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August 5, 2013

Mr. Nathan Poore, Town Manager
Town of Falmouth
271 Falmouth Road
Falmouth, ME 04105

Subject: Route One South Infrastructure Project
Supplemental Explanation of Scope of Services

Dear Nathan:

As requested during our telephone conversation on July 31, 2013, Fay, Spofford & Thorndike (FST) has prepared the following supplemental explanation to clarify the following four (4) comments raised by the Town staff concerning our proposal and scope of services for this project:

1. *Provide further explanation on the inclusion of geotechnical explorations within the scope of services.*

   Response:

   FST has a geotechnical engineer on staff that will provide support to the design efforts of this project. Based upon the scope of the project, we do not believe that the geotechnical investigation represents a major effort.

   As part of the Task 2 Work Effort, our office has included two days for performing geotechnical explorations. During the process, test probes to depths of 12' to 15' below ground surface would be performed along the sanitary sewer extension route (north of Bucknam Road) to determine depth to shallow bedrock; depth to groundwater; and general soil classification data. In addition, test probes or test pits will be performed in the areas of the proposed stormwater quality treatment measures.

2. *Provide further explanation and assurance that the design of the underground electrical and communication system will be complete and sufficient for construction bidding process.*

   Response:

   As part of the Task 2 Work Effort, FST will meet with the franchise utility companies (Central Maine Power Company, Fairpoint, Time Warner Cable and Oxford Networks) involved with the new underground infrastructure system for electric, telephone and communications. It is our understanding that each of the franchise utilities will be responsible for providing general design criteria and construction requirements for each of their systems. Based upon the meetings with the franchise utilities, FST will prepare preliminary plans for the underground primary service system, including underground services to abutting private properties. These preliminary plans will be submitted to the franchise utilities for review and comment. The final plans will be revised to reflect comments provided by the franchise utilities.

   The FST proposal anticipates and includes some level of design effort within each of the private properties where new underground services will be installed in order to coordinate the installation of these new services.

   The final plans and specification documents prepared by FST will be complete and suitable for bidding and construction for the underground electrical, telephone and communication systems.

3. *If additional meetings are requested beyond that outlined in the scope of services, will the additional meetings be included in the lump sum amount for Task 3?*

   Response:

   As part of Task 3 Meetings, FST provided a summary of the meetings anticipated during the performance of this contract. FST understands the importance for timely and effective communications that will be necessary for this project. While we believe the number of meetings identified provides adequate coverage in all areas to support the Town in delivering this project, FST is willing to include three (3) additional meetings with the Town, CDC and\or private property entities with up to two (2) staff members present at each additional meeting as part of our lump sum proposal. Should the Town see the need for additional meetings beyond that, then it would be our hope that the Town would consider this as a change in scope and work with us at the hourly rates provided for various staff members for those additional meetings. We are committed to working closely with the Town to meet all of its needs and objectives and trust that the Town will treat our team fairly in the process of doing so.

4. *Provide further explanation of the scope of services to be provided for the stormwater quantity and quality treatment aspects of the project.*

Response:

FST has a wealth of experience in stormwater management design and permitting, and specialize in creative stormwater retrofit solutions.

With the high level of interest in stormwater quality control today in Maine and beyond, FST is able to offer clients stormwater management solutions that meet the growing local and state regulations while being cognizant of construction disturbance and cost, and the costs associated with long term maintenance.

The vast majority of our projects involve stormwater quality treatment and/or quantity control in some capacity. From wet ponds, buffers and biofilters to proprietary pretreatment and treatment options including StormTreat™ units, Filterra® (Tree Box), underground chambers, and cartridge treatment systems, FST has a broad menu of options for consideration when it comes to stormwater management. We are familiar with all current stormwater technology including low impact development (LID) and "green infrastructure" and are in regular contact with the Maine DEP and treatment product vendors regarding new technology.

Beyond our regular site design and permitting, in 2010 FST was selected to complete the design and permitting for the Long Creek Catchment A1-O5 retrofit project on Gorham Road, South Portland (Dick's Sporting Goods area). In 2011, FST was retained by the Cumberland County Soil and Water Conservation District to develop concept retrofit design options and opinions of cost for five proposed retrofit projects in the Red Brook Watershed. At the commencement of the Long Creek Watershed program in 2009/2010, we completed several studies for various landowners in the watershed providing concept retrofit designs and associated opinions of cost to enable them to make informed decisions as to whether or not to join the General Permit for the Long Creek Watershed Management Plan. In 2011, we were retained by StormTreat Systems Inc. to develop a design for the installation of StormTreat™ units at the University of New Hampshire Stormwater Center.

Project Understanding – Stormwater Related

As stated in our proposal for the project, it is our understanding that the stormwater components of the Route One Infrastructure project will include:

- The stormwater collection system will be modified to accommodate intersection improvements.
- Catch basin grates will be adjusted for bicycle safety and some replaced with cascade grates.

- Three critical portions of the storm drain system will be upgraded to enlarge pipe size and capacity.
- The existing corrugated metal storm drain pipe will be replaced.
- Stormwater treatment measures will be incorporated into the proposed storm drain system improvements. The current preliminary plan for the project identifies eleven (11) treatment systems.

Approach – Stormwater Related

The first step in the process will be to conduct an underground utility survey of the existing storm drain system. The purpose of this study will be to survey locate storm drain system appurtenant structures, document rim and invert elevations, and confirm pipe sizes. We will also perform a visual inspection of each appurtenance structure to assess the condition and need for remedial repairs so as to minimize costly changes during the construction phase. The results of this investigation will be reviewed with the Town's project team as well as the Public Works and Wastewater Departments.

Storm drain Collection and Conveyance

Based upon the underground utility survey, our office will develop a summary of the recommended improvements for the storm drain system to replace existing corrugated metal pipes as well as remedial measures to existing catch basin and storm drain manholes. These recommendations will be reviewed with the Public Works Department.

The replacement of the existing storm drain system has the potential to be a costly component of the project as open trench replacement would require impact to the roadway pavement, existing granite curb, complications across existing business driveways, etc. One option we are considering would be to slip line the existing corrugated metal pipe, digging pits at strategic locations and minimize disturbance to the roadway. From recent consultation with Ted Berry Company, we understand that slip lining the existing storm drain might see savings of 30-50% compared with a traditional open trench approach.

It is our understanding that the previous stormwater model prepared by Woodard & Curran will be provided for our use in performing the hydrologic and hydraulic analysis necessary to evaluate requirements for improved storm drain system capacity that will be incorporated into the overall storm drain system infrastructure improvement plan.

Stormwater Treatment

The concept plan for the project identifies eleven (11) potential stormwater quality measures within the Route One right-of-way. Our office notes that the report prepared by Woodard and Curran for the Webes Creek Watershed identified several water quality measures beyond the Route One right-of-way and seemed to prioritize the use of biofilters, underdrained soil filters, and gravel wetlands.

While our office acknowledges the concept level work for the Route One project appeared to close in on the use of proprietary stormwater treatment systems, our office will also evaluate potential alternatives for providing stormwater quality treatment that may not have been considered during the conceptual design phase. The goal of this effort will be to assess the ability to integrate cost effective stormwater BMP measures and consider the long-term maintenance costs of each treatment measure proposed. We note that cartridge based treatment systems typically require the cartridges to be replaced on an annual basis, with cartridge costs ranging from $400-$500 each.

It is understood that the implementation of water quality treatment measures within a confined right-of-way with closed storm drain system is difficult and often leads to a more expensive, underground treatment system; however, we will evaluate other potential options as part of the preliminary design process, and potentially explore with the Town the possibility of constructing stormwater treatment measures beyond the Route One right-of-way on abutting land. The Town may also want to consider low impact development techniques with openings in the curb line to collect and treat runoff in shallow recessed areas between the roadway and multi-use path.

Although generally one of our goals is to provide water quality treatment in accordance with Maine DEP Chapter 500 using the approved "Best Management Practices", we also understand that this project is not required to meet Maine DEP stormwater regulations and, as such, the ability to employ creative designs to provide water quality treatment could be explored. From recent correspondence with MeDEP we understand that the proprietary media used in Filterra® Tree Box filters is now available by the bag. Based on the treatment efficiencies and sizing criteria for this media, it could potentially be utilized in an efficient footprint area to provide water quality in strategic locations along the roadway.

Feel free to contact me with any questions regarding our proposal and the supplemental clarifications provided within this letter. We look forward to meeting with you, Town staff and the members of the CDC later today to further discuss this project and the contents of our proposal. We greatly appreciate the opportunity to work with the Town of Falmouth on this exciting project.

Sincerely,

FAY, SPOFFORD & THORNDIKE, LLC

Joseph A. Laverriere, P.E.
Senior Principal Engineer

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