

**AGREEMENT
BETWEEN
OLD COLONY BEACH CLUB ASSOCIATION (OCBCA) WPCA
AND
FUSS & O'NEILL, INC.
FOR
PROFESSIONAL SERVICES
CONNECTION TO EAST LYME COLLECTION SYSTEM AND ADDITIONAL
ASSOCIATION IMPROVEMENTS**

THIS AGREEMENT, made and entered into this 22 day of May, 2013 by and between the OCBCA Water Pollution Control Authority (WPCA) acting herein by and through its Chairman, who is duly authorized so to act, hereinafter called the WPCA, and Fuss & O'Neill, Inc., with offices in Manchester, Connecticut, hereinafter called the Engineer.

WITNESSETH, in consideration of the mutual promises herein contained, the parties hereto agree, each with each other, as follows:

ARTICLE 1 - EMPLOYMENT OF ENGINEER

1.1 **General**

The WPCA hereby employs the Engineer and the Engineer hereby accepts employment to provide professional services related to the design and construction of a connection to the Town of East Lyme's wastewater collection system (including a shared force main with the Old Lyme Shores Beach Association) and storm drainage and roadway improvements.

1.1 **Project Understanding**

The Connecticut Department of Energy and Environmental Protection (DEEP) issued Consent Order No. CO WR MU 12-001 to OCBCA on August 12, 2012. The Order directed the Association to "implement the remedial actions specified in the Plan requires that OCBCA procure capacity in the regional sewerage system serving New London, Waterford, and East Lyme; and design and construct sanitary sewers to collect sanitary sewage within the boundaries of OCBCA through portions of the Town of Old Lyme, and convey it to the regional sewer system."

Consent Order No. CO WR MU 12-002 was issued on October 1, 2012 to the adjacent Old Lyme Shores Beach Association (hereinafter referred to as OLSBA), also requiring implementation of the remedial actions specified in the Plan.

The Plan recommended a public sewerage alternative including individual collection systems with a dedicated centralized wastewater pump station within each Association boundary and a shared force main to convey the wastewater from both Associations to East Lyme.

The scope of services provided herein is limited to the work associated with the OCBCA collection system (approximately 9,750 linear feet of roadways and 7,500 linear feet of sewers) and one half of the scope of services related to the 13,000 linear foot shared force main route along Route 156 from the discharge of the Associations to East Lyme (approximately 6,500 linear feet). It also includes services related to roadway and storm drainage improvements within the OCBCA boundary. Figure 1 depicts the demarcation of the OCBCA, OLSBA collection systems and the shared force main to convey wastewater to East Lyme's public sewer system.

Work related to evaluations and improvements in the downstream regional wastewater collection system including pump stations and infrastructure in East Lyme, Waterford and New London is not included herein. The scopes for these services were provided separately under separate proposal. Improvements within the OLSBA boundary are not included herein, but have been provided to OLSBA-WPCA under separate cover.

ARTICLE 2 - SCOPE OF SERVICES

2.0 General

The Engineer will provide comprehensive engineering services (site, civil, structural, mechanical, electrical, geotechnical or other functions as required) for procurement of agreements with regional wastewater authorities and the preparation of complete engineering drawings, specifications, estimates, contract administration, project inspection, and related services. The Engineer will serve as the WPCA's professional engineering representative on those phases of the project to which this Agreement applies and will consult with and advise the WPCA during the performance of his services.

The Engineer will:

- Perform professional services in connection with the Project as hereinafter stated,
- Attend WPCA meetings and special meetings, as requested;
- Assist with negotiation of intermunicipal agreements (IMAs) with East Lyme and New London, and a Memorandum of Understanding with OLSBA;
- Provide advice and apply for permits;
- Coordinate eligible and ineligible work elements of the Project;
- Advise on overall project costs and cash flow requirements;
- Assist the WPCA in preparing an application for Clean Water Fund grant funding for submittal to the DEEP;
- Submit monthly progress reports to the WPCA summarizing work done to date.

The Engineer will perform record keeping services for the project. He will submit copies of project correspondence to the WPCA Chairman. He will maintain a duplicate set of files and

a complete set of reproducible record drawings. Upon completion of his services, the Engineer will provide the WPCA with test reports, inspections, field notes, measurements, material slips and other copies of material, including record drawings and pertinent data regarding the services. These records will be bound in chronological order, or as otherwise specified by the WPCA.

2.1 Aerial Mapping Wetlands Delineation and Subsurface Investigation

The Engineer will gather and review information and mapping from OCBCA and Point O' Woods as available for use in determining whether the existing aerial mapping is useful.

2.1.1 Aerial Mapping & Surveying

Fuss & O'Neill will utilize existing aerial mapping provided by the Old Colony Beach Club Association, circa 1990. We will also prepare digital topographic mapping using a new aerial flight (Spring of 2013). The aerial mapping will run along the proposed sewer force main route along Connecticut Route 156 and augment the existing 1990 aerial mapping. The mapping will be prepared at 1 inch = 40 foot-scale with a 2-foot contour interval. Aerial targets will be established and will be field located, as required by the photogrammetrist. Targets will be tied horizontally into the North American Datum of 1927 (NAD 27) and vertically to National Geodetic Vertical Datum of 1929 (NGVD 29). This mapping will be field edited for information that does not appear on the photographs, such as pipe invert elevations, house numbers, telephone poles, and similar information.

Along the proposed sewer route information necessary for the design of sewers and pump station, including the following information, will be obtained and depicted on the plans:

- Top of frame and invert elevations of storm drains.
- Elevations will be obtained along the edges and centerline of all the roadways located within the Association's property at 50 foot intervals.
- Detailed topographic information regarding Sheffield Brook will be obtained, as well as previously installed piping information in the vicinity of Gorton Avenue.
- Approximate locations of underground utilities such as, but not limited to: water, gas, buried and overhead electric, telephone, drinking water wells, etc., based upon a field-edit of the aerial mapping and mapping available from the various utility companies.
- The aerial mapping will be field-edited to verify the following: house numbers and finished floor elevations, pole numbers, visible utilities, large individual trees, hedges, edge of woods, driveway and type, walks and types, light poles/posts, signs, etc.
- Inland and Tidal Wetland boundary flags and other significant features.
- Location of subsurface investigations (borings and probes).
- Iron pins and other monumentation will be field located and compared to existing mapping. This mapping will meet Class D accuracy requirements.

Bench marks will be established along the proposed sewer route at approximately 800 foot intervals and shown on the aerial mapping.

Elevations will be taken at key points along the proposed sewer route to verify the topography/contours of the aerial mapping.

Assessor's mapping will be used as a basis for property lines and right-of-way lines. The locations of property and right-of-way lines will be added to the aerial mapping based on occupancy, features depicted on the aerial mapping, monumentation obtained in the field, and other research.

Names and addresses of each property owner will be added to the base map.

Fuss & O'Neill has budgeted one (1) day in the Association for the cleaning out of catchbasins and storm manholes that are silted in or are filled with debris within the Association's property. This will be done so that accurate pipe sizes, pipe material and invert elevations can be measured.

The above plans and field survey will be prepared in accordance with the accuracies of a Class A-2 Horizontal Control Survey, Class T3 Topographic Survey for the new aerial mapping, and a Class TD Topographic survey for aerial mapping provided by the Old Colony Beach Club Association as defined in the "Standards for Surveys and Maps in the State of Connecticut", prepared and adopted by the Connecticut Association of Land Surveyors, Inc., (CALS) September 26, 1996.

Property lines depicted on the above plans will be prepared in accordance with the standards of a Class D Data Accumulation Plan as defined in the "Standards for Surveys and Maps in the State of Connecticut", prepared and adopted by the Connecticut Association of Land Surveyors, Inc., September 26, 1996.

2.1.2 Wetlands Delineation

A Fuss & O'Neill soil scientist, registered with the Society of Soil Scientists of Southern New England, will delineate the limits of Federal and State jurisdictional wetlands and watercourses located in the project area. We will review available mapping to determine the extent of previously identified or delineated wetlands or watercourses. Such mapping includes local, State and Federal wetland and soils maps, site-specific mapping (i.e. surveys, site plans, etc.), and aerial photographs

Wetlands and watercourses will be delineated (identified, classified, and flagged at approximately 50-foot intervals) in accordance with State of Connecticut Preservation of Tidal Wetlands (CGS §§ 22a-28 to 22a-35a inclusive) and Inland Wetland and Watercourses Act (CGS §§ 22a-36 to 22a-42 inclusive). In addition, Federal jurisdictional wetlands and watercourses will be delineated in accordance with the prescribed methodology of the U.S. Army Corps of Engineers' 1987 Wetland Delineation Manual (Technical Report Y-87-1) and the Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual:

North central and Northeast Region (ERDC/EL TR-09-19). All wetlands and watercourses delineated on the property will be flagged in the field during a time of years when the ground is not frozen. Fuss & O'Neill will designate the boundary of wetlands on site with a prefix letter and numbered in a logical sequence.

Wetland areas to be delineated are those located within the Old Colony community within 100 feet of the proposed wastewater facilities and other improvements upgrades. In addition, each wetland or watercourse crossing by the proposed sewer force main (estimated to be four) from the associations to East Lyme will be delineated. Wetlands or watercourses will be delineated 100 feet upstream and downstream of the proposed crossings.

Following the on-site inspection and delineation within the limits of the project area, a brief wetlands and watercourses report will be completed. This report will summarize the wetland and upland soils mapped on site watercourses on or immediately adjacent to the project area.

2.1.3 Subsurface Investigations

Procure the services of a driller to perform soil borings and probes, and prepare a memorandum summarizing subsurface soil conditions and to determine the extent of bedrock and groundwater within the limits of the proposed sewer extensions. We will also:

- Stake out borings and probes. Two (2) days are budgeted for this work.
- Prepare a subcontract for drilling services (Subcontractor will be responsible for coordination with State and local police for state Route 156. It is assumed that police will not be required for the Association Road work).
- Contact Call-Before-You-Dig.
- Coordinate with DOT for subsurface investigation work along Route 156.
- Drill borings and probes. The borings and probes will be drilled to an average depth of 12 feet. Soil borings will be conducted using a 2½ - inch ID hollow stem auger with representative split spoon samples. Assume 15 borings and 23 probes will be required. (Borings at 800 foot intervals, probes at 250 foot intervals except where logs are available for Route 156) An additional four (4) soil borings at a depth of 30 feet for the pump station site will be budgeted for this work.
- Provide field observation for the subsurface investigation work. It is assumed that the work will require eight (8) working days to complete (16 days total for the entire project including both associations).
- Provide logs of borings and probes to the WPCA.

2.1.4 Phase I Archeological Survey

Coordinate with the SHPO office regarding their request to have a Phase 1a Archeological Survey conducted. Procure the services of a certified archeologist in CT. A Phase I Archeological Survey is budgeted for the project.

2.2 Preliminary Design – Wastewater Collection System

2.2.1 Coordinate with the Town of East Lyme Water and Sewer Commission

Contact and meet with the East Lyme Water and Sewer Commission staff and determine the requirements for connection to the East Lyme sewer system, and identify special considerations or technical requirements. Incorporate improvements to East Lyme infrastructure as required based on the results of the hydraulic capacity study and Bride Brook and Route 156 Pump Stations evaluation, for which a study proposal has been provided to OCBCA WPCA under separate cover, and is not included as part of this scope of work. Improvements to the pump stations, as required, are not included in the scope of services provided herein but may be submitted subsequent to the study phase at the request of OCBCA under separate cover.

2.2.2 Develop design criteria including flows, velocities, pipe materials, slopes etc. pursuant to 2011 Technical Report #16 (TR-16) guidelines prepared by New England Interstate Water Pollution Control Commission (NEIWPC).

2.2.3 Attend scoping meetings with DOT to establish criteria for Route 156 force main design and bridge crossing. It is assumed that the force main will be affixed to the parapet wall of the bridge.

2.2.4 Attend scoping meetings with AMTRAK representatives to establish criteria for Route 156 Bridge crossing above AMTRAKs Northeast Corridor railway.

2.2.5 Prepare a preliminary design of the sewer system at a scale 1 inch = 100 feet including gravity sewers, force mains, and the pump station.

2.2.6 Generate preliminary sewer profiles at a scale of 1 inch = 100 feet horizontal and 1 inch = 10 feet vertical along the sewer routes.

2.2.7 Define the parameters for the centralized OCBCA pump station, including pump sizing requirements; odor control mitigation systems, pump start-stop controls, wet well level control, and backup power needs. Prepare draft site plans at 1 inch = 20 scale. A maximum of two (2) draft site plans will be prepared for this effort. Upon WPCA selection of the pump station layout, prepare one (1) rendering of a representative pump station overlaid onto photographs provided by F&O. The pump station superstructure is anticipated to be a concrete vault with a truss roof, limited faux windows and fascia to generally match the character of the buildings in the area.

2.2.8 Prepare alternatives for force main routing along Route 156 for submittal to DOT.

2.2.9 Prepare plans and specifications for DOT bridge crossing above AMTRAK Northeast Corridor Bridge for submittal to DOT and AMTRAK.

2.2.10 Evaluate Miami Beach sewer extension accommodation alternative to East Lyme, if their wastewater study indicates a public sewerage solution is the most cost effective long term

means of wastewater renovation for that community. We will evaluate following hydraulic computations:

- Utilizing the shared OLSBA/OCBCA force main (Route 156 force main) via storage and off-peak pumping
- Increasing the size of force main
- Running a parallel dry force main pipe along Route 156

- 2.2.11 Develop budgetary level opinions of probable construction cost for the preliminary sewer and force main layout and pump station. . Provide an opinion of probable construction cost for accommodating a potential connection with Miami Beach Association as described in Section 2.2.10 above.
- 2.2.12 Prepare a lateral location form with a cover letter for each property in OCBCA. Each form will include an 8 ½ x 11 inch attached site plan depicting the house and property. Provide form and letter to the WPCA for mailing to the applicable property owners in the proposed sewer service area.
- 2.2.13 Attend four (4) WPCA meetings to review progress and findings, present pump station features to adjacent property owners as desired and assist WPCA to secure an easement on Association-owned land for siting the pump station.
- 2.2.14 Prepare a preliminary design memorandum summarizing the pump station layout and manufacturer's literature for major equipment, design criteria, permit requirements, sewer and force main layouts and preliminary opinion of cost. Furnish ten (10) copies of the preliminary design memorandum to WPCA for distribution to members and stakeholders.
- 2.2.15 Finalize preliminary wastewater improvements design based on WPCA and stakeholder responses. Transmit ten (10) copies of the final preliminary design memorandum for wastewater improvements to WPCA, composed of wastewater improvements, roadway improvements (full sets to DOT, DEEP and OCBCA, and partial sets to East Lyme and AMTRAK).

2.3 Preliminary Design - Roadway Improvements

- 2.3.1 F&O will perform a field review to familiarize the Project Team with overall site conditions and to confirm pavement and drainage conditions, utilizing survey basemapping prepared by F&O field survey.
- 2.3.2 F&O will design vertical and horizontal geometry. Vertical geometry adjustments will be made to address drainage deficiencies in the area.
- 2.3.3 Preliminary Design roadway plans to be prepared by F&O will be in AutoCAD Civil 3D 2011 and shall consist of the following:

- Title Sheet
- Typical Roadway Sections
- Miscellaneous Details
- Intersection Grading Plans

- 2.3.4 Title Sheet and General Notes will be presented on the Plan Sheets, which will be incorporated into the overall single contract for the improvements to both Associations.
- 2.3.5 Plan and Profile Sheets – Scale: 1 inch = 40 feet Horizontal and 1 inch = 2 feet. Vertical Cross Sections will be cut at 50 foot intervals, driveways and critical locations (500+ sections) Cross sections will only be produced electronically and not be contained within the printed plan set.
- 2.3.6 F&O will coordinate with utility companies whose facilities are affected by the proposed improvements. Coordination shall include sending letters/plans to utilities and conducting one (1) utility meeting.
- 2.3.7 F&O will prepare a Preliminary Roadway Design budgetary level opinion of probable construction cost and list of anticipated specifications to be included in the Project Manual.
- 2.3.8 F&O will submit two (2) sets of Preliminary Design Roadway Plans, list of specifications and opinion of probable construction cost to the Association as part of the Preliminary Design package for review and comment, and will submit full plan sets to DOT and DEEP
- 2.3.9 F&O will address comments received from the Association on the Preliminary Design Roadway Plans submission.

2.4 Preliminary Design - Storm Drainage Improvements

Solicit and review storm drainage report by Indigo engineering and recommendations provided therein. Evaluate storm drainage system components and compare information to basemapping information gathered through field survey. Identify discrepancies. Two (2) days of effort are budgeted for this task, one for each Association.

Prepare preliminary design for storm drainage improvements, incorporating Best Management Practices (BMPs) as applicable. Using information obtained from the Indigo report as applicable, as well as field inspections, we will prepare a preliminary stormwater management system layout for the reconstructed roadways.

As an alternative approach to managing stormwater, we will investigate the feasibility of incorporating Low Impact Development (LID) principles to reduce runoff volume and provide water quality improvement prior to discharge to receiving streams. During the preliminary design phase we will calculate existing stormwater flows to the project area. Peak flow rates and runoff volumes will be calculated for the selected design frequency storm. Using the calculations and based on observed field conditions we will identify alternative stormwater management approaches. Up to three alternatives will be identified. The project will focus on small-scale watershed management with the goal of restoring the

study area's natural recharge capacity. These alternatives will be conceptually sized based on existing hydrology. For each alternative we will:

- Prepare planimetric sketches on existing base mapping
- Develop order-of-magnitude opinions-of-costs for construction for comparison purposes
- Identify permitting issues if any and identify the advantages and disadvantages of each alternative

For the selected LID alternative we will prepare a 60% design plan. In the 60% design plan will update the planimetric layouts on existing base mapping and develop typical cross sections of improvements. We will update opinions-of-cost for construction budgeting purposes.

2.5 Detailed Design - Wastewater Improvements

- 2.5.1 Further develop pump station design, including hydraulic computations for pump station/force main system and coordination with the pumping system at OLSBA, detailed 10 scale site plan layout, section of pump station, shared force main and incorporate accommodations for a Miami Beach sewer extension into the detailed design bid documents, as a bid alternate, if recommended. Finalize methods for odor control for the pump station. This may include introduction of an oxidizing agent or other chemical at the pump station or at an insertion point along the force main, and/or treatment and venting of the exhaust air at the point where the force main terminates into a gravity sewer. Prepare backup power generator within the pump station superstructure.
- 2.5.2 Prepare 1 inch = 40 feet horizontal and 1 inch = 4 feet vertical scale plan-profile drawings of the proposed sewers and force main. Drawings will be prepared in Autocad 2011 format. Sewer design intent will be to provide first floor service with consideration for servicing basement plumbing in isolated situations where economically feasible. Evaluate lateral location forms and coordinate locations with property owners to obtain an authorized copy of the form. Add preferred lateral locations to the design drawings as applicable. Develop construction plans, including cover sheet, index map, plan/profile sheets for the sewer, and sewer details. One construction contract is assumed for this effort, including the OCBCA improvements, OLSBA improvements and the shared force main (along with accommodations for Miami Beach sewer extension if recommended).
- 2.5.3 Prepare typical details for bidding and construction of the gravity sewers, shared force main and pump station. Include detailed information for the DOT bridge crossing with shared force main.
- 2.5.4 Prepare technical specifications in CSI 16 Division MasterSpec MasterFormat. One (1) construction contract is assumed, with the Bid Schedule bid item quantities segregated into three headings:

- OCBCA Quantities (including eligible and ineligible items for DEEP reimbursement)
- OLSBA Quantities (including eligible and ineligible items for DEEP reimbursement)
- Shared Quantities (Along Route 156)

- 2.5.5 Prepare definitive level opinion of probable construction cost.
- 2.5.6 Furnish six (6) copies of the Contract Drawings (Drawings will be prepared inclusive of work in both Associations and the shared force main as a single contract) and Project Manual at 95% complete to the WPCA for final review purposes. It is assumed that two sets will be retained by OCBCA WPCA, one set will be transmitted to OLSBA, one set to East Lyme Water and Sewer Commission, one set to DEEP, and one set to DOT for review and comment.
- 2.5.7 Conduct a meeting with the WPCAs from OLSBA, OCBCA, East Lyme and DEEP to review the Contract Documents for input on the specific design elements and modification thereof as required including proposed LID features. It is intended that one coordination meeting will be held to solicit input from all parties. incorporating a Miami Beach sewer extension into the detailed design bid documents as a bid alternate, if recommended through their planning study.
- 2.5.8 Attend monthly WPCA meetings to report on progress and discuss issues related to the design of the project.

2.6 Detailed Design - Roadway Improvements

- 2.6.1 A Definitive Level Roadway Opinion of Probable Construction Cost will be prepared.
- 2.6.2 F&O will submit two (2) sets of Detailed Design Plans, specifications, and cost estimates to the Association for their review prior to incorporation into the overall construction project as part of the 95% contract documents submission, and will submit full plan sets to DOT and DEEP
- 2.6.3 F&O will address comments received from the Association on the Detailed Design Roadway Submission.
- 2.6.4 F&O will finalize Contract Specifications for inclusion within the Project Manual for the overall sewer and other improvements project for both Associations.
- 2.6.5 F&O will meet with Association representatives to discuss the planned improvements.

2.7 Detailed Design - Storm Drainage Improvements

F&O will prepare a detailed design for storm drainage improvements, incorporating Best

Management Practices (BMPs) as applicable. Existing stormwater management system infrastructure will be used as much as possible if feasible to do so. It's our understanding that there currently exists one major pipe outlet that conveys stormwater flows into the Long Island Sound. This existing outlet will be analyzed and suggestions for improvements will be made as necessary. We are assuming no new outlets will be necessary. At this time, the stormwater management system will be sized using the Bentley System's StormCAD computer program. Input from the model will be derived using the Rational Formula. This will size the pipes required to convey the design storm flows adequately to their outlets. The stormwater management system will be designed in accordance to the Town of Old Lyme zoning regulations requirements. Detailed design documents will be inserted into the sewer construction improvements project contract documents.

We will refine hydrologic and hydraulic calculations to size the proposed stormwater management systems, utilizing the subsurface investigation results from Section 2.1.3 above. We will identify the water quality benefits we believe will result from implementation of LID measures. Anticipated water quality benefits will be assessed based on published literature values, and no modeling or quantitative assessment is proposed.

We will design LID elements and incorporate them into the drainage improvement design. The design will include the layout of improvements in the context of roadway configuration and topography, existing and proposed drainage, the location and depths of the proposed wastewater collection system, utilities, improvements on adjacent private properties including driveways, landscaping and other features. The design will take into consideration the physical characteristics of surrounding soils and depths to groundwater and bedrock (if any). Specifications, material quantities and construction details of the design elements will be provided in the Contract Documents.

At the completion of detailed design we will update the opinion of cost.

2.8 Permitting Assistance

- 2.8.1 Provide assistance obtaining an inland wetlands permit for the project from the Town of Old Lyme, including preparation of a local wetlands permit application as required. Attend wetlands commission meetings as required. Permit fees are included in this task.
- 2.8.2 Prepare a Office of Long Island Sound Programs (OLISP) Coastal Site Plan Review for the sewer, roadway and water mains as required. Upon completion of the preliminary design, we will meet with OLISP representatives to review the proposed scope of work related to storm drainage improvements, including the stormwater collection system and outfalls into Long Island Sound. The permitting of efforts related to OLISP application for the storm drainage system will be established via a separate authorization.
- 2.8.3 Prepare Army Corps of Engineers (ACOE) Permit notification for a Programmatic General Permit. We have assumed that the extent of the work will not trigger a DEEP 401 Water Quality Certification. A structures, dredging and fill permit is not anticipated for this work.
- 2.8.4 Prepare a DEEP General Permit Registration application for the discharge of stormwater and dewatering wastewaters from construction activities.



- 2.8.5 Provide assistance with permit applications to the Planning & Zoning Commission of Old Lyme for the work, and attend meetings as required. Prepare materials for 8-24 Referral review. Attend two (2) Town of Old Lyme Planning and Zoning Commission meetings to obtain 8-24 referral for the entire project (one meeting for each Association is budgeted for this effort).
- 2.8.6 Assist with securing approval from the DEEP Bureau of Protection and Land Reuse for a sanitary sewer extension.
- 2.8.7 Provide assistance with permit applications to the Planning & Zoning Commission and Inland Wetlands Commission of East Lyme for the work, and attend meetings as required to obtain 8-24 referral and Inland Wetlands Permit for the project.
- 2.8.8 Assist with the preparation of a DOT encroachment permit and provide budgetary cost to reconstruct the roadway along Route 156 to DOT.
- 2.8.9 Prepare DOT permit application for crossing of DOT bridge above AMTRAK Northeast Corridor railway.
- 2.8.9a Prepare a permit application for submittal to AMTRAK to span the Northeast Corridor DOT Bridge with a sewer utility force main. Incorporate AMTRAK requirements into contract documents.
- 2.9 Special Services During Design
- 2.9.1 Provide IMA Assistance and MOU(s)
- Provide negotiating assistance in developing the Intermunicipal Agreements with the Town of East Lyme and New London, and prepare a draft memorandum of understanding (MOU) with OCBCA and OLSBA for consideration. If the recommendation of the Miami Beach Association (MBA) wastewater management study is a public sewer extension to the shared OCBCA/OLSBA force main or parallel force main, prepare a draft MOU between OLSBA /OCBCA and MBA for consideration.
- 2.9.2 Pump Station A-2 Survey
- A Class A2 Boundary survey will be prepared for one prospective pump station site within OCBCA. The Boundary survey will be limited to the Association-owned property.
- 2.9.3 Financial and WPCA Assistance
- Fuss & O'Neill will provide the OLSBA with consultations regarding financing and funding support including determination of benefit assessments, charges and fees.
- 2.9.4 WPCA Policies, Procedures and Support



Assist WPCA with establishing policies and procedures, including formulation of OCBCA sewer regulations, setting policies for benefit assessments, user fees, and connection charges. Prepare 3-ring binders for WPCA members as desired with contact information, statutory guidance and important information to be retained. Attend public hearings if requested. Two (2) such public hearings have been budgeted for this effort.

2.10 Bidding Services

- 2.10.1 Print and issue 13 copies of the Contract Documents to prospective bidders during the bidding period. (Twenty-five (25) total sets of contract documents are anticipated for bidders.) Answer bidder questions and issue addenda if required. One (1) addendum is budgeted for this effort.
- 2.10.2 Prepare Advertisement to Bid for the Associations to publish in the Hartford Courant. Coordinate with electronic posting agent (e.g. McGraw Hill Construction Bid Services) to expand the pool of prospective bidders as desired.
- 2.10.3 Conduct a Pre-Bid Conference with prospective bidders for the project. One (1) such conference is budgeted for this effort.
- 2.10.4 Attend Bid Opening and assist Association with recording the bids in a tabular format.
- 2.10.5 Assist the OCBCA and OLSBA WPCAs in evaluating bids and furnish recommendation on the award of the construction contract. Provide recommendation package to the Associations and DEEP for authorization to award the contract.
- 2.10.6 Prepare contract documents for signing by the WPCA and the construction Contractor following approval to award the contract by the WPCA and DEEP.

2.11 Basic Construction Services

- 2.11.1 Attend a pre-construction conference and schedule ahead monthly meetings with the Contractor to observe as an experienced and qualified design professional the progress and quality of the executed work of Contractor(s) and to determine in general if such work is proceeding in accordance with the Contract Documents. Engineer shall not be responsible for the means, methods, techniques, sequences or procedures of construction selected by Contractor(s) or the safety precautions and programs incident to the work of Contractor(s), but shall not knowingly allow any unsafe methods without notifying the Contractor of same. A 24-month (2 year) period is anticipated for the OCBCA and shared force main to East Lyme construction work.
- 2.11.2 Review and approve (or take other appropriate action in respect of) Shop Drawings and samples, the results of tests and inspections and other data which the Contractor is required to submit, but only for conformance with the design of the Project and compliance with the information given in the Contract Documents (but such review and approval of other action shall not extend to means, methods, sequences, techniques or procedures of construction or

- to safety precautions and programs incident thereto) except such review and approval shall not knowingly allow any unsafe practice related to these items; determine the acceptability of substitute materials and equipment proposed by Contractor(s); and receive and review (for general content as required by the Specifications) maintenance and operating instructions, schedules, guarantees, bonds and certificates of inspection which are to be assembled by Contractor(s) in accordance with the Contract Documents.
- 2.11.3 Provide necessary interpretations and clarifications of the Contract Documents, and provide technical assistance in situations where there are design conflicts in the field.
- 2.11.4 Make periodic site visits to observe progress of the work and on the Contractor's general compliance or non-compliance with the contract terms as approved by OCBCA WPCA in writing. Twenty Four (24) periodic site visits are budgeted for this work.
- 2.11.5 Provide commissioning services to observe testing of pump station components and general conformance with the intent of the Contract Documents.
- 2.11.6 Assist the WPCA with an inspection to determine if the Project is substantially complete and a final inspection to determine if the work has been completed in accordance with the Contract Documents. Provide a punch list to the Contractor, listing outstanding contract requirements not met by the Contractor at the substantial completion inspection.
- 2.11.7 DELETED
- 2.11.8 Engineer shall not be responsible for the acts or omissions of any Contractor, or subcontractor, or any of the Contractor(s) or subcontractors' agents or employees or any other persons (except Engineer's own employees and agents) at the site or otherwise performing any of the Contractor(s)' work; however, nothing contained herein, shall be construed to release Engineer from liability for failure to perform properly duties undertaken by Engineer in the Contract Documents. Engineer shall take all reasonable steps to insure that contractor(s), subcontractor(s) and their agents shall fully comply with the Contract Documents.
- 2.12 Resident Representation

A resident representative and assistants will be furnished and directed by the Engineer to provide reports on progress of the work and on the Contractor's compliance or non-compliance with the contract terms through continuous on-site observation of the work; however, the furnishing of such resident representation or the performance of any other construction service shall not make the Engineer responsible for the Contractor's failure to perform the construction work in accordance with the contract documents no for the Contractor's construction methods of procedures or the safety precautions incident thereto. However the Engineer and the Resident Representative and assistants directed by the Engineer shall take all reasonable steps to insure that contractor(s), subcontractor(s) and their agents shall fully comply with all approved plans, specifications and contract documents and shall not knowingly allow through review and approval responsibilities any

unsafe practice.

- 2.12.1 Visually inspect and approve or reject materials, equipment and supplies delivered to the site of the work.
- 2.12.2 Observe the Contractor's work with respect to quality, suitability and general conformance with the contract requirements. As a result of those observations, report to Engineer wherever he believes that any work is unsatisfactory, faulty or defective or does not conform to the Contract Documents, or has been damaged, or does not meet the requirements of any inspection, test or approval required to be made; and advise Engineer of work that he believes should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval on the basis of his qualification as a certified inspector. It is envisioned that a minority or woman-owned business representative will subcontract to Fuss & O'Neill for assistance in this effort.
- 2.12.3 Keep records of construction and installation progress. Maintain and measure quantities for bid items attributed to OCBCA, OLSBA, and the shared force main for equitable distribution of construction costs. Prepare and maintain a set of marked prints for use in reviewing record drawings prepared by the Contractor.
- 2.12.4 Make measurements and prepare monthly and final payment computations for work done by the construction contractors. Receive, process and handle shop drawings and the like, transmitting submittals to the Engineer's home office for review.
- 2.12.5 Assemble maintenance and operation instructions, and parts list which the construction contractor submits in compliance with the Contract Documents.
- 2.12.6 Collect, review and file weekly payroll and other records or statements required by State and other agencies having jurisdiction. This review does not certify nor imply that information submitted by the construction contractor is accurate or has been investigated for accuracy.
- 2.12.7 Review reports of testing laboratories.
- 2.12.8 Review the progress schedule, schedule of Shop Drawing submittals and schedule of values prepared by Contractor and consult with Engineer concerning acceptability. Furnish the WPCA periodic reports as required of progress of the work and of Contractor's compliance with the progress schedule and schedule of shop drawing and sample submittals.
- 2.12.9 Attend meetings with Contractor, such as preconstruction conferences, monthly progress meetings as approved by OCBCA WPCA in writing, job conferences and other project-related meetings, and prepare and circulate copies of minutes thereof.
- 2.12.9a Maintain at the job site orderly files for correspondence, reports of job conferences, shop drawings and samples, reproductions of original Contract Documents including all Work Directive Changes, Addenda, Change Orders, Field Orders, additional drawings issued subsequent to the execution of the Contract, Engineer's clarifications and interpretations of

the Contract Documents, progress reports, and other project-related documents.

2.12.9b Keep a diary or log book, recording Contractor hours on the job site, weather conditions, data relative to questions of Work Directive Changes, Change Orders or changed conditions, list of job site visitors, daily activities, decisions, observations in general, and specific observations in more detail as in the case of observing test procedures; and send copies to Engineer.

2.12.9c Record names, addresses and telephone numbers of all Contractors, subcontractors and major suppliers of materials and equipment.

2.13 Special Services During Construction

2.13.1 The Engineer will furnish, or obtain from others, services of the following types:

Furnish a set of reproducible record prints of the construction plans, based on prints marked by the resident representative, to show marked changes made during construction which differ from approved plans and specifications.

2.13.2 Provide assistance during the warrantee period for such items as problems with equipment, materials or structures, seeking repairs or replacements under warrantee provisions and making payments to Contractors.

2.13.3 Prepare a draft Operation and Maintenance (O&M) Manual for the OCBCA Pump Station. Compile and organize final shop drawings for equipment installed at the pump station. Include operating instructions based on manufacturer's recommendations, list spare parts, and maintenance required for the pump station. Submit two (2) draft copies for review by WPCA. Revise and finalize the O&M manual, and transmit two (2) final copies to OCBCA WPCA.

2.13.4 Provide any services required in connection with readvertisements for construction bids.

ARTICLE 3 - RESPONSIBILITIES OF THE WPCA

The WPCA, without cost to the Engineer, will:

- 3.1 Place at the disposal of the Engineer all information in their possession pertinent to the Project including previous reports and any other data relative to the Project.
- 3.2 Provide access to and make all provisions for the Engineer to enter upon public and private lands as required for the Engineer to perform his work under this Agreement.
- 3.3 Designate in writing a person to act as the WPCA's representative with respect to the work to be performed under this Agreement, such person to have complete authority to transmit instructions, receive information and advise the Engineer as to the WPCA's policies and decisions pertinent to the work covered by this Agreement.
- 3.4 Waive road opening permit fees for the subsurface investigation and well/water service location programs. Waive road opening fees for the construction project.
- 3.5 Coordinate access for the engineer and construction on private property or private roads.
- 3.6 On a base map to be provided by the Engineer, write onto the base map the names of property owners that have recently changed within the proposed sewer service area.
- 3.7 Provide mailing list and mail lateral location letter forms to property owners in the proposed sewer service area.
- 3.8 Submit bid Advertisements to local and regional newspapers.
- 3.9 Secure project funding for ineligible design and construction work.
- 3.10 Procure services of legal counsel to finalize legal documents including, but not limited to: Memorandum of Understanding (MOU) with OLSBA and Miami Beach Association as applicable, Intermunicipal Agreements, Policies, Regulations and Procedures, Contract Operations Contract and issuance/enforcement of Assessments.

ARTICLE 4 - PERIOD OF SERVICE

- 4.1 The Engineer shall proceed with the services under this Agreement promptly and will diligently and faithfully prosecute the work to completion in accordance with applicable engineering standards subject to any delays due to strikes, action of the elements, act of any government, civil disturbances, or any other cause beyond the reasonable control of the Engineer. The schedule for completion of the scope of services provided herein is defined in the Consent Order with a completion date of construction scheduled for September 2016.

ARTICLE 5 - PAYMENT TO THE ENGINEER

5.1 For the services performed, the Engineer shall be paid on a lump sum or cost plus fixed fee basis as outlined below and shown on Schedule 1, attach hereto.

5.2 For the services performed on a lump sum basis, said lump sum to be payable monthly on the basis of a mutually agreed upon percent complete.

5.3 Cost Plus Fixed Fee Charges

For services performed on a cost plus fixed fee basis, the charges will be determined as follows:

5.3.1 Charges will include costs incurred during the billing period plus a portion of the fixed fee based on a mutually agreed upon percentage of work completed. The cost ceiling (which does not include the fixed fee) will not be exceeded without the Agreement being formally amended, and the fixed fee will not be increased except for an Agreement Amendment increase the scope of work.

5.3.2 In the event the period of service extends beyond the dates specified herein, the cost ceilings and fixed fees stated herein shall be subject to renegotiation; provided, however, there shall be no renegotiation if the extension is caused by the Engineer.

5.3.3 The Engineer shall notify the WPCA when the costs incurred total approximately 60 percent of the total estimated costs. With the notification, the Engineer shall indicate whether his estimate of the total cost to complete the project will be greater or less than the original cost. Should the revised estimate exceed the original amount, this Agreement may be amended upon agreement of all parties to cover the increase in total estimated cost or the scope of services revised to keep the total estimated cost within the original amount. The Engineer shall not be obligated to provide services, the charges for which would exceed the total estimated cost, without the Agreement being amended.

5.3.4 Costs will include direct labor, indirect costs, and direct costs:

5.3.4.1 Direct labor is salaries and wages paid to personnel for time chargeable to a specific engagement.

5.3.4.2 Indirect costs are allocations of overhead costs which are not directly chargeable to a specific engagement.

Payments are to be based on the indirect cost rate of 192.18 percent of direct salaries and wages. This rate is subject to annual adjustment as determined by audit and approved by the State of Connecticut.

Payments for the Resident Representative will be based on an indirect cost rate of 167.95 percent of direct salaries and wages. This rate is subject to annual adjustment as determined by audit and approved by the State of Connecticut.

5.3.4.3 Direct costs include such typical expenses as cost of transportation, printing and reproduction, identifiable supplies; outside consultant's charges; subcontracts for services such as testing by commercial laboratories; and charges by reviewing authorities. Automobile mileage will be charged at the IRS approved rate (currently \$0.565 per mile).

5.4 Fee Schedule

See attached Schedule 1.

ARTICLE 6 - GENERAL PROVISIONS

6.1 Save Harmless

The Engineer will save harmless the WPCA and its agents or employees from claims or liabilities arising out of any negligence or any tortious acts or omissions of the Engineer or any of its employees or agents in connection with the performance of the Agreement provided the WPCA gives the Engineer written notice of all such claims within ten (10) days after the WPCA receives notice of knowledge of the claim and the WPCA gives the Engineer reasonable opportunity to defend such claim.

6.2 Insurance

6.2.1 Comprehensive General Liability Insurance

The Engineer will secure and maintain in full force for the duration of this contract Comprehensive General Liability Insurance, including Contractual Liability Insurance issued by an insurance company licensed to conduct business in the State of Connecticut with combined single limits of \$1,000,000 per occurrence with a \$2,000,000 aggregate limit. Deductibles will be the responsibility of the Engineer to pay and/or indemnify. The OLSBA WPCA will be named as an additional insured on this policy. The Engineer shall be responsible for ensuring that all of its subcontractors carry insurance of similar types and with similar limits of coverage as required for the Engineer.

6.2.2 Automobile Liability Insurance

The Engineer will secure and maintain in full force for the duration of this contract Automobile Liability Insurance, issued by an insurance company licensed to conduct business in the State of Connecticut with limits not less than \$500,000 for all damages because of bodily injury sustained by each person as a result of any occurrence and \$1,000,000 for damage because of bodily injury sustained by two or more persons as the result of any one occurrence, and limits of \$250,000 for all damages because of property

damage sustained as the result of any one occurrence of a \$1,000,000 Combined Single Limit (CSL). Deductibles will be the responsibility of the Engineer to pay and/or indemnify. The OLSBA WPCA will be named as an additional insured on this policy.

6.2.3 Professional Liability Insurance

The Engineer will secure and maintain in full force for the duration of this contract and extended for two years following the completion date professional liability insurance including pollution coverage on a claims made basis with an aggregate limit of \$5,000,000 and a per occurrence limit of \$3,000,000 for protection against claims arising out of the performance of professional services under this Agreement caused by errors or omissions for which the Engineer is legally liable.

6.2.4 Workman's Compensation Insurance

The Engineer will secure and maintain in full force for the duration of this contract Workman's Compensation Insurance, in accordance with Connecticut State Statutes, as will protect him from claims for bodily injury, death, or property damage which may arise from the performance of his services under this Agreement.

6.3 Standard of Care

The standard of care applicable to Engineer's services will be the degree of skill and diligence normally employed by professional engineers or consultants performing the same or similar services at the time said services are performed. Engineer will perform any services not meeting this standard, without additional compensation.

6.4 Subsurface Investigations

In soil, foundation, groundwater, and other subsurface investigations, the actual characteristics may vary significantly between successive test points and sample intervals and at locations other than where observations, exploration, and investigations have been made. While the Engineer will make reasonable effort to identify underground conditions, the inherent uncertainties in subsurface evaluations, changed, or unanticipated underground conditions may occur that could affect total Project cost and/or execution. These conditions and cost/execution effects are not the responsibility of Engineer.

6.5 Opinions of Cost

Since the Engineer has no control over the cost of labor, materials, equipment or services furnished by others, or over the Contractor(s)' methods of determining prices, or over competitive bidding or market conditions, the Engineer's opinions of probable Total Project Costs and Construction Cost are to be made on the basis of the Engineer's experience and qualifications and represent the Engineer's best judgment as an experienced and qualified professional engineer, familiar with the construction industry; but the Engineer cannot and does not guarantee that proposals, bids or actual Total Project or Construction Costs will not vary from opinions of probable cost prepared by the Engineer. If prior to the Bidding or Negotiating phase the WPCA wishes greater assurance as to

Total Project or Construction Costs, the WPCA shall employ an independent cost estimator.

6.6 Litigation and Additional Work

In the event the Engineer is to prepare for or appear in any litigation on behalf of the WPCA or is to make investigations of reports on matters not covered by this Agreement, or is to perform other services not included herein, additional compensation shall be paid the Engineer as is mutually agreed upon in writing.

6.7 Reuse of Documents

All right, title and interest to work products of the Engineer resulting from its performance under this Agreement, including drawings and specifications, data and reports, shall be vested in the WPCA. Any reuse without specific written verification or adaptation by the Engineer will be at the WPCA's sole risk and without liability or legal exposure to the Engineer, and the WPCA shall indemnify and hold harmless the Engineer from all claims, damages, losses and expenses, including attorneys' fees, arising out of or resulting therefrom. Any such verification or adaptation will entitle the Engineer to further compensation at rates to be agreed upon by the WPCA and the Engineer. The Engineer shall have the unlimited right to re-use such documents.

6.8 Termination

The obligation to provide further services under this Agreement may be terminated by either party upon seven days' written notice in the event of substantial failure by the other party to perform in accordance with the terms hereof through no fault of the terminating party. In the event of any termination, the Engineer will be paid for all service rendered to the date of termination, all Reimbursable Expenses and termination expenses.

IN **WITNESS WHEREOF**, the parties hereto have executed this Agreement the day and year first written.

**WATER POLLUTION CONTROL AUTHORITY
OCBCA, OLD LYME CONNECTICUT**

By: _____
Joel Weisman
OCBCA WPCA Chairman

FUSS & O'NEILL, INC.

By: _____
Virgil J. Lloyd, P.E.
Senior Vice President

Reviewed by: _____
CEO/President

**CONNECTION TO EAST LYME COLLECTION SYSTEM AND ADDITIONAL
ASSOCIATION IMPROVEMENTS**

**SCHEDULE 1
FEE SUMMARY
May 21, 2013**

Item No.	Scope Item	Fee Basis	Cost/Budget*
2.1.1	Aerial mapping & Surveying	Lump Sum	\$55,900.00
2.1.2	Wetlands Delineation	Lump Sum	\$6,900.00
2.1.3	Subsurface Investigation	Lump Sum	\$35,300.00
2.1.4	Phase I Archeological Investigation	Lump Sum	\$ 8,300.00
2.2	Preliminary Design – Wastewater Collection Sys	Lump Sum	\$71,700.00
2.3	Preliminary Design – Roadway Improvements	Lump Sum	\$33,300.00
2.4	Preliminary Design – Storm Drainage Improv	Lump Sum	\$32,200.00
2.5	Detailed Design – Wastewater Improvements	Lump Sum	\$155,600.00
2.6	Detailed Design – Roadway Improvements	Lump Sum	\$71,600.00
2.7	Detailed Design – Storm Drainage Improv	Lump Sum	\$38,500.00
2.8	Permitting Assistance	Lump Sum	\$45,000.00
2.9	Special Services During Design		
2.9.1	Provide IMA, MOU Assistance	Cost + F.F.	\$38,000.00
2.9.2	Prepare A-2 Surveys	Cost + F.F.	\$2,500.00
2.9.3	Financial and WPCA Assistance	Cost + F.F.	\$50,000.00
2.9.4	WPCA Policies, Procedures and Support	Cost + F.F.	\$19,000.00
2.10	Bidding Services	Lump Sum	\$20,000.00
2.11	Basic Construction Services	Cost + F.F.	\$TBD
2.12	Resident Representation	Cost + F.F.	\$TBD
2.13	Special Services During Construction	Cost + F.F.	\$TBD
2.13.1	Record Drawings	Cost + F.F.	\$TBD
2.13.2	Warrantee Assistance	Cost + F.F.	\$TBD
2.13.3	Prepare Operation & Maintenance Manual	Cost + F.F.	\$TBD
2.13.4	Re-advertisement for Bids (as Required)	Cost + F.F.	\$TBD
TOTAL AUTHORIZATION			\$683,800.00

* Includes Expenses

* Does not include fees for East Lyme hydraulic modeling and Bride Brook Pump Station evaluation.