

**REVIEWED**

By Robert J. Stroup, PE at 3:33 pm, Apr 19, 2017

Advertised: **APRIL 15, 2017** **REVISED APRIL 19, 2017**

**NCDOT--Transportation Mobility & Safety Division (ITS & Signals)**

**REQUEST for LETTERS of INTEREST (RFLOI)**

**U-6015 Burlington-Graham Signal System Upgrade**

TITLE: **U-6015 Burlington-Graham Signal System Upgrade**

USING AGENCY: North Carolina Department of Transportation  
**NCDOT--Transportation Mobility & Safety Division (ITS & Signals)**

ISSUE DATE: **APRIL 15, 2017**

SUBMITTAL DEADLINE: **MAY 01, 2017**

ISSUING AGENCY: North Carolina Department of Transportation  
 Technical Services Division  
 Professional Services Management Unit

**SYNOPSIS**

**SUBCONSULTANTS ARE PERMITTED UNDER THIS CONTRACT.**

The primary and/or subconsultant firm(s) *(if Subconsultants are allowed under this RFLOI)* shall be pre-qualified to perform ALL of the work codes listed below for the NCDOT--Transportation Mobility & Safety Division (ITS & Signals). Work Codes required are:

- 00123 - ITS Design
- 00207 - Signals Design
- 00208 - Signal Equipment Design
- 00209 - Signal System Design
- **00310 -- Utility-Make-Ready-Design → WORK CODE 00310 IS NOW A PART OF WORK CODE 00209.**

**WORK CODES for each primary and/or subconsultant firm(s) *(if Subconsultants are allowed under this RFLOI)* SHALL be listed on the respective RS-2 FORMS (see section 'SUBMISSION ORGANIZATION AND INFORMATION REQUIREMENTS').**

This RFLOI is to solicit responses (LETTERS of INTEREST, or LOIs) from qualified firms to provide professional consulting services to:

**PREPARING DETAILED PLANS, SPECIFICATIONS AND AN ENGINEER'S ESTIMATE FOR THE REHABILITATION/EXPANSION OF THE BURLINGTON-GRAHAM COMPUTERIZED TRAFFIC SIGNAL SYSTEM. THE COMPUTERIZED TRAFFIC SIGNAL SYSTEM WILL CONSIST OF 203 INTERSECTIONS AND 10 NEW CCTV CAMERAS UTILIZING SINGLE MODE FIBER OPTIC COMMUNICATIONS CABLE. THIS PROJECT WILL INCLUDE NEW 2070 CONTROLLERS AND ASSOCIATED CABINETS; INSTALLATION OF NEW TRAFFIC CONTROL CENTER EQUIPMENT AND EXPANSION OF THE EXISTING FIBER OPTIC COMMUNICATIONS NETWORK BY THIRTY (30) MILES.**

Except as provided below any firm wishing to be considered must be properly registered with the Office of the Secretary of State and with the North Carolina Board of Examiners for Engineers and Surveyors. Any firm proposing to use corporate subsidiaries or subcontractors must include a statement that these companies are properly registered with the North Carolina Board of Examiners for Engineers and Surveyors and/or the NC Board for Licensing of Geologists. The Engineers performing the work and in responsible charge of the work must be registered Professional Engineers in the State of North Carolina and must have a good ethical and professional standing. It will be the responsibility of the selected private firm to verify the registration of any corporate subsidiary or subcontractor prior to submitting a Letter of Interest. Firms which are not providing engineering services need not be registered with the North Carolina Board of Examiners for Engineers and Surveyors. Some of the services being solicited may not require a license. It is the responsibility of each firm to adhere to all laws of the State of North Carolina.

The firm must have the financial ability to undertake the work and assume the liability. The selected firm(s) will be required to furnish proof of Professional Liability insurance coverage in the minimum amount of \$1,000,000.00. The firm(s) must have an adequate accounting system to identify costs chargeable to the project.

## **SCOPE OF WORK**

The North Carolina Department of Transportation (NCDOT) is soliciting proposals for the services of a firm/team for the following contract scope of work:

**The development of Plans and Specifications shall adhere to the requirements of the Burlington-Graham Metropolitan Planning Organization Regional ITS Strategic Deployment Architecture as defined in the North Carolina Statewide ITS Strategic Deployment Plan. The finalized package shall be a stand-alone document complete and ready for letting by the Department.**

**The plans shall be prepared in electronic format and DocuSigned. Electronic files of the plans shall be prepared using MicroStation; electronic files of the Project Special**

Provisions shall be prepared using Microsoft Word; and electronic files of the Engineer's Estimate shall be prepared using Microsoft Excel.

The Scope of Work as a minimum will consist of the following:

**Project Management:**

- Coordination and communications with project steering committee members through meeting agendas, monthly design meetings, meeting minutes, monthly invoices, project progress reports, technical memoranda and functional design drawings. Monthly design meetings will be conducted in Burlington, NC.

**System Boundary Identification and System Evaluation:**

- Define the study area of which traffic signals (existing and proposed) will be incorporated into the computerized traffic signal system. Evaluate alternative system designs against each other and against the existing system. Develop a Systems Engineering Document that defines the physical and functional requirements of the system to ensure consistency with the Burlington Regional ITS Architecture and to ensure conformance with the requirements of 23 CFR 940.11 Project Implementation.

**System Data Collection:**

- Perform an inventory of intersections to determine the current characteristics of the field hardware including: the physical layout of the cabinet; the conduit entrances in the foundation; required modifications or replacements to accommodate new cabinets; electrical service arrangement; the location of the existing local and system detectors; and the phasing and signal head arrangement at each intersection.

**Identify Local Intersection Improvements:**

- Verify all intersection displays are in compliance with the MUTCD and NCDOT standards. Review at-grade rail crossings to ensure the necessary preemption phasing and associated equipment are existing. Make recommendations for improvements to the overall safety and efficiency of intersections.

**Basemapping/Utility Make-Ready Plan Development:**

- Coordinate with the NCDOT and the City of Burlington to obtain base mapping. Review the routing of the existing aerial communications cable to identify NESC compliance for the possible over-lashing of new fiber optic cable. Investigate the viability of reusing existing underground conduits. Identify the most cost-effective route for the placement of new fiber optic cable. Prepare preliminary cable routing plans for use in the utility walk-through, identifying both aerial and underground applications. Will include field walk through with the utilities to achieve buy-in on the routes and to agree upon needed adjustments and attachment points.

**Railroad Encroachment Permits:**

- Identify the railroad crossings, collect all data required for railroad encroachment permits, complete the technical information, prepare the figures and exhibits of the permits, and prepare the encroachment applications.

**Historical Property Identification:**

- Identify known historical properties and districts within the proposed signal system project boundaries. Identify the placement of new signal items such as poles, cabinets, mast arms, CCTV cameras, or other work that would cause a possible effect

on the historical property. Provide detailed figures that illustrate the location and types of work planned within or adjacent to historic properties.

#### **Communications Design:**

- Identify the size of the required fiber optic communications network based on the functional design requirements to accommodate all system features and to ensure a sufficient number of spare fibers for future system expansion. Design the fiber optic communications system to include conduit networks, aerial networks, splice cabinets, and the associated fiber optic splice details to convert the existing serial fiber optic network to an Ethernet fiber optic network.
- Evaluate the use of wireless technology in the areas of the system that are to be expanded, including performing wireless site surveys.

#### **CCTV Monitoring System:**

- Identify potential locations for CCTV cameras. Conduct field surveys of each location to determine the best visibility based on horizontal curves of the roadway and obstructions such as buildings and trees. Record the roadway in each direction at a height similar to that of the proposed CCTV camera attachment. Develop detailed drawings for the placement of the CCTV assembly identifying the placement of CCTV poles with associated distances from edges of pavement.

#### **Signal System PS&E:**

- Develop a complete package containing all elements required of a standard NCDOT signal system design including: Traffic Signal Plans, Electrical Details for Traffic Signal Plans; Typical Details; Special Details; Traffic Control Plans; CCTV Monitoring System Details; System Detection Placement; Intersection Improvement Plans; Cable Layout Sheets depicting installation of the communications cable, cabinet equipment work to be performed at intersections, work to be performed to install ITS features; Splice Diagrams depicting individual fiber splicing in a graphical format, Schedules of Work, Pay Items, Project Special Provisions, and an Engineer's Estimate of Probable Construction Cost.

The firm must have demonstrated design expertise in Intelligent Transportation Systems and Central Computerized Traffic Signal Systems.

**PROPOSED CONTRACT TIME: TWELVE (12) MONTHS.**

**PROPOSED CONTRACT PAYMENT TYPE: LUMP SUM**

### **SUBMITTAL REQUIREMENTS**

All LOIs are limited to **FIFTEEN (15)** pages (RS-2 forms are not included in the page count) inclusive of the cover sheet, and shall be typed on 8-1/2" x 11" sheets, single-spaced, one-sided.

LOIs containing more than **FIFTEEN (15)** pages will not be considered.

**WORK CODES for each primary and/or subconsultant firm(s) (if Subconsultants are allowed under this RFLO) SHALL be listed on the respective RS-2 FORMS (see section 'SUBMISSION ORGANIZATION AND INFORMATION REQUIREMENTS').**

ONLY ELECTRONIC LOIs WILL BE ACCEPTED.

LOIs should be submitted in .pdf format using software such as Adobe, CutePDF PDF Writer, DocuDesk deskPDF, etc.

One copy of the LOI should be sent as a .pdf file, **through NCDOT's FTS System**, to: [psmu-411@ncdot.gov](mailto:psmu-411@ncdot.gov) . **The FTS system will send you an electronic receipt when your LOI is uploaded to NCDOT's FTS system.** Paper copies are not required. The subject line should contain the Firm's Name, and "LOI for U-6015 Burlington-Graham Signal System Upgrade".

If an interested firm does not have an FTS account they should send a request through regular e-mail to [psmu-411@ncdot.gov](mailto:psmu-411@ncdot.gov) . A response will be sent via the FTS system that will provide a login username, password, and login procedures.

**LOIs SHALL be received electronically no later than 12:00 P.M., MAY 01, 2017.**

**LOIs received after this deadline will not be considered.**

**Firms submitting LOIs are encouraged to carefully check them for conformance to the requirements stated above (and any other requirements in this Advertisement). If LOIs are submitted late, exceed the maximum number of pages, are sent by any means other than NCDOT's FTS system, or are sent to any address other than psmu-411@ncdot.gov they will be disqualified.**

**The Department reserves the right to reject all LOIs and not proceed with procurement.**

**The Department reserves the right to waive any technicality in LOIs, or notify the Firm(s) of such technicality and allow the Firm(s) up to two (2) business days to rectify the technicality.**

## **SELECTION PROCESS**

Following is a general description of the selection process:

- The NCDOT Selection Committee will review all qualifying LOI submittals.
- For Limited Services Contracts (On-Call type contracts), the NCDOT Selection Committee MAY, at the Department's discretion, choose any number of firms to provide the services being solicited.
- For Project-Specific Contracts (non On-Call type contracts), the Selection Committee MAY, at the Department's discretion, shortlist a minimum of three (3) firms to be interviewed. IF APPLICABLE, dates of shortlisting and dates for interviews are shown in the section SUBMISSION SCHEDULE AND KEY DATES at the end of this RFLOI.

- In order to be considered for selection, consultants must submit a complete response to this RFLOI prior to the specified deadlines. Failure to submit all information in a timely manner will result in disqualification.

## **SMALL PROFESSIONAL SERVICE FIRM (SPSF) PARTICIPATION**

The Department encourages the use of Small Professional Services Firms (SPSF). Small businesses determined to be eligible for participation in the SPSF program are those meeting size standards defined by Small Business Administration (SBA) regulations, 13 CFR Part 121 in Sector 54 under the North American Industrial Classification System (NAICS). The SPSF program is a race, ethnicity, and gender neutral program designed to increase the availability of contracting opportunities for small businesses on federal, state or locally funded contracts. SPSF participation is not contingent upon the funding source.

The Firm, at the time the Letter of Interest is submitted, shall submit a listing of all known SPSF firms that will participate in the performance of the identified work. The participation shall be submitted on the Department's Subconsultant Form RS-2. RS-2 forms may be accessed on the Department's website at [NCDOT Electronic Forms](#).

The SPSF must be qualified with the Department to perform the work for which they are listed.

Real-time information about firms doing business with the Department and firms that are SPSF certified through the Contractual Services Unit is available in the Directory of Transportation Firms. The Directory can be accessed on the Department's website at [Directory of Firms](#) -- Complete listing of certified and prequalified firms.

The listing of an individual firm in the Department's directory shall not be construed as an endorsement of the firm.

## **PREQUALIFICATION**

The Department maintains on file the qualifications and key personnel for each approved discipline, as well as any required samples of work. Each year on the anniversary date of the company, the firm shall renew their prequalified disciplines. If your firm has not renewed its application as required by your anniversary date or if your firm is not currently prequalified, please submit an application to the Department **prior to submittal of your LOI**. An application may be accessed on the Department's website at [Prequalifying Private Consulting Firms](#) -- Learn how to become Prequalified as a Private Consulting Firm with NCDOT. Having this data on file with the Department eliminates the need to resubmit this data with each letter of interest.

Even though specific DBE/MBE/WBE goals are not required for this project, the Department of Transportation is committed to providing opportunity for small and disadvantaged businesses to perform on its contracts through established Department goals. The Firm, subconsultant and subfirm shall not discriminate on the basis of race, religion, color, national origin, age, disability or sex in the performance of this contract.

## **SELECTION CRITERIA**

**All prequalified firms who submit responsive letters of interest will be considered.**

In selecting a firm/team, the selection committee will take into consideration qualification information including such factors as:

1. **35%** = The evaluation of performance on any previous contracts with the NCDOT-Transportation Mobility and Safety Division and/or City of Burlington Traffic Engineering Division.
2. **35%** = The Firm's experience and staff to perform the type of work required, including any designated sub-consultants.
3. **25%** = The Firm's ability to meet the time schedule established for the work.
4. **5%** = The Firm's outstanding workload with the NCDOT-Transportation Mobility and Safety Division and/or City of Burlington Traffic Engineering Division.
5. **N/A%** = N/A.

After reviewing qualifications, if firms are equal on the evaluation review, then those qualified firms with proposed SPSF participation will be given priority consideration.

**SUBMISSION ORGANIZATION AND INFORMATION REQUIREMENTS**

The LOI should be addressed to **Mr. Robert J. Stroup, PE -- State Professional Services Engineer** and must include the name, address, telephone number, and e-mail address of the prime consultant's contact person for this RFLOI.

The LOI must also include the information outlined below:

**Chapter 1 - Introduction**

The Introduction should demonstrate the consultant's overall qualifications to fulfill the requirements of the scope of work and should contain the following elements of information:

- Expression of firm's interest in the work;
- Statement of whether firm is on register;
- Date of most recent private engineering firm qualification;
- Statement regarding firm's(') possible conflict of interest for the work; and
- Summation of information contained in the letter of interest.

**Chapter 2 - Team Qualifications**

This chapter should elaborate on the general information presented in the introduction, to establish the credentials and experience of the consultant to undertake this type of effort. The following must be included:

1. Identify recent, similar projects the firm, acting as the prime contractor, has conducted which demonstrates its ability to conduct and manage the project. Provide a synopsis of each project and include the date completed, and contact person.
2. If subconsultants are involved, provide corresponding information describing their qualifications as requested in bullet number 1 above.

### Chapter 3 - Team Experience

This chapter must provide the names, classifications, and location of the firm's North Carolina employees and resources to be assigned to the advertised work; and the professional credentials and experience of the persons assigned to the project, along with any unique qualifications of key personnel. Although standard personnel resumes may be included, identify pertinent team experience to be applied to this project. Specifically, the Department is interested in the experience, expertise, and total quality of the consultant's proposed team. If principals of the firm will not be actively involved in the study/contract/project, do not list them. The submittal shall clearly indicate the Consultant's Project Manager, other key Team Members and his/her qualifications for the proposed work. Also, include the team's organization chart for the Project / Plan. A Capacity Chart / Graph (available work force) should also be included. Any other pertinent information should also be listed in this section.

**Note:** If a project team or subconsultant encounters personnel changes, or any other changes of significance dealing with the company, NCDOT should be notified immediately.

### Chapter 4 - Technical Approach

The consultant shall provide information on its understanding of, and approach to accomplish, this project, including their envisioned scope for the work and any innovative ideas/approaches, and a schedule to achieve the dates outlined in this RFLOI (if any project-specific dates are outlined below).

The Plans and Specifications shall be complete within twelve (12) months from Notice to Proceed.

## APPENDICES-

### CONSULTANT CERTIFICATION Form RS-2

Completed Form RS-2 forms SHALL be submitted with the firm's letter of interest. This section is limited to the number of pages required to provide the requested information.

Submit Form RS-2 forms for the following:

- **Prime Consultant firm**
  - Prime Consultant Form RS-2 Rev 1/14/08; and



- **ANY/ALL Subconsultant firms** (*If Subconsultants are allowed under this RFLOI*) to be, or anticipated to be, utilized by your firm.
  - Subconsultant Form RS-2 Rev 1/15/08.
  - In the event the firm has no subconsultant, it is required that this be indicated on the Subconsultant Form RS-2 by entering the word “None” or the number “ZERO” and signing the form.

**Complete and sign each Form RS-2 (instructions are listed on the form).**

The required forms are available on the Department’s website at:

<https://apps.dot.state.nc.us/quickfind/forms/Default.aspx> .

[Prime Consultant Form RS-2](#)

[Subconsultant Form RS-2](#)

All submissions, correspondence, and questions concerning this RFLOI should be directed to **Robert J. Stroup, PE** at [rstroup@ncdot.gov](mailto:rstroup@ncdot.gov). However, the LOI itself must be submitted to [psmu-411@ncdot.gov](mailto:psmu-411@ncdot.gov) via NCDOT’s FTS System.



**NOTE: To adhere to the Timeframe, a Notice to Proceed is expected to be issued shortly after (a) firm(s)/team(s) is/are selected. All firm(s)/team(s) submitting a LETTER OF INTEREST should make sure that their rates and overheads are current and have been audited by NCDOT.**

## **SUBMISSION SCHEDULE AND KEY DATES**

RFLOI Release – **APRIL 15, 2017**

Deadline for Questions -

Issue Final Addendum -

Deadline for LOI Submission – **MAY 01, 2017**

Shortlist Announced \* - **TBD -- if the Department elects this option.**

Interviews - the week of **TBD -- if the Department elects this option.**

Firm Selection and Notification \*\* - **TBD.**

Anticipated Notice to Proceed – **TBD**.

\* Notification will **ONLY** be sent to shortlisted firms.

\*\* Notification will **ONLY** be sent to selected firms.