/Contractor roles and responsibilities for testing, inspection, auditing and monitoring

Commented [FN(30)]: The FEDERAL TRANSIT ADMINISTRATION? Not sure how this would be relevant.

- f. Forms and documentation for recording activities
 - g. Lines of communication and notification responsibilities
6. The Contractor's Quality Assurance Plan and associated activities shall be subject to MDC's verification at any time. Verification may include, but will not be limited to the following:
- a. Surveillance of the operations
 - b. Auditing of contractors, subcontractors and vendors
 - c. Inspection to measure quality of the items to ensure compliance with all requirements; and
 - d. Review of Quality Records.
7. Contents of QAP: The QAP shall describe in detail all elements of the QA System, the Contractor proposes to implement for the ATMS project. These elements shall be considered in the development of detailed quality procedures. The quality elements at minimum to be addressed in this plan are as follows:
- a. Organization: A functional organization chart showing the interrelationships between the Contractor and subcontractors, and other supporting organizations. The contractor shall designate a Quality Assurance Representative (QAR) experienced in the quality requirements of the Contract. Based on the functional organization chart, the organization structure, levels of authority, and lines of communication for activities affecting quality, shall be clearly established and delineated. Quality Assurance personnel shall have the authority and responsibility to evaluate and assure that the QA system is correctly and effectively executed and verified. Where problems are identified, QA personnel shall have the authority and responsibility to evaluate and assure that the QA System is correctly and effectively executed and verified. QA personnel shall have the authority and organizational freedom to initiate, recommend and provide solutions. The QAR shall not be replaced by the Contractor without prior written approval of MDC.
 - b. Quality Assurance System: The QA system shall include those processes necessary to address key activities affecting quality; provide control over activities affecting quality consistent with their importance; provide for the planning and accomplishment of activities affecting quality under suitably controlled conditions. Controlled conditions shall include the use of appropriate equipment, suitable environmental conditions for accomplishing the activity, and assurance that the prerequisites for any given activities have been satisfied; provide for any special controls, processes, test equipment, tools and skills to attain required quality and for necessary verification of quality such as inspection or test; provide orientation and training, as necessary, of personnel performing activities affecting quality to assure that suitable proficiency is achieved and maintained; and require management to regularly assess the adequacy of the QA system and assure its effective implementation.
 - c. Design Control: The QA system shall include design control measures to assure that design specifications, regulatory and code requirements, and engineering standards are correctly applied to drawings, specifications, procedures, and instructions; that appropriate quality standards are specified in the design documents; that selection and review of materials and processes essential to installation are suitable for their application; that design review/checking, and certification by licensed professional engineers are performed; and distribution of all design documents.
 - d. Procurement Control: The QA system shall include a procurement control process to assure that design, engineering and services, along with materials, machinery and equipment are procured in accordance with the contract requirements. Procurement documents are to be prepared in detail to include and be reviewed for technical, quality

and commercial requirements for all materials, products and services, to meet strict requirements to ensure that those documents requiring regulatory or professional approval are submitted in a thorough format and timely manner for approval as required. Refer to Articles 73 and 76 for additional requirements.

- e. Instructions, Procedures and Drawings: Instructions, procedures and drawings shall also prescribe quantitative and qualitative acceptance criteria.
- f. Document and Data Control: The QA system shall describe the procedures for issuance, approval, distribution, retention, and maintenance detail of drawings, specifications, reports, procedures, and other quality related documents applicable to the design and construction of the projects. All documents that specify quality requirements or prescribed activities affecting quality shall be controlled to assure that the correct documents are being employed. Refer to Article 80 for additional requirements.
- g. Control of Purchased Materials, Equipment, and Services: This QA element is required to assure that purchased materials, equipment, and services are delivered/ performed by contractors, and suppliers in conformance with the requirements stipulated in the contract documents; and are identified and verifiable to the documents submitted. Refer to Article 98 for additional requirements.
- h. Identification and Control of Materials, Parts and Components: The QA system shall include this element to assure that all materials, parts, and components are properly identified and controlled; identification is maintained by part number, serial number or other appropriate means either on the item or on the records that are traceable to the item as required throughout fabrication or construction of the item; and nonconforming work, materials, parts or components are prevented from being incorporated into the final product.
- i. Control of Special Processes: The QA system shall include this element to assure that special processes, including but not limited to welding, heat treating, non-destructive testing, are properly controlled and performed by qualified personnel using approved procedures in accordance with the applicable codes and engineering standards under suitable conditions.
- j. Inspection: The QA system shall include inspection during all phases to assure that requirements of contract documents (e.g. drawings, specifications, instructions, regulatory requirements, applicable codes and standards, etc.) are being complied with by the consultants, contractors, and suppliers. Refer to Article 57 for additional requirements.
- k. Test Control: The QA System shall include the element of test control to assure that all testing required to demonstrate that the equipment and systems will perform satisfactorily and are done in accordance with approved procedures; test procedures shall include all prerequisite requirements and acceptance criteria specified in the contract documents; and test results are evaluated by responsible and competent persons. Refer to Article 49 for additional requirements.
- l. Inspection, Test, and Operating Status: The QA System shall include inspection, test and operating status information to demonstrate (provide evidence) that all manufactured or fabricated equipment, components, or systems have satisfactorily passed all required inspection, examination and testing. Refer to Articles 49 and 97 for additional requirements.
- m. Nonconforming Parts, Materials, and Components: The QA System shall assure that nonconforming parts, materials and components are prevented from being incorporated/introduced in all manufacturing tasks and/or into the final product; are properly identified and segregated from conforming items while awaiting disposition; and are reported for immediate disposition of nonconformance. Refer to Article 73 for additional requirements.

- n. **Corrective and Preventive Action:** The QA System shall include corrective action processes to assure that conditions which are adverse to quality are promptly identified and corrected; to determine the cause of nonconformance and take corrective measures to prevent recurrence; to document and report to appropriate management all records and procedures used in correcting the condition of nonconformance; and to assure that corrective actions resulting from the audits are properly corrected and immediately responded to.
 - o. **Quality Assurance Records:** The QA System shall include procedures to assure that all QA related documents and supporting evidence are properly accumulated, maintained, organized and protected; and that all documents are properly identified, controlled, and stored in a well-defined location. These records shall be available for review. Records are considered one of the principle forms of objective evidence that applicable quality system elements have been implemented. Refer to Articles 16 and 88 for additional requirements.
 - p. **Audits:** The QA System shall include audits to verify implementation and compliance with all aspects of the QA System and to determine the effectiveness of the system; assure that audits are performed in accordance with a written checklist by qualified personnel; assure that all audit results are documented and reviewed by management responsible for the area being audited; and assure that follow-up actions and actual verification, including re-audit of deficient areas are performed. The Contractor's Audit program shall include auditing of the subcontractors, sub-consultants and supplier organizations to verify that the quality systems are compliant with contract quality requirements and the organizations' quality plan. Refer to Article 17 for additional requirements.
 - q. **Servicing:** The QA System shall include documented procedures for performing, verifying, and reporting that the servicing meets the specified requirements.
 - r. **Software Quality Assurance and Documentation:** The Contractor shall submit for approval, a Software Quality Assurance Plan, SQAP (in accordance with ANSI/IEEE Standard 730-2002 or ISO 9001-2008 requirements). For reference, this Standard has the following minimum software documentation requirements:
 - 1) **Software Requirements Specification (Ref. Exhibit 1 - Scope of Services)**
 - 2) Software Design Description
 - 3) Software Verification and Validation Plan
 - 4) Software Verification and Validation Report
 - 5) User Documentation
 - 6) Training Documentation
8. The Software Design Description (SDD) shall be in accordance with ANSI/IEEE Standard 1016-1998 or ISO 9001 requirements. The final Software Design Description shall include details required by ATA Specification No. 102, through all levels to Level 6 or ISO 9001 requirements. The levels defined in ATA No. 102 are summarized below only for information:
- a. Level 1. Computer description and operation
 - b. Level 2. Software architecture, basic program and functions.
 - c. Level 3. Detailed flow information.
 - d. Level 4. Annotated compiler/assembly listing
 - e. Level 5. Detailed memory map and listing
 - f. Level 6. Input/output port map

Commented [FN(31)]: Is this a FTA requirement?

9. At its option, MDC will participate in both the Software Requirements and the Preliminary Design Review, as defined by the ANSI/IEEE Standard 730-2002 or in accordance with the Contractor's ISO 9001-2008 quality procedures. Following these reviews, the Contractor shall submit, for approval, the Preliminary Design Review Report. All subsequent changes to these reports shall also be submitted and approved prior to implementation.

C. Safety Certification Program Plan

1. The CAD/AVL System shall be Safety Certified by DTPW in accordance with the Transit Safety Certification Program Plan.

Commented [FN(32)]: Do not understand why this is relevant to the Project.

DRAFT

4. TECHNICAL AND MANAGEMENT PROPOSAL FORMAT

4.01 GENERAL REQUIREMENTS

- A. The information submitted in response to this RFP must be complete and in the format requested in this Section. Failure to provide all requested information or any significant deviation from this format might be cause for rejection of the response.
- B. All information submitted will become property of the County. At the discretion of the County, Proposers submitting a response to this RFP may be requested to provide on-site system demonstrations and product evaluations as a part of the assessment process. The County will not reimburse the Proposers to this RFP for any costs associated with the preparation and submission of said responses or in the preparation for and attendance at the on-site system demonstrations and product evaluations. The County reserves the option to request any Proposer submitting a response to clarify its response or to supply additional information, as necessary.
- C. Consultants must submit a complete proposal in response to this RFP, using the format and forms provided in this section and the relevant attachments, responding to all requirements and describing its approach to satisfying each requirement. Submission of the consultant's proposal ~~shall~~will be construed by the County as the consultant's acceptance of the procedures, evaluation criteria, and other administrative instructions in this RFP.
- D. For the purposes of evaluation, each proposal must be submitted in two separate parts. A responsive proposal ~~shall~~will consist of a Part I Technical and Management Proposal (see Section 4.02 Part I), and a Part II Cost and Contract Proposal (see Section 4.03 Part II). Part I ~~shall~~must consist exclusively of the Technical and Management Proposal. Part II is the Cost Proposal with other administrative items. Each part must be complete in itself in order that the evaluation of both parts can be accomplished independently and concurrently, and Part I can be evaluated strictly on the basis of its technical merits and Part II can be evaluated, in part, on the basis of competitive proposed costs. Cost information is not to be included in the Part I submittal, and Technical and Management information is not to be included in the Part II submittal.
- E. Consultants must submit Part I and Part II in separate sealed labeled packages. Proposals must be submitted in three ring binders. Each response section must be separated by labeled tab dividers. Do not submit proposals bound any other way (e.g., stapled, spiral- or cloth-bound). Clearly identify any attachment with the consultant's and the RFP's name on a cover sheet that is firmly attached to the document. Clearly identify any unattached documents with the consultant's and the RFP's name on each page of the document.
- F. In order to promote uniformity of preparation and to facilitate review, proposals should be printed on standard 8½ by 11-inch white paper and be organized in accordance with the format set forth in this RFP. Proposal text should be 11 point font or larger, except where necessitated for readability of tables, figures, schedules, or special graphics. 12 point fonts are preferred. Please avoid printing schedules using fonts smaller than 8 point. Illustrations that support the text must be simple and direct and be either sized to fit on 8 ½ by 11-inch paper or printed on 11 inch by 17 inch paper as long as the pages are folded to the 8 ½ by 11-inch size. Illustrations and photographs must be reproducible in black and white without obscuring their distinctive information. Double sided printing is allowed. Color printing is allowed.
- G. Consultants must submit a complete proposal in response to the RFP, using the format defined herein. The consultant's proposal must be composed and presented in the format and order that follows.

Commented [WB(33)]: We can make this separation, Im not sure about why we need to do this, this way. This will unnecessarily prolong the evaluation process.

4.02 PART I: TECHNICAL AND MANAGEMENT PROPOSAL

Commented [WB(34)]: All submission are electronic via BidSync. Multiple copies aren't necessary.

- A. The Part I proposal response requirements are listed below. Please be sure that these instructions are followed to ensure that your proposal is considered responsive to be eligible for contract award.

Part I - Technical and Management Submittal Checklist	
<input type="checkbox"/>	Ten (10) Printed and bound hard copies of Part I plus one copy of Part I on CD/DVD in MS Office 2007 compatible format.
<input type="checkbox"/>	Securely sealed and clearly labeled with the consultant's name, address, and telephone number and the words "ATMS RFP Part I — Technical and Management Proposal (XXXXXX)"
<input type="checkbox"/>	Name of person(s) who prepared proposal
<input type="checkbox"/>	Contact person(s), email addresses and telephone numbers
<input type="checkbox"/>	Signed Cover Letter on official business letterhead
<input type="checkbox"/>	Table of Contents identifying each major section and initial-page numbers
<input type="checkbox"/>	Executive Summary of proposed approach
<input type="checkbox"/>	Technical and management approach
<input type="checkbox"/>	Description of maintenance and support services
<input type="checkbox"/>	Complete and submit Attachment 6 Company Experience and References
<input type="checkbox"/>	Complete and submit Attachment 7 Staffing Plan, Resumes, Project Experience and References
<input type="checkbox"/>	Complete and submit Attachment 9 Requirements Traceability Matrix with an indication of proposer's ability to meet system requirements

1. The consultant must submit ten (10) paper copies of Part I, and one soft copy on a CD/DVD (in Microsoft Office 2007 compatible format) — each clearly identified on the cover or label with the Consultant's name and the words "ATMS RFP Part I — Technical and Management Proposal (XXXXXX)." Proposals must be securely sealed and clearly labeled. Any outside packaging containing Part I copies must be clearly marked with the words "ATMS RFP, Part I — Technical and Management Proposal (XXXXXX)."
2. Note: Cost information is not to be included in the Part I submittal, and Technical and Management information is not to be included in Part II submittal.
3. The County reserves the right to make clarifications to the scope of work to be performed under this Agreement during contract negotiations with the selected Consultant.

B. Cover Letter

1. The consultant must submit a signed Cover Letter on official business letterhead. The Cover Letter must accompany each volume and include the following:

- a. The signature of an official authorized to bind the consultant to all of its provisions.
 - b. A statement that, if awarded the contract, the consultant will comply with all the requirements set forth in the RFP.
 - c. A statement that the offered named key personnel will be provided once the County issues a Notice to Proceed. The County does not allow unapproved substitutes.
 - d. Any claims of confidential and proprietary information should also be identified and addressed in this section.
 - e. The following information regarding the consultant's official representative for its proposal:
 - 1) Name of consultant's official representative
 - 2) Title
 - 3) Name of company
 - 4) Address
 - 5) Telephone number
 - 6) FAX number
 - 7) E-mail address of the consultant's representative
 - f. (If there are multiple offices of the consultant, indicate which one will be primarily responsible for the contract. Indicate which other offices are also involved.)
 - g. The legal names of all Subconsultants involved in the consultant's response.
2. Table of Contents
- a. The Table of Contents must identify each major section of the consultant's proposal, along with its initial-page number. Any offered attachments or addendums must be cited here.
3. Executive Summary
- a. Provide a brief and concise description of the proposed approach and work effort. Feel free to concisely discuss emerging trends and relevant issues.
4. System Requirements and Technical Approach
- a. System Requirements
 - 1) Using the System Requirements table provided as Attachment 10, System Requirements, and using the following indicators, the consultant should provide its indication as to whether its proposed solution meets County/Department's requirements with respect to system requirements.
 - 2) Scale for consultant ability to meet requirements:
 - a) OB - Meets requirement "out of the box"
 - b) CNF - Meets requirements with special configuration
 - c) CST - Meets requirements with custom software code
 - d) NAV - Not available
 - 3) Definitions:

- a) OB – out of the box. Assumed to mean that the system meets the requirements without any of the following being applicable.
 - b) CNF – special configuration. Special configuration is the scenario where the product does not include standard features built specifically to address the requirement in question, but the desired results can be achieved by configuring the system in a specific way. A typical example of a special configuration is the use of a workflow engine that supports business processes. The workflow typically requires configuration to implement business rules that are unique to the process. The application has a framework to alter the look or function of the application based on data stored in supporting database table;
 - c) CST – customization. This is the scenario where the standard product does not include features built specifically to address the requirement in question, and where custom development effort is needed to achieve the desired results;
 - d) NAV – not available. The required functionality is not available and cannot be provided. This is the scenario where the standard product does not have features built specifically to address the requirement in question, and where the respondent does not recommend additional customization to the software to meet the requirement.
- 4) **The consultant must respond to every requirement.** The consultant must also respond to any “specific instructions to respondents” by providing the page number in their proposal where the fulfillment of the requirement is provided. Not providing the page number where the requirement is addressed in the proposal will result in a lower score. **Failure to respond to each and every requirement may lead to proposal dismissal on non-responsive grounds.**
- b. Technical Approach
- 1) The consultant ~~shall~~**must** describe its approach for performing the work and accomplishing the scope and objectives as identified in the RFP. Specifically, the response ~~shall~~**must** include the approach for performing the work and accomplishing project objectives as outlined in Section 2.03 Consultant (Systems Integrator) Responsibilities and Section 2.04 Team Experience And Qualifications, including:
 - a) Project Initiation and Planning (Requirements C-1 to C-2)
 - b) System Configuration (Requirements C-3 to C-9)
 - c) System Construction (Requirements C-10 to C-16)
 - d) Data Migration (Requirement C-17 to C-18)
 - e) System Acceptance (Requirements C-19 to C-21)
 - f) System Implementation (Requirements C-22 to C-25)
 - g) Training Requirements (Requirements C-26 to C-31)
 - h) Support Requirements (Requirements C-32 to C-39)
 - i) Consultant Performance Requirements (Requirements C-40 to C-44)
 - j) Consultant Experience Requirements (Requirements C-45 to C-49)
 - k) Consultant Key Personnel Requirements (Requirements C-50 to C-53)
 - 2) Additionally Consultants are expected to respond to these specific responsibilities by using Attachment 9, Requirement Traceability Matrix, to provide the page number(s) in their proposal where the approach to meeting the requirement is provided. The response must also include a technical solution description relating the architecture of

the solution proposed and the approach to achieving it. The technical solution description must incorporate the recommended local redundancy to support the proposed solution and needs of the TMCs. The description must include the following:

- a) System architecture (including system hardware, system software, supporting tools, network diagrams, and redundant infrastructure needed to support the proposed solution)
 - b) Information architecture (conceptual data model)
 - c) Security architecture (description of how security controls are positioned to maintain the system's confidentiality, integrity, and availability)
 - d) Narrative description of the proposed process to get from current to final state
 - e) Proposed approach for testing and promoting the system
 - f) Recommendations for all hardware and software needed to support its proposed design including the recommended local redundant infrastructure. These recommendations must comply with all requirements and specifications described in this RFP.
 - g) Recommendations and proposed solution for archiving system data.
- c. Experiences and References
- 1) The qualifications and prior experience of the consultant are of great importance to the County/Department. Direct, prior and relevant experience in the provision of maintenance decision support systems is highly desirable. Consultants must complete the relevant sections of the following documentation as part of the response:
 - a) Company Experience and References (Attachment 6)
 - b) Staffing Plan and Resumes, Project Experience and References (Attachment 7)
- d. Project Schedule
- 1) A consultant's Part I Technical proposal must include a proposed project schedule (in MS Project 2007 format) specific to this project.
- e. Staffing Plan
- 1) The consultant ~~shall~~must complete and submit Attachment 7 Staffing Plan and Resumes, Project Experience and References.

Commented [WB(35)]: It's advisable that we define the level of detail for the schedule, i.e. to show all milestones. I didn't see where we set mandatory milestones. I think we should.

4.03 PART II – COST AND CONTRACT PROPOSAL

- A. The Part II proposal response requirements are listed below. Please be sure that these instructions are followed to ensure that your proposal is considered responsive to be eligible for contract award:

Commented [WB(36)]: Note: We can product test equipment proposed by the firm recommended for award. This is a time consuming effort but it may be necessary. Think about this option.

Part II - Cost and Contract Submittal Checklist	
<input type="checkbox"/>	Five (5) Printed and bound hard copies of Part II plus one copy of Part II on CD/DVD, in MS Excel 2007 compatible format
<input type="checkbox"/>	Securely sealed and clearly labeled with the words "Miami-Dade County, ATMS RFP, Part II — Cost and Contract Proposal (XXXXX)"

<input type="checkbox"/>	Required Cost information (complete and submit Attachment XX, Cost Proposal)
<input type="checkbox"/>	Name, title, address, email, and telephone number of person(s) with authority to negotiate, and who may be contacted during proposal evaluation
<input type="checkbox"/>	ADD ANY OTHER ISD FORM AND SUBMITTAL REQUIREMENTS

B. Part II of the proposal consists of two sections: (1) a Cost Section, which sets forth the lump sum fees and rates for performing the work in the scope of services, and (2) the Contract Section, which provides the required County certification and RFP administrative forms. All signatures on each copy must be an original. Cost information is not to be included in the Part I submittal, and Technical and Management information is not to be included in Part II submittal.

C. The consultant must submit five (5) paper copies of Part II, and one soft copy on a CD/DVD (in Microsoft Office 2007 compatible format) — each clearly identified on the cover or label with the consultant's name and the words "ATMS RFP, Part II — Cost Proposal (XXXXXX)." All copies of Part II must be packaged separately from Part I. Proposals ~~shall~~must be securely sealed and clearly labeled. Any outside packaging containing Part II copies must be clearly marked with the words "ATMS RFP, Part II — Cost Proposal (XXXXXX)."

D. Cost Section

1. The Consultant will procure all required hardware and any supporting software for the approved solution. The Consultant will be responsible for the installation of a comprehensive ATMS and traffic signal controllers. Proposers must include in their cost proposal (Attachment XX) information about all hardware required to support the proposed solution, based on the consultant's notional design using the information provided in the RFP and attachments. Hardware requirements must reflect support for local redundancy of critical components including signal controllers and application and databases servers.

2. The Consultant ~~shall~~must include the cost for all software needed to support its proposed design, and must make recommendations regarding the required hardware to operate the proposed software. The County is seeking an Enterprise Software License to cover all software licensing and updates for the duration of the Contract. The one-time costs for the first year will cover the Enterprise Software License and any maintenance costs for the first year. The first year starts upon the acceptance of the system by the County. The Consultant must include in its cost proposal estimated costs for all recommended hardware required to support its proposed design for the phased deployments. Do not include costs for the proposed system redundancy and recommended archival approach as described in the technical solution description. All proposed software and hardware must comply with all requirements and specifications described in this RFP.

Commented [WB(37)]: We will establish a proposal price sheet, structured in a manner to support the payment schedule. We need to discuss how we want to see cost submitted.

5. CRITERIA FOR EVALUATION OF PROPOSALS

5.01 OVERVIEW OF EVALUATION PROPOSALS

- A. Proposals received on or before the RFP's published proposal due date ~~shall~~will be opened, logged-in, and examined for completeness and adherence to the RFP's response requirements. Logged in proposals ~~shall~~will be certified as being received. Proposals received late ~~shall~~will not be opened and ~~shall~~will be returned to sender.
- B. Once logged in, proposals ~~shall~~will be pre-screened to determine if they meet the minimum RFP responsiveness requirements, (including mandatory requirements). Proposals that meet minimum RFP responsiveness requirements ~~shall~~will be considered further; proposals that do not meet minimum RFP responsiveness requirements may be deemed non-responsive. Proposals deemed to be non-responsive ~~shall~~will be removed from further consideration.
- C. Proposals passing pre-screening ~~shall~~will then be evaluated by the County using a Best Value Method evaluation process based on the technical and cost criteria described below. Technical considerations are of greater importance than pricing considerations; however, the competitiveness of proposed costs is a significant factor in the County's evaluation of proposals.
- D. Technical and Management proposal evaluation will be accomplished by a representatives Selection Committee supported by the Technical Committee. The committees are comprised, as appropriate, of technical, program and management subject matter experts. Selection Committee members will be given technical proposals with instructions and score sheets. Selection Committee members, working as individuals, ~~shall~~will compare each proposal against the RFP, measuring the degree of responsiveness to the RFP's specifications and requirements. Selection Committee members will document their findings, and assign a numerical score for each of the RFP's evaluation criteria. Evaluators may identify clarification questions along the way. Beyond the level of peculiarity set in this RFP, proposal evaluation process rules, scales, definitions and instruments ~~shall~~must be internally defined and approved by the County prior to the receipt of proposals.
- E. Once independent evaluation of proposals is complete, the Selection Committee ~~shall~~will meet as a group to collectively discuss their findings with possible score changes. Reason(s) for score changes shall be documented. Offered experience may be verified by contacting references provided by proposers. Evaluators may revise findings and scores based on consideration of reference checks.
- F. Proposers responding to this RFP are not allowed to change their technical proposal. However, proposers may be requested to clarify issues or to provide additional insights into their proposal through written clarifications and/or technical interviews. If written clarifications are required to complete the technical evaluation of proposals, evaluators will be allowed to revise their technical scores based on this additional information. Scores after initial technical proposal review ~~shall~~will remain open and are subject to change as a result of completing technical interviews; initial written proposal scores may be changed due to further clarification and insights gained from shortlisted firms which go through technical interviews. After initial technical proposal evaluation, initial cost scores ~~shall~~will be combined to generate an initial best value score, to determine which proposals are mathematically susceptible to contract award/eligible to be invited to attend technical interviews. Technical scores may be adjusted via consideration of Best and Final offers. Final written proposal scores will be generated at the conclusion of the technical interviews (plus optional Best and Final Offer requests). For those firms that do not make the initial best value shortlist, their final written technical scores will be produced after group discussion and final clarifications have concluded.

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Most of this doesn't identify Procurement's process.

- G. Final offers. Final written proposal scores will be generated at the conclusion of the technical interviews (plus optional Best and Final Offer requests). For those firms that do not make the initial best value shortlist, their final written technical scores will be produced after group discussion and final clarifications have concluded.
- H. Technical interviews are required to complete the technical evaluation of proposals. There are up to 60 points available for the initial evaluation of written technical proposals and there are up to 10 points available for the in-person technical interview and presentation. Cost proposal evaluation results (up to 30 points) ~~shall~~will be considered with initial raw technical score results to determine initial offered Best Value, which ~~shall~~will lead to an initial Best Value-determined short-list of firms (determined to be mathematically susceptible for contract award). The County will short-list the field of proposals, identifying those proposals subject to contract award (any proposal within 10 points of the top initial best value ranked proposal plus any 'cluster' of proposal surrounding the cut-off line). Technical interviews are required to complete the technical evaluation of proposals and will be held at the County's offices at a location, date and time to be determined.
- I. The County reserves the right to ask clarifying questions regarding each cost proposal (Part II) and DBE participation as well. Furthermore, the County reserves the right to request best and final offers from firms that are determined to be susceptible for contract award. The County also reserves the right to re-score the remaining technical and cost proposals should a firm either withdraw from this solicitation or be deemed non-responsive after initial evaluation and scoring.
- J. An award ~~shall~~will be made to the offeror whose proposal receives the highest total Best Value score after considering all technical and cost/price evaluation factors.
- K. It is expressly understood that this Request for Proposals does not commit the County to award a contract, pay any costs incurred in the preparation of a proposal to this request, or to procure or contract services or supplies. Further, the County shall have no obligation or liability whatsoever to the vendor selected as a result of this solicitation unless and until a contract satisfactory to the County is approved and executed by the vendor and all necessary County officials.

5.02 PROPOSAL EVALUATION PROCESS

- A. Using the proposal evaluation process described herein, the County will evaluate proposals that are received prior to the deadline and deemed complete. The County will not consider proposals that are received late or are deemed to be incomplete.
- B. The County will first pre-screen each proposal to determine whether it was received on time, is complete, and adheres to the required response formats. Early submission of proposals is encouraged. Next, the County will conduct a mandatory technical requirements review of those proposals that have passed the pre-screening. Proposals that pass the mandatory review will continue to the next step — Technical evaluation and Cost evaluation. The County will review and score each section of the proposals on a scale that is based upon pre-established evaluation criteria (approved before receipt of proposals; to become part of the procurement record). When the Part I and Part II evaluations are complete, the technical and management score will be added to the cost score to develop a composite Best Value score. At the end of all possible technical scoring, technical proposals will receive a final perfected Best Value score that will be weighted such that the Technical score will comprise 70 percent of the final score (60 perfected technical points allocated to the highest scoring RFP written response, 10 perfected technical points allocated to the highest scoring technical presentation) and 30 perfected cost score points allocated to the lowest proposed total cost). As part of the technical evaluation process, consultants with a mathematical chance of being awarded a contract ~~shall~~will be invited to and provide a technical presentation at the County's offices at a location, date and time to be determined. These

consultants will be required to bring their key personnel to the technical presentations. The paragraphs that follow describe each phase of the proposal evaluation process in greater detail.

C. Pre-Screening of Proposals

1. The County must receive all proposals at the designated address by 2:00 PM ET on the RFP's proposal due date. It is the sole responsibility of the consultant to assure that its proposal is received on time. The County will pre-screen all proposals received on time. Late submissions ~~shall~~will be dismissed. The County must contain all the information requested in this RFP to be considered complete. All proposals must follow the format outlined in Section 4, Proposal Format and Contents. The pre-screening will ensure that the consultant has submitted all required Part I - Technical and Management proposal, and Part II - Cost proposal components. Failure to provide the proposal in this format may result in it being deemed non-responsive. The County may remove from consideration and not evaluate any proposal deemed non-responsive. Consultants whose proposals are deemed non-responsive will be notified, in writing, of their elimination.
2. Review of Mandatory Technical Requirements. All Part I proposals submitted on time will be reviewed to ensure that all requirements identified as Mandatory have been met. The County will consider proposals that do not meet all Mandatory requirements to be non-responsive and will eliminate such proposals from further consideration. Consultants whose proposals are deemed non-responsive will be notified, in writing, of their elimination. The County reserves the right to ask clarification questions on a firm's mandatory responses.

D. Part I and Part II Proposal Evaluations

1. Each proposal which clears Pre-Screening will have its Part I proposal evaluated further, and will have its Part II proposal evaluated further. The County reserves the right to ask for clarifications of either proposal. Other than responses made to requests by the County for clarification of such contents, no consultant will be permitted to alter its proposal after the final filing date and time. When the Part I and Part II evaluations are complete, the two scores will be added together to develop a composite Best Value score (initial and final).
 - a. Part I Proposal Evaluation
 - 1) The Technical and Management Part I proposal will be evaluated and point scored, and, when perfected, will represent 70% of the total score. The initial evaluation of the written Technical and Management proposal will account for up to 60 points of the total score while the technical interview will account for up to 10 points of the total score. Technical interview scores will be separately perfected.
 - 2) The Section Committee with support of the Technical Committee will evaluate and score each section of the Part I Technical and Management proposal on the scale determined by the County prior to submission of proposals. Each Section Committee member will first independently evaluate each proposal to determine the degree of responsiveness of each area against the requirements and specifications contained in the RFP (the requirement traceability matrix ~~shall~~must be used). Each evaluator ~~shall~~must document their independent findings then determine the appropriate score for each RFP factor using the predefined scale and definitions. Once all independent evaluations are complete, the Section Committee ~~shall~~will meet and discuss each proposal as a group. Scores may change as a result of group discussions and all reasons for score changes ~~shall~~must be documented. Clarification questions may be requested either during the initial technical proposal evaluation stage or as part of the technical interviews (or both). Scores and findings may be changed as the result of

the consideration of clarified material. Firms ~~shall~~will be given a reasonable amount of time to respond to clarification question requests.

b. Technical Presentation Evaluation

- 1) As part of the technical evaluation, the top-rated consultants who have a mathematical chance of being selected (a Best Value determination, based on combined technical and cost scores) will be required to provide a technical presentation of their proposal to the County. The key staff members identified in the consultant's proposal must attend. Prior to the technical presentations, the will provide each consultant with a Technical Presentation Package, including an agenda, instructions, and possible clarification questions. Consultants ~~shall~~must not change their proposal during the technical presentation but responses to requested clarifications are permitted. The presentation will be evaluated and scored by the Section Committee and will account for 10 percent of the consultant's final Best Value score. In addition, the consultant must be prepared to demonstrate its proposed solution as instructed in the Technical Presentation Package. The Section Committee will be allowed to revise their earlier Part I technical scores based on the results of further clarifications and insights gained from this demonstration. The consultant assumes the responsibility of being prepared for and conducting this activity.
- 2) Technical presentations will be held at a date and time to be determined by the County. Each presenter will be given a Technical Presentation Package which defines the schedule and expected content of the presentation. The presenter will be expected to:
 - a) Provide a demonstration of how the offered solution addresses the Technical Presentation Package and allow the evaluators to further gage the consultants ability to meet the RFP specifications.
 - b) Have all Key Personnel in attendance for the presentation, provide a short introduction of the Key Personnel and discuss of their capabilities and experience.
 - c) Respond to clarification questions from the Section Committee.

c. Total Technical Score Calculation

- 1) Upon conclusion of the consultant's technical presentation, the technical presentation score will be separately perfected, with the highest scoring technical presentation score receiving a perfect 10 points and all others receiving proportionately lower technical presentation scores. After possible rescoring of initial written technical proposal scores (with reasons for re-score changes documented), the proposal with the highest Part I technical score ~~shall~~will receive a perfect 60 points and all others receiving proportionately lower scores. Perfected presentation and written scores ~~shall~~will be added together to generate a total Part I technical proposal score.

2. Part II Cost Proposal Evaluation

- a. Cost proposals will be evaluated for reasonable costed elements, reasonable hourly rates, overhead rates and fees. Clarification questions may be asked. Cost proposals ~~shall~~will be scored, and will account up to 30 points of the total best value score.
- b. Consultants are required to provide a competitive fixed cost inclusive of all proposed services and technical solutions contained in the consultant's proposal by using the tables and worksheets provided in Attachment XX. Competitive hourly rates are also to be proposed.
- c. The County will evaluate, score and rank each Part II Cost Proposals using the following formula: $(A/B)*C$ ((A divided by B) times C) where:

- 1) A is Total Price of the lowest price Cost proposal
- 2) B is Total Price of the Cost proposal being scored
- 3) C is Cost points available (30 points or 30% of the final cost score)
- d. Total price will be evaluated based on the fixed price cost plus a cost factor that reflects an estimate of the cost to extend the implementation throughout the County. The County will estimate this cost factor and rates will be weighted according to a formula devised by the County.
- e. The proposer with the lowest total proposed cost will receive a perfected cost score of 30 points. Proposals with higher proposed total cost will receive proportionally lower cost scores.

3. Selection Recommendation

- a. Each consultant's final Best Value score will be calculated by adding its total perfected technical score (written and interview) and its perfected cost score. The County will then rank consultants in descending order of final Best Value score. The results of the proposal evaluation process ~~shall~~**must** be documented by the County.
- b. A tentative contract award ~~shall~~**will** be made to the consultant whose proposal receives the highest total Best Value score after considering all technical and cost/price evaluation factors.
- c. It is expressly understood that this Request for Proposals does not commit the County to award a contract, pay any costs incurred in the preparation of a proposal to this request, or to procure or contract services or supplies. Further, the County shall have no obligation or liability whatsoever to the vendor selected as a result of this solicitation unless and until a contract satisfactory to the County is approved and executed by the vendor and all necessary County officials

E. The proposals will be evaluated in accordance with the weighted scoring system indicated in the table below.

Step	Title	Scoring Method	Points out of 100
1	Pre-Screening	Pass/Fail	N/A
2	Mandatory Requirements Review	Pass/Fail	N/A
	Mandatory Requirements		
3	Technical Proposal	Scored	60
	System Requirements	25	
	Technical Approach	20	
	Experience	10	
	Experience of Staff (7)		

Step	Title	Scoring Method	Points out of 100
	Experience of Firm (3)		
	Project Schedule	3	
	Organization and Staffing Plan		
4	Cost Proposal	Scored	30
5	Technical Presentation	Scored	10
Total			100