

TOWN OF WALLINGFORD  
DEPARTMENT OF PUBLIC UTILITIES  
WATER AND SEWER DIVISIONS  
377 SOUTH CHERRY STREET  
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INTEROFFICE MEMORANDUM

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**TO:** RICHARD A. HENDERSHOT, DIRECTOR OF PUBLIC UTILITIES  
**FROM:** NEIL H. AMWAKE, P.E., GENERAL MANAGER *mf*  
**RE:** SEWER DIVISION – BUDGET AMENDMENT FOR FY17-18 –  
WASTEWATER TREATMENT FACILITY PLAN  
**DATE:** AUGUST 31, 2017  
**CC:**

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**Introduction**

The Town of Wallingford owns and operates a rotating biological contactors (RBC) advanced secondary wastewater treatment plant (WWTP) with ultraviolet (UV) disinfection to treat collected wastewater prior to discharge to the Quinnipiac River. The plant is currently permitted to treat an average daily flow of 8.0 million gallons per day (mgd). Substantial completion for the current wastewater treatment plant was achieved on July 1, 1989, and while some upgrades have occurred, much of the original equipment and structures remain. The wastewater treatment plant has been in continuous operation for more than 28 years with no comprehensive study undertaken in that time period to thoroughly review, assess and evaluate the equipment or processes.

Discharges of treated effluent from the WWTP to the Quinnipiac River are regulated by a National Pollutant Discharge Elimination System (NPDES) permit issued by the Connecticut Department of Energy and Environmental Protection (DEEP) and a General Permit for Nitrogen. It is anticipated that the DEEP will issue a draft renewal permit in April, 2018. The draft NPDES permit is expected to include an effluent limit for Total Phosphorus with an April 1 through October 31 seasonal load cap of 8.95 lbs./day (an average of 0.13 mg/L at 8.0 mgd), an average monthly concentration limit of 0.31 mg/L, and a maximum daily concentration limit of 0.62 mg/L. The existing plant currently operates with an effluent monthly concentration of Total Phosphorus between 0.38 mg/L to 0.81 mg/L (April 1, 2015 to July 31, 2017).

ITEM NO. 3-2  
PUC AGENDA 9/5/17

To prepare for the anticipated changes in the permitted phosphorus discharge, and given the earlier-described lack of a comprehensive study of WWTP structures, equipment and processes, the Sewer Division has initiated efforts to prepare a Wastewater Treatment Facility Plan.

### Facility Plan Scope of Work

The Facility Plan Scope of Work has been structured to address the planning topics in a two phase approach. The first phase is an engineering evaluation of phosphorus removal technologies and related ancillary equipment. The second phase addresses nitrogen removal improvements and the evaluation and assessment of the remaining plant processes to provide future wastewater treatment in an effective and efficient manner. The Facility Plan will build upon and provide continuity with previous efforts prepared for the Sewer Division including the 2005 nitrogen removal upgrades, the 2010 Engineering Report for the Study of the Wastewater Treatment Plant, and the 2012 Technical Memorandum of Phosphorus Removal.

The first phase, identified as the "Fast Track" phase, includes pilot studies of three (3) phosphorus treatment technologies, a determination of the WWTP's existing flows and solids and nutrient loads, and a projection of future wastewater flows and pollutant loads for the next 20 years. The Fast Track phase also includes an evaluation of the rotating biological contactors (RBC's) and the peripheral processes that will affect phosphorus removal such as solids handling, secondary settling, UV disinfection and pumping. The deliverable for the "Fast Track" phase will be a Facility Plan for Phosphorus Treatment Report that will identify the preferred technology for phosphorus removal, its capacity, an economic analysis, and other associated ancillary equipment or process needs.

The second phase of the Facility Plan will include a comprehensive evaluation of the existing facility (structures, equipment and processes) to treat wastewater to the limits noted in the current permit, and the condition of existing equipment, systems, and structures to provide wastewater treatment for a 20-year planning period. Existing items to be evaluated include the headworks (bar screens, grit tanks), primary treatment and pumping (tankage capacity, scum troughs and drives), secondary processes including settling tanks and associated pumping, solids handling (nutrient removal and sidestream treatment, dewatering process), as well as electrical and emergency generator needs, laboratory capacity and space requirements, disinfection and post aeration, plant water systems, the plant's hydraulic profile, and gates and valving. This information will then be

ITEM NO. 33  
PUC AGENDA 9/5/17



integrated with the Facility Plan for Phosphorus Treatment Report into a comprehensive Wastewater Treatment Facility Plan.

### Department of Energy and Environmental Protection Funding for Planning Projects

A Quality Based Selection of engineering services to prepare the Wastewater Treatment Facility Plan, including but not limited to an evaluation of short- and long-term nutrient removal alternatives based on NPDES requirements for phosphorus and nitrogen, is a requirement of the Connecticut Clean Water Fund, the State's environmental infrastructure assistance program administered by the Department of Energy and Environmental Protection (DEEP), and the USEPA State Revolving Fund Program. As stated in the Final Clean Water Fund (CWF) Priority List for State fiscal years 2016 and 2017: "In order for a planning project to be eligible, Quality Based Selection (QBS) must be used to choose an engineering consultant for that specific project."

"After the planning reserve funds are depleted [\$10M in FY15-16 and \$10M in FY16-17 on a first-come, first-serve basis], municipalities may proceed with planning by utilizing local funds, and retain eligibility for future reimbursement of eligible costs [55% planning grant] provided the municipality has received prior written approval of the fees and scope of work from the Department [DEEP]. Municipalities that expend funds for eligible planning efforts without receiving written approval from the Department will not be eligible for reimbursement at a later date."

### Quality Based Selection Process

Quality Based Selection (QBS) is a procurement process established by the U.S. Congress as a part of the Brooks Act (Public Law 92-582; see also 40 USC §1101 et seq.) and further developed as a process for public agencies to use for the selection of architectural and engineering services for public planning, design and construction projects. Town of Wallingford Purchasing Ordinance No. 54, Section 43.10, Subsection D, Paragraph 4 allows for Quality Based Selection upon approval by the Wallingford Town Council on a project specific basis.

Quality Based Selection is a competitive contract procurement process whereby consulting firms submit qualifications to a procuring entity (Sewer Division) who evaluates and selects the most qualified firm, and then negotiates the project scope of work, schedule, budget, and consultant fee. Crucially, under QBS procurement, the cost of the work (price) is not considered when making the initial selection of the best or most appropriate

ITEM NO. 3-4  
PUC AGENDA 9/5/17



provider of the professional services required. Fees for services are negotiated following selection and before contracting (executing a signed Agreement between the parties). If negotiations are not successful with the most qualified firm, and the parties cannot agree to a contract, the Sewer Division would dismiss the top-ranked firm and invite the second-ranked firm to negotiate, and so on until a contract is executed.

The Wallingford Town Council at their meeting on March 28, 2017 approved the QBS process for consultant services to prepare a Wastewater Treatment Facility Plan. By utilizing the QBS process the Town also preserves its option to seek reimbursement for the cost to prepare the Facility Plan.

The Town publicly advertised the Request for Qualifications (RFQ) for Consultant Services to Prepare Wastewater Treatment Facility Plan on April 27, 2017. The RFQ described in detail the proposed scope of services and the selection criteria in order for firms to judge the likelihood of being selected (key personnel assigned to the team, team experience with projects of similar scope and technical requirements, in-house resources versus sub-consultants, references, etc.). Submissions were due on June 8, 2017. The submissions were then evaluated by a 5-member selection committee comprised of the Water and Sewer Divisions General Manager, the Sewer Superintendent, the Assistant Sewer Superintendent, the Engineering Section Senior Engineer and the Water and Sewer Divisions Chemist. The selection committee ranked the firms/teams using the published selection criteria included in the RFQ.

The initial evaluation of submittals led to a shortlist of three firms/teams that the selection committee judged to be well qualified to perform the work. These three respondents were invited to interview in person with the selection committee. Ultimately, the selection committee established a final rank of the shortlisted firms. The Sewer Division then invited the top-ranked firm to enter into negotiations to establish the scope of services, compensation and other contractual terms.

#### **Facility Plan Fee and Funding**

In December, 2015 the Sewer Division budgeted \$500,000 in its FY16-17 capital budget to complete a Wastewater Treatment Facility Plan. The original approach, at that time, was for the Sewer Division to self-fund the Facility Plan and not seek the partial (55% grant) reimbursement from the DEEP for the planning study.

ITEM NO. 3-8  
PUC AGENDA 9/5/17



As noted earlier, by utilizing a QBS procedure to select and engage an engineering consultant to prepare the Wastewater Treatment Facility Plan the Sewer Division is eligible for a 55% grant of qualified costs associated with the Facility Plan. The Sewer Division would be initially responsible for the full cost of the Wastewater Treatment Facility Plan and then be reimbursed for the eligible planning expenses once construction began.

Negotiations with the top-ranked provider of the requested services have resulted in an estimated cost to prepare the Wastewater Treatment Facility Plan of \$1,100,000. With a 55% reimbursement grant, the Town will be eligible to receive reimbursement of \$605,000 once construction is initiated, resulting in a net cost to prepare the Facility Plan of approximately \$495,000; an amount nearly equal with the original budget appropriation.

### Time is of the Essence

Eleven municipalities<sup>1</sup> in Connecticut, including Wallingford, have been or will be issued discharge permits for Total Phosphorus at or below an average monthly concentration of 0.31 mg/L. Per Public Act No. 16-57, these eleven communities "shall receive (A) a project grant of fifty per cent of the [design and construction] costs of the project associated with such phosphorus removal, (B) except as provided in subdivision (3) of this subsection, a twenty per cent grant for the balance of the project, and (C) a loan for the remainder of the costs of the project" *provided that the municipality enters into a construction contract before July 1, 2019 to obtain such financing*. Please note that the July 1, 2019 deadline is for entering into a construction contract not application for, or execution of, a Clean Water Fund Agreement.

Thus, per the *funding schedule*, should the Town of Wallingford begin construction of the phosphorus removal treatment upgrades prior to July 1, 2019 the costs for the phosphorus removal (estimated construction cost of \$19,000,000 in 2012) would be eligible for a 50% grant though the Clean Water Fund.

Should the Town of Wallingford not enter into a construction contract prior to July 1, 2019 for phosphorus removal and closely related improvements, then the grant would be thirty per cent of the phosphorus removal project costs, versus the 50% grant. The 30% grant applies to nutrient removal projects, such as nitrogen removal projects or phosphorus removal projects for communities other than the eleven identified in Public

<sup>1</sup> Bristol, Cheshire, Danbury, Meriden, New Canaan, Plainville, Ridgefield, Southington, Vernon, Wallingford and Waterbury

ITEM NO. 3-6  
PUC AGENDA 9/5/17

Act No. 16-57. The DEEP is advising "all of the eligible municipalities to put themselves in a position to take advantage of [the funding per Public Act No. 16-57] as soon as they can."

The *regulatory compliance* schedule states that no later than April 1, 2020 the Town shall begin construction of the phosphorus removal to achieve compliance with the limits identified in the new NPDES permit. And, no later than April 1, 2022, the Town shall complete the phosphorus treatment construction project such that the treatment process is fully operational to achieve the limits (an average monthly concentration limit of 0.31 mg/L) in the NPDES permit.

Thus, there are two timelines to consider for any phosphorus treatment project: a construction contract deadline of July 1, 2019 to be eligible for a 50% grant of the phosphorus removal project costs (versus 30% grant funding); and a regulatory compliance deadline of April 1, 2022 to achieve compliance with the expected phosphorus discharge limits per the new NPDES permit.

### **Budget Amendment Request**

The Sewer Division requests approval by the Public Utilities Commission of a budget amendment increasing Account #46300331 (Treatment Plant – Structures & Improvements) in the amount of \$600,000. Funds for this purpose will be made by an increase in the amount of \$439,854 to the Appropriation from Cash in the Source of Funds section of the budget, as well as a reduction in the Appropriation to Cash of \$160,146. Revised budget pages reflecting the proposed amendment are attached.

As always, please feel free to contact me should you have any questions or require additional information. Thank you.

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ITEM NO. 3-7  
PUC AGENDA 9/5/17