

City of Portsmouth, NH  
Department of Public Works

**DESIGN SERVICES**  
**for**  
**Woodbury Avenue Traffic Signal System Interconnect & Upgrade**

**REQUEST FOR QUALIFICATIONS 45-14**

**INVITATION**

The City of Portsmouth seeks Statements of Qualifications for engineering design services to upgrade, reconfigure, interconnect and coordinate the traffic signal equipment of seven signalized intersections within Portsmouth NH. Sealed Statements of Qualifications will be accepted until Thursday March 6, 2014 @ 2:00 p.m. at the Finance/Purchasing Department, City Hall, 1 Junkins Avenue, Portsmouth, New Hampshire, 03801.

The seven intersections are as follows:

- Woodbury Avenue/Gosling Road
- Woodbury Avenue/ Durgin Lane/ BJ's Wholesale Club
- Woodbury Avenue/ Commerce Way/ Durgin Plaza
- Woodbury Avenue/ Arthur Brady Dr./ Marshall's Plaza
- Woodbury Avenue/ Market St/ Marshall's Plaza
- Woodbury Avenue/ Granite Street
- Market St./ Portsmouth Boulevard

The City of Portsmouth reserves the right to reject any and all proposals, to waive technical or legal deficiencies, and to accept any proposals that are deemed to be in the best interest of the City.

Proposal specifications may be obtained from the City's web site at [www.cityofportsmouth.com](http://www.cityofportsmouth.com) or by contacting the Purchasing Coordinator at the above address, or by calling the Purchasing Coordinator at 603-610-7227. Addenda to this proposal, if any, including written answers to questions, will be posted on the City of Portsmouth website under the project heading.

If you have any questions, please contact the Finance/Purchasing Department at the following number (603) 610-7227 between 9 a.m. and 4 p.m.

**REQUEST FOR PROPOSAL FOR  
DESIGN SERVICES  
Woodbury Avenue Traffic Signal System Interconnect & Upgrade**

**I  
Introduction**

The City of Portsmouth seeks Statements of Qualifications from qualified consulting firms for engineering design services to upgrade, interconnect, and coordinate seven signalized intersections within Portsmouth. The seven intersections are as follows:

- Woodbury Avenue/Gosling Road
- Woodbury Avenue/ Durgin Lane/ BJ's Wholesale Club
- Woodbury Avenue/ Commerce Way/ Durgin Plaza
- Woodbury Avenue/ Arthur Brady Dr./ Marshall's Plaza
- Woodbury Avenue/ Market St/ Marshall's Plaza
- Woodbury Avenue/ Granite Street
- Market St./ Portsmouth Boulevard

The City has received a CMAQ grant for this project with 80% of the funding provided by the Federal Highway Administration through the CMAQ Program administered by the New Hampshire Department of Transportation (NHDOT), and a 20% match provided by the City of Portsmouth. The City also has additional funds that will be used in order to upgrade the corridor to provide new cabinets, controllers and hardware with new emergency preemption, pedestrian signals, new handicapped ramps and multimodal detection.

The City of Portsmouth will manage the project through the NHDOT's Local Public Agency (LPA) system. The program allows the City to select the design consultant and contractor, provide contract administration, coordinate public participation efforts and manage the design and construction of the project. All proposals submitted and any and all contracts entered into will need to be in full conformance with the current LPA Manual. Consulting Firms should review the most current version of the manual prior to submission of qualification statements to the City. It is the City's intent to finish the design portion of the project in October of 2014.

**II  
Purpose and Need**

The Woodbury Avenue Corridor is the City's main thoroughfare for moving traffic north & south through the northern commercial district. Because of the close proximity of traffic signals in the corridor, vehicles will sometimes back up from one intersection through the next. The signals have been coordinated by multiple firms over the last ten to fifteen years but due to the lack of communication infrastructure and modern controllers, and the ever changing nature of the area, none of these coordination attempts have lasted any substantial period of time.

### **III Project Goals**

#### *Improving Transportation Efficiency*

The major objective of this project is to improve traffic flow in the Corridor. The City's hope is to interconnect and coordinate these signals in a manner that is efficient, stable, and adaptable. Adaptive Signal Controls may be warranted due to the dynamic traffic patterns experienced.

#### *Improving Safety in the Corridor*

The intersection of Market Street and Woodbury Ave has a very high number of handicapped wheelchair users. Handicapped people cross the Market St./Woodbury Ave. intersection many times every day to get back and forth primarily from the Marshall's Plaza. One goal of the project would be to improve the safety of this crossing for the disabled. A system that could automatically extend 'walk' times as needed for the disabled would be advantageous in this location. Currently, due to the high frequency of disabled crossers, the current walk signal timing has been extended beyond what is needed for a fully able pedestrian. If the system could monitor the pedestrian during the crossing, the crossing times could be truncated accordingly.

The existing pedestrian signals are outdated and MUTCD non-compliant. The City wishes to upgrade the pedestrian hardware as part of the work. This includes providing ADA compliant ramps and equipment at all crossings.

The City is in the process of upgrading its signals citywide with emergency signal pre-emption systems. The Woodbury Avenue Corridor is a primary route for the Fire Department and therefore the corridor will need to be equipped with the system.

#### *Improving Detection Reliability*

The City would like to explore the option of going to video (or infrared) detection in the corridor primarily to avoid detection loop failure. It would be advantageous if the detection system could also serve the handicapped, pedestrians, and bicycles.

#### *Granite Street Intersection*

The intersection of Granite Street with Woodbury Ave currently has substandard signal equipment. New mast arms, signals, conduit, controllers, etc., will need to be designed for this intersection. This is the only intersection that will require full design as it is the City's desire to maintain the existing mast arms wherever feasible.

### **IV Coordination with Other City Projects**

The engineer shall coordinate efforts with any previously approved projects in the area.

## V Scope of Work

The Project Study Area should include the following seven signalized intersections scheduled for upgrade and coordination:

<b>LOCATION</b>	<b>SCOPE OF IMPROVEMENTS</b>
▪ Woodbury Avenue/Gosling Road	(Pedestrian Upgrades Only)
▪ Woodbury Avenue/ Durgin Lane/ BJ's Wholesale Club	(Upgrade/Coordinate)
▪ Woodbury Avenue/ Commerce Way/ Durgin Plaza	(Upgrade/Coordinate)
▪ Woodbury Avenue/ Arthur Brady Dr./ Marshall's Plaza	(Upgrade/Coordinate)
▪ Woodbury Avenue/ Market St/ Marshall's Plaza	(Upgrade/Coordinate)
▪ Woodbury Avenue/ Granite Street	(Reconstruct/Coordinate)
▪ Market St./ Portsmouth Boulevard	(Upgrade/Coordinate)

### 1. DATA COLLECTION:

The Consultant shall collect vehicle turning movement and pedestrian traffic data at each intersection during the following time periods:

- Weekday Hours (7 AM – 8 PM)
- Saturday Peak Hours (9 AM – 8 PM)
- Sunday Midday Hours (10 AM – 6 PM)

The pedestrian data shall include number of handicapped crossings and the average crossing time.

The Police Department can provide three years of accident data for each intersection for the Consultant's use if desired.

The consultant shall provide structural engineering services and also evaluate existing mast arm structures in regard to safety from weld, foundation, or other structural failures. It is the intent of the City to reuse the existing mast arm structures, with the exception of Granite St., if feasible.

The Consultant shall review all existing conditions of the existing signals including, but not limited to cabinet and foundation condition regarding possible reuse, wiring insulation, push button, and handicapped ramp location in regard to compliance with ADA regulations, pedestrian signals, conduit condition and size, mast arms, electrical services, light housings, spare conductors, etc.

The Consultant will also be responsible for obtaining all existing timings from the controllers.

### 2. BASE PLAN PREPARATION:

The City will provide aerial imagery and GIS data for the area. The consultant will be required to complete finished design plans from this base data. If additional data is required beyond the City's base maps, the Consultant will be responsible for obtaining that data. It is likely that the City's ROW will need to be determined at each intersection where new equipment is proposed.

### 3. ENGINEERING STUDY & TRAFFIC ANALYSIS:

The Consultant shall also perform an assessment of all the intersections for each time period listed in Section 1 for an evaluation of the existing capacity constraints. After considering seasonal adjustments and an annual growth rate the Consultant shall perform an evaluation of the opening year and 10-year future conditions. The Consultant shall consider operational and safety conditions, as well as potential capacity improvements by evaluating items such as turn lane warrants. The Consultant shall also model the corridor under a coordinated traffic signal system with any proposed roadway improvements (i.e. turn lanes). The analysis effort should quantify the benefits of the improvements over the no-build condition.

The Consultant shall also evaluate accident data to determine if any changes to existing traffic control are required based on accident trends.

### 4. PRELIMINARY DESIGN:

The consultant will develop preliminary design plans for City of Portsmouth approval prior to proceeding to final design. The preliminary plans will include, but not be limited to:

- Location plan
- General plan
- Typical details
- Handicapped Ramp details
- Utility plan, if required
- R.O.W., alignment, and Curb Ties as needed
- Pavement Markings and Signage
- Signalization Plan
- Documentation of proposed variance from minimum city, state, or federal design standards (if applicable)
- Itemized cost estimate using, to the maximum extent practical, item numbers, nomenclature, descriptions, and materials and construction requirements that are contained in the Standard Specifications for Road and Bridge Construction, State of NHDOT latest edition. Method of measurement and basis of payment for items used may be modified by Special Provision at the discretion of the designer. Special items unique to the project will require their own Special Provisions.

### ENVIRONMENTAL & CULTURAL DOCUMENTATION:

The Consultant will be responsible for identifying any impacts on the environment caused by the project. Existing natural, cultural, and social resources will be reviewed and documented by the consultant as described in the latest version of the *LPA Manual, section 17*.

Since the project is federally funded, Section 4(f) of the USDOT Act and Section 106 of the National Historic Preservation Act allows the NH Division of Historical Resources (NHDHR)/State Historic Preservation Office (SHPO) the opportunity to review the project's impacts on potentially sensitive historic and cultural resources. The Consultant will be responsible for conducting a preliminary review to

identify potentially historic and archaeological resources in the project area. The results of these findings and any recommendations from NHDHR will be properly documented.

The consultant may be required to prepare air quality or noise modeling to determine the project's impact on adjacent receptors. The results of these modeling sessions will be stated in the environmental document, if needed.

**The Consultant will be responsible for preparing all applications and obtaining all pertinent environmental permits or approvals on behalf of the City.**

#### 5. MEETINGS:

It is assumed that ten (10) meetings will require the consultant's attendance as provided below. The Consultant shall be responsible for recording and preparing meeting agendas and minutes as well as providing presentation plans as requested by the City.

- Progress Meetings with City Staff (Assume 4 meetings)
- Public Informational Meeting (Assume 1)
- Environmental Resource Meeting (Assume 1)
- Abutters Meeting (Assume 1)
- Utility Coordination Meeting (Assume 1)
- Pre-Bid meeting with City/ Prospective Contractors (Assume 1)
- Pre-Construction Meeting with City/Contractor (Assume 1)

#### 6. FINAL DESIGN:

Following the preliminary plan presentation and approval, the Consultant will prepare final design plans, specifications, and estimate for City final review and approval. The final design plans will consist of two separate design review submissions:

- Preliminary PS&E for review by the City and State
- Final PS&E

The Preliminary PS&E submission shall include a Preliminary Traffic Control Plan and Prosecution of Work for discussion with the City. Each submission shall include a list of the project items and descriptions of variances from the minimum City and State design standards. Following the review of the Final PS&E submission, the Consultant shall make any minor revisions and submit a copy of the plans with a copy of the calculations, which shall be stamped by a Professional Engineer in the State of New Hampshire for use in construction bidding. All design computation sheets and plans shall also be submitted in electronic format for the City's future use.

**The Consultant shall prepare all plans as needed to secure any easements and/or acquisitions to construct the project.** Although no road widening is anticipated, it is likely that easements may be needed for temporary construction impacts, mast arm relocations and new cabinet installations.

Original construction plans will become the property of the City of Portsmouth. A professional engineer

licensed in the State of New Hampshire will stamp all plans. The consultant will also provide the City with electronic files containing all engineering data in AutoCAD format.

7. CONSTRUCTION SERVICES:

Construction Engineering & Inspection will not be part of this design contract; however a contract amendment to include these services may be negotiated at a later time. The Consultant will be required to review construction bids and attend the preconstruction meeting.

8. POST CONSTRUCTION:

The following two items are requested for inclusion into the design contract's scope:

- A. *Traffic Signal System Fine-Tuning and Adjustment in Field* – Following construction, the Consultant shall provide engineering and technical personnel to fine-tune and adjust the system equipment and signal timings in the field. A check and review of the traffic operations plans shall be field documented to assure that the proper operations are implemented. Consultant shall provide final construction plans to the City after any fine tuning adjustments are made.
- B. *Verification of controller and system programming and timing* – Following construction, the Consultant shall assist the City in verification of completeness of installation.

## VI Submittal Requirements

The Consultant shall submit three (3) bound copies of a non-price proposal and one (1) separate sealed rate sheet. **Proposals will be accepted until Thursday March 6, 2014 @ 2:00 p.m. at the Finance/Purchasing Department, City Hall, 1 Junkins Avenue, Portsmouth, New Hampshire, 03801.**

The following items shall be included in the non-price proposal submission.

- 1. Firm Description – provide a brief description of the firm including firm size and areas of specialization, location of corporate headquarters, and potential satellite office proposed to handle this project.
- 2. Project Team – Provide names and resumes of key professional staff who would be assigned to the project. Each team member's education and experience shall be listed. The team leader shall be designated. It will be required that at least one member of the team will be a licensed Professional Engineer in the State of New Hampshire. The engineering firm will also be required to be certified in the NHDOT's Local Public Agency (LPA) process and familiar with Federal Aid Highway Projects (FAHP).
- 3. Relevant Experience – Provide the details of relevant experience and past performance of the consultant and its team members on comparable signal coordination projects. This item should cover, at a minimum, the substantive nature of comparable projects. Consultants are required to give

sufficient information of their experiences to permit the City to understand and verify the exact nature of the contributions made by the Consultant to the projects listed.

4. References – Provide the name, title, locations, and phone number of persons who can substantiate the consultant’s referenced experiences as listed in Item #3 above.
5. Statement of Project Requirements – The consultant shall state in succinct terms its understanding of what is required by this Request for Proposal.
6. Scope of Services – Describe in narrative form the Consultant’s approach and technical plan for accomplishing the work listed herein. The Consultant is encouraged to elaborate and improve on the tasks listed in the RFP. The Consultant shall submit a schedule for completing the scope of work.
7. Rate Sheets – The consultant shall submit in a separate sealed envelope hourly rates for those members of its staff who are anticipated to be assigned to the project.

## **VII Selection Criteria**

All responsive submittals shall be reviewed and the City may conduct interviews of short-listed firms. Each team shall be evaluated based on the following criteria:

- A. Team Qualifications
- B. Qualifications of Project Manager, Lead Designers, and other Key Staff
- C. Understanding of Project Objectives
- D. Responsiveness to City’s Requirements reflected in Proposed Approach/Scope
- E. Adherence to Project Schedule

Upon review of the non-price proposals, and interviews, if so used, the City shall rate the firms in order of preference. The top rated firm shall be notified of its standing. The Rate Sheets of the three top-ranked firms shall be opened. The City will attempt to negotiate a mutually satisfactory contract with the top rated firm, negotiating scope and price as may be in the city’s best interest. The City may terminate the negotiations with the top-ranked firm without prejudice at any time and commence negotiations with the second ranked firm. If no agreement can be reached with the second rated firm, the City may move to the third, and so forth. Once negotiations are terminated with a firm, they may not be reopened.

The City of Portsmouth reserves the right to reject any and all proposals, to waive technical or legal deficiencies, to accept any proposals that are deemed to be in the best interest of the City, and to negotiate terms and conditions of any proposal leading to acceptance and final execution of a contract.

The City also reserves the right to undertake such investigation as it deems necessary to evaluate the qualifications of the firm. Firms may be requested to execute releases for information. Failure to provide a release upon request will result in disqualification.