



SANDY SPRINGS™
GEORGIA

ADDENDUM NUMBER 2

INVITATION TO BID #20-004
ATMS IV Enhancements – SCOOT Implementation at 20 Intersections

Schedule of Events

- **Bid Due Date:** August 30, 2019

Bids received after the above time or any proposal submitted in any other format (email, paper, fax, mail, etc.) than online submissions for this ITB through the Bonfire Portal at <https://sandysprings.bonfirehub.com/projects/view/17635> will not be accepted for any reason.

❖ **Please note the following requirements for this ITB:**

1. The City of Sandy Springs is accepting sealed bids from qualified firms **meaning a Prequalified Prime Contractor listed by the Georgia Department of Transportation, Office of Contract Administration** for ITB # 20-004 ATMS IV Enhancements – SCOOT Implementation at 20 Intersections PROJECT # TS107 for the Public Works Department.
2. The time of completion for the project is five hundred fifty-five (550) calendar days from the date of the “Notice to Proceed.”.

❖ **Please note the following changes to the ITB:**

3. Paragraph 1 on page 3 states the contractor must self-perform 100% of the work. The contractor must self-perform 51%.
4. Special Provisions for Utilities and Traffic Control were added to the Bid. These special provisions are attached to this addendum.
5. Subcontractor List has been added. A copy of the form is attached to this addendum.

I hereby acknowledge receipt of Addendum Number 2 for Invitation to Bid #20-004 ATMS IV Enhancements – SCOOT Implementation at 20 Intersections. I have incorporated the necessary changes into my response for the abovementioned ITB.

COMPANY NAME _____

CONTACT PERSON: _____

ADDRESS: _____ CITY: _____

STATE: _____ ZIP: _____

PHONE: _____ EMAIL ADDRESS _____

SIGNATURE: _____ DATE: _____

**DEPARTMENT OF PUBLIC WORKS
CITY OF SANDY SPRINGS
SPECIAL PROVISION
PROJECT NUMBER: TS107
SANDY SPRINGS ATMS PHASE 4
FULTON COUNTY
Section 150—TRAFFIC CONTROL**

Add the following:

150.11 SPECIAL CONDITIONS:

- A. The Contractor shall not close lanes or move equipment or materials between the hours of 5:00 am to 9:00 am and 3:00 pm to 8:00 pm Monday through Friday. All Lane closures shall be approved by the Engineer prior to installation. Double lane closures shall not be allowed at any time.
- B. For this project, the advanced warning signs specified in Subsection 150.03H shall be portable signs. These signs shall be in place only during times that construction is in progress or as conditions warrant as directed by the Engineer. Signs shall be removed or covered at all other times.

**DEPARTMENT OF PUBLIC WORKS
CITY OF SANDY SPRINGS
SPECIAL PROVISION**

**County: Fulton
Project Number: TS107**

SECTION 978 – ADAPTIVE CONTROL SYSTEM

Section 978 - Adaptive Control System

978.01 General Description

This project will utilize the Split Cycle Offset Optimization Technique (SCOOT) adaptive control system. The SCOOT system shall be implemented to operate the defined 20 Mt. Vernon Hwy, Peachtree-Dunwoody Rd, and Abernathy Rd intersections in the City of Sandy Springs.

New SCOOT intersection detectors utilizing Wireless Magneto-Resistive Field Sensors shall be provided at all intersections and it will be the contractor's responsibility to install the optimal detection for the SCOOT system per the plans. The existing stop bar detectors being used for local SEPAC operations at all intersections shall remain intact and operational; these detectors will continue to be needed at times when SCOOT is not actively controlling the signal timing operations. Existing system detectors shall also be left in place, subject to availability of sufficient detector inputs in the cabinet. Note that SEPAC supports direct input from certain types of wireless microloop and video detection systems that do not require the use of cards in the input file.

The Contractor shall supply software support and maintenance for five (5) years.

The specifications included in this Special Provision provide minimal requirements for various elements of the SCOOT Adaptive Traffic Control System but do not specify all elements needed for a complete integrated SCOOT Adaptive Traffic Control System. The Contractor is required to submit a fully documented proposal and plan for a complete, integrated and functional SCOOT Adaptive Traffic Signal Control System utilizing the required technologies and optimal SCOOT intersection detection.

978.01.01 Definitions

Adaptive Traffic Signal Control System – This SCOOT system shall automatically and continuously (in real time) adjust signal coordination cycle length, offset, and split values for signalized intersections, providing the maximum efficiency for moving traffic along and across the project roadways. The detection for the adaptive traffic signal control system is its key component. Without properly located and functioning SCOOT detectors, the SCOOT system cannot operate at maximum efficiency; therefore, this project includes new SCOOT intersection detection to be located at optimum locations. The system will use the detection as an input to SCOOT, and the system will also collect and store traffic data in a retrievable format. Existing intersection detection at all intersections shall remain operational because it will be used when the SCOOT adaptive mode is not activated.

978.01.02 Related References

A. Georgia Specifications

- Section 150 – Traffic Control
- Section 922 – Electrical Wire and Cable
- Section 925 – Traffic Signal Equipment

- Section 937 – Video Detection System
- Section 938 – Detection
- Section 939 – Communications and Electronics Equipment
- Section 936 – CCTV

B. Referenced Documents

- Traffic Control Systems Standards No. TS 1
- NEMA Traffic Control Systems Standards No. TS 2
- AASHTO Roadside Design Guide
- The Manual on Uniform Traffic Control Devices (MUTCD), current edition
- National Electrical Code (NEC)
- American National Standards Institute (ANSI)
- Federal Communications Commission (FCC) regulations
- Underwriters' Laboratories Inc. (UL)
- National Electrical Manufacturer Association (NEMA)
- Institute of Electrical and Electronic Engineers (IEEE)
- American Society of Testing and Materials (ASTM)
- American National Standards Institute (ANSI)
- Lightning Protection Institute (LPI)
- National Electrical Safety Code (NESC)
- Occupational, Safety, and Health Act (OSHA)
- Federal Highway Works Administration (FHWA)
- Nation Fire Protection Association (NFPA)
- National Cooperative Highway Research Program (NCHRP)
- Federal Communications Commission (FCC)

All materials, equipment, accessories and components that are not in accordance with the specific standards and requirements shall require approval by the City of Sandy Springs.

The Contractor shall bring any conflicts between referenced industry specifications and this specification to the attention of the City of Sandy Springs.

Use the latest version of referenced industry specifications, standards, and practices in force and in existence as of this project's advertisement date unless otherwise noted. Acquire and use all applicable manuals, guidelines, and standards and practices that apply to the design, construction, and testing activities required to complete this project.

978.01.03 Submittals

This Subsection and the following chart provide the Contractor with an outline of the submittal requirements for the equipment and components for all pay items in this Section 978. This chart is to be used as a guide and does not relieve the Contractor from the requirement to submit additional information to form a complete submittal package.

Section 978 Submittal Requirements														
Material	Specification Reference	Catalog Cuts	Mfg. Specification	Design/ Construction Plans	Structural Calc.	Warranty Info.	Installatin Proced.	Maintenance Proced.	Test Schedule	Test Plan	Test Reports	Training Schedule	Training Material	Submittal Due Date (Calendar Days after NTP)
SCOOT Adaptive System Equipment	978.2	X		X		X	X	X						60
SCOOT Intersection Detection	978.2	X	X	X		X	X	X						60
Corridor Map Displays	978.2			X						X		X	X	60 (prior to implementation)
SCOOT/Detection Testing	978.3.06								X	X	X*			30 (prior to start of testing)
SCOOT/Detection Training	978.3.08											X	X	30 (prior to start of training)

**Items due after acceptance*

Provide one (1) electronic (word files, PDFs, etc.) and two (2) paper copies of complete and thorough submittal data for all components required for this item. Electronic copies shall be delivered on a DVD; each submittal shall be on a separate DVD. Furnish the submittal data to the Engineer.

Include; but not limited to, in the submittal data complete technical and performance specifications and cut-sheets on all hardware, components and materials to be installed; construction TCC system details and schematics; operational / user manuals for provided equipment; schedules; and testing and training to be performed under this contract.

All items – devices, equipment, components, cabling, materials provided and installed on this Project shall require a submittal to the City and the Engineer for review and approval.

Neatly organize each package of submittal data and separate by hardware or software item. Include an index of all submittal data documents contained within the package. Provide submittal data that is neat, legible, and orderly.

Use the “Materials Certification Package Index and Transmittal Form”, contained in Section 105.02 of the Special Provisions, for each pay item to document and list all material and components that are included in the submittal package. Any submittal data submitted without the Index/Transmittal form or that is incomplete will be rejected.

A. SCOOT Adaptive System

Submit complete design and physical, performance, and operational materials submittal data for the SCOOT adaptive system and all associated components.

B. SCOOT Intersection Detection

Submit complete design for SCOOT intersection detection showing layout of all equipment, power supplies, pole attachment points (and permitting if placing equipment on poles not owned by the State or cities), and communications. Detection design will require approval by the Engineer prior to installation.

C. Installation Procedure

Submit installation procedure showing steps to implement the SCOOT Intersection Detection and SCOOT Adaptive System. Procedure shall explain how the construction impacts to traffic will be minimized during detection installation and explain how existing intersection detection will be protected/maintained such that signal phase timings will not be set to max recall during construction for more than three days at any intersection.

D. Acceptance Testing

Submit acceptance testing plan with procedures for testing and validating the performance of the adaptive control system and detection. The adaptive control system testing plan shall include validation procedures demonstrating that the General System Requirements for SCOOT (978.02.02A) are met.

E. Warranties and Guarantees

Submit materials and submittal data providing complete example documentation on all manufacturers' warranties or guarantees on all Adaptive Traffic Signal Control Systems and detection furnished, as required in Subsection 978.03.07.

F. Training

Submit a Training Plan that includes, at a minimum, a detailed description of the contents of the course, an outline of the training course, resumes and references of the instructor(s), and the training notebook that the students will use during training. Submit a Training Plan within 60 calendar days of Contract Notice-to-Proceed. Obtain approval from the Engineer. Training plan shall include operational and maintenance training sessions. A minimum of one week of training is expected for up to 15 participants.

Request in writing the training date(s) a minimum of thirty (30) calendar days in advance of the desired training date(s). Do not submit the request to schedule the training prior to receiving the Engineer's approval of the Training Plan. Allow the Engineer to adjust the proposed schedule of the training by up to seven (7) calendar days, at no cost to the Department, to allow for availability of Department personnel.

G. As-Built Documentation

Provide PDF format as-built/delivered documentation of the SCOOT system and its detection within thirty (30) calendar days of the completion of the testing.

978.02 Materials

978.02.01 Delivery, Storage, and Handling

Not Applicable

978.02.02 SCOOT Adaptive System

A. General System Requirements

1. The system shall be able to apply a progression-based timing solution during uncongested periods
2. The system shall be able to implement timing strategies that maximize throughput inbound and outbound during peak periods
3. The system shall be able to implement timing strategies that balance throughput during noon and weekend peak periods
4. The system shall be able to apply timings that seek to avoid backing queues into adjacent intersections and facilities

5. The system shall be able to automatically choose the appropriate timing strategy given the conditions
6. The system shall allow certain links to be designated as critical (bottleneck) links, and use congestion on these links as a trigger to reduce green time on other designated signals to prevent the critical links from becoming saturated.
7. The system shall monitor sensors to identify the corridor conditions
8. The system shall initiate response to identified conditions within one signal cycle
9. The system shall implement a response to changing conditions within three signal cycles
10. The system shall allow the operator to constrain the changes made by the system to a defined range
11. The system shall allow the operator to override the operation
12. The system shall allow the central system to override adaptive operation by time of day
13. The system override shall be implemented intersection by intersection or for the whole network
14. The system shall monitor detectors for failure
15. The system shall provide alternative measurement values for failed detectors
16. The system shall automatically operate in local intersection control in case of failure of the central system control modes
17. The system shall provide real-time display indicating which timing strategy is in effect
18. The system shall provide real-time report of failure mode conditions and overrides
19. The system shall make all reporting available on any workstation attached to the central signal system
20. The system shall maintain a log for the most recent 30 days.
21. The system log shall include when timing strategies were in effect
22. The system log shall include failure mode conditions and overrides
23. The system log shall be automatically archived at user-defined intervals
24. The system shall allow the operator to set thresholds for increased flows that identify an incident condition.
25. The system shall treat the incident condition identification as an alarm condition within the traffic signal system
26. The system shall accommodate a minimum of 30 intersections on installation
27. The system shall be expandable to a minimum of 250 intersections without additional software modification
28. The system shall fulfill all requirements using 2070 traffic signal controllers running the Siemens SEPAC firmware in the version approved and provided at no cost by City of Sandy Springs, in ECOM protocol configuration
29. The system shall fulfill all project requirements when implemented in a Siemens TACTICS traffic signal system in the version used by the City of Sandy Springs.
30. The system shall operate over the Ethernet network installed by this project.
31. Use the City of Sandy Springs's 192.168 IP addressing scheme.
32. The system contractor shall provide new detection required for adaptive control of all signal phases at all intersections
33. The system contractor shall recommend locations and technologies for adaptive control
34. The system contractor shall design, install, test, and certify operation for all recommended and approved adaptive control detectors
35. The system shall allow detectors on any controller on the system to be mapped to adaptive control inputs on any intersection in the system.

36. The system shall collect and store traffic data such as delay, flow and congestion. This data must be available in a user friendly format, such as graphs, and be exportable in standard database formats.
37. The system should include facilities to enable priority control for public transport vehicles at intersections. This facility should also include recovery action after the vehicle has passed through an intersection.
38. The system contractor shall provide a submittal demonstrating fulfillment of all requirements.
39. The system contractor shall submit a test plan that demonstrates and certifies that all requirements are fulfilled before acceptance
40. The system contractor shall submit a validation plan demonstrating that the system supports the needs and processes before acceptance

B. SCOOT System Base (20 Intersections)

The SCOOT System Base (20 Intersections) shall include:

- 20 SCOOT intersection licenses
- Intersection graphics for 20 intersections
- Manufacturer approved remote session software interface to access the SCOOT user interface
- SCOOT central software configuration for up to 20 intersections
- Any other materials to provide a complete base system

C. SCOOT Field Tuning Validation

All of the intersections on the project currently have 2070 controllers. The contractor shall coordinate with The City of Sandy Springs to borrow any extra controllers needed, such that the Contractor can swap-out controllers where needed with minimal impact to traffic.

978.02.03 SCOOT Intersection Detection

Not Applicable – Detection per design in plans

978.03

978.03.00 Construction Requirements

Ensure that all construction for the equipment, materials, components and assemblies of the SCOOT system, detection, and corridor map displays conforms to the Contract and vendor's requirements and recommendations. Install all equipment, materials and components at the locations indicated on the Plans unless otherwise approved by the Engineer. Contractor shall be responsible for coordinating all installation activities with the City, GDOT and the Engineer.

978.03.01 Personnel

Not applicable

978.03.02 Equipment

Not applicable

978.03.03 Preparation

Not applicable

978.03.04 Fabrication

Not applicable

978.03.05 Construction

The Contractor shall install a complete and functional Adaptive Traffic Signal Control System and associated detection as required to provide the most accurate means of operating the Adaptive Traffic Signal Control system. All Adaptive Traffic Signal Control intersections shall use the existing controllers and communicate via the Ethernet network implemented by this project.

SCOOT System Base

The SCOOT System Base (20 Intersections) shall be installed at the Sandy Springs Traffic Management Center (TMC).

SCOOT Field Tuning and Validation

The Contractor shall:

- Verify every detector is transmitting data to the controller as planned
- Setup, monitor, fine tune, and validate all adaptive parameters in SCOOT

As-Built Drawings

Furnish 3 sets of as-built drawings, schematics, parts lists and manuals of the delivered Adaptive Traffic Signal Control System and detection and submit all copies to the City of Sandy Springs.

978.03.06 Quality Acceptance

A. General

Acceptance testing of the Adaptive Traffic Signal Control System consists of two phases: 1) field installation testing and 2) burn-in period. After the Engineer's granting of burn-in period completion, obtain Adaptive Traffic Signal Control System expansion acceptance. Perform acceptance testing for all equipment, hardware, software and work provided under this Contract, including each Adaptive Traffic Signal Control System assembly field installation. Perform all testing in the presence of the Engineer. Notify the Engineer of a desired acceptance test schedule no less than fourteen calendar days prior to beginning the testing. Develop detailed and thorough test procedures with full test plan descriptions and test results data sheets. As part of the submittal data requirements, submit these test plans to the Engineer for approval. The Engineer will notify the Contractor of the approval or disapproval of the test procedures; only test procedures approved by the Engineer can be used. Have a complete copy of all materials and equipment submissions and all documentary items on hand at all acceptance testing sessions. Demonstrate that the Adaptive Traffic Signal Control System and detection system equipment, hardware and software meet all requirements of the Contract. These requirements include but are not limited to all design, construction, materials, equipment, assembly, documentation of manufacturer's certification of assembly and configuration, environmental, performance, communications and documentary requirements of the Contract. Prior to the beginning of any acceptance testing at a given Adaptive Traffic Signal Control System assembly site, complete all configuration and documentation described in subsection 978.3.05

B. General

Perform the Field Installation Test as an onsite test of the complete delivered equipment. For the field equipment test confirm that the detectors are successfully operating at each adaptive intersection. Testing shall be performed in both directions during normal daytime traffic.

C. Burn-in Period

1. General Requirements

Provide a 30-day burn-in period for all work and equipment included in the Contract. The burn-in period shall consist of the operation of the Adaptive Traffic Signal Control System and detection system in a

manner that is in full accordance with the Adaptive Traffic Signal Control System assembly requirements of the Plans and Specifications. An acceptance test procedure is not required for the system burn-in.

Conduct only one (1) burn-in period on the entire Contract. Commence with the burn-in period only after meeting all of the following requirements:

- All work required in all Contract documents and approved submittals for the Adaptive Traffic Signal Control System has been completed and inspected by the Engineer.

Commence with the burn-in period upon written authorization by the Department to commence. Terminate the burn-in period 30 consecutive days thereafter unless an equipment malfunction occurs. Stop the burn-in period for the length of time any equipment is defective. After repairing the equipment so that it functions properly, resume the burn-in period at the point it was stopped.

Successful completion and acceptance of the burn-in period will be granted on the 30th day unless any equipment has malfunctioned during the 15th through 30th day of the burn-in period.

If any equipment has failed during the 15th through 30th day, final acceptance will be withheld until all the equipment is functioning properly for 15 days after repair.

When a specific piece of equipment has malfunctioned more than three times during the 30 day burn-in period, replace that equipment with a new unit and repeat the 30 day burn-in period.

2. Contractor Responsibilities

During the burn-in period, maintain all work under this Contract in accordance with the Specifications. Restore any work or equipment to proper operating condition within 12 hours after notification.

3. Department Responsibilities

Department responsibilities during the burn-in period will be as follows:

- Expeditious notification of Contractor upon failure or malfunction of equipment
- In the event that the Contractor does not provide the services enumerated above under his Contract responsibilities, the Department or its authorized agents may in the interest of public safety take emergency action to provide for adequate traffic control. Pay any costs incurred as a result of these emergency actions. Such action by the Department will not void any guaranties or warranties or other obligations set forth in the Contract.

4. Burn-In Period Acceptance

The Department will make burn-in period acceptance after satisfactory completion of the required burn-in period and on the basis of a comprehensive field inspection of the complete Adaptive Traffic Signal Control System in accordance with the Specifications. Upon burn-in period acceptance but prior to Final Acceptance of the entire Contract, maintain the complete Adaptive Traffic Signal Control System in accordance with the requirements of Subsection 978.3.07.

978.03.07 Contractor Warranty and Maintenance

A. Warranty

Provide a manufacturer's support (usual and customary warranties) period for all equipment and materials furnished and installed as part of the Adaptive Traffic Signal Control System equipment and materials. Transfer Manufacturer's and Contractor's warranties or guarantees to the agency or user responsible for the Adaptive Traffic Signal Control System maintenance. Make these warranties/guarantees are continuous throughout their duration, and state in them that they are subject to such transfer. Transfer the warranties or guarantees upon Contract Final Acceptance.

B. Support

During the warranty period, provide on-site and/or phone consultation as needed at no cost for any operating and maintenance questions or problems that may arise.

C. On-going Support

Provide on-going support for a period of five (5) years to include phone consultation as needed and on-site support up to 80 hours per year.

978.04 Measurement

A. SCOOT System

SCOOT System Base (20 Intersections) is measured as per each for the full delivery of a fully functional adaptive system delivered, installed, integrated, tested, and accepted.

SCOOT Field Tuning and Validation is measured as per each intersection for the completion and acceptance of the field tuning and validation activities.

B. Testing

Testing is measured as a lump sum for full delivery of testing and acceptance requirements

978.04.01 Limits

Not Applicable

978.05 Payment

Adaptive Traffic Signal Control System

Payment is full compensation for furnishing and installing the items complete in place according to this Specification. Payment for all items is as follows:

Item No. 978	SCOOT System Base (20 Intersections)	Each
Item No. 978	SCOOT Field Tuning and Validation	Each
Item No. 978	SCOOT System Maintenance	Lump Sum

978.05.01 Adjustments

A. Partial payment is allowed for the SCOOT System Base (20 Intersections) as follows:

- 50% payment after acceptance of the SCOOT intersection graphics creation, and proof of purchase of 20 licenses
- 50% final payment after full delivery of a fully functional adaptive system delivered, installed, integrated, tested, and accepted.

DEPARTMENT OF PUBLIC WORKS
CITY OF SANDY SPRINGS
SPECIAL PROVISION
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SANDY SPRINGS ATMS PHASE 4
FULTON COUNTY
Section UC – UTILITY COORDINATION

Utility companies having known facilities that conflict with the construction of this project have been directed by the City to adjust or relocate their facilities and will be notified of the contract award.

Conform to all the requirements of the Specifications as they relate to cooperation with utility owners and the protection of utility installations that exist on the project. Refer to the requirements of Section 107, Legal Regulations and Responsibility to the Public, with attention to Subsection 107.21.

Coordinate the Work with any work to be performed by others in any right of way clearance and arrange a schedule of operations that will allow for completion of the Project within the specified contract time. Where stage construction is required, notify the utility owner when each stage of work is completed, and the site is available for utility work to proceed.

Information concerning utility facilities known to exist within the project limits is shown on the plans.

Under Georgia Code Section 32-6-171, utilities are required to remove or relocate their facilities. The Contractor is required to give the utility at least 60 days written notice directing the removal and relocation, and the utility is required to begin removal within a reasonable time thereafter.

Under agreements with the City, all local service telephone companies, all Electric Membership Cooperatives and certain other utilities, are liable for delays to construction that is due to the utility's failure to clear conflicts within reasonable time.

In accordance with Subsection 105.06 of the Specifications, the City of Sandy Springs and the Georgia Department of Transportation will not be liable for payment of any claims due to utility delays, inconvenience or damage sustained by the Contractor due to interference of any utilities or appurtenances, or the operation of moving them.

**EXHIBIT O
TO CONTRACT AGREEMENT**

**SUBCONTRACTORS
LIST OF SUBCONTRACTORS**

I do _____, do not _____, propose to subcontract some of the work on this project. I propose to Subcontract work to the following subcontractors:

Company Name: _____