



*Communities working together to  
meet Chittenden County's transportation needs*

**CHITTENDEN COUNTY METROPOLITAN PLANNING  
ORGANIZATION**

# **Chittenden County Signal Optimization Plan**

## **Request for Proposals**

**July 6, 2007**

**Proposals Due  
Thursday, July 26, 2007 at 3:00 pm**

CCMPO  
30 Kimball Ave, Suite 206, South Burlington, Vermont 05403  
(802) 660-4071 / (802) 660-4079 *Fax*  
[www.ccmpto.org](http://www.ccmpto.org) / [droberts@ccmpto.org](mailto:droberts@ccmpto.org)

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## I. GENERAL INFORMATION

### Introduction

The Chittenden County Metropolitan Planning Organization (CCMPO), the transportation planning agency for the Burlington, Vermont metropolitan area, is seeking a qualified consultant to assist in performing signal optimization for municipally owned and maintained traffic signals in Chittenden County.

This project is a continuation of a program which began in 2005. The CCMPO acts as the project manager for this federal aid project which requires a Cooperative Agreement (CA) to be signed between the MPO and the Vermont Agency of Transportation (VTrans). The project will be managed in conjunction with VTrans through the Local Transportation Facilities (LTF) program.

Tasks included in the project include compiling and reviewing intersection turning movement counts, providing an inventory of existing signal equipment, performing signal operation analyses, developing optimized timing plans and programming controllers with new signal timings. In addition, the selected consultant will work with VTrans and the municipality to prepare the National Environmental Policy Act (NEPA) documentation for the project.

All consultants must follow the standard consultant provisions as found the LTF Guidebook which can be downloaded at:

<http://www.aot.state.vt.us/progdev/Sections/LTF/LTFGuidebook/LocalTransportationFacilitiesGuidebook.htm> .

Interested Consultants or Consultant Teams are invited to submit separate technical and cost proposals addressing the scope of work. **Proposals are due in the CCMPO offices at 3:00 pm on Thursday, July 26, 2007.** The project target completion date is October 2007.

## II. PROPOSAL REQUIREMENTS

Per the LTF Guidebook, all consultants must be on VTrans Prequalified list. Contact Al Neveau at VTrans ([Al.Neveau@state.vt.us](mailto:Al.Neveau@state.vt.us)) for instructions if you are interested in getting your firm on the list. All consultants or consultant teams will be required to prepare a Technical Proposal and a Cost Proposal as part of this submission. In order to be considered responsive to this RFP, each proposal must conform to the following requirements. The consultant shall:

- Submit **eight (8)** copies of the Technical Proposal (see requirements below). The Technical Proposal must not have acetate or plastic covers. Number all pages consecutively.
- Submit **one (1)** copy of the Cost Proposal (see requirements below) in a sealed, separate package.

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- Submit **one (1)** copy of the required Financial Forms (see requirements below) in a sealed, separate package.
- Clearly indicate the following on the outside of each Technical Proposal and the two sealed packages:
  1. Project name (Chittenden County Signal Optimization Plan);
  2. Contents (Technical Proposal, Cost Proposal or Financial Information); and
  3. Name and address of the prime consultant.

Submissions must be received by **3:00 pm Thursday, July 26, 2007** at:

Chittenden County Metropolitan Planning Organization  
30 Kimball Ave, Suite 206  
South Burlington, VT 05403

*If any of the above requirements are not met, the proposal may not be considered.*

Proposals received after the deadline will not be accepted. Questions regarding this RFP should be directed to David Roberts, Senior Transportation Planner, CCMPO at (802) 660-4071 x16 or [droberts@ccmpo.org](mailto:droberts@ccmpo.org). CCMPO will maintain a list of questions and answers linked to the CCMPO RFP website (<http://www.ccmpo.org/consultants/rfps.html>). *Questions will be accepted until July 20, 2007 to ensure that all parties have adequate time to review the answers.*

## Technical Proposal Requirements

The Technical Proposal should demonstrate that the Proposer understands the intent and scope of the project, the character of the deliverables, the services required for their delivery, and the specific tasks that must be performed in the course of supplying these services. In addition, the qualifications of the Proposer to supply the required services must be demonstrated. In order to assist in the evaluation process, please include the following information in the technical proposal:

### **I. Cover Letter**

### **II. Project Abstract**

This section should state the Proposer's understanding of the nature of the work and approach to be taken. This section would address project objectives, scope of work, the proposed approach, and any other pertinent elements.

### **III. Introduction to the Consultant Firm(s)**

Proposers shall provide the following information relative to their firms. Similar information must be provided for each sub-consultant or each member of a joint venture.

- a) Firm name and business address, including telephone number and email contact.

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- b) Year established. Include former firm names and year established, if applicable. Identify the state in which the firm was organized or incorporated.
- c) Type of ownership, and name and location of parent company and subsidiaries, if any.
- d) Indication of whether the firm is licensed to do business in the State of Vermont which is a requirement of the project.
- e) Number of full-time employees. Part-time employees or consultants routinely engaged by the Respondent may be included if clearly identified as such.

#### IV. Methodology

This section should include a detailed description of the proposed approach to the project. Each of the considerations listed in the scope of work must be addressed.

#### V. Workplan

This section will include a description of tasks, products, milestones, and time tables. A detailed timetable should accompany the work description showing the expected sequence of tasks and resource requirements for both the consultant and CCMPO staff.

#### VI. Qualifications and Experience of the Consultant Firm(s)

Proposers shall describe **recent** experience relevant to the project. Particular emphasis should be placed on projects managed by the key personnel to be assigned to this project. If the respondent anticipates the use of sub-consultants, or the use of staff and/or sub-consultants based overseas, the respondent shall identify:

- a) The role and extent to which these parties will participate in the project;
- b) The means by which the consultant will oversee the work of these parties; and,
- c) The experience and credentials of these parties relevant to this project.

**References:** The respondent shall submit names, addresses, and phone numbers of at least three references familiar with the consultant's ability, experience, and reliability in the performance and management of projects of a similar nature.

#### VII. Qualifications and Experience of Key Staff

Proposers shall identify key individuals assigned to this project and include the function and/or responsibility of each of the identified individuals. Experience summaries of these key individuals shall be provided, with emphasis on previous experience on similar projects in similar roles. Resumes of these key individuals may also be included as an appendix.

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### Cost Proposal Requirements

The consultant will be reimbursed on a time and materials basis.

The Cost Proposal should include the following, listing the prime consultant and any sub-consultants separately:

- I. Hourly rate schedule.
- II. Overhead rate and fee.
- III. Hours and cost by task.
- IV. Total project cost.

### Financial Forms

Copies of the financial forms are available for download from the CCMPO website at <http://www.ccmpto.org/consultants/rfps.html>, or you may contact Bernie Ferenc at 802-660-4071 Ext. 10 or [bferenc@ccmpto.org](mailto:bferenc@ccmpto.org) for paper copies.

In a separate labeled and sealed envelope submit VTrans Form AF38 (Revised 6/30/04) for each firm included in the proposal as well as a completed copy of Standard Form 330 (Architect-Engineer Qualifications).

## III. CONSULTANT SELECTION PROCEDURE

### Review of Technical Proposals

The proposals will be evaluated based on the following factors:

- Responsiveness to the scope of work (30 points).
- Knowledge of the project area (10 points).
- Quality and numbers of staff assigned to the project (15 points).
- Specific experience of the proposed staff (20 points).
- Project schedule and work plan (10 points).
- Creativity of methodological approach (5 points).
- Technical resources of the consultant or consultant team (10 points).

Technical proposals will be evaluated by a selection committee consisting of CCMPO and VTrans and municipal staff. Once the technical proposal review is complete, the cost proposal information will be reviewed for consistency with, and in light of, the evaluation of the technical proposal. Project cost will be a consideration in the selection. Specific attention will be given

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to the commitment implied for key staff and the overall labor effort proposed, and their relationship to the estimated project cost.

CCMPO reserves the right to seek clarification of any proposal submitted and to select the proposal considered to best promote the public interest. The selection committee will make a recommendation on a preferred consultant to the CCMPO's Technical Advisory Committee (TAC). The TAC is responsible for the consultant selection decision.

All proposals become the property of CCMPO upon submission. The cost of preparing, submitting and presenting a proposal is the sole expense of the consultant. CCMPO reserves the right to reject any and all proposals received as a result of this solicitation, to negotiate with any qualified source, to waive any formality and any technicalities or to cancel the RFP in part or in its entirety if it is in the best interest of CCMPO. This solicitation of proposals in no way obligates CCMPO to award a contract.

### Oral Presentations

If deemed necessary, a short list of qualified consultants may be selected from those who submitted proposals for oral presentations. Presentations will be made to the selection committee described above. Each consultant will be permitted approximately 20 minutes to make an oral presentation to the selection committee, with a question and answer session to follow not to exceed 40 minutes. The consultant may wish to present the following information: descriptions, demonstrations or plans of projects of a similar nature which have been completed by each firm; and any unique features of the project(s). Oral presentations, if requested, will take place at the CCMPO offices.

### Additional Information

The CCMPO TAC reserves the right to award the contract to the most qualified bidder, not necessarily the lowest bidder. This solicitation in no way obligates the CCMPO to award a contract.

The consultant will submit monthly invoices accompanied by brief, written progress reports.

## IV. SCOPE OF WORK

The Scope of Work has been developed to provide guidance for the proposed signal optimization project. Although the scope presents a sound approach, we are willing to consider revisions based on the experience and expertise of the Consultant.

The first task for the selected consultant will be a review of the scope of work and recommendations to CCMPO regarding any necessary changes. Consultants are encouraged to suggest any innovative approaches that are not addressed in this RFP. ***However, both the technical and cost sections of the proposal must include each of the tasks listed below.***

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Changes to the scope of work will only be considered after the Consultant has been selected. The target completion date for final agreement on the project scope of work is August 2007.

The project consists of optimizing traffic signal timings at 11 intersections at the following locations in the City of South Burlington:

1. Dorset Street / Kennedy Drive
2. Dorset Street / South Burlington High School Drive
3. Dorset Street / San Remo Drive / Aspen Dr
4. Dorset Street / University Mall South Entrance
5. Dorset Street / Blue Mall Drive
6. Dorset Street / Market Street
7. Dorset Street / 100 Dorset Street (Chittenden Bank/Barnes and Noble Drives)
8. Dorset Street / Williston Road
9. Williston Road / I-89 Exit 14 NB off ramp
10. Williston Road / White Street
11. Williston Road / Hinesburg Road

In addition, the consultant will be responsible for reviewing proposed optimized signal timings recently prepared by VTrans as part of a safety project at the intersection of White Street and Patchen Road.

The majority of the count data needed for this project will be provided to the selected consultant. CCMPO has obtained the following traffic count data:

<b><i>Location</i></b>	<b><i>Count Agency / Date / Type</i></b>
Dorset Street / Kennedy Drive	VTrans / August 2004 / 12 hours
Dorset Street / South Burlington HS Drive	CCMPO / May 2007 / 12 hours
Dorset Street / San Remo Drive / Aspen Dr	CCMPO / May 2007 / Peak Period <i>and</i> VTrans / July 2001 / 12 hours
Dorset Street / San Remo Drive (north – no signal present at this intersection)	CCMPO / May 2007 / Peak Period
Dorset Street / University Mall South Entrance	VTrans / August 2005 / 12 hours
Dorset Street / Blue Mall Drive	CCMPO / May 2007 / Peak Period
Dorset Street / Market Street	VTrans / August 2005 / 12 hours <i>and</i> CCMPO / May 2007 / Peak Period
Dorset Street / 100 Dorset Street	VTrans / August 2005 / 12 hours
Dorset Street / Williston Road	VTrans / August 2005 / 12 hours
Williston Road / I-89 Exit 14 NB off ramp	CCMPO / June 2007 / Traffic Recorder
Williston Road / White Street	VTrans / August 2005 / 12 hours
Williston Road / Hinesburg Road	VTrans / May 2006 / 12 hours

Updated counts at the I-89 Northbound off-ramp intersection with Williston Rd are also planned for July 2007.

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The selected consultant will review this data and determine if any additional counts are needed to perform the work required to optimize the signal timing at these intersections. At the very least, the consultant should plan on conducting Saturday peak counts at the Dorset Street intersections between and including the U Mall South Mall Entrance to Williston Road (US 2).

In addition to the traffic count data, CCMPO has Synchro traffic analysis software networks for the signalized intersections on Williston Rd (US 2) which will be provided to assist consultants with inventory and other basic information. All geometry and volume information will need to be verified in the field and updated with the most recent traffic count data prior to use. The Dorset St corridor should be added to the existing Williston Rd file to create a base Synchro file encompassing all of the signalized intersections under study in this project.

Using the above data, the consultant will complete the following tasks:

1. Work with VTrans to prepare the required National Environmental Policy Act (NEPA) documentation for the project. A Categorical Exclusion is expected for the project.
2. Conduct an inventory of existing signal equipment (controller equipment, signal heads, detectors, pedestrian signals and pushbuttons) by working with appropriate municipal staffs and field visits. Identify outdated and/or malfunctioning equipment (this information will assist the CCMPO in understanding the need for a potential future signal equipment project). Review and identify existing equipment and signal related signing, pavement markings, street lighting, etc, for compliance with current standards, such as the MUTCD.
3. Review the turning movement counts and automatic traffic recorder counts from CCMPO and VTrans, and determine if any additional traffic data collection is needed. The consultant should also discuss with the municipalities any future development projects which may have significant effect on traffic operations at these intersections in the immediate future and obtain traffic data for these projects.
4. Collect relevant field data for analysis purposes including, but not limited to, intersection data (number of lanes and lane use, pedestrian signalization/crosswalks, available storage lengths and shoulder widths), existing signal parameters (timing, cycle length, phasing, and time-of-day schedules, pre-emption equipment) and posted speed limits (including school speed zones). CCMPO has an inventory of signalized intersection diagrams and existing Synchro files which may be used as a starting point for this effort.
5. Provide documentation that certifies all project work will be done within the existing right-of-way. This information can be determined through discussions with the municipalities.
6. Document existing conditions using Synchro (version 6.0 or later) based on current signal timings. This may require access to the controller timing plans if the municipality does not have the current timing plans readily available. This information will be useful in comparing decreases in delay and queuing resulting from optimized timing.

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7. Develop optimized timing plans using Synchro for design and analysis (version 6.0 or later) at all eleven intersections. The timing plans will show any need for “time of year”, i.e. spring vs. winter vs. summer, etc, timings for individual intersections, including AM, PM or off peak hour conditions (Saturday) and other recommended timing plans for each intersection (i.e. school peaks, special events). Based on the analysis, the consultant should make recommendations for additional equipment and/or coordination, if deemed relevant (the Dorset Street signals currently operate as a coordinated system). Pedestrian signal timing parameters should also be provided. The Synchro analysis and resulting timing plans will be submitted for review by the CCMPO and the municipality.
8. Assist City of South Burlington public works personnel in entering the new timings. This work includes programming the controllers with the new timings and making necessary adjustments to optimize the signals operation.
9. Monitor new timings to ensure the timing plan is working correctly and work with municipal maintenance personnel to implement adjustments as necessary. The proposal should detail the number of trips anticipated for adjusting individual intersection timings.
10. Prepare a draft report for review by the CCMPO, VTrans and municipal staffs.

All of the above tasks should be completed for the eleven intersections listed for optimization. Tasks for the White Road/Patchen Road intersection will include all work above with the exception of developing the initial timing plans.

### **Deliverables:**

- The consultant will provide Synchro models both in hard copy and electronic format. These models will include analyses for existing conditions as well as the results for the recommended timing plans. Any field adjustments which are made should be reflected in the final recommended timing plans.
- A detailed project report will be compiled including the following information for each intersection: intersection layout, detailed timing plans, peak hour and other relevant time period traffic volume data, levels of service results, queuing results, and inventory of signal equipment – type of controller, detectors, signal heads, pre-emption devices and pedestrian buttons/signals. The report should note any malfunctioning or missing equipment needed to allow the signal to operate as intended, and recommendations for coordination.
- Electronic versions of the detailed project report, environmental documentation, and any other project documents in PDF and MS Word format.

**Schedule:** A draft project report document should be submitted to the CCMPO and the municipalities within twelve (12) weeks of the initiation of the contract. Six (6) copies of the final document will be submitted to the CCMPO project manager within four (4) weeks of receiving comments on the draft.